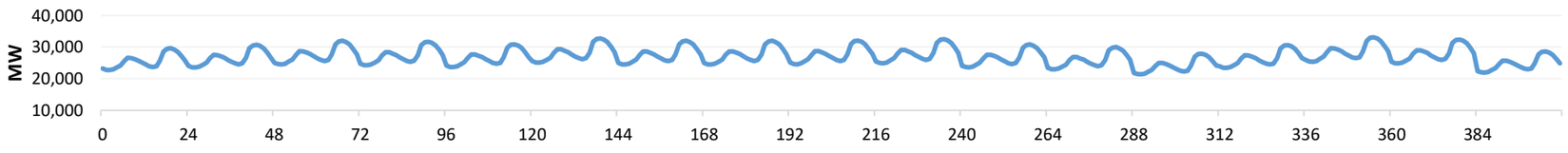
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 1 - PD 1 No Disruptions (Winter 2030/2031)

Hourly Results Summary

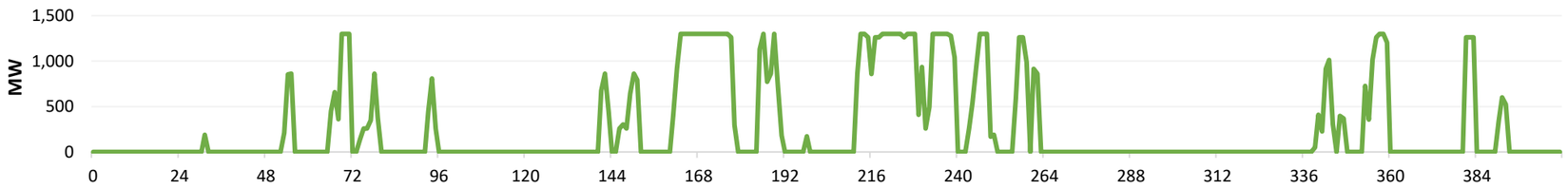
Case Name: Scenario 1 - PD 1 No Disruptions

Load During Modeling Period



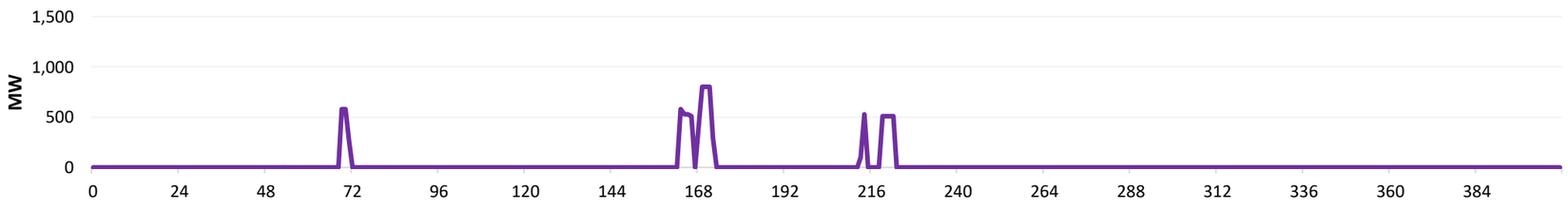
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



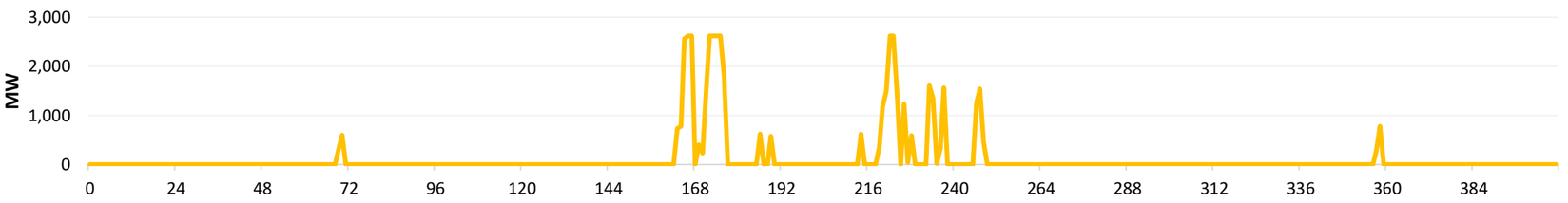
Export Reductions	
Total Hrs.	117
Total MWh	103,786
Avg. MW	254.4

SCR/EDRP Deployed During Modeling Period



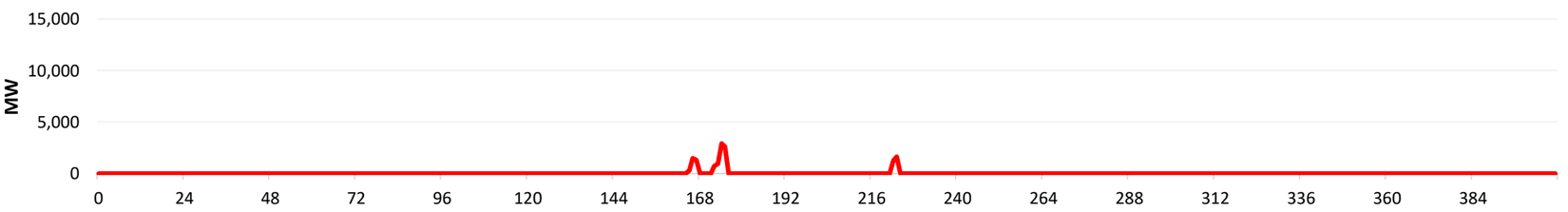
SCR Deployment	
Total Hrs.	18
Total MWh	9,301
Avg. MW	22.8

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	37
Total MWh	47,251
Avg. MW	115.8
First Hour with Viol.	69

Loss of Load During Modeling Period



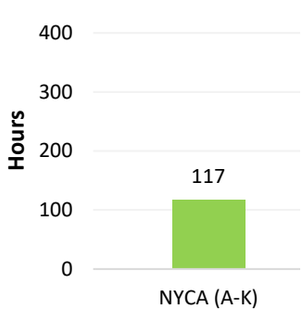
Loss of Load	
Total Hrs.	9
Total MWh	13,231
Avg. MW	32.4
First Hour with Losses	165

Full Period Results Summary

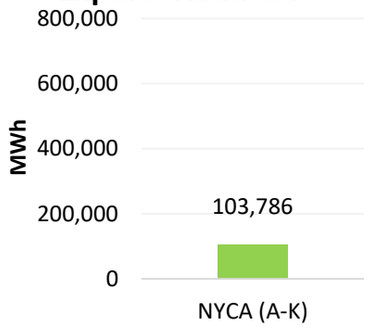
Case Name: Scenario 1 - PD 1 No Disruptions

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

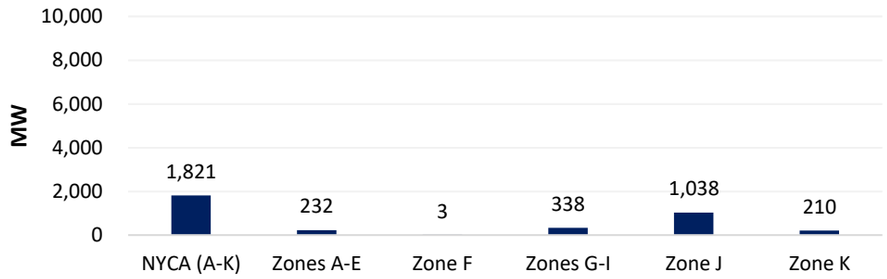
Hours Exports Reduced



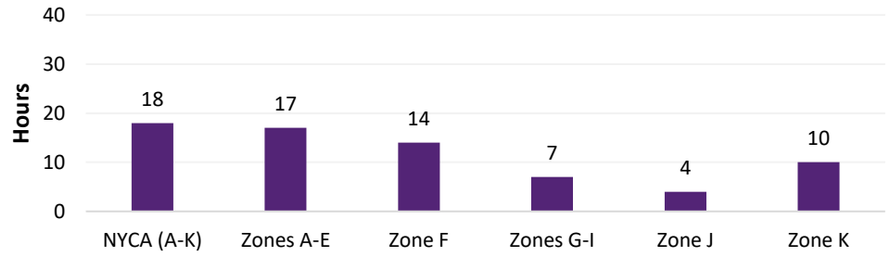
Total MWh of Exports Reduced



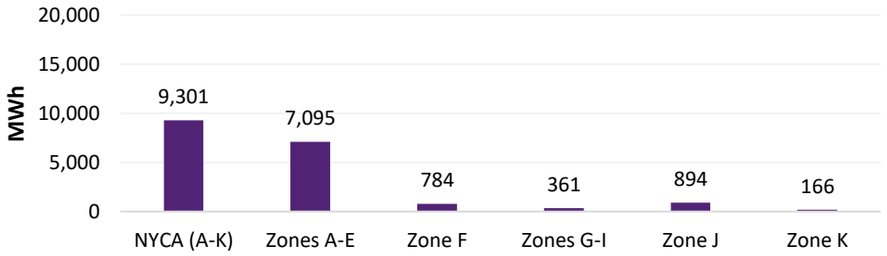
Average Capacity Not Available Due to Exhausted Fuel Inventory



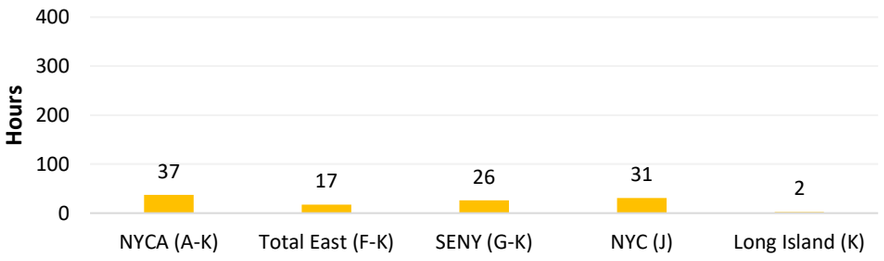
Hours SCR/EDRP Deployed



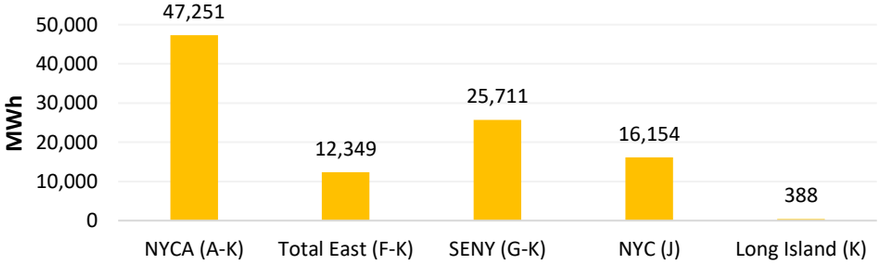
Total MWh SCR/EDRP Deployed



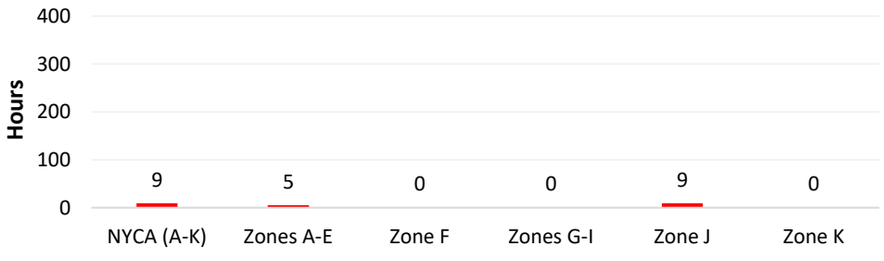
Hours with Reserve Violations



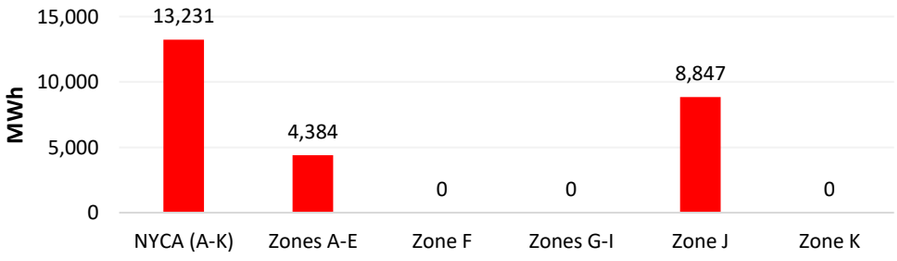
Total MWh of Reserve Violations

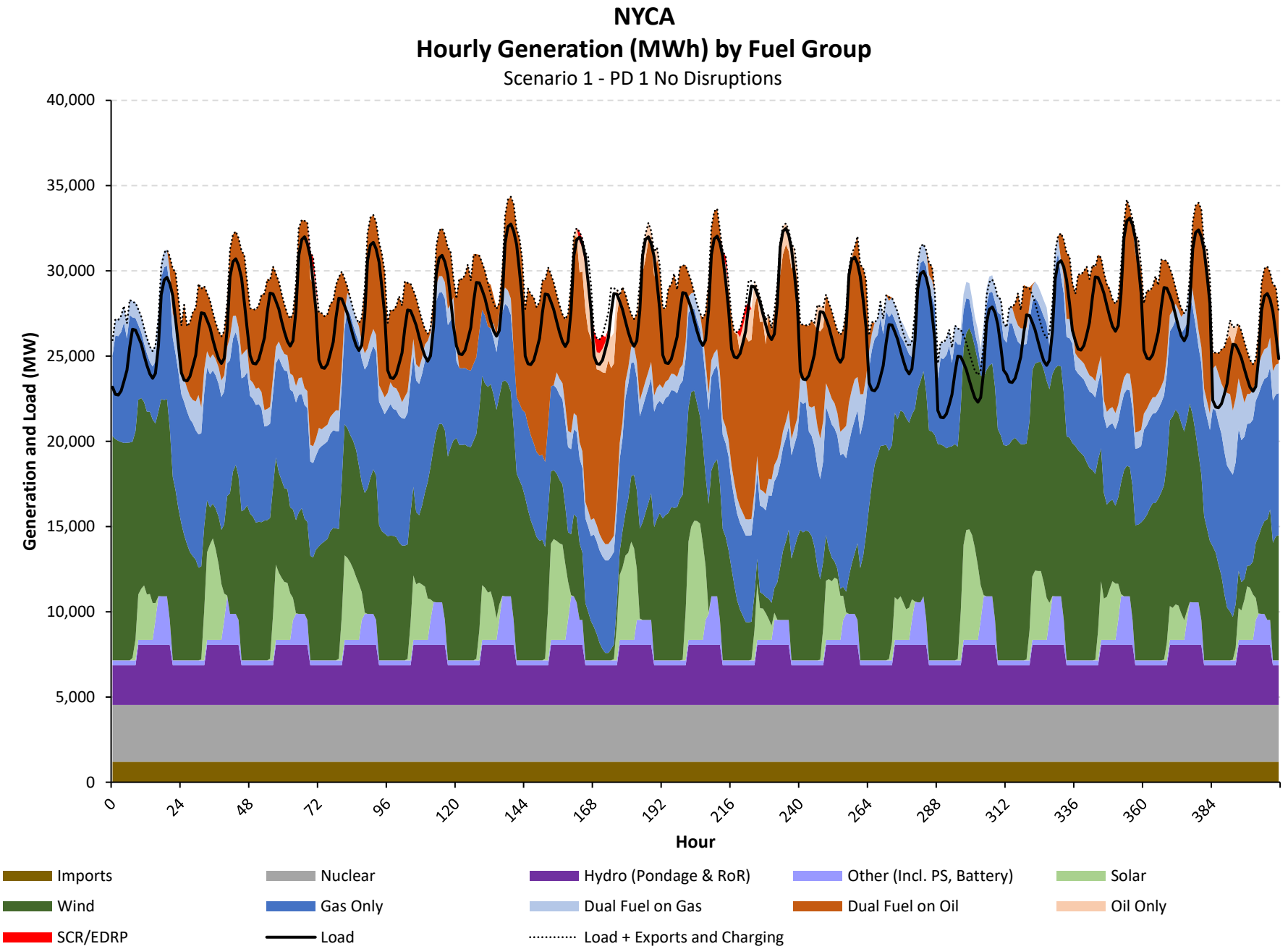


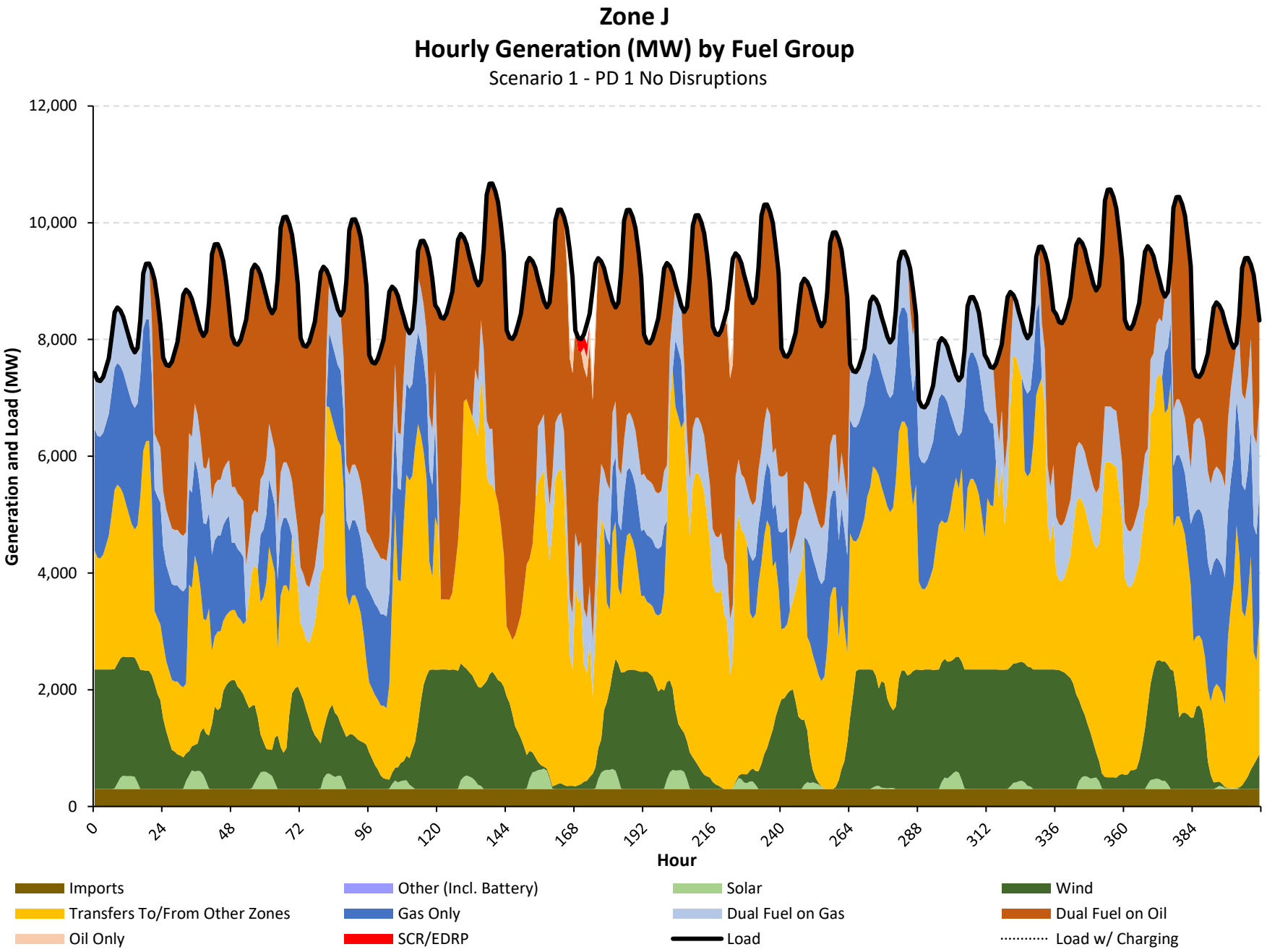
Hours with Loss of Load



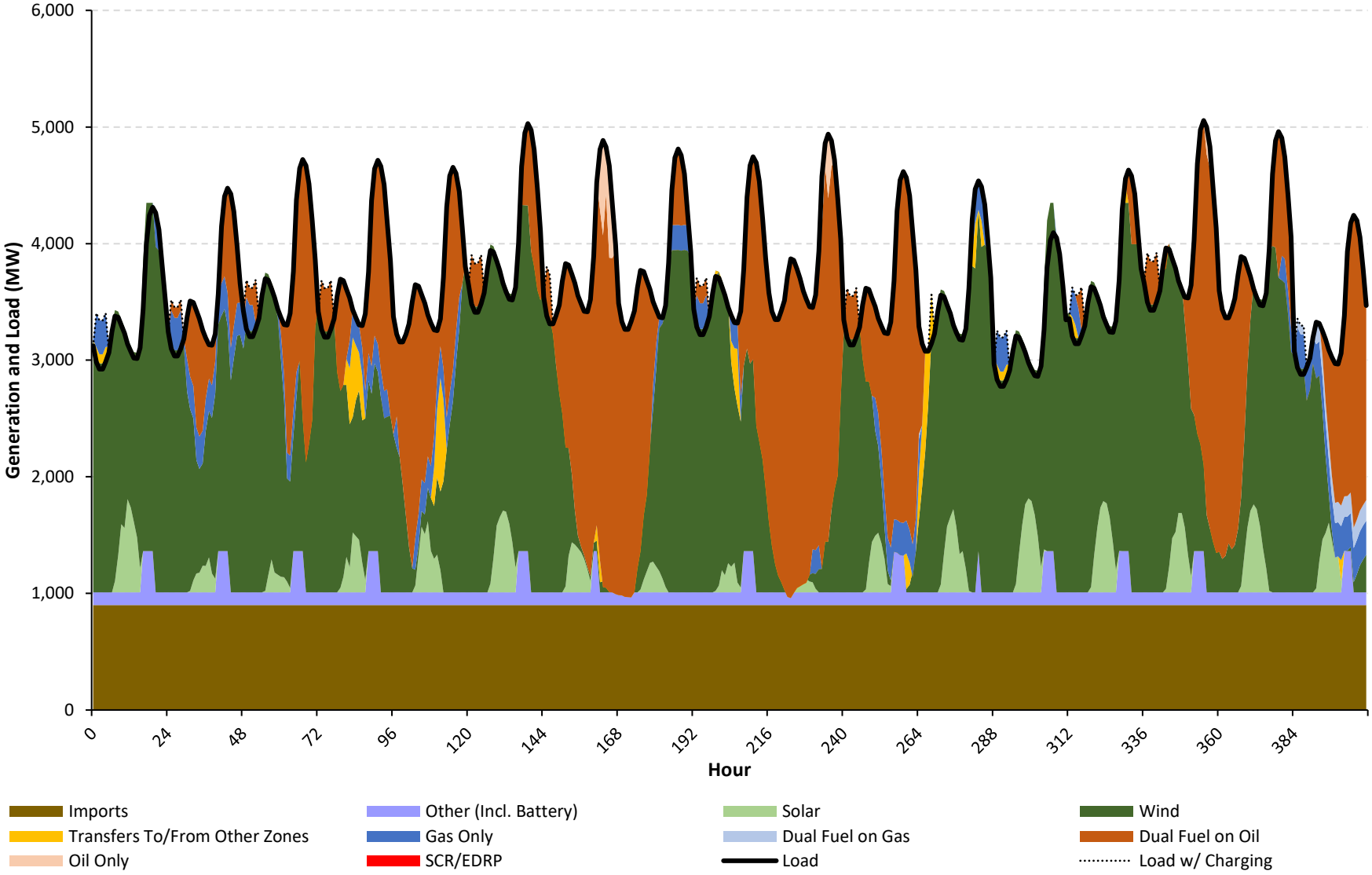
Total MWh of Lost Load

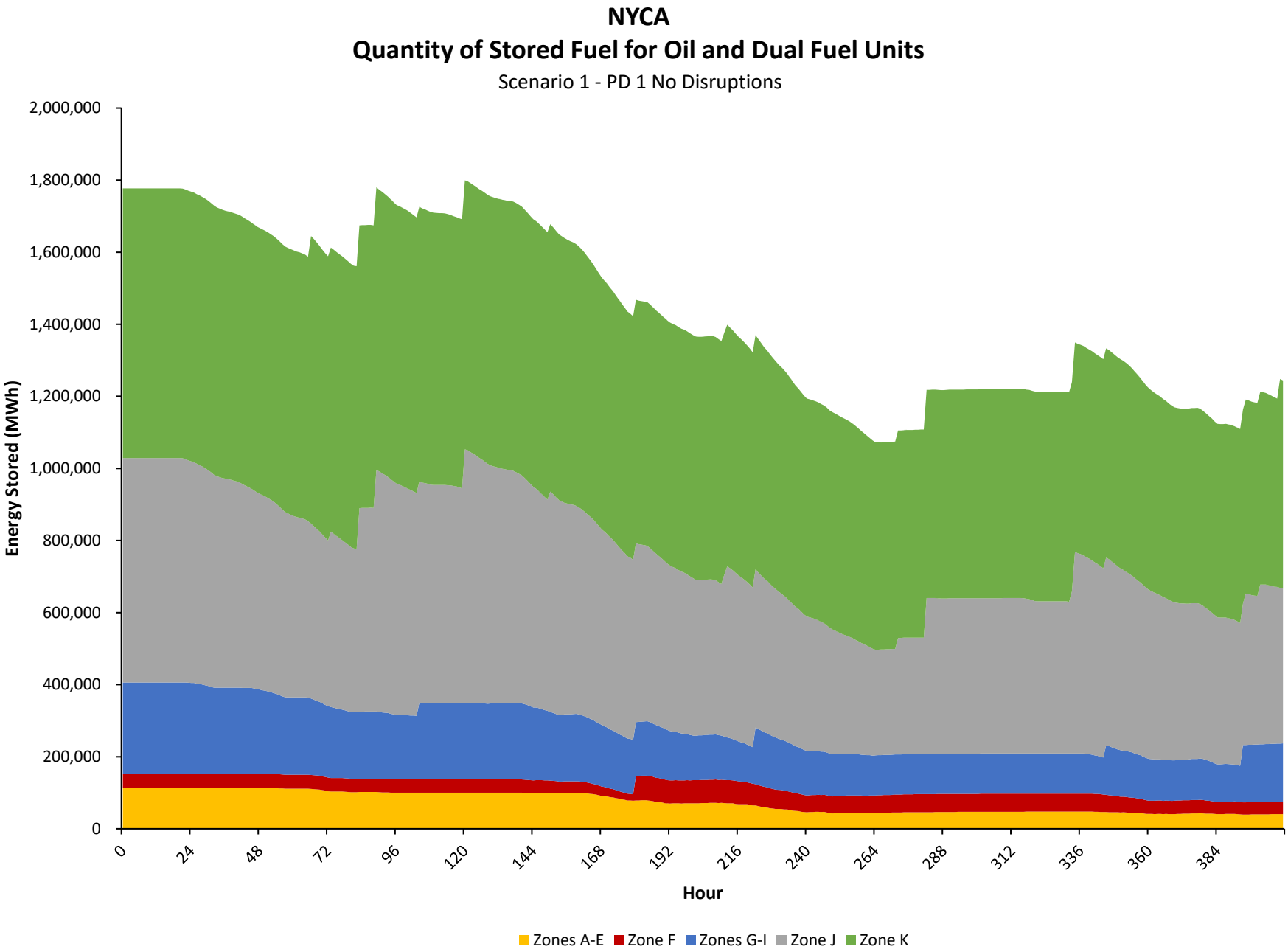


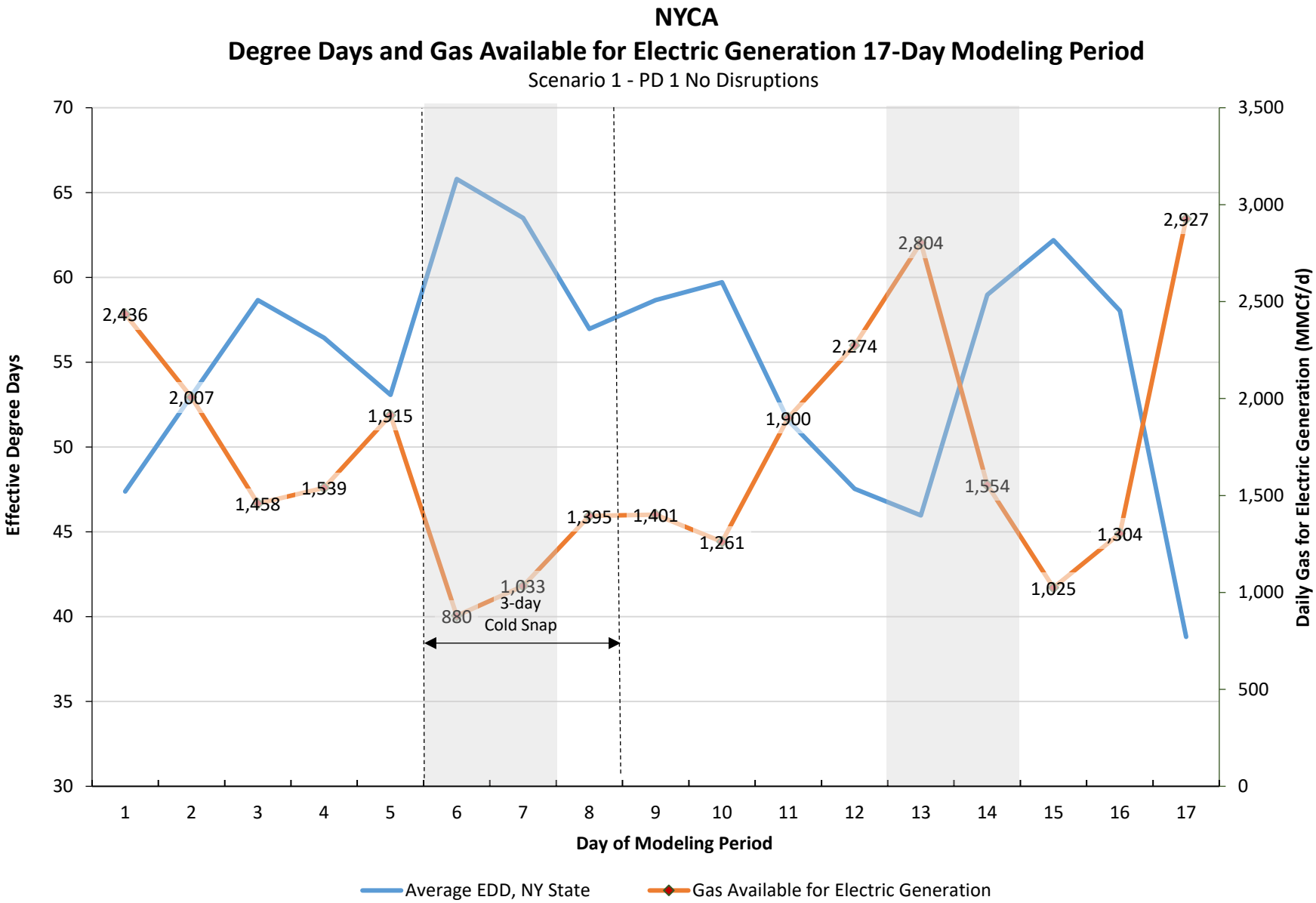

NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 1 - PD 1 No Disruptions
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 1 - PD 1 No Disruptions
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

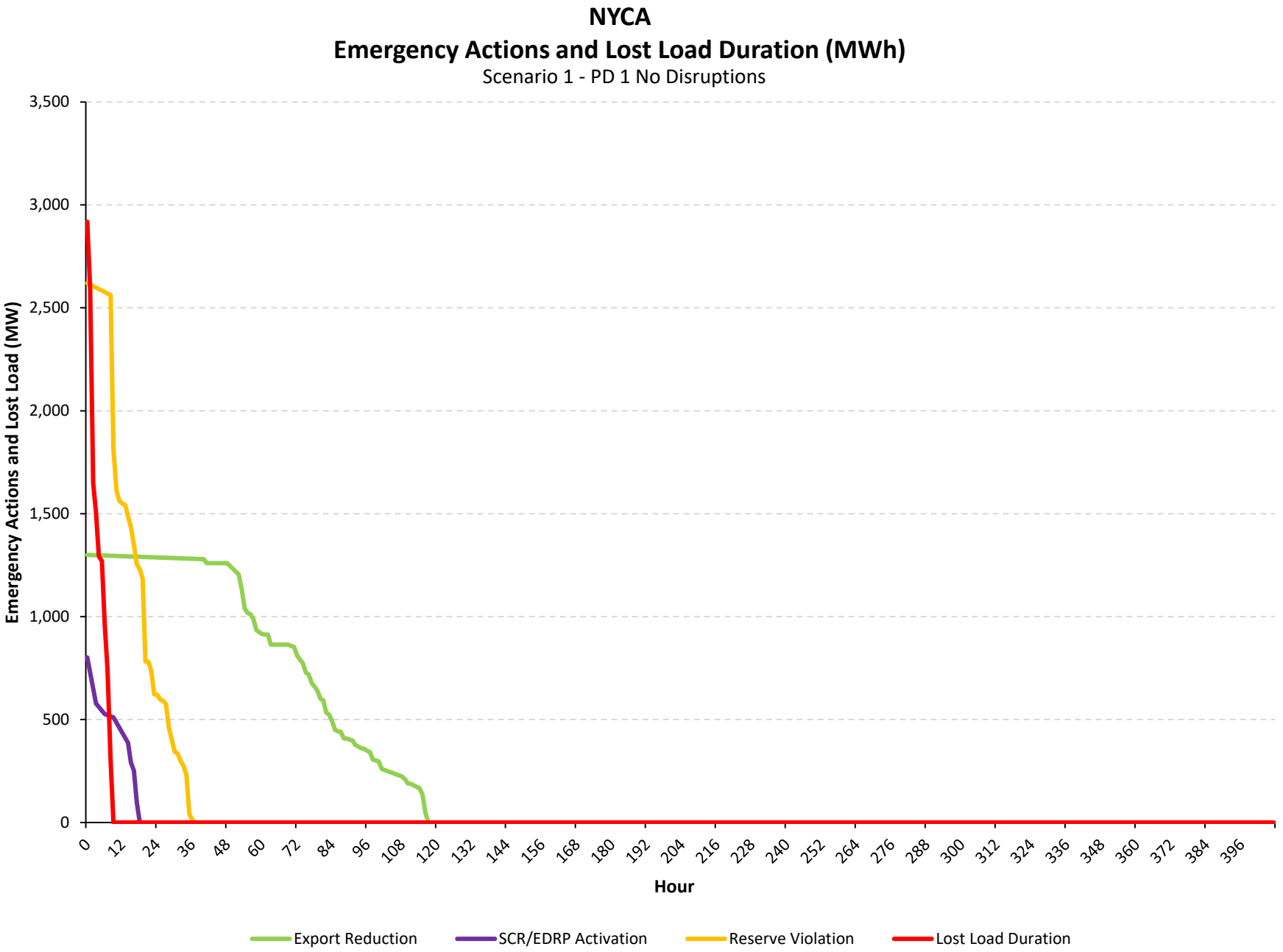
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 1 - PD 1 No Disruptions

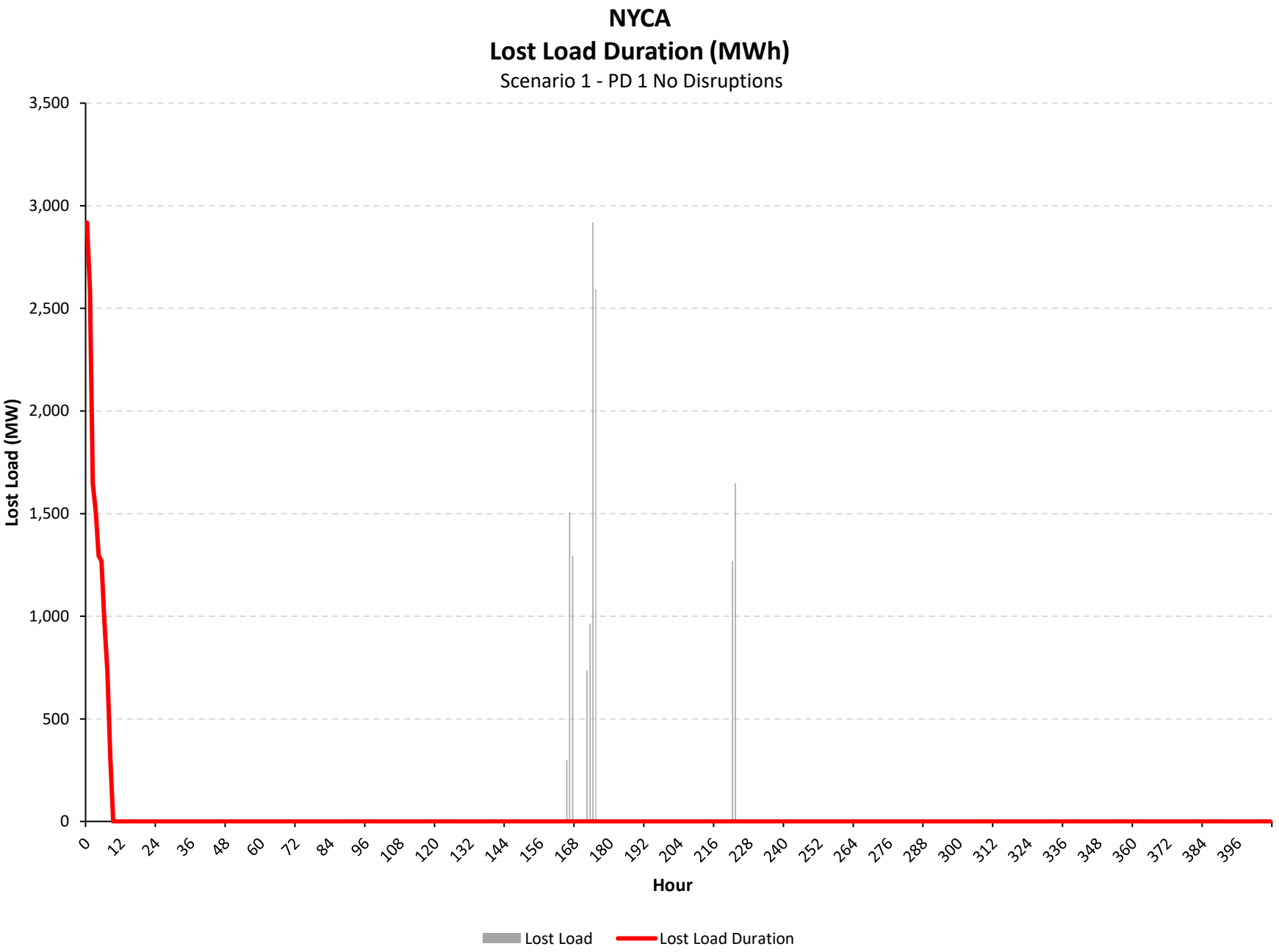



NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 1 - PD 1 No Disruptions
Energy Stored (MWh)
2,000,000
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Zones A-E
Zone F
Zones G-I
Zone J
Zone K



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 1 - PD 1 No Disruptions
Emergency Actions and Lost Load (MW)
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 1 - PD 1 No Disruptions
Lost Load (MW)
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

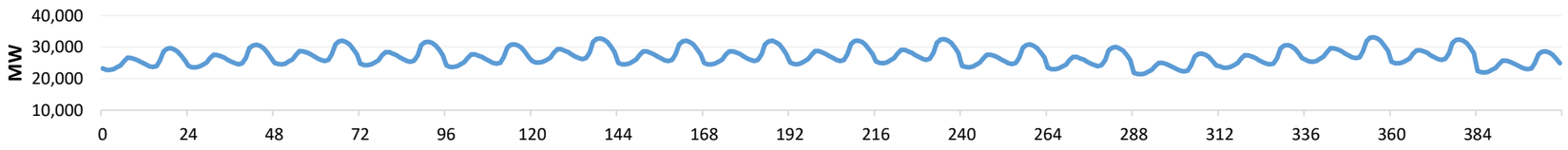
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 1 - PD 2 High Outage (Winter 2030/2031)

Hourly Results Summary

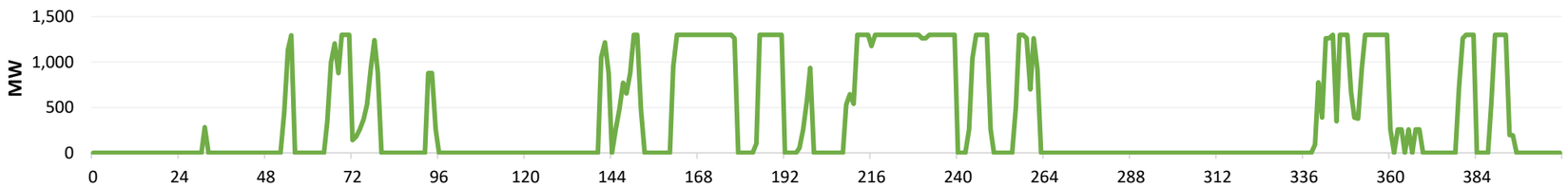
Case Name: Scenario 1 - PD 2 High Outage

Load During Modeling Period



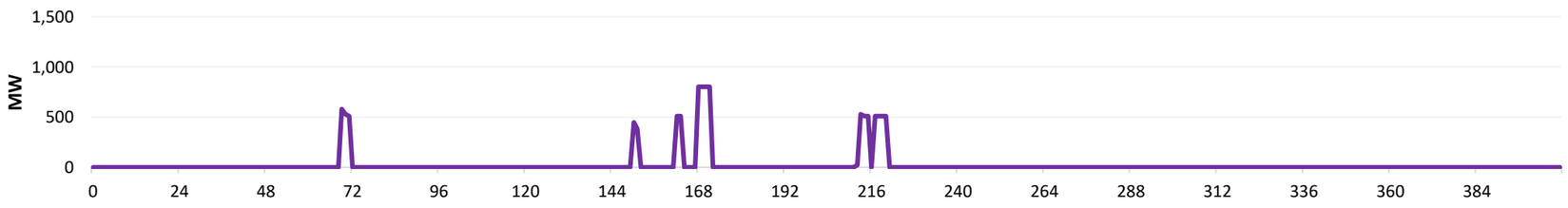
Case Summary	
Derate (EFORd) Increase:	High
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



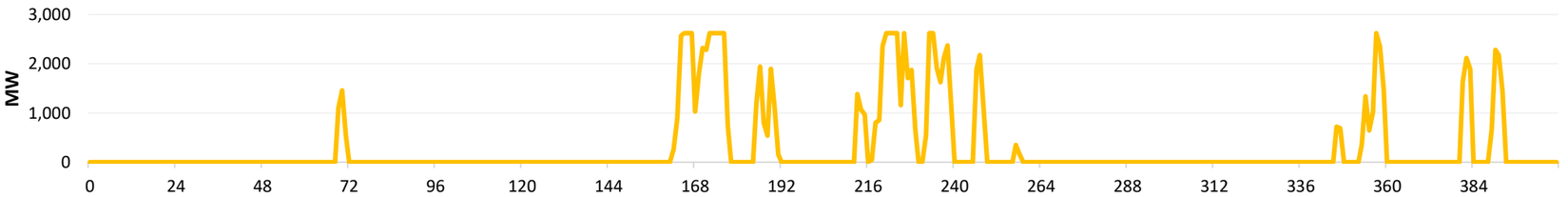
Export Reductions	
Total Hrs.	147
Total MWh	146,627
Avg. MW	359.4

SCR/EDRP Deployed During Modeling Period



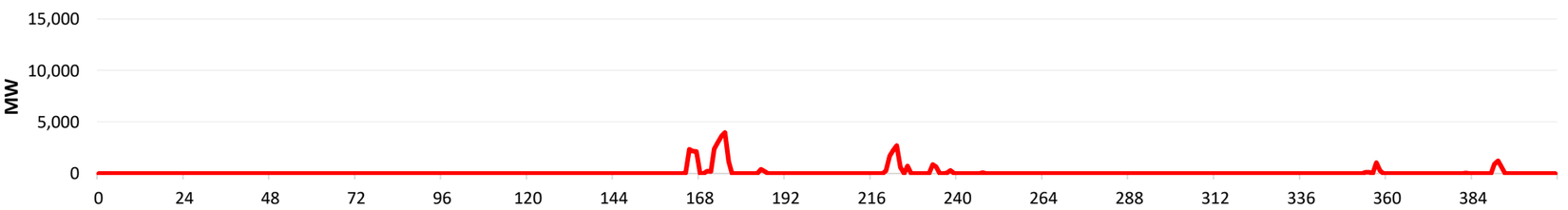
SCR Deployment	
Total Hrs.	19
Total MWh	10,286
Avg. MW	25.2

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	71
Total MWh	113,616
Avg. MW	278.5
First Hour with Viol.	69

Loss of Load During Modeling Period



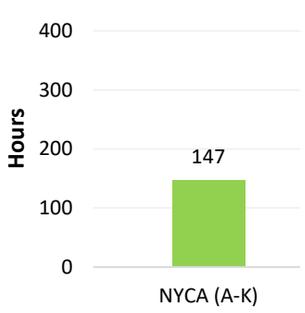
Loss of Load	
Total Hrs.	32
Total MWh	36,571
Avg. MW	89.6
First Hour with Losses	164

Full Period Results Summary

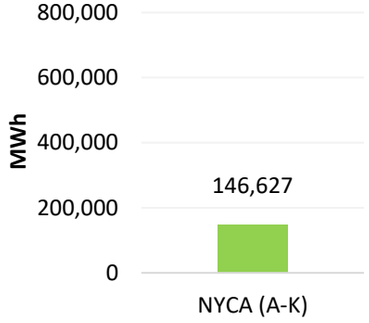
Case Name: Scenario 1 - PD 2 High Outage

Case Summary	
Derate (EFORd) Increase:	High
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

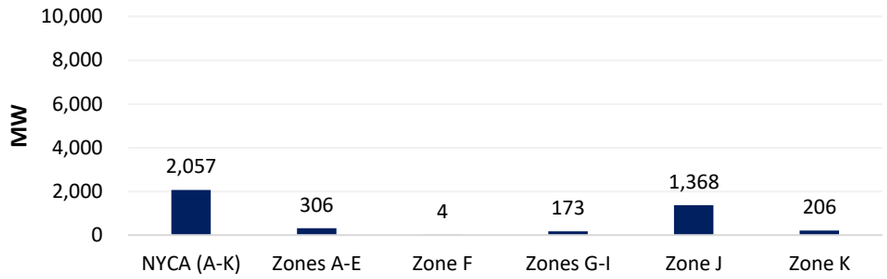
Hours Exports Reduced



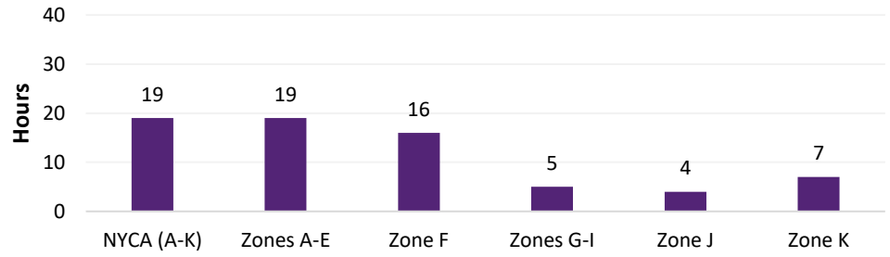
Total MWh of Exports Reduced



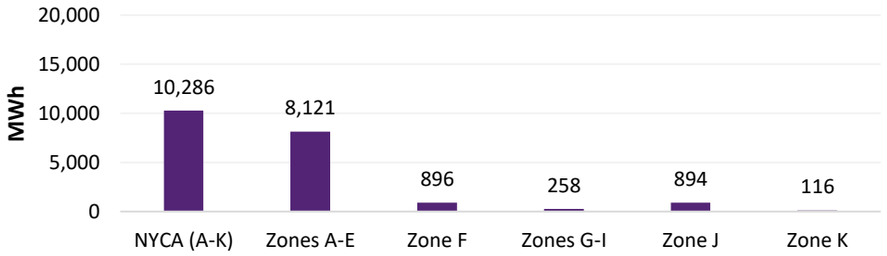
Average Capacity Not Available Due to Exhausted Fuel Inventory



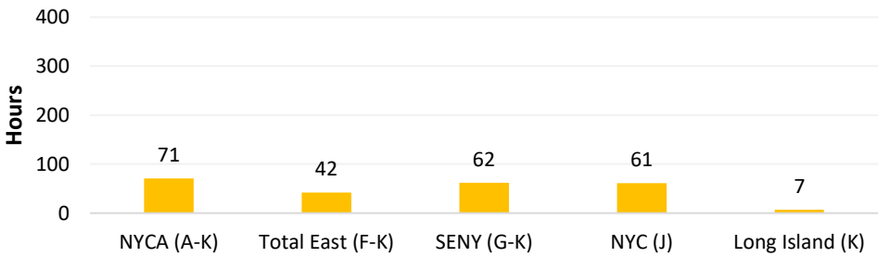
Hours SCR/EDRP Deployed



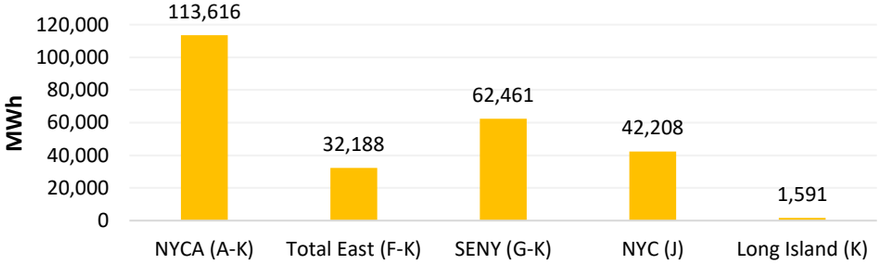
Total MWh SCR/EDRP Deployed



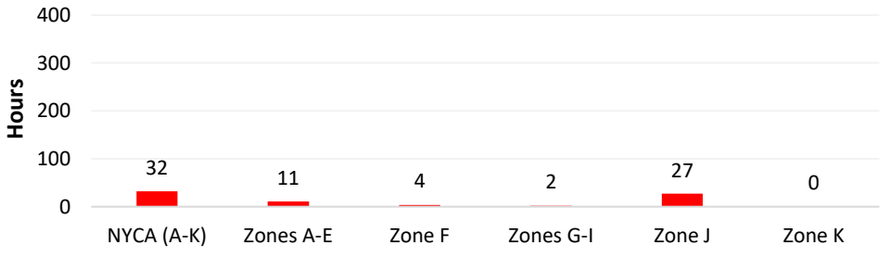
Hours with Reserve Violations



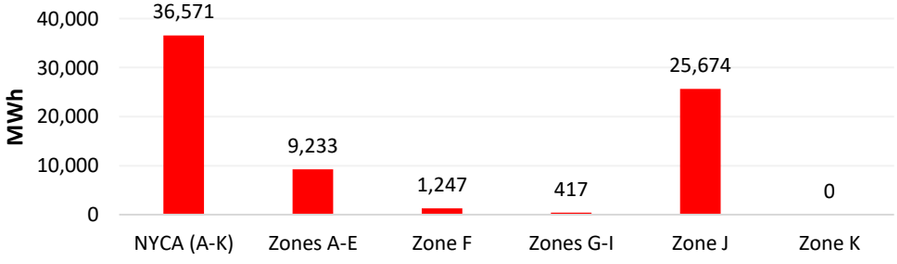
Total MWh of Reserve Violations

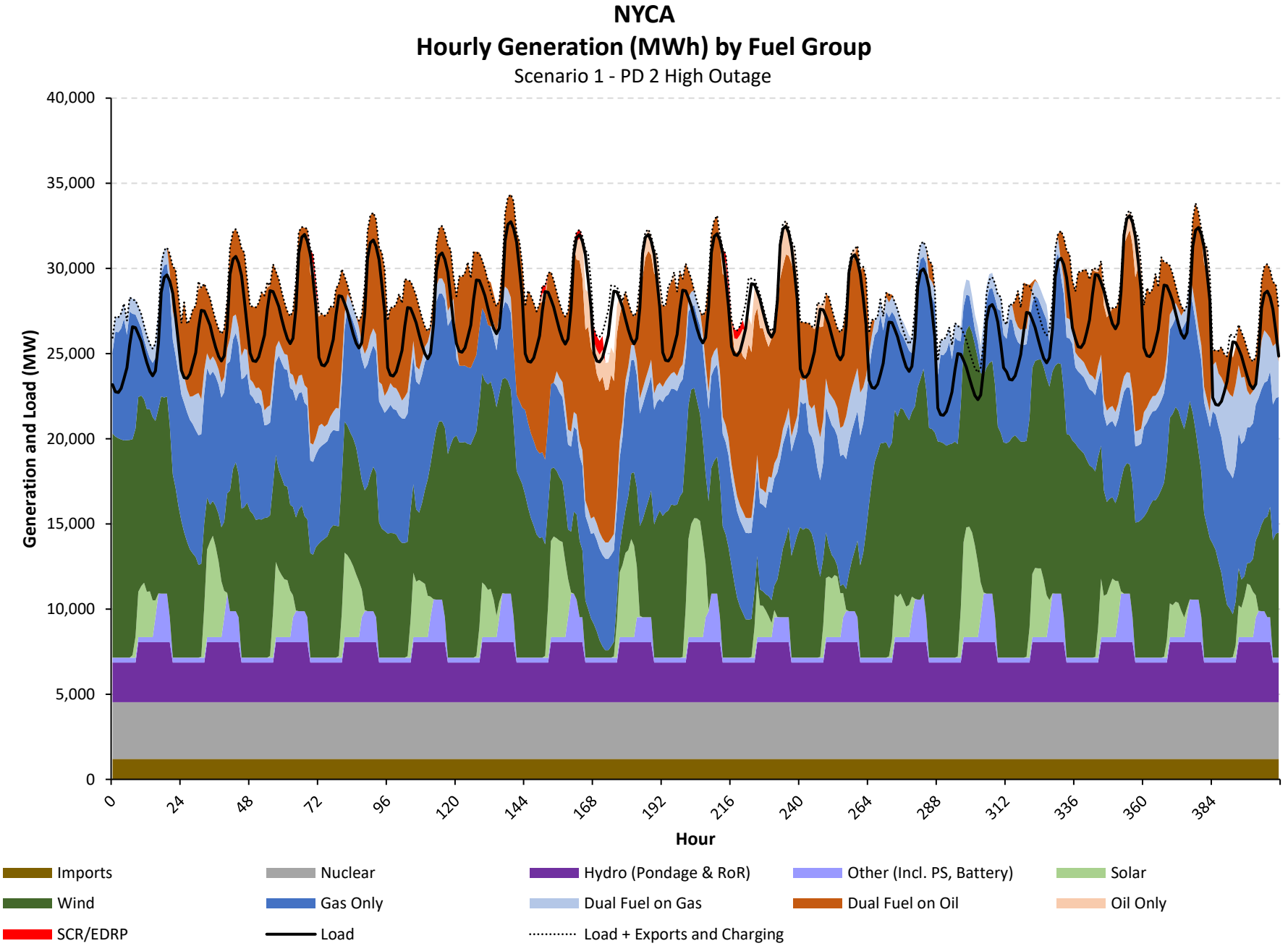


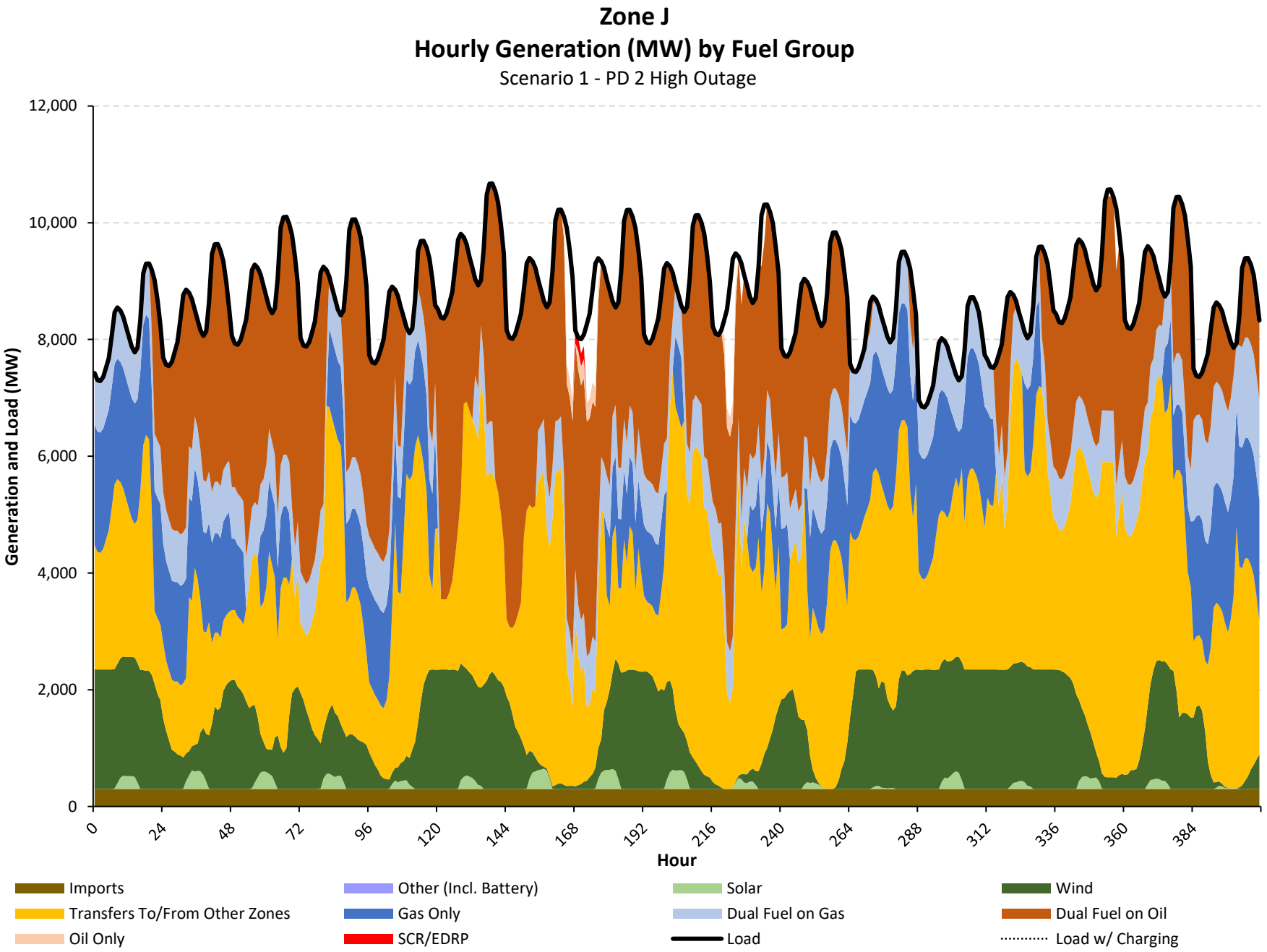
Hours with Loss of Load



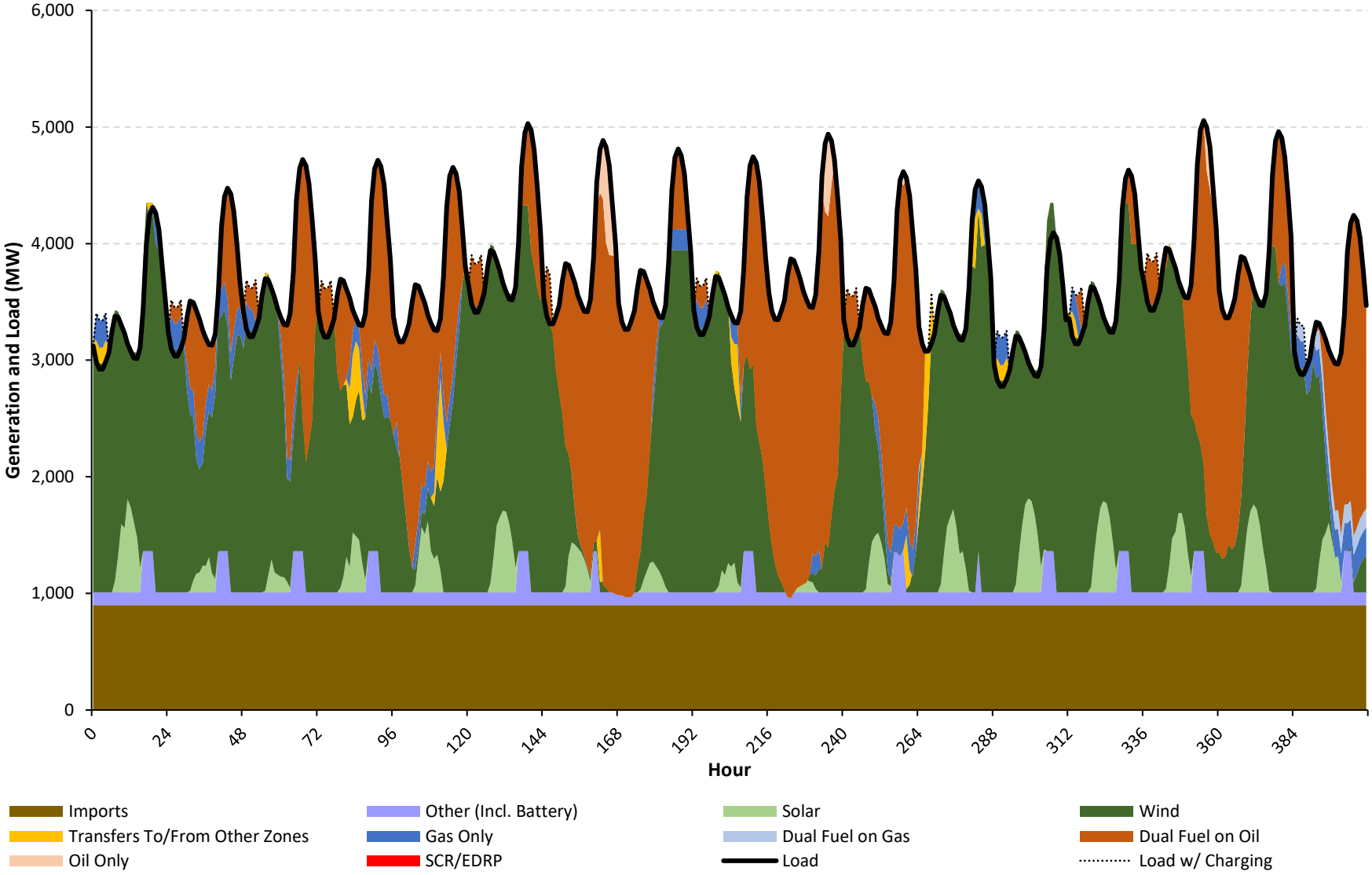
Total MWh of Lost Load

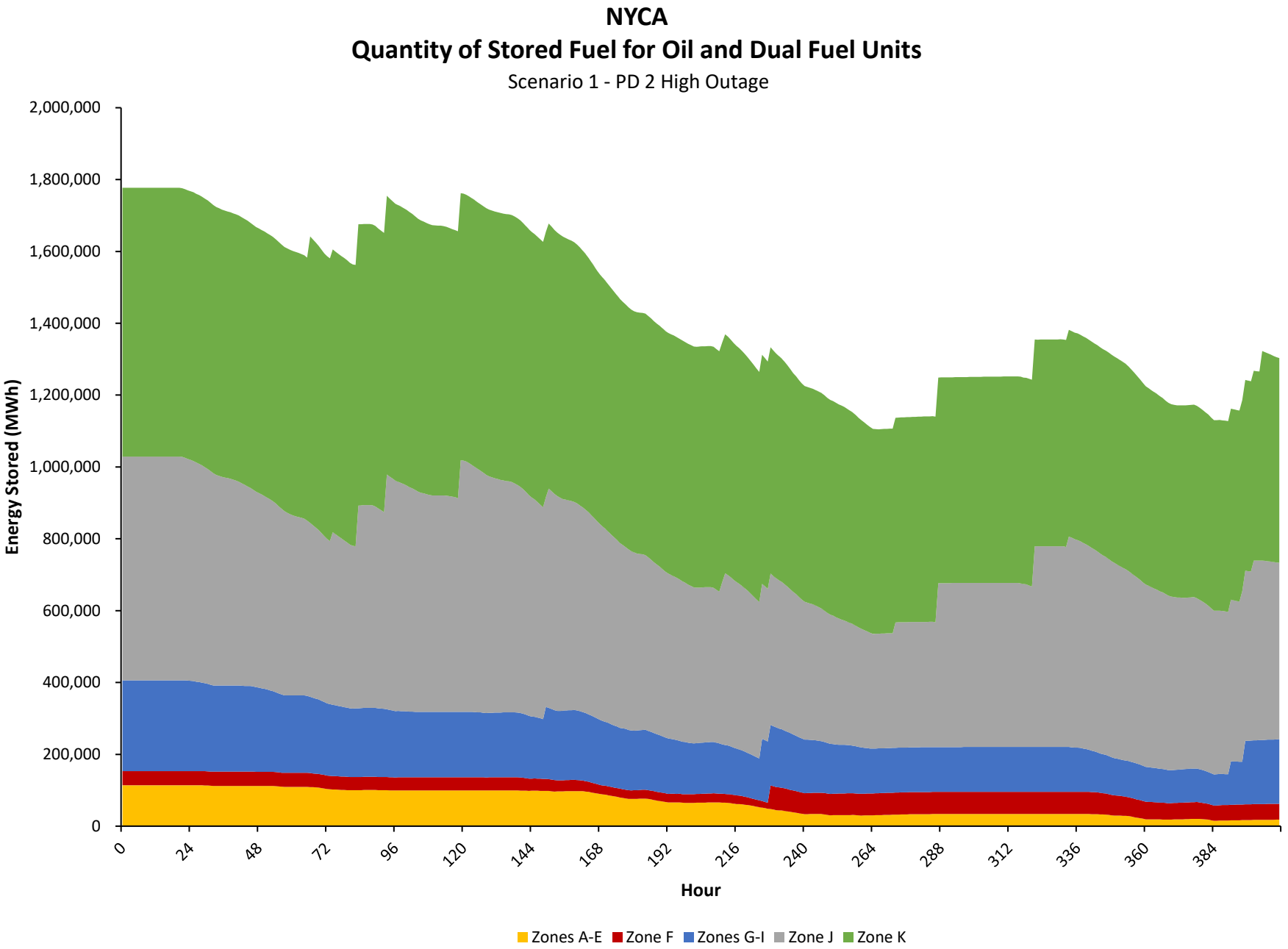


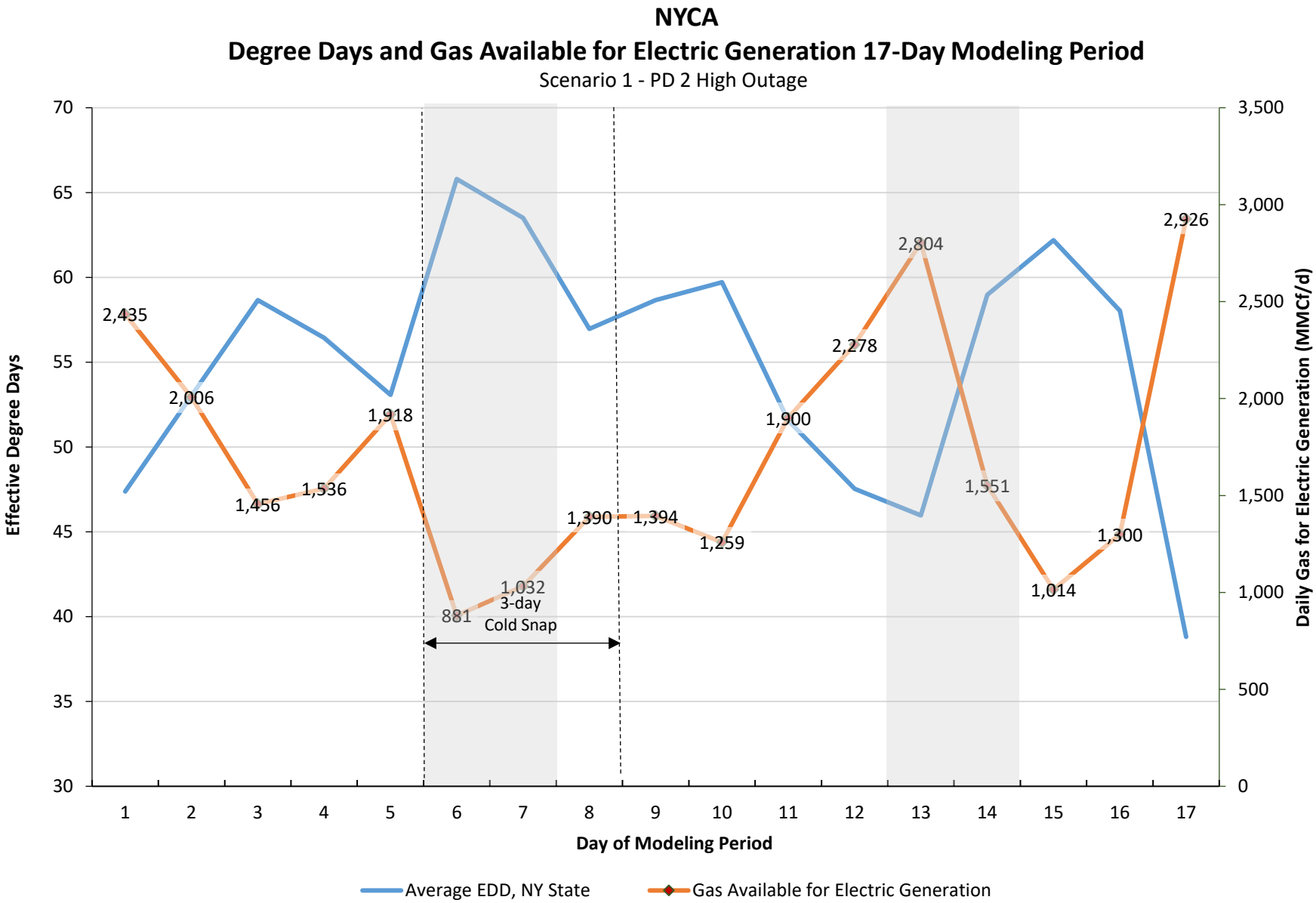

NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 1 - PD 2 High Outage
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 1 - PD 2 High Outage
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

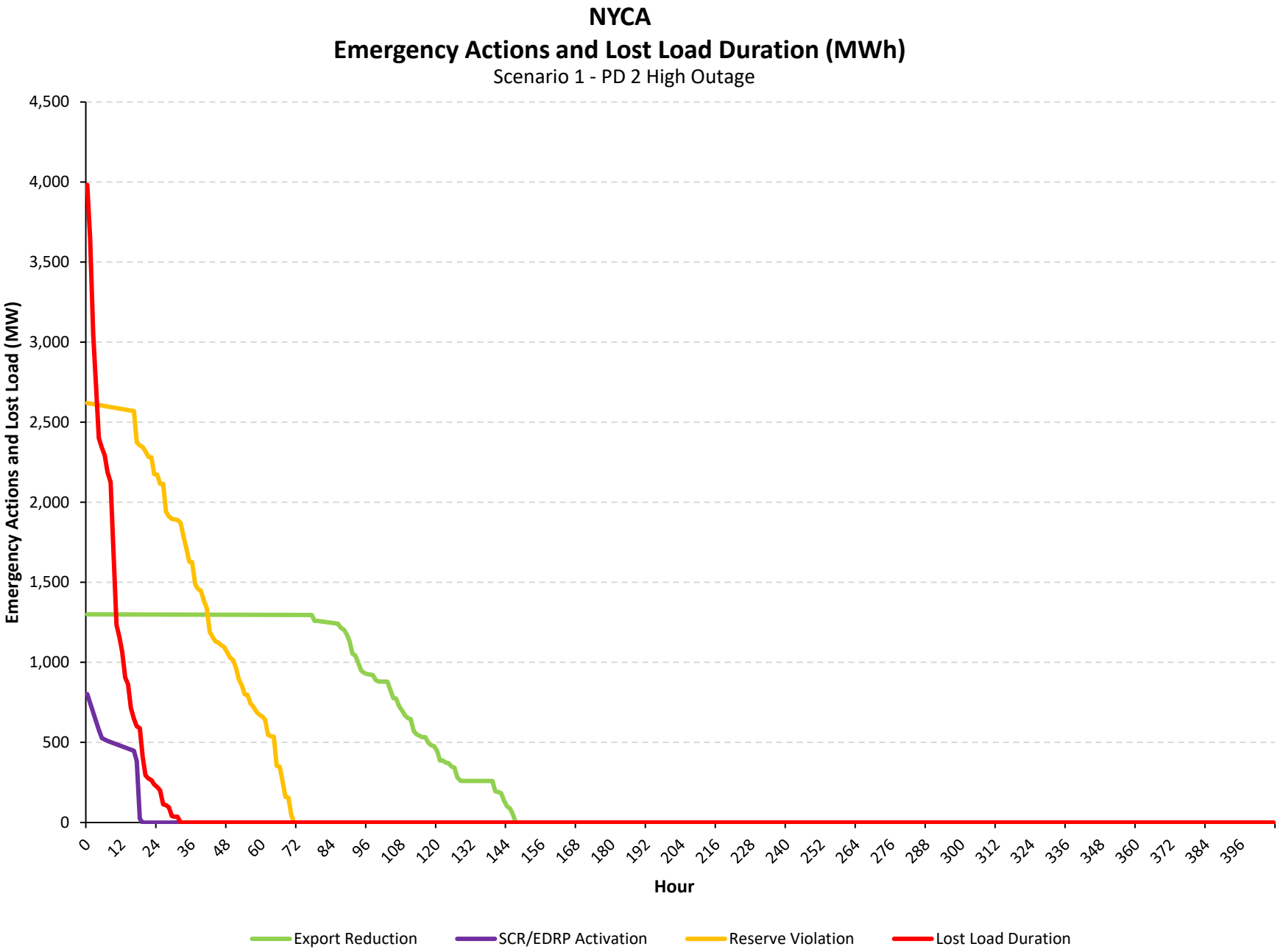
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 1 - PD 2 High Outage

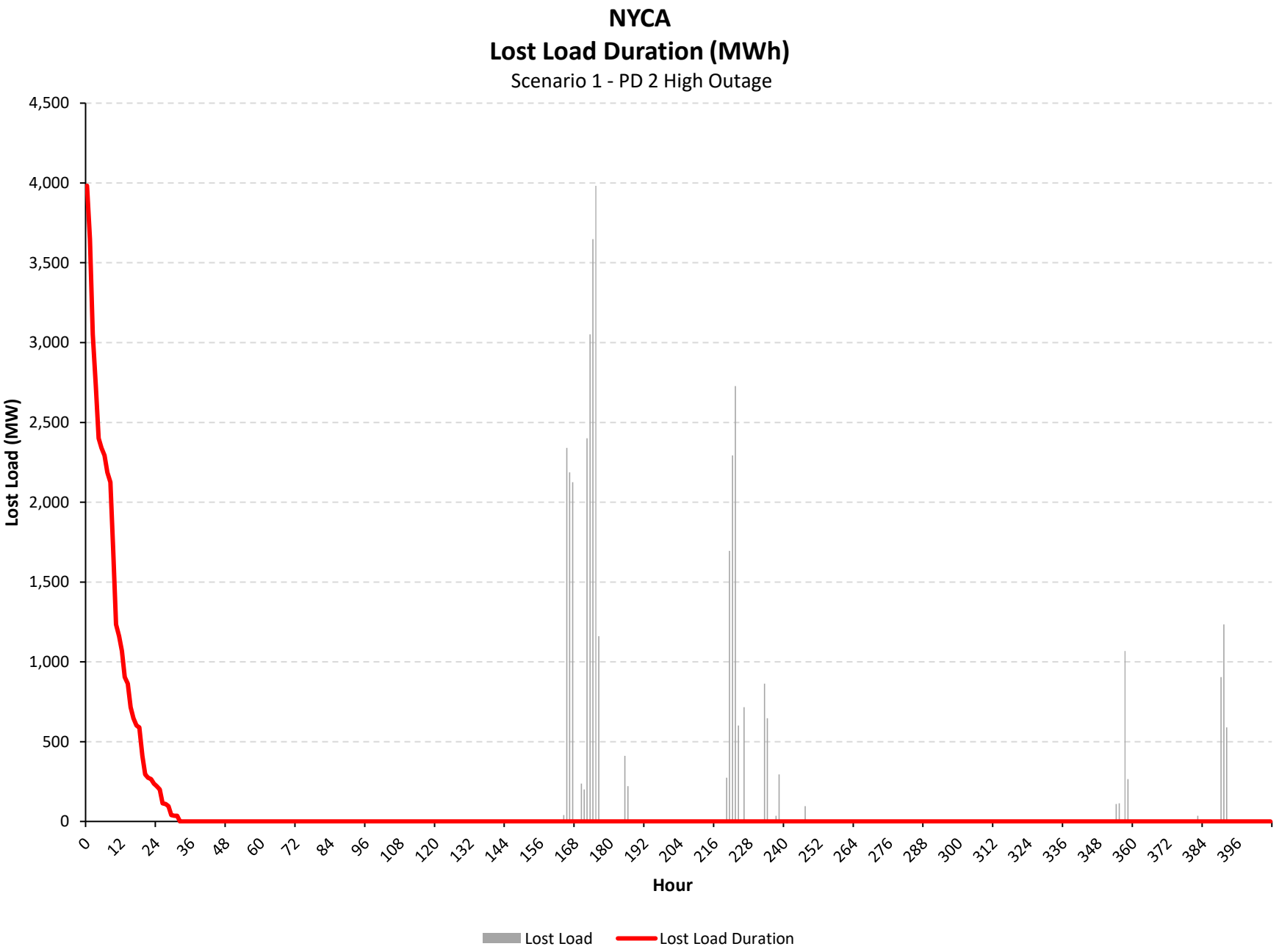



NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 1 - PD 2 High Outage
Energy Stored (MWh)
2,000,000
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Zones A-E
Zone F
Zones G-I
Zone J
Zone K



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 1 - PD 2 High Outage
Emergency Actions and Lost Load (MW)
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 1 - PD 2 High Outage
Lost Load (MW)
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

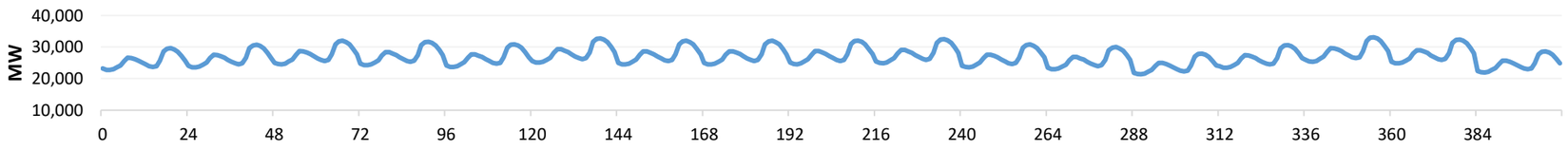
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 1 - PD 3 SENY Deactivation (Winter 2030/2031)

Hourly Results Summary

Case Name: Scenario 1 - PD 3 SENY Deactivation

Load During Modeling Period



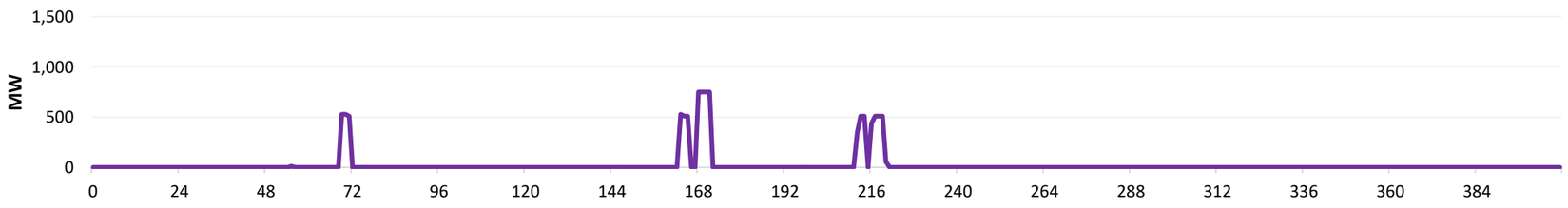
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	Roseton
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



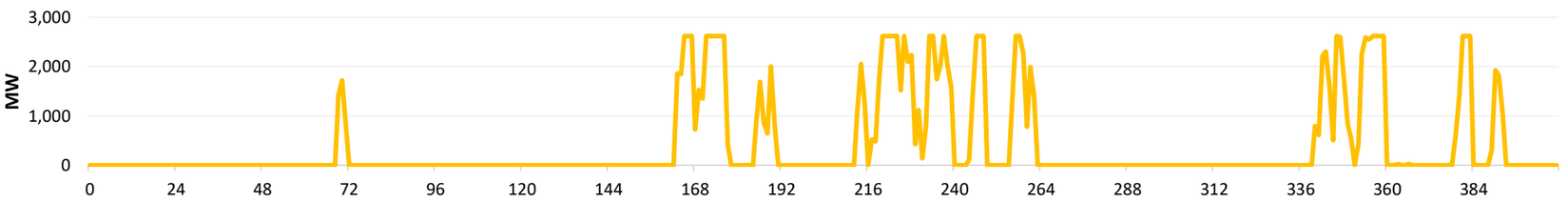
Export Reductions	
Total Hrs.	163
Total MWh	171,058
Avg. MW	419.3

SCR/EDRP Deployed During Modeling Period



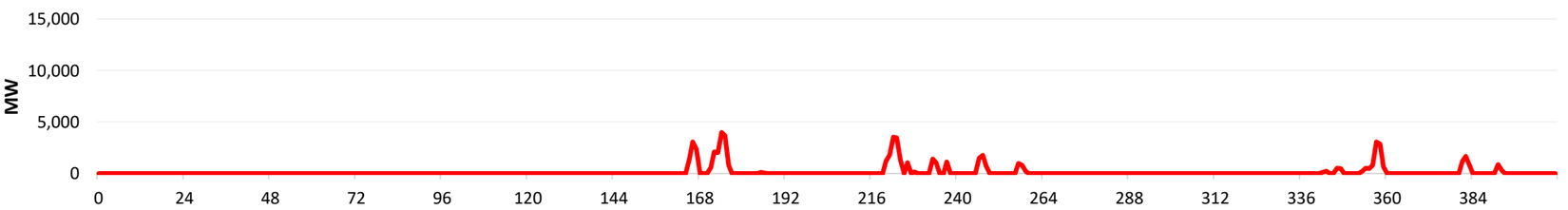
SCR Deployment	
Total Hrs.	19
Total MWh	9,520
Avg. MW	23.3

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	92
Total MWh	161,045
Avg. MW	394.7
First Hour with Viol.	69

Loss of Load During Modeling Period



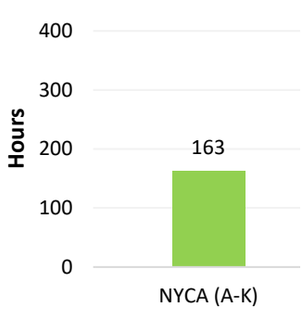
Loss of Load	
Total Hrs.	45
Total MWh	57,101
Avg. MW	140.0
First Hour with Losses	165

Full Period Results Summary

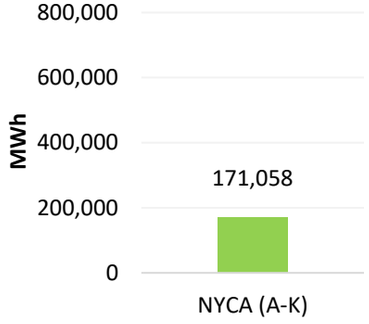
Case Name: Scenario 1 - PD 3 SENY Deactivation

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	Roseton
Import Scenario:	All

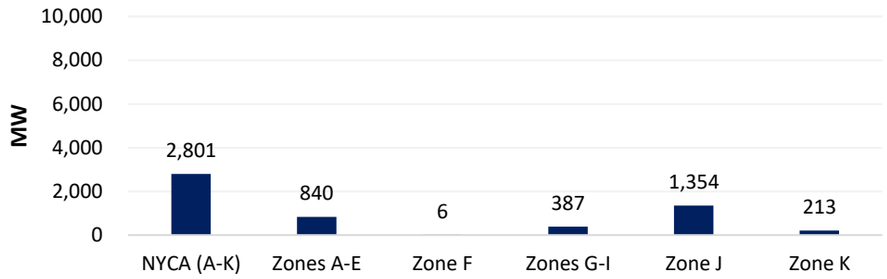
Hours Exports Reduced



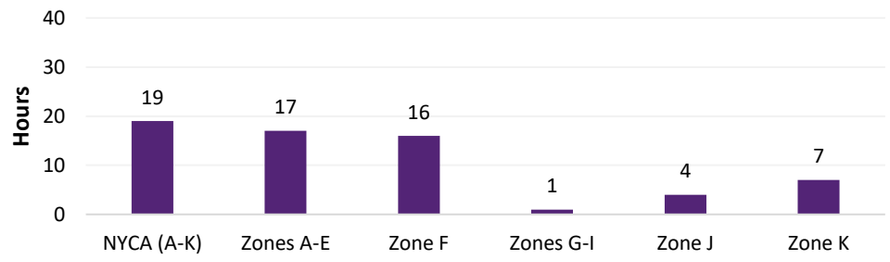
Total MWh of Exports Reduced



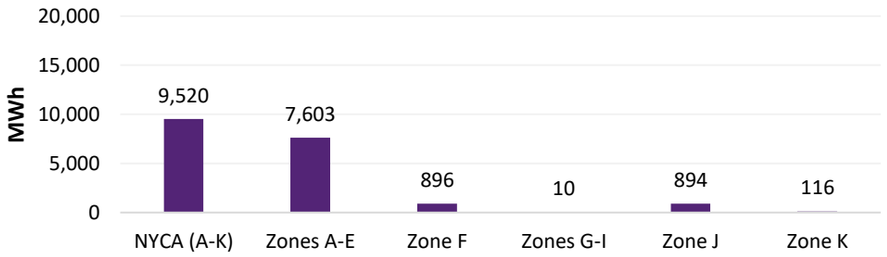
Average Capacity Not Available Due to Exhausted Fuel Inventory



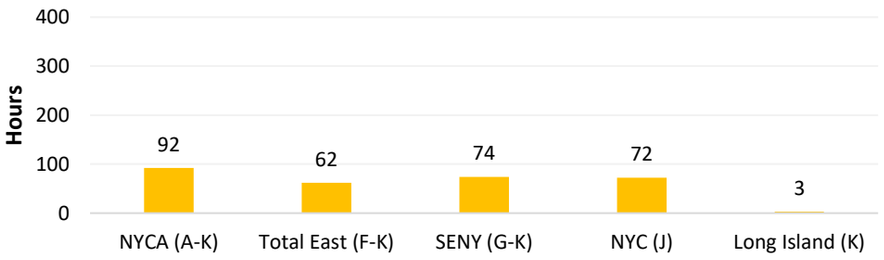
Hours SCR/EDRP Deployed



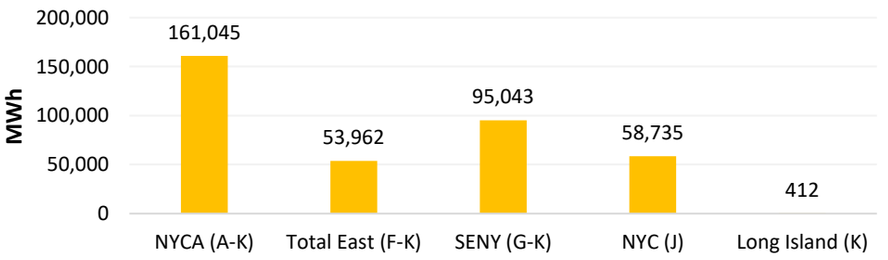
Total MWh SCR/EDRP Deployed



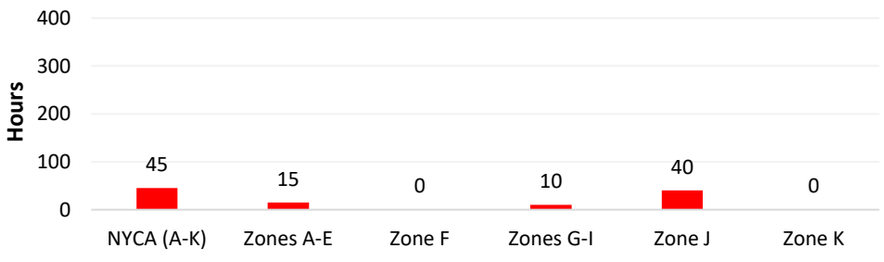
Hours with Reserve Violations



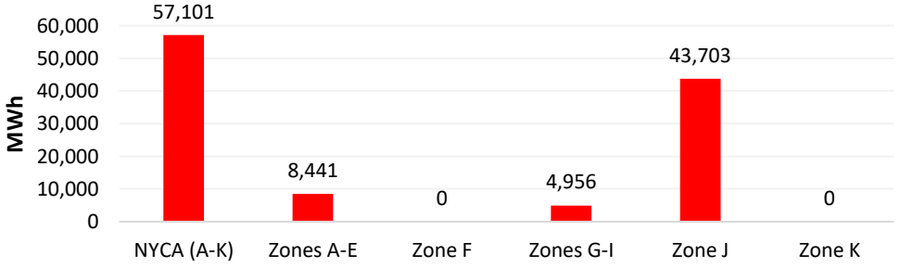
Total MWh of Reserve Violations

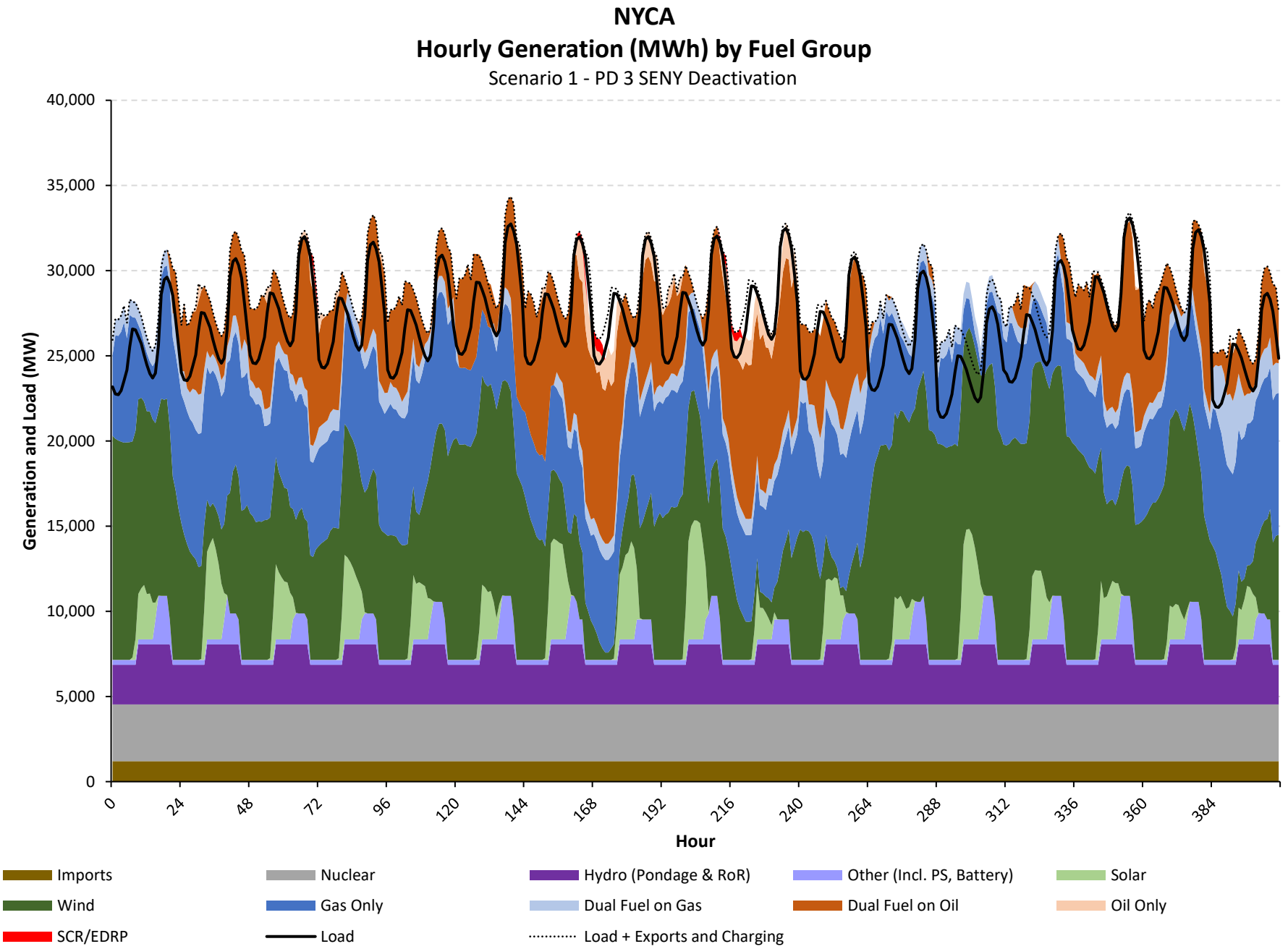


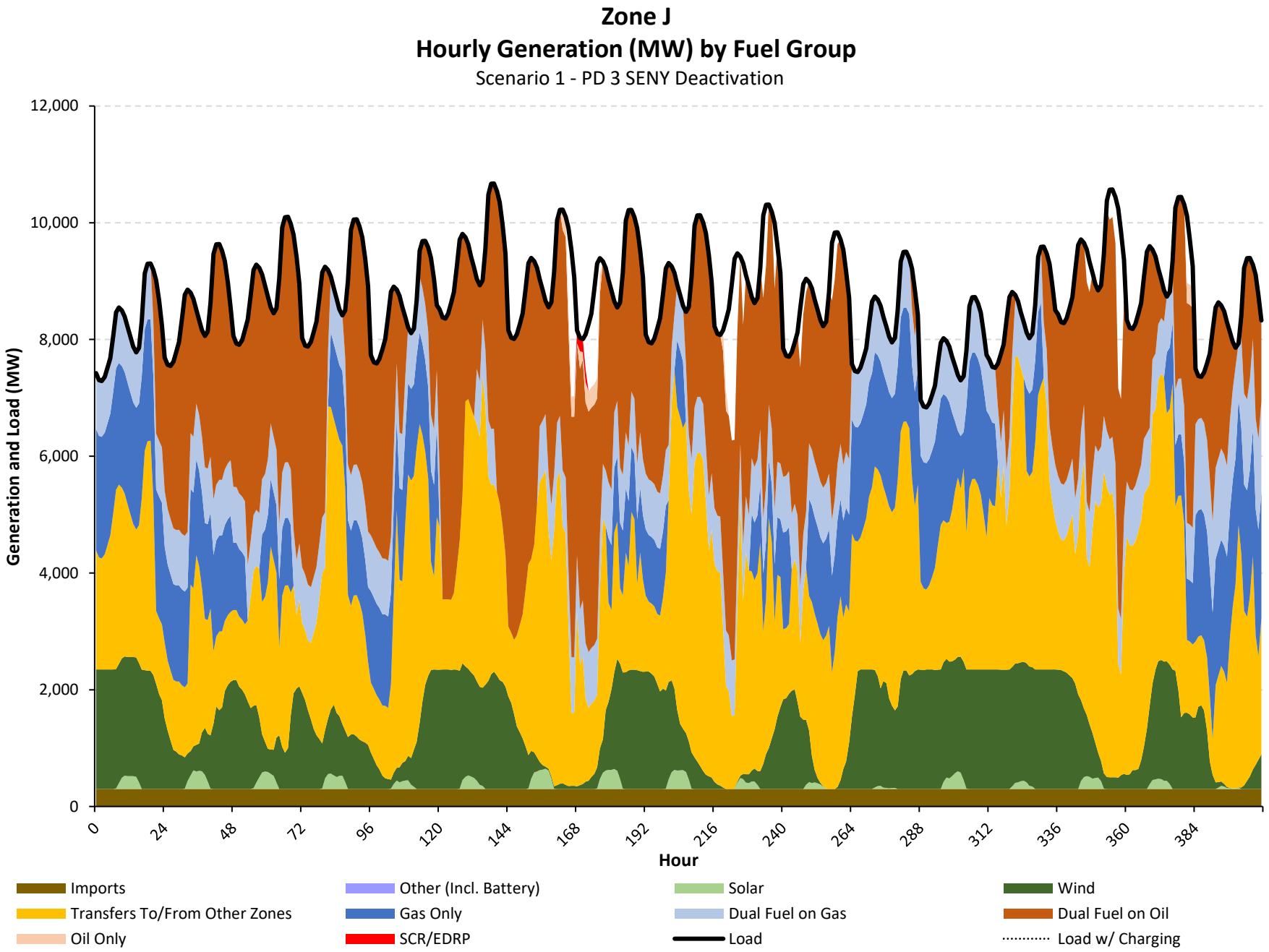
Hours with Loss of Load



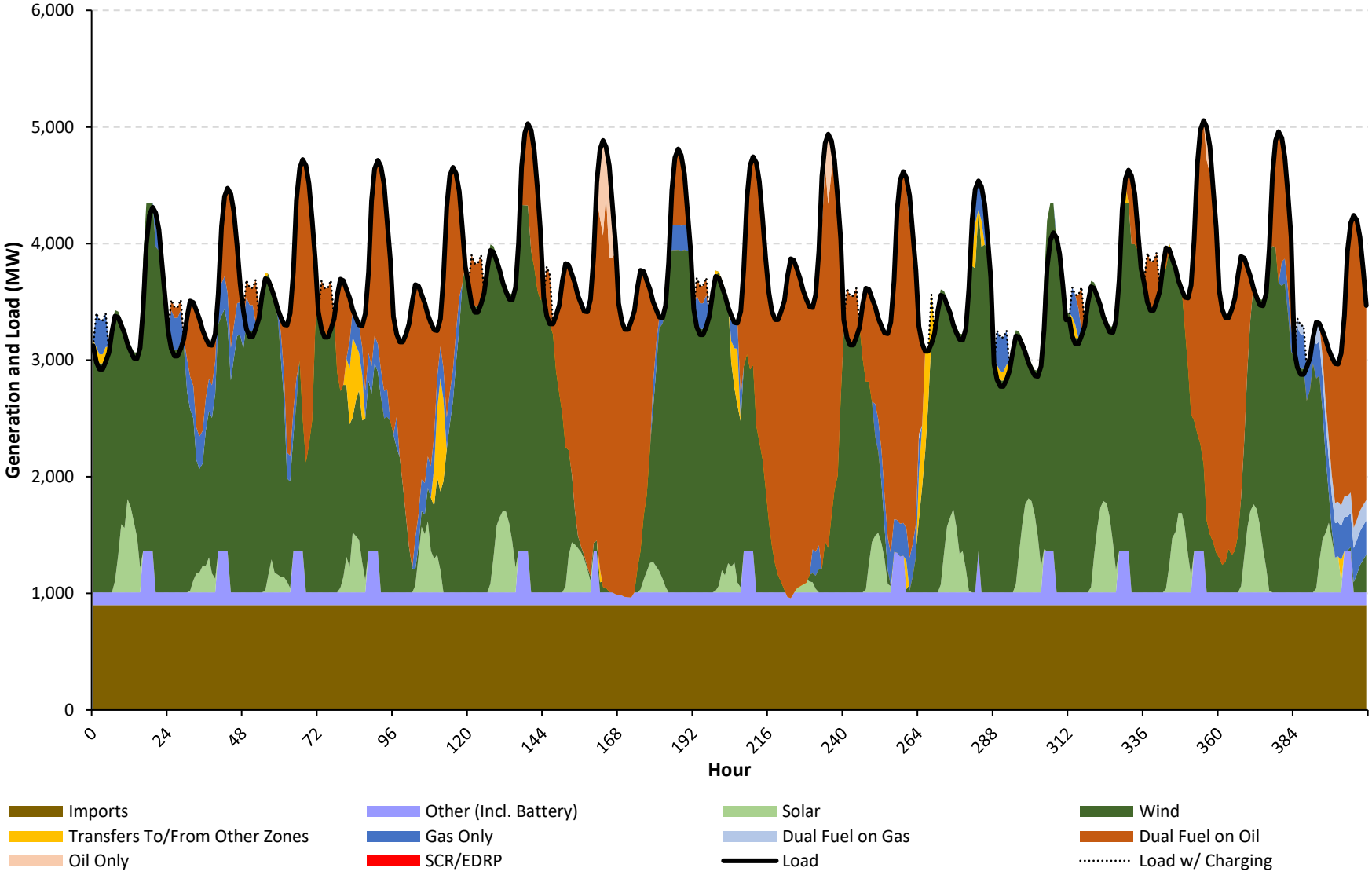
Total MWh of Lost Load



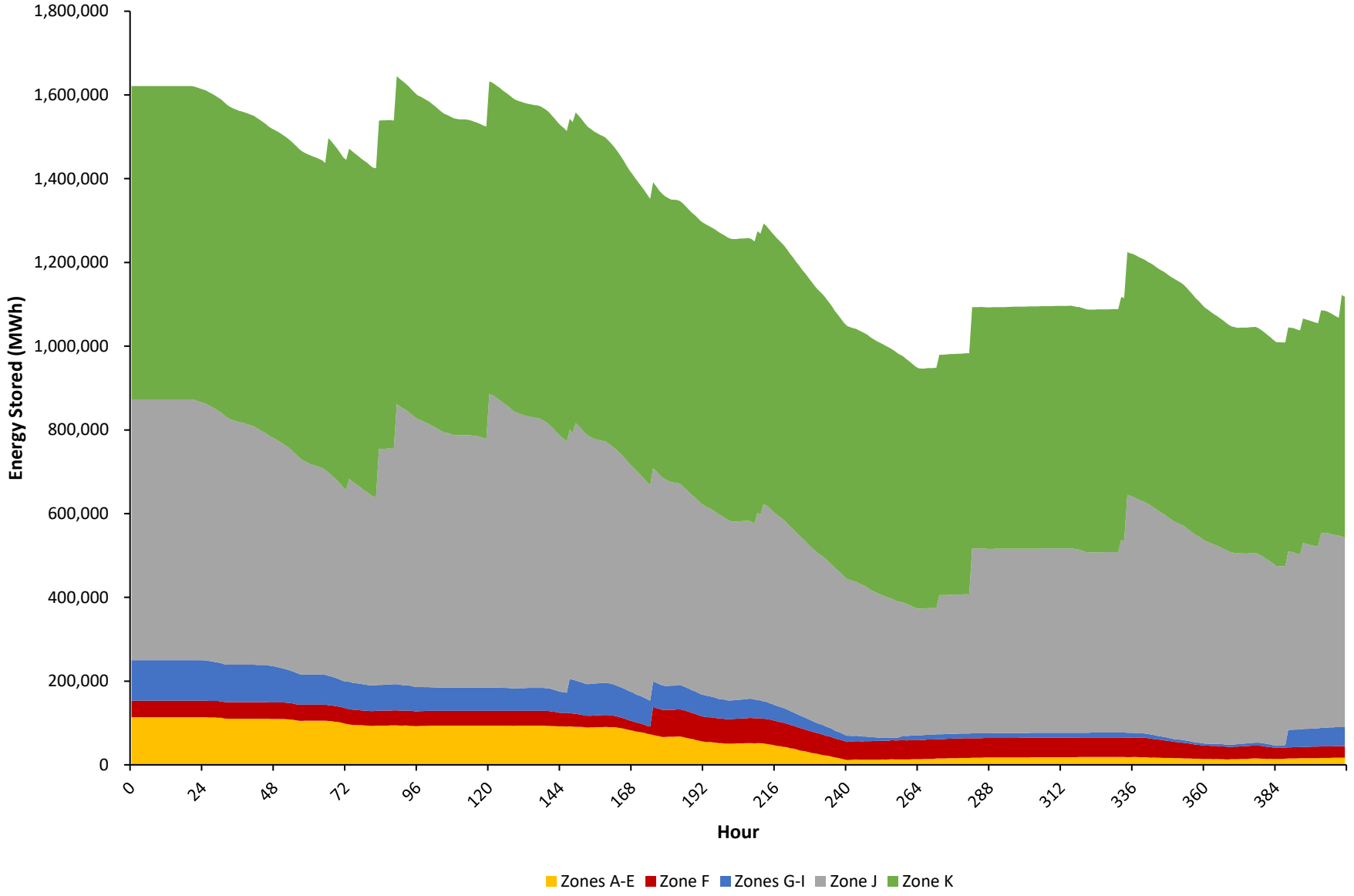

NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 1 - PD 3 SENY Deactivation
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

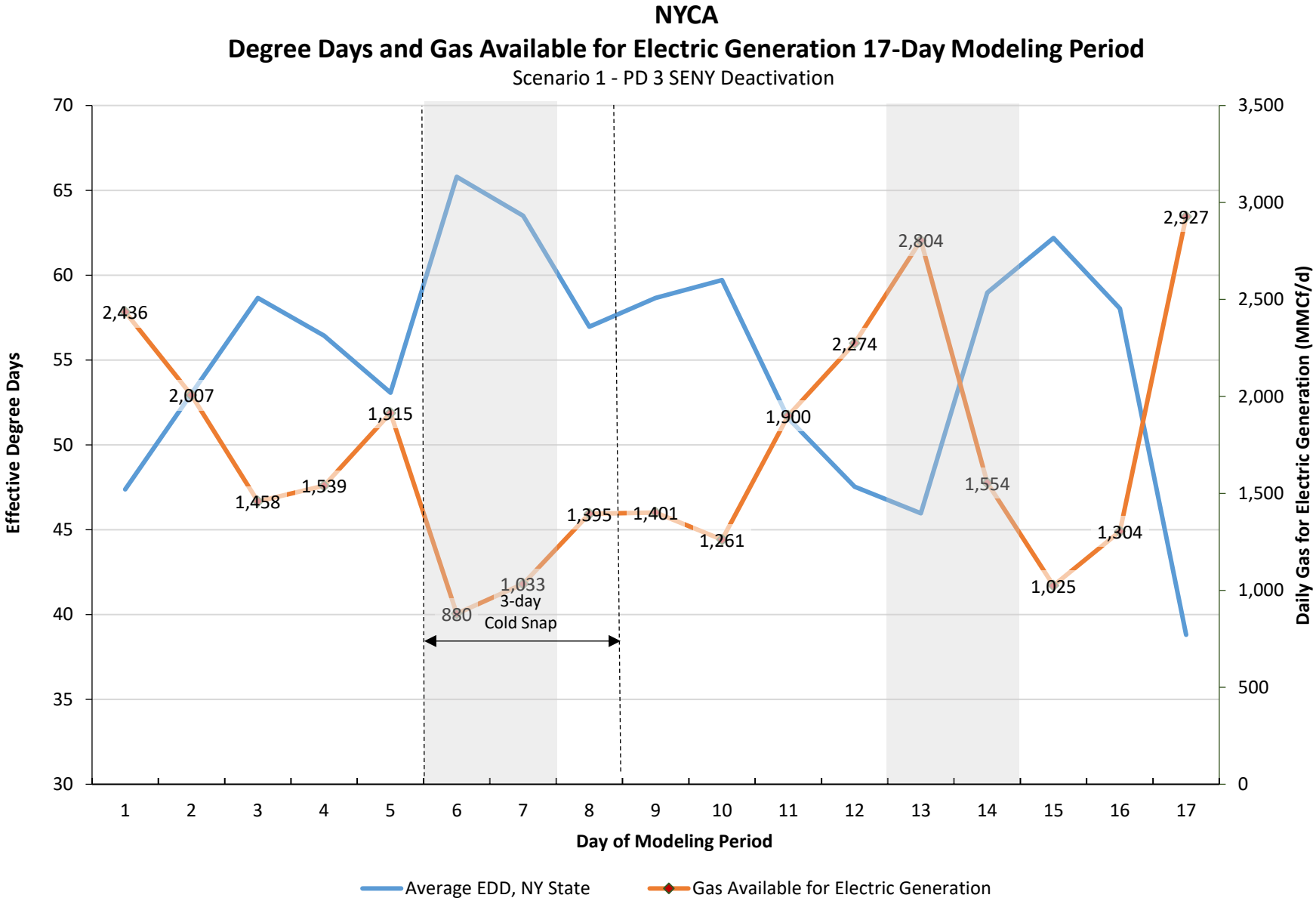

Zone J
Hourly Generation (MW) by Fuel Group
Scenario 1 - PD 3 SENY Deactivation
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

Zone K
Hourly Generation (MW) by Fuel Group
Scenario 1 - PD 3 SENY Deactivation

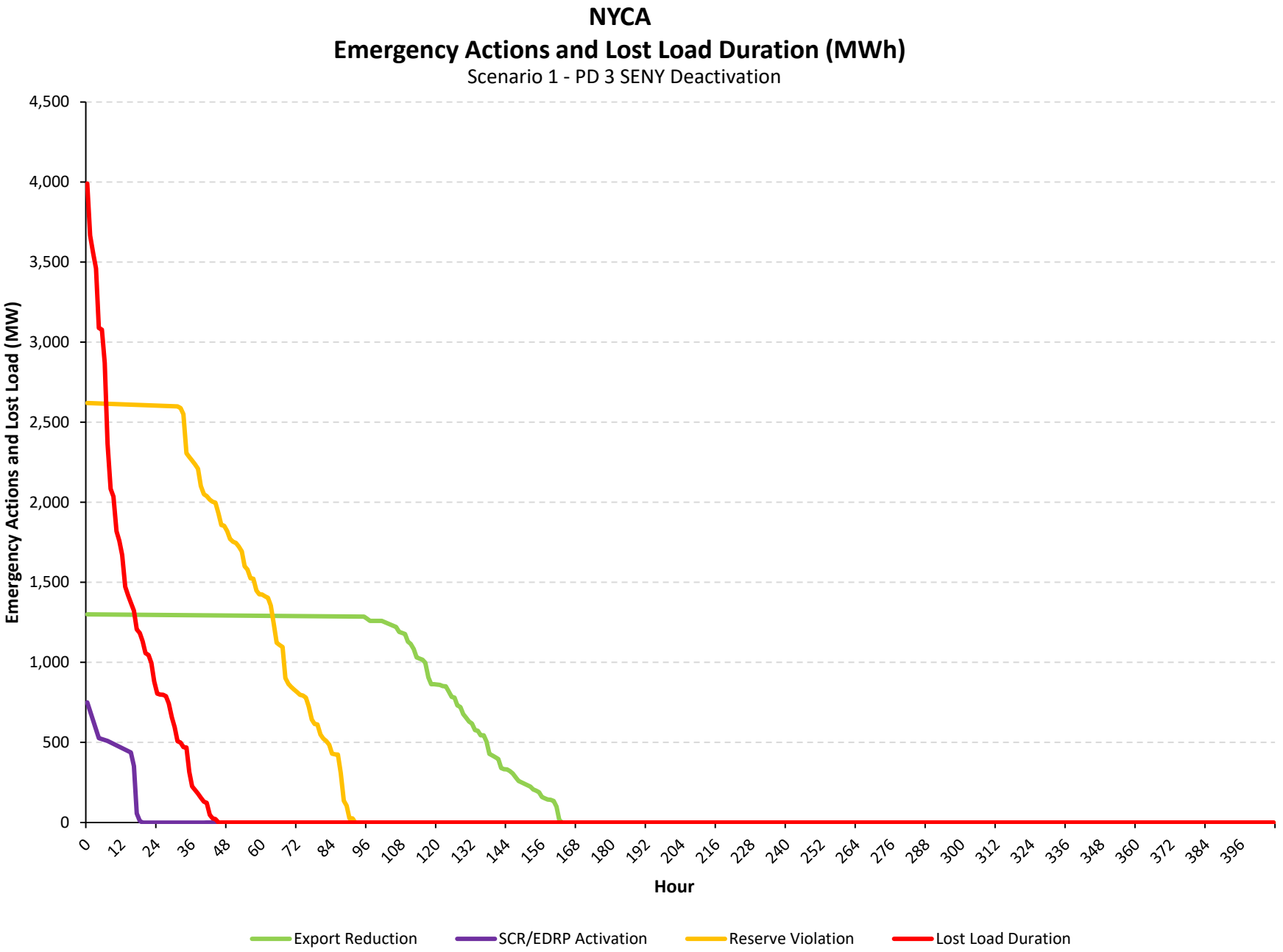


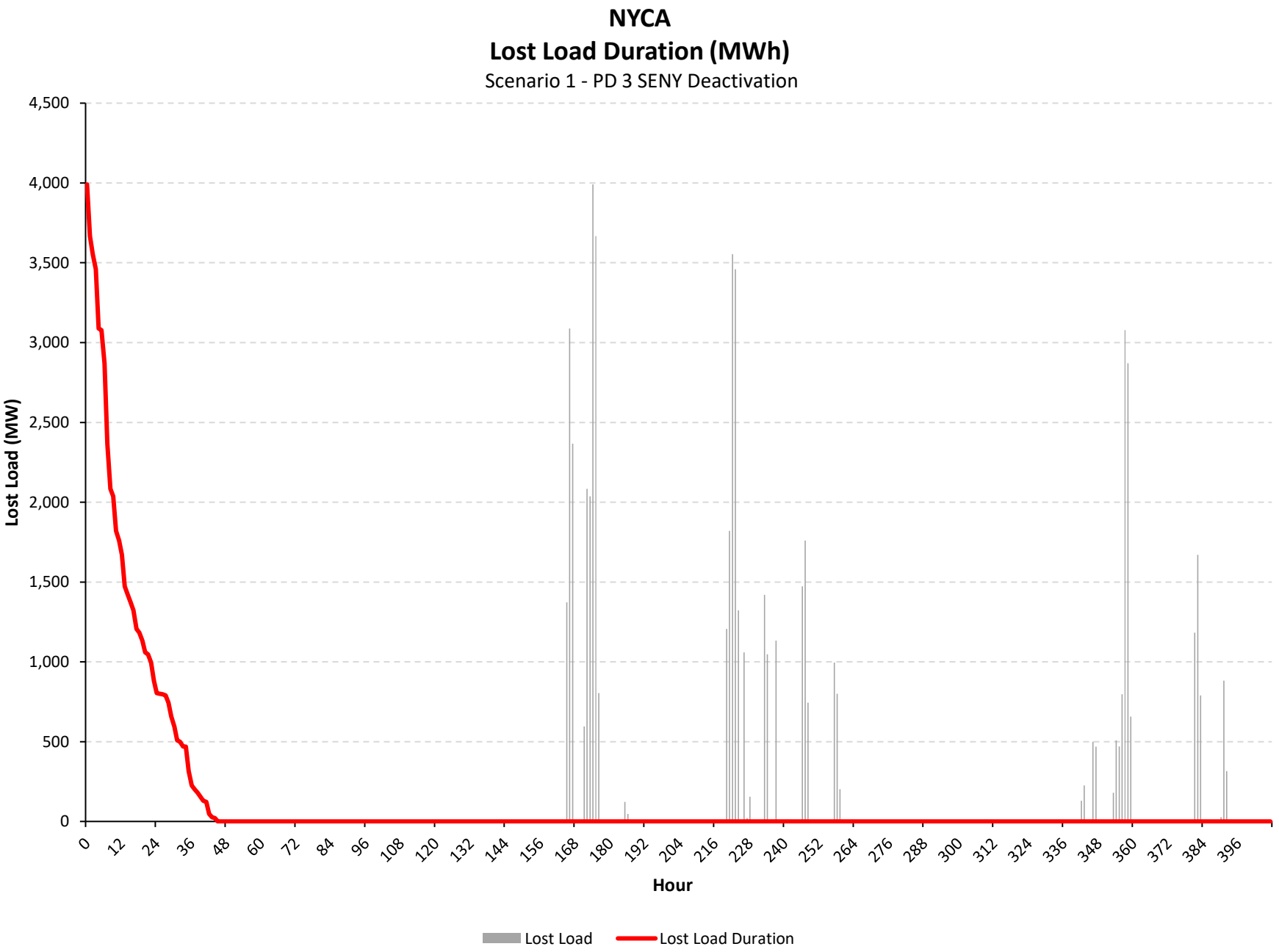
NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 1 - PD 3 SENY Deactivation





Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 1 - PD 3 SENY Deactivation
Emergency Actions and Lost Load (MW)
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 1 - PD 3 SENY Deactivation
Lost Load (MW)
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

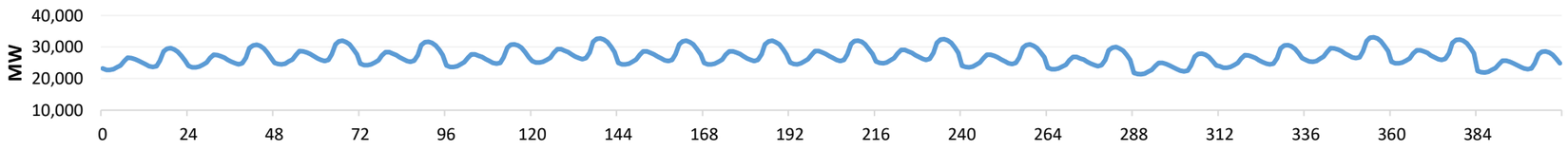
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 1 - PD 4 Nuclear Station Outage (Winter 2030/2031)

Hourly Results Summary

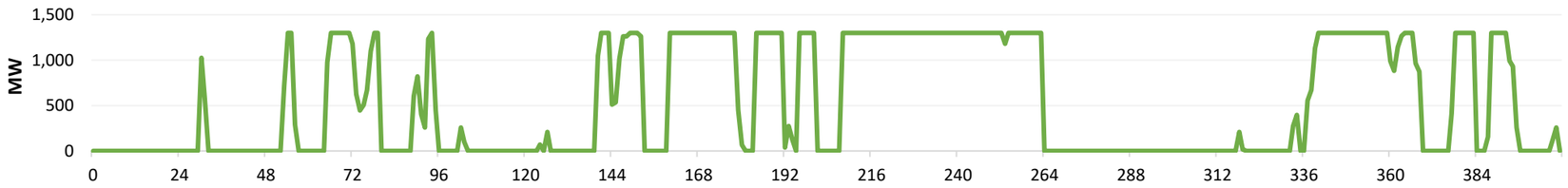
Case Name: Scenario 1 - PD 4 Nuclear Station Outage

Load During Modeling Period



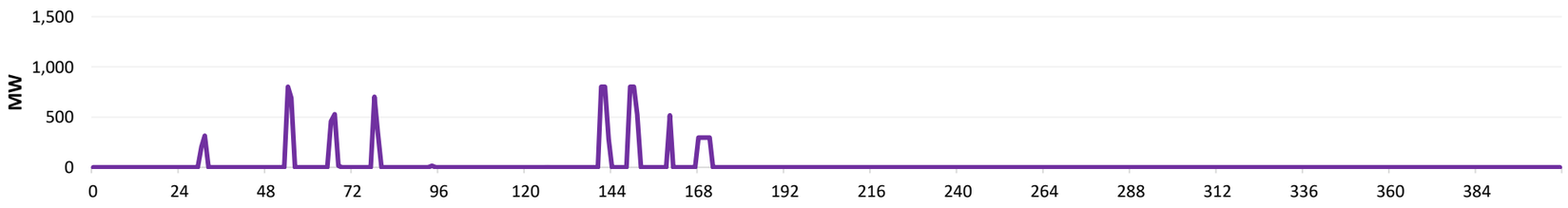
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	On
Plant Outage:	None
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



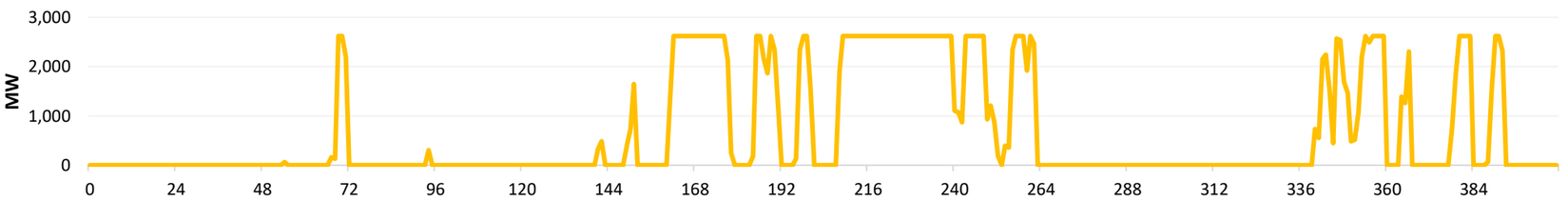
Export Reductions	
Total Hrs.	192
Total MWh	213,464
Avg. MW	523.2

SCR/EDRP Deployed During Modeling Period



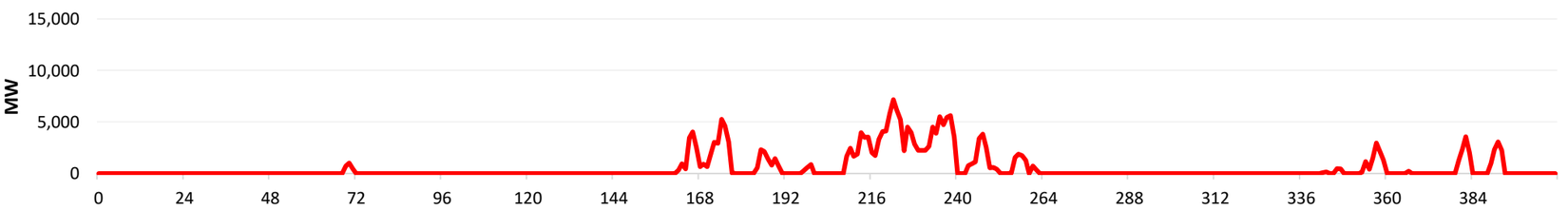
SCR Deployment	
Total Hrs.	21
Total MWh	9,799
Avg. MW	24.0

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	133
Total MWh	265,418
Avg. MW	650.5
First Hour with Viol.	54

Loss of Load During Modeling Period



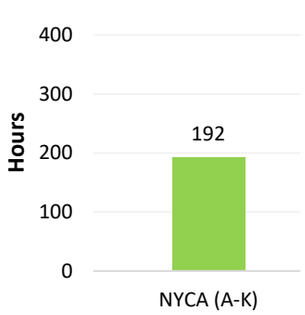
Loss of Load	
Total Hrs.	96
Total MWh	213,306
Avg. MW	522.8
First Hour with Losses	69

Full Period Results Summary

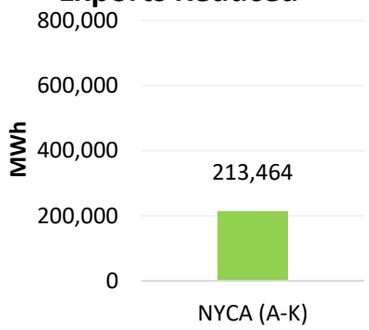
Case Name: Scenario 1 - PD 4 Nuclear Station Outage

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	On
Plant Outage:	None
Import Scenario:	All

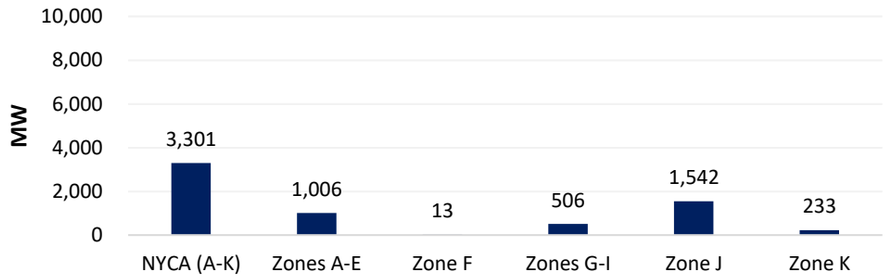
Hours Exports Reduced



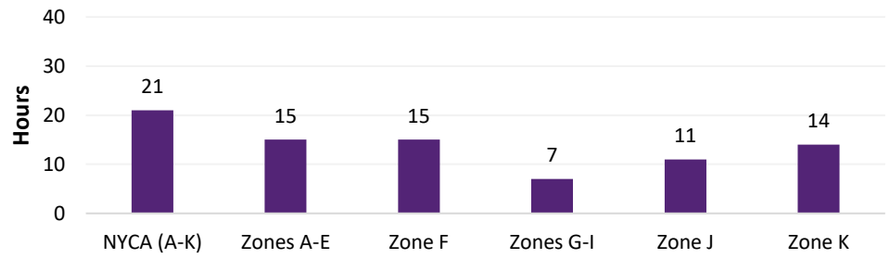
Total MWh of Exports Reduced



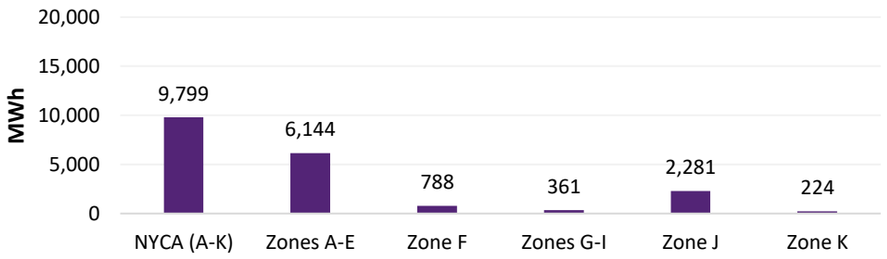
Average Capacity Not Available Due to Exhausted Fuel Inventory



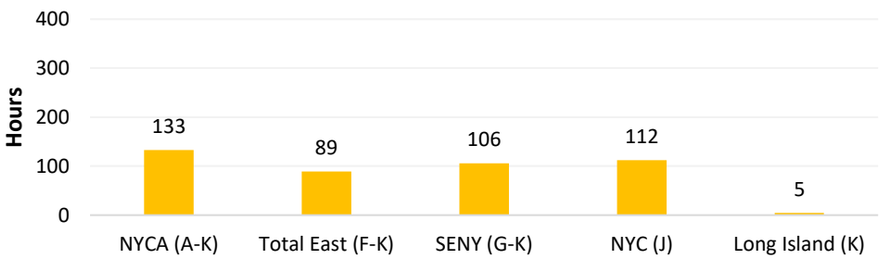
Hours SCR/EDRP Deployed



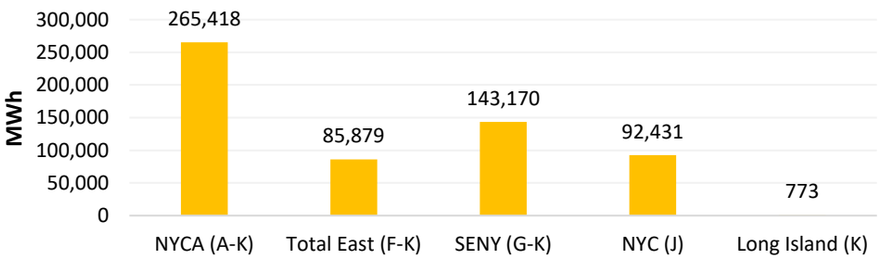
Total MWh SCR/EDRP Deployed



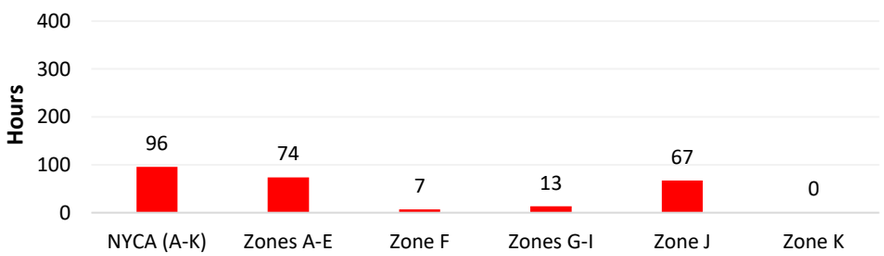
Hours with Reserve Violations



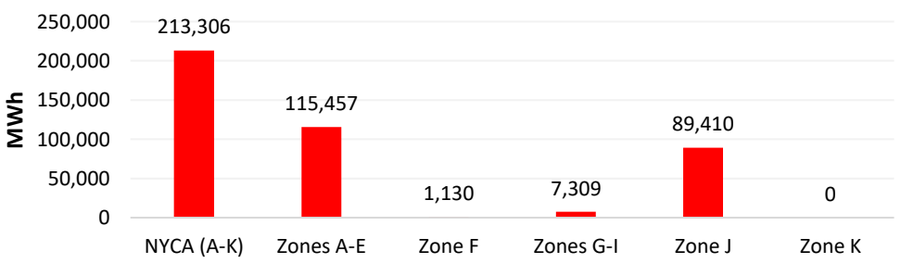
Total MWh of Reserve Violations

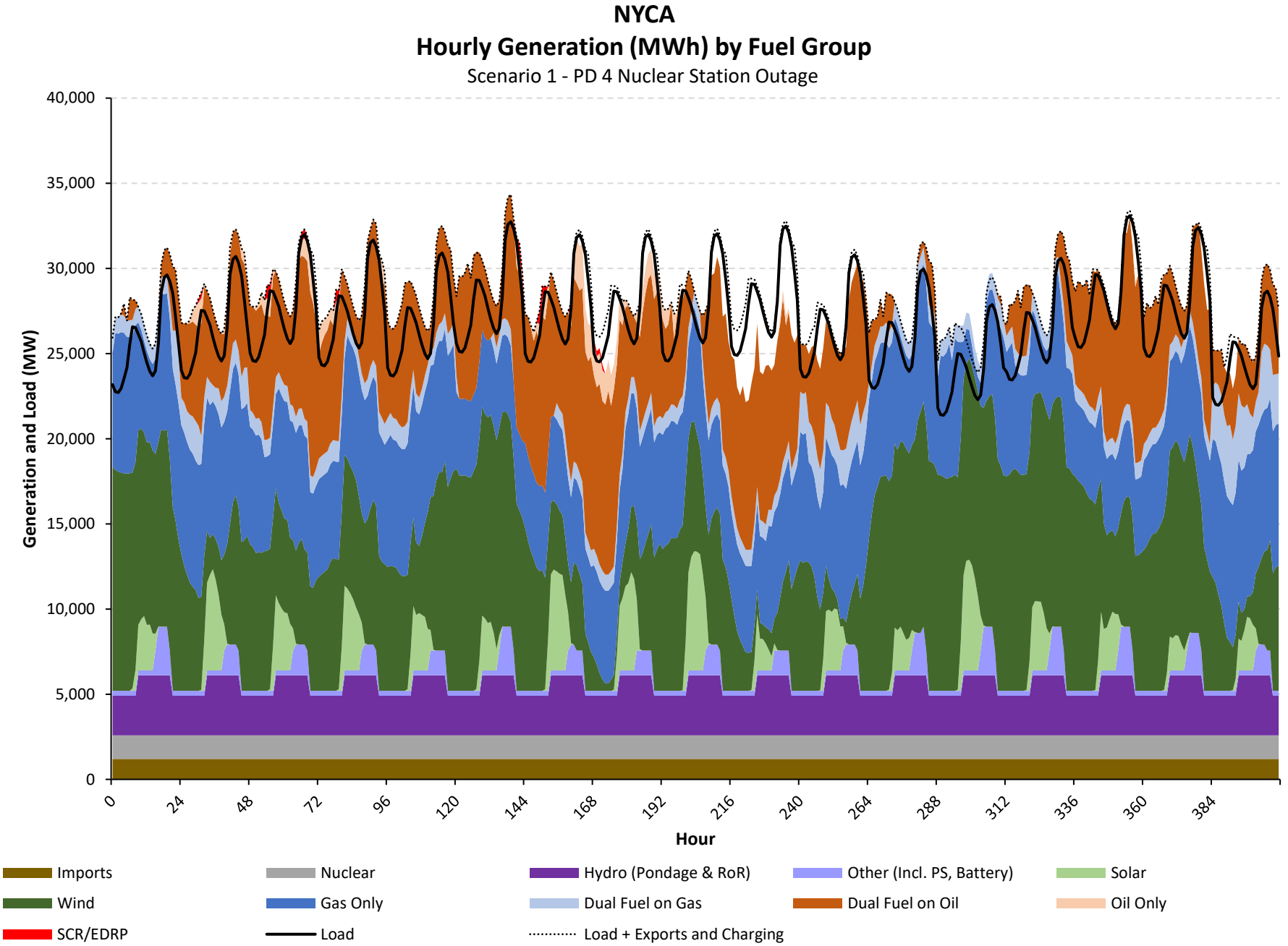


Hours with Loss of Load

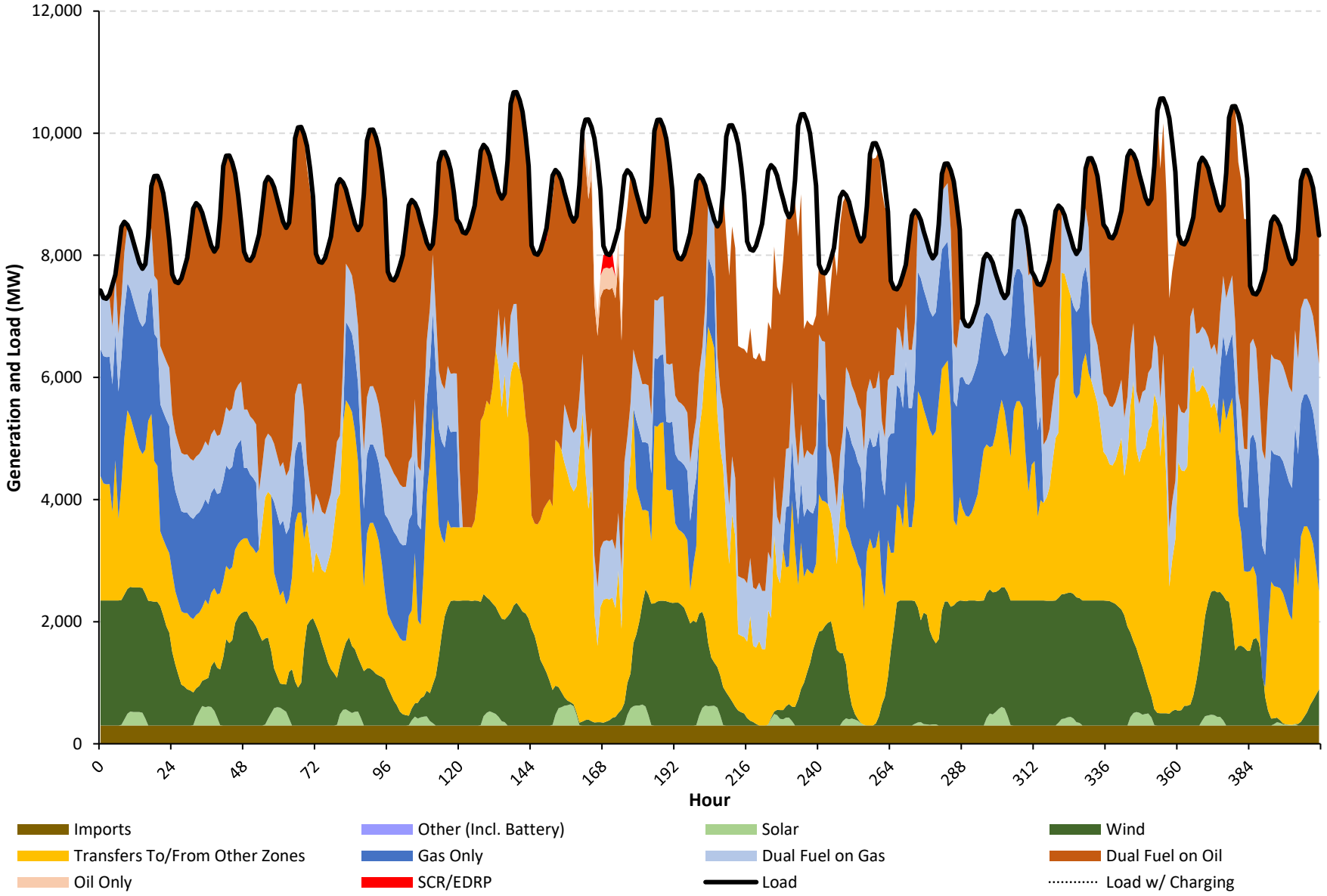


Total MWh of Lost Load

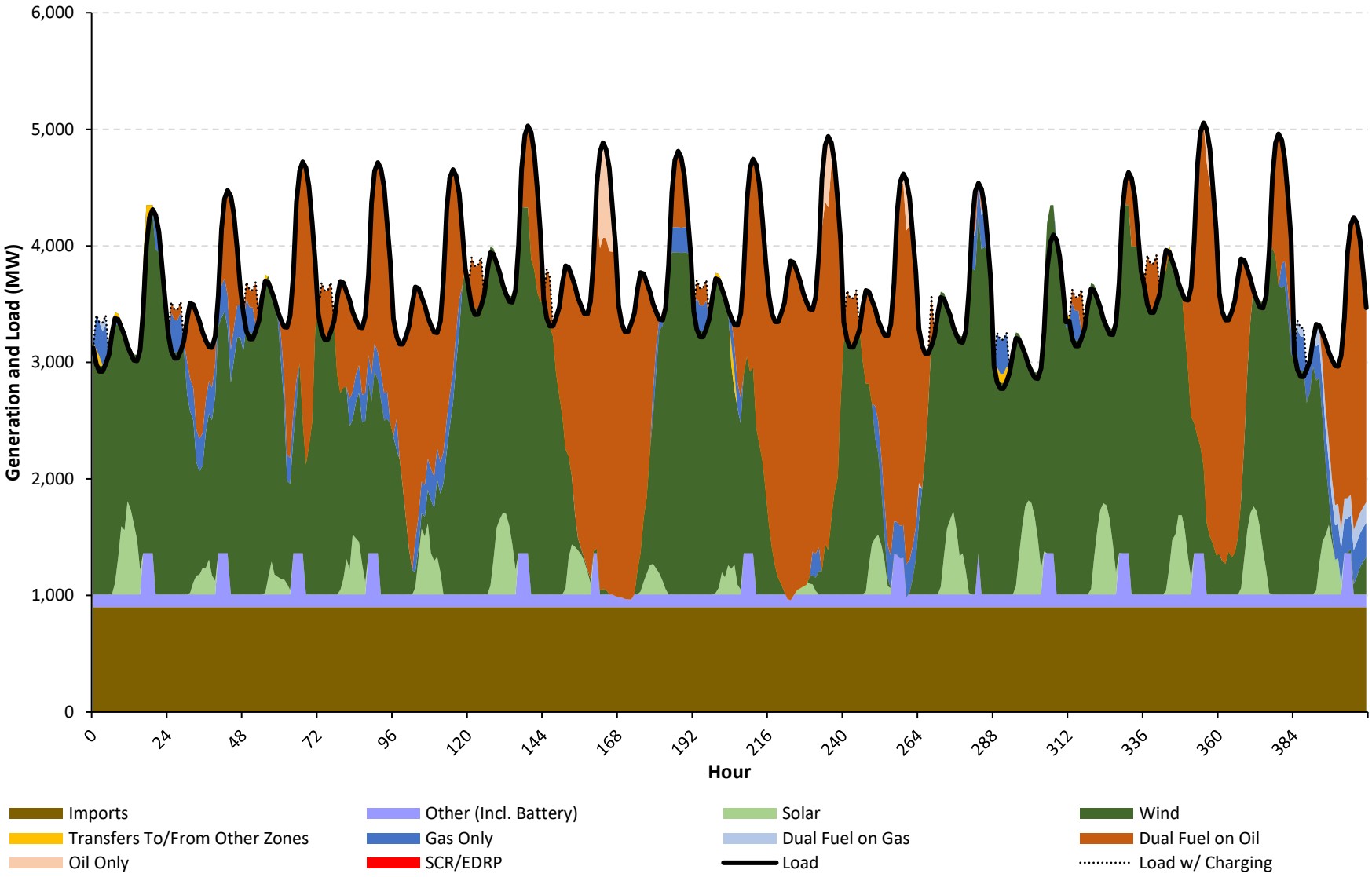



NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 1 - PD 4 Nuclear Station Outage
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

Zone J
Hourly Generation (MW) by Fuel Group
Scenario 1 - PD 4 Nuclear Station Outage



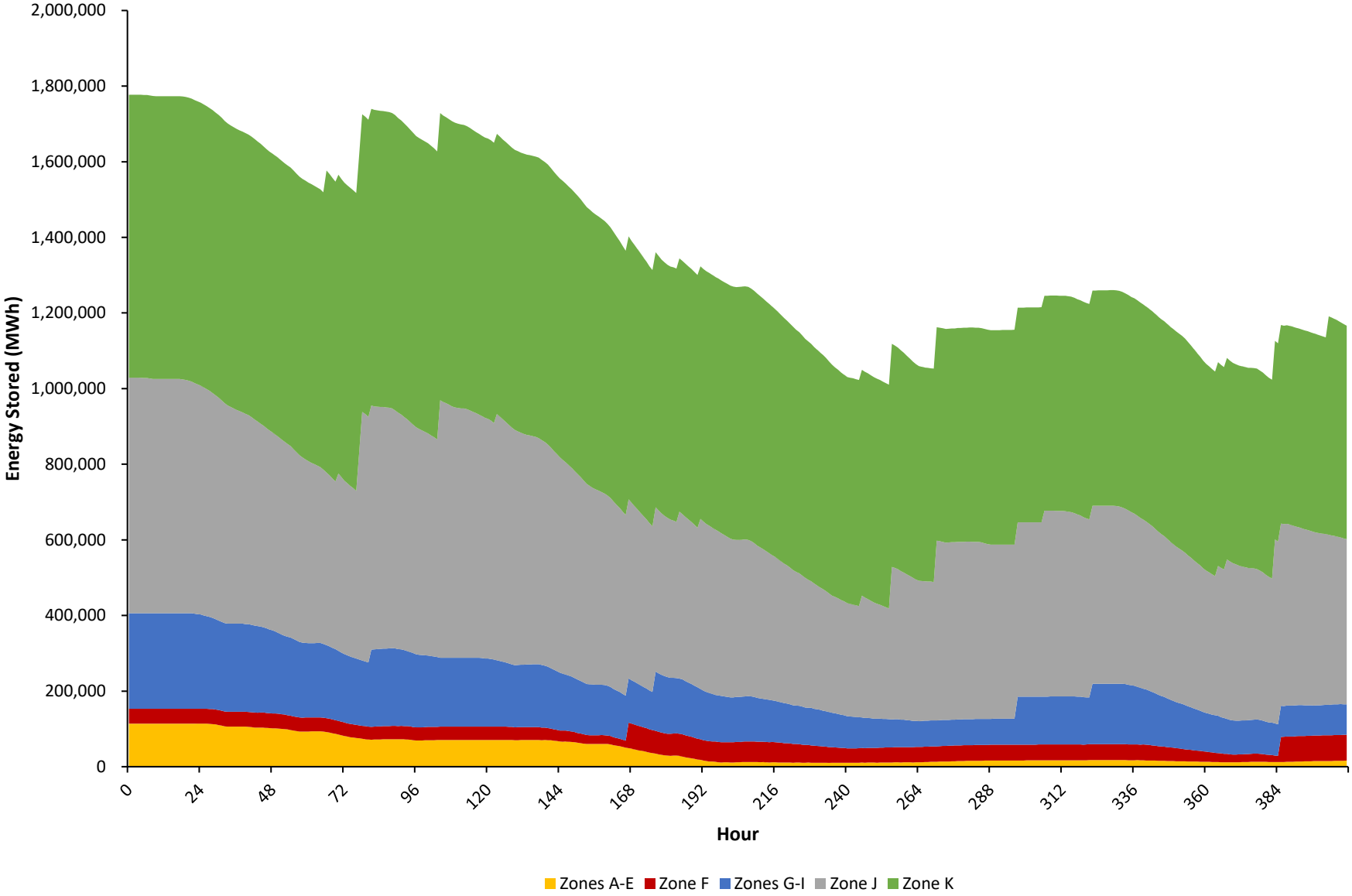
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 1 - PD 4 Nuclear Station Outage



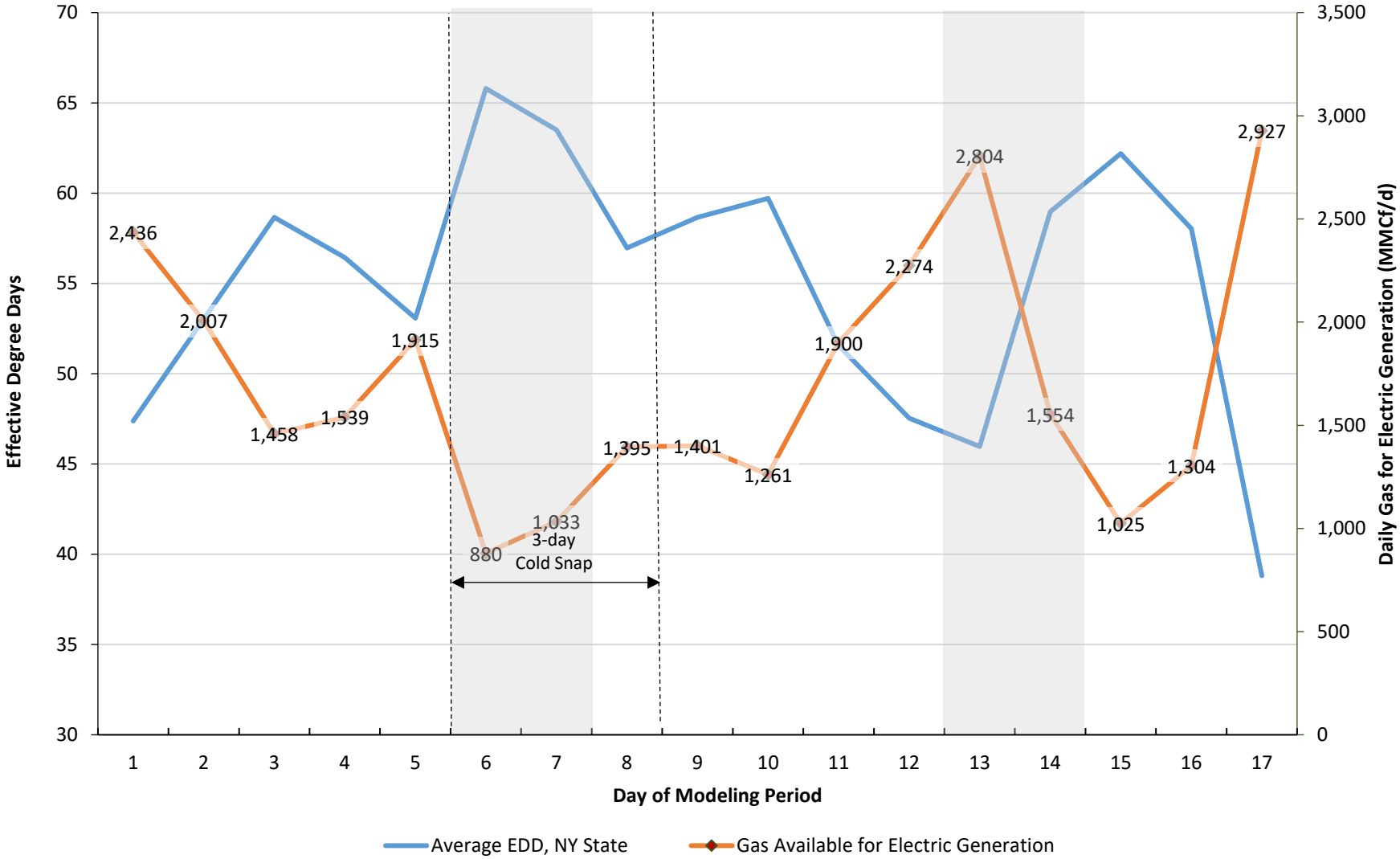
NYCA

Quantity of Stored Fuel for Oil and Dual Fuel Units

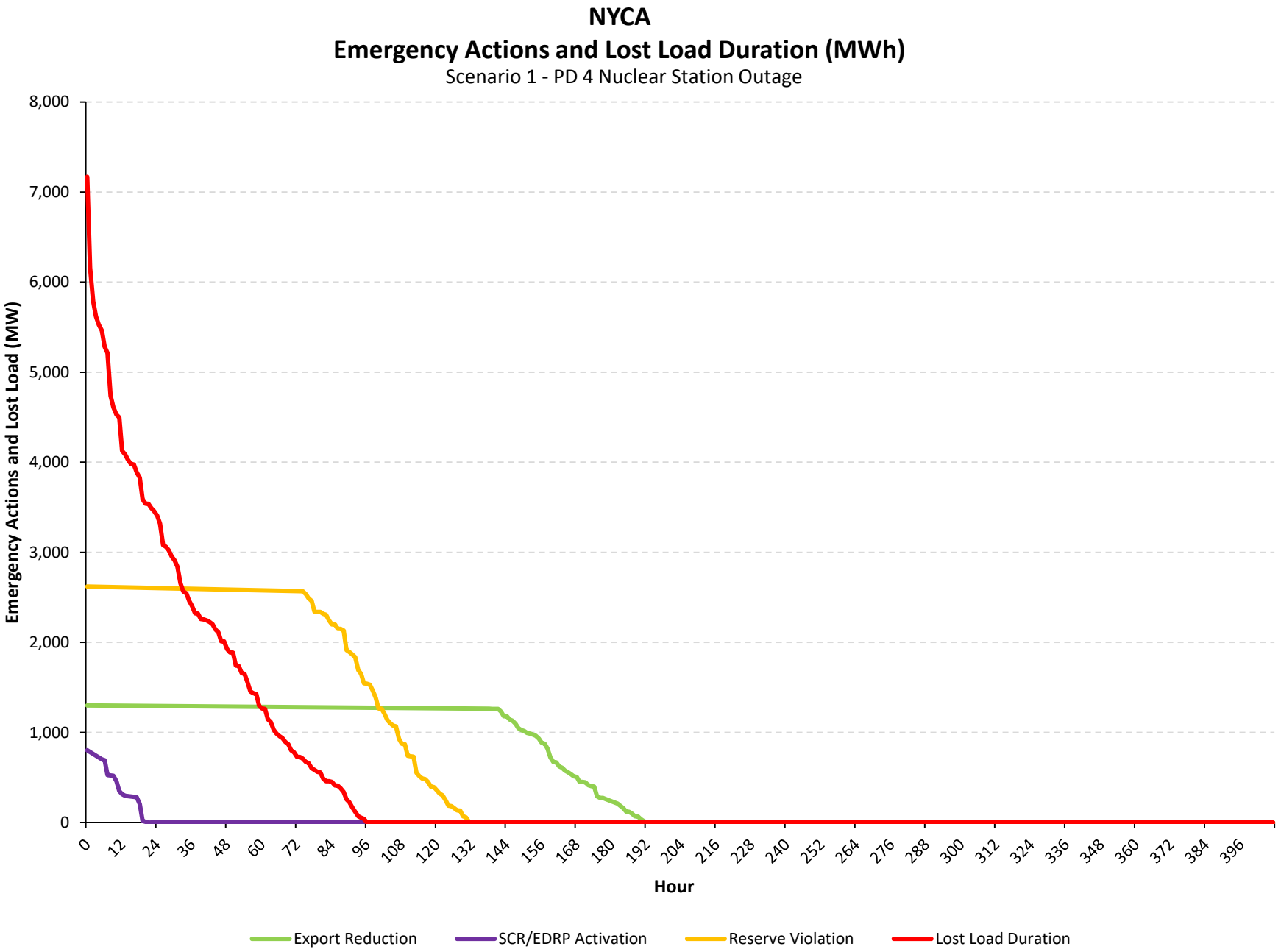
Scenario 1 - PD 4 Nuclear Station Outage

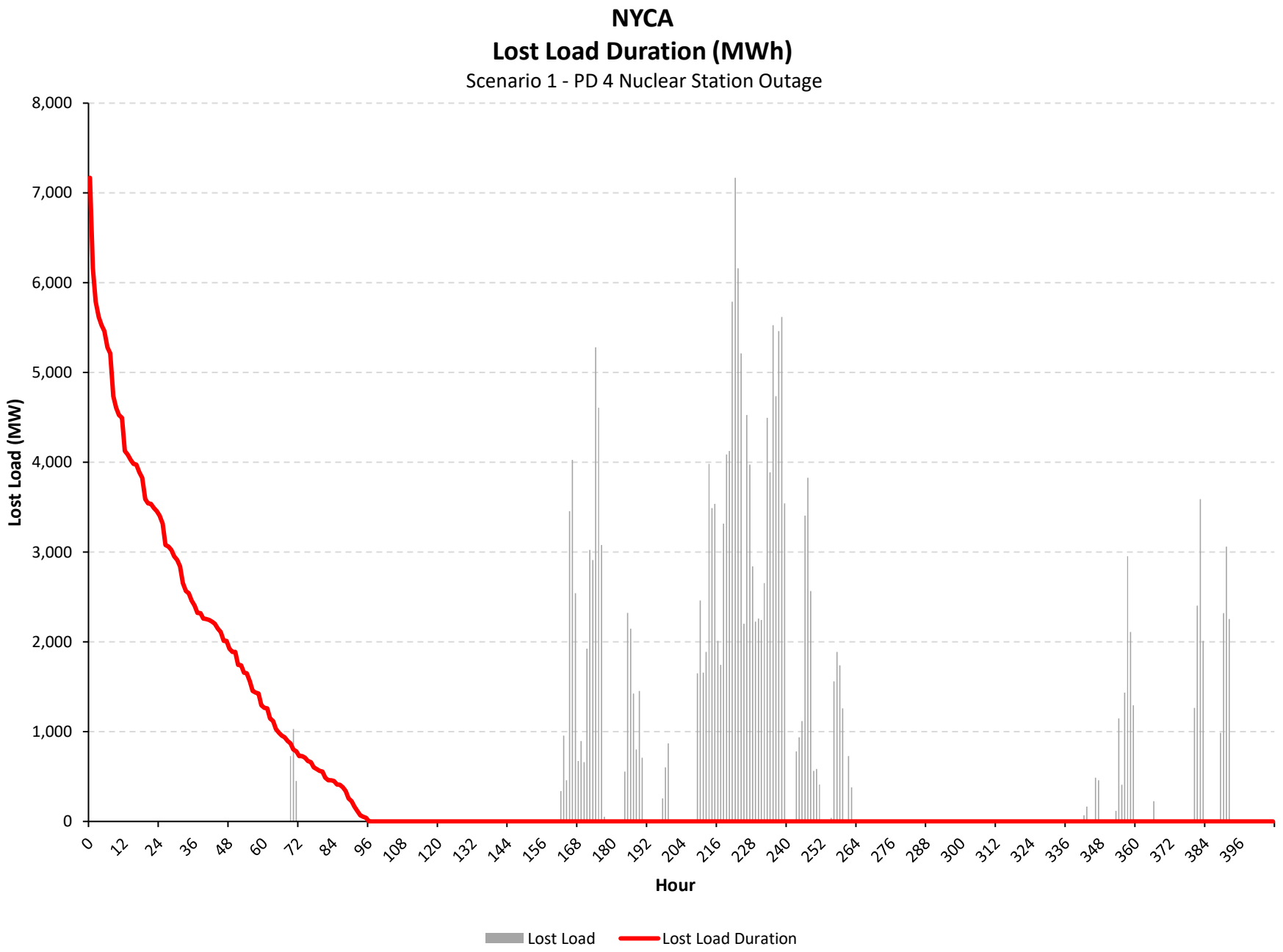


NYCA
Degree Days and Gas Available for Electric Generation 17-Day Modeling Period
Scenario 1 - PD 4 Nuclear Station Outage



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 1 - PD 4 Nuclear Station Outage
Emergency Actions and Lost Load (MW)
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 1 - PD 4 Nuclear Station Outage
Lost Load (MW)
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

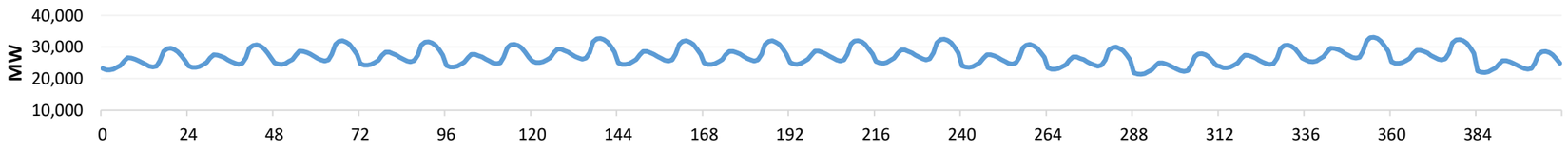
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 1 - PD 5 No Truck Refill (Winter 2030/2031)

Hourly Results Summary

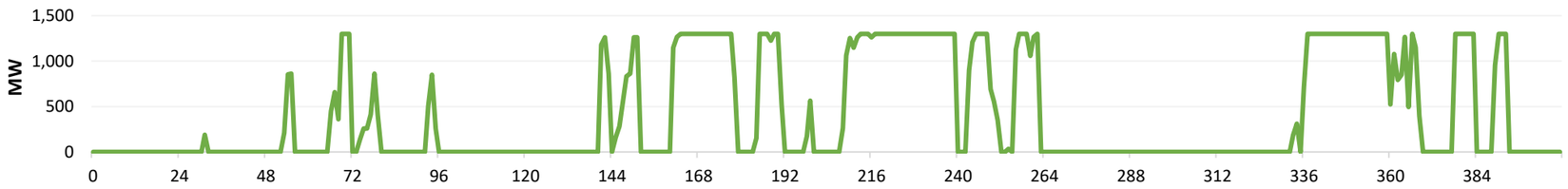
Case Name: Scenario 1 - PD 5 No Truck Refill

Load During Modeling Period



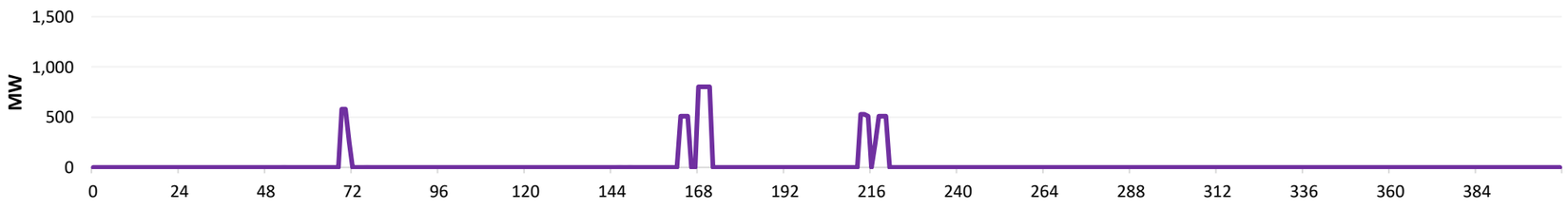
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	No Trucks
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



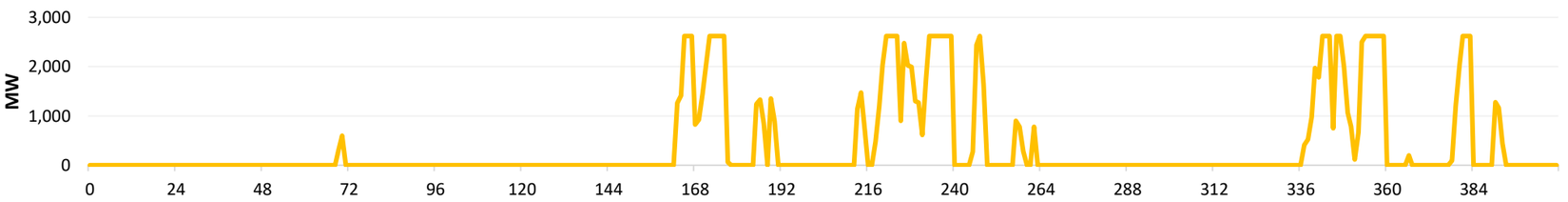
Export Reductions	
Total Hrs.	151
Total MWh	161,114
Avg. MW	394.9

SCR/EDRP Deployed During Modeling Period



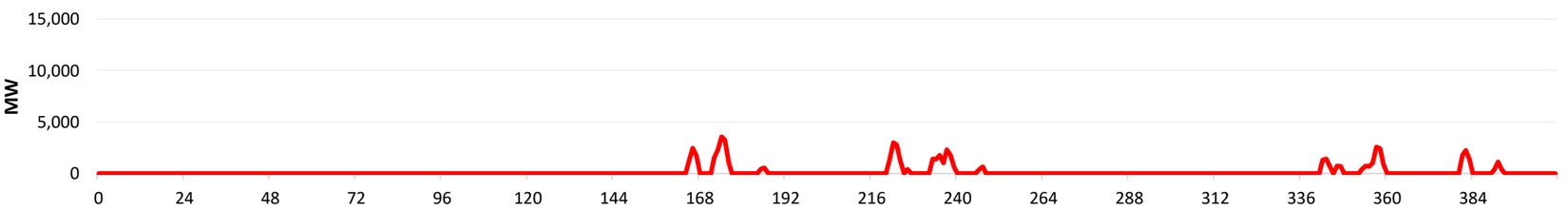
SCR Deployment	
Total Hrs.	17
Total MWh	9,479
Avg. MW	23.2

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	88
Total MWh	150,024
Avg. MW	367.7
First Hour with Viol.	69

Loss of Load During Modeling Period



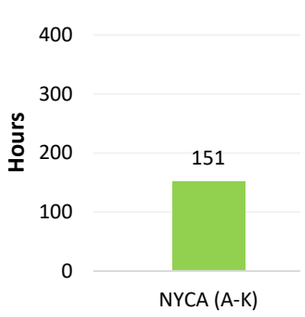
Loss of Load	
Total Hrs.	43
Total MWh	59,262
Avg. MW	145.3
First Hour with Losses	165

Full Period Results Summary

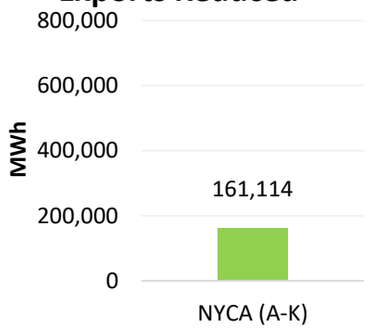
Case Name: Scenario 1 - PD 5 No Truck Refill

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	No Trucks
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

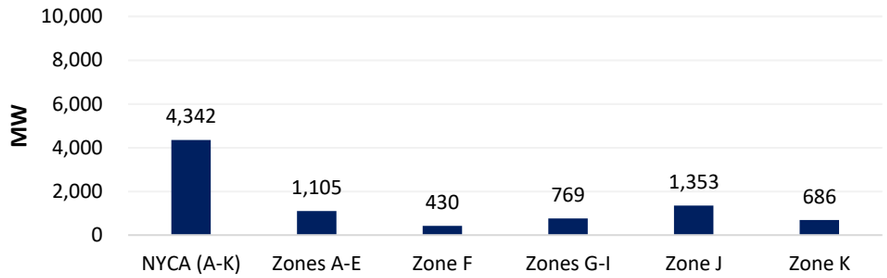
Hours Exports Reduced



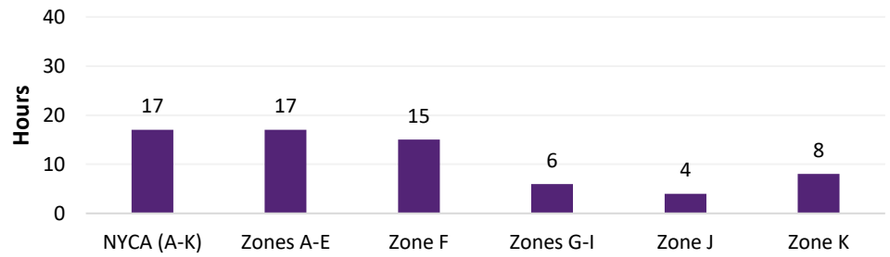
Total MWh of Exports Reduced



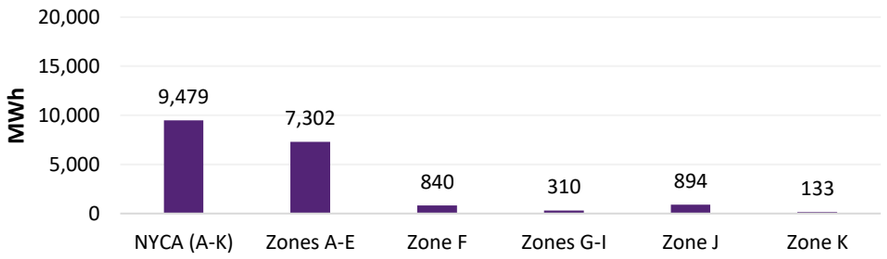
Average Capacity Not Available Due to Exhausted Fuel Inventory



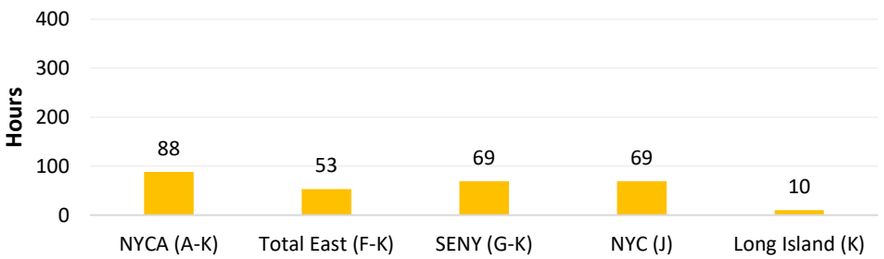
Hours SCR/EDRP Deployed



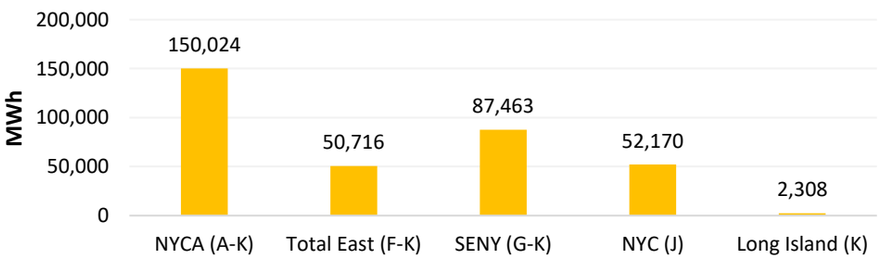
Total MWh SCR/EDRP Deployed



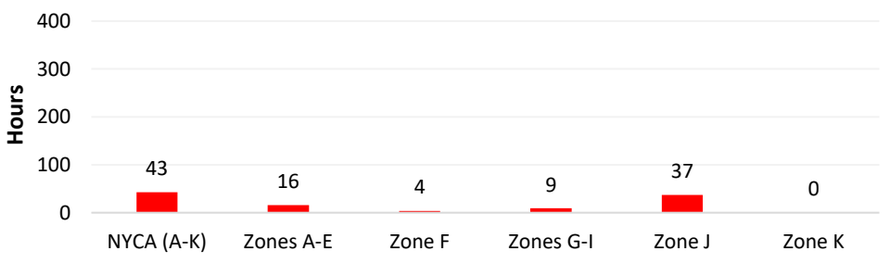
Hours with Reserve Violations



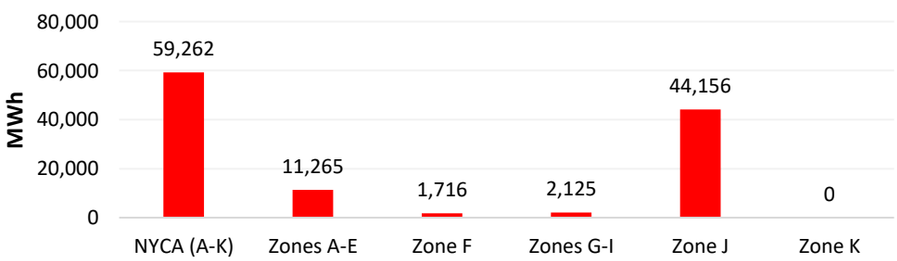
Total MWh of Reserve Violations

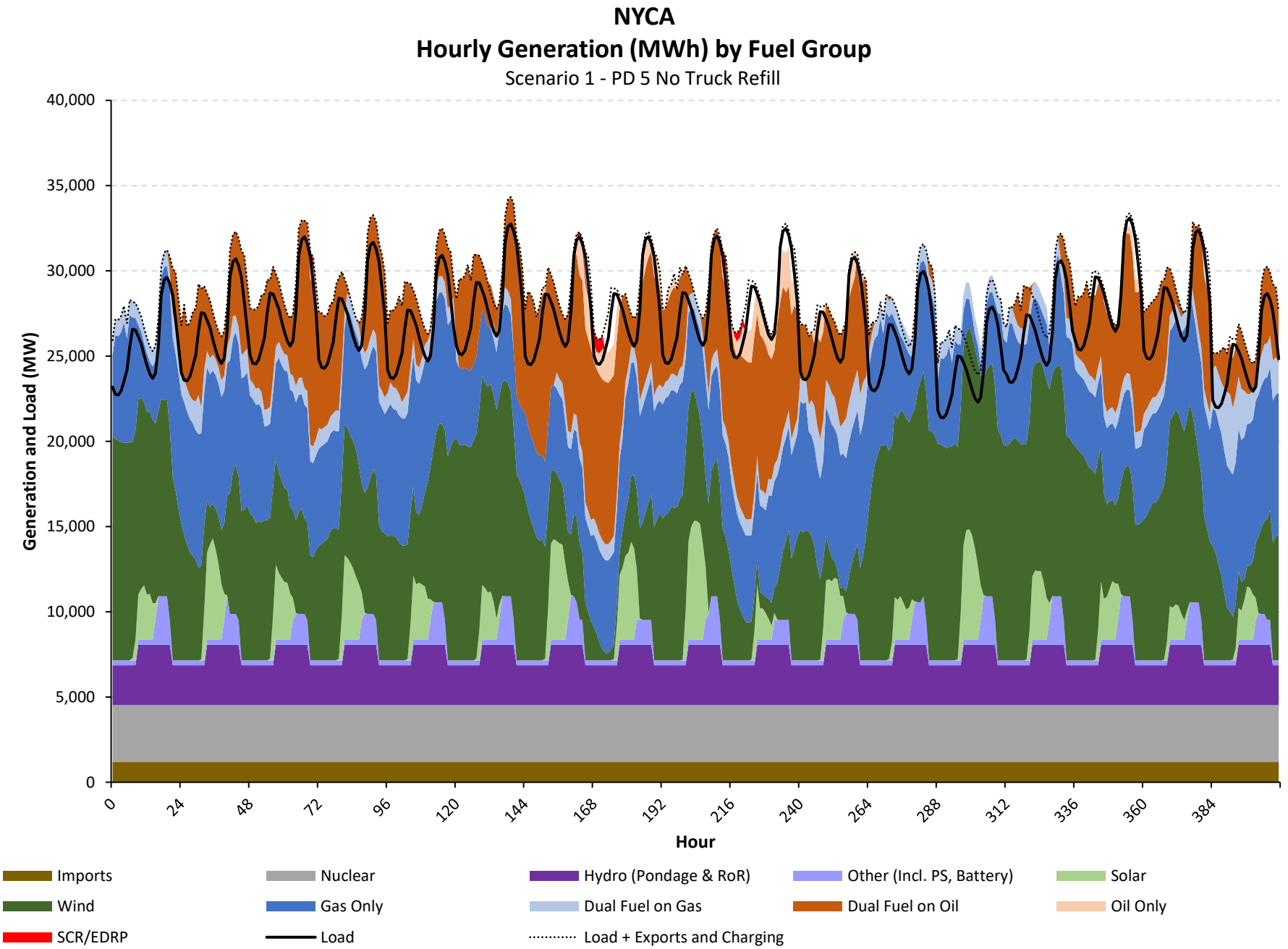


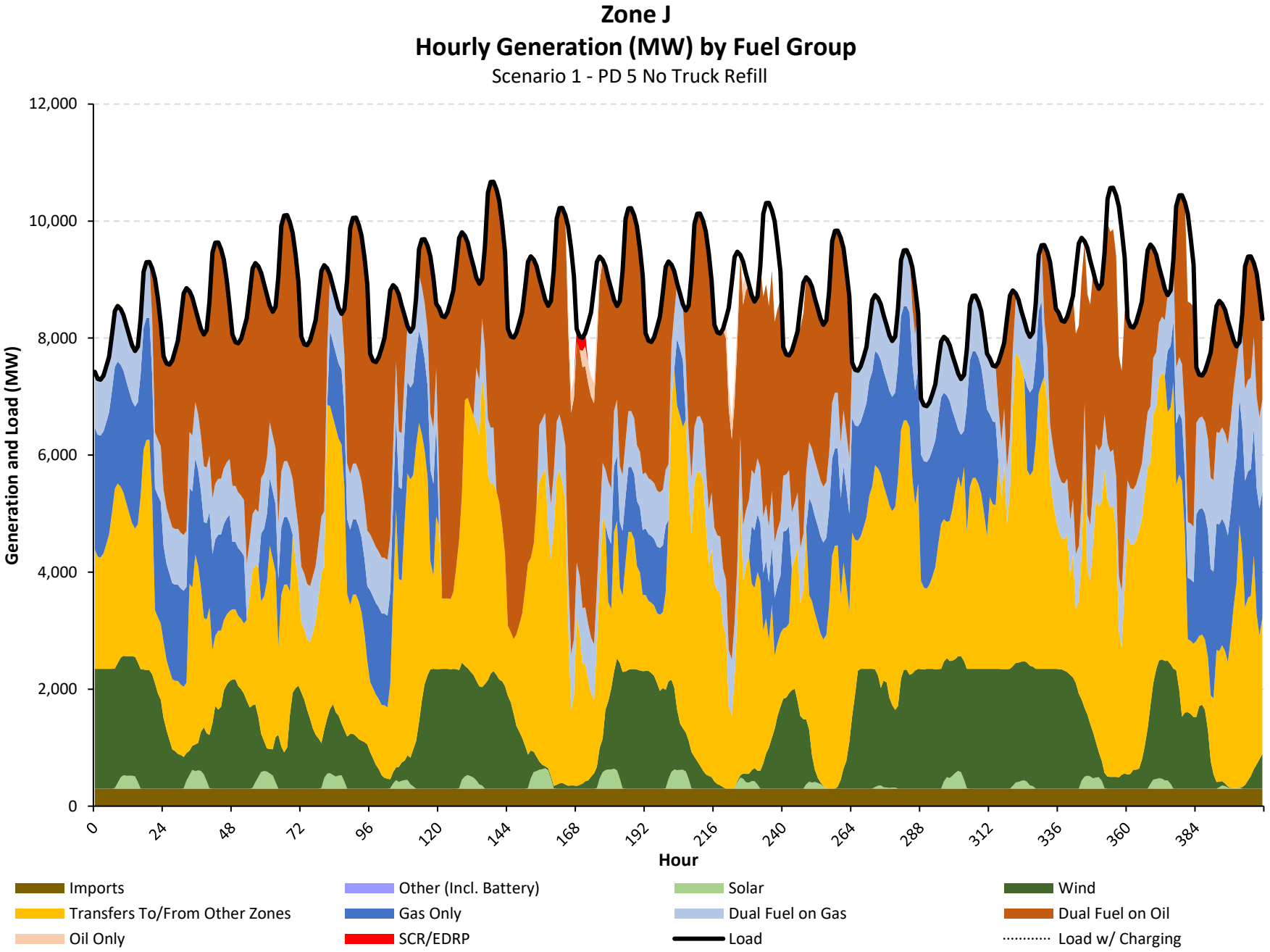
Hours with Loss of Load



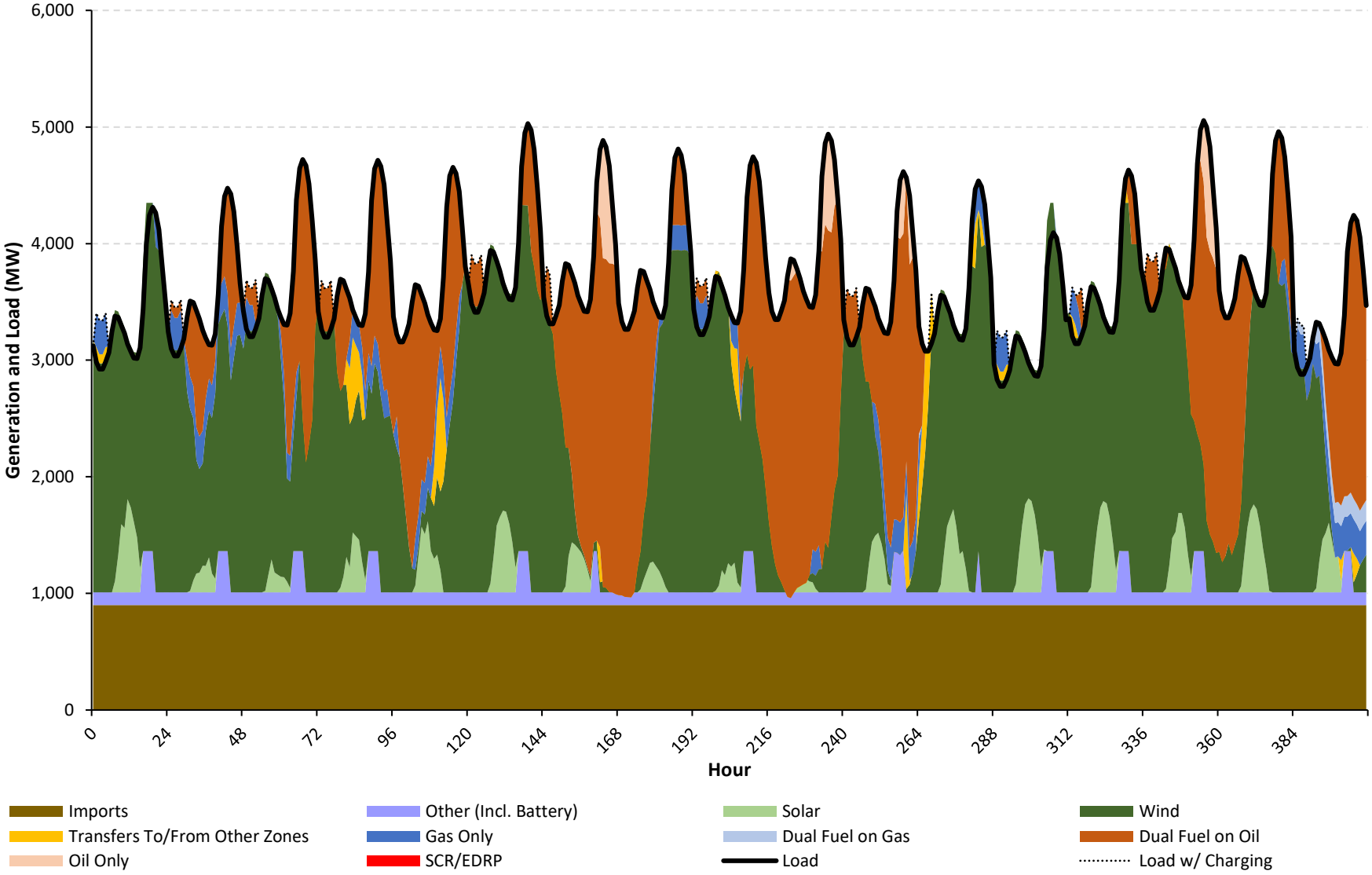
Total MWh of Lost Load



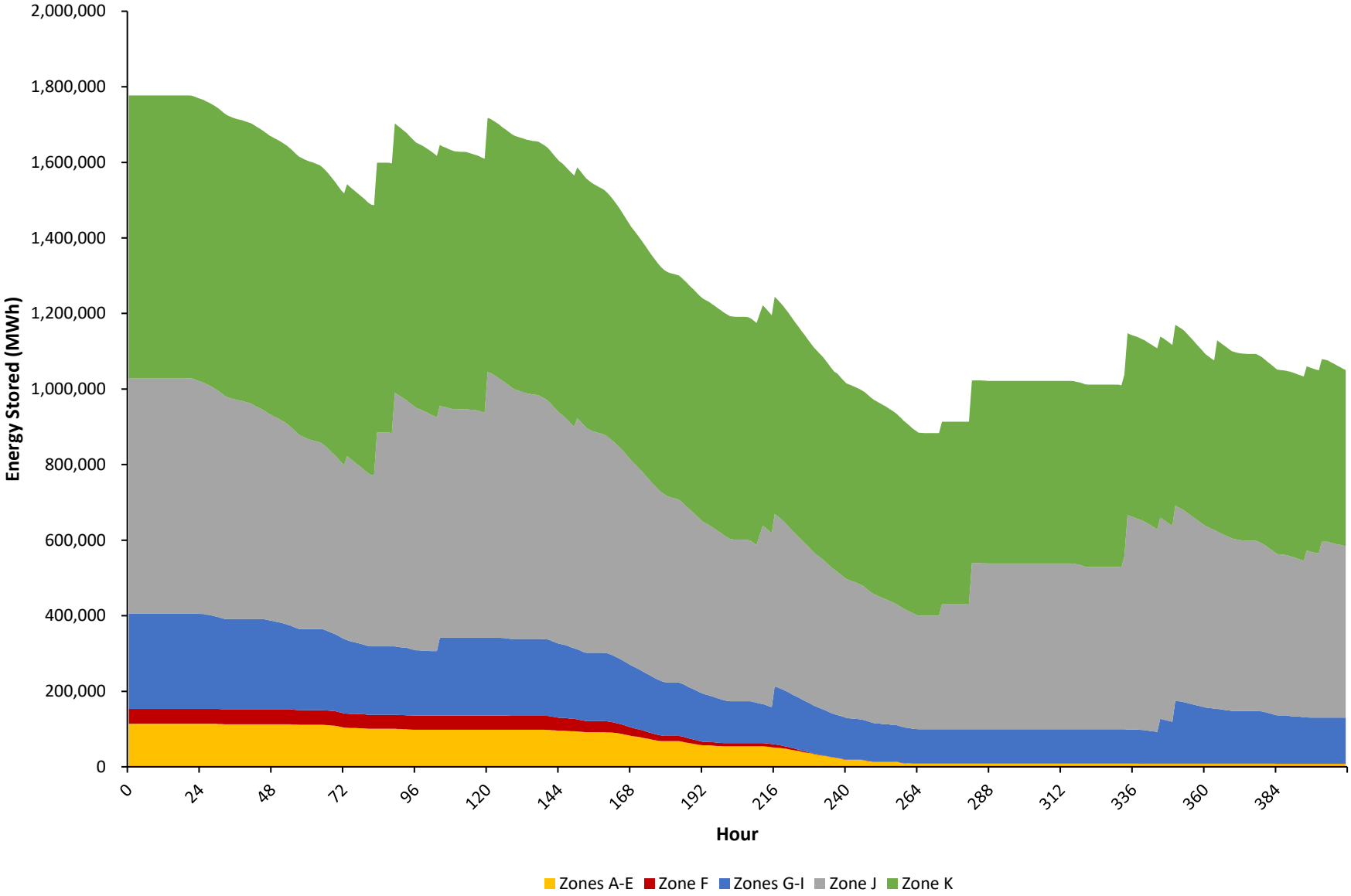

NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 1 - PD 5 No Truck Refill
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

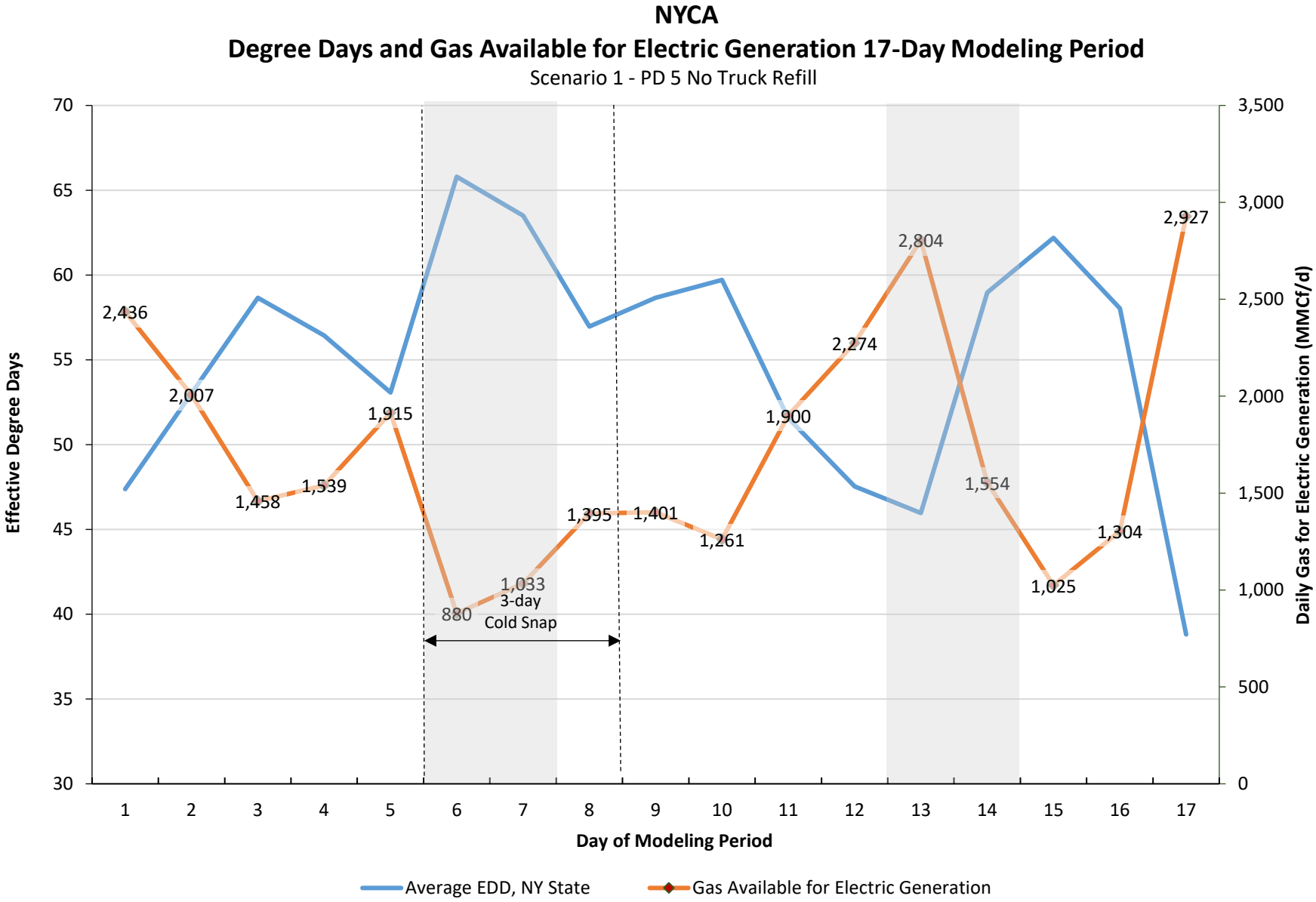

Zone J
Hourly Generation (MW) by Fuel Group
Scenario 1 - PD 5 No Truck Refill
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

Zone K
Hourly Generation (MW) by Fuel Group
Scenario 1 - PD 5 No Truck Refill

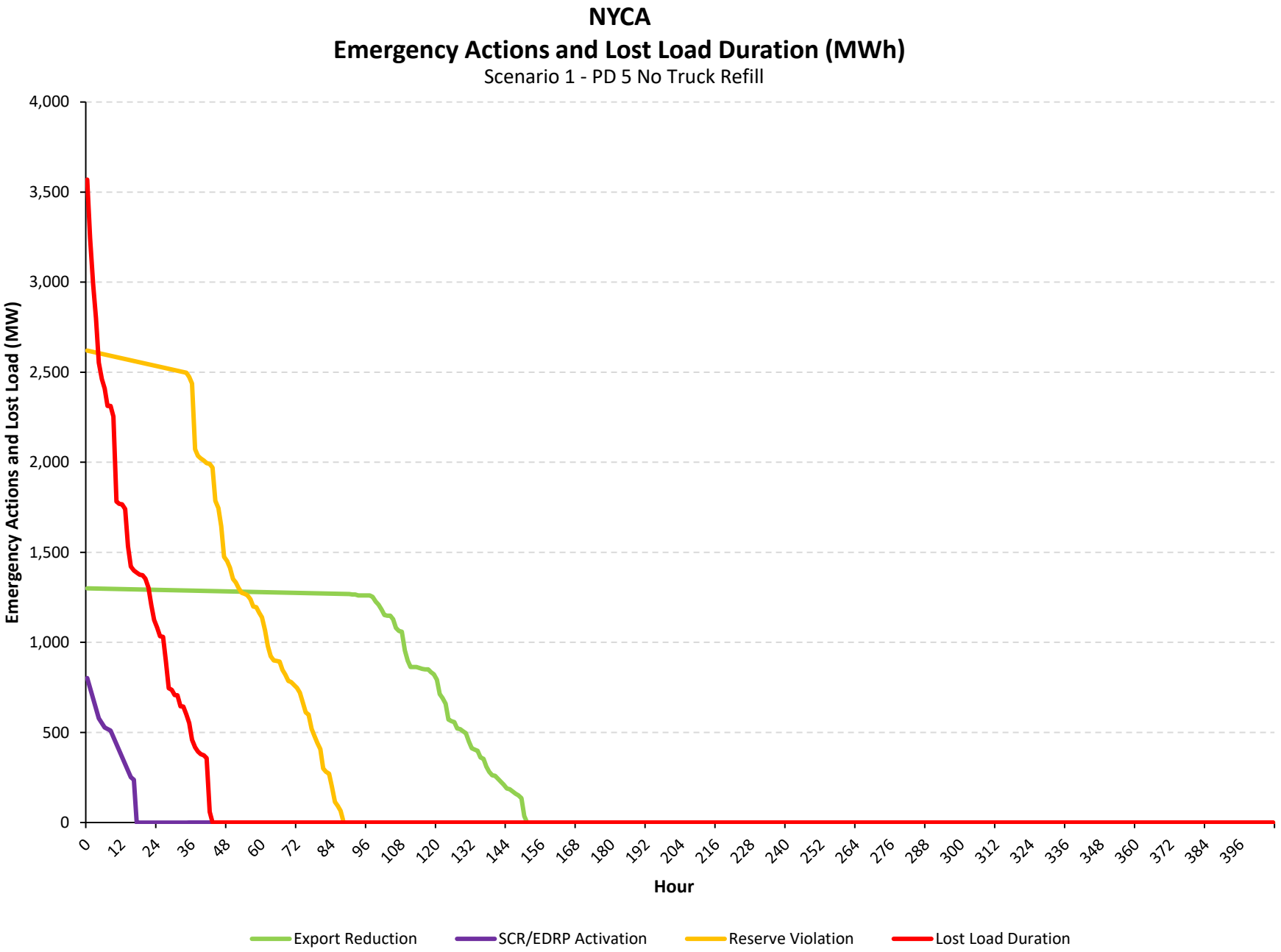


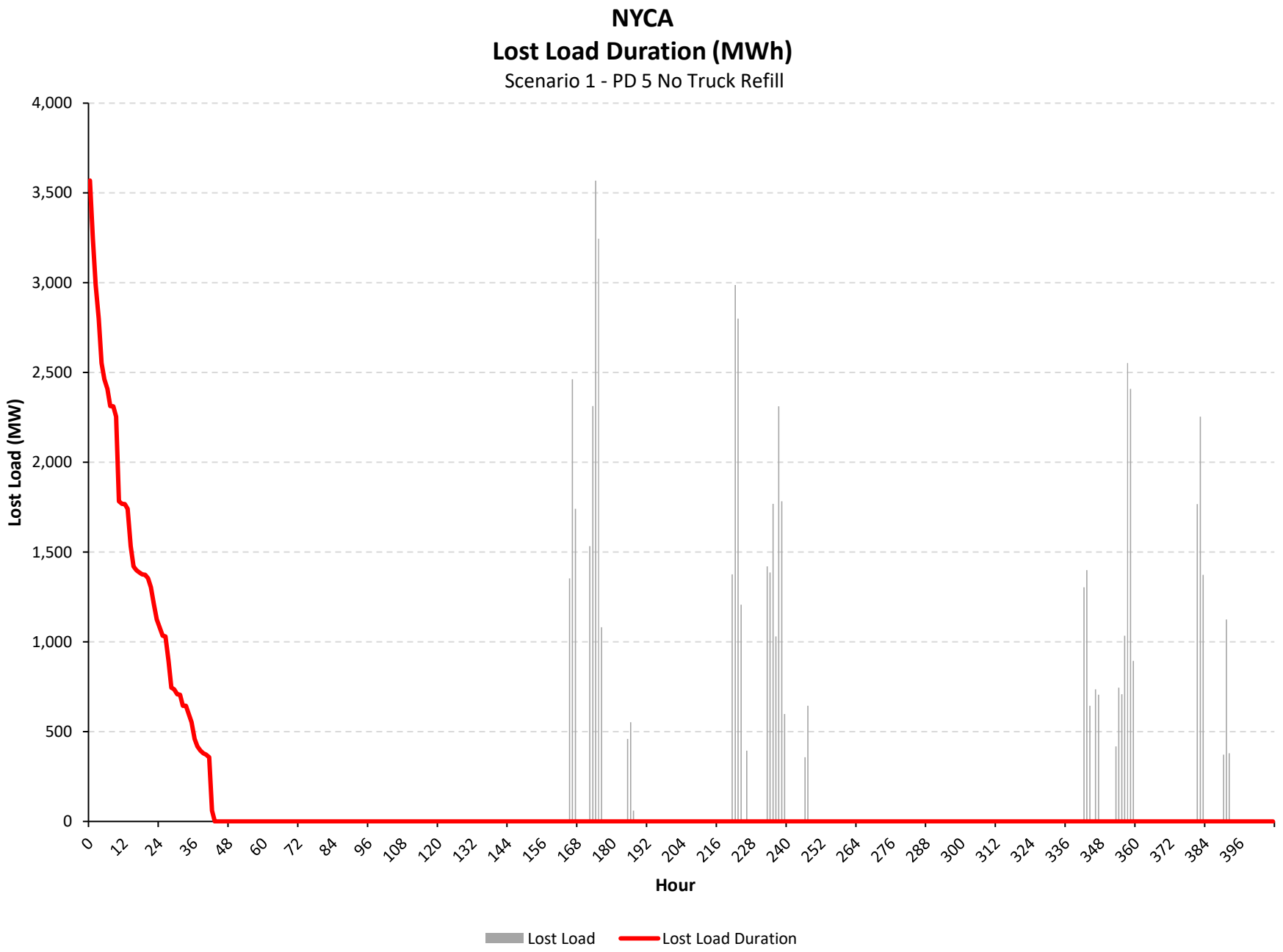
NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 1 - PD 5 No Truck Refill





Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 1 - PD 5 No Truck Refill
Emergency Actions and Lost Load (MW)
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 1 - PD 5 No Truck Refill
Lost Load (MW)
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

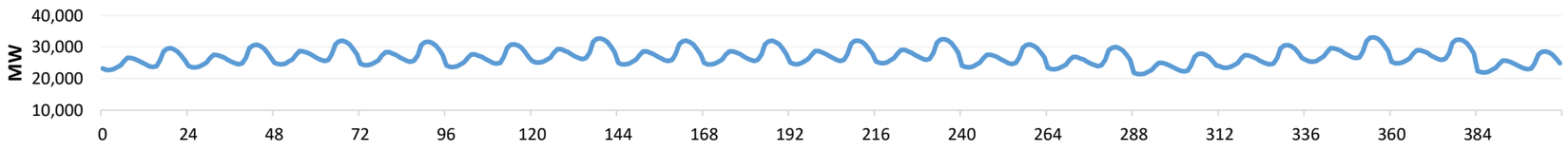
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 1 - PD 6 No Barge Refill (Winter 2030/2031)

Hourly Results Summary

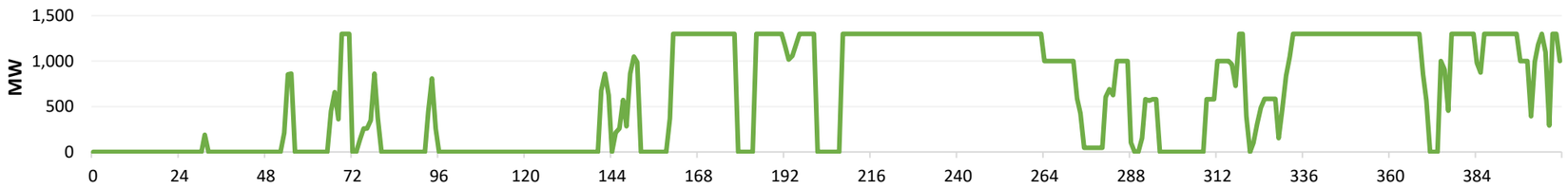
Case Name: Scenario 1 - PD 6 No Barge Refill

Load During Modeling Period



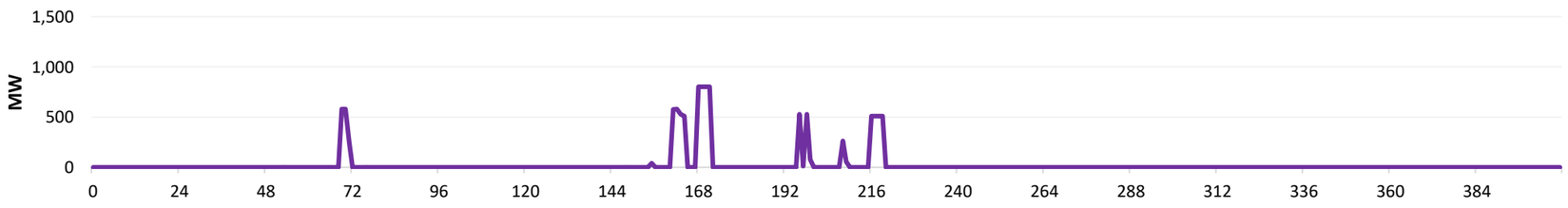
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	No Barge
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



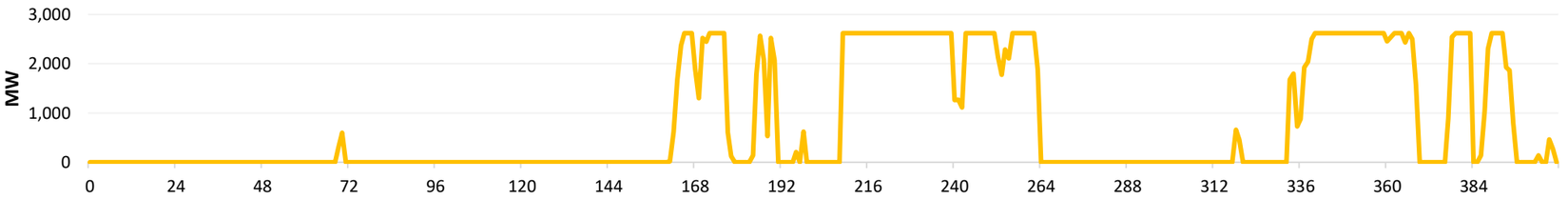
Export Reductions	
Total Hrs.	246
Total MWh	256,874
Avg. MW	629.6

SCR/EDRP Deployed During Modeling Period



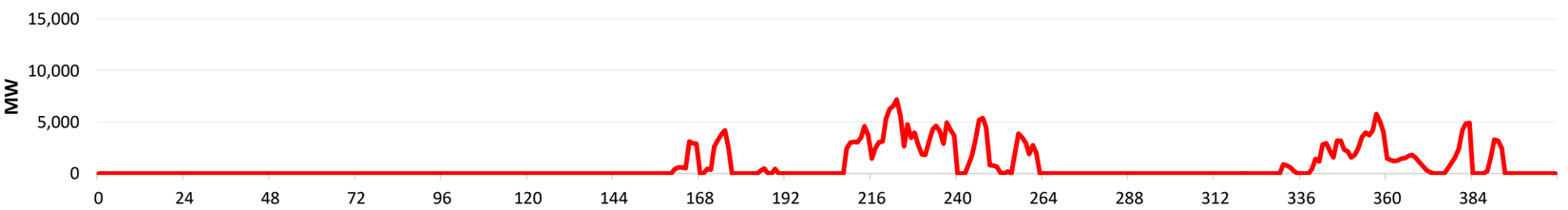
SCR Deployment	
Total Hrs.	22
Total MWh	10,347
Avg. MW	25.4

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	142
Total MWh	307,885
Avg. MW	754.6
First Hour with Viol.	69

Loss of Load During Modeling Period



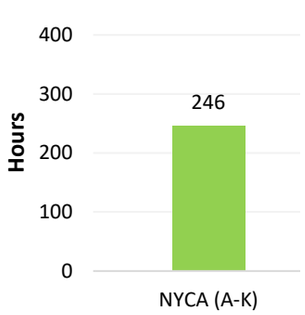
Loss of Load	
Total Hrs.	119
Total MWh	296,749
Avg. MW	727.3
First Hour with Losses	161

Full Period Results Summary

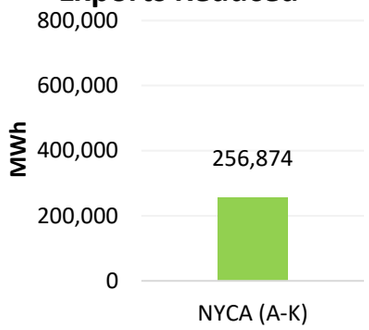
Case Name: Scenario 1 - PD 6 No Barge Refill

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	No Barge
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

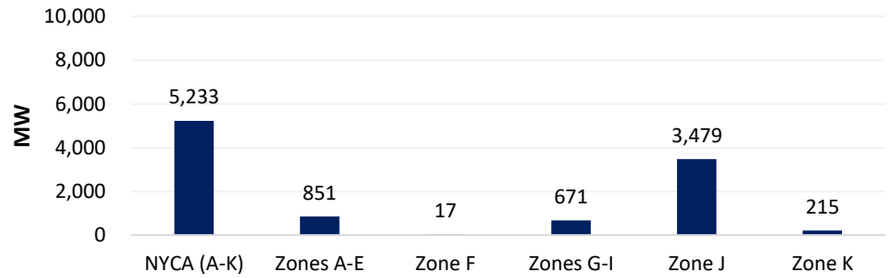
Hours Exports Reduced



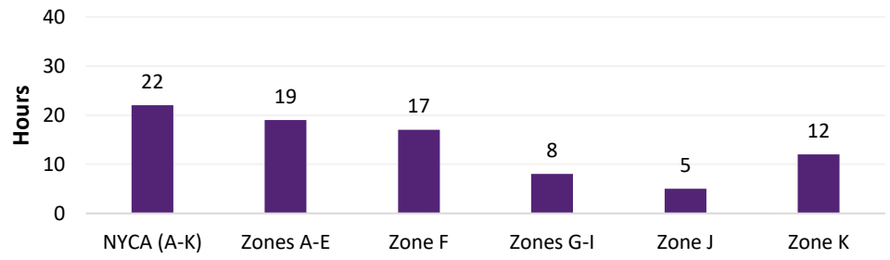
Total MWh of Exports Reduced



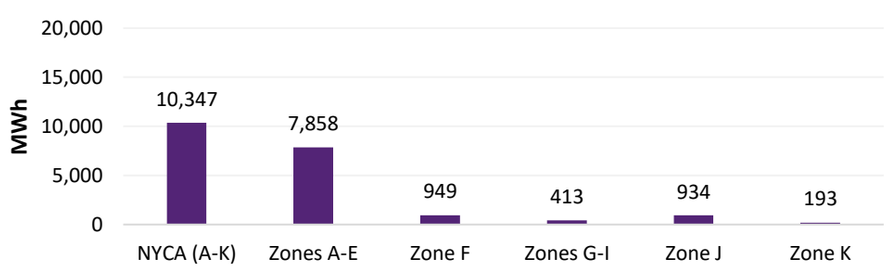
Average Capacity Not Available Due to Exhausted Fuel Inventory



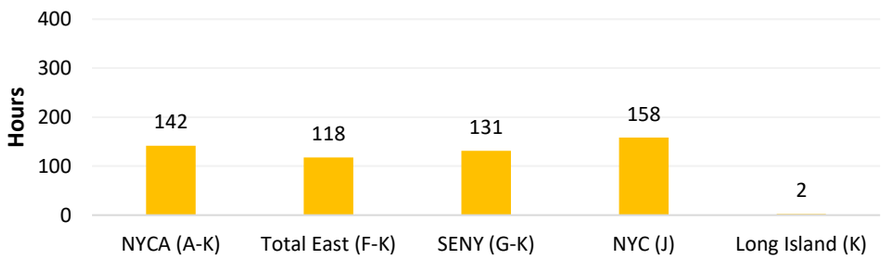
Hours SCR/EDRP Deployed



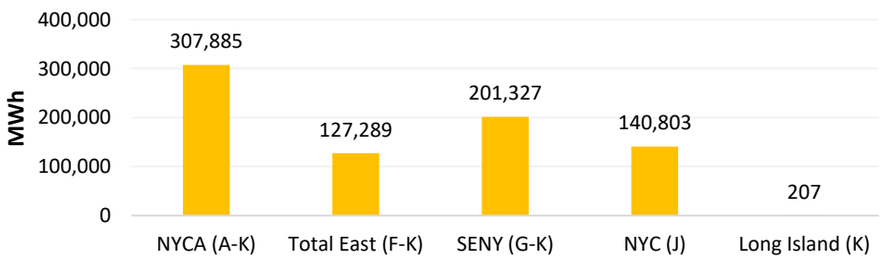
Total MWh SCR/EDRP Deployed



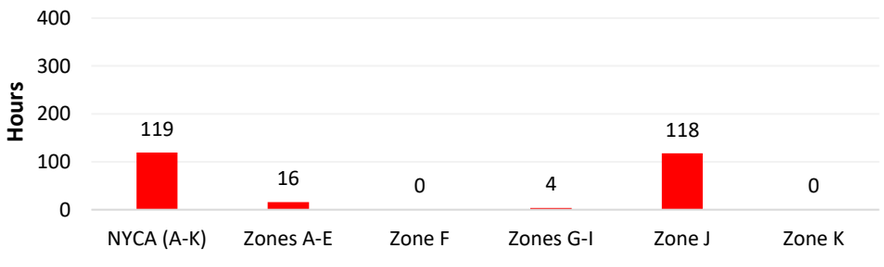
Hours with Reserve Violations



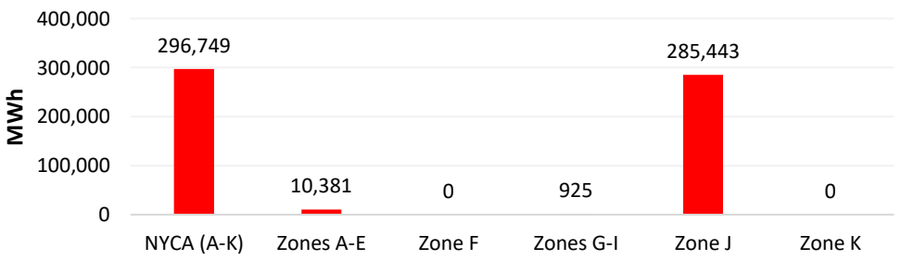
Total MWh of Reserve Violations

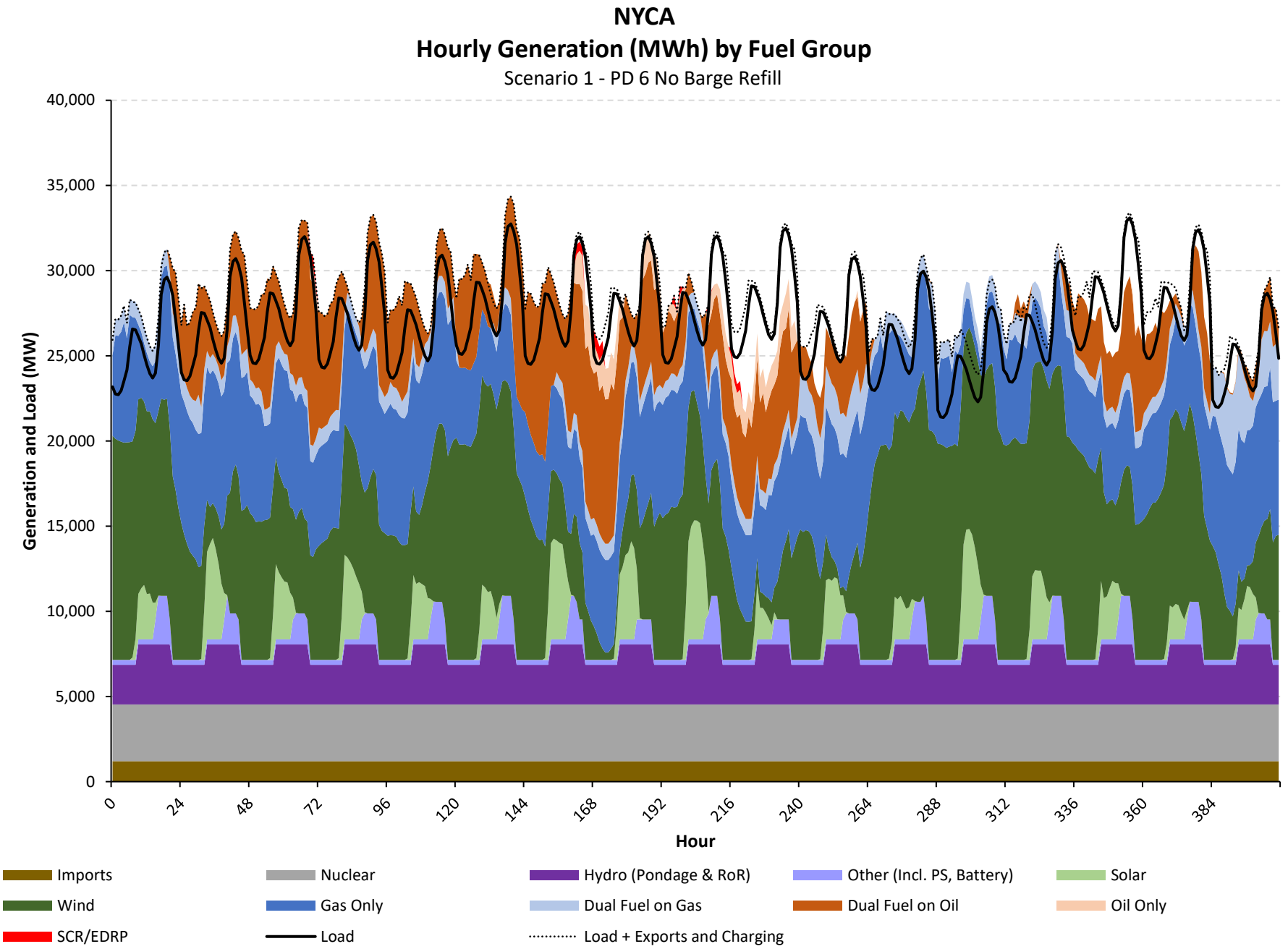


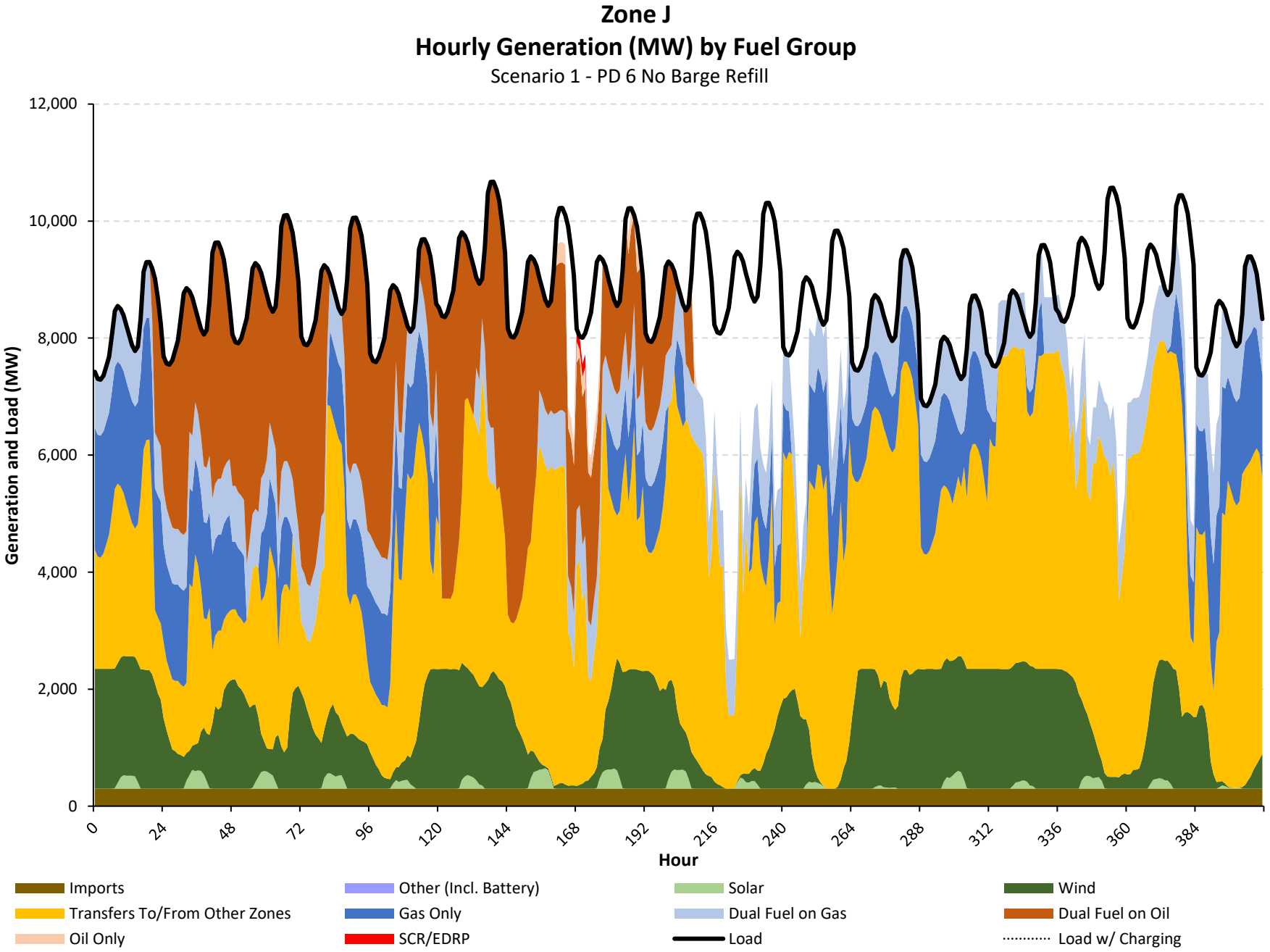
Hours with Loss of Load



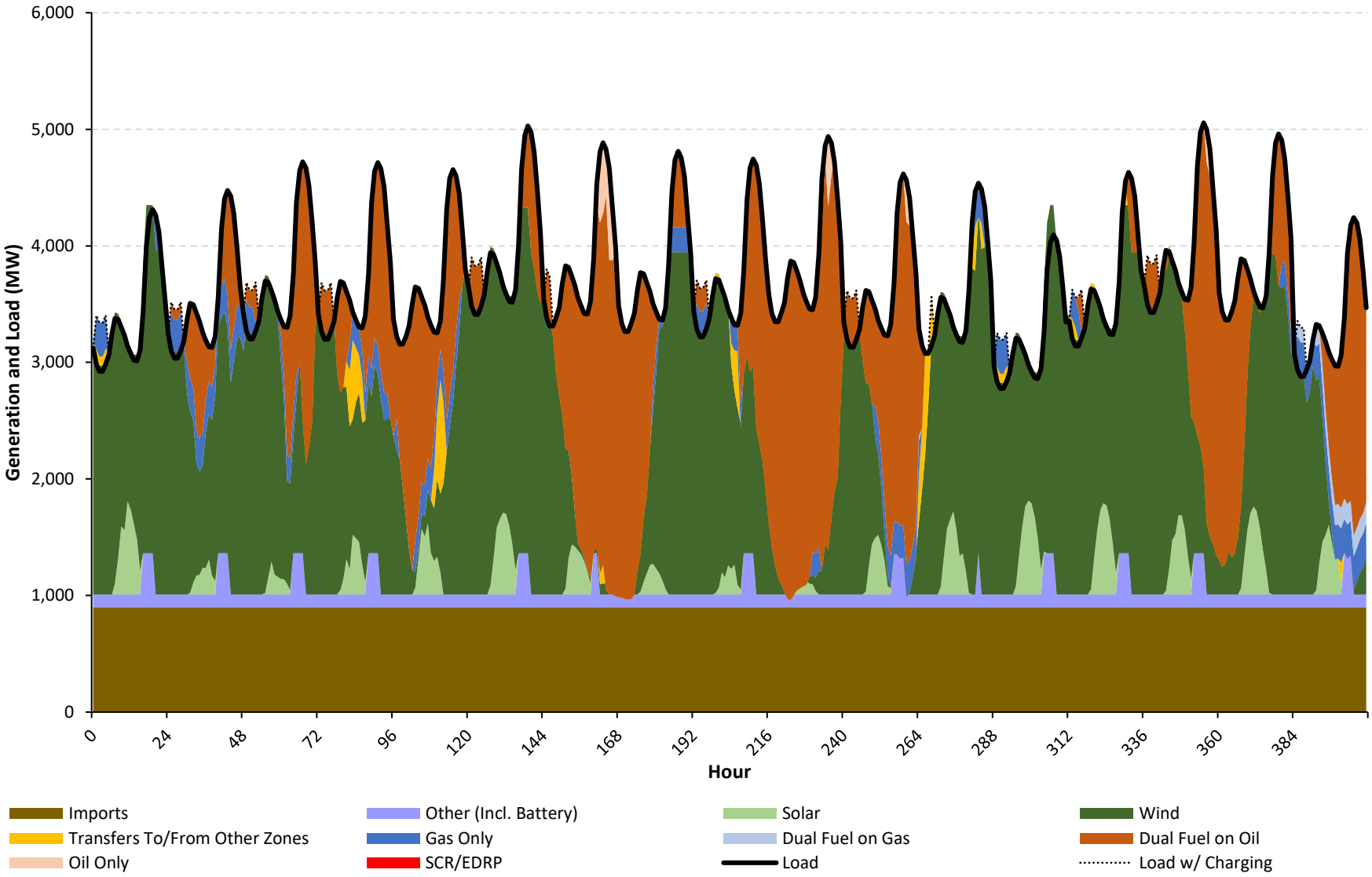
Total MWh of Lost Load

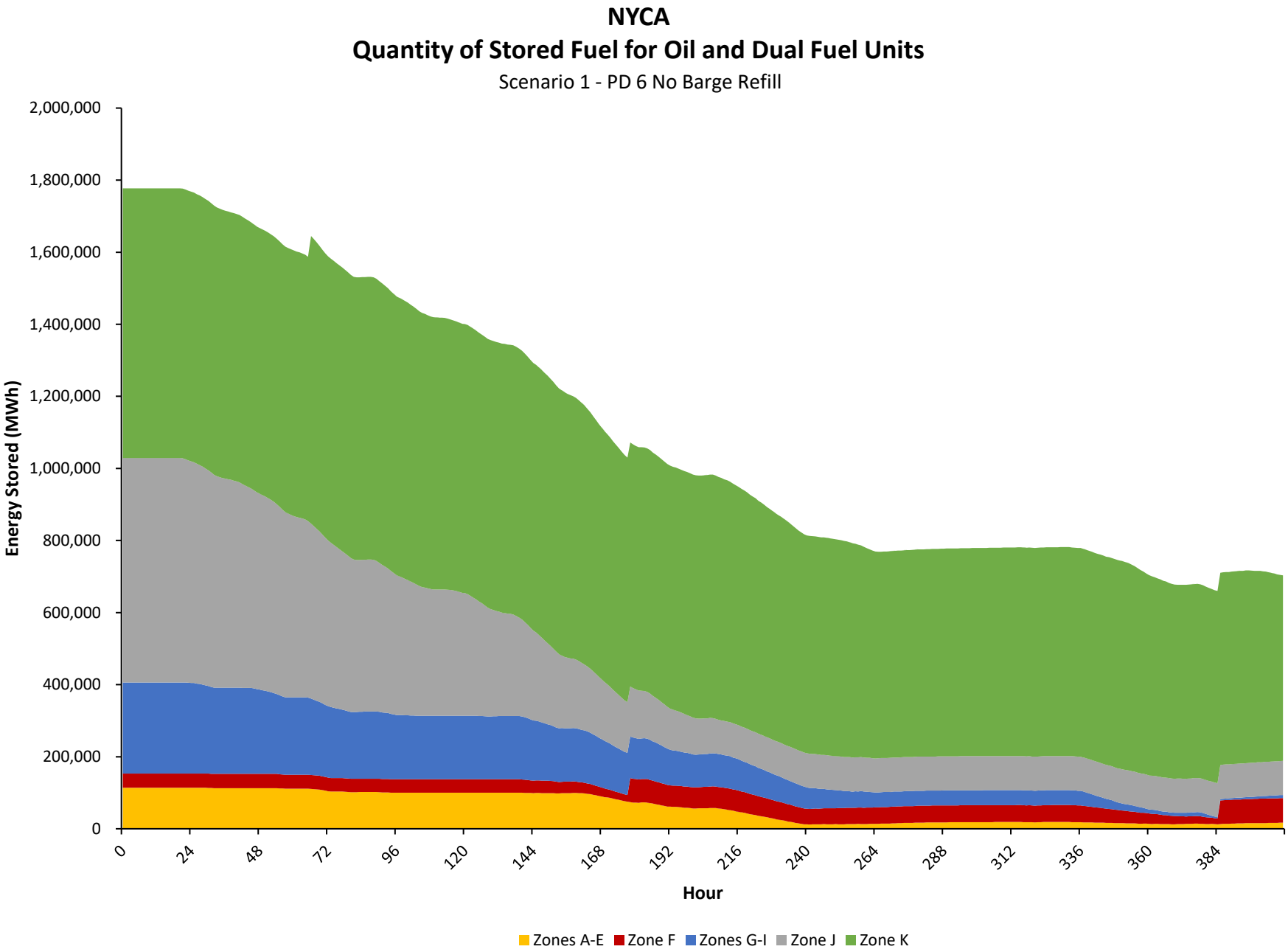


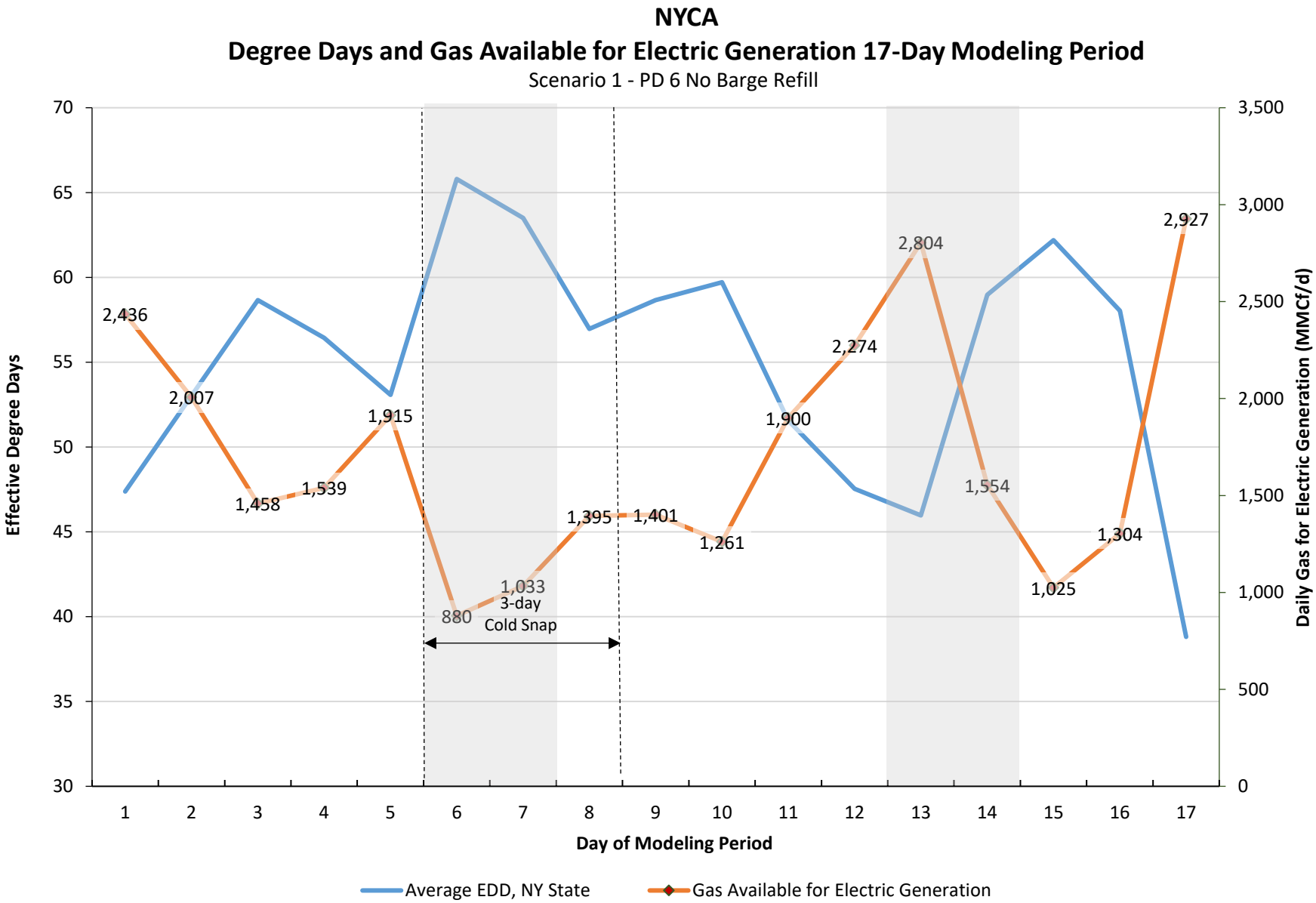

NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 1 - PD 6 No Barge Refill
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 1 - PD 6 No Barge Refill
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

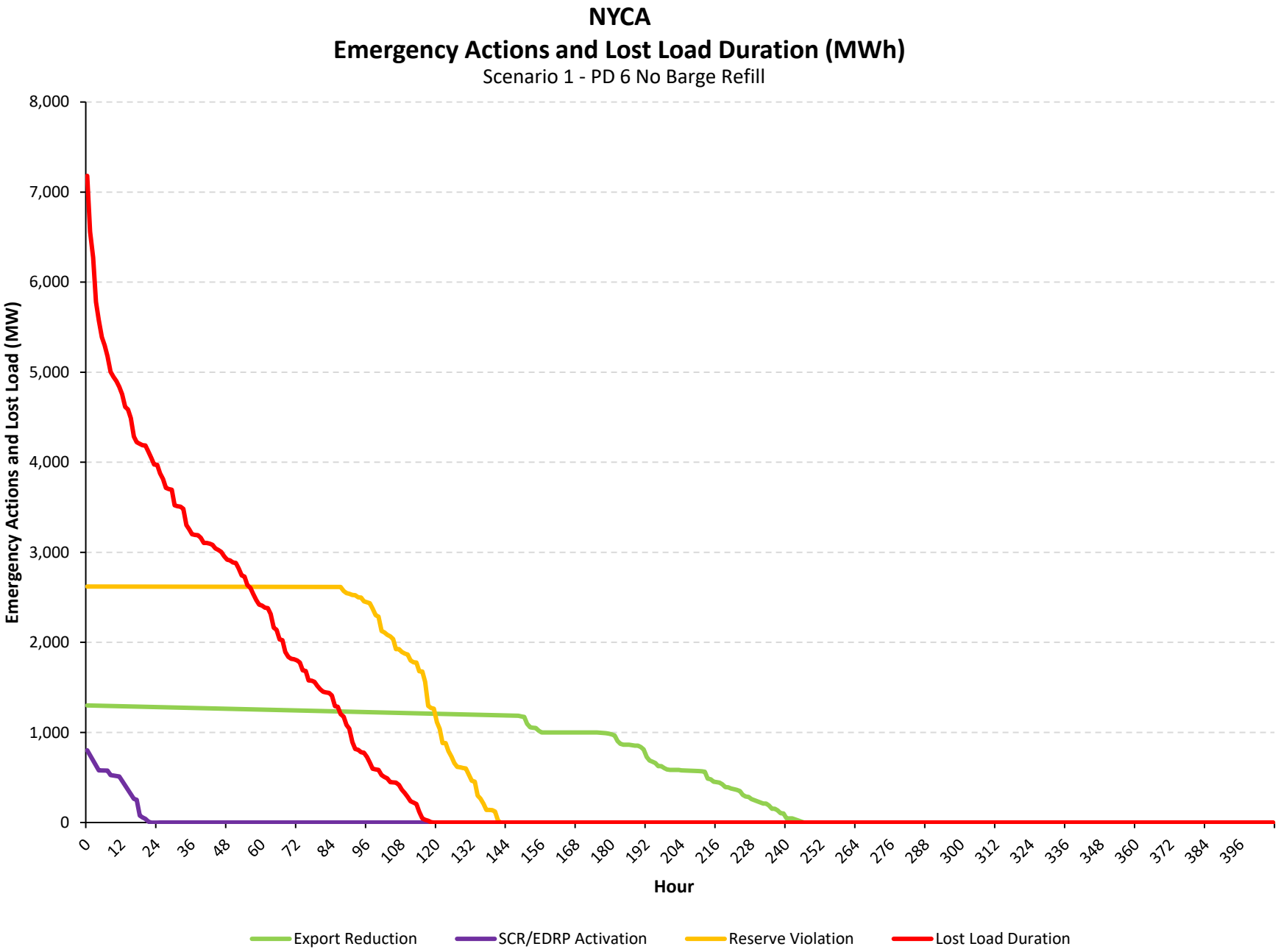
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 1 - PD 6 No Barge Refill

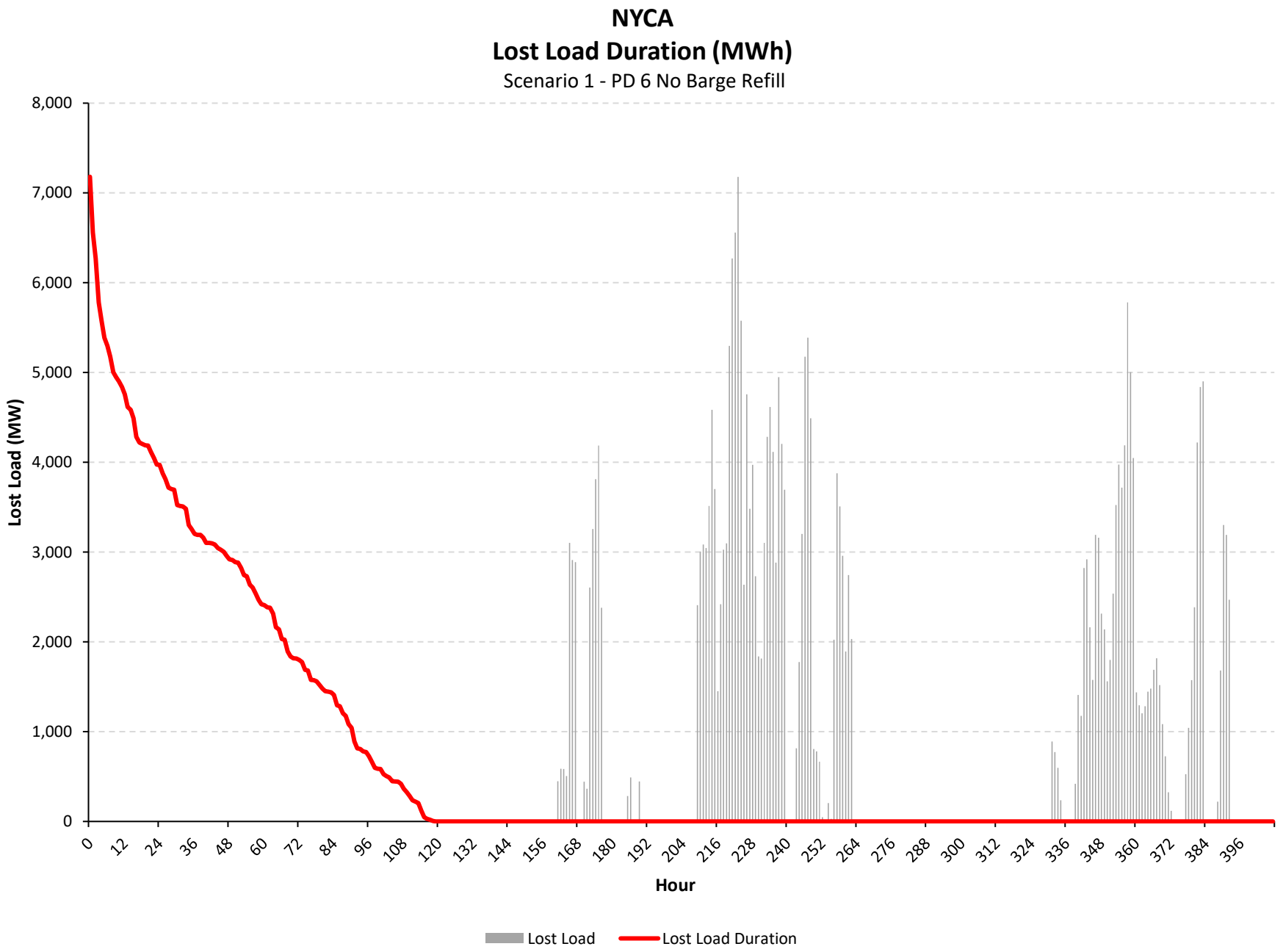



NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 1 - PD 6 No Barge Refill
Energy Stored (MWh)
2,000,000
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Zones A-E
Zone F
Zones G-I
Zone J
Zone K



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 1 - PD 6 No Barge Refill
Emergency Actions and Lost Load (MW)
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 1 - PD 6 No Barge Refill
Lost Load (MW)
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

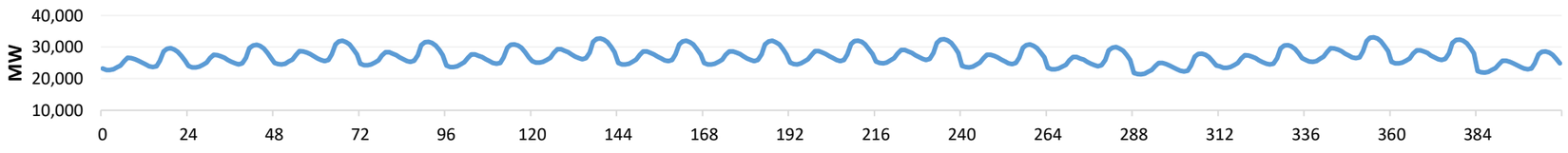
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 1 - PD 7 No Refill (Winter 2030/2031)

Hourly Results Summary

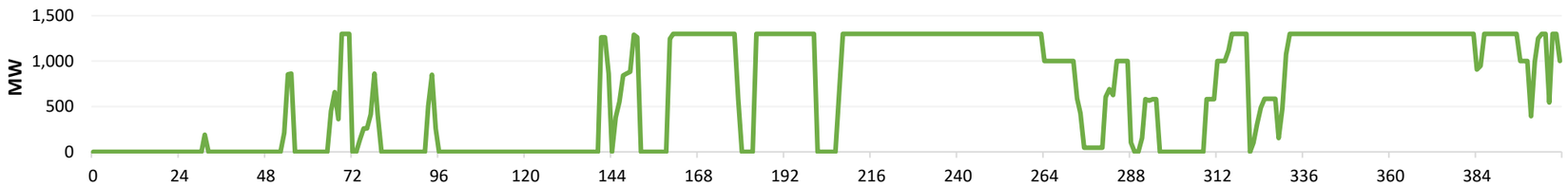
Case Name: Scenario 1 - PD 7 No Refill

Load During Modeling Period



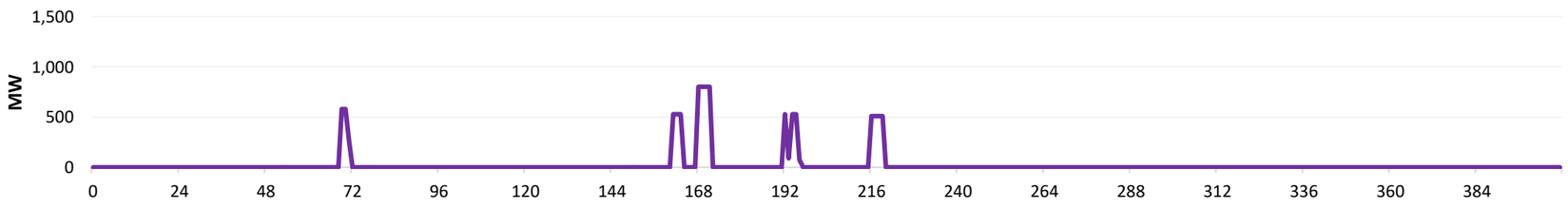
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	No Refill
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



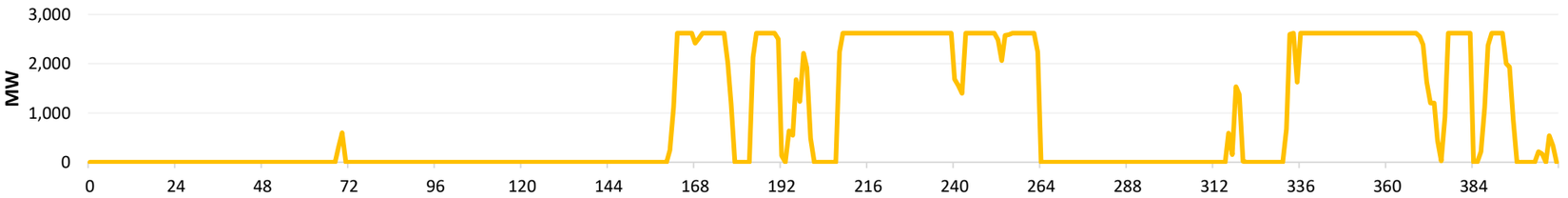
Export Reductions	
Total Hrs.	251
Total MWh	272,572
Avg. MW	668.1

SCR/EDRP Deployed During Modeling Period



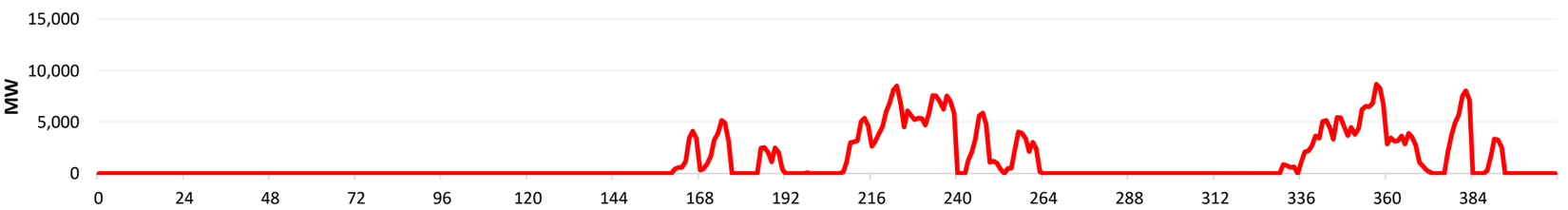
SCR Deployment	
Total Hrs.	19
Total MWh	9,979
Avg. MW	24.5

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	163
Total MWh	359,527
Avg. MW	881.2
First Hour with Viol.	69

Loss of Load During Modeling Period



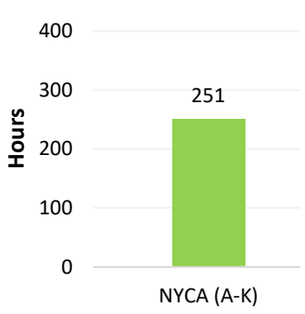
Loss of Load	
Total Hrs.	131
Total MWh	466,993
Avg. MW	1,144.6
First Hour with Losses	161

Full Period Results Summary

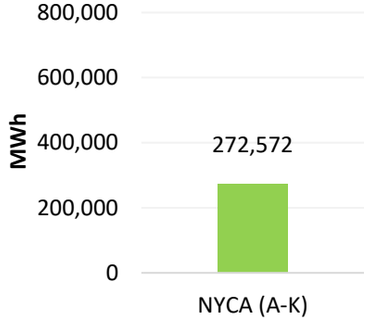
Case Name: Scenario 1 - PD 7 No Refill

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	No Refill
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

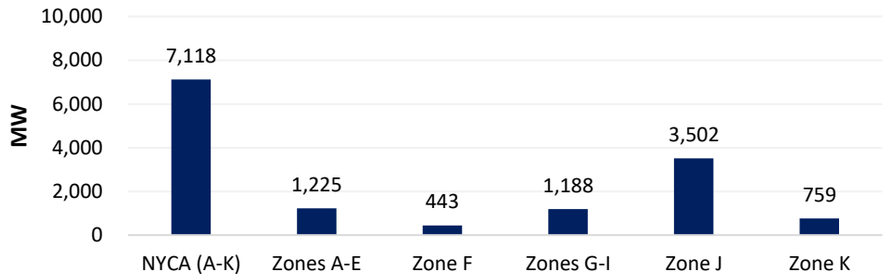
Hours Exports Reduced



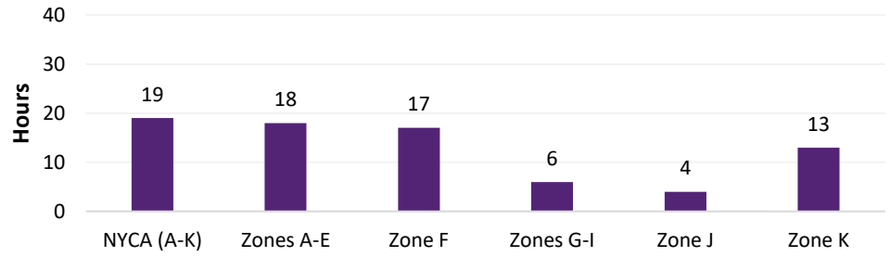
Total MWh of Exports Reduced



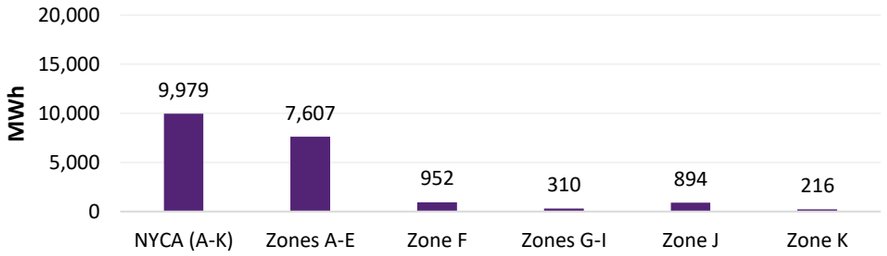
Average Capacity Not Available Due to Exhausted Fuel Inventory



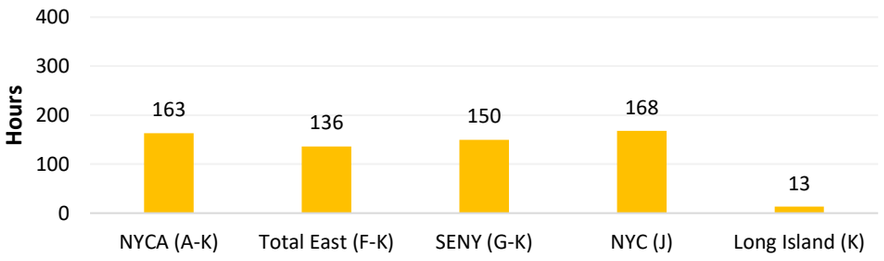
Hours SCR/EDRP Deployed



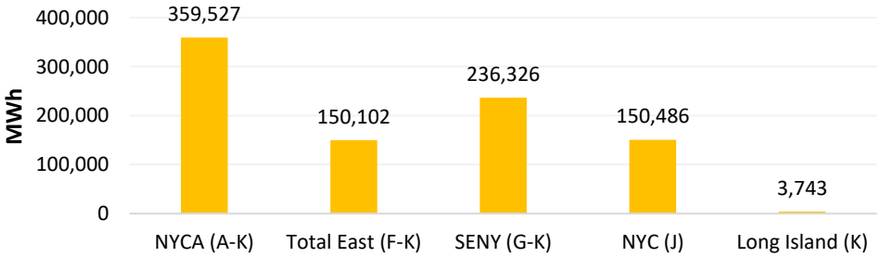
Total MWh SCR/EDRP Deployed



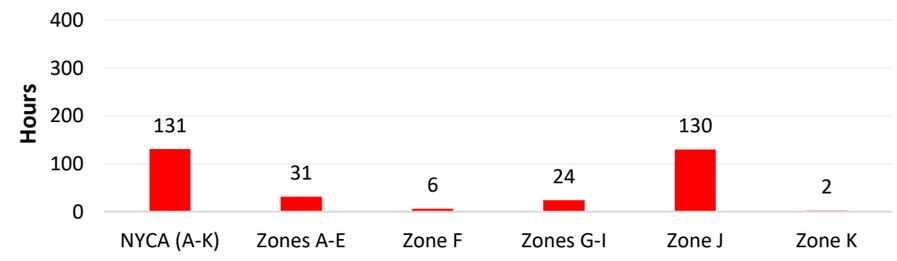
Hours with Reserve Violations



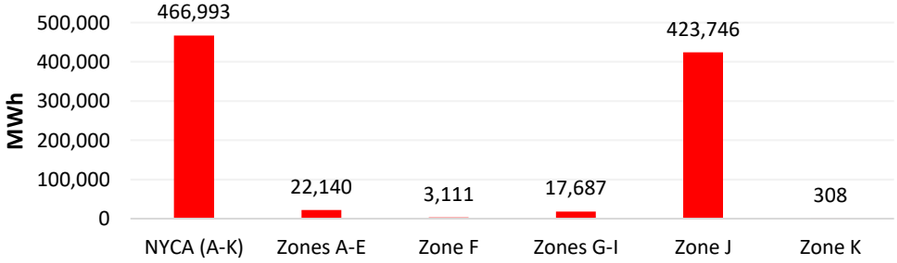
Total MWh of Reserve Violations

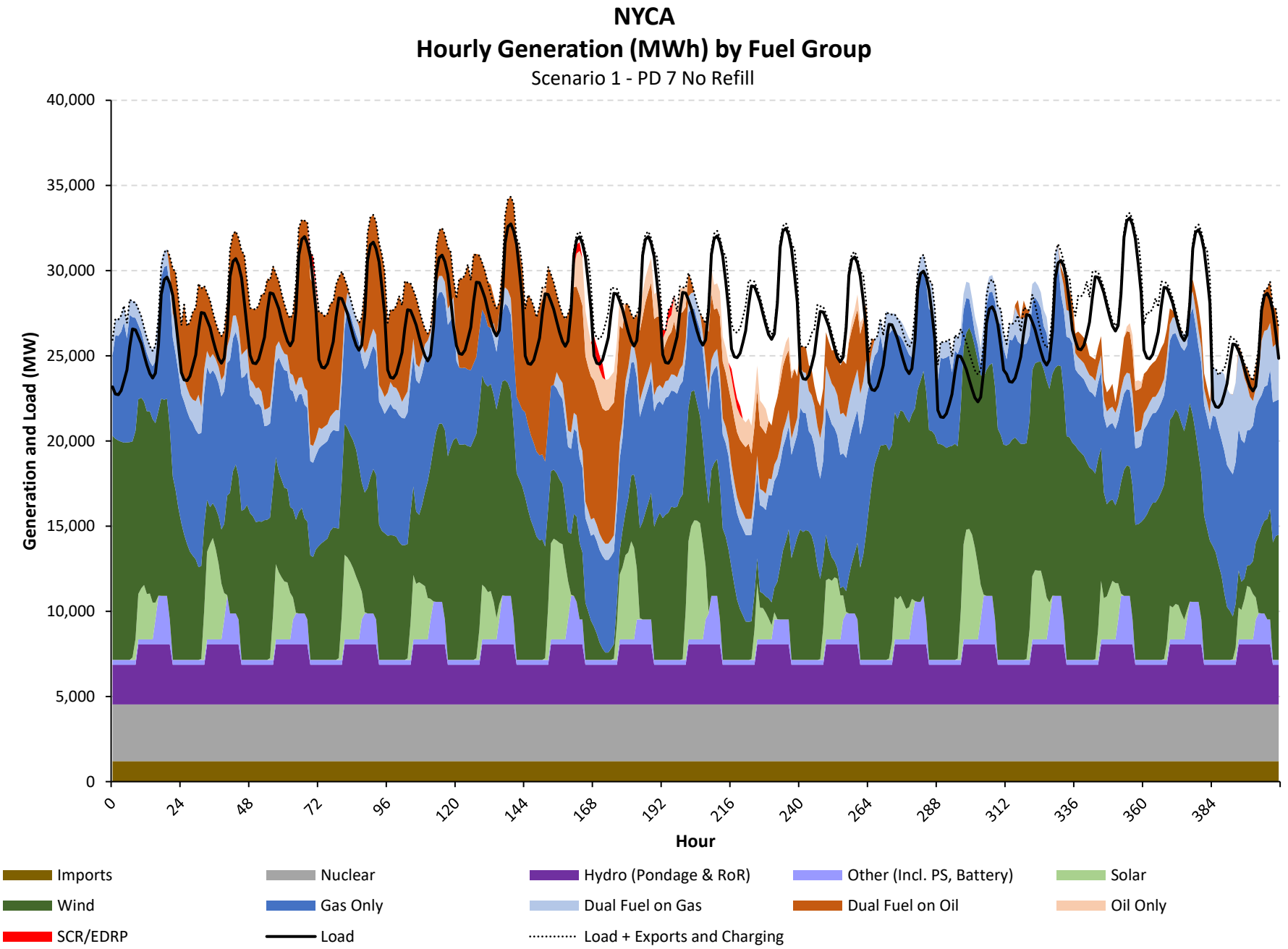


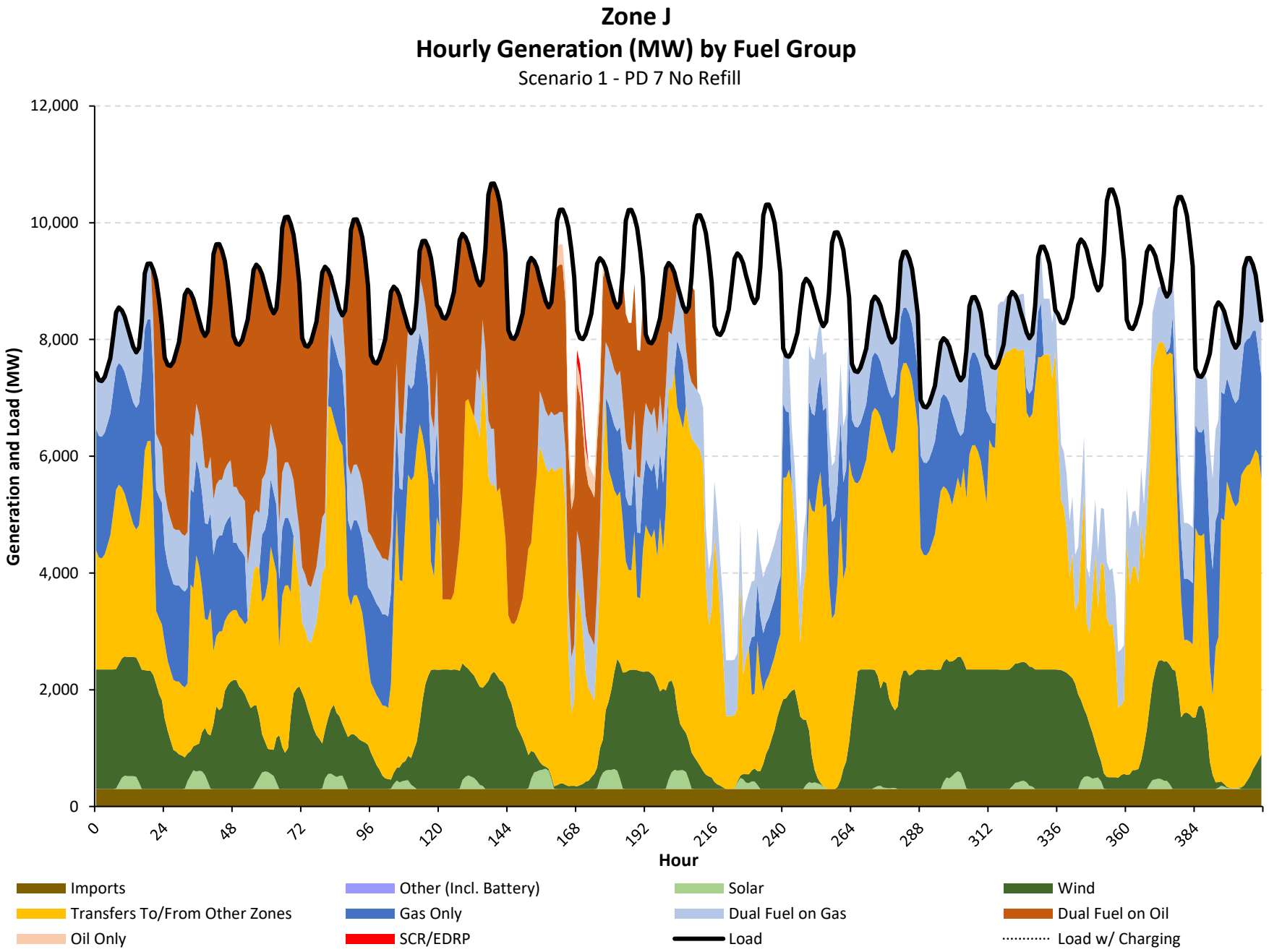
Hours with Loss of Load



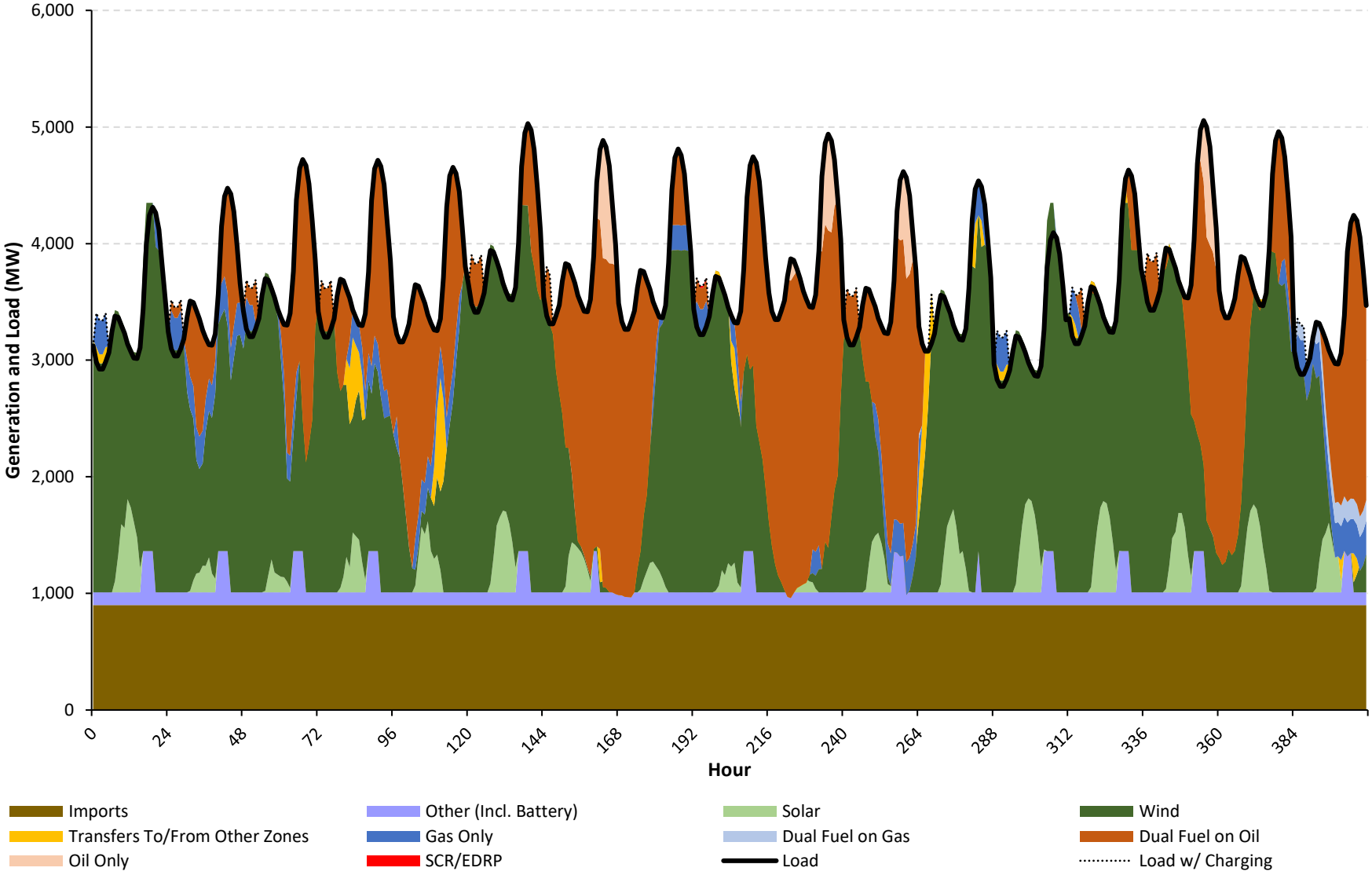
Total MWh of Lost Load



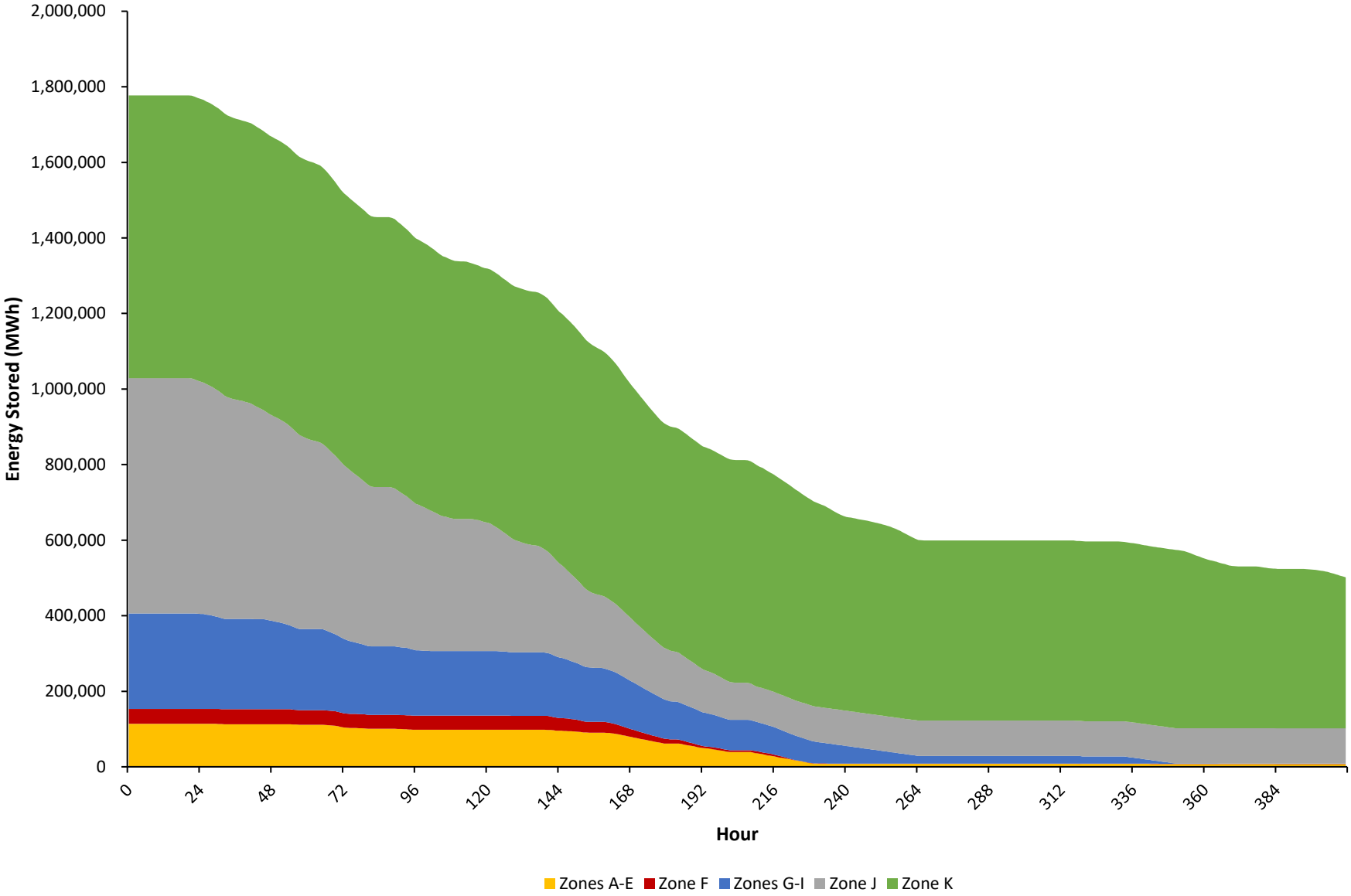

NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 1 - PD 7 No Refill
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

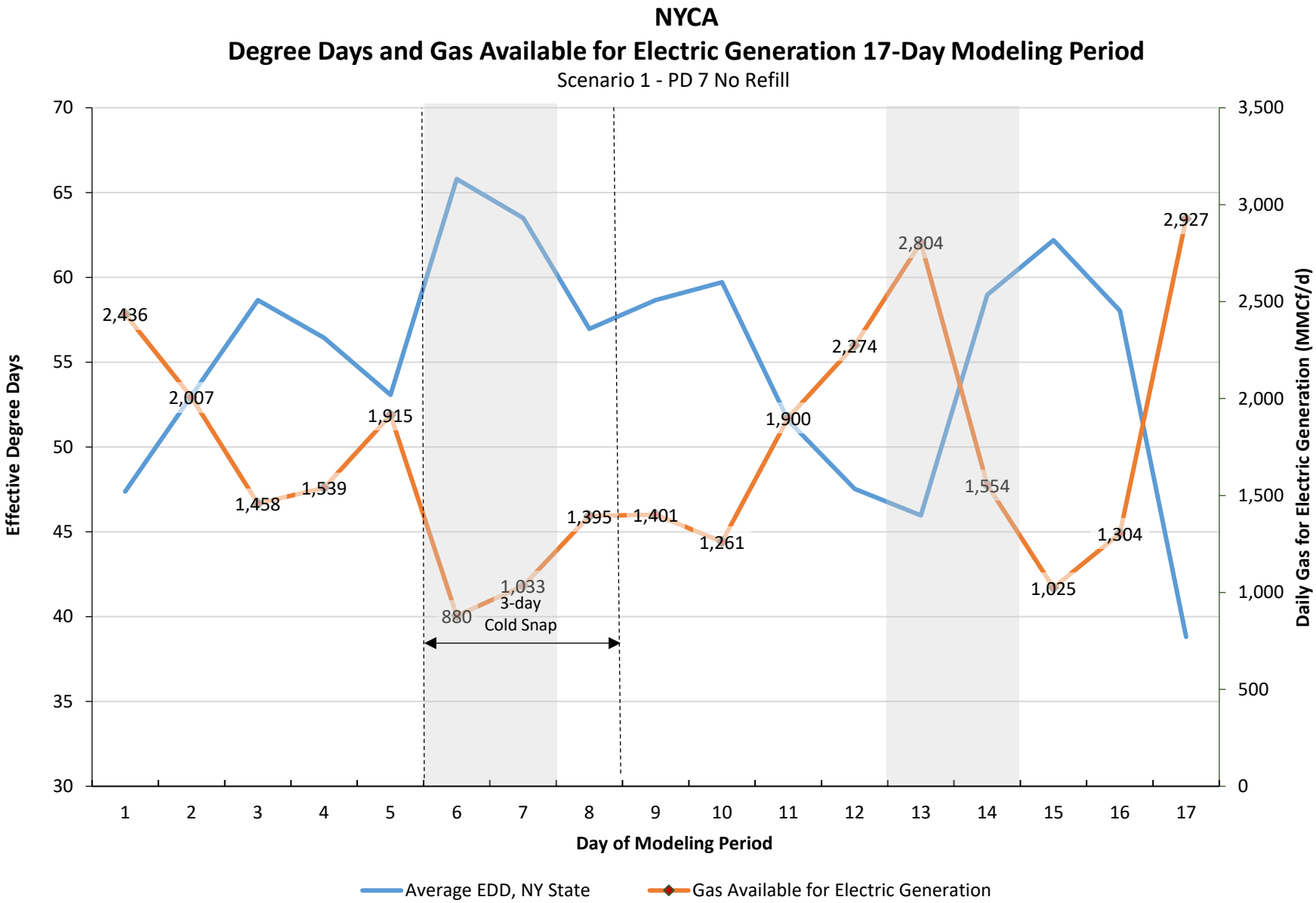

Zone J
Hourly Generation (MW) by Fuel Group
Scenario 1 - PD 7 No Refill
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

Zone K
Hourly Generation (MW) by Fuel Group
Scenario 1 - PD 7 No Refill

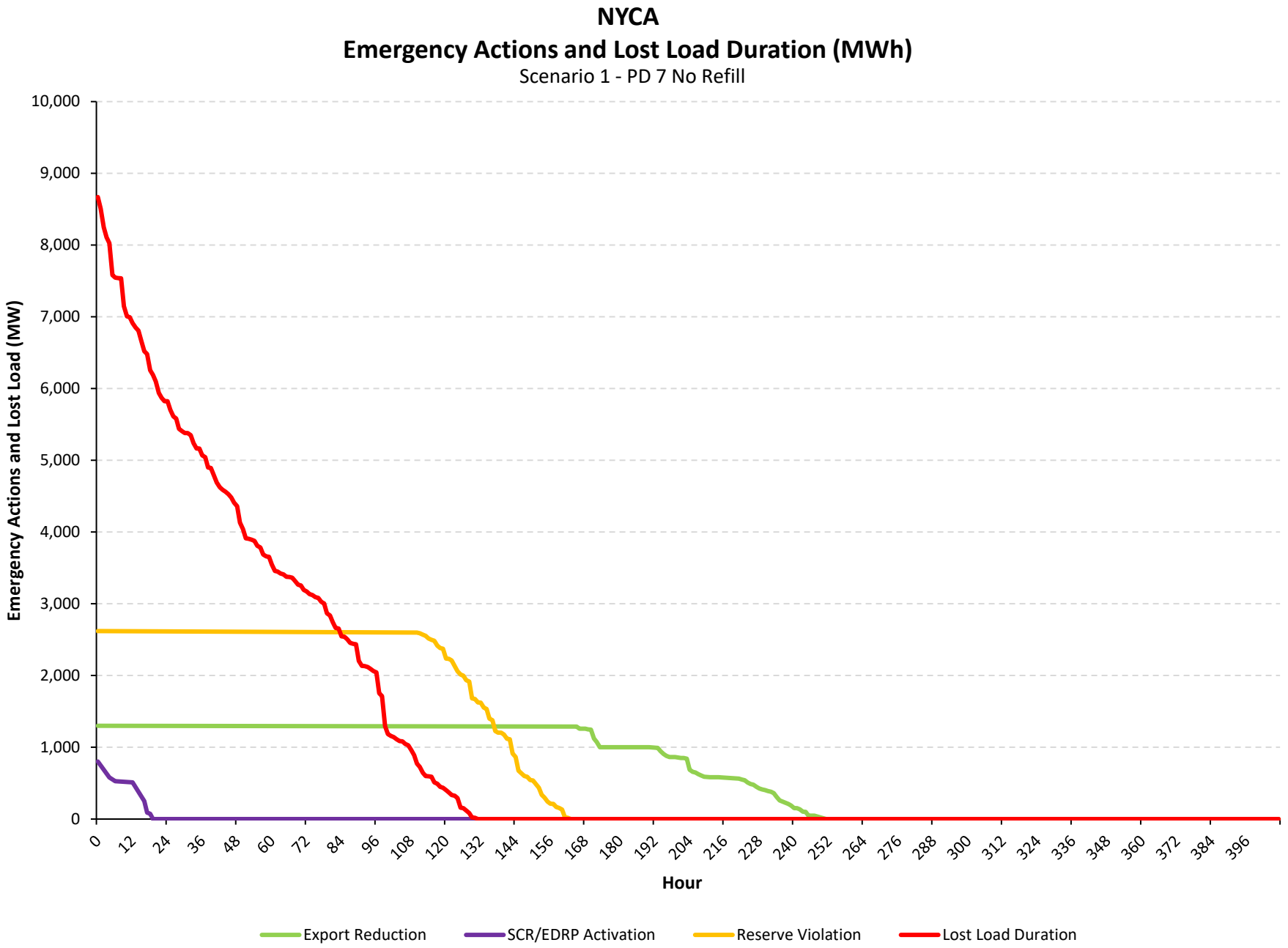


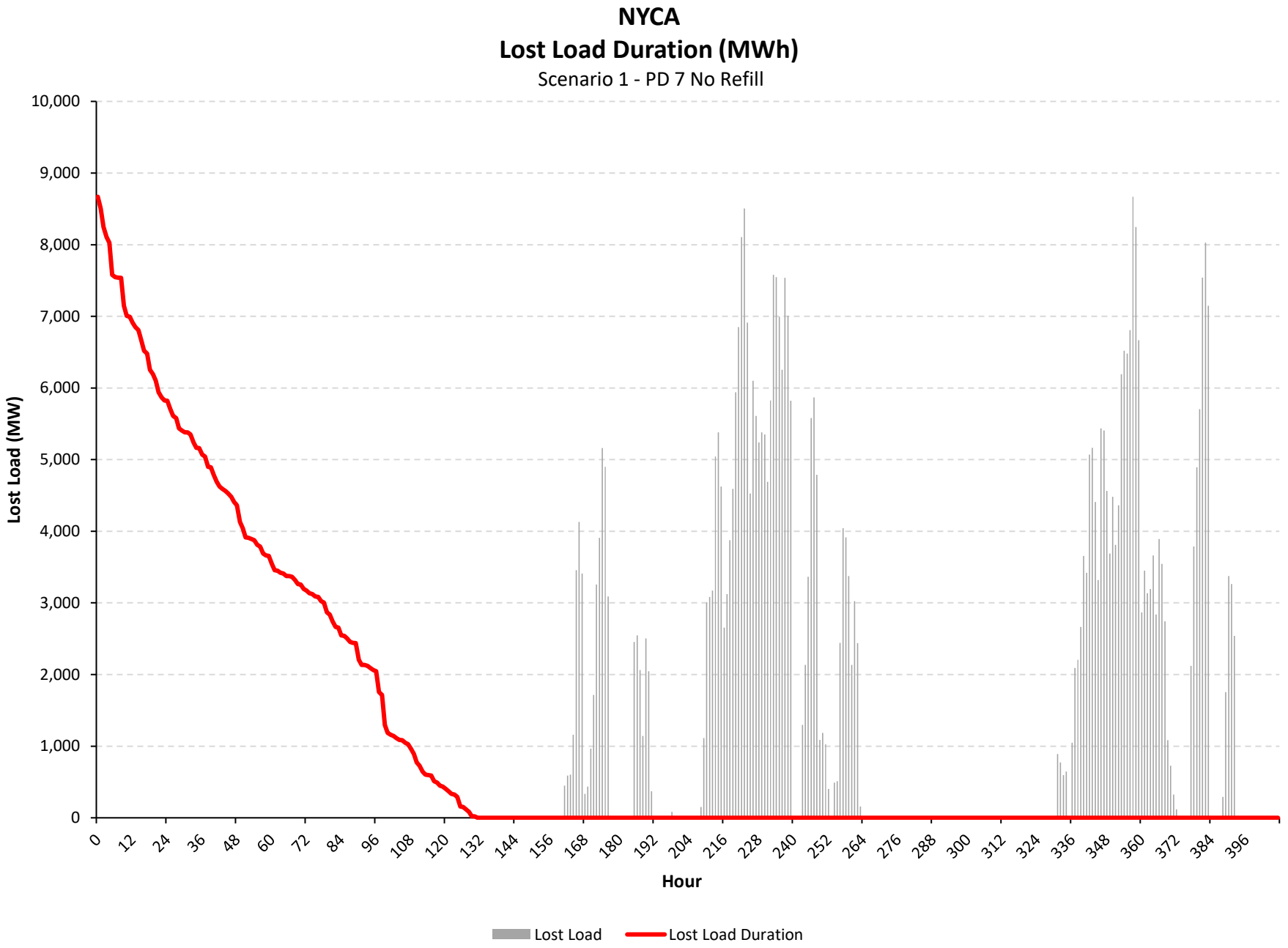
NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 1 - PD 7 No Refill





Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 1 - PD 7 No Refill
Emergency Actions and Lost Load (MW)
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 1 - PD 7 No Refill
Lost Load (MW)
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

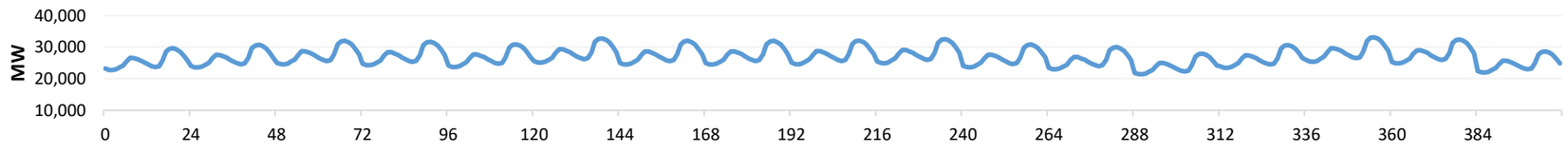
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 1 - PD 8 Non-Firm Gas Unavailable (F-K) (Winter 2030/2031)

Hourly Results Summary

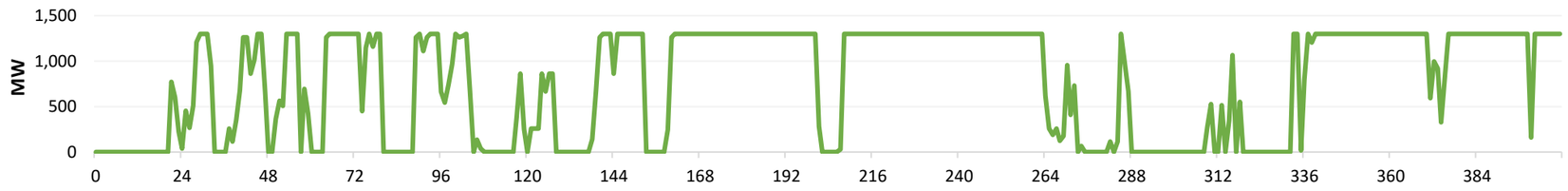
Case Name: Scenario 1 - PD 8 Non-Firm Gas Unavailable (F-K)

Load During Modeling Period



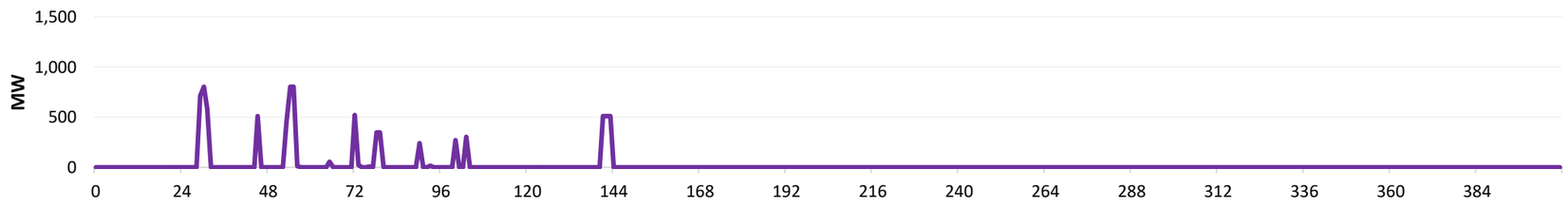
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	F-K
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



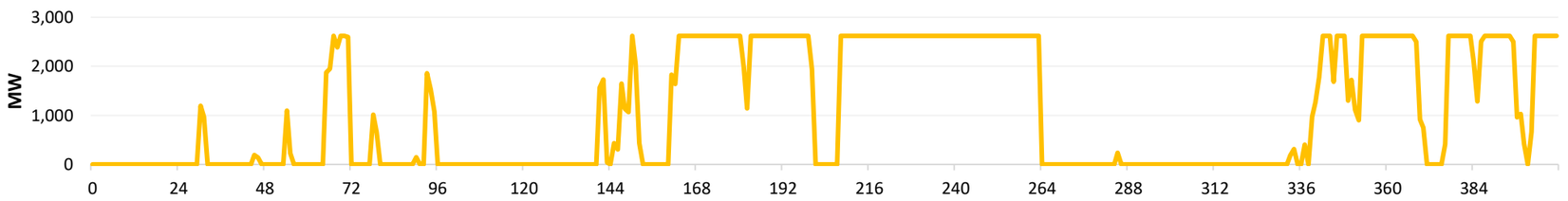
Export Reductions	
Total Hrs.	287
Total MWh	314,356
Avg. MW	770.5

SCR/EDRP Deployed During Modeling Period



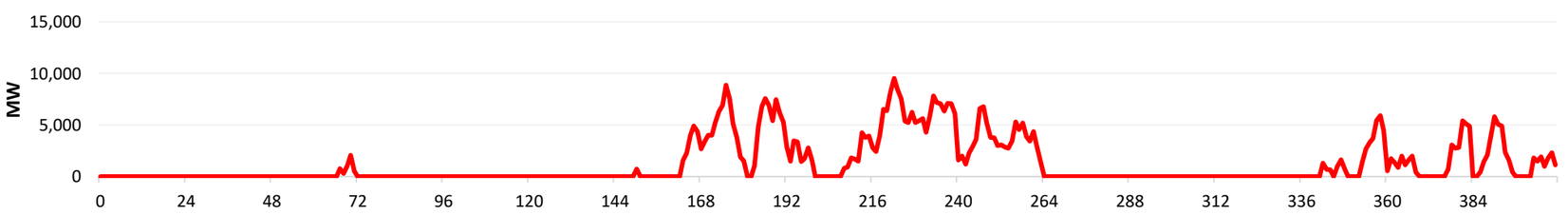
SCR Deployment	
Total Hrs.	21
Total MWh	8,342
Avg. MW	20.4

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	193
Total MWh	427,290
Avg. MW	1,047.3
First Hour with Viol.	30

Loss of Load During Modeling Period

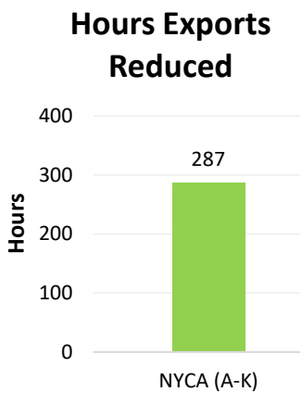


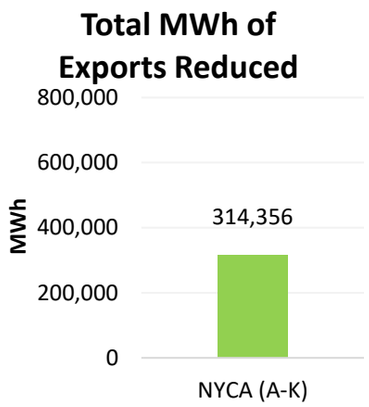
Loss of Load	
Total Hrs.	143
Total MWh	515,447
Avg. MW	1,263.4
First Hour with Losses	67

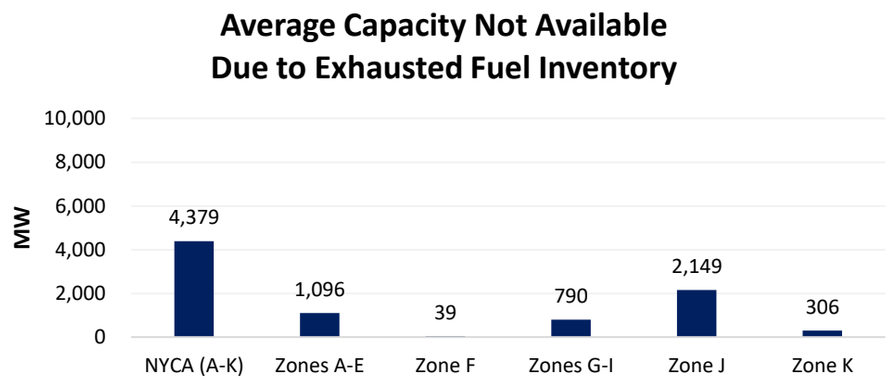
Full Period Results Summary

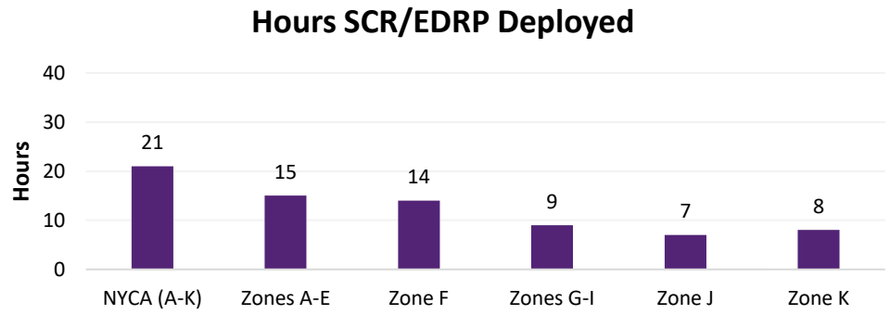
Case Name: Scenario 1 - PD 8 Non-Firm Gas Unavailable (F-K)

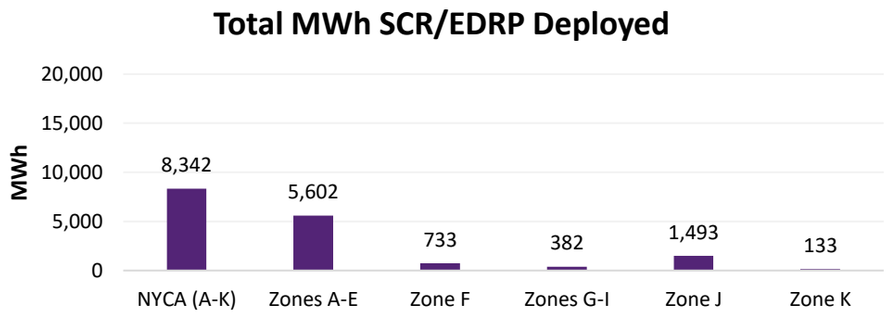
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	F-K
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

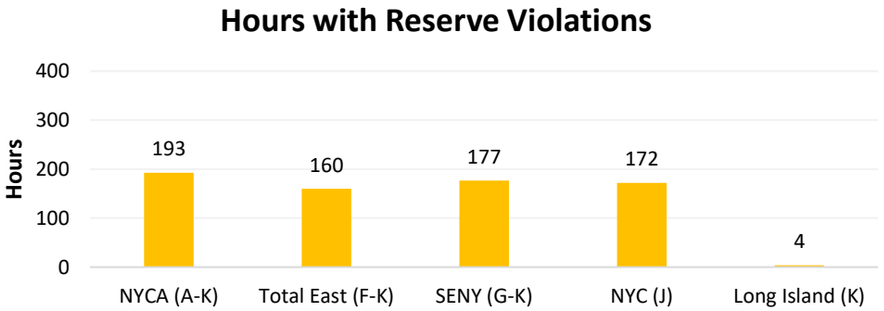


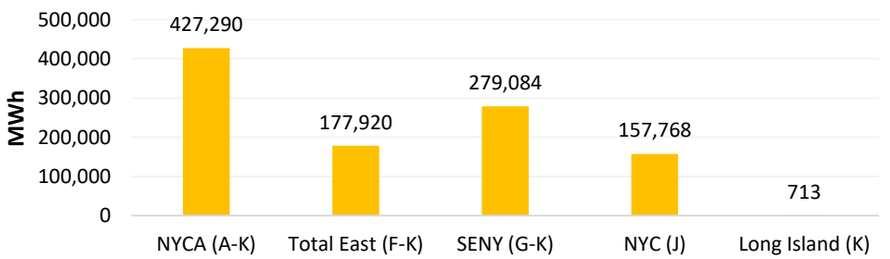


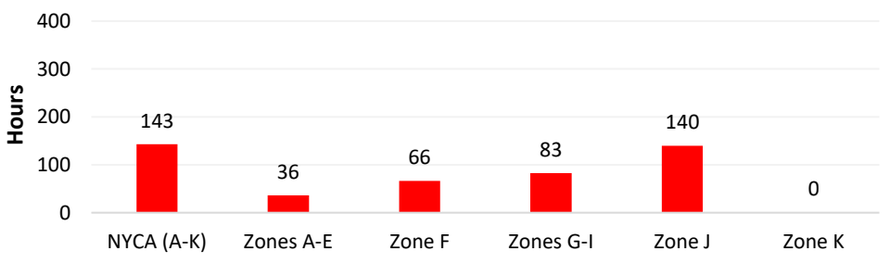


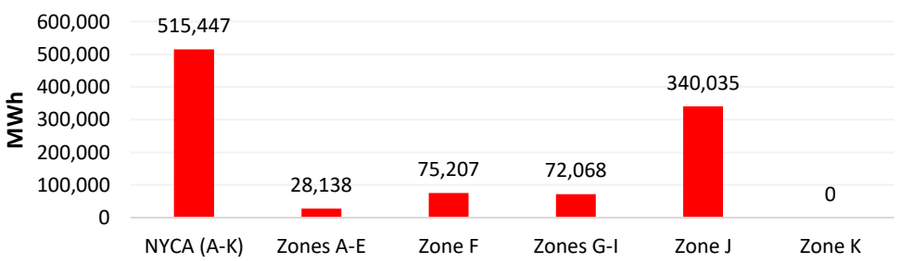


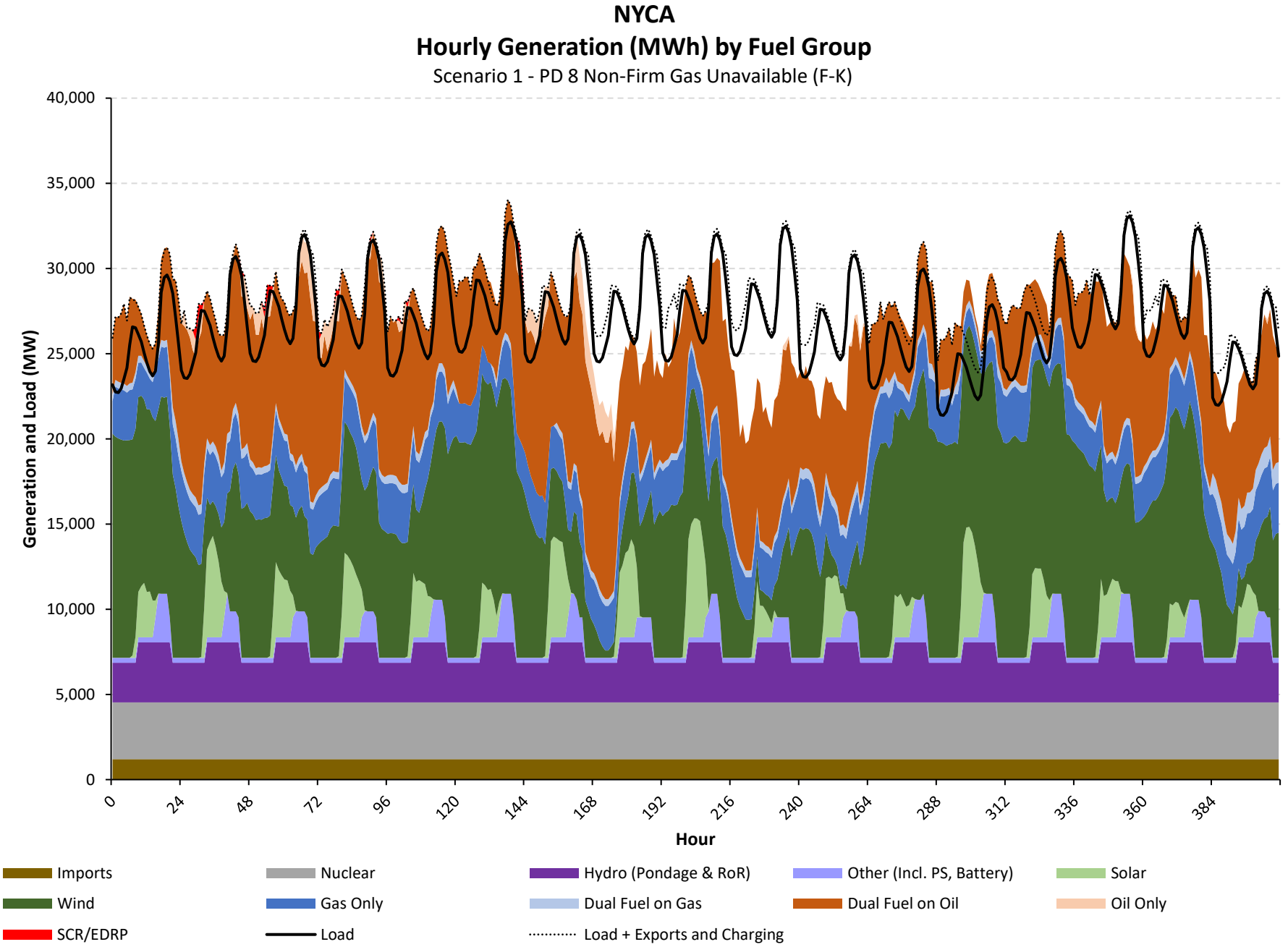


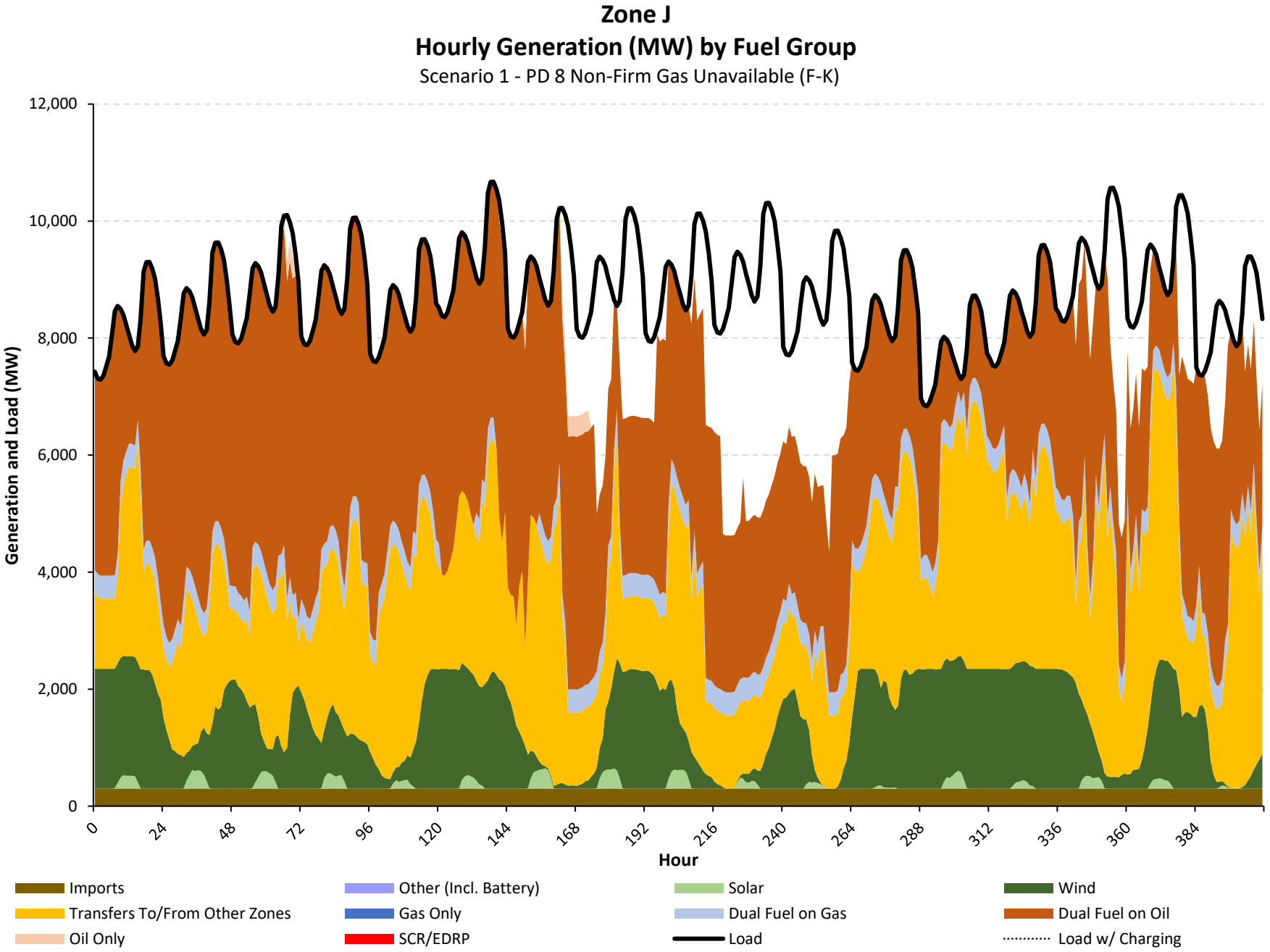




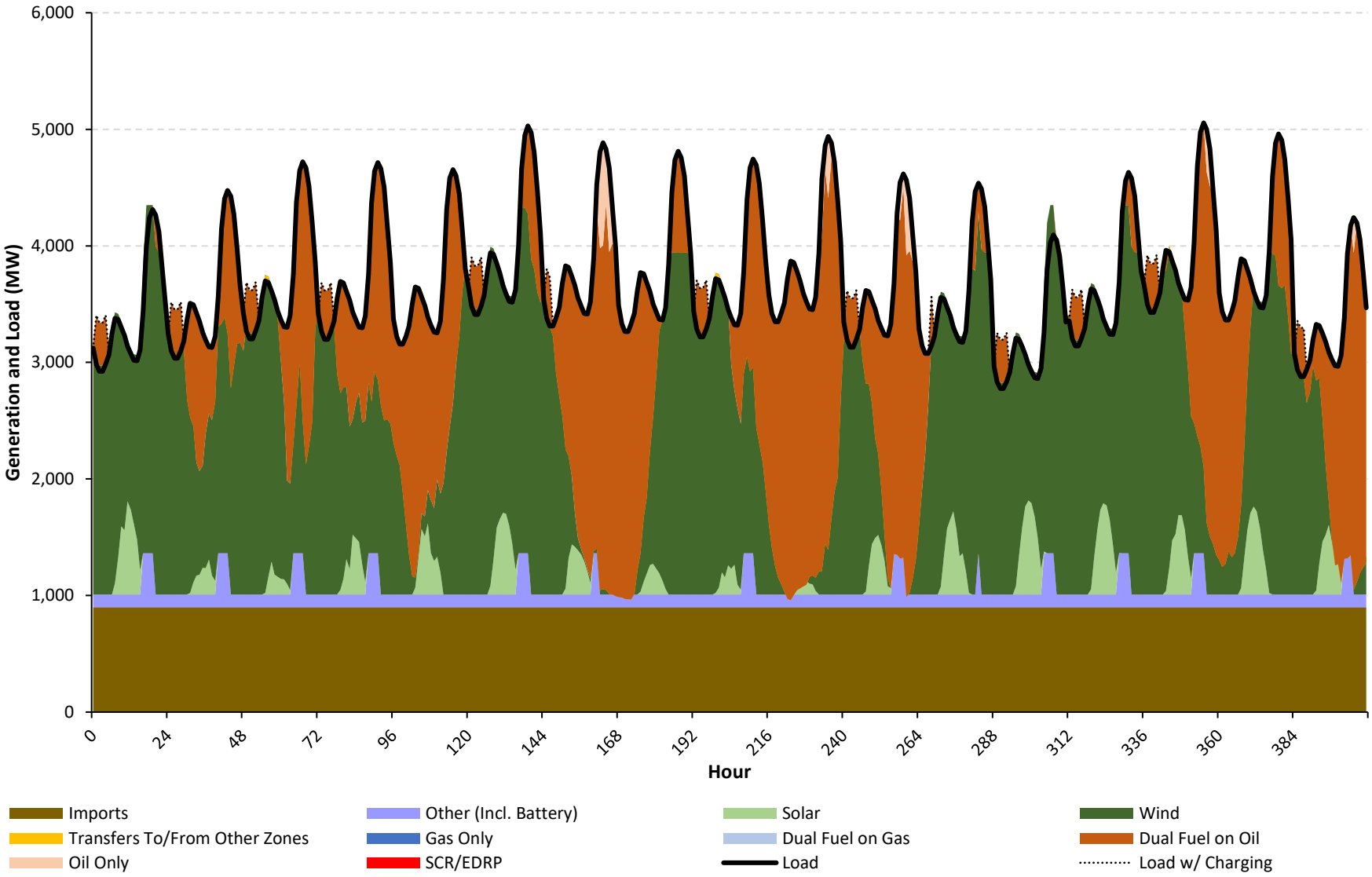





NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 1 - PD 8 Non-Firm Gas Unavailable (F-K)
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 1 - PD 8 Non-Firm Gas Unavailable (F-K)
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

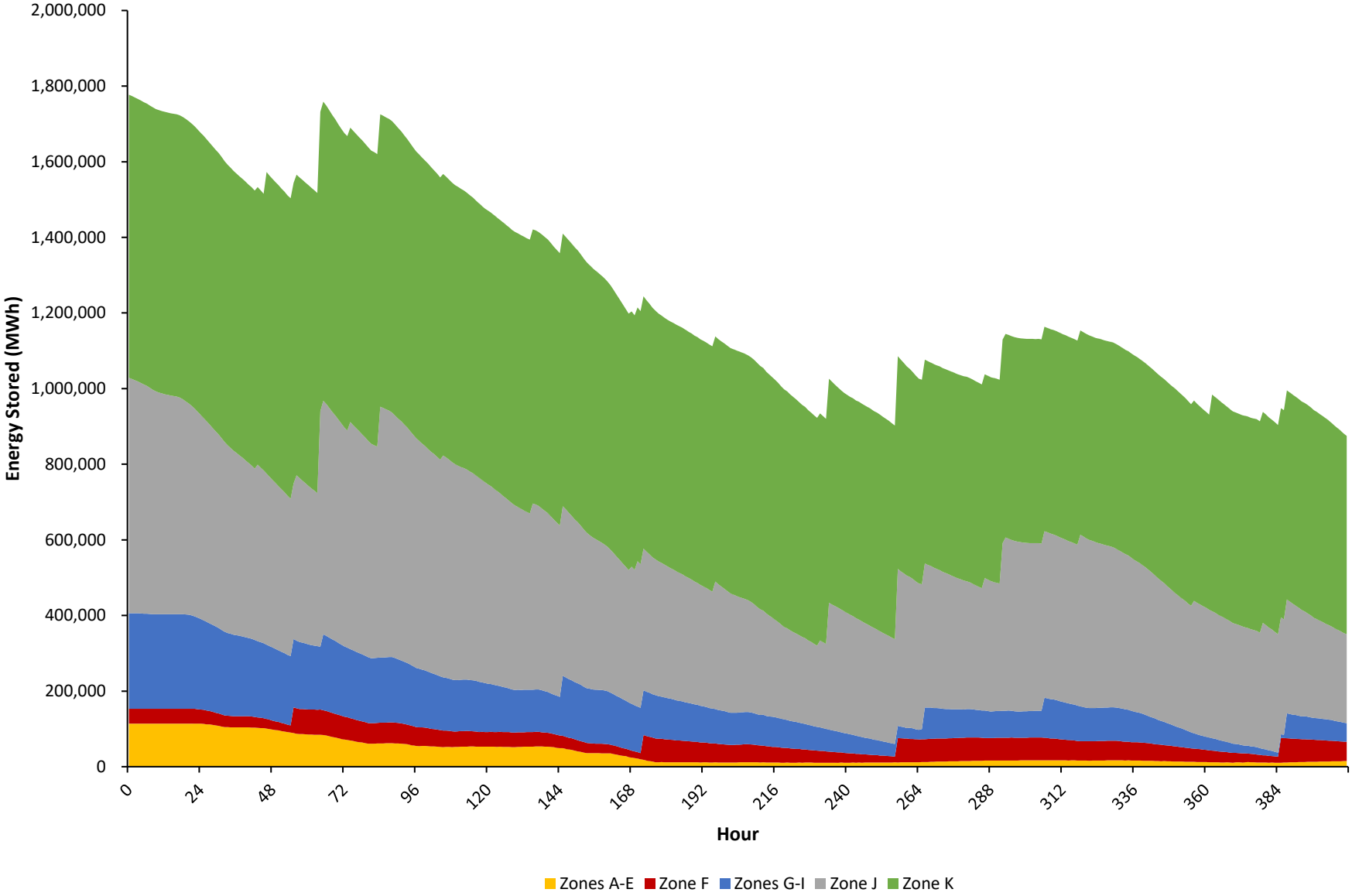
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 1 - PD 8 Non-Firm Gas Unavailable (F-K)



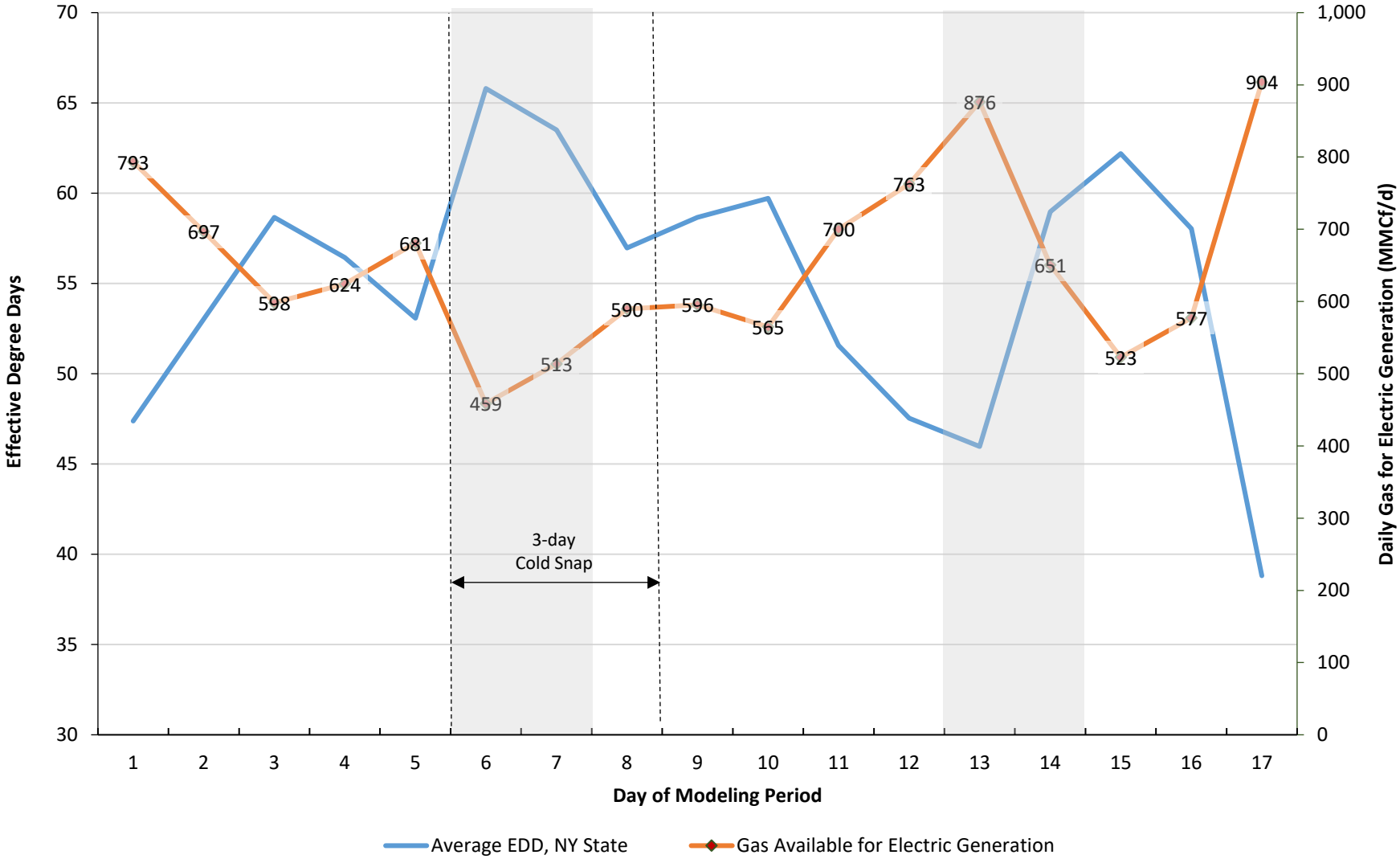
NYCA

Quantity of Stored Fuel for Oil and Dual Fuel Units

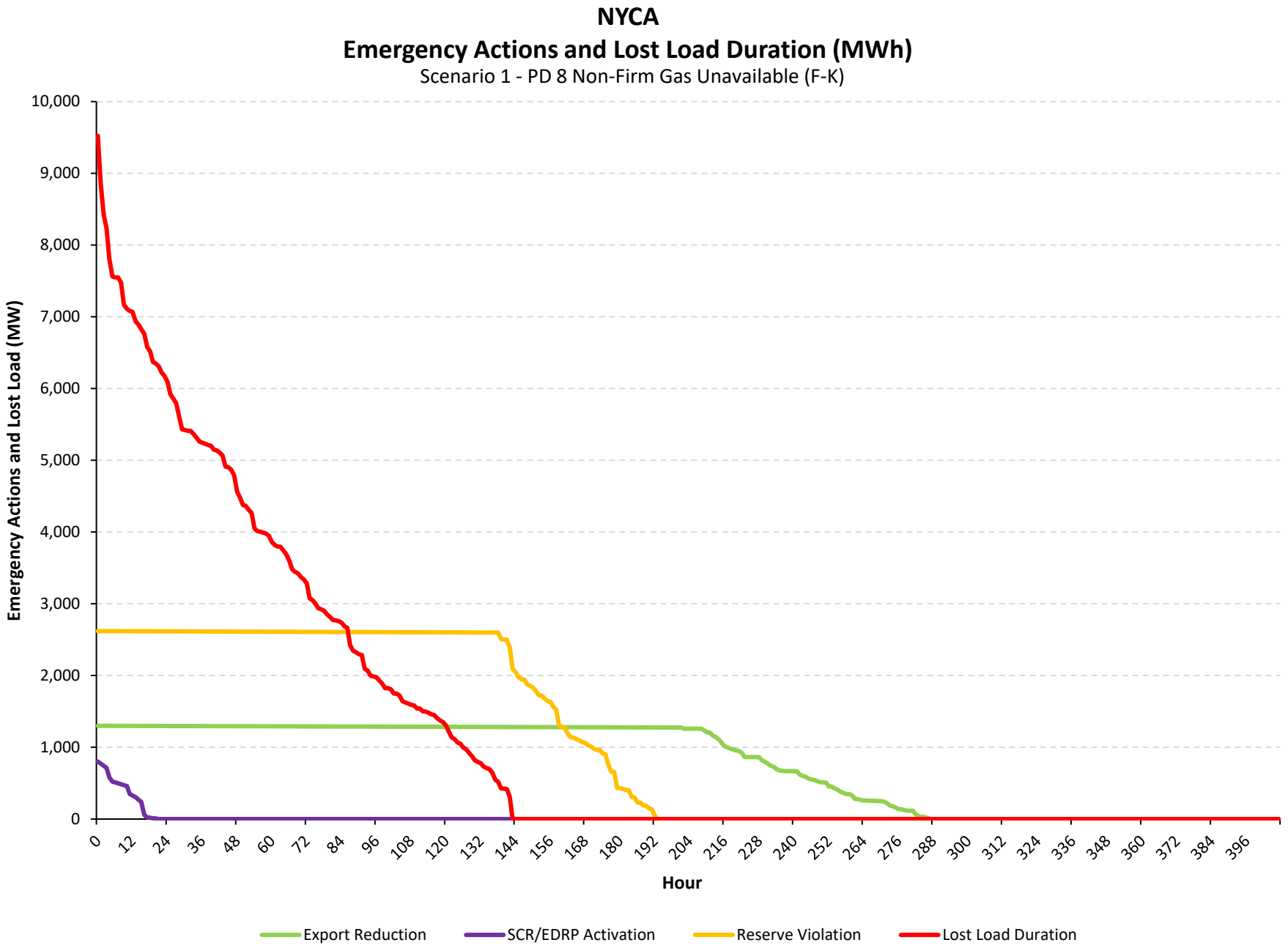
Scenario 1 - PD 8 Non-Firm Gas Unavailable (F-K)

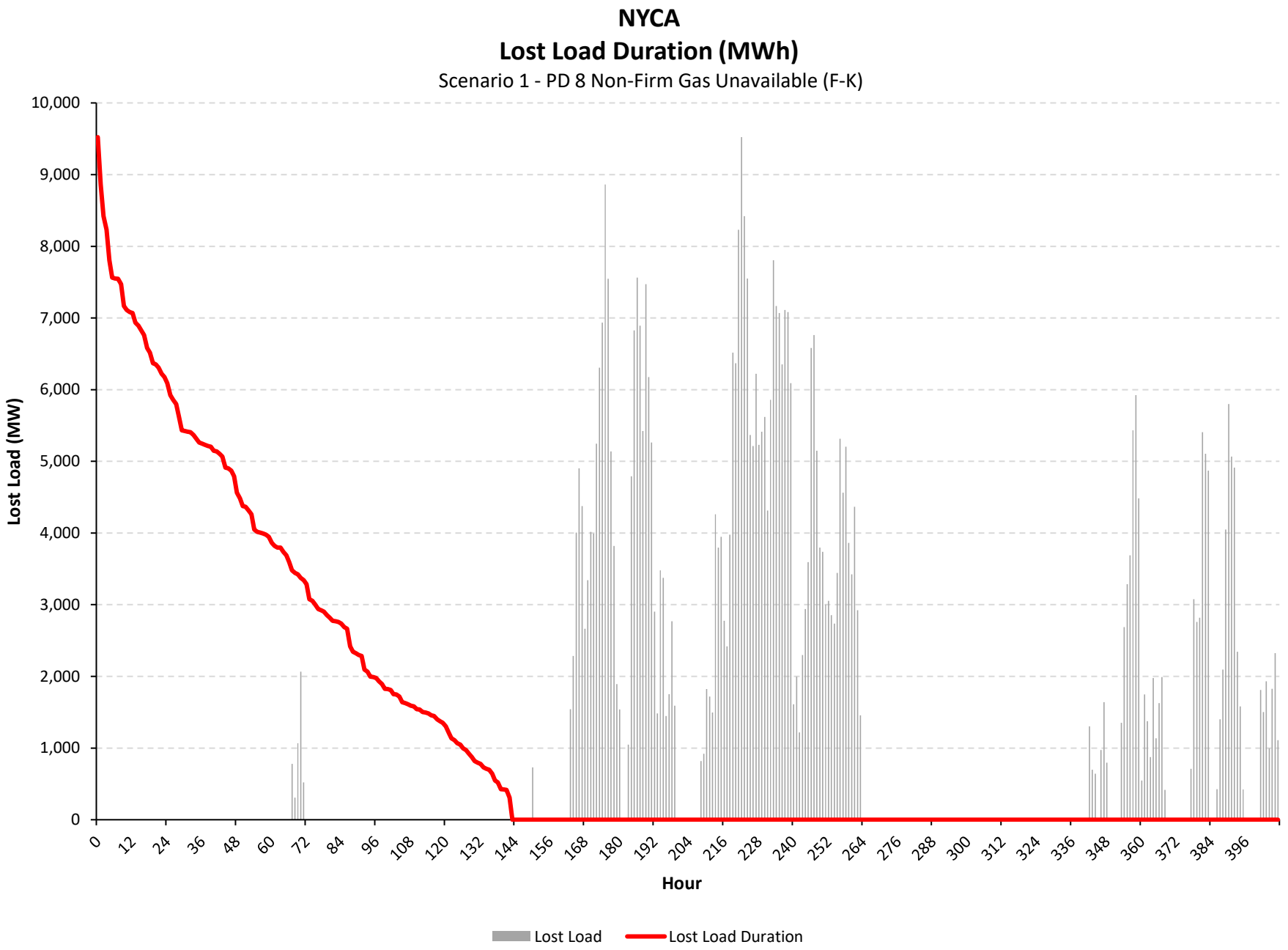


NYCA
Degree Days and Gas Available for Electric Generation 17-Day Modeling Period
Scenario 1 - PD 8 Non-Firm Gas Unavailable (F-K)



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 1 - PD 8 Non-Firm Gas Unavailable (F-K)
Emergency Actions and Lost Load (MW)
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 1 - PD 8 Non-Firm Gas Unavailable (F-K)
Lost Load (MW)
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

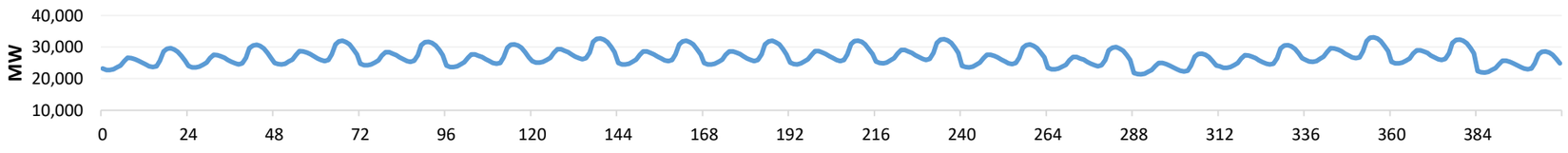
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 1 - PD 9 Non-Firm Gas Unavailable (NYCA) (Winter 2030/2031)

Hourly Results Summary

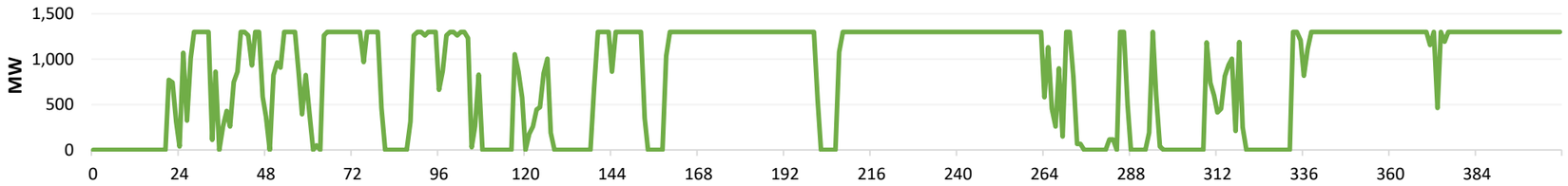
Case Name: Scenario 1 - PD 9 Non-Firm Gas Unavailable (NYCA)

Load During Modeling Period



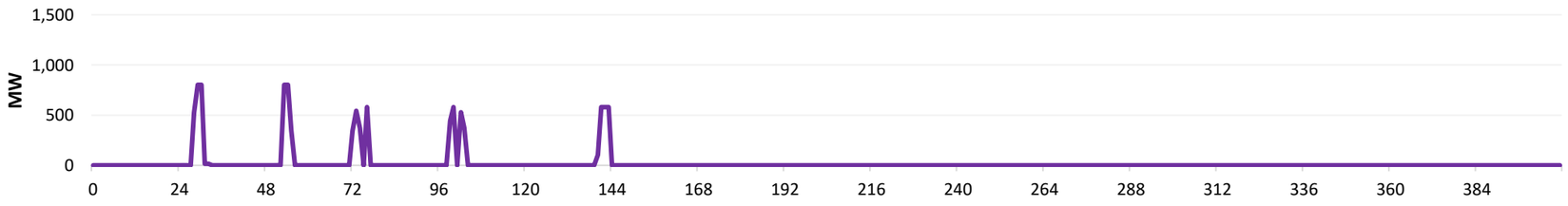
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	NYISO
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



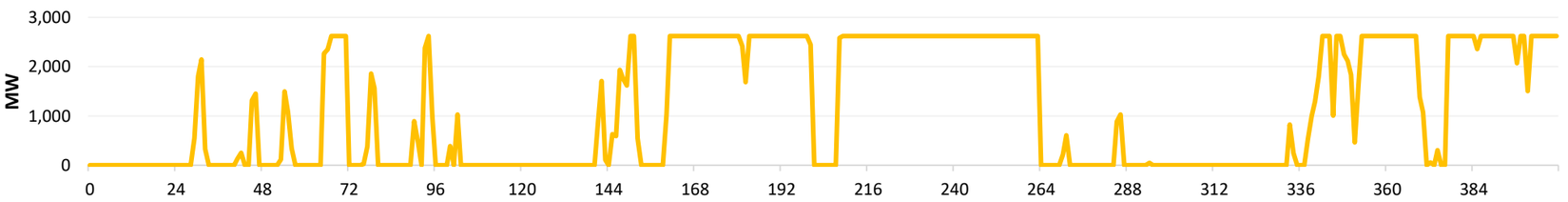
Export Reductions	
Total Hrs.	307
Total MWh	342,955
Avg. MW	840.6

SCR/EDRP Deployed During Modeling Period



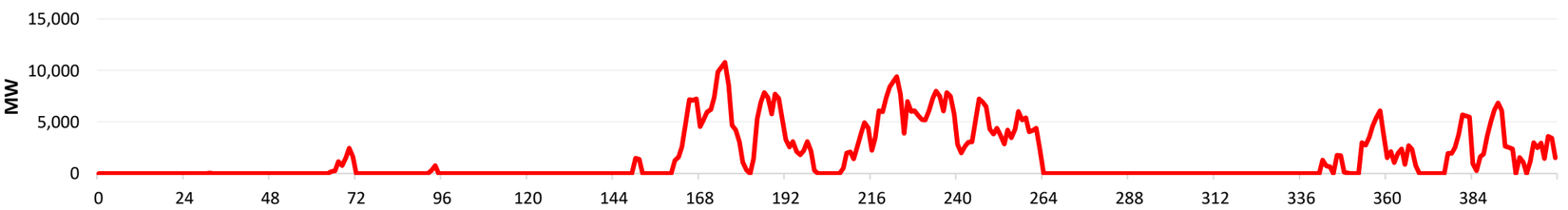
SCR Deployment	
Total Hrs.	20
Total MWh	9,711
Avg. MW	23.8

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	212
Total MWh	462,397
Avg. MW	1,133.3
First Hour with Viol.	29

Loss of Load During Modeling Period



Loss of Load	
Total Hrs.	159
Total MWh	621,455
Avg. MW	1,523.2
First Hour with Losses	31

Full Period Results Summary

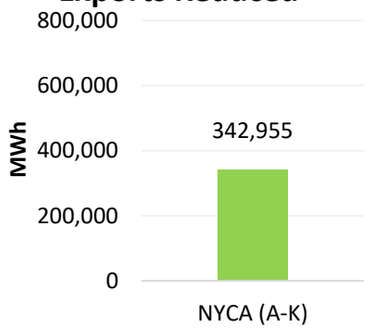
Case Name: Scenario 1 - PD 9 Non-Firm Gas Unavailable (NYCA)

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	NYISO
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

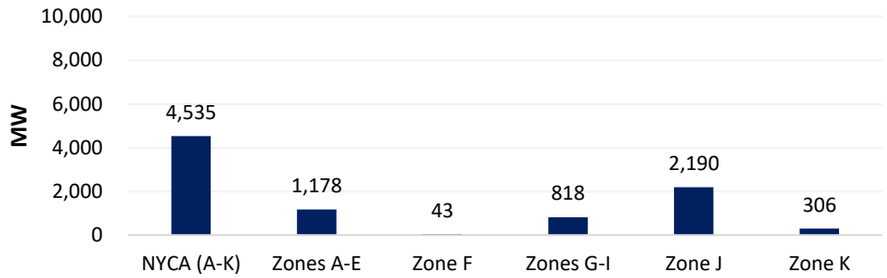
Hours Exports Reduced



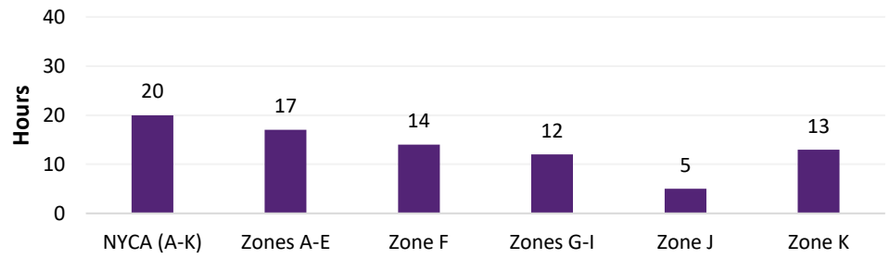
Total MWh of Exports Reduced



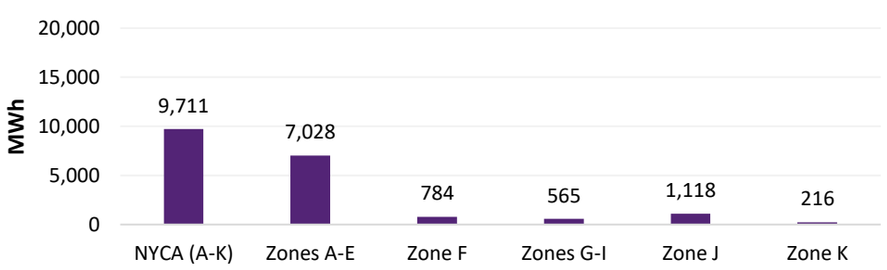
Average Capacity Not Available Due to Exhausted Fuel Inventory



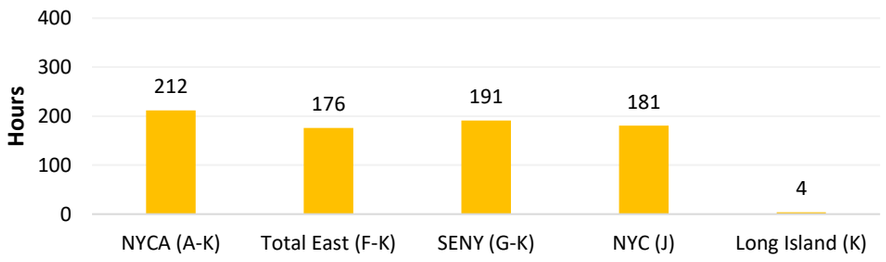
Hours SCR/EDRP Deployed



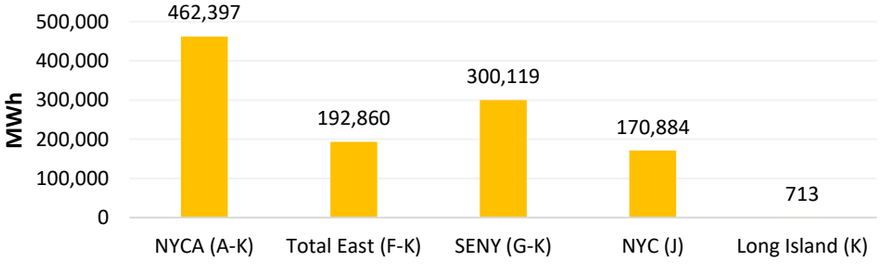
Total MWh SCR/EDRP Deployed



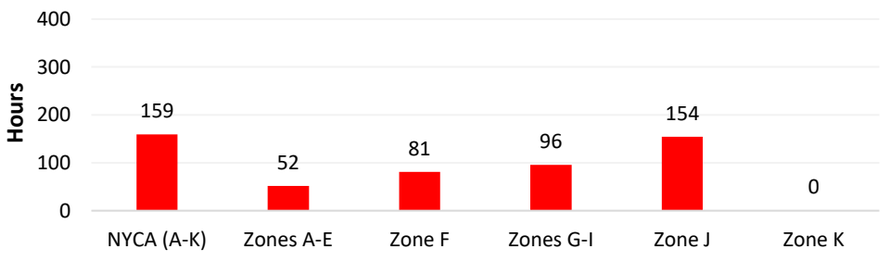
Hours with Reserve Violations



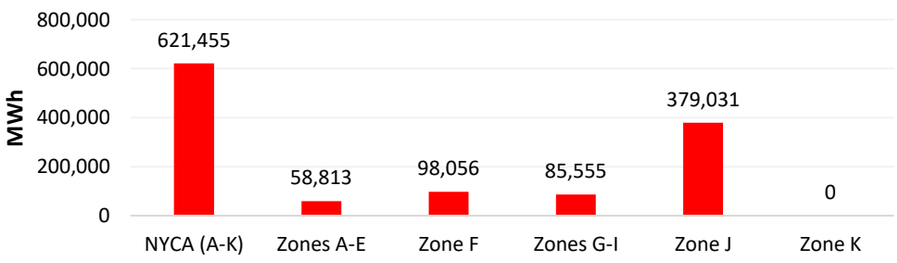
Total MWh of Reserve Violations

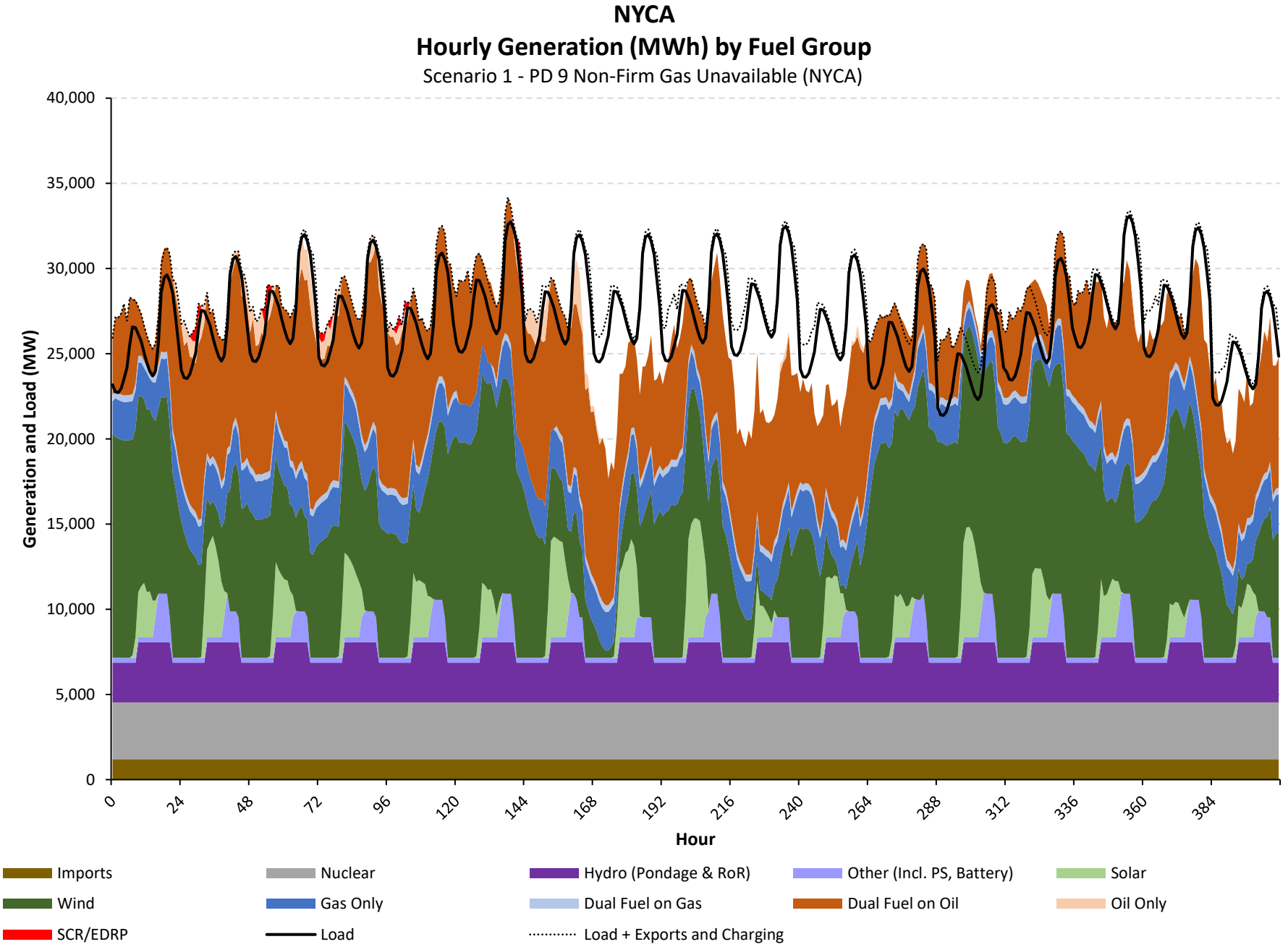


Hours with Loss of Load

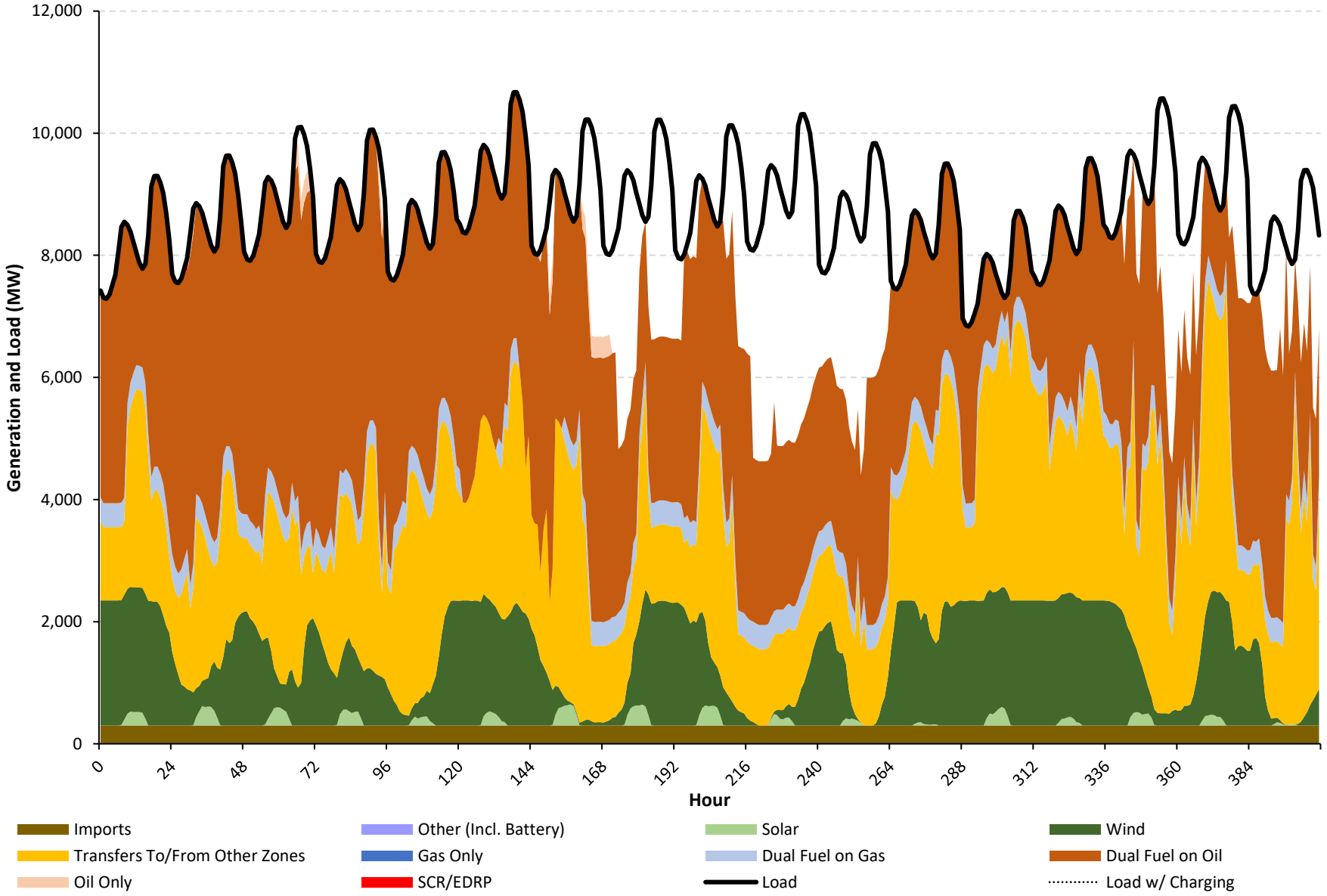


Total MWh of Lost Load

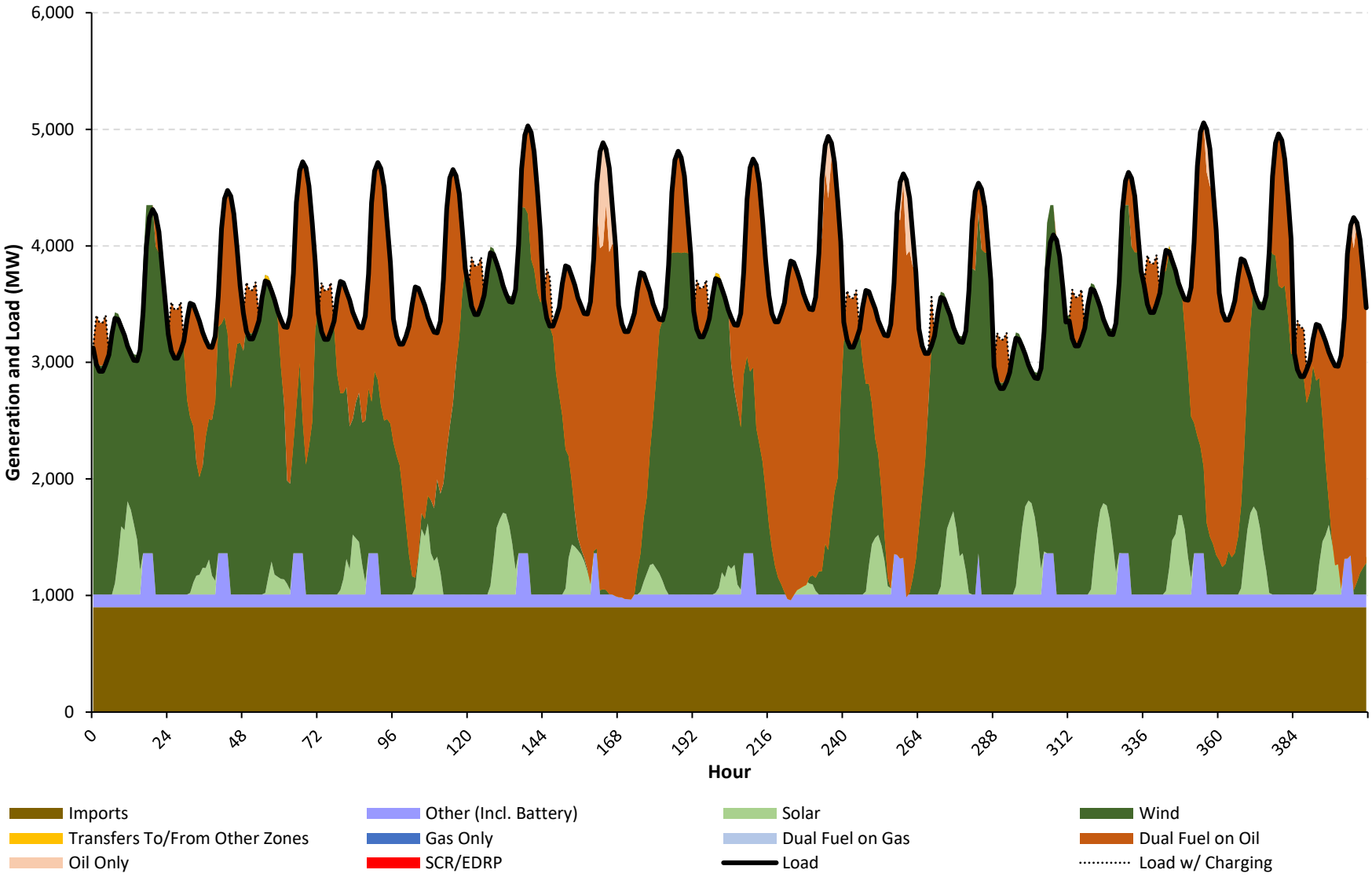



NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 1 - PD 9 Non-Firm Gas Unavailable (NYCA)
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

Zone J
Hourly Generation (MW) by Fuel Group
Scenario 1 - PD 9 Non-Firm Gas Unavailable (NYCA)



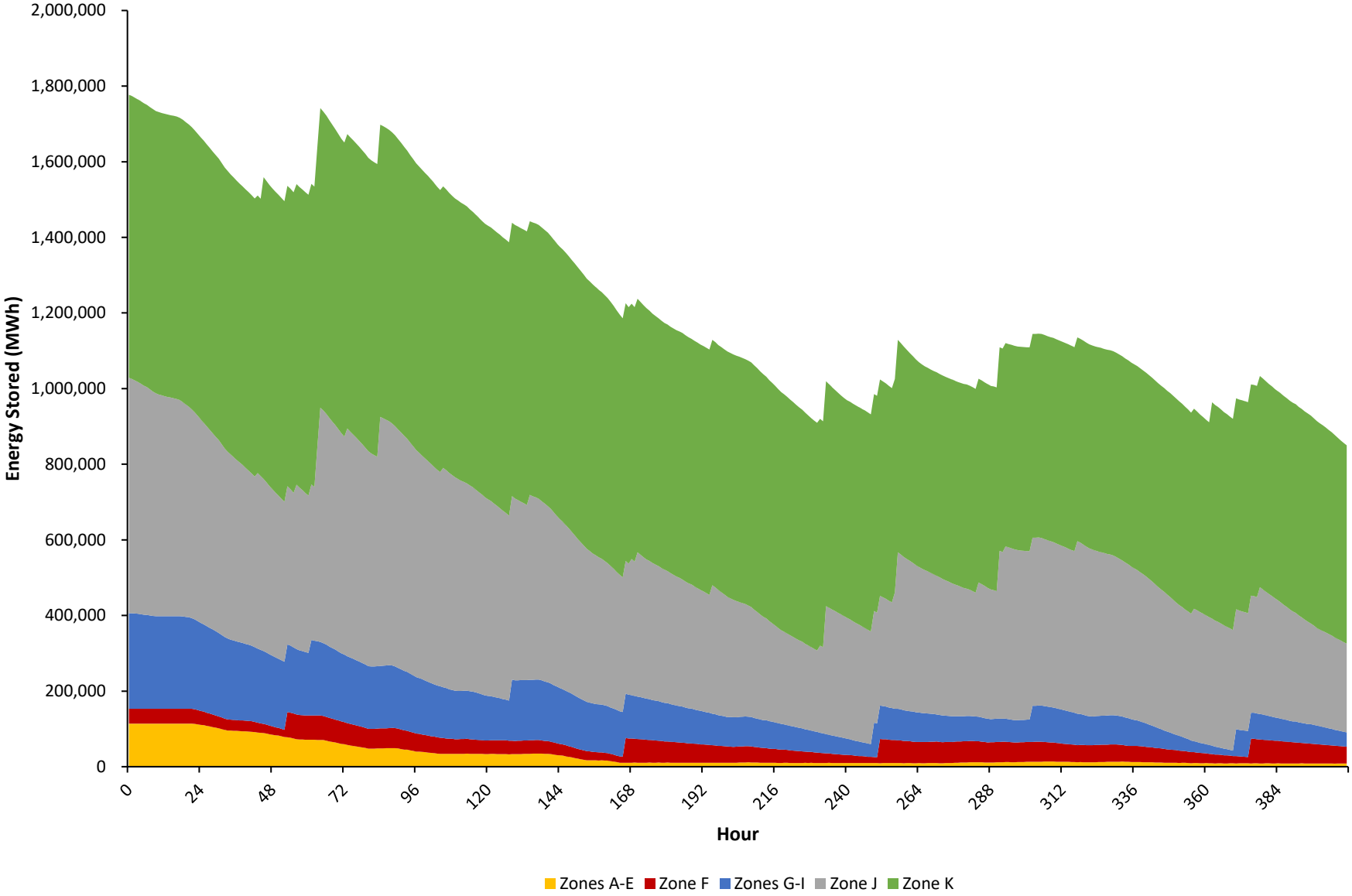
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 1 - PD 9 Non-Firm Gas Unavailable (NYCA)

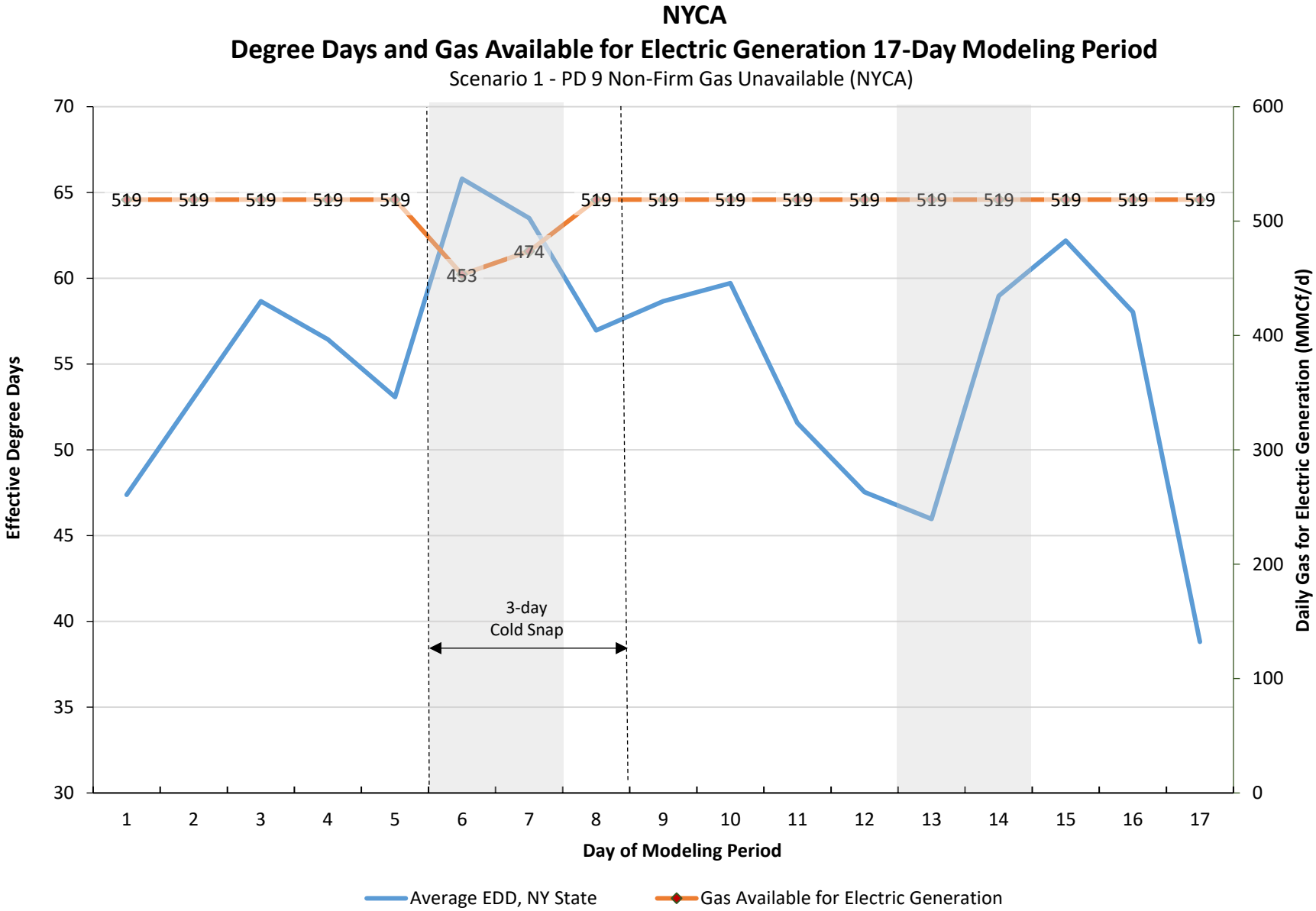


NYCA

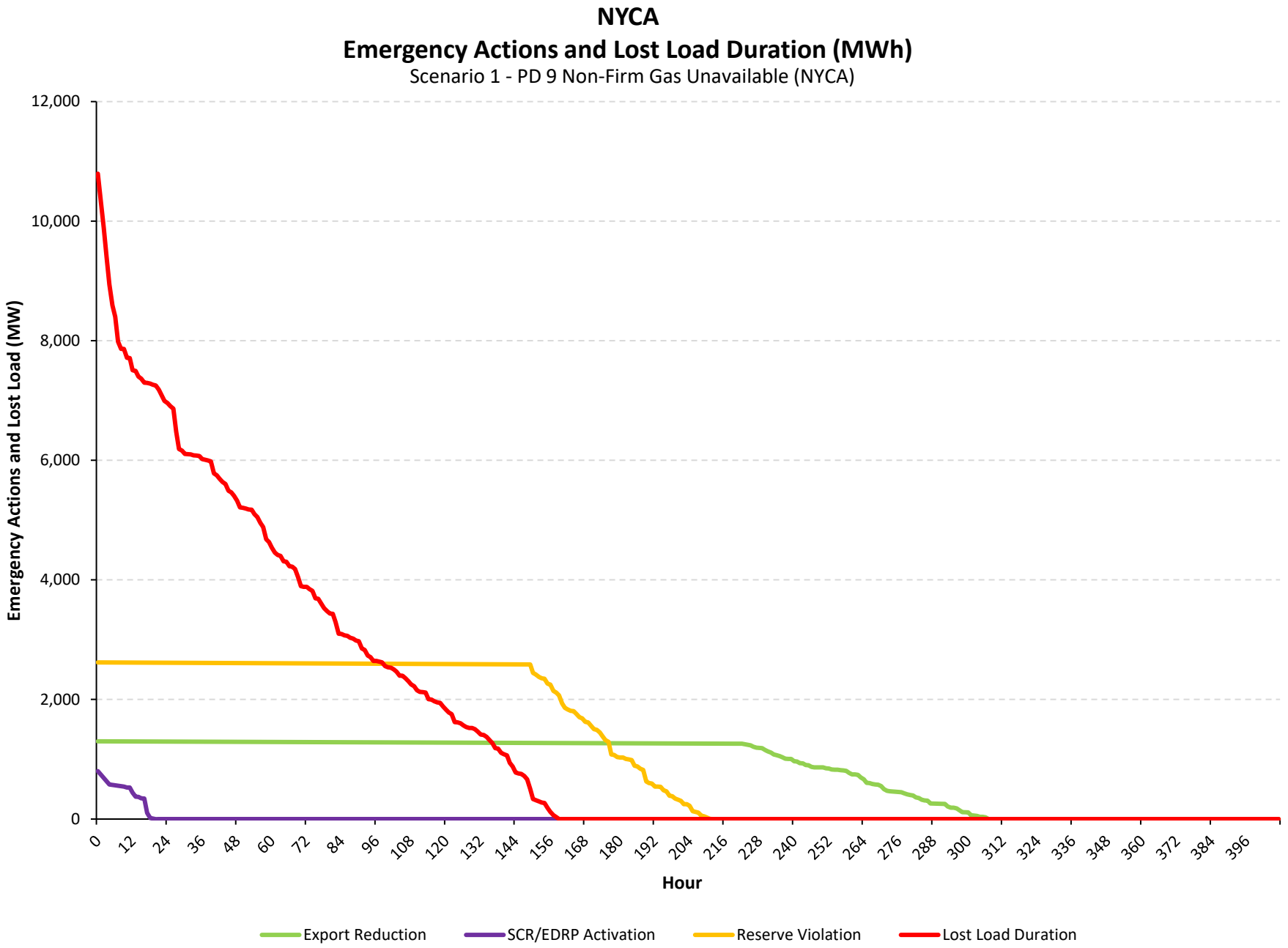
Quantity of Stored Fuel for Oil and Dual Fuel Units

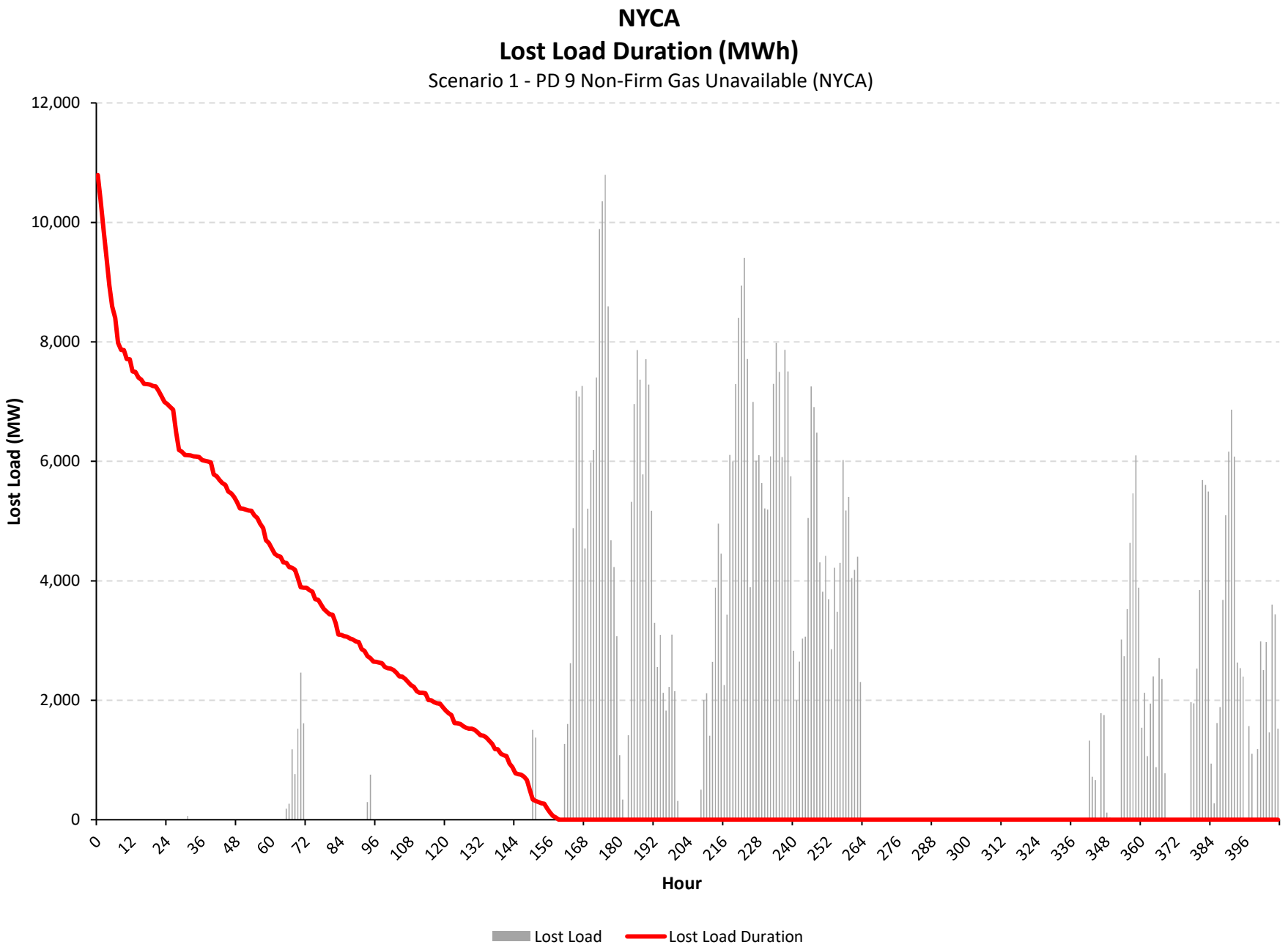
Scenario 1 - PD 9 Non-Firm Gas Unavailable (NYCA)





Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 1 - PD 9 Non-Firm Gas Unavailable (NYCA)
Emergency Actions and Lost Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 1 - PD 9 Non-Firm Gas Unavailable (NYCA)
Lost Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

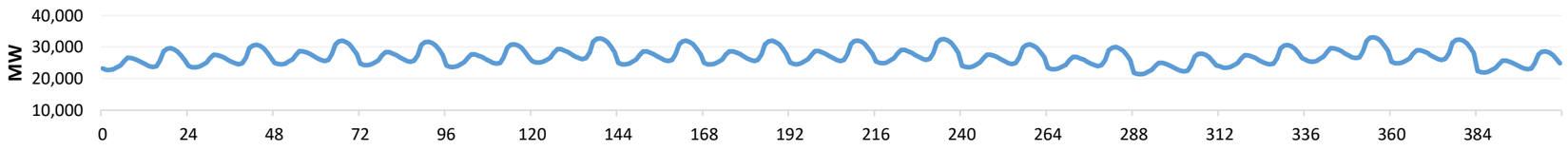
Case: Scenario 1 - PD 10 Non-Firm Gas Unavailable (4 days) (Winter 2030/2031)

Hourly Results Summary

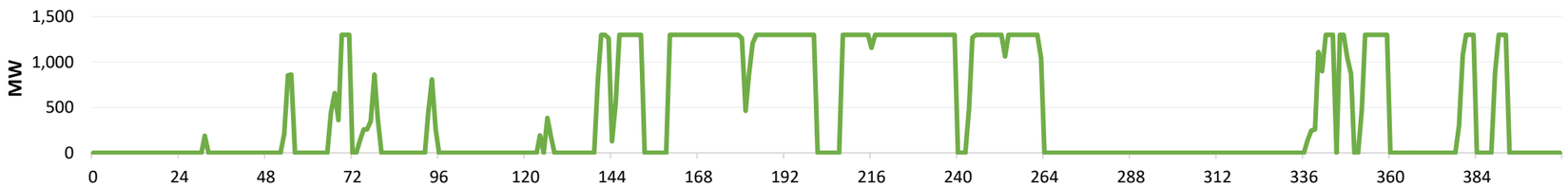
Case Name: Scenario 1 - PD 10 Non-Firm Gas Unavailable (4 days)

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	3-4 days
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

Load During Modeling Period

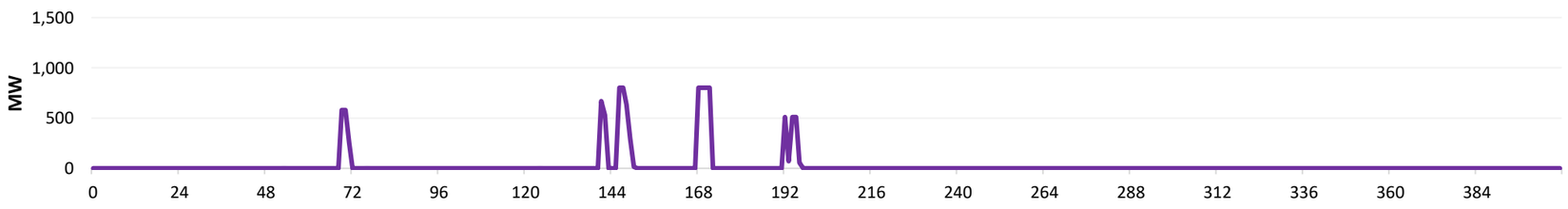


Export to ISO-NE Reduction During Modeling Period



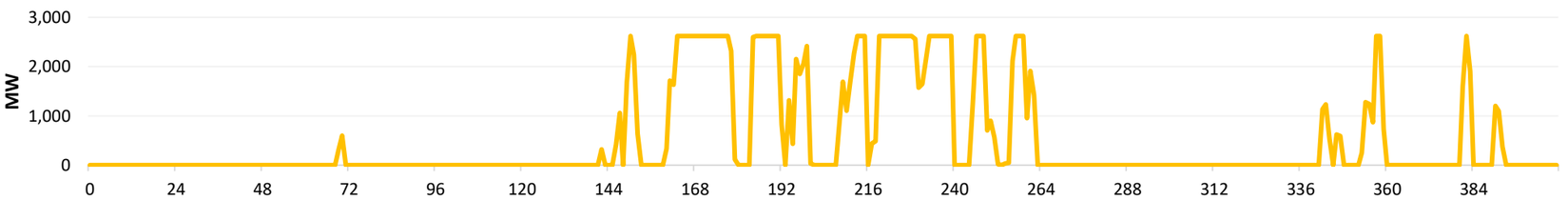
Export Reductions	
Total Hrs.	159
Total MWh	176,479
Avg. MW	432.5

SCR/EDRP Deployed During Modeling Period



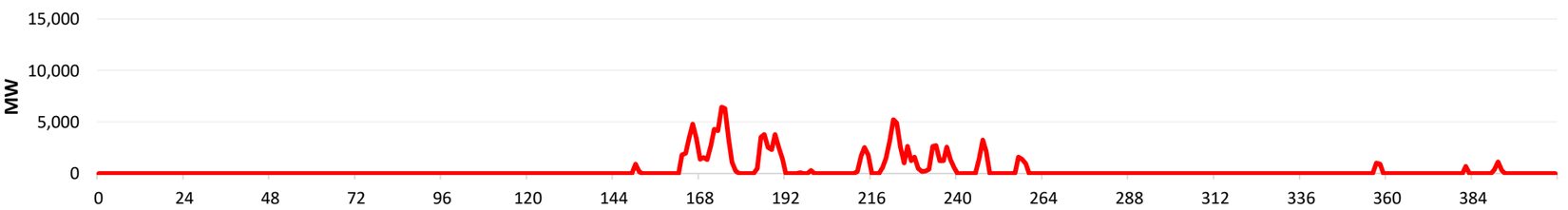
SCR Deployment	
Total Hrs.	19
Total MWh	10,023
Avg. MW	24.6

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	111
Total MWh	204,350
Avg. MW	500.9
First Hour with Viol.	69

Loss of Load During Modeling Period



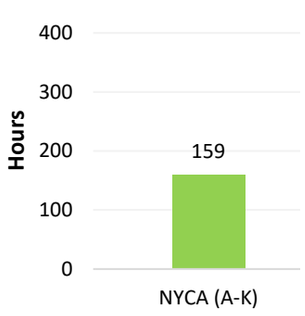
Loss of Load	
Total Hrs.	66
Total MWh	129,732
Avg. MW	318.0
First Hour with Losses	150

Full Period Results Summary

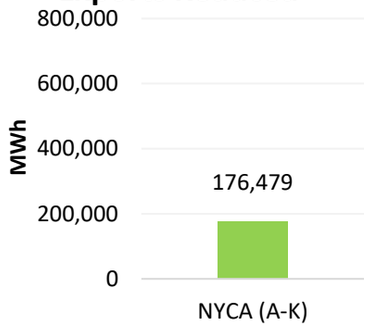
Case Name: Scenario 1 - PD 10 Non-Firm Gas Unavailable (4 days)

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	3-4 days
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

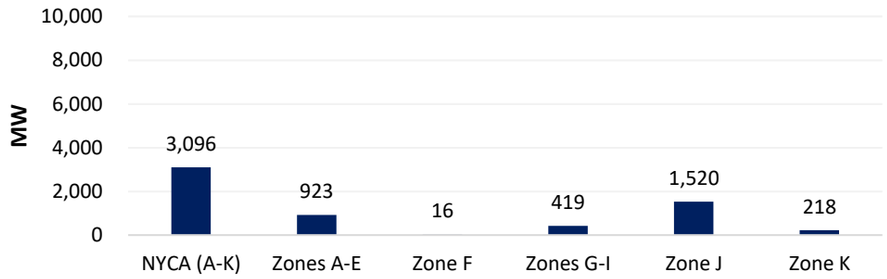
Hours Exports Reduced



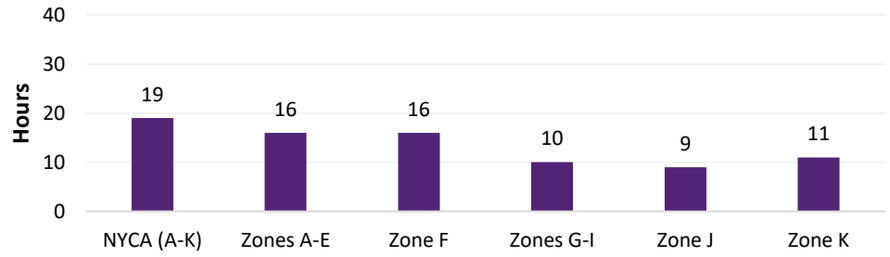
Total MWh of Exports Reduced



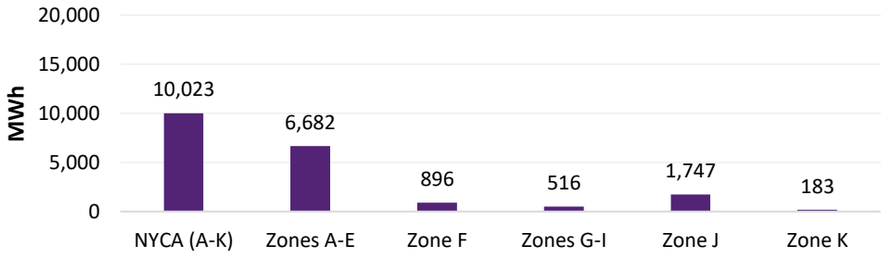
Average Capacity Not Available Due to Exhausted Fuel Inventory



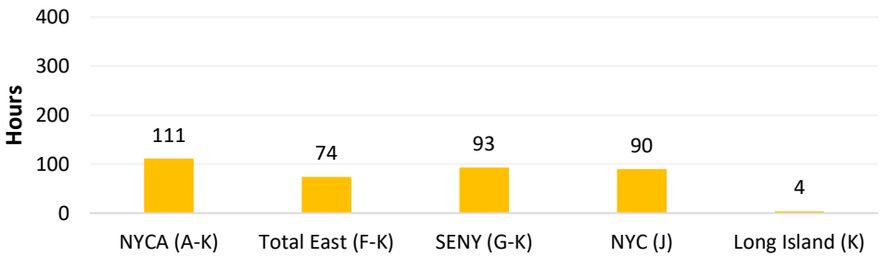
Hours SCR/EDRP Deployed



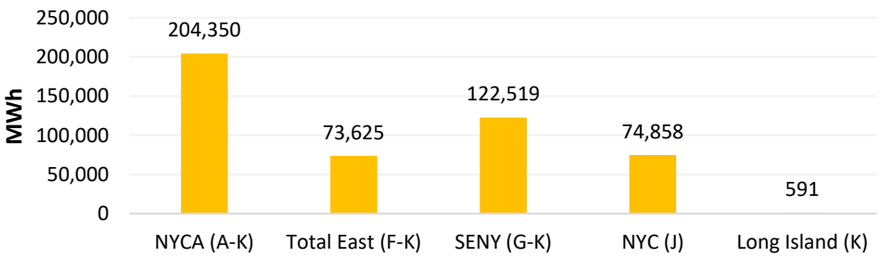
Total MWh SCR/EDRP Deployed



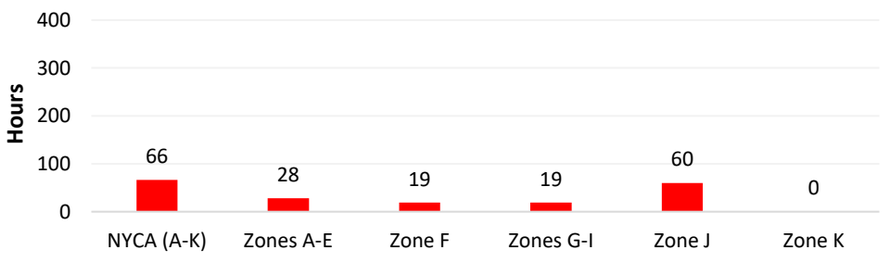
Hours with Reserve Violations



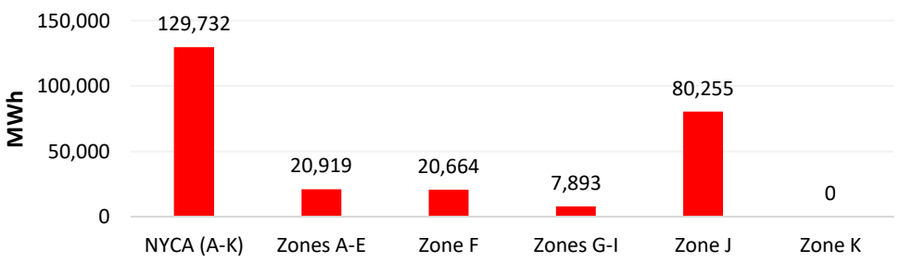
Total MWh of Reserve Violations

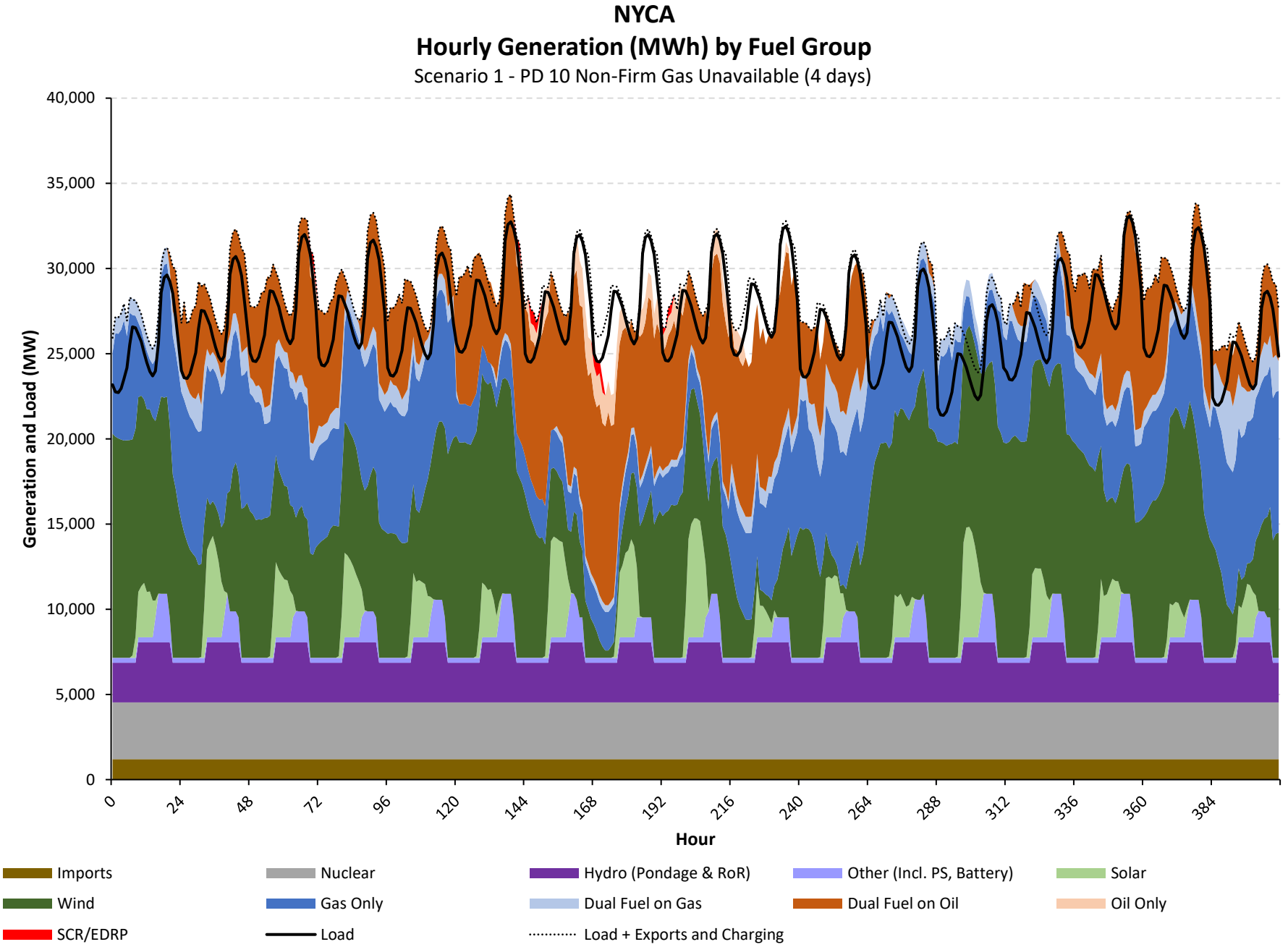


Hours with Loss of Load

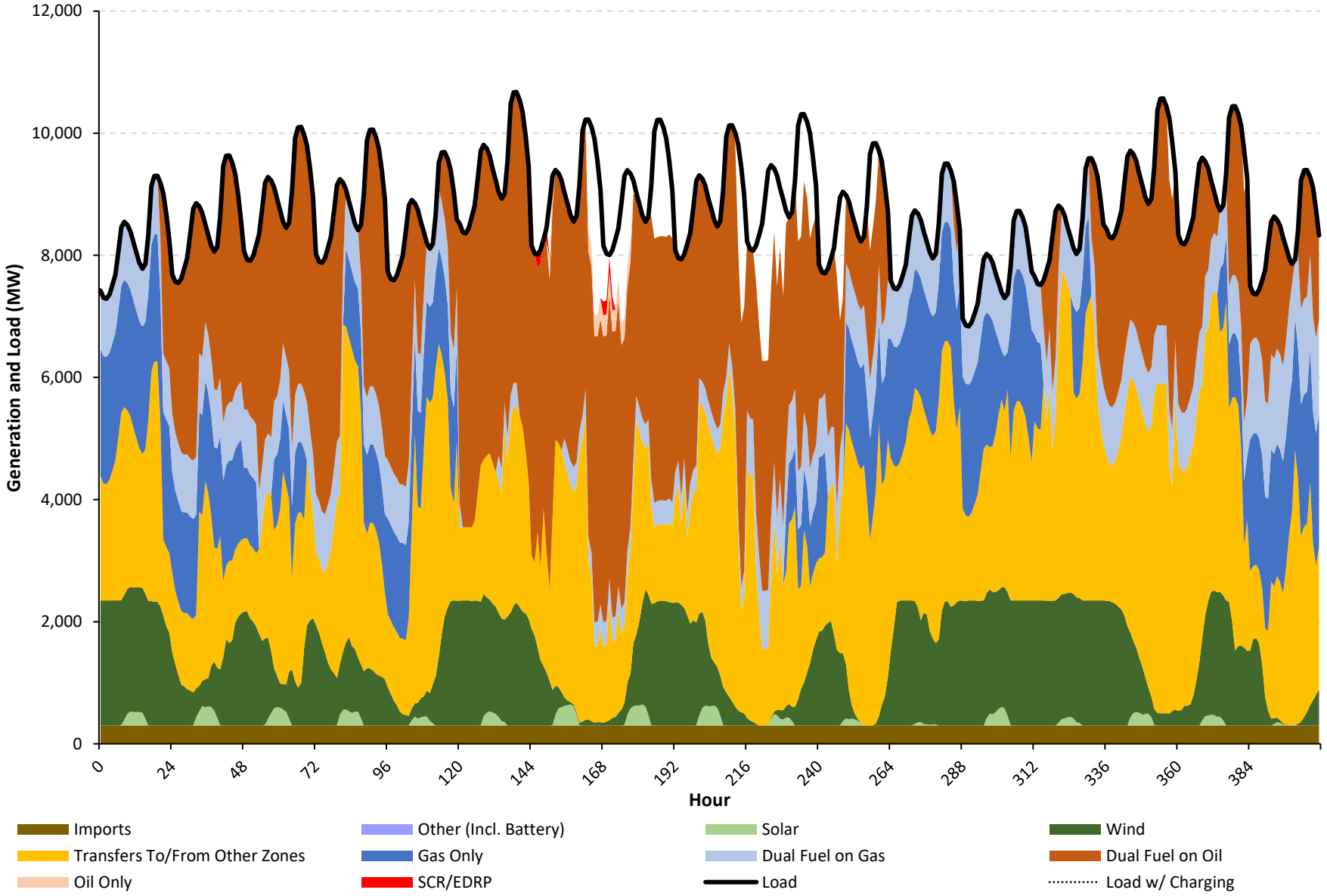


Total MWh of Lost Load

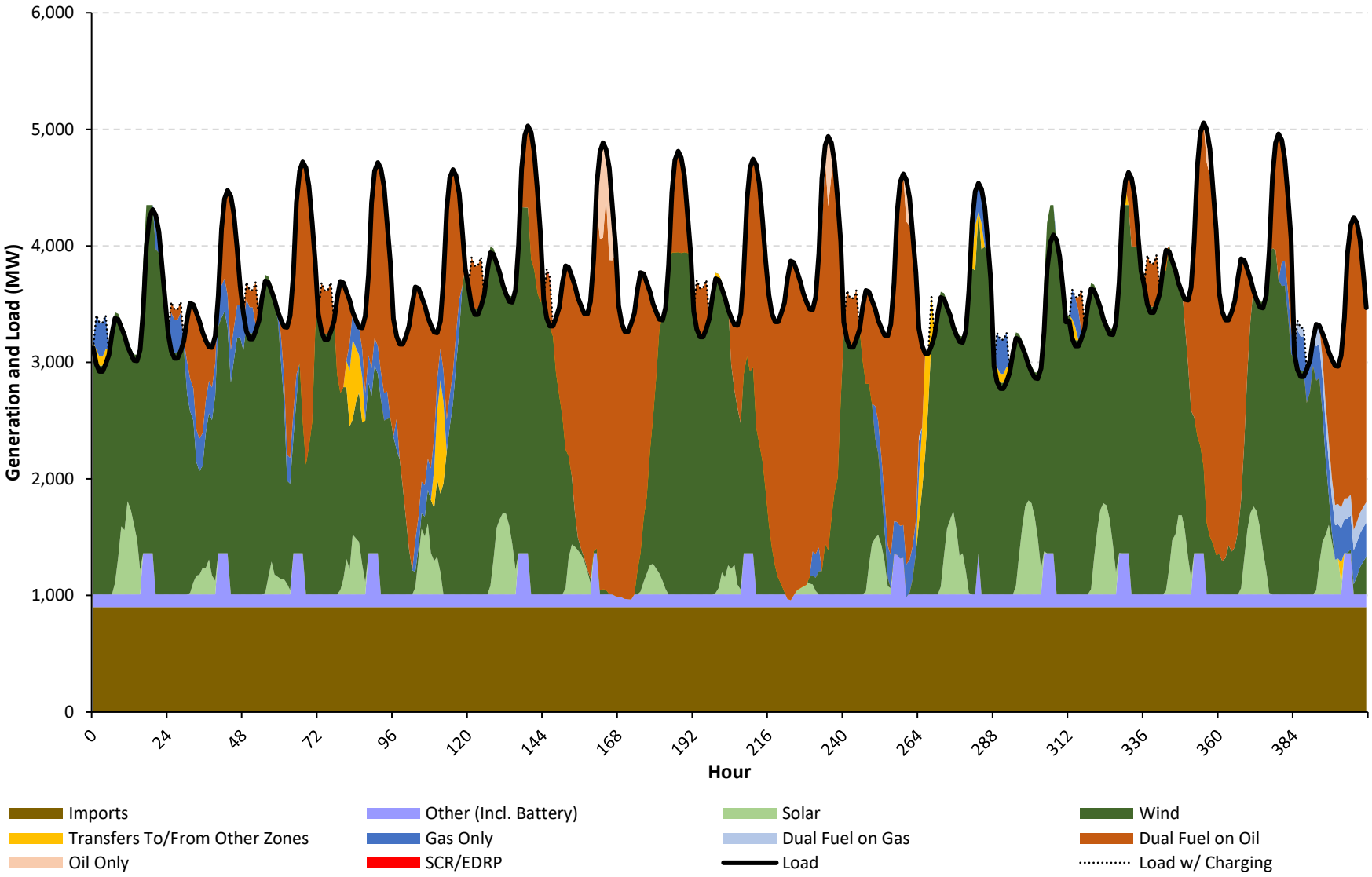



NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 1 - PD 10 Non-Firm Gas Unavailable (4 days)
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

Zone J
Hourly Generation (MW) by Fuel Group
Scenario 1 - PD 10 Non-Firm Gas Unavailable (4 days)



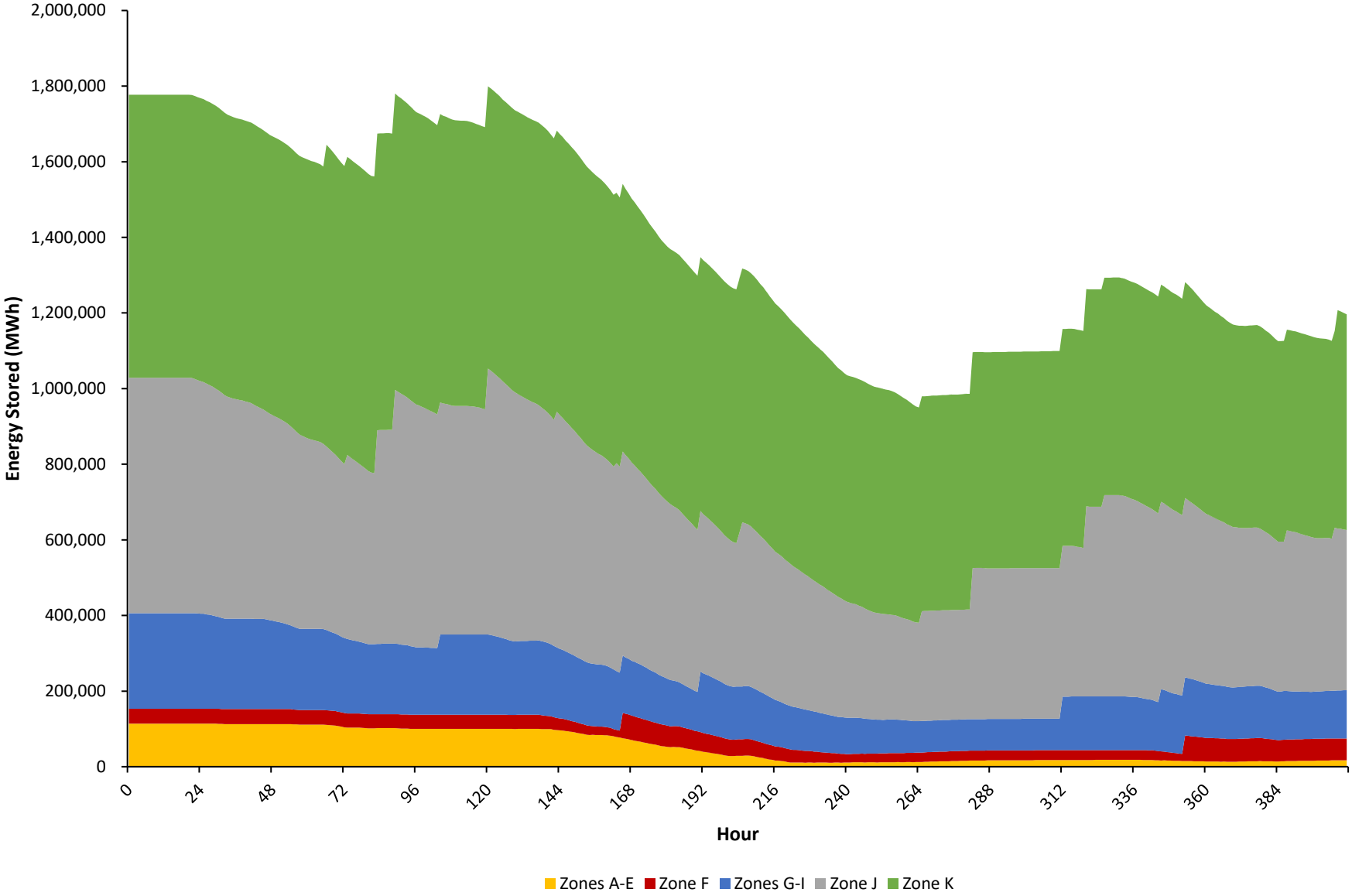
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 1 - PD 10 Non-Firm Gas Unavailable (4 days)



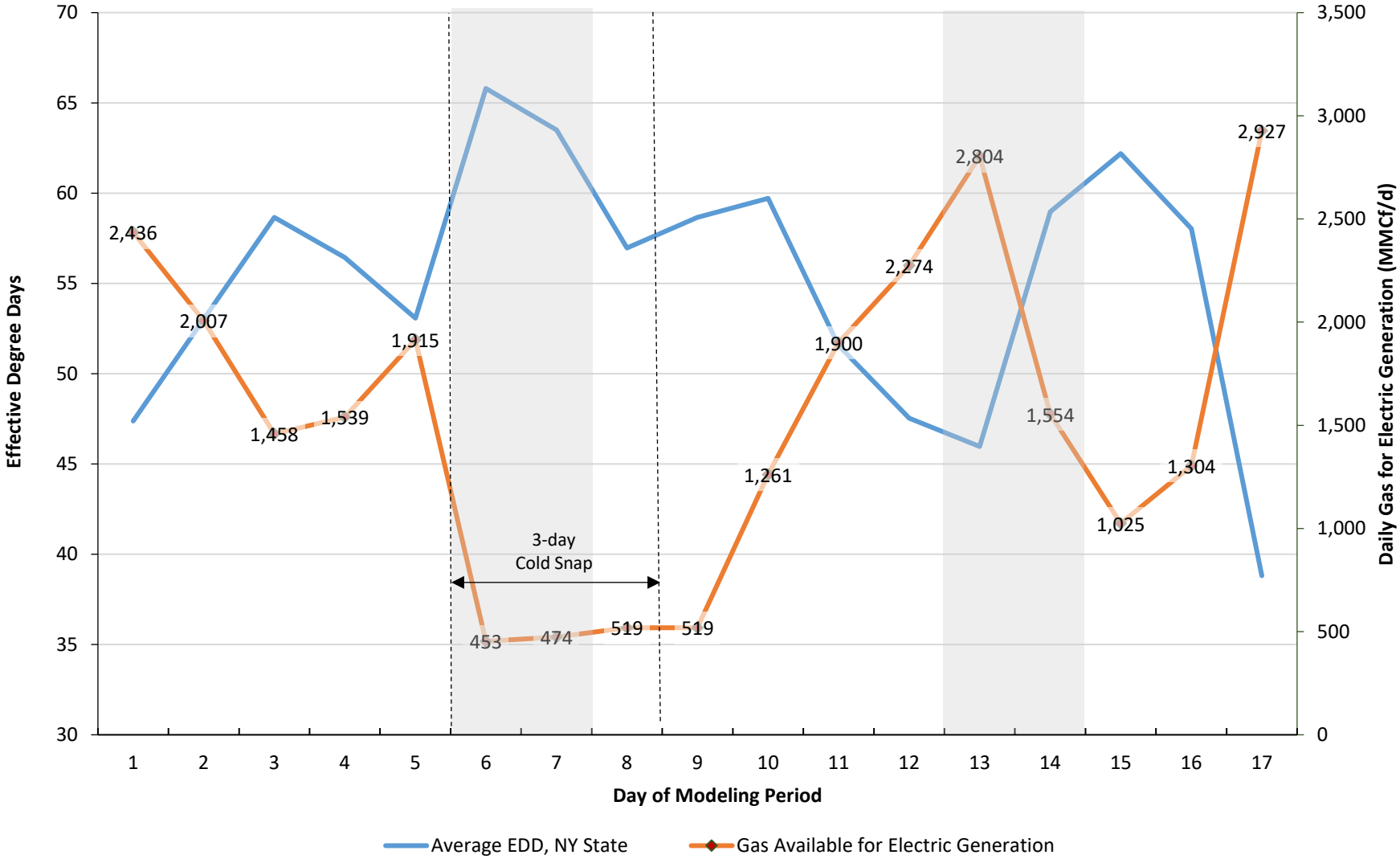
NYCA

Quantity of Stored Fuel for Oil and Dual Fuel Units

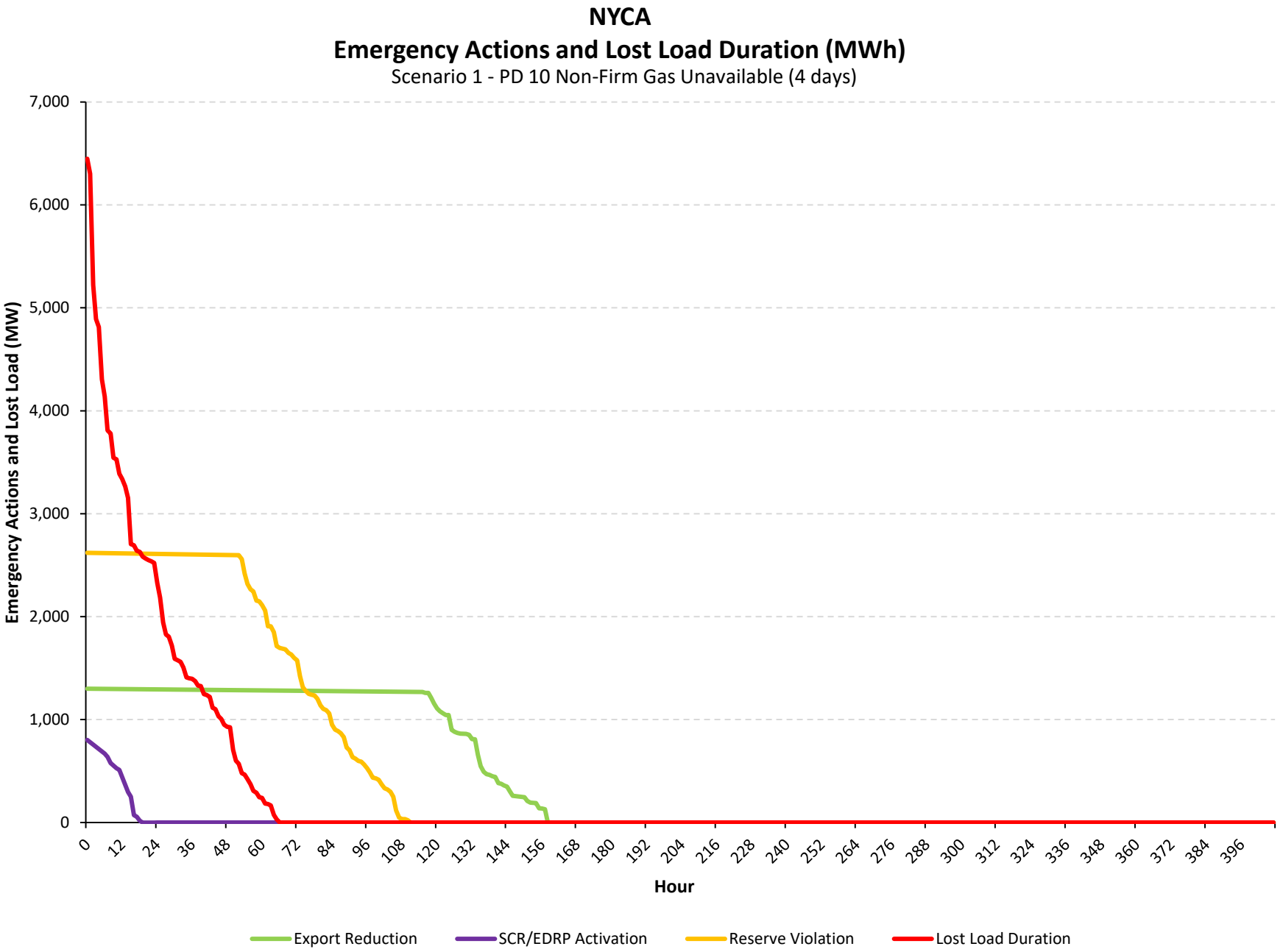
Scenario 1 - PD 10 Non-Firm Gas Unavailable (4 days)

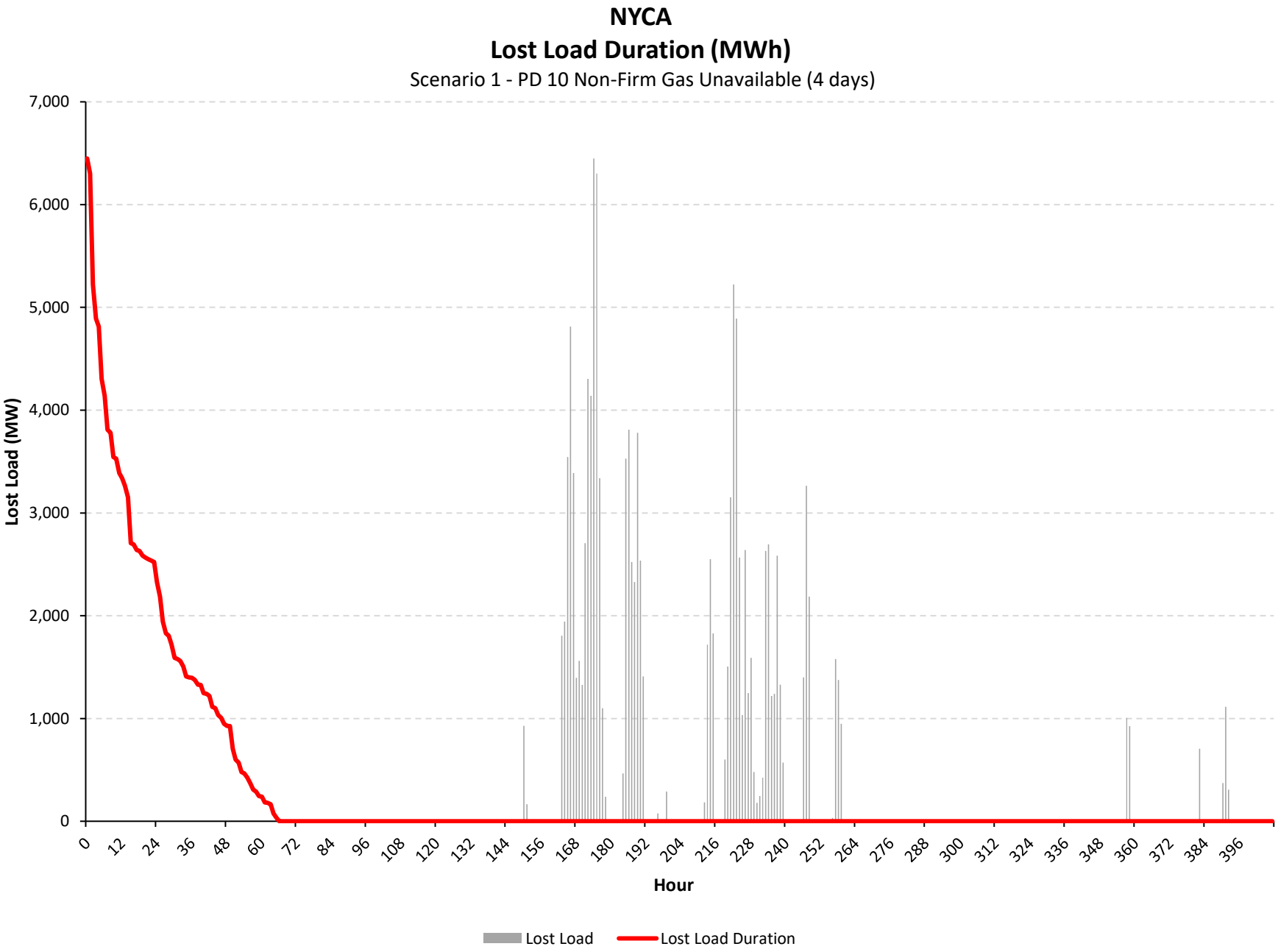


NYCA
Degree Days and Gas Available for Electric Generation 17-Day Modeling Period
Scenario 1 - PD 10 Non-Firm Gas Unavailable (4 days)



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 1 - PD 10 Non-Firm Gas Unavailable (4 days)
Emergency Actions and Lost Load (MW)
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 1 - PD 10 Non-Firm Gas Unavailable (4 days)
Lost Load (MW)
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

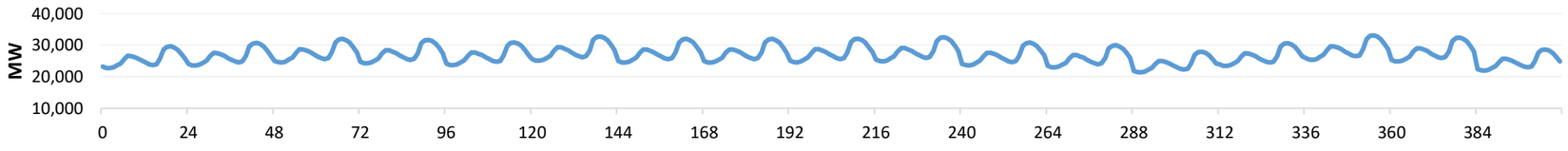
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 1 - PD 11 Combination Disruption (Winter 2030/2031)

Hourly Results Summary

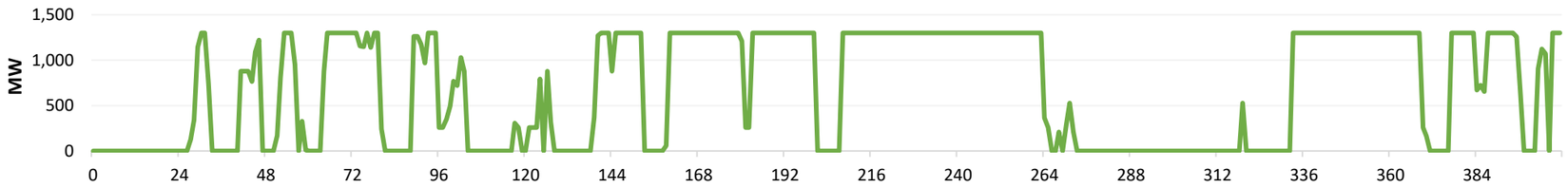
Case Name: Scenario 1 - PD 11 Combination Disruption

Load During Modeling Period



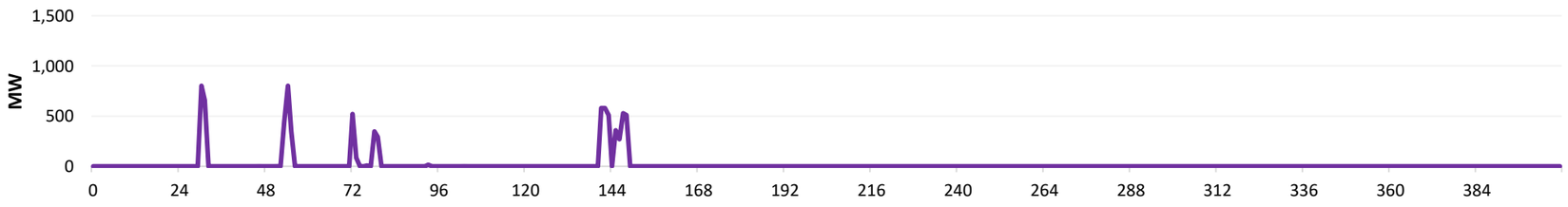
Case Summary	
Derate (EFORd) Increase:	High
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	Reduced
Loss of Gas Fired Gen.	Reduced
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



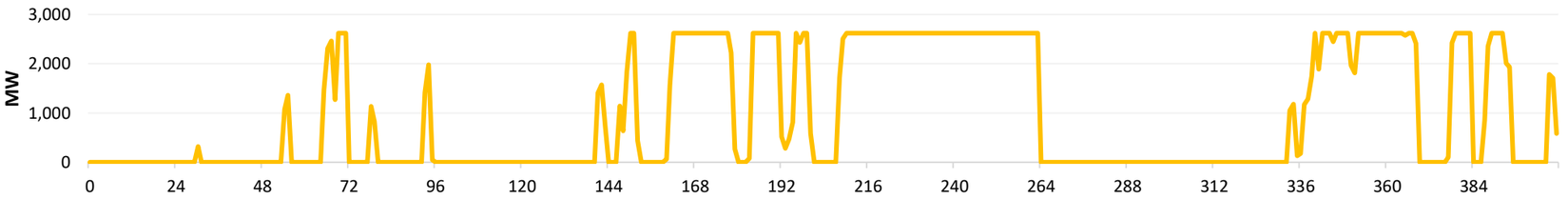
Export Reductions	
Total Hrs.	243
Total MWh	274,517
Avg. MW	672.8

SCR/EDRP Deployed During Modeling Period



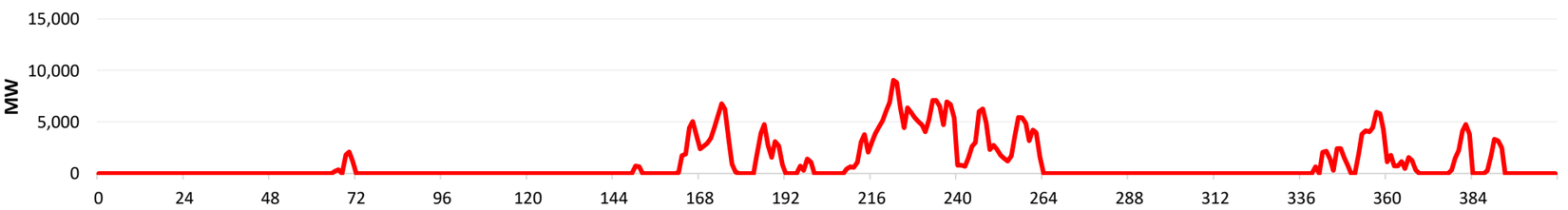
SCR Deployment	
Total Hrs.	18
Total MWh	7,650
Avg. MW	18.8

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	172
Total MWh	379,653
Avg. MW	930.5
First Hour with Viol.	30

Loss of Load During Modeling Period



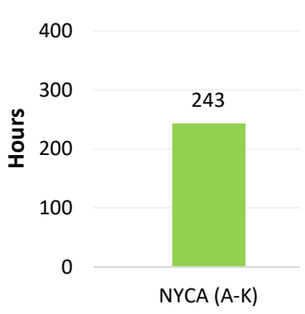
Loss of Load	
Total Hrs.	128
Total MWh	396,888
Avg. MW	972.8
First Hour with Losses	66

Full Period Results Summary

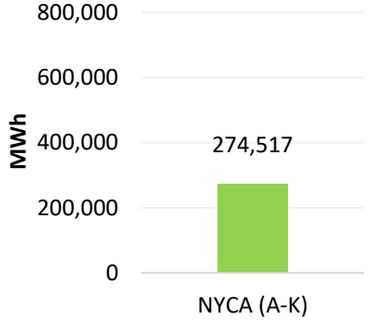
Case Name: Scenario 1 - PD 11 Combination Disruption

Case Summary	
Derate (EFORd) Increase:	High
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	Reduced
Loss of Gas Fired Gen.	Reduced
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

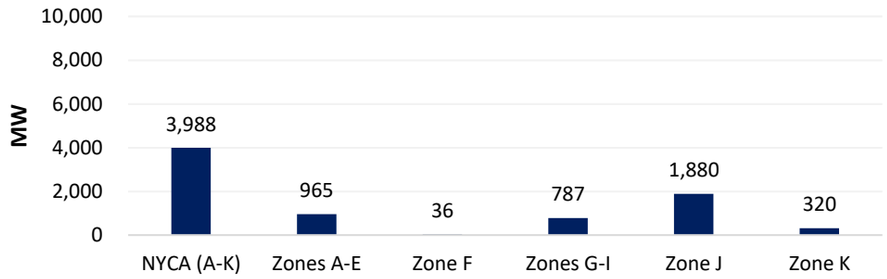
Hours Exports Reduced



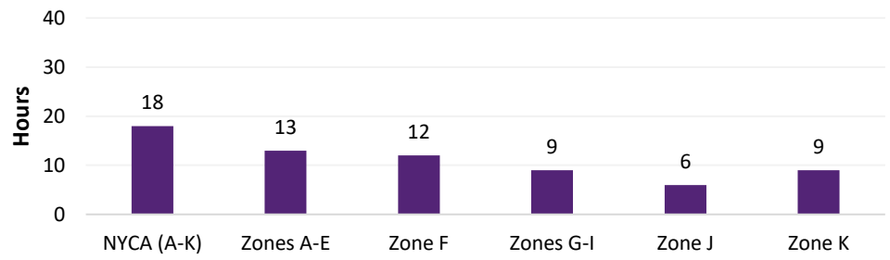
Total MWh of Exports Reduced



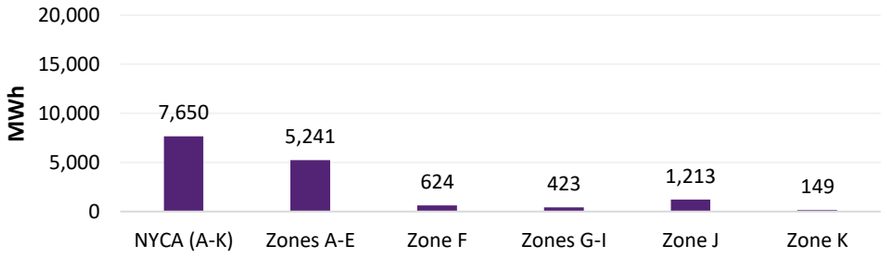
Average Capacity Not Available Due to Exhausted Fuel Inventory



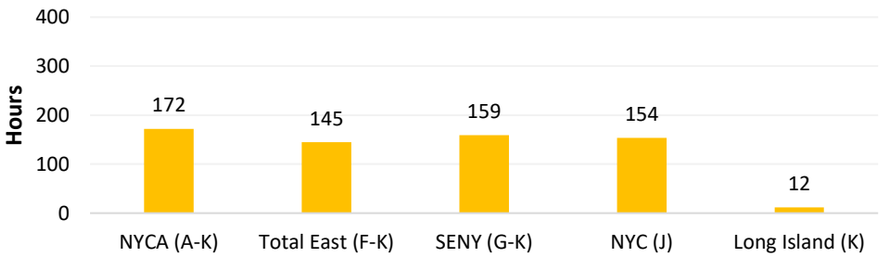
Hours SCR/EDRP Deployed



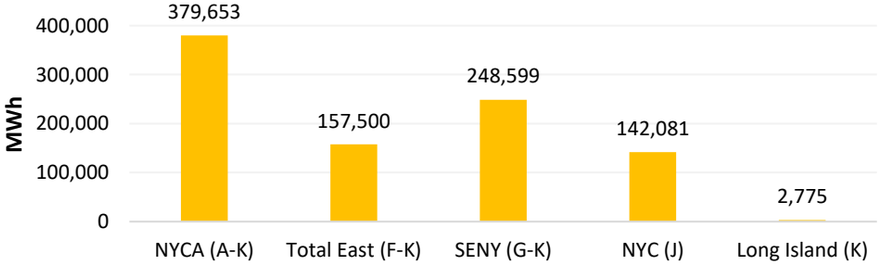
Total MWh SCR/EDRP Deployed



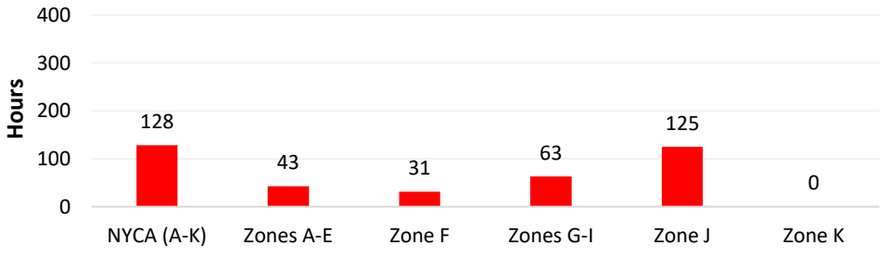
Hours with Reserve Violations



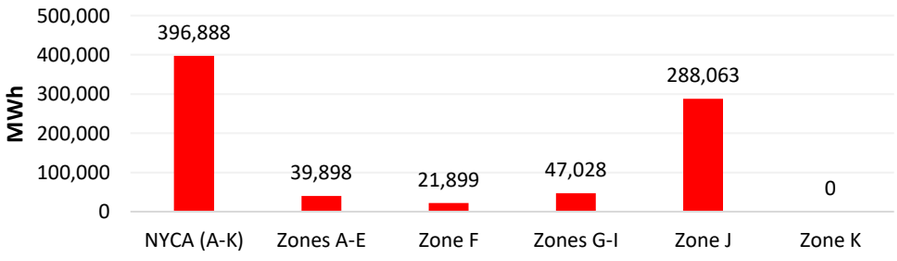
Total MWh of Reserve Violations

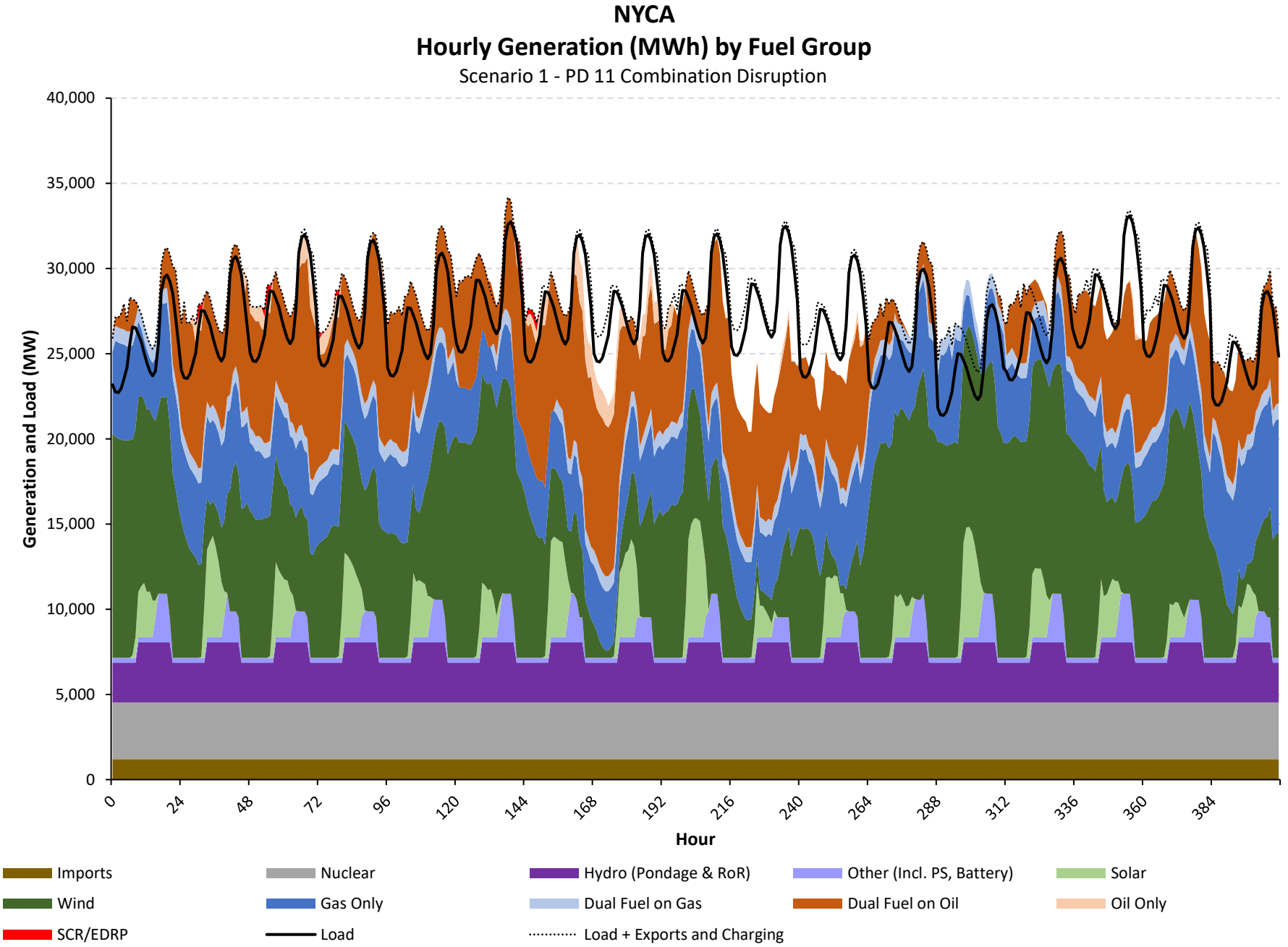


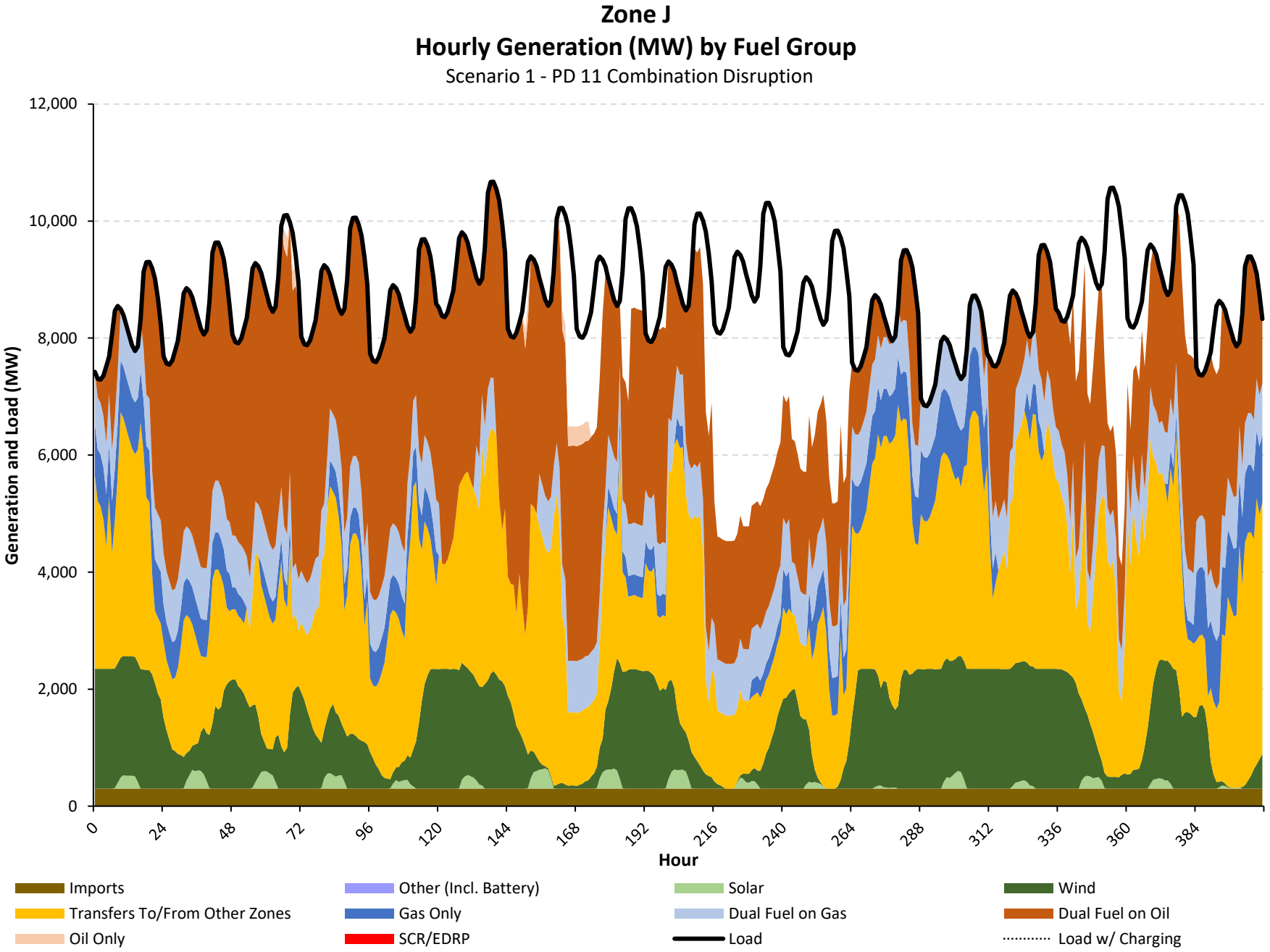
Hours with Loss of Load



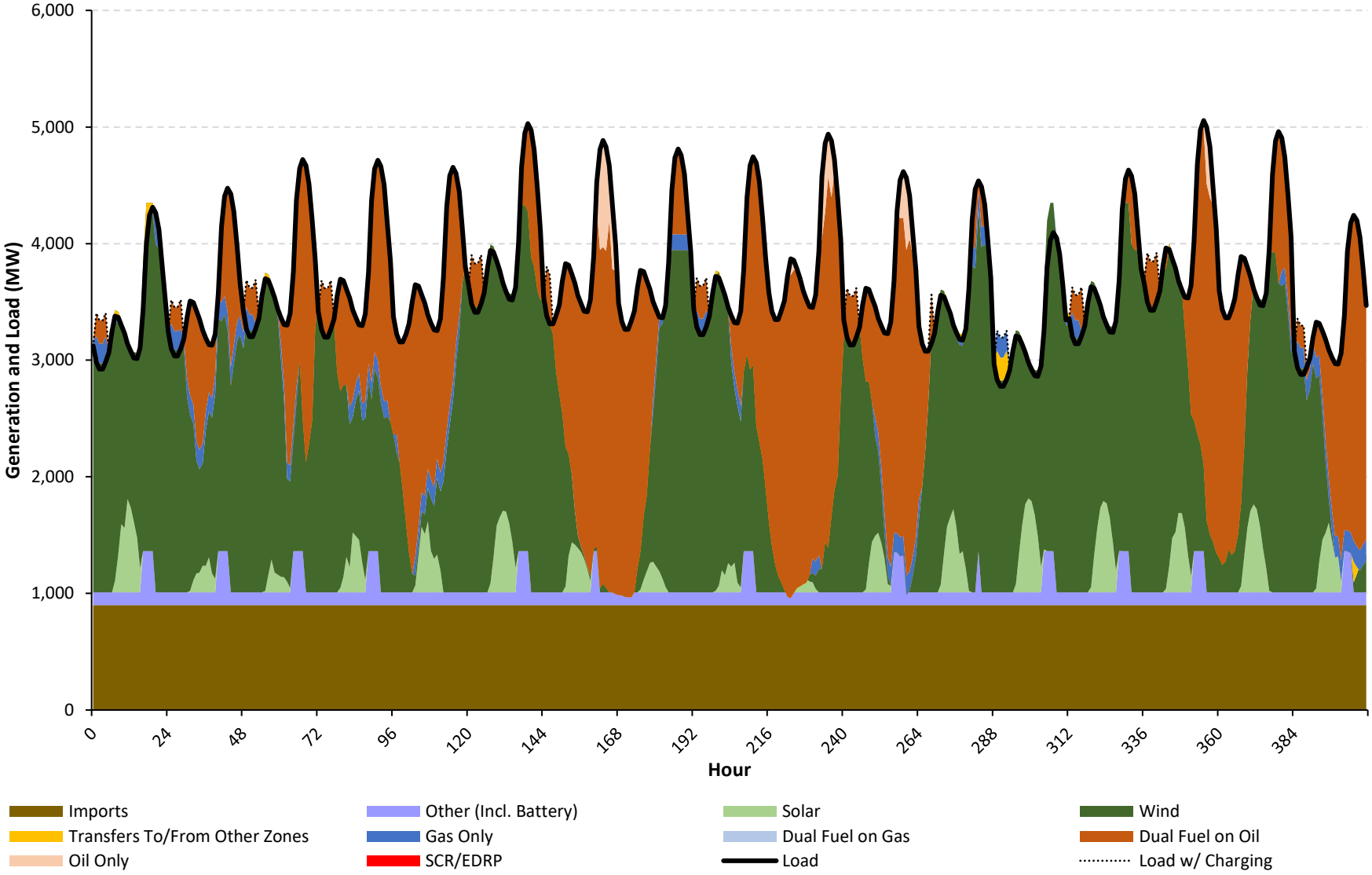
Total MWh of Lost Load

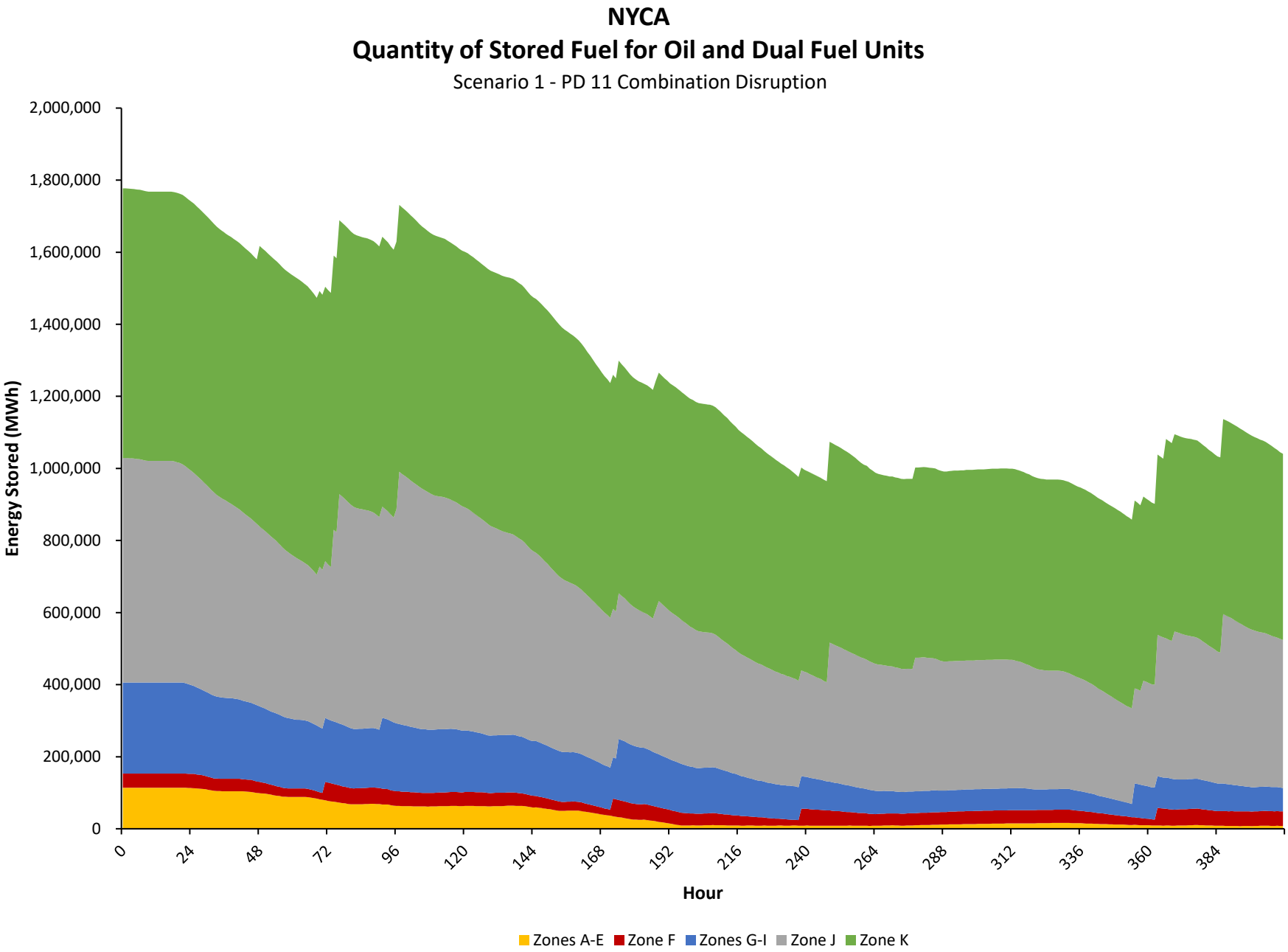


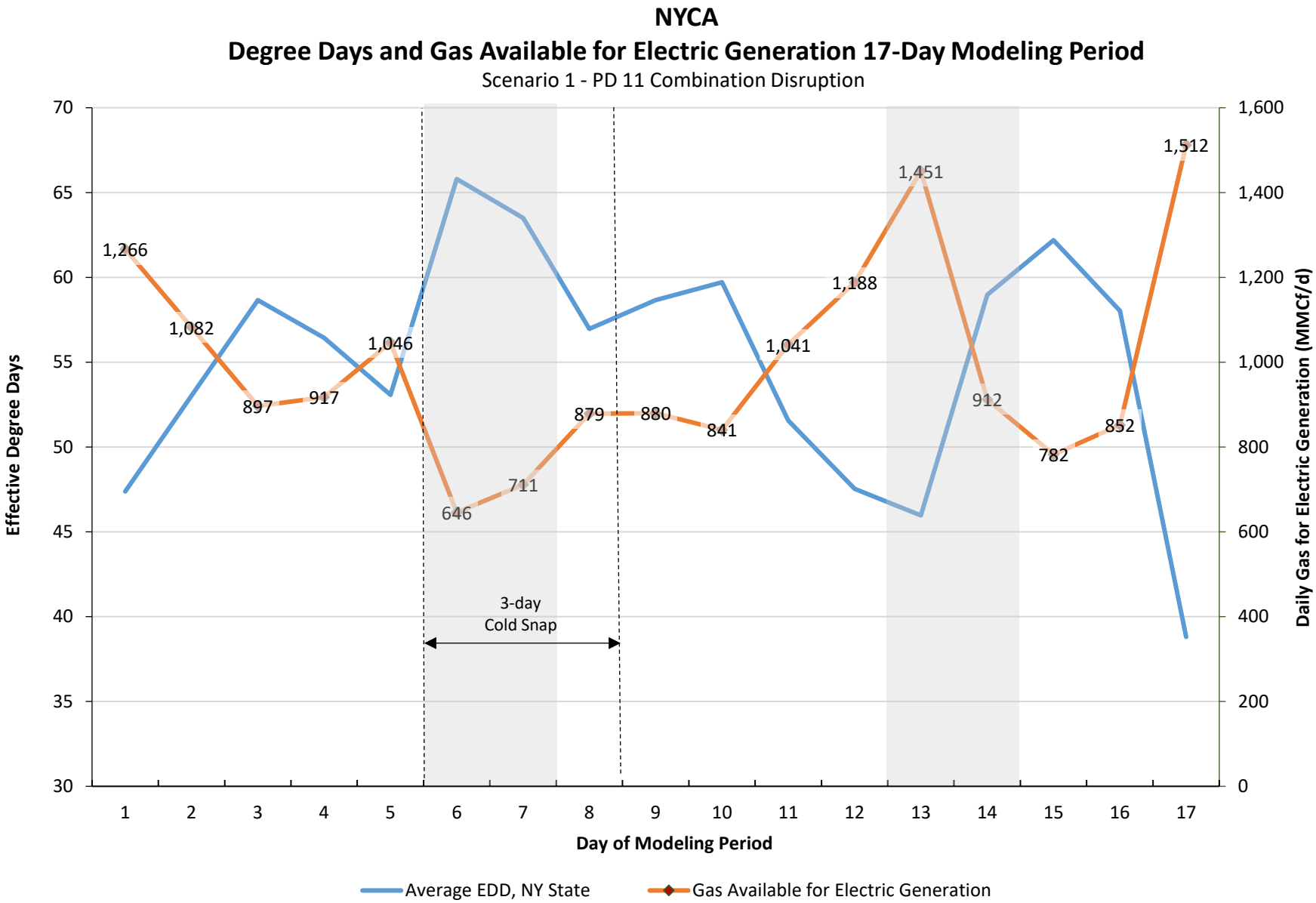

NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 1 - PD 11 Combination Disruption
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 1 - PD 11 Combination Disruption
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

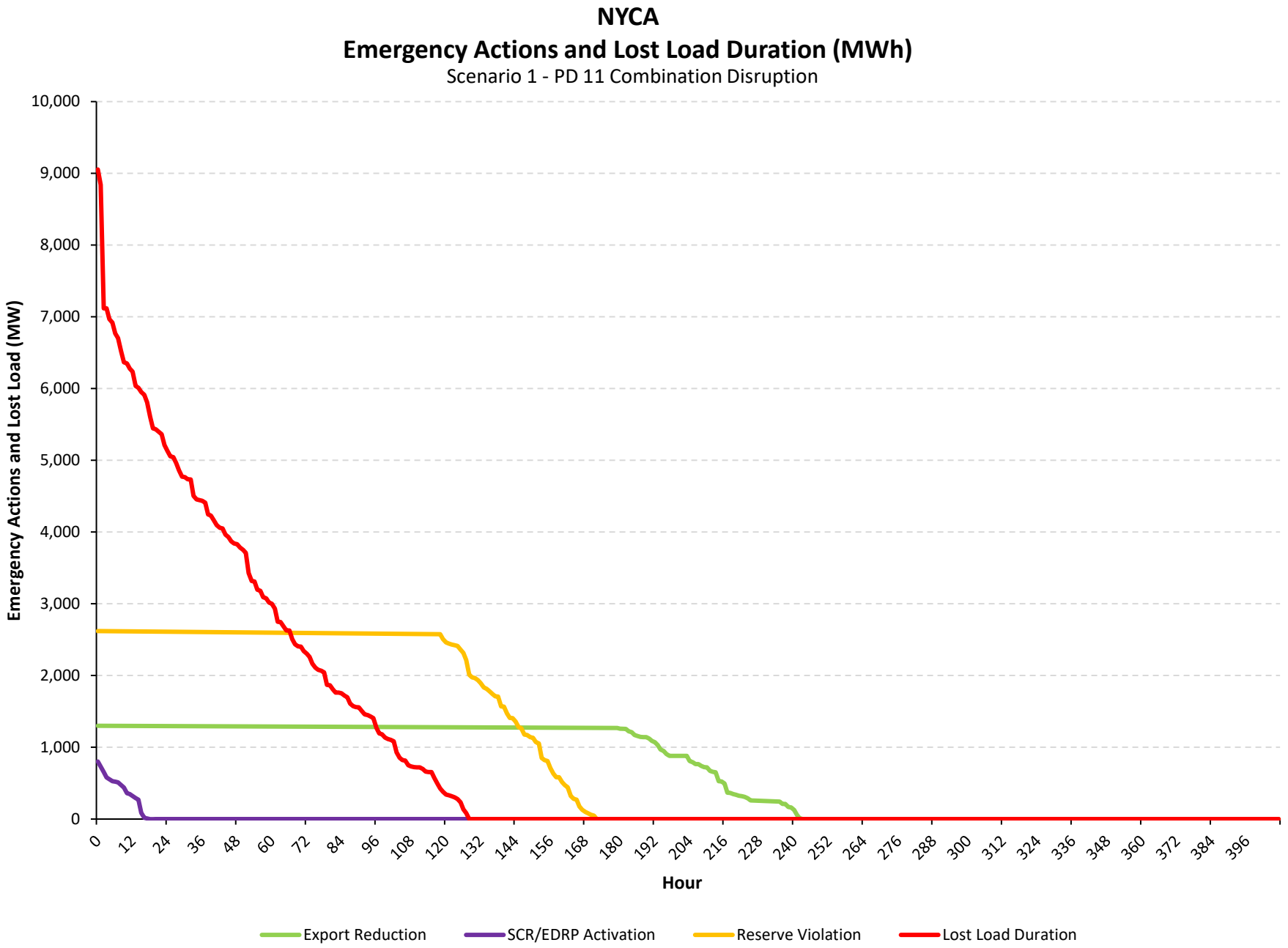
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 1 - PD 11 Combination Disruption

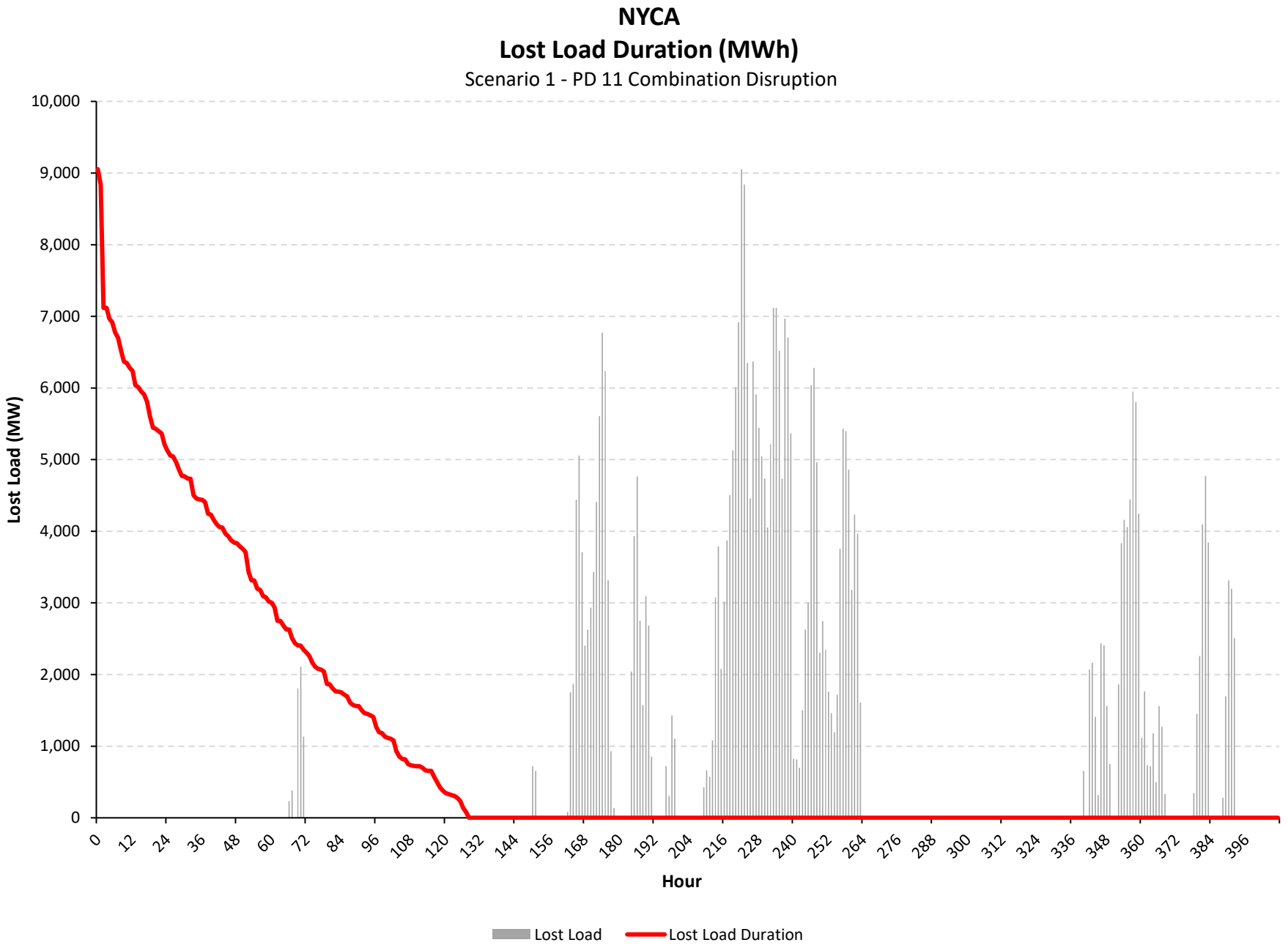



NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 1 - PD 11 Combination Disruption
Energy Stored (MWh)
2,000,000
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Zones A-E
Zone F
Zones G-I
Zone J
Zone K



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 1 - PD 11 Combination Disruption
Emergency Actions and Lost Load (MW)
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 1 - PD 11 Combination Disruption
Lost Load (MW)
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

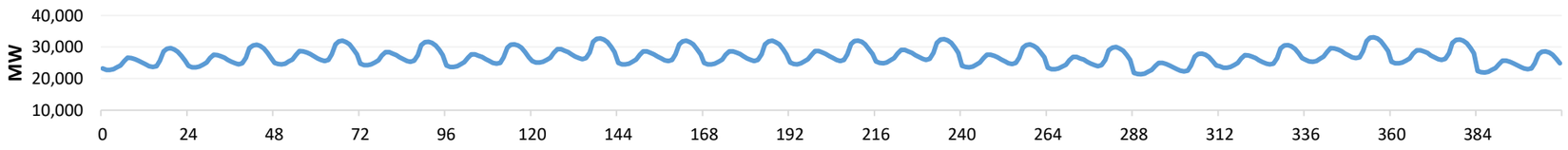
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 2 - PD 1 No Disruptions (Winter 2030/2031)

Hourly Results Summary

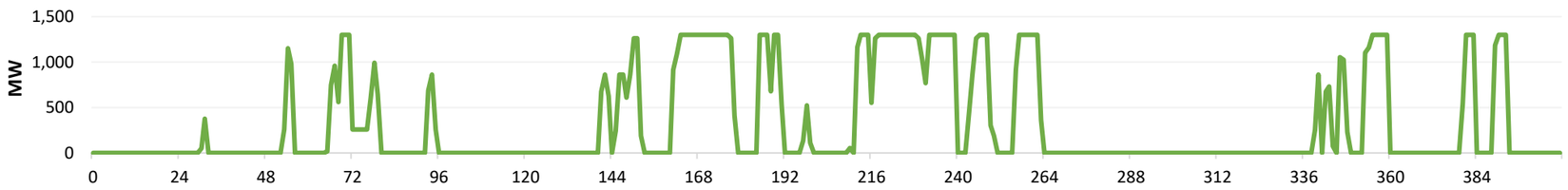
Case Name: Scenario 2 - PD 1 No Disruptions

Load During Modeling Period



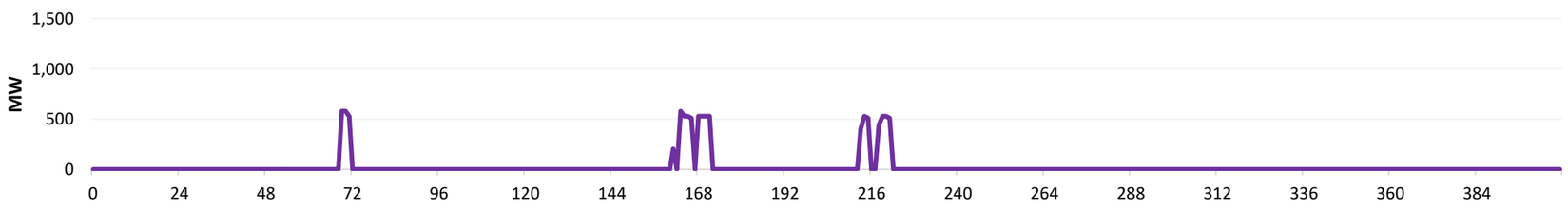
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

Export to ISO-NE Reduction During Modeling Period



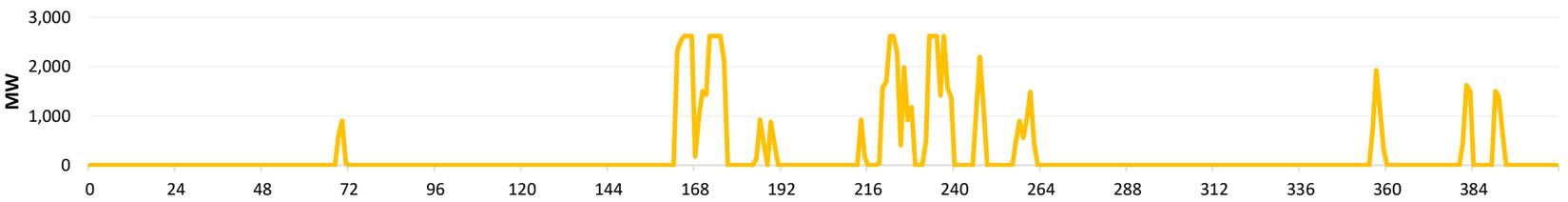
Export Reductions	
Total Hrs.	130
Total MWh	126,968
Avg. MW	311.2

SCR/EDRP Deployed During Modeling Period



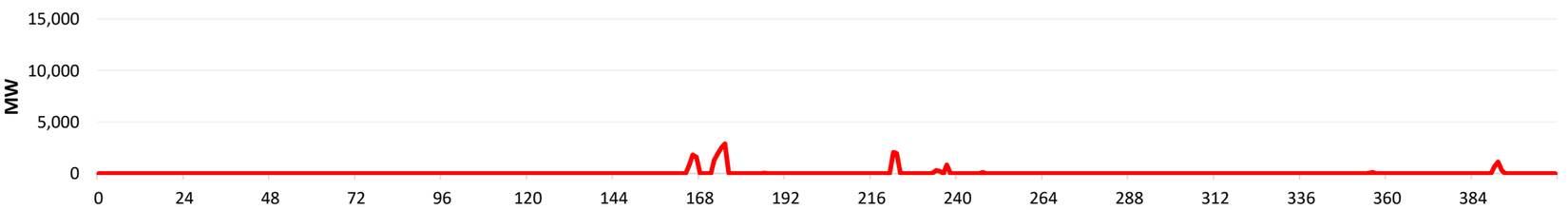
SCR Deployment	
Total Hrs.	19
Total MWh	9,576
Avg. MW	23.5

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	61
Total MWh	86,139
Avg. MW	211.1
First Hour with Viol.	69

Loss of Load During Modeling Period



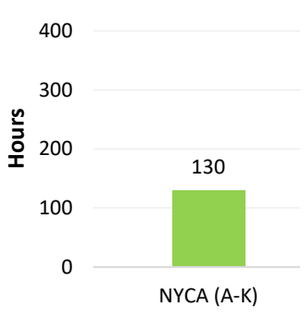
Loss of Load	
Total Hrs.	22
Total MWh	20,902
Avg. MW	51.2
First Hour with Losses	165

Full Period Results Summary

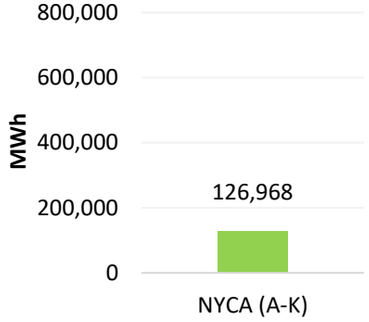
Case Name: Scenario 2 - PD 1 No Disruptions

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

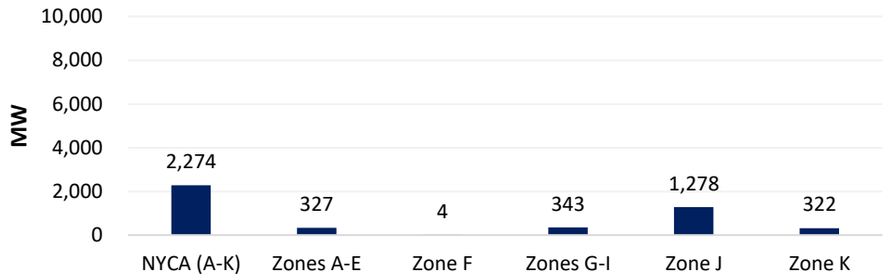
Hours Exports Reduced



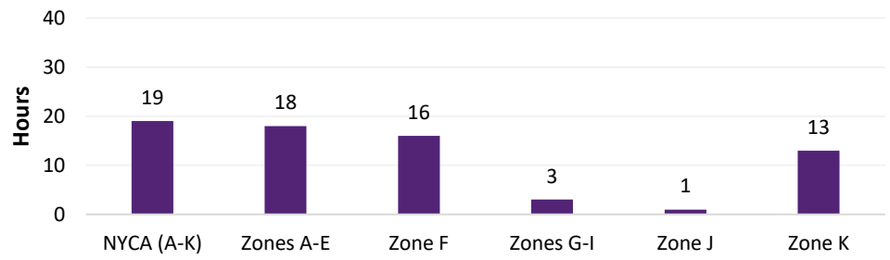
Total MWh of Exports Reduced



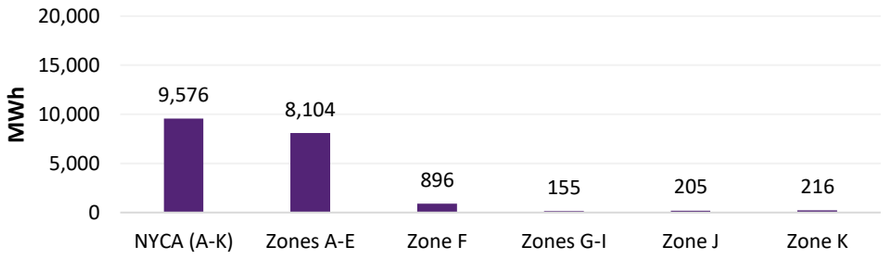
Average Capacity Not Available Due to Exhausted Fuel Inventory



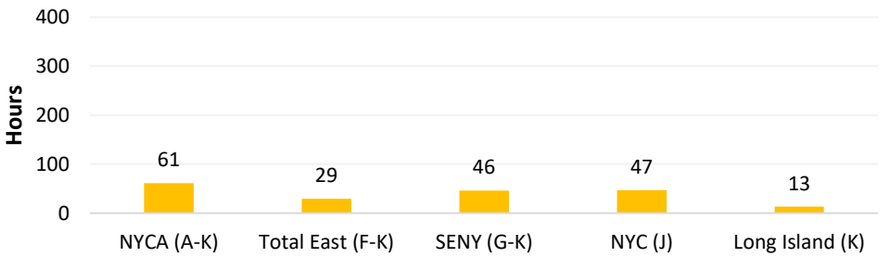
Hours SCR/EDRP Deployed



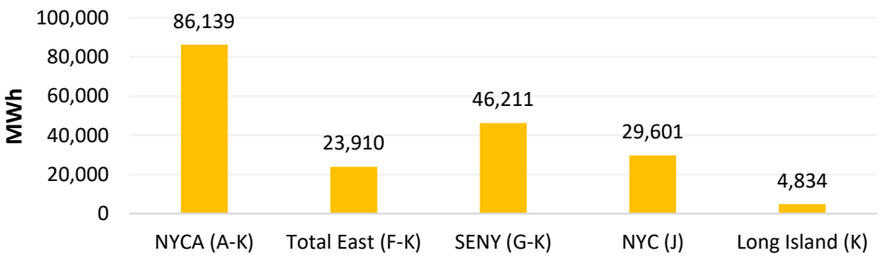
Total MWh SCR/EDRP Deployed



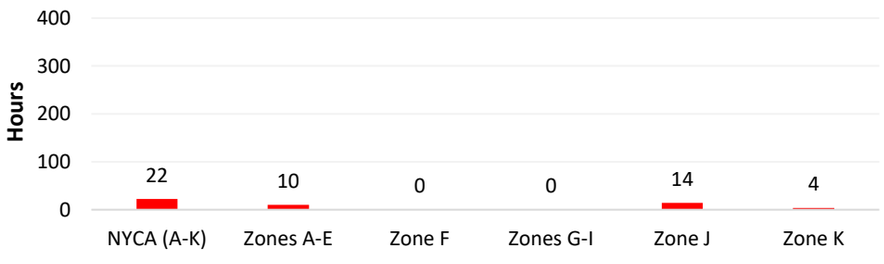
Hours with Reserve Violations



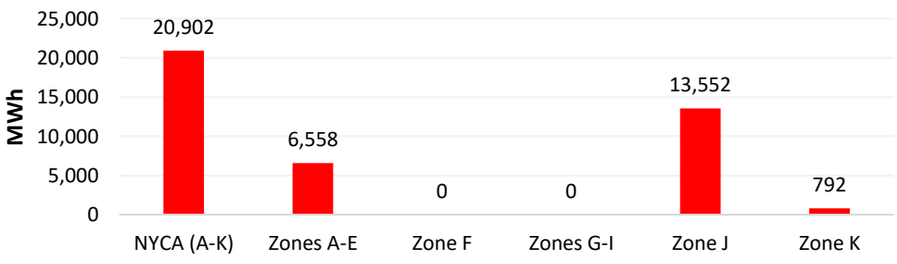
Total MWh of Reserve Violations

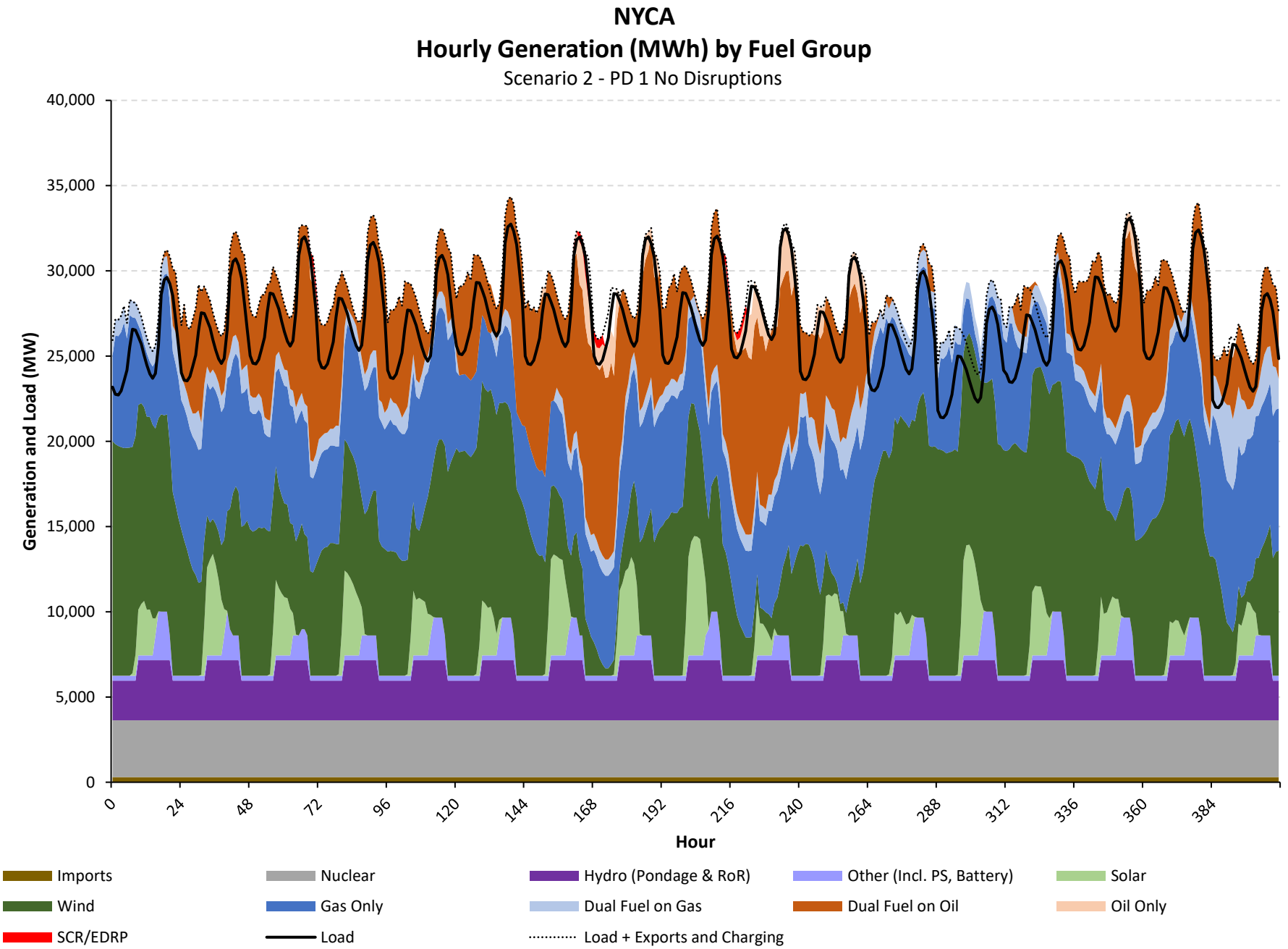


Hours with Loss of Load

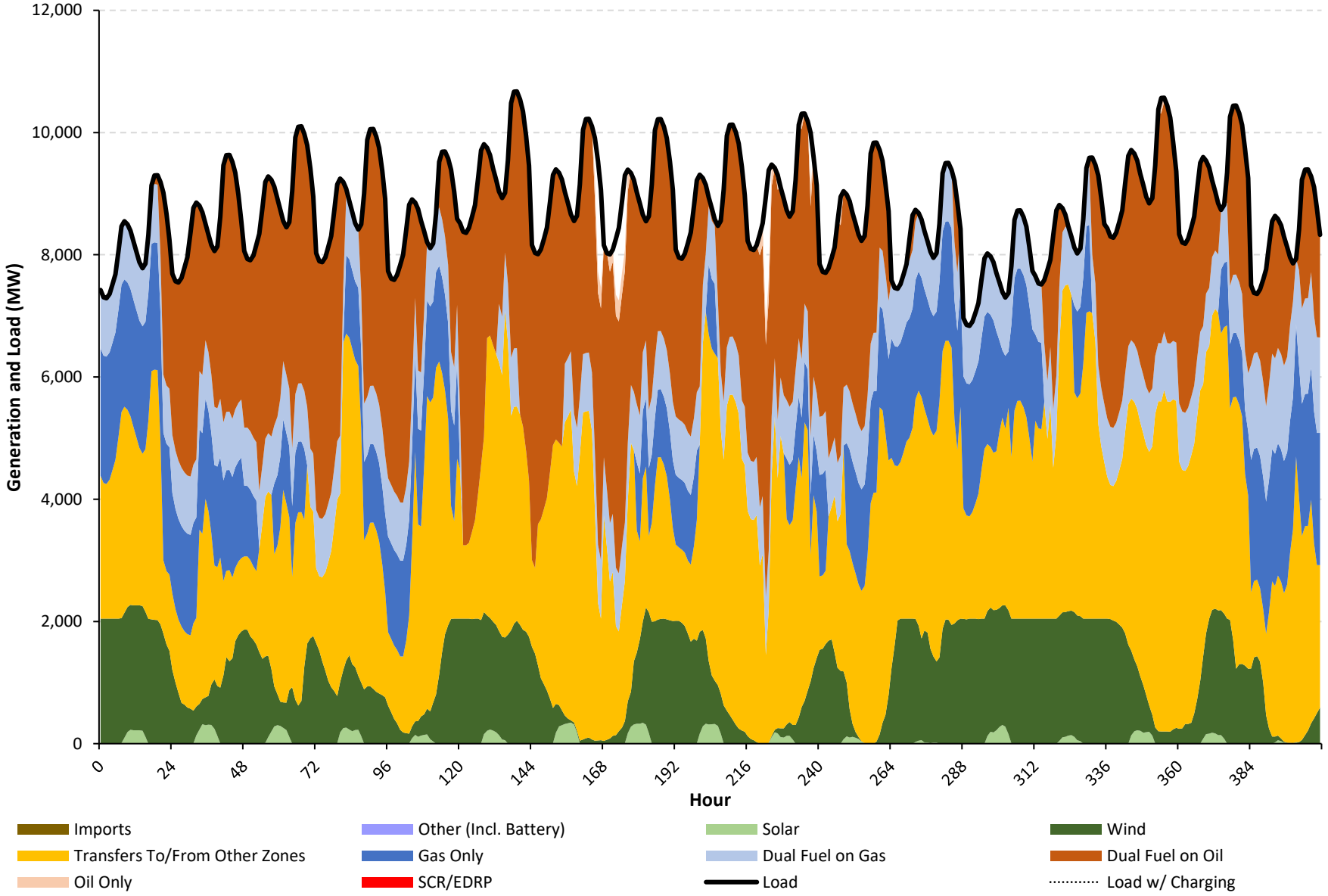


Total MWh of Lost Load

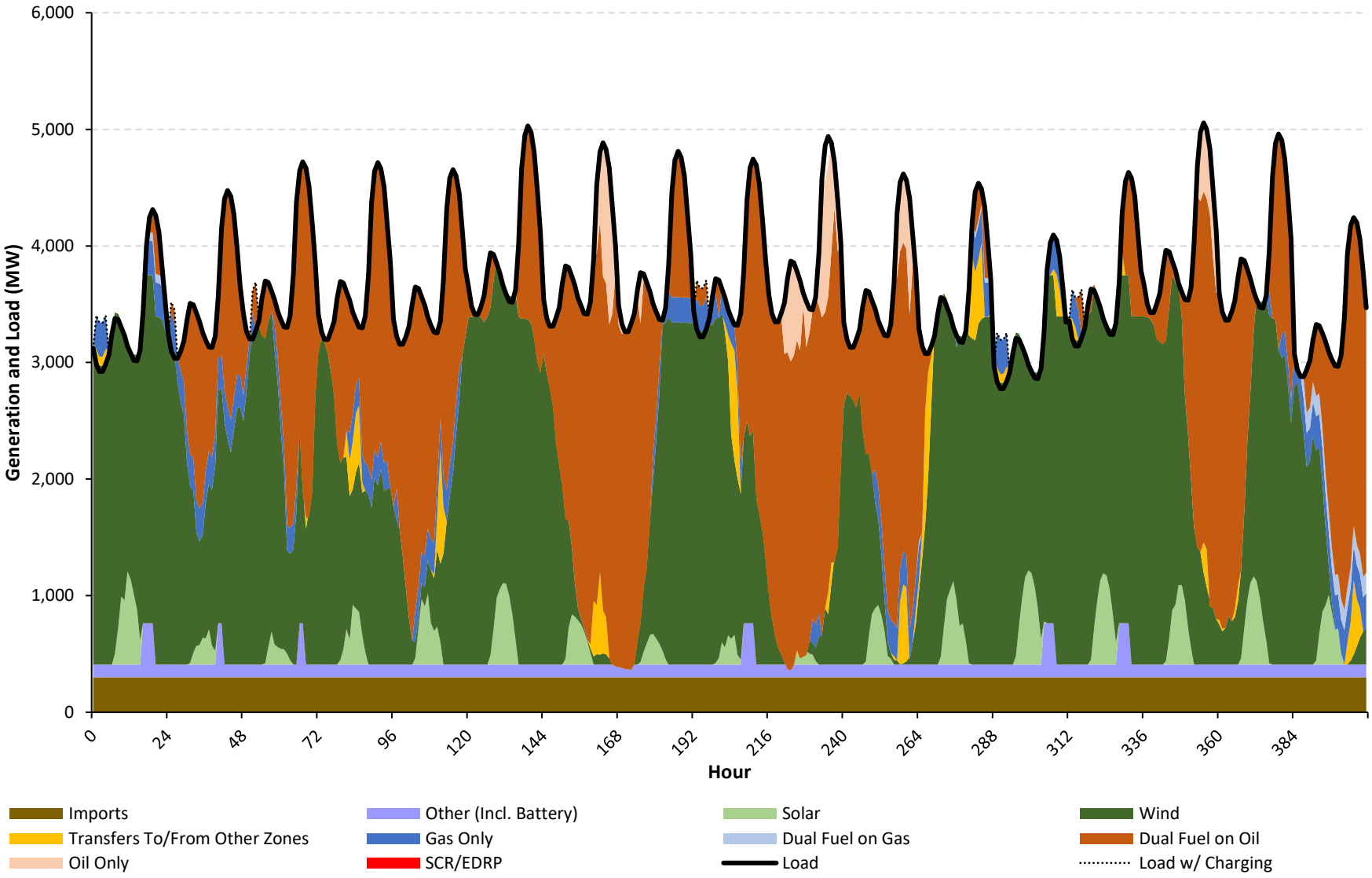


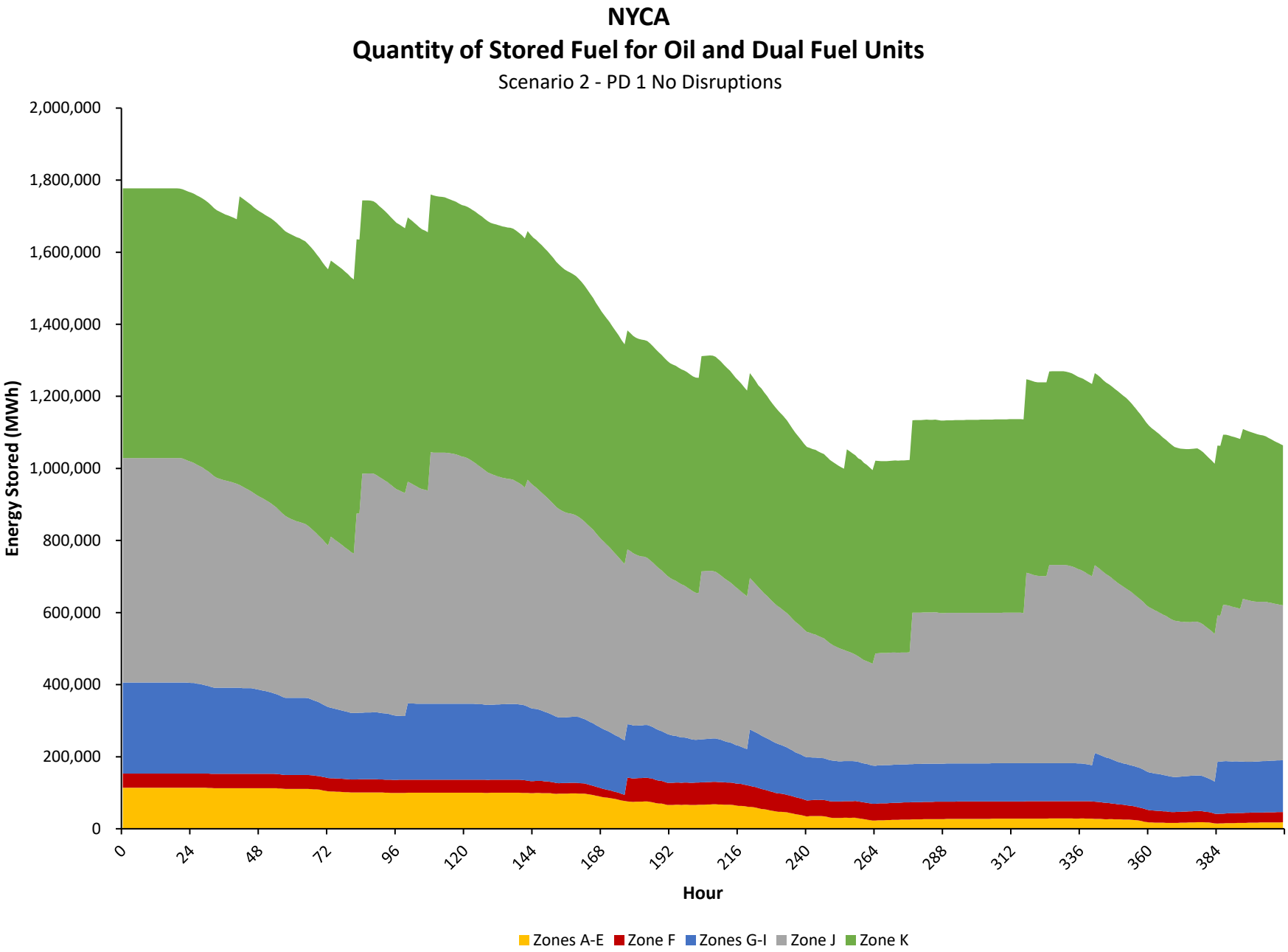

NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 2 - PD 1 No Disruptions
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

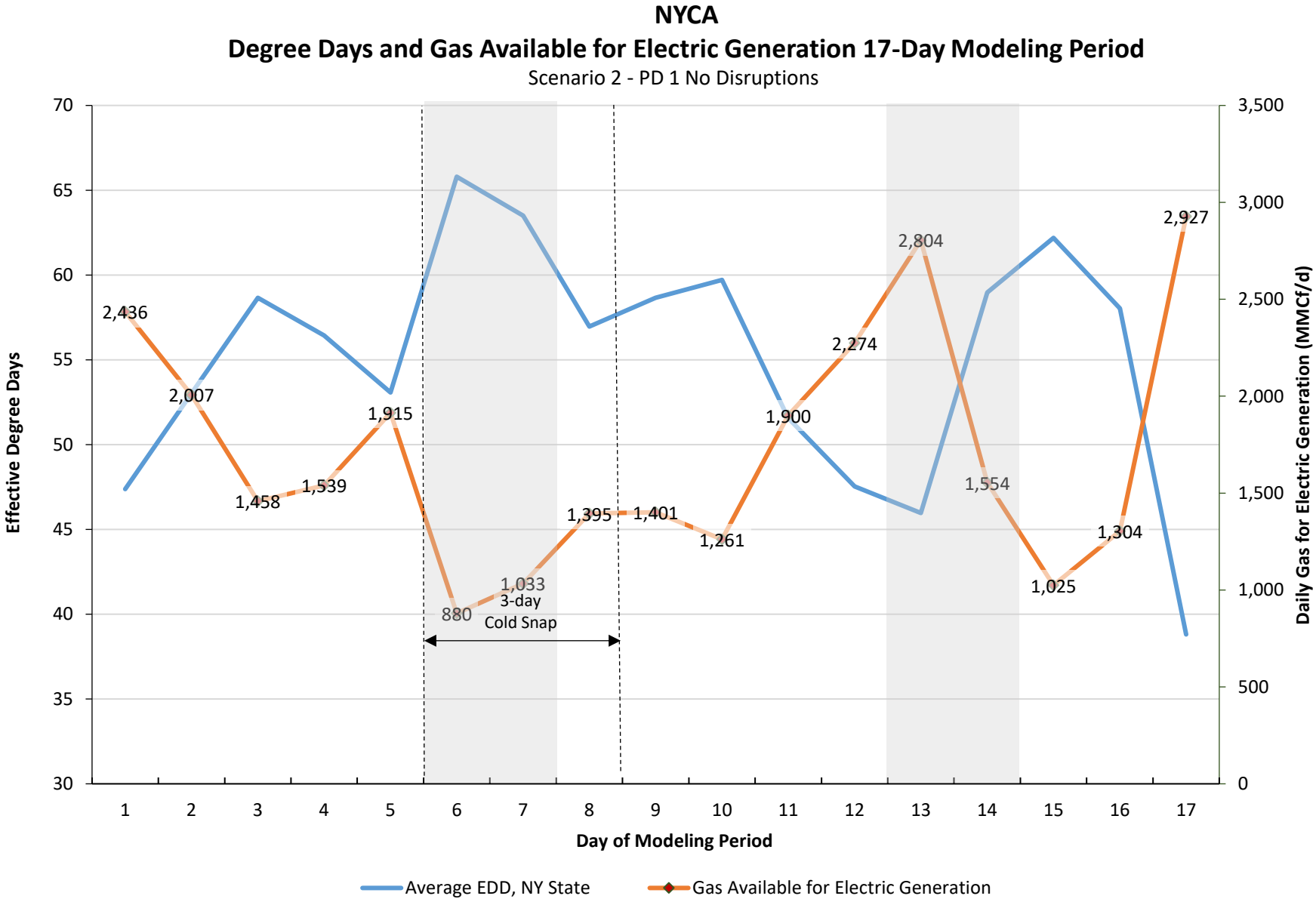
Zone J
Hourly Generation (MW) by Fuel Group
Scenario 2 - PD 1 No Disruptions



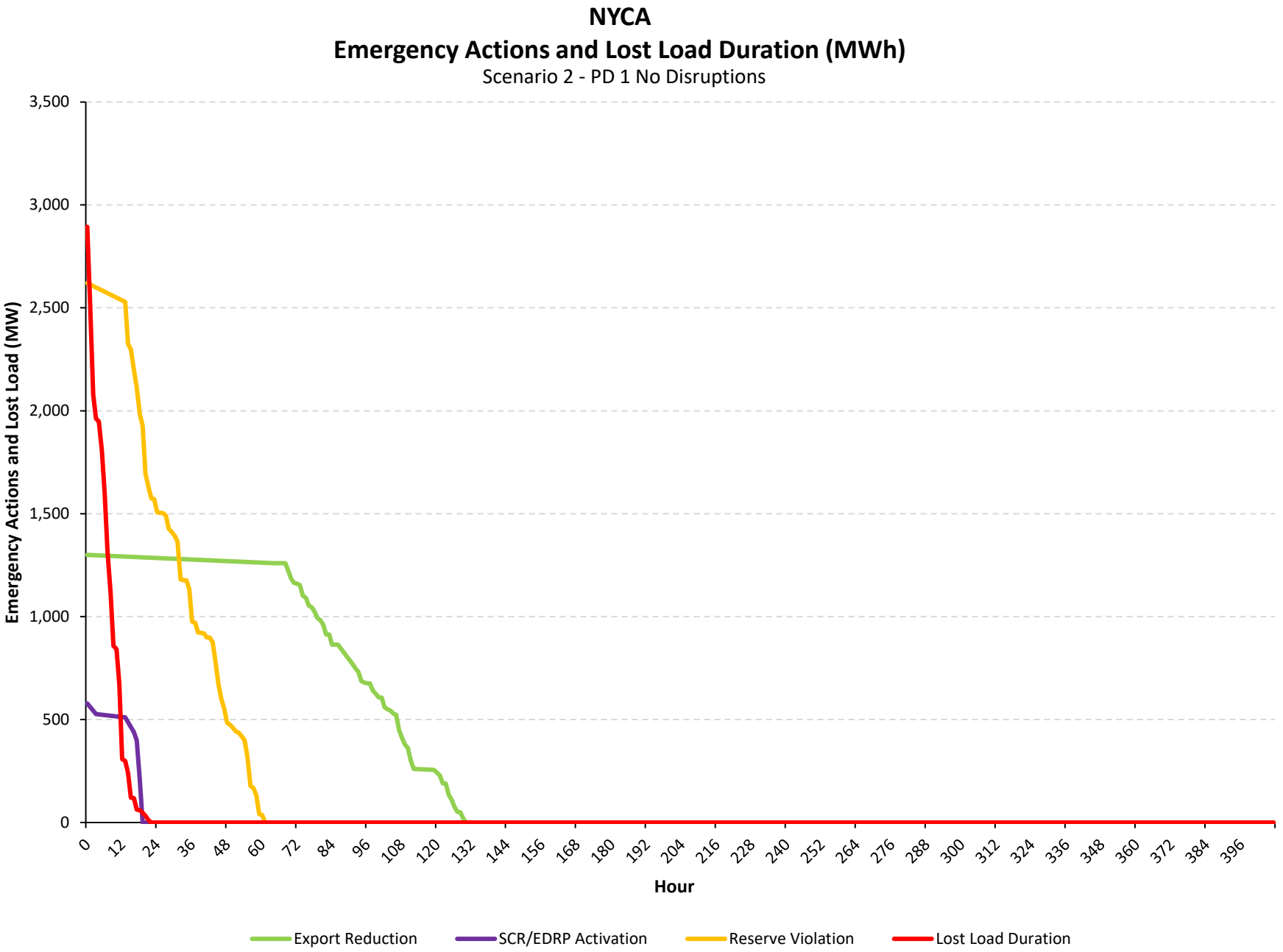
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 2 - PD 1 No Disruptions

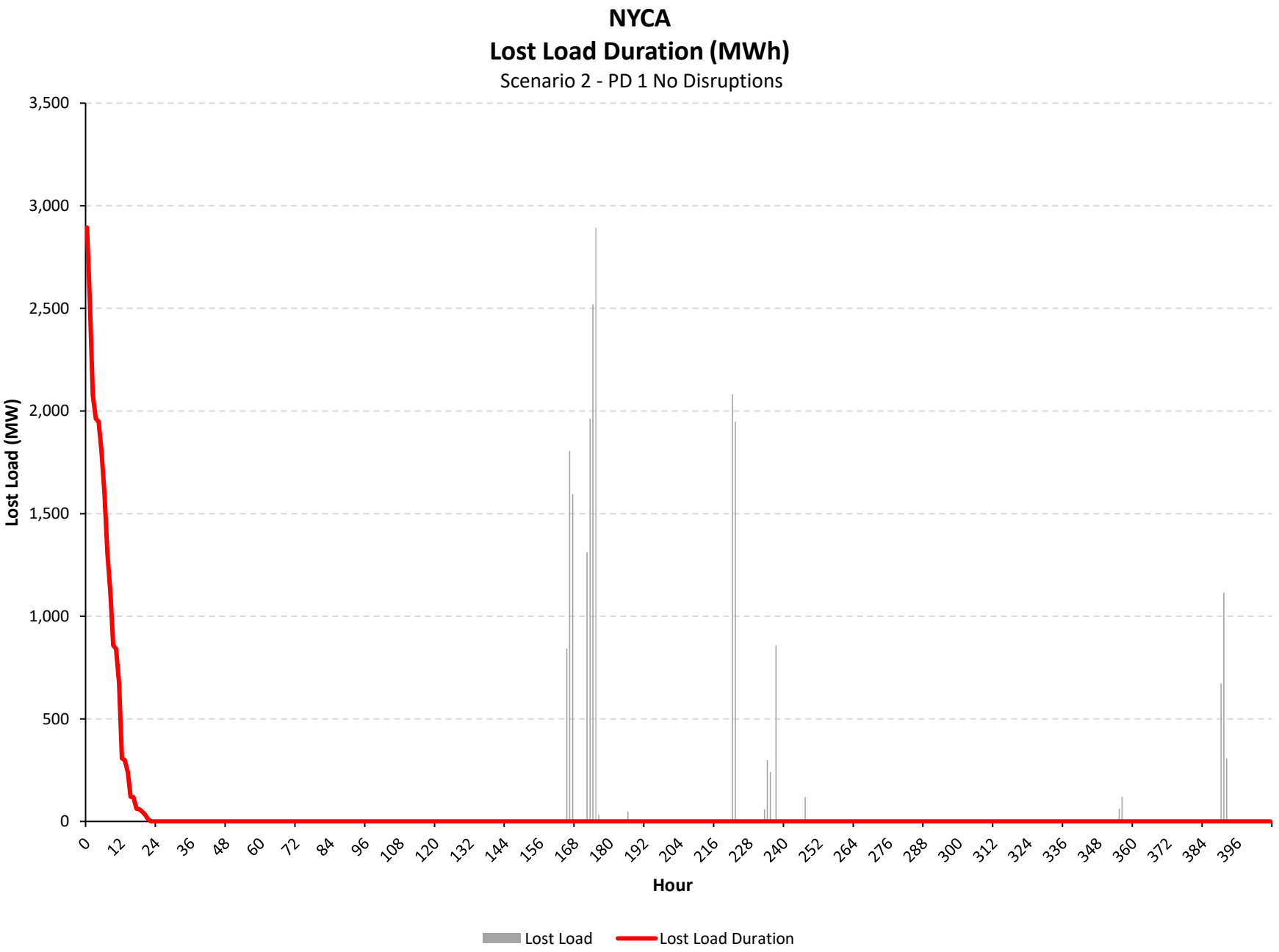



NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 2 - PD 1 No Disruptions
Energy Stored (MWh)
2,000,000
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Zones A-E
Zone F
Zones G-I
Zone J
Zone K



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 2 - PD 1 No Disruptions
Emergency Actions and Lost Load (MW)
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 2 - PD 1 No Disruptions
Lost Load (MW)
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

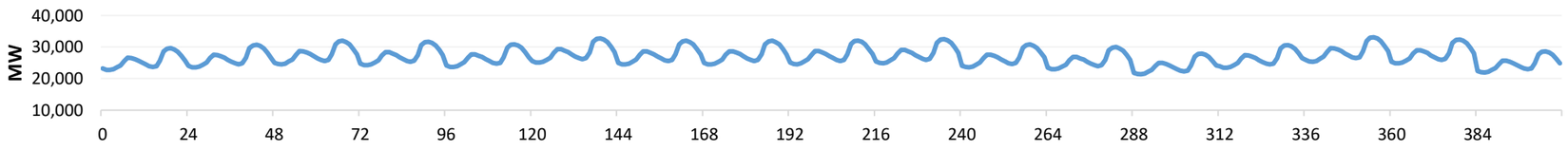
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 2 - PD 2 High Outage (Winter 2030/2031)

Hourly Results Summary

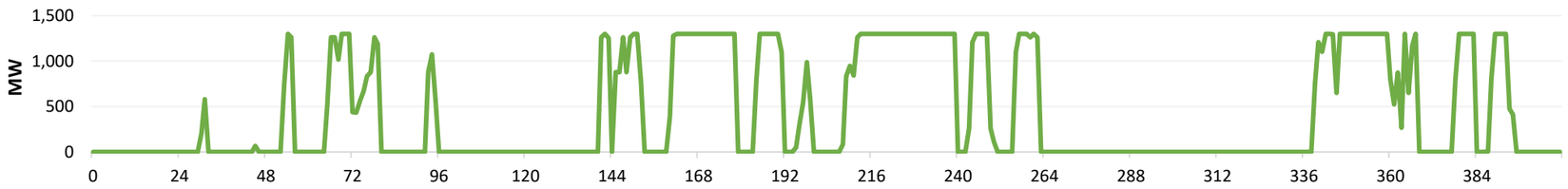
Case Name: Scenario 2 - PD 2 High Outage

Load During Modeling Period



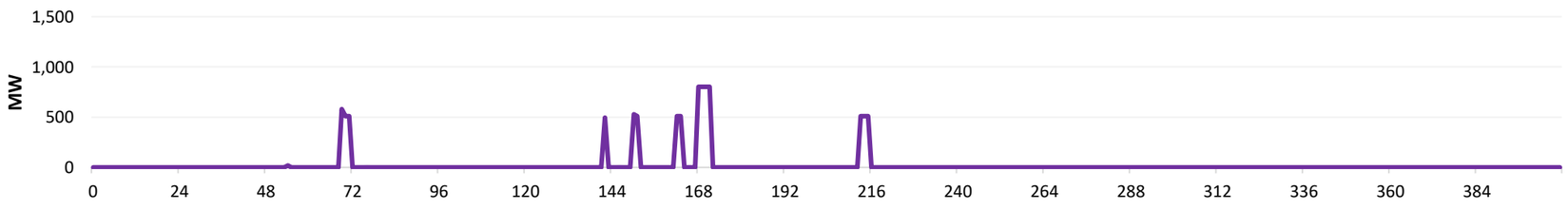
Case Summary	
Derate (EFORd) Increase:	High
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

Export to ISO-NE Reduction During Modeling Period



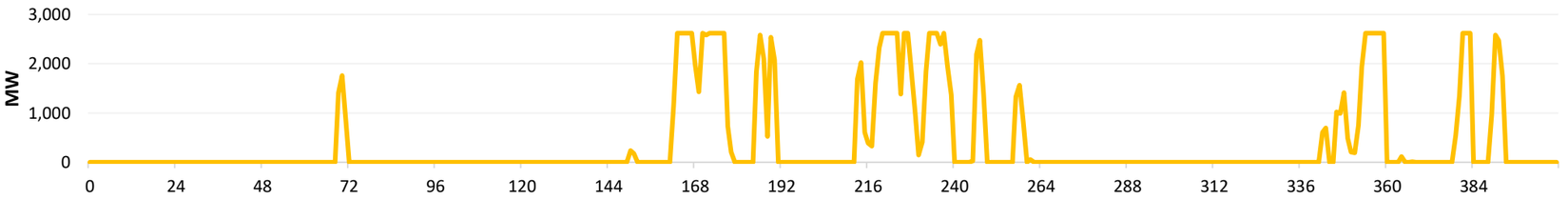
Export Reductions	
Total Hrs.	157
Total MWh	170,937
Avg. MW	419.0

SCR/EDRP Deployed During Modeling Period



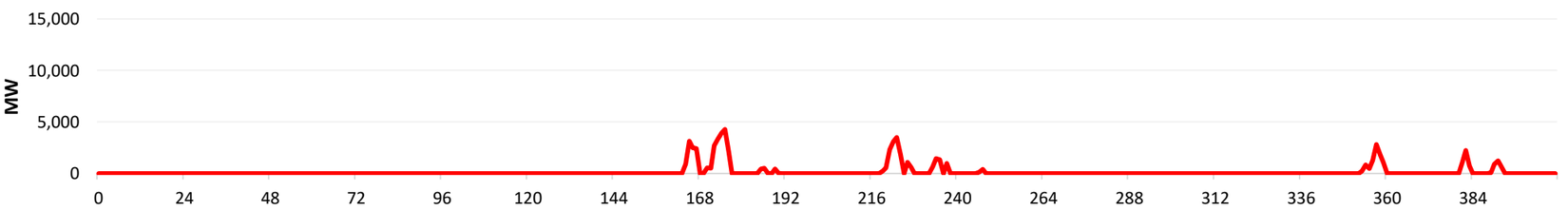
SCR Deployment	
Total Hrs.	16
Total MWh	8,910
Avg. MW	21.8

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	90
Total MWh	154,568
Avg. MW	378.8
First Hour with Viol.	69

Loss of Load During Modeling Period



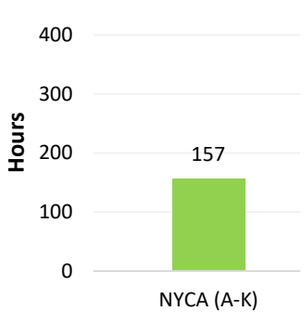
Loss of Load	
Total Hrs.	44
Total MWh	61,585
Avg. MW	150.9
First Hour with Losses	164

Full Period Results Summary

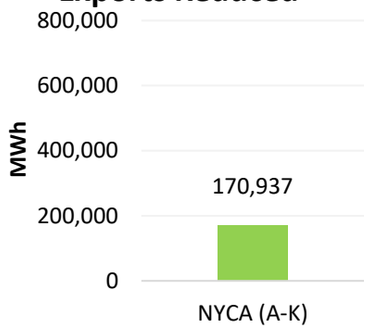
Case Name: Scenario 2 - PD 2 High Outage

Case Summary	
Derate (EFORd) Increase:	High
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

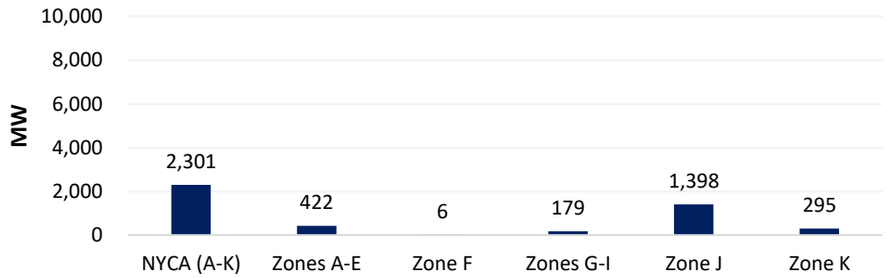
Hours Exports Reduced



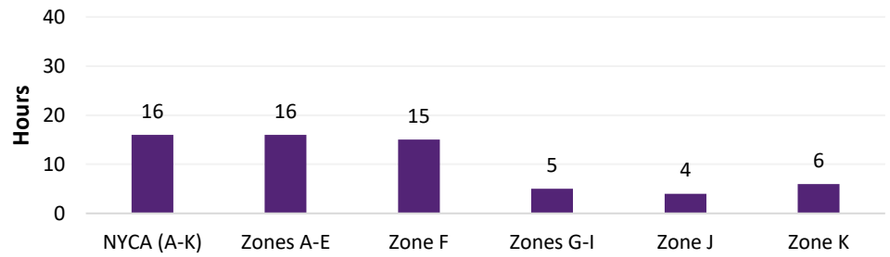
Total MWh of Exports Reduced



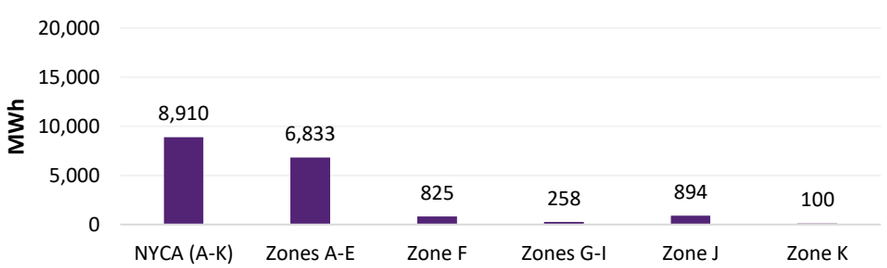
Average Capacity Not Available Due to Exhausted Fuel Inventory



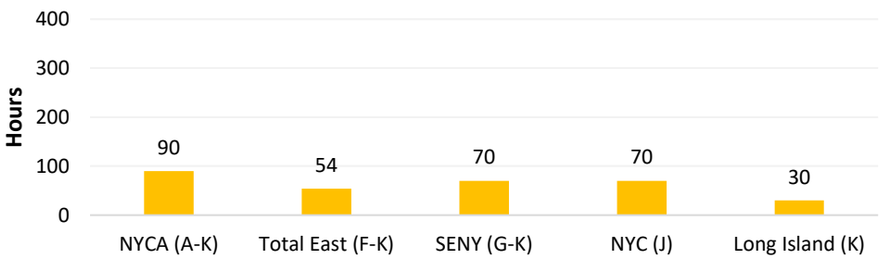
Hours SCR/EDRP Deployed



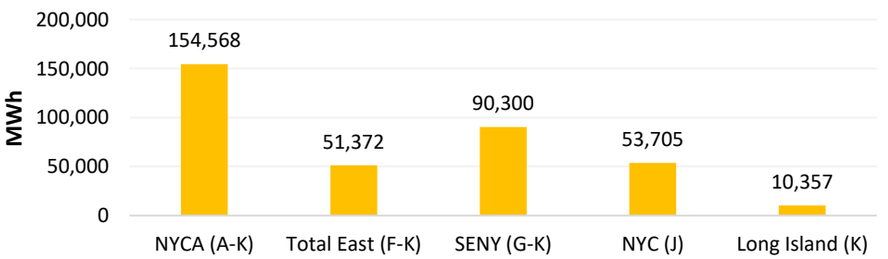
Total MWh SCR/EDRP Deployed



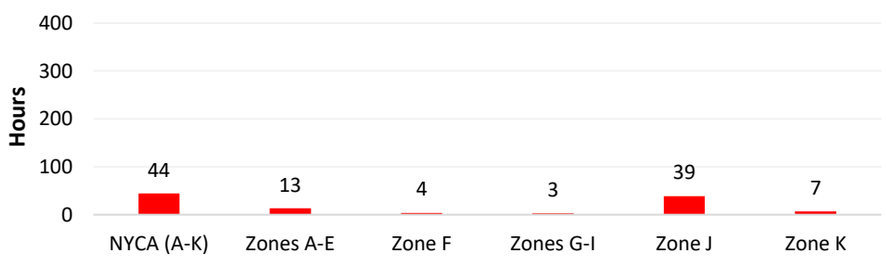
Hours with Reserve Violations



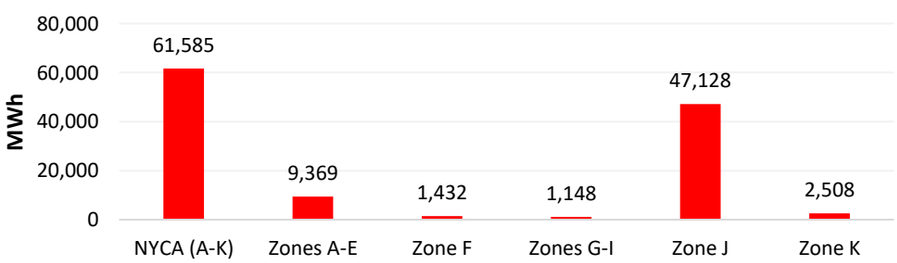
Total MWh of Reserve Violations

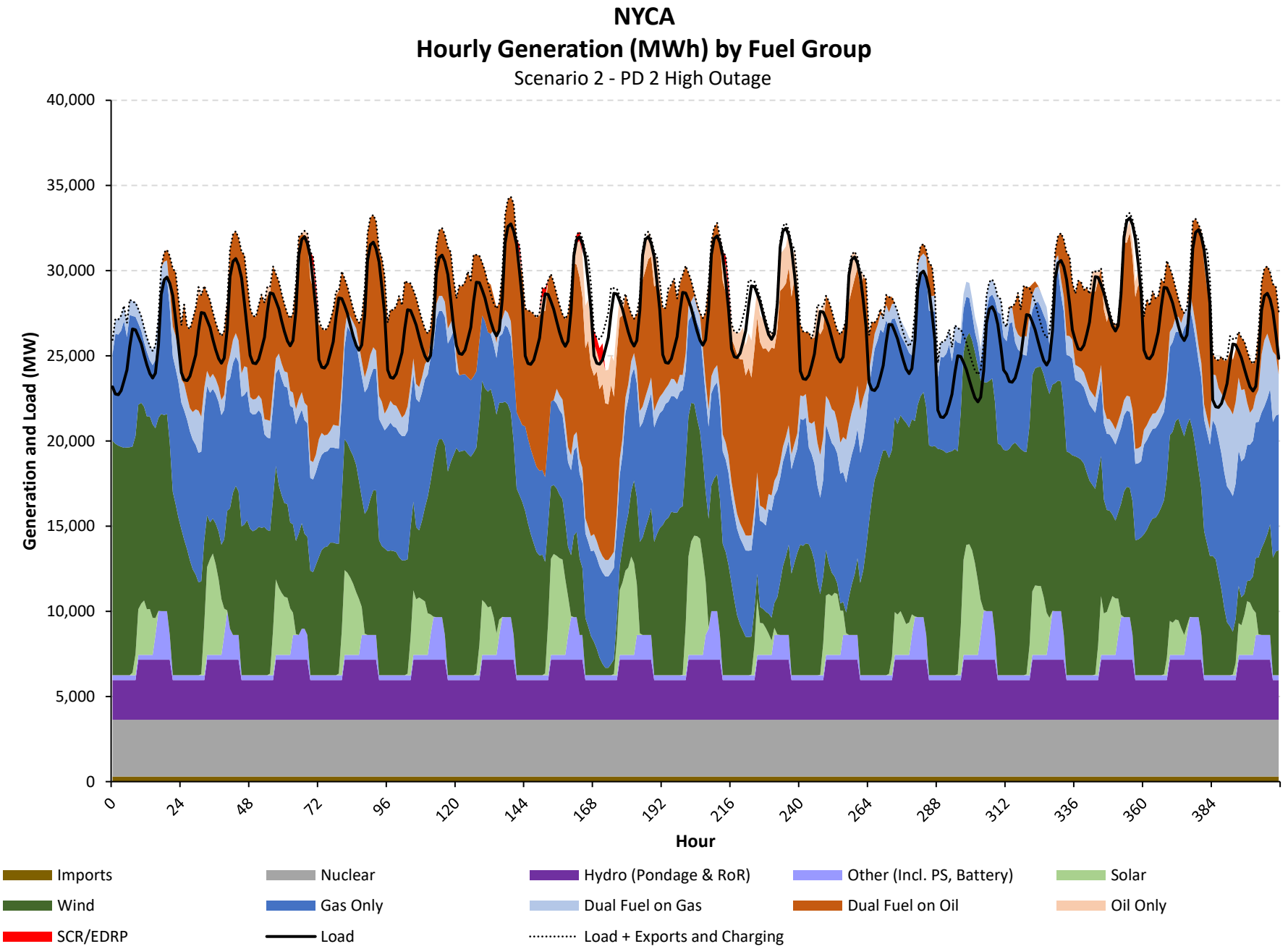


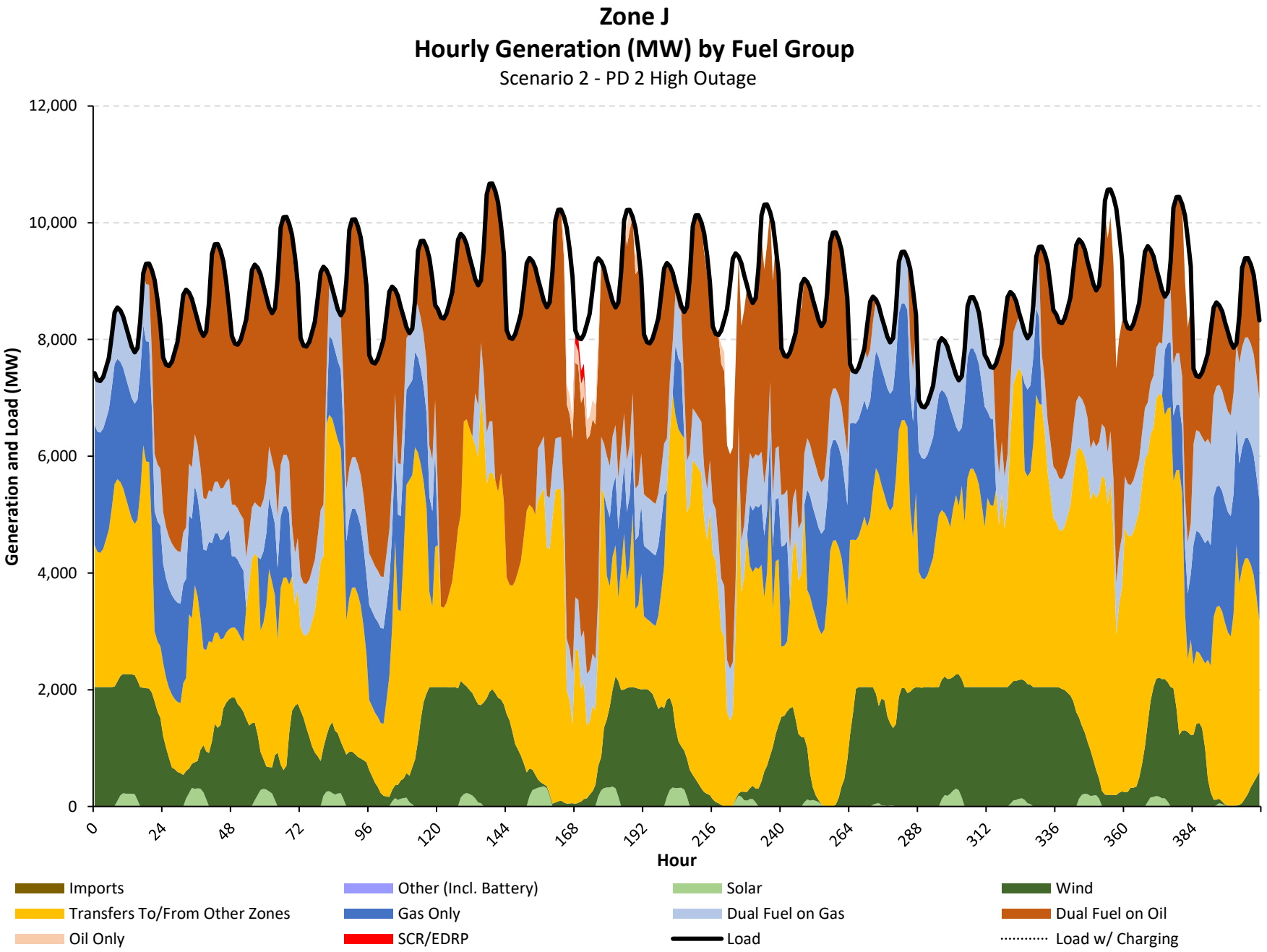
Hours with Loss of Load



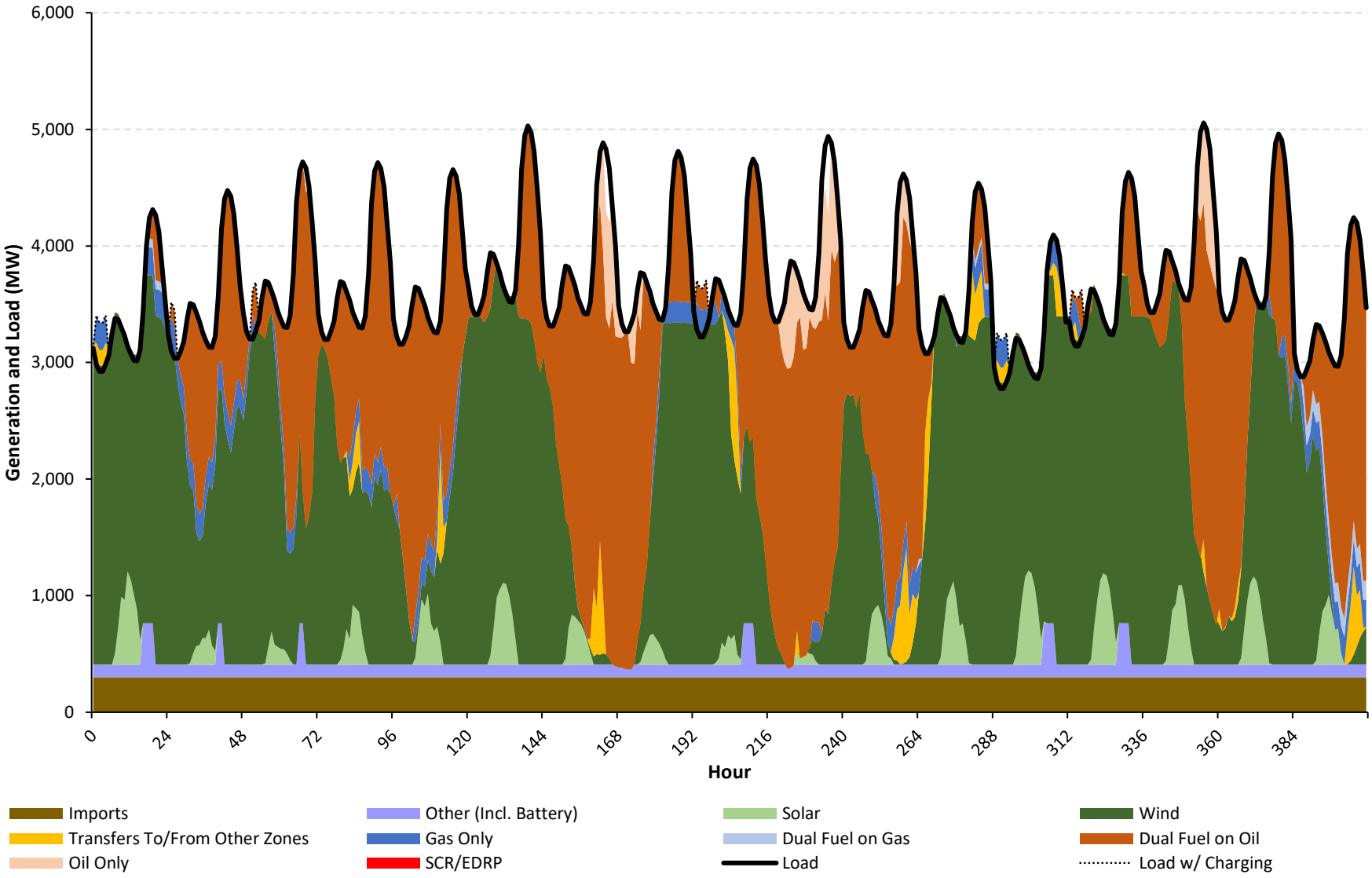
Total MWh of Lost Load

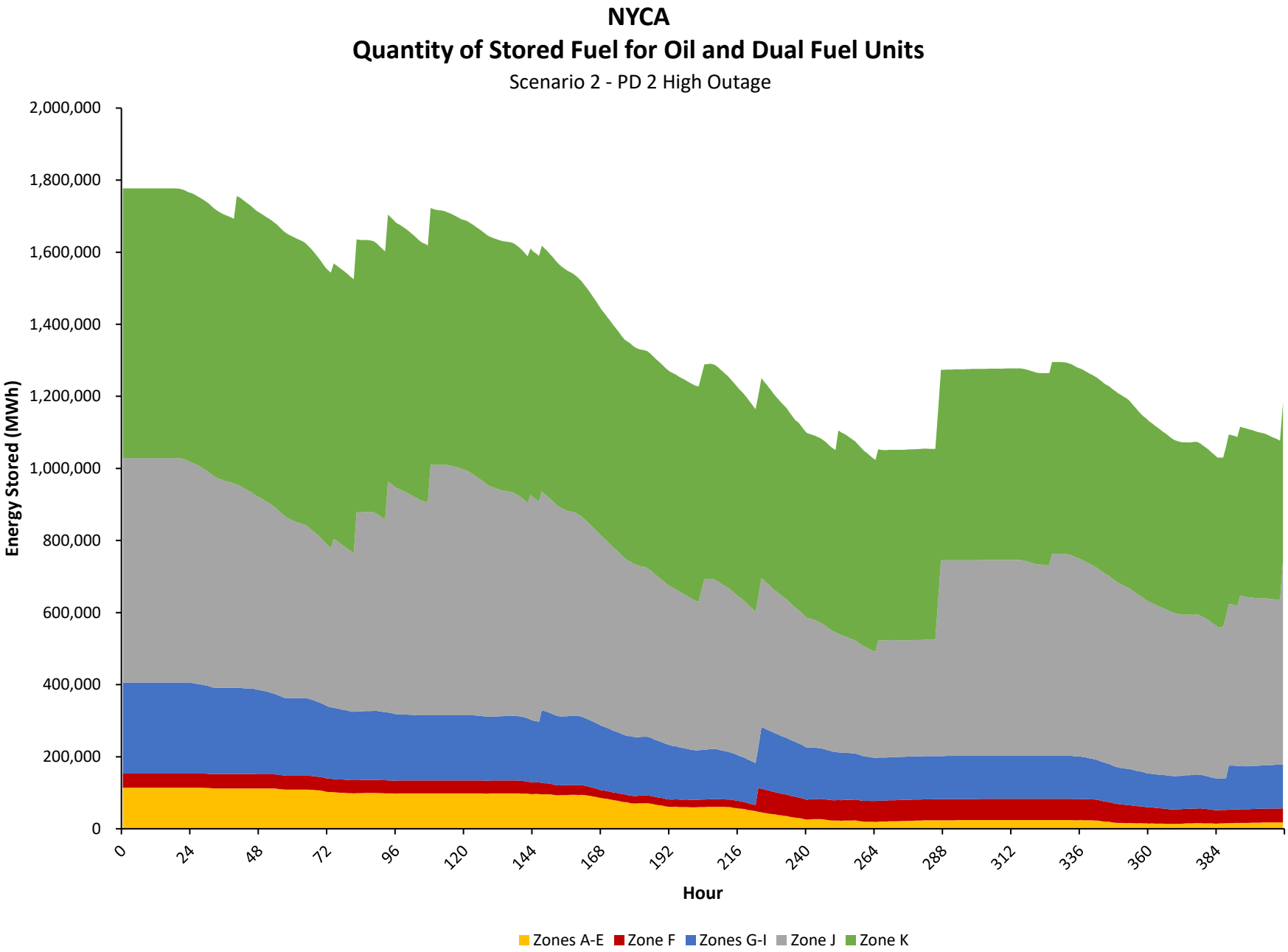


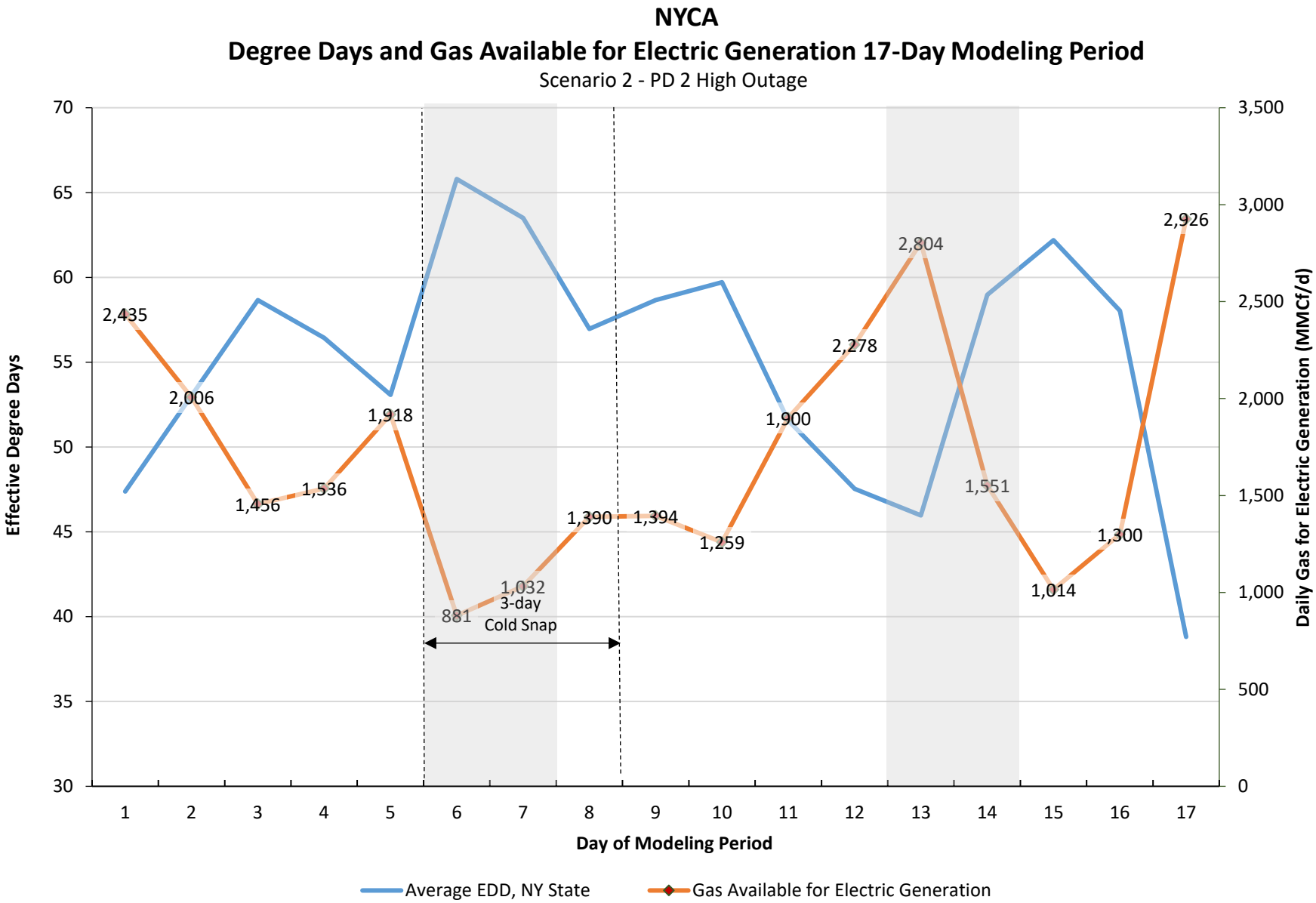

NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 2 - PD 2 High Outage
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 2 - PD 2 High Outage
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

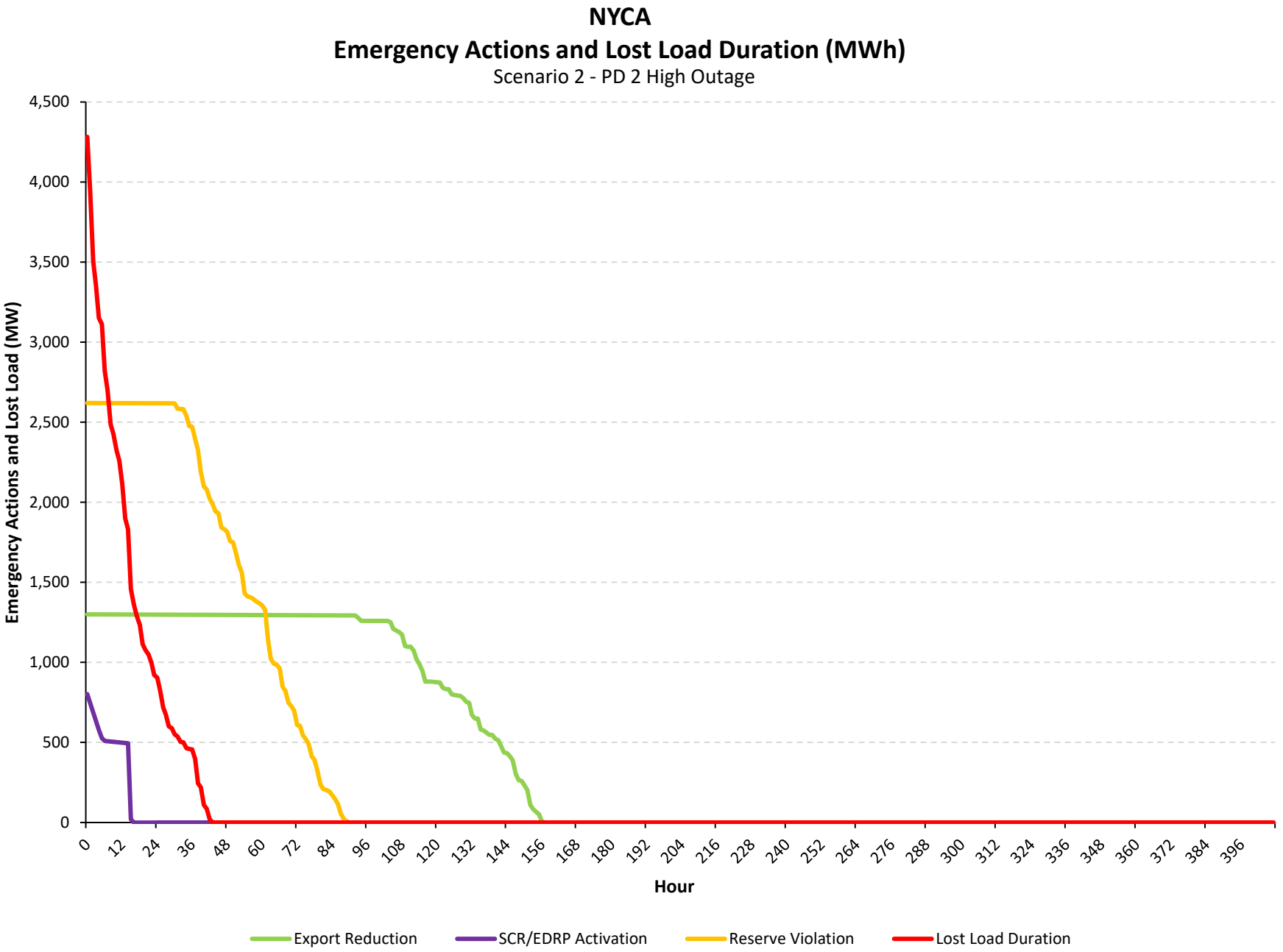
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 2 - PD 2 High Outage

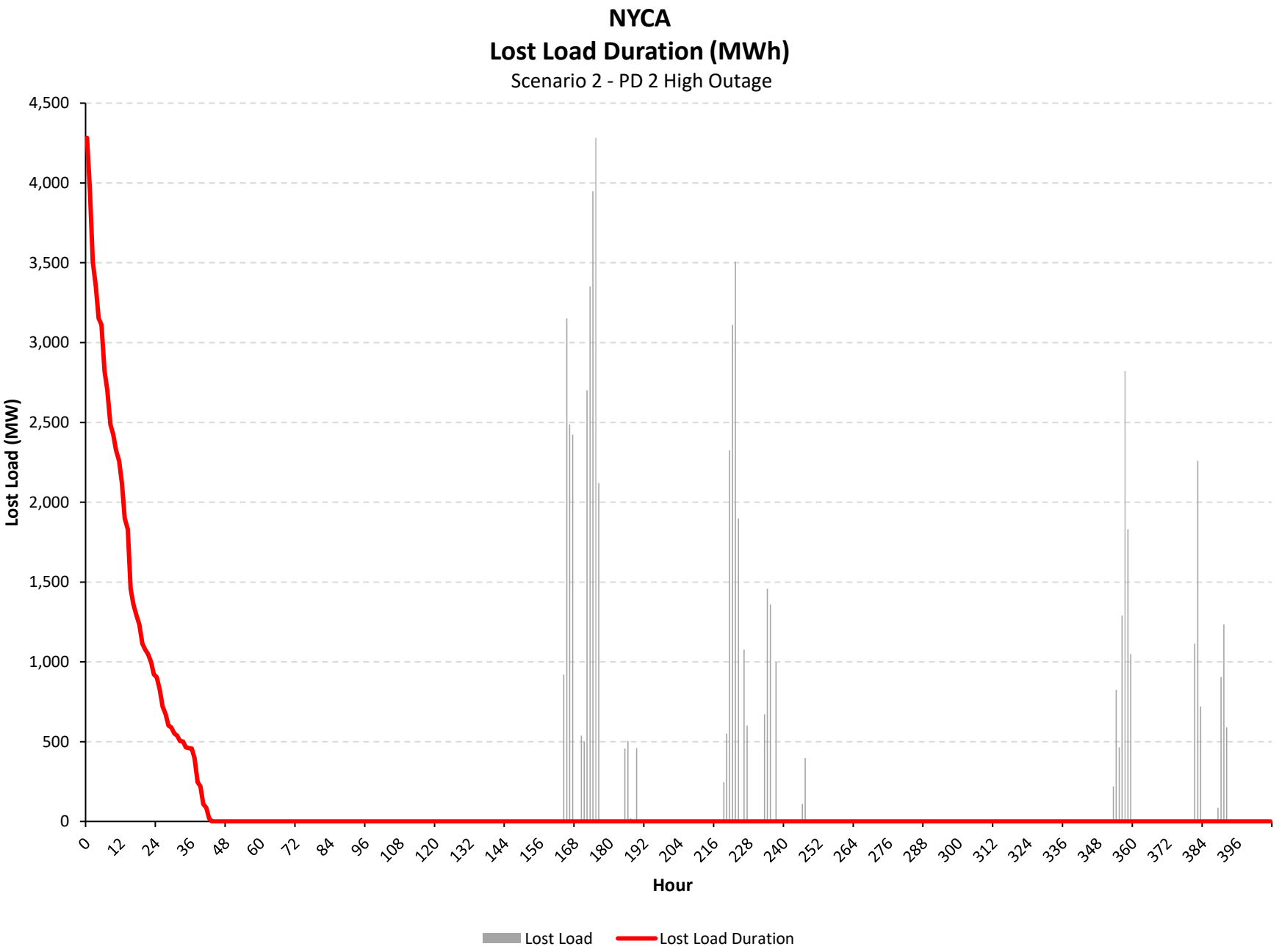



NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 2 - PD 2 High Outage
Energy Stored (MWh)
2,000,000
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Zones A-E
Zone F
Zones G-I
Zone J
Zone K



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 2 - PD 2 High Outage
Emergency Actions and Lost Load (MW)
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 2 - PD 2 High Outage
Lost Load (MW)
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

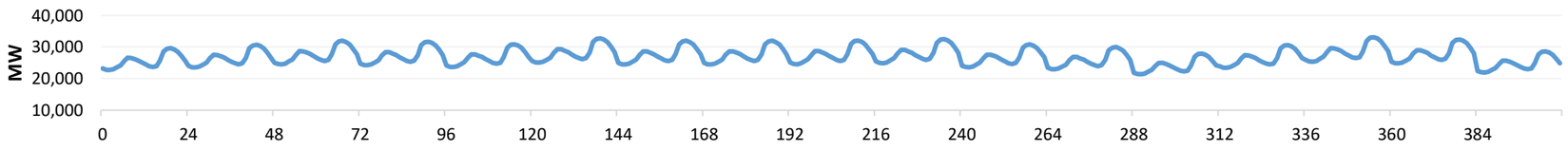
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 2 - PD 3 SENY Deactivation (Winter 2030/2031)

Hourly Results Summary

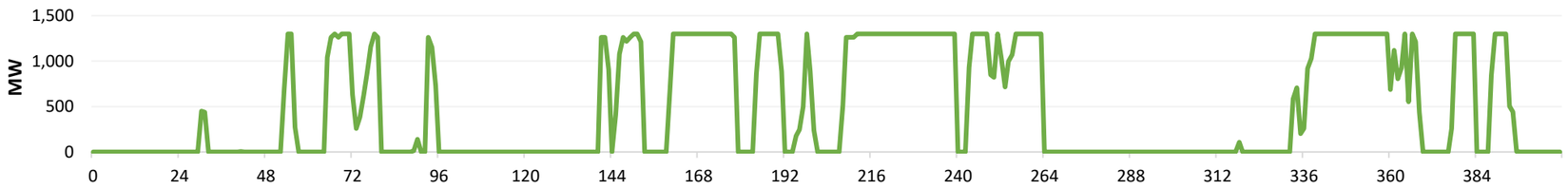
Case Name: Scenario 2 - PD 3 SENY Deactivation

Load During Modeling Period



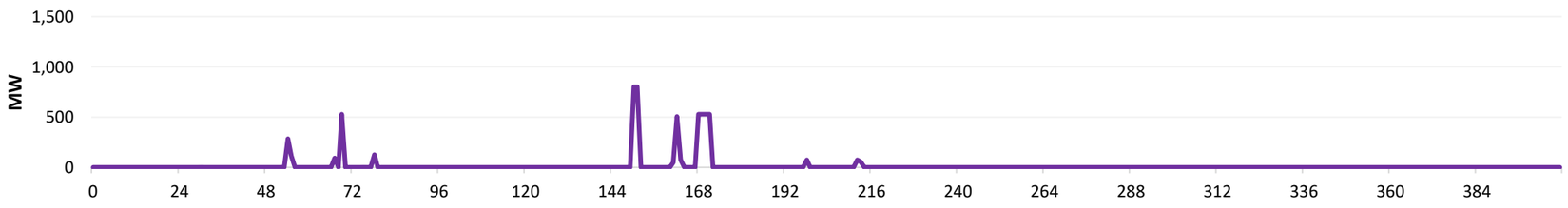
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	Roseton
Import Scenario:	Net Zero

Export to ISO-NE Reduction During Modeling Period



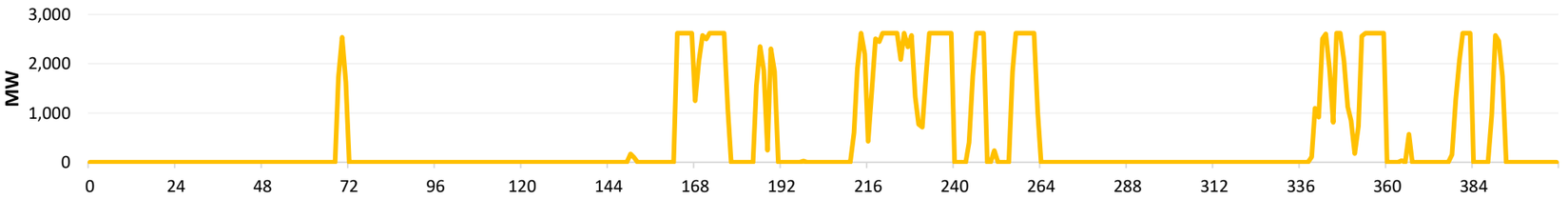
Export Reductions	
Total Hrs.	176
Total MWh	192,209
Avg. MW	471.1

SCR/EDRP Deployed During Modeling Period



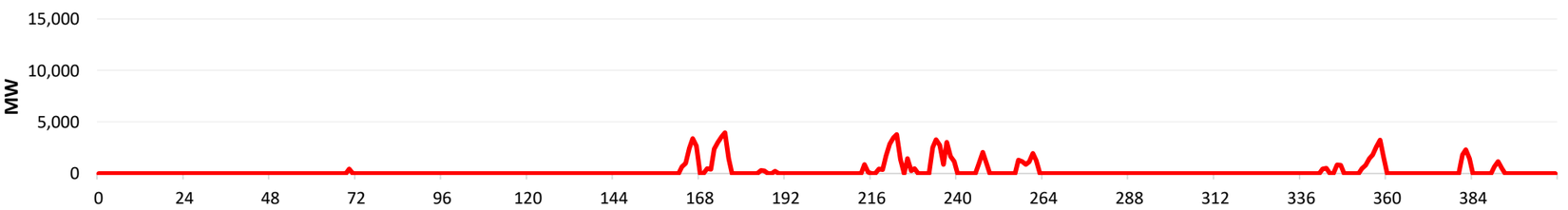
SCR Deployment	
Total Hrs.	17
Total MWh	5,689
Avg. MW	13.9

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	102
Total MWh	198,668
Avg. MW	486.9
First Hour with Viol.	69

Loss of Load During Modeling Period



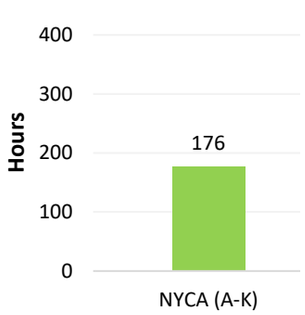
Loss of Load	
Total Hrs.	61
Total MWh	93,720
Avg. MW	229.7
First Hour with Losses	70

Full Period Results Summary

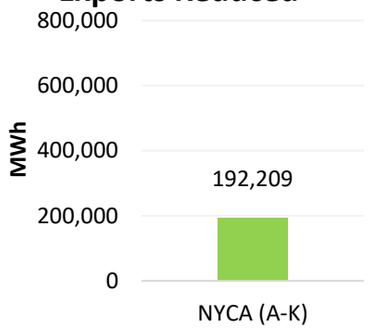
Case Name: Scenario 2 - PD 3 SENY Deactivation

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	Roseton
Import Scenario:	Net Zero

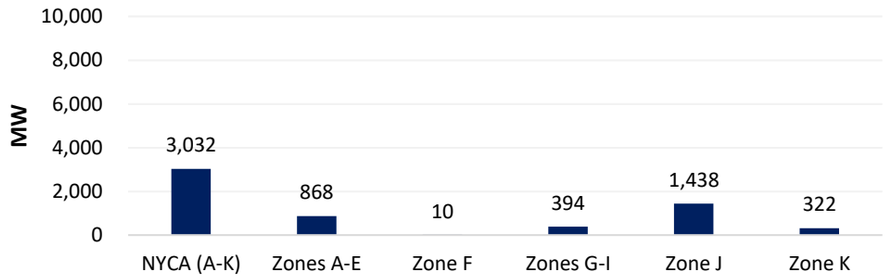
Hours Exports Reduced



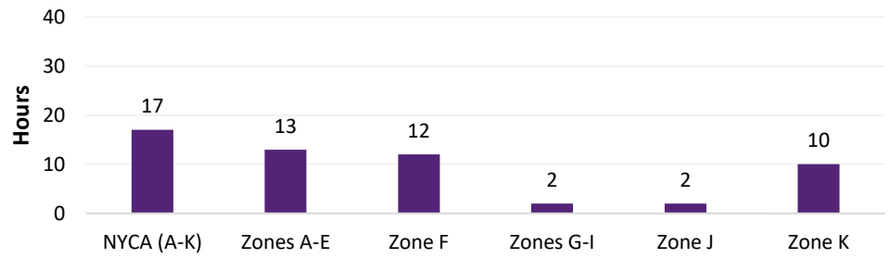
Total MWh of Exports Reduced



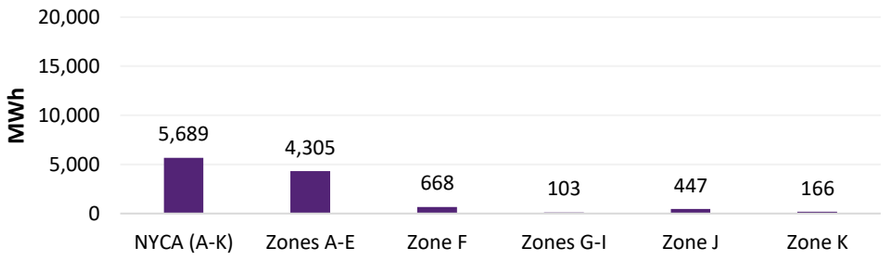
Average Capacity Not Available Due to Exhausted Fuel Inventory



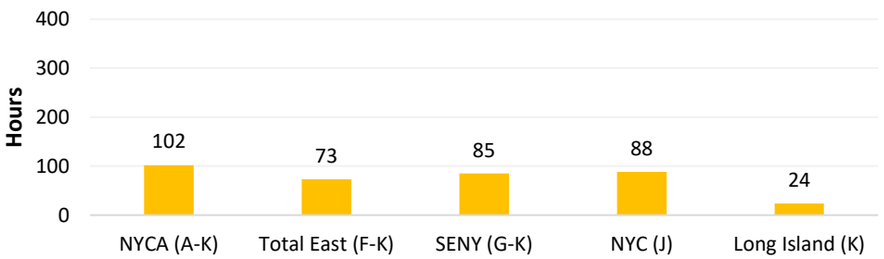
Hours SCR/EDRP Deployed



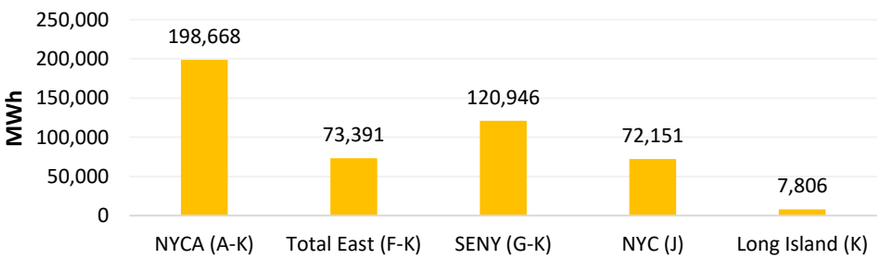
Total MWh SCR/EDRP Deployed



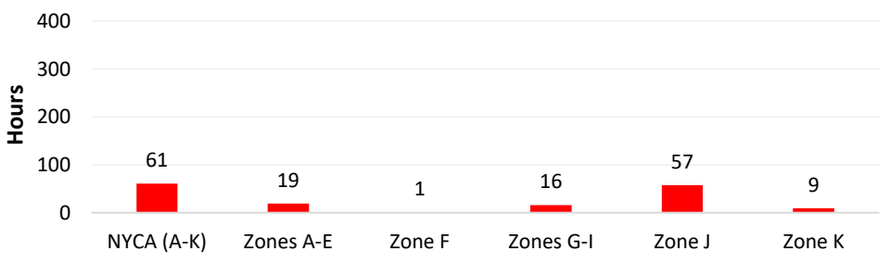
Hours with Reserve Violations



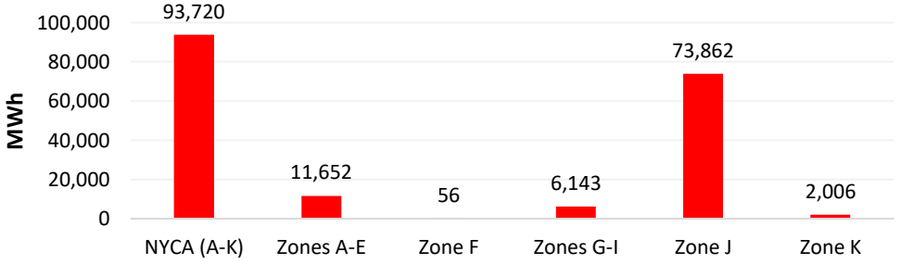
Total MWh of Reserve Violations

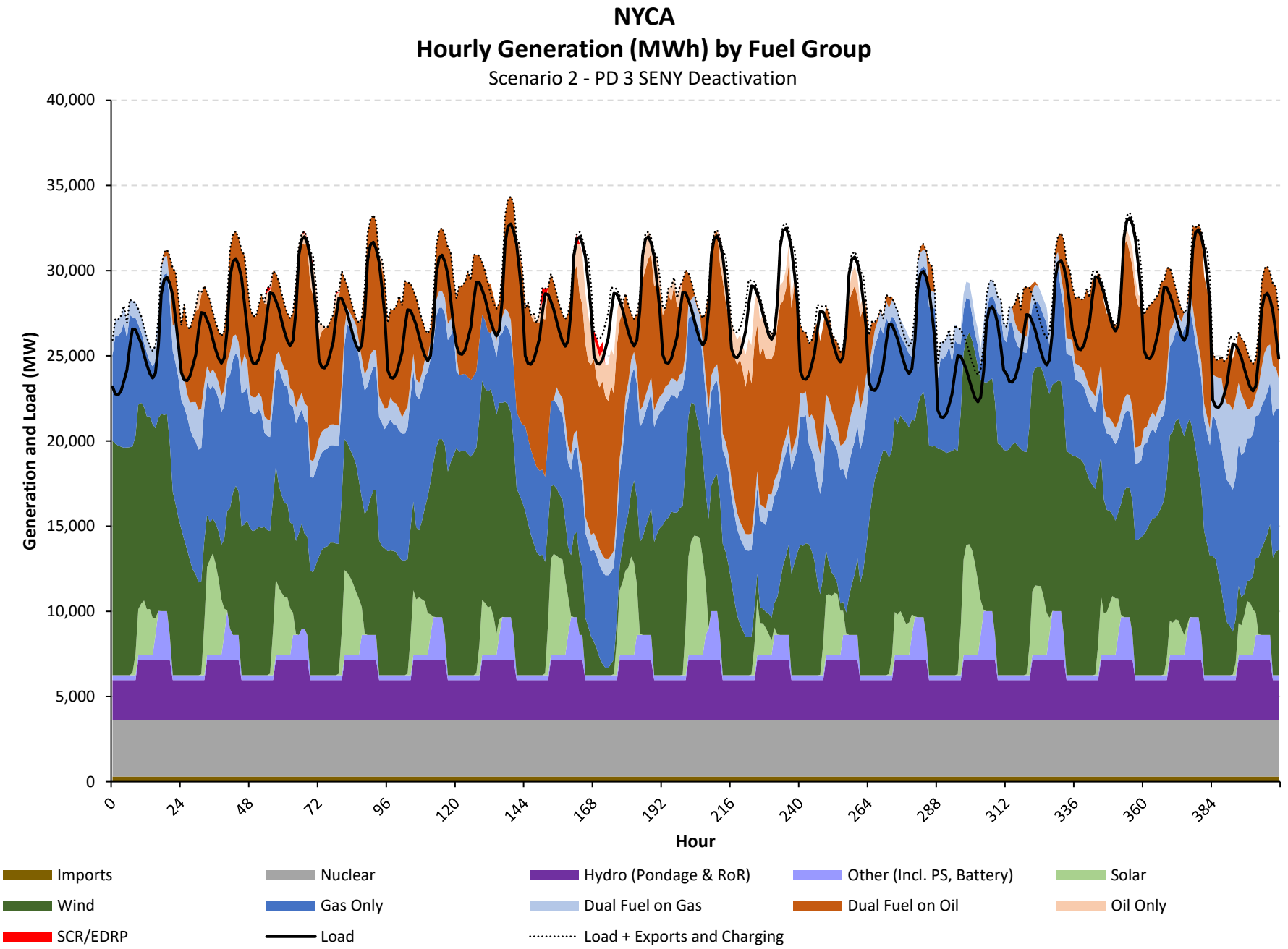


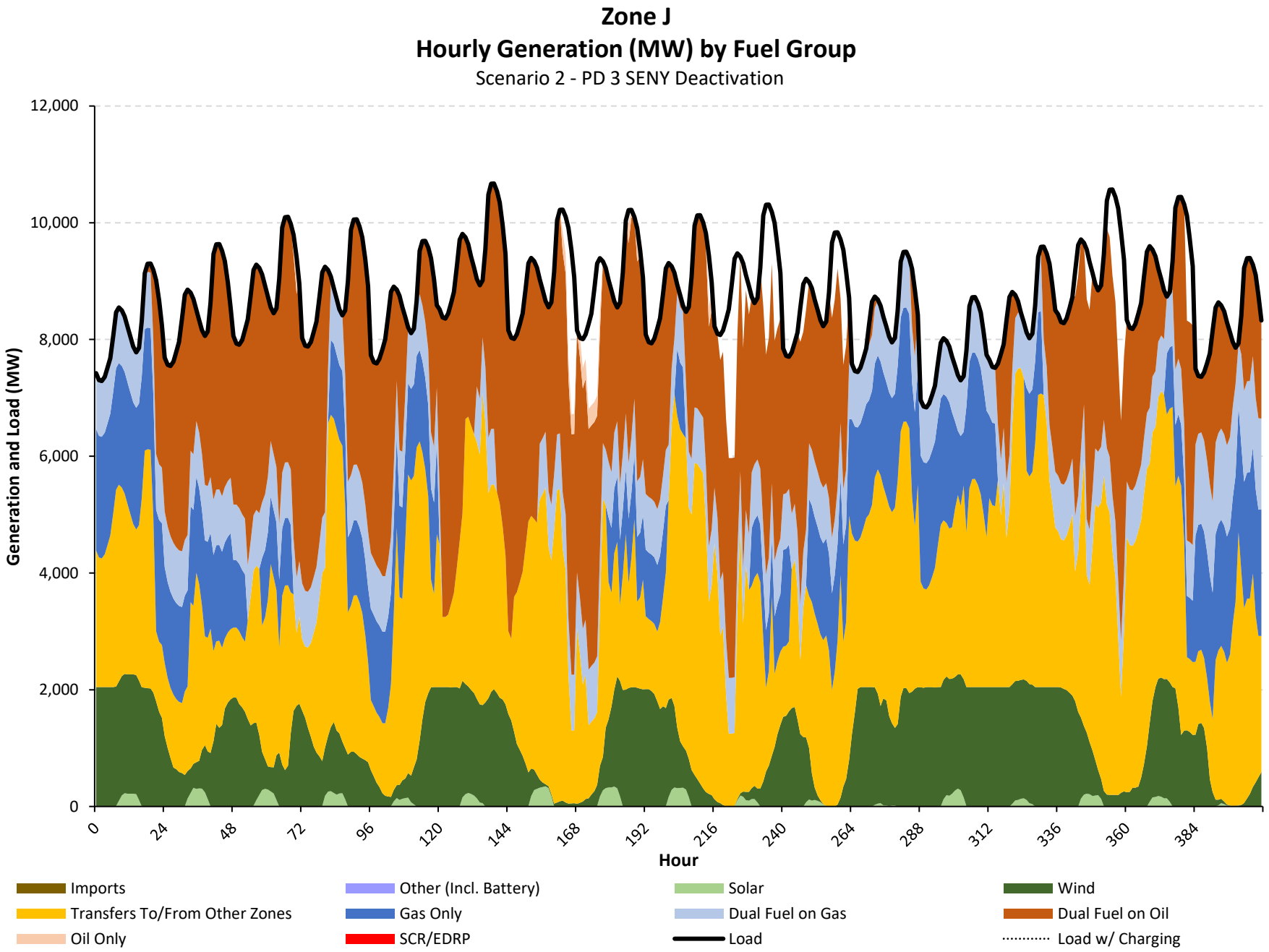
Hours with Loss of Load



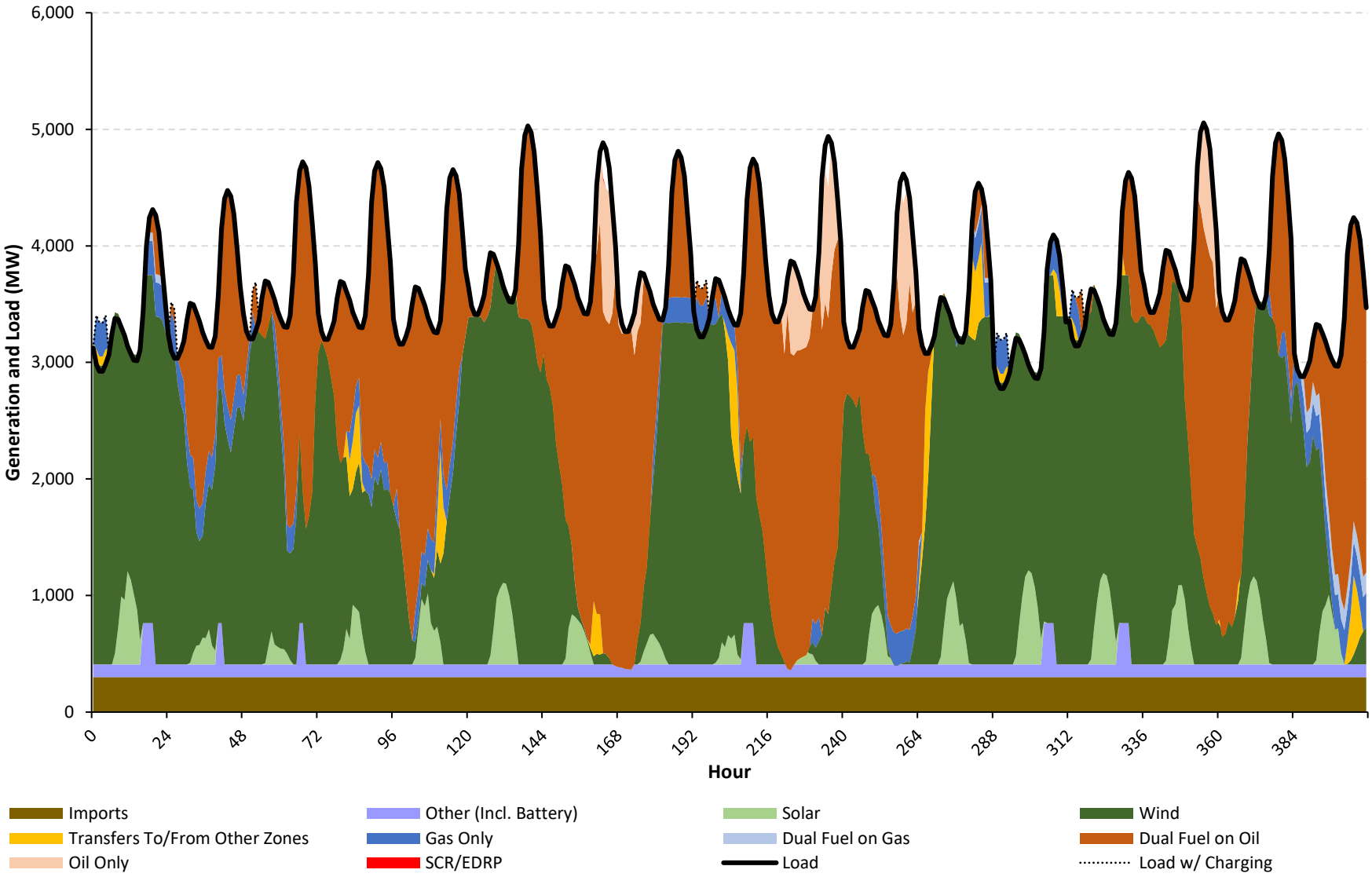
Total MWh of Lost Load



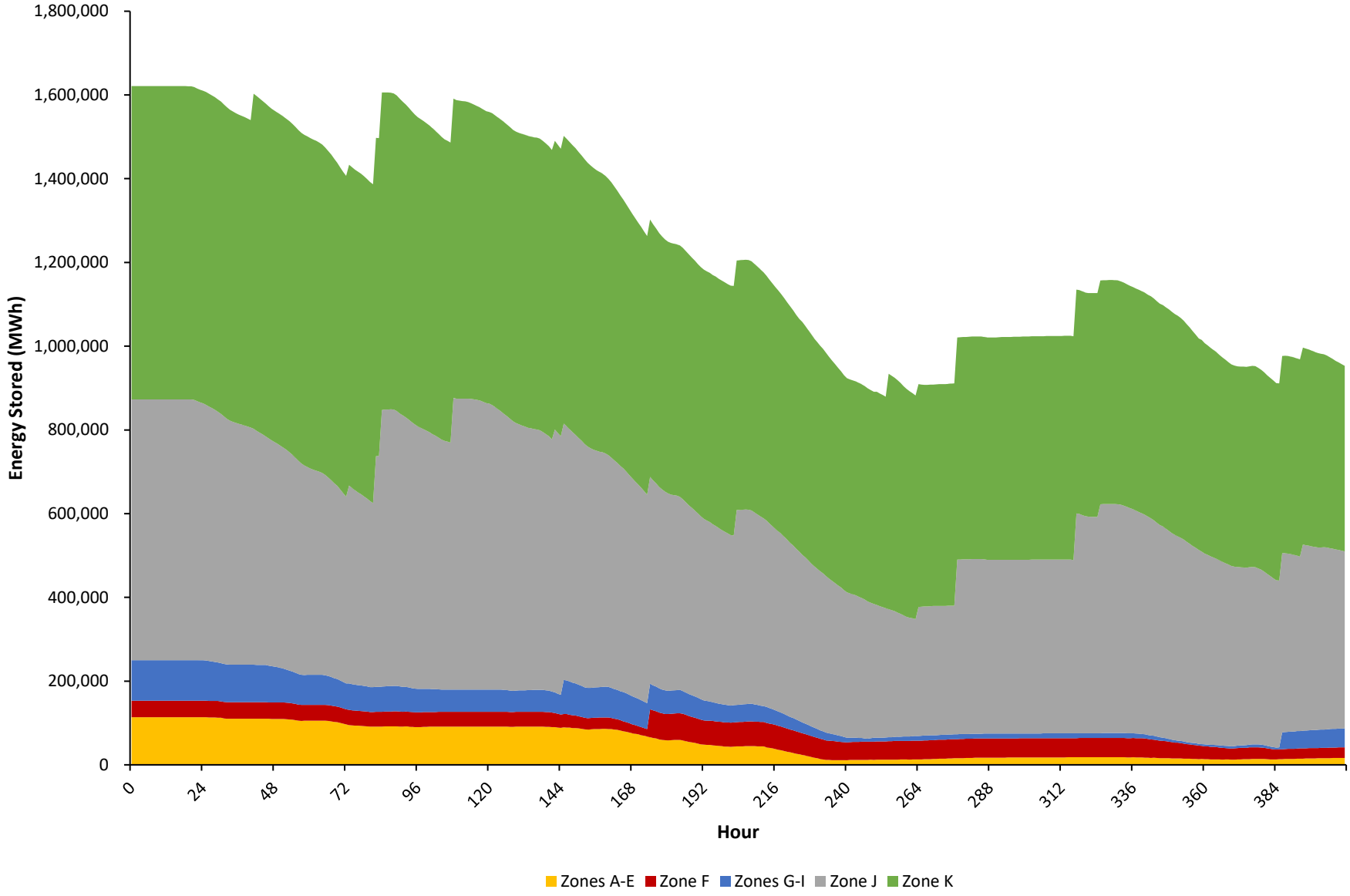

NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 2 - PD 3 SENY Deactivation
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

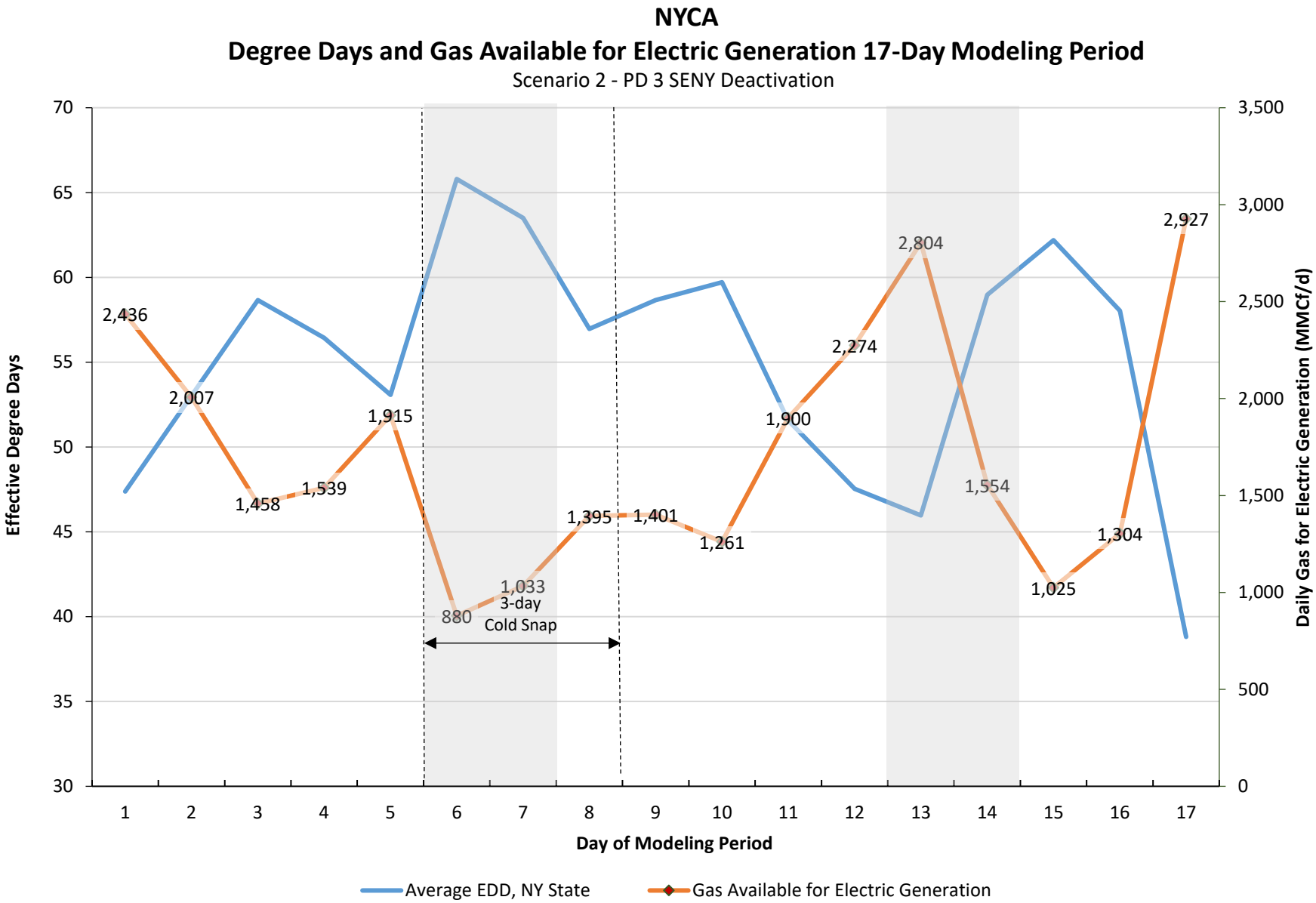

Zone J
Hourly Generation (MW) by Fuel Group
Scenario 2 - PD 3 SENY Deactivation
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

Zone K
Hourly Generation (MW) by Fuel Group
Scenario 2 - PD 3 SENY Deactivation

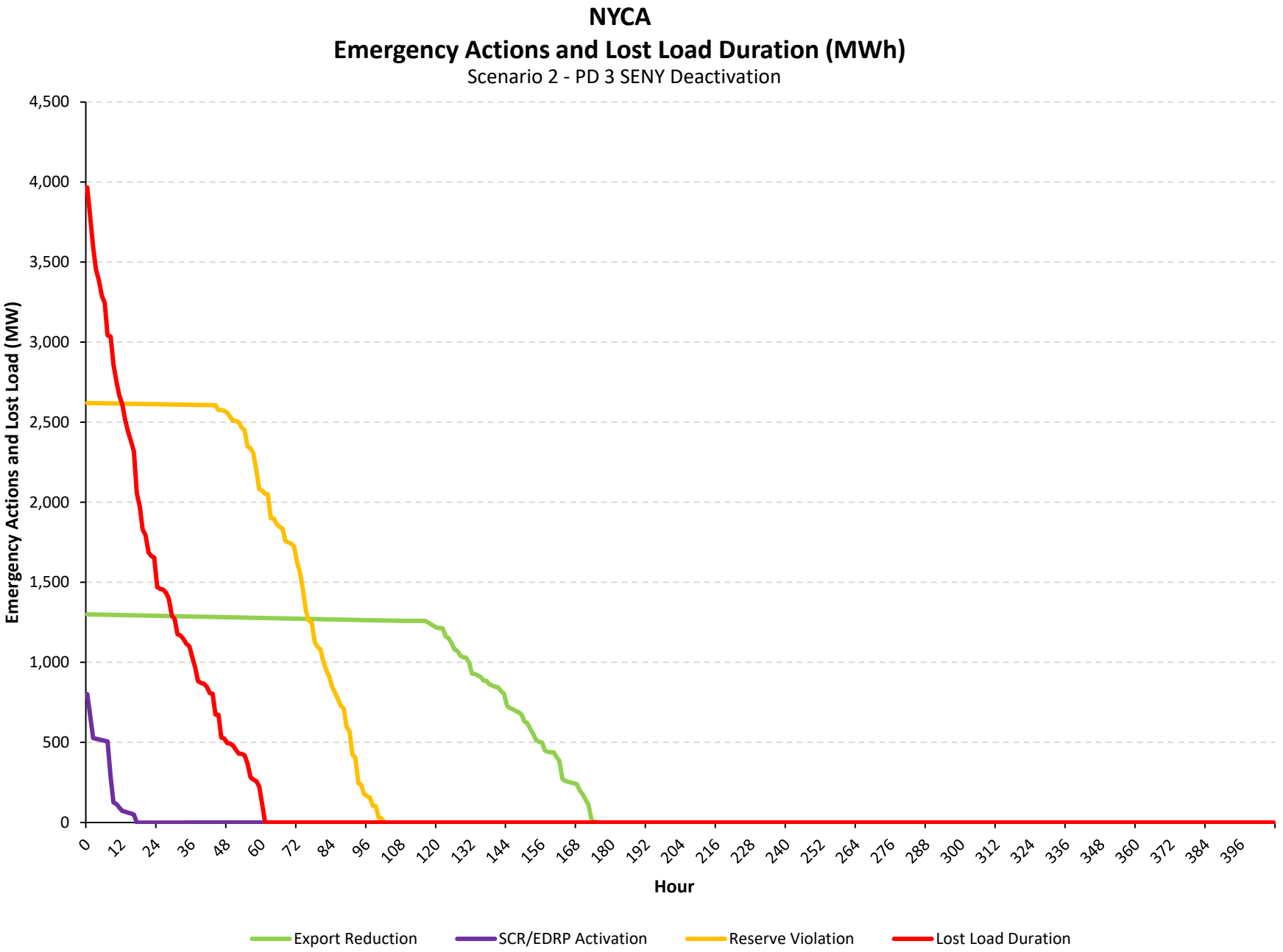


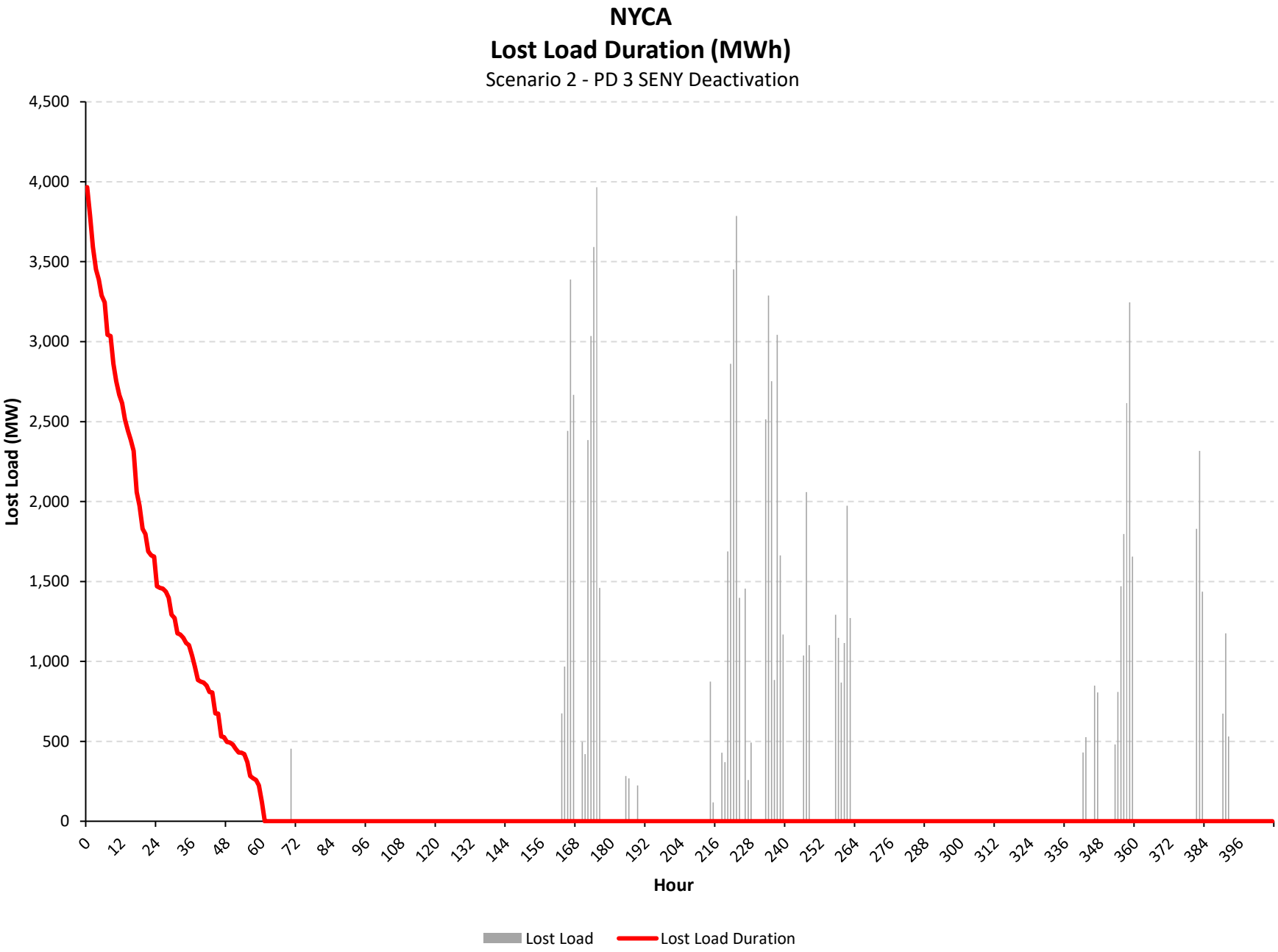
NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 2 - PD 3 SENY Deactivation





Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 2 - PD 3 SENY Deactivation
Emergency Actions and Lost Load (MW)
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 2 - PD 3 SENY Deactivation
Lost Load (MW)
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

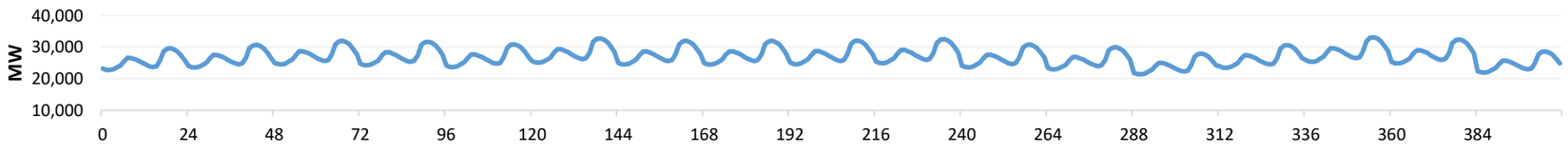
Case: Scenario 2 - PD 4 Nuclear Station Outage (Winter 2030/2031)

Hourly Results Summary

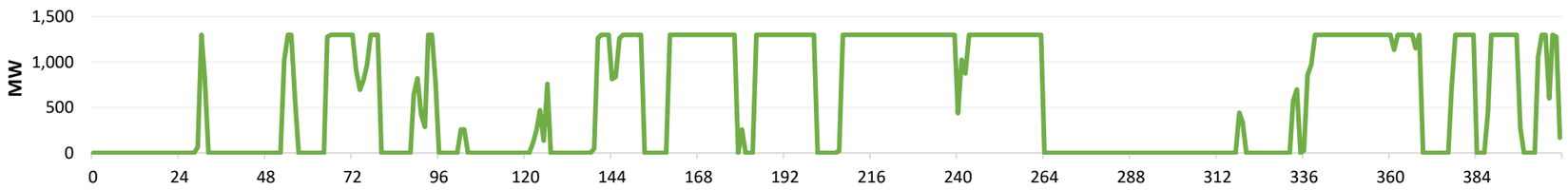
Case Name: Scenario 2 - PD 4 Nuclear Station Outage

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	On
Plant Outage:	None
Import Scenario:	Net Zero

Load During Modeling Period

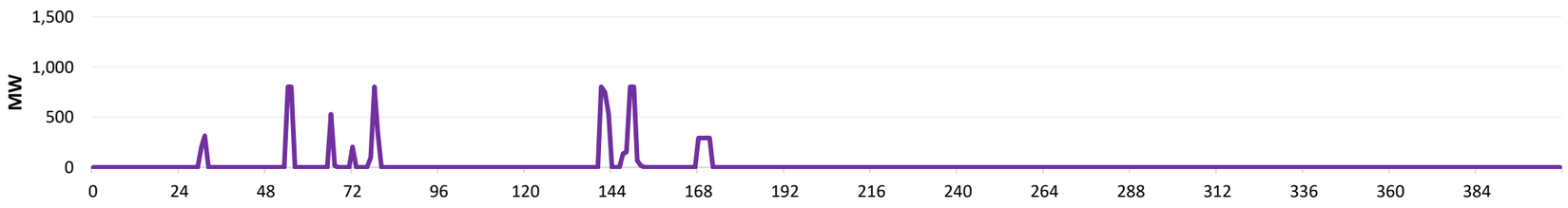


Export to ISO-NE Reduction During Modeling Period



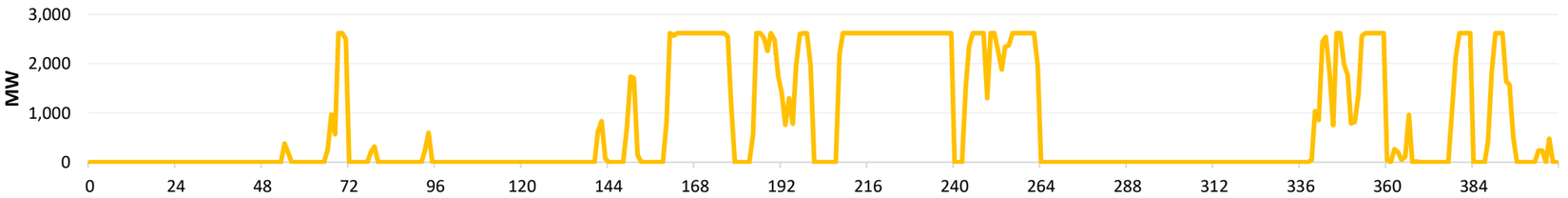
Export Reductions	
Total Hrs.	205
Total MWh	235,314
Avg. MW	576.7

SCR/EDRP Deployed During Modeling Period



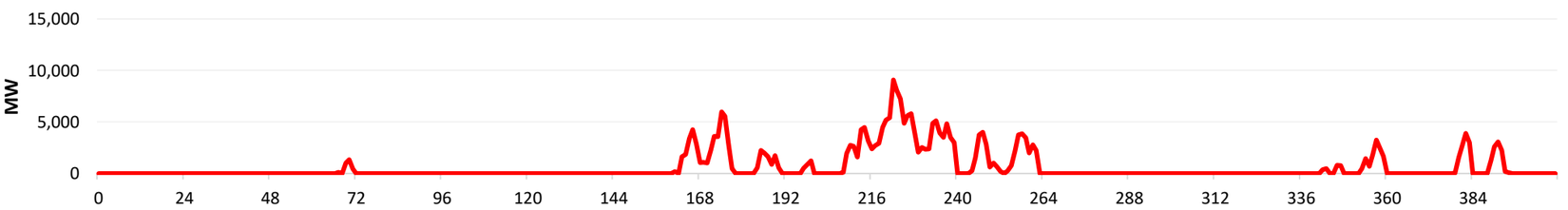
SCR Deployment	
Total Hrs.	23
Total MWh	9,343
Avg. MW	22.9

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	153
Total MWh	300,436
Avg. MW	736.4
First Hour with Viol.	54

Loss of Load During Modeling Period



Loss of Load	
Total Hrs.	104
Total MWh	254,984
Avg. MW	625.0
First Hour with Losses	67

Full Period Results Summary

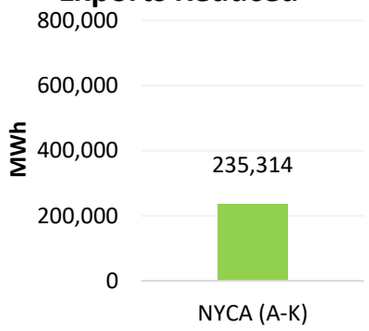
Case Name: Scenario 2 - PD 4 Nuclear Station Outage

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	On
Plant Outage:	None
Import Scenario:	Net Zero

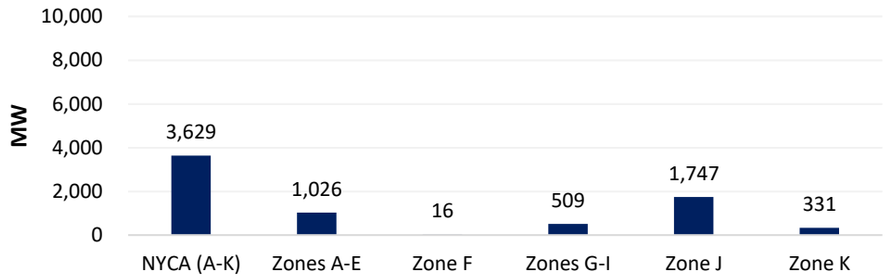
Hours Exports Reduced



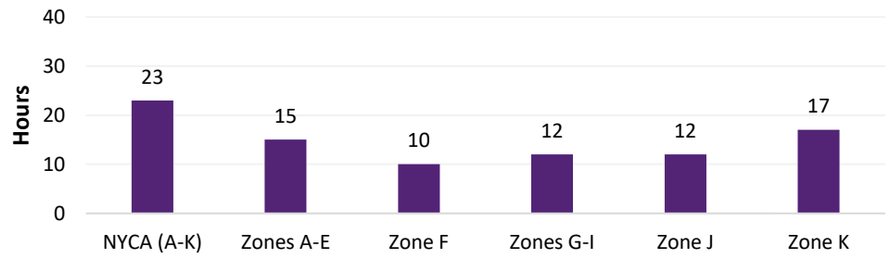
Total MWh of Exports Reduced



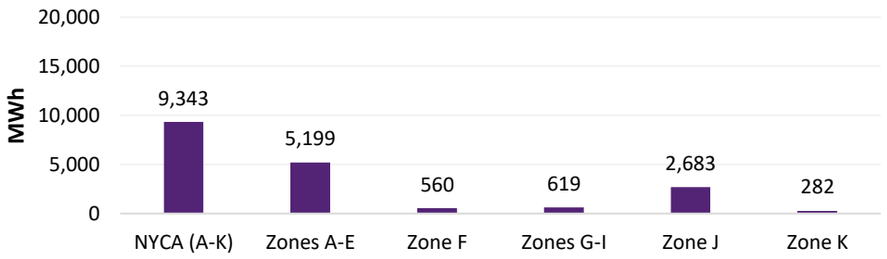
Average Capacity Not Available Due to Exhausted Fuel Inventory



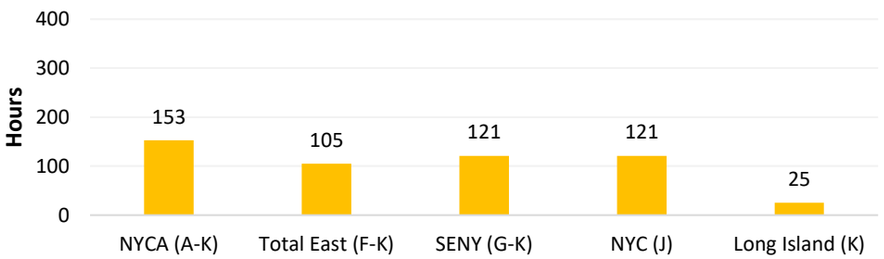
Hours SCR/EDRP Deployed



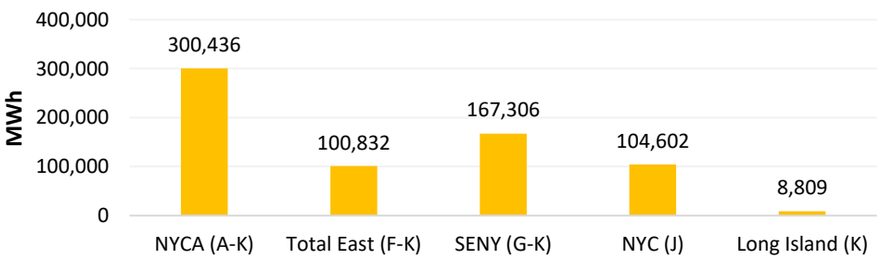
Total MWh SCR/EDRP Deployed



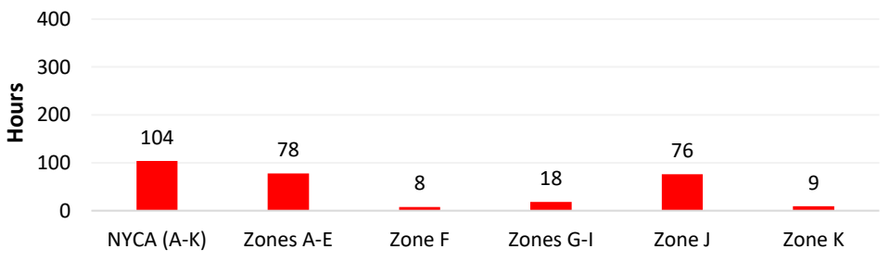
Hours with Reserve Violations



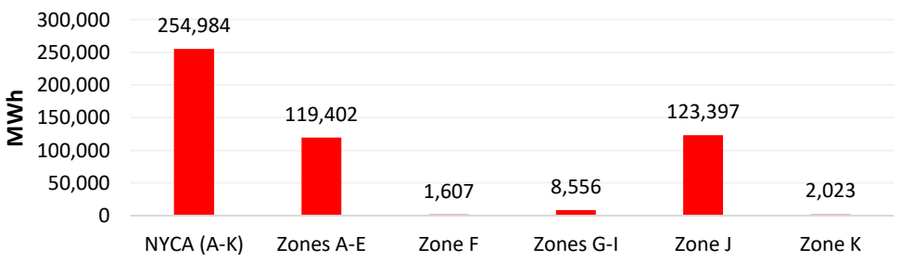
Total MWh of Reserve Violations

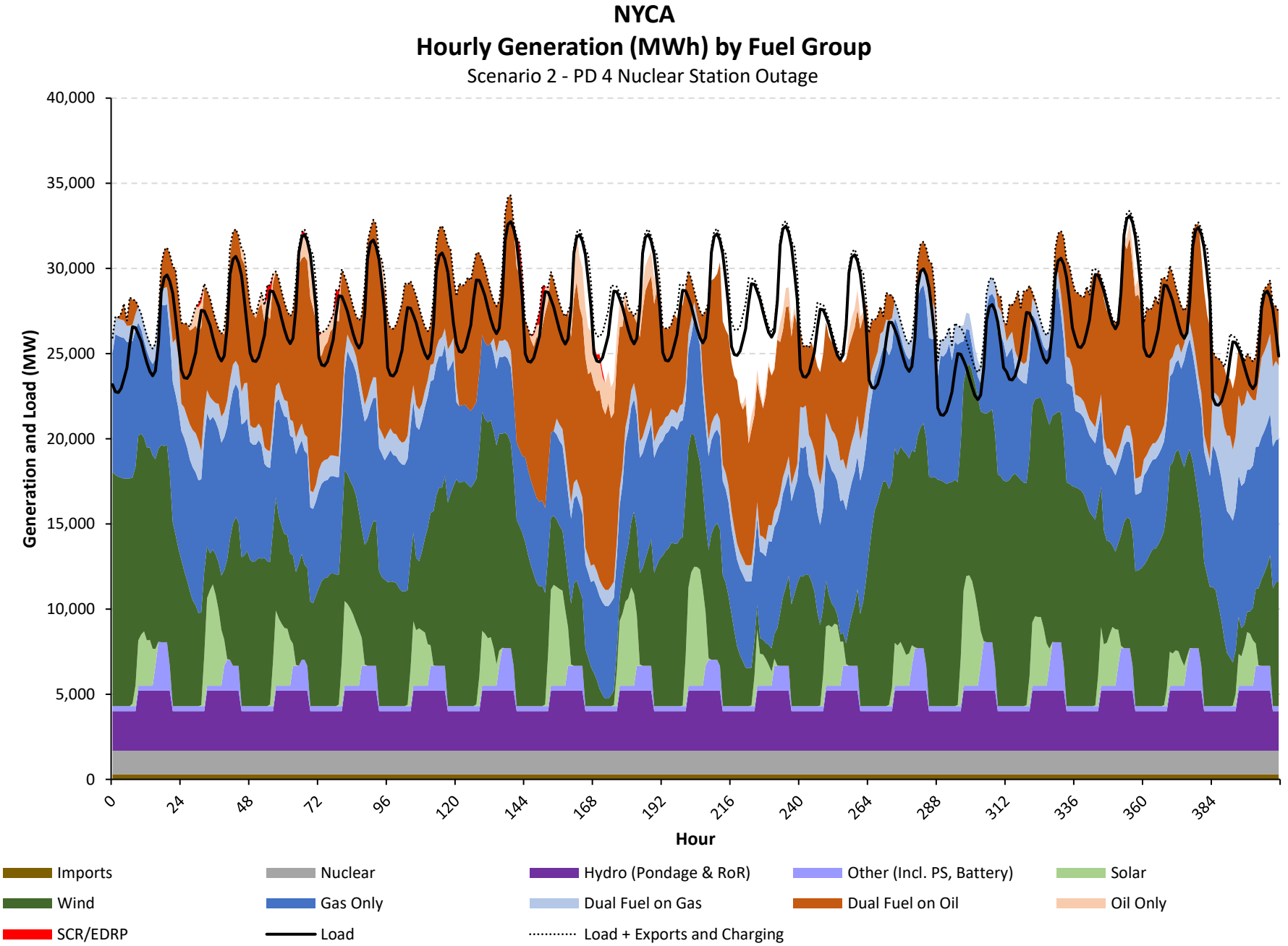


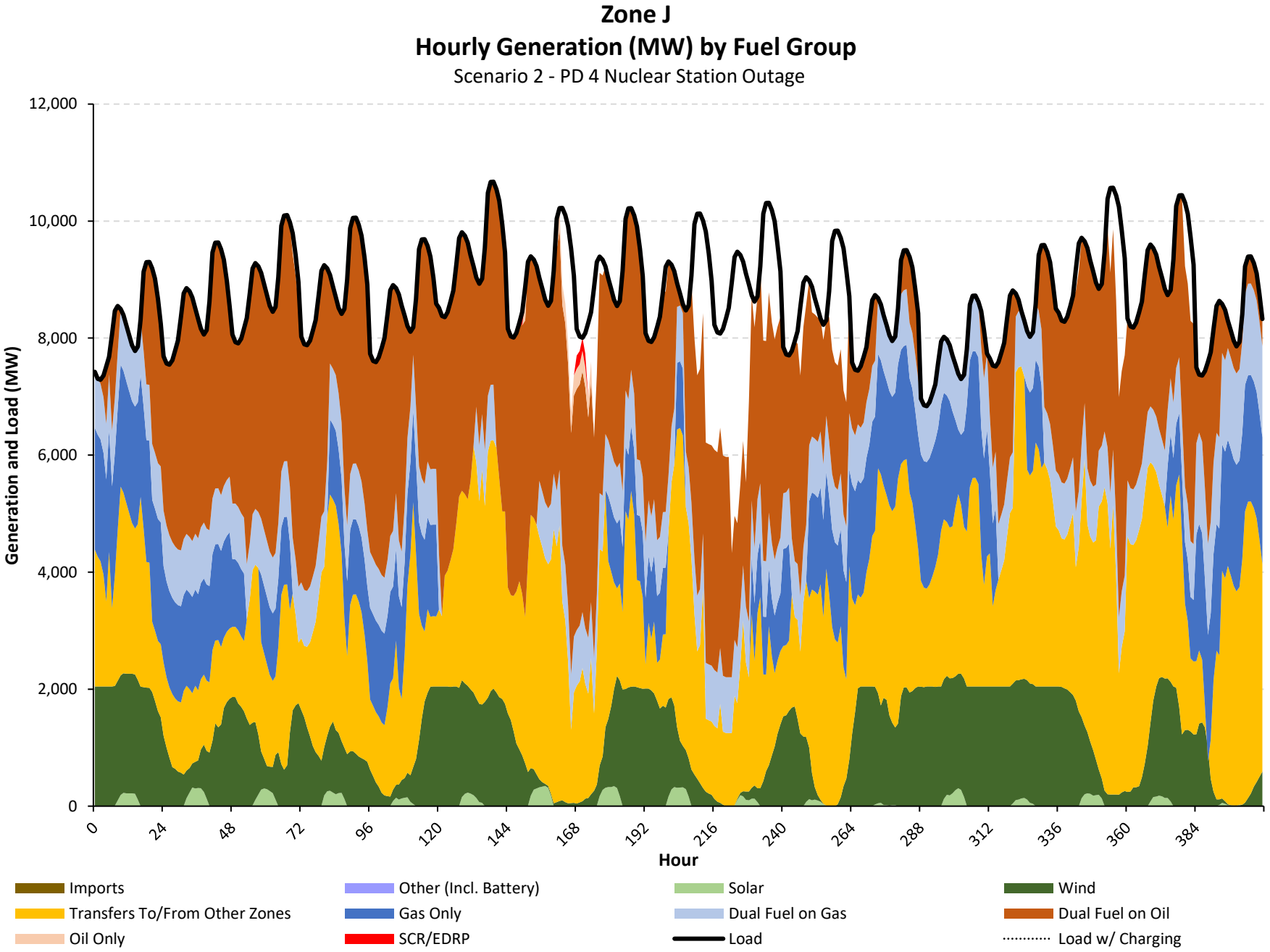
Hours with Loss of Load



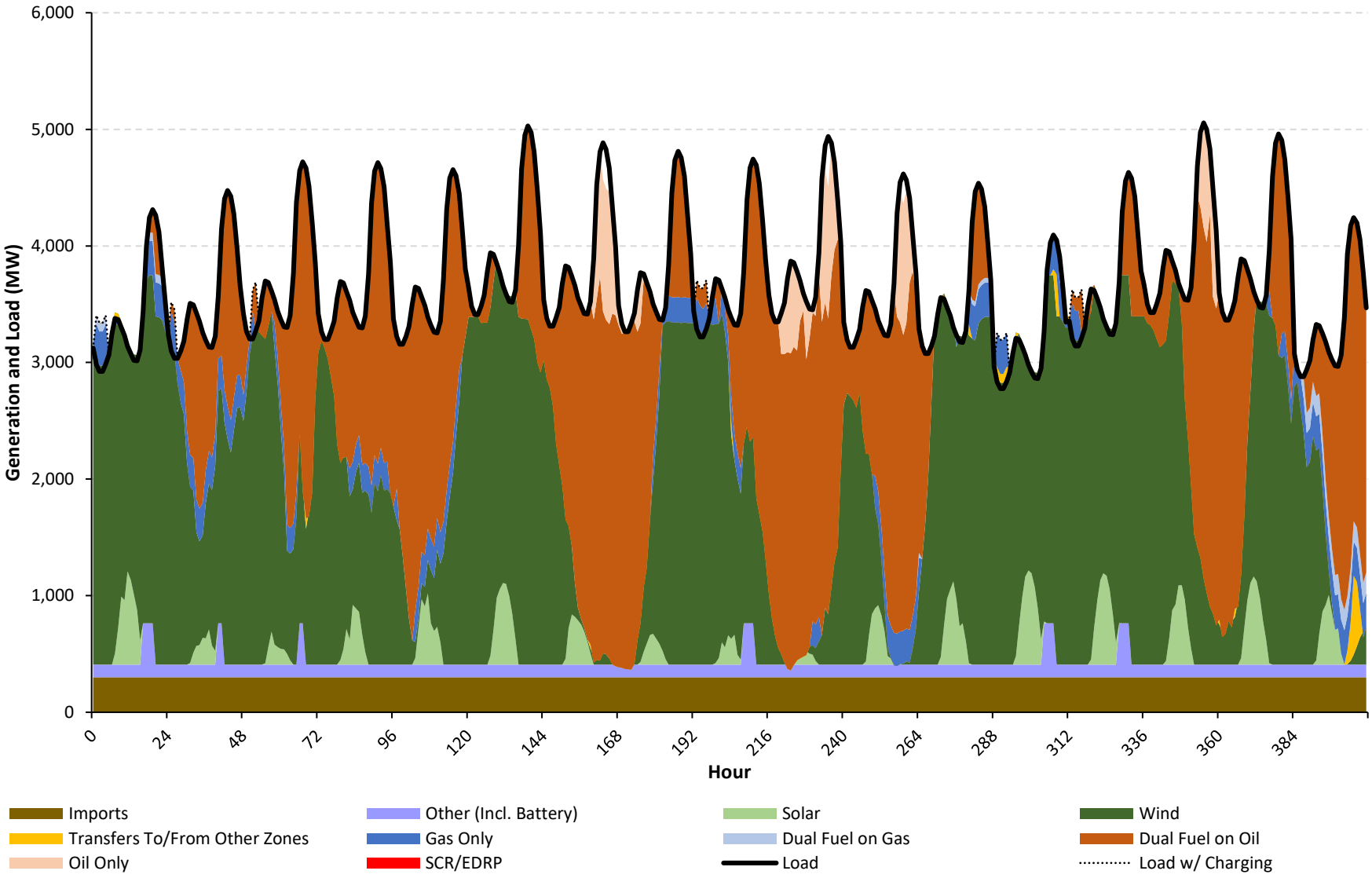
Total MWh of Lost Load




NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 2 - PD 4 Nuclear Station Outage
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 2 - PD 4 Nuclear Station Outage
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

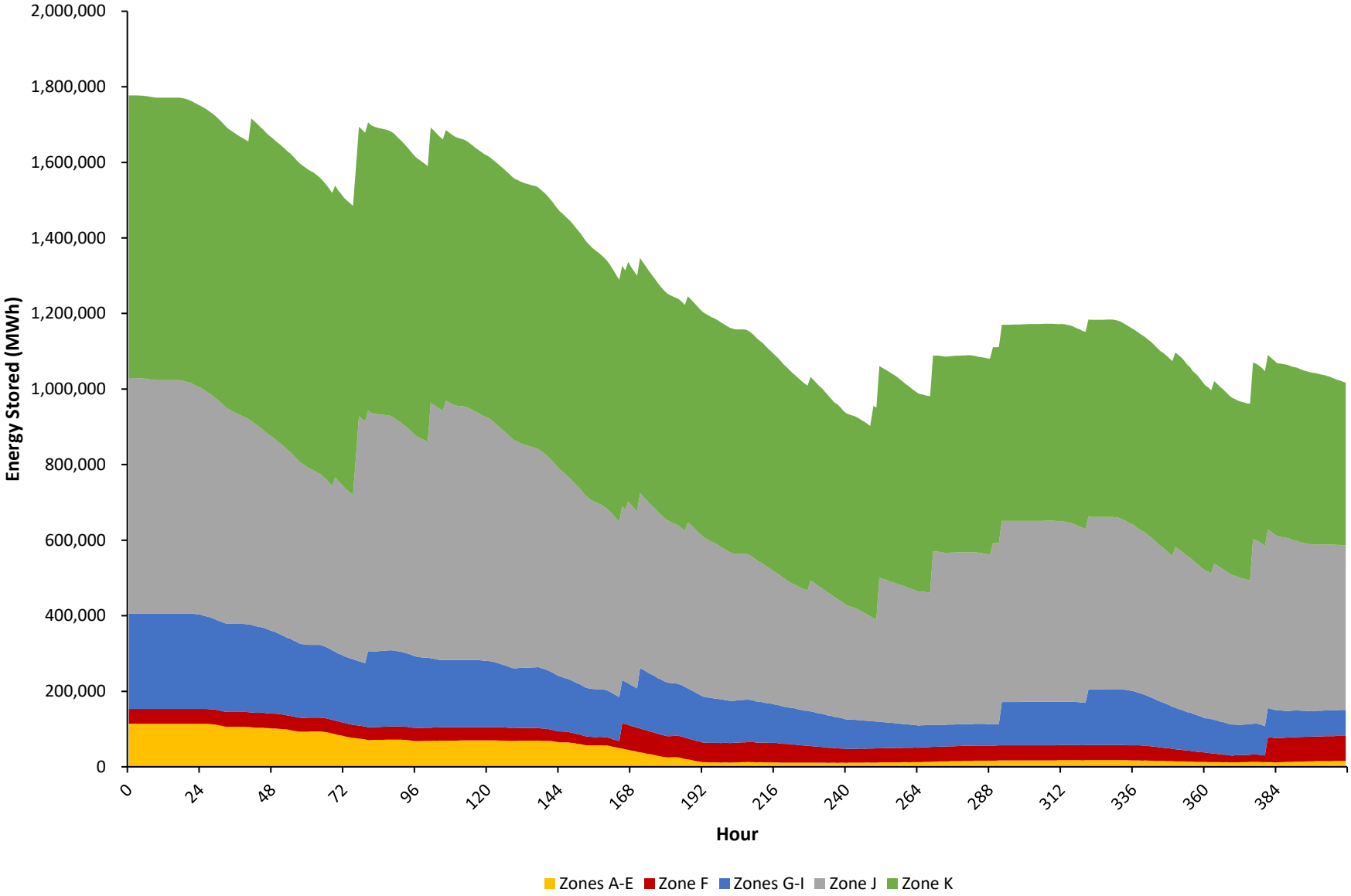
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 2 - PD 4 Nuclear Station Outage



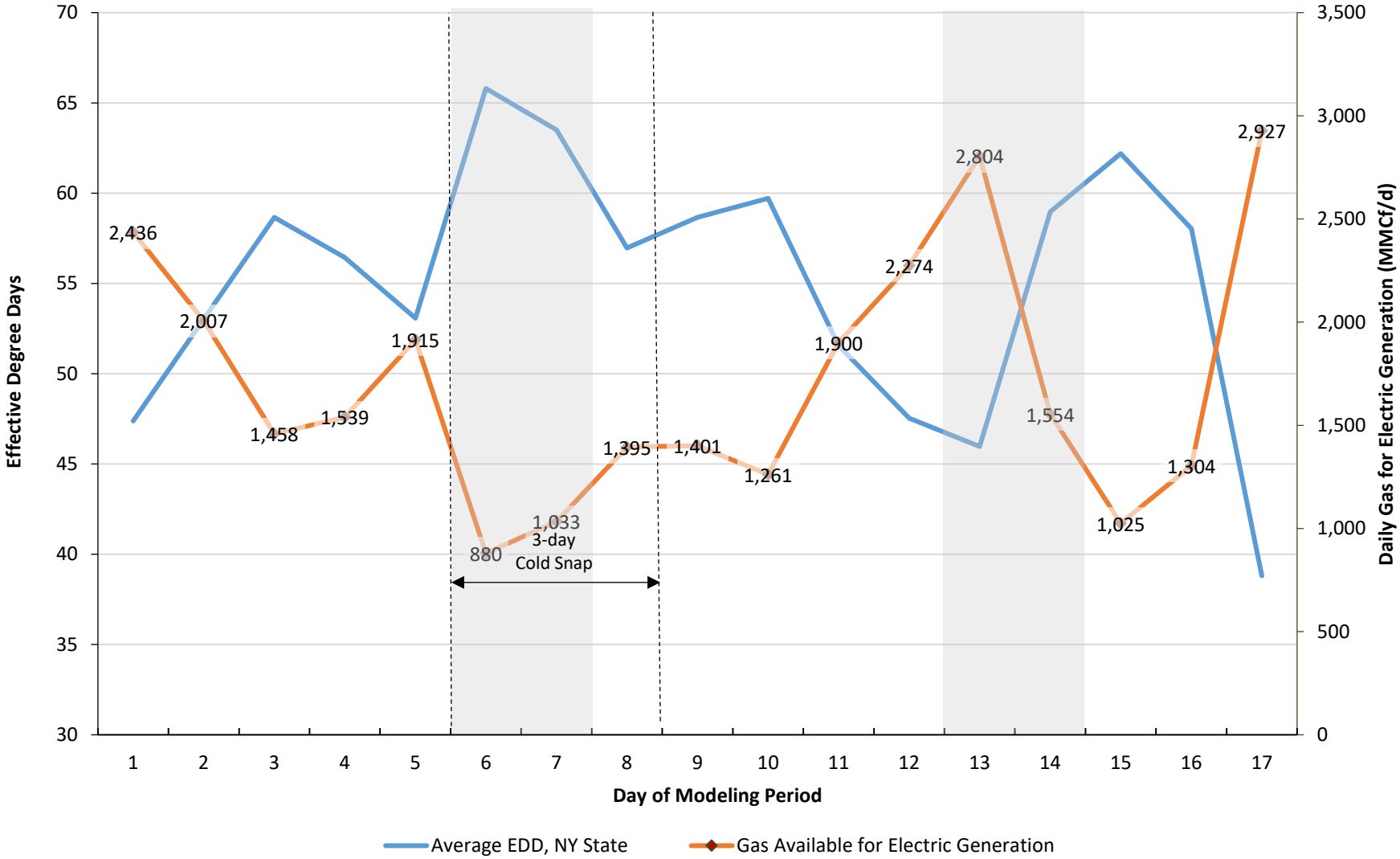
NYCA

Quantity of Stored Fuel for Oil and Dual Fuel Units

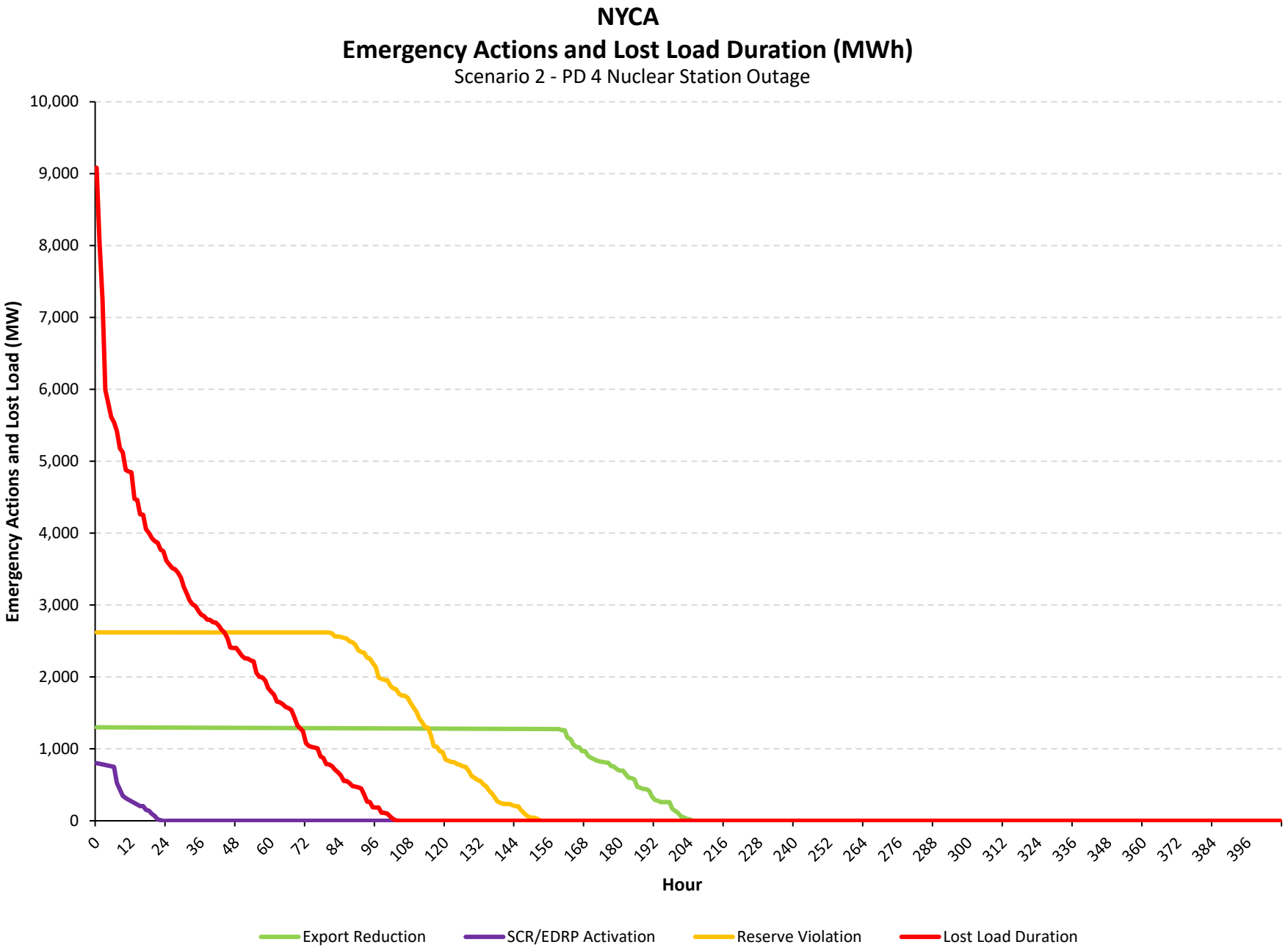
Scenario 2 - PD 4 Nuclear Station Outage

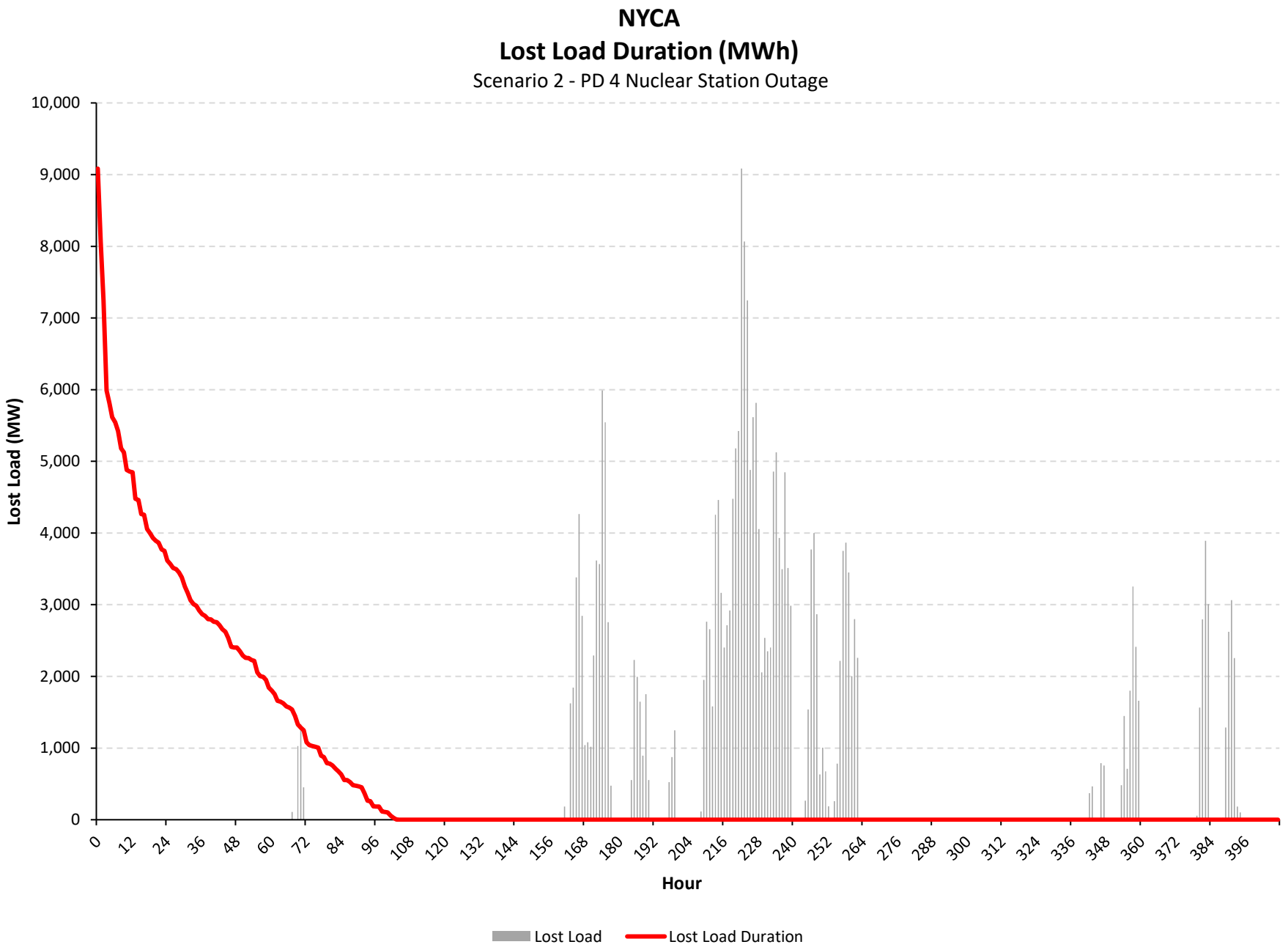


NYCA
Degree Days and Gas Available for Electric Generation 17-Day Modeling Period
Scenario 2 - PD 4 Nuclear Station Outage



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 2 - PD 4 Nuclear Station Outage
Emergency Actions and Lost Load (MW)
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 2 - PD 4 Nuclear Station Outage
Lost Load (MW)
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

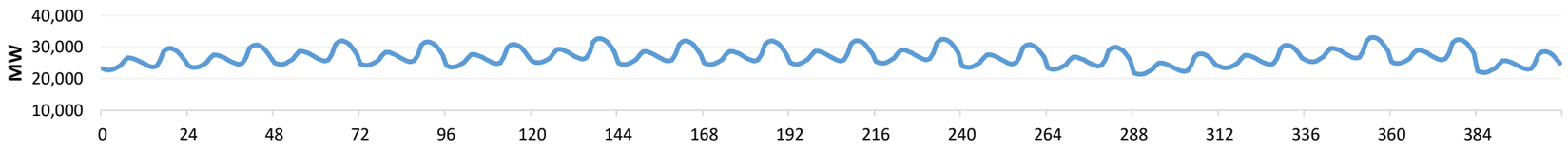
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 2 - PD 5 No Truck Refill (Winter 2030/2031)

Hourly Results Summary

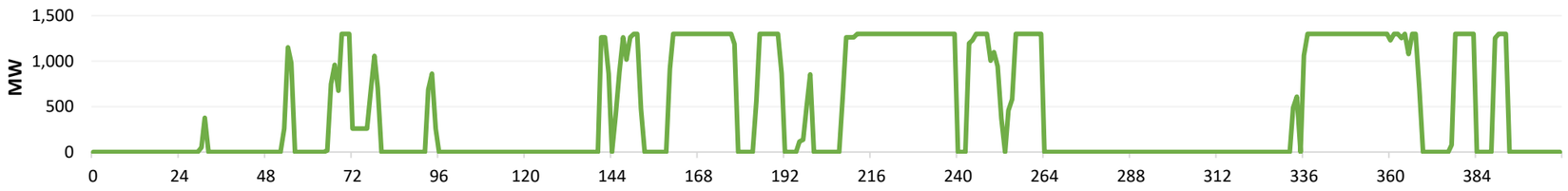
Case Name: Scenario 2 - PD 5 No Truck Refill

Load During Modeling Period



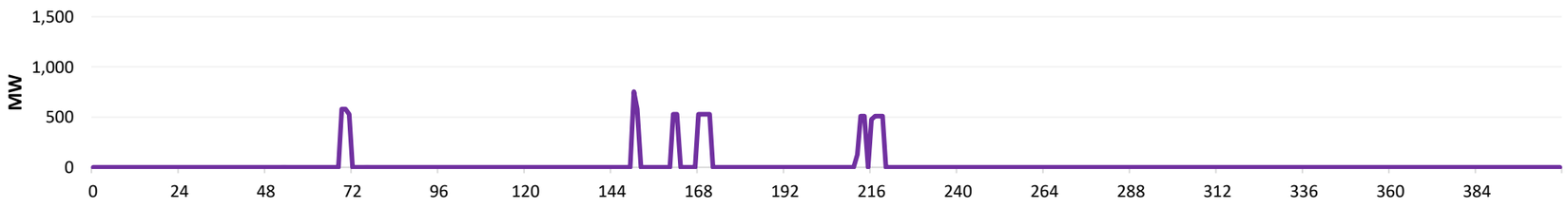
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	No Trucks
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

Export to ISO-NE Reduction During Modeling Period



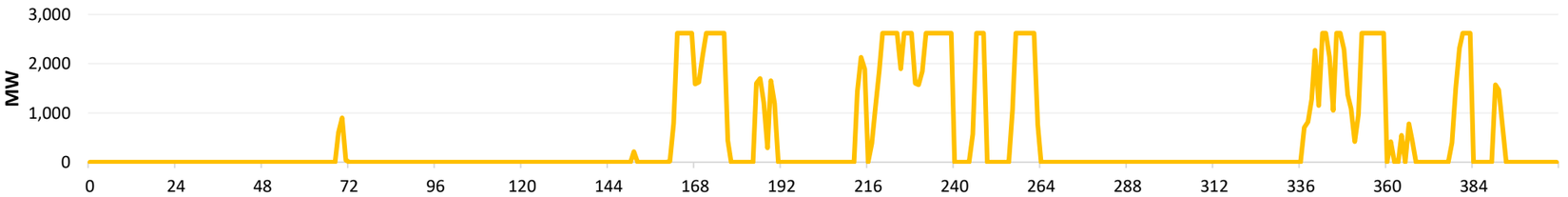
Export Reductions	
Total Hrs.	163
Total MWh	180,169
Avg. MW	441.6

SCR/EDRP Deployed During Modeling Period



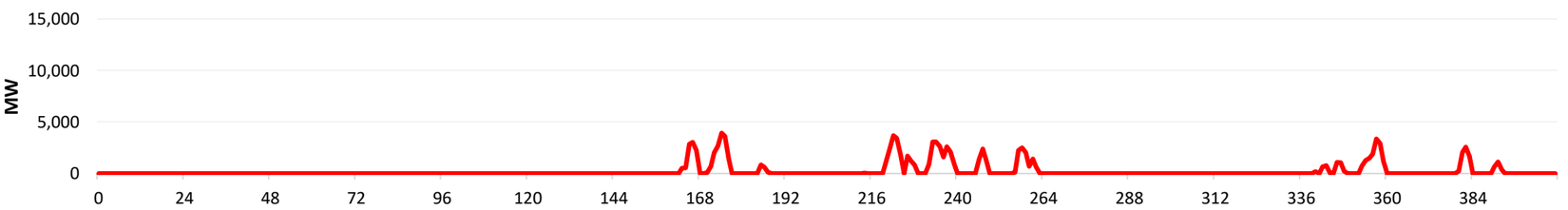
SCR Deployment	
Total Hrs.	18
Total MWh	9,330
Avg. MW	22.9

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	102
Total MWh	190,836
Avg. MW	467.7
First Hour with Viol.	69

Loss of Load During Modeling Period



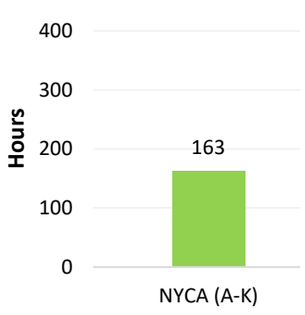
Loss of Load	
Total Hrs.	63
Total MWh	98,616
Avg. MW	241.7
First Hour with Losses	163

Full Period Results Summary

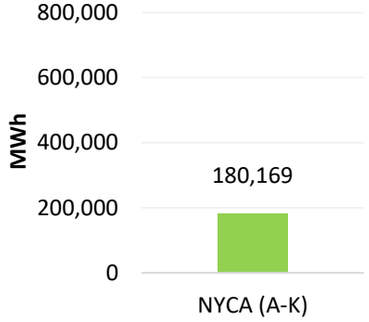
Case Name: Scenario 2 - PD 5 No Truck Refill

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	No Trucks
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

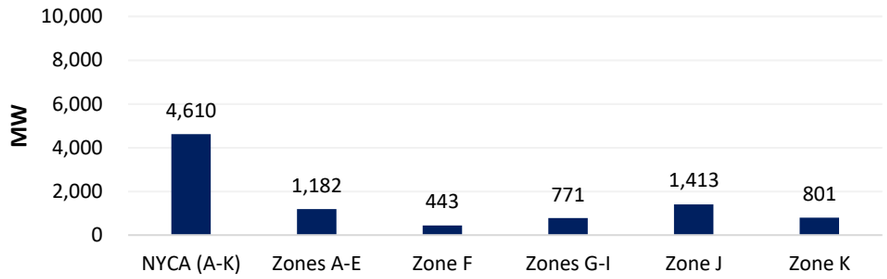
Hours Exports Reduced



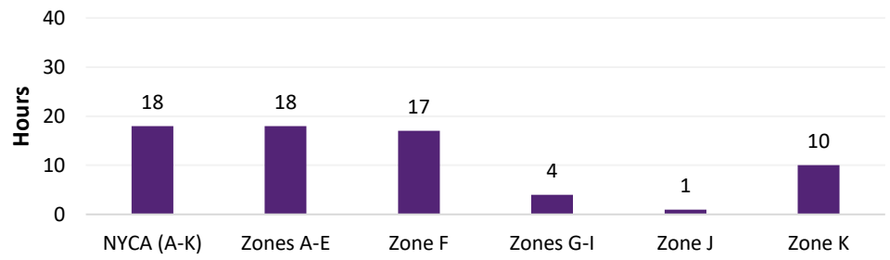
Total MWh of Exports Reduced



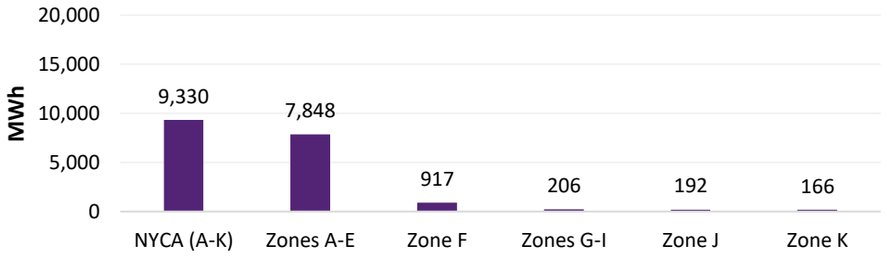
Average Capacity Not Available Due to Exhausted Fuel Inventory



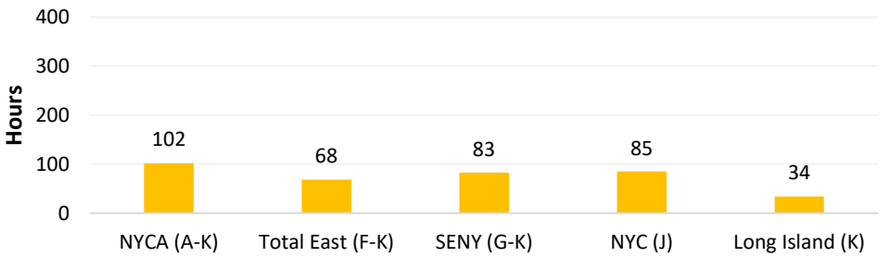
Hours SCR/EDRP Deployed



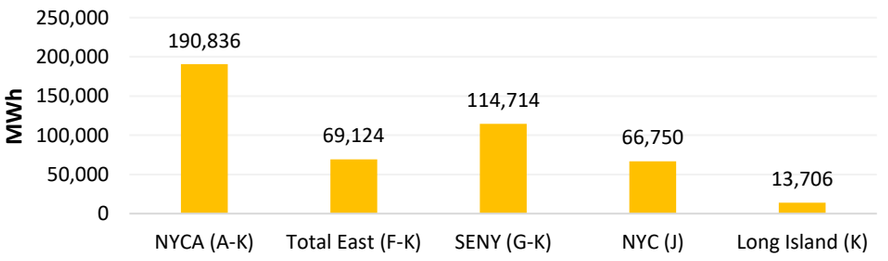
Total MWh SCR/EDRP Deployed



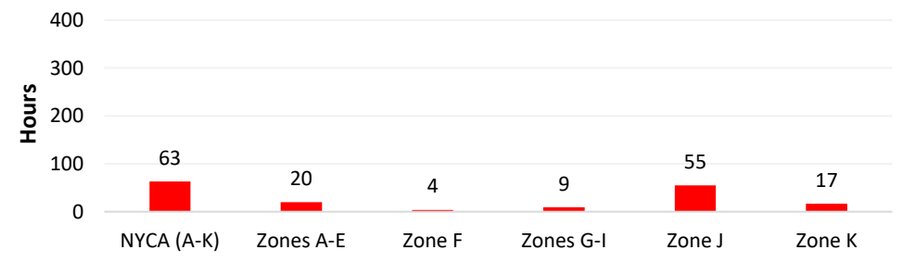
Hours with Reserve Violations



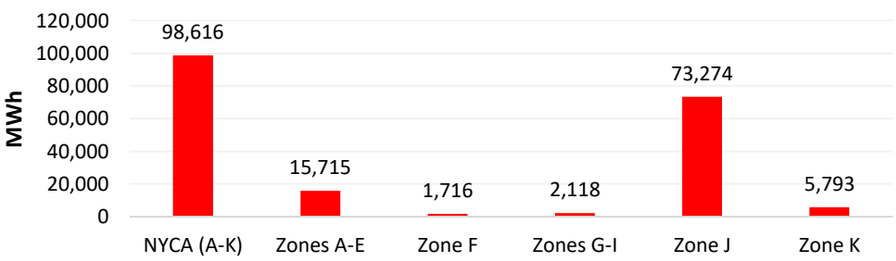
Total MWh of Reserve Violations

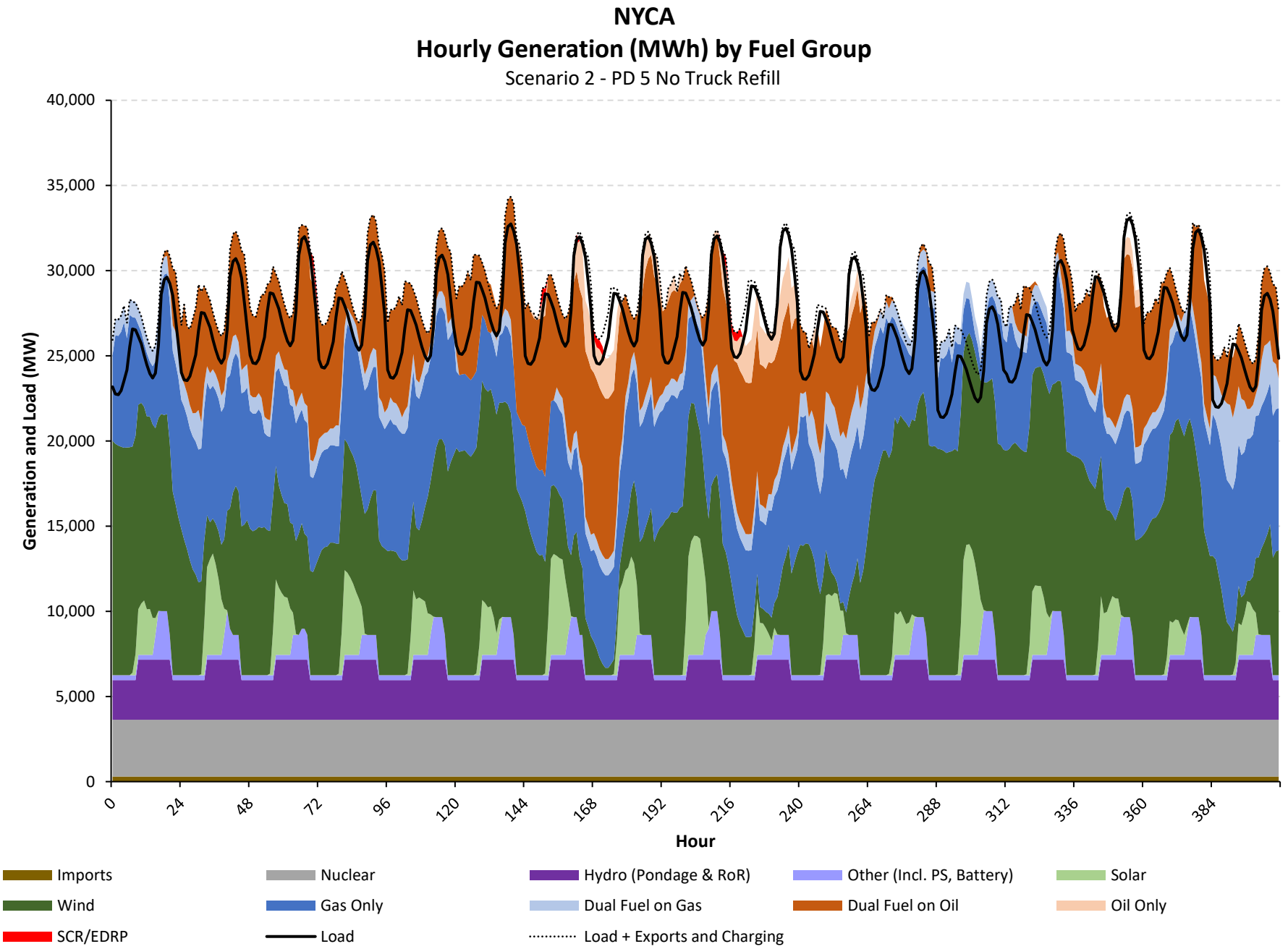


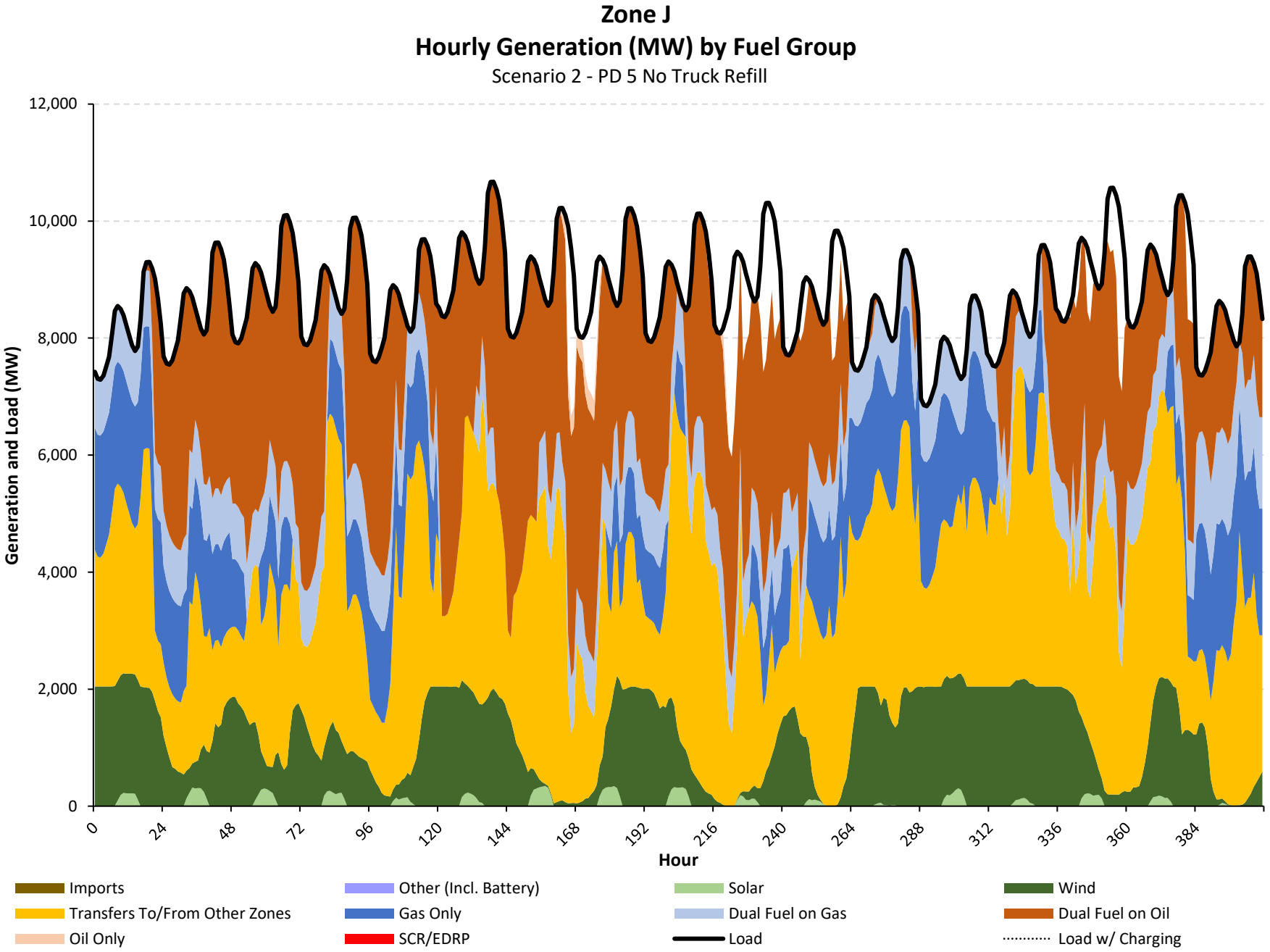
Hours with Loss of Load



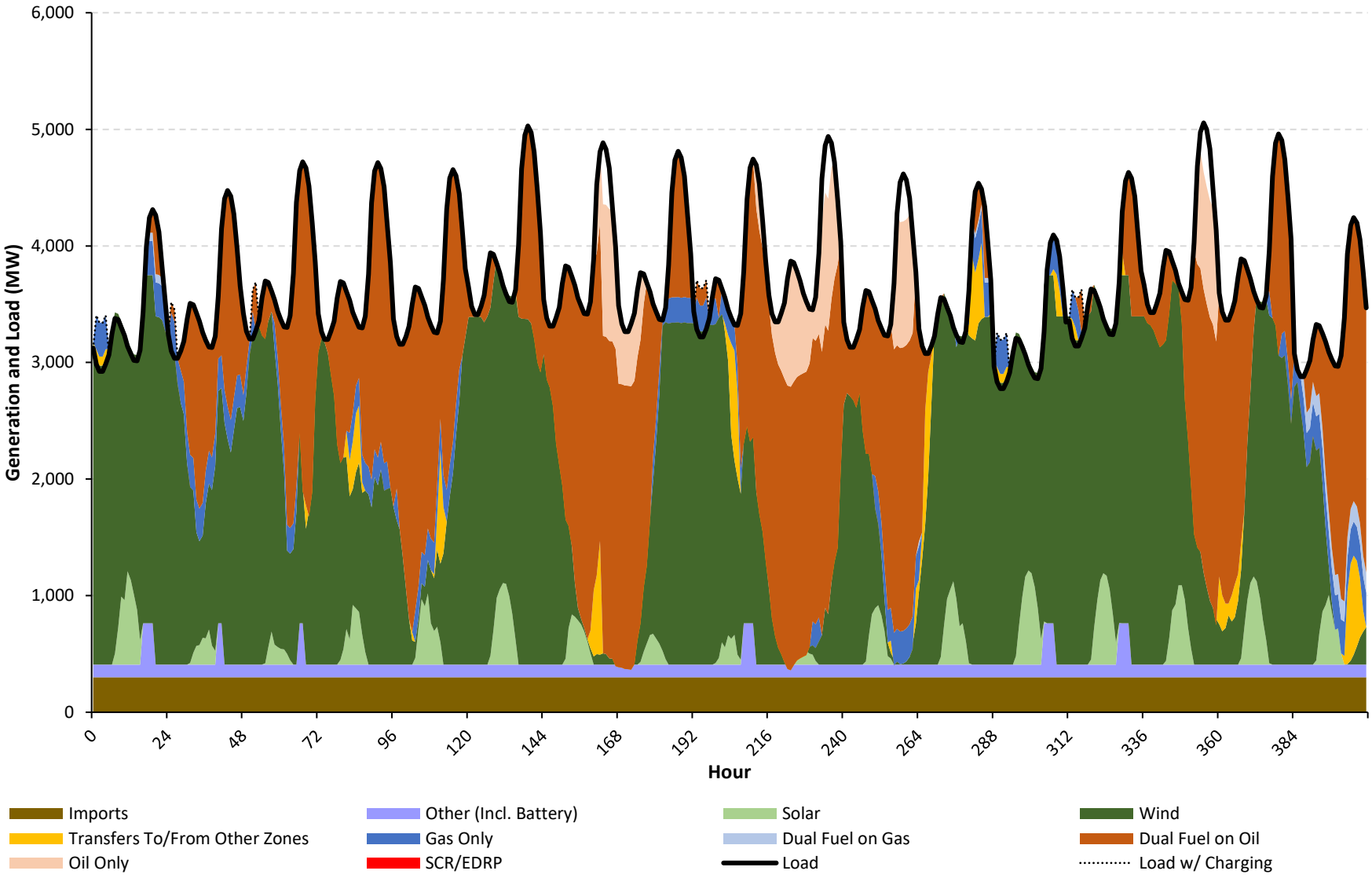
Total MWh of Lost Load

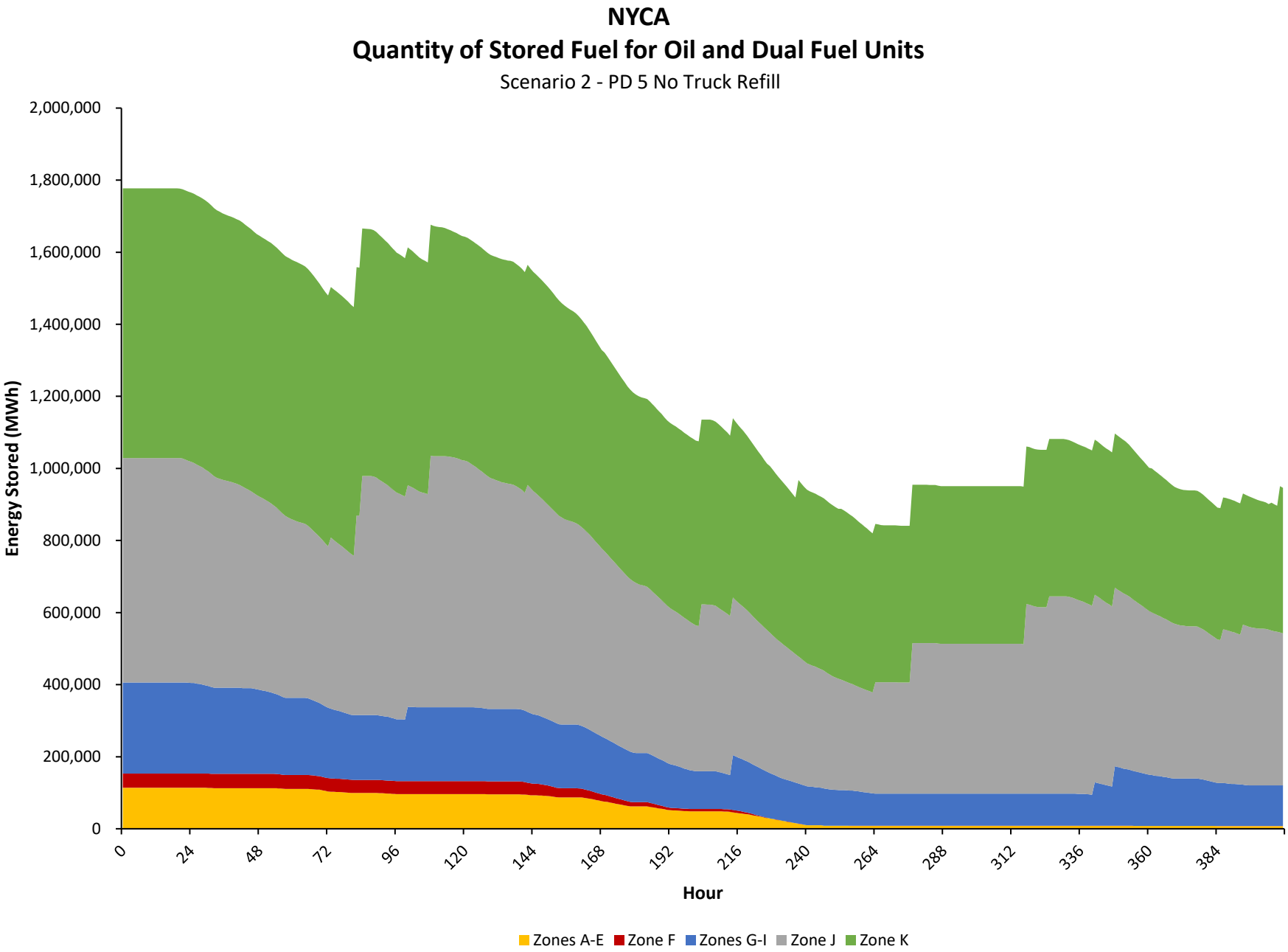


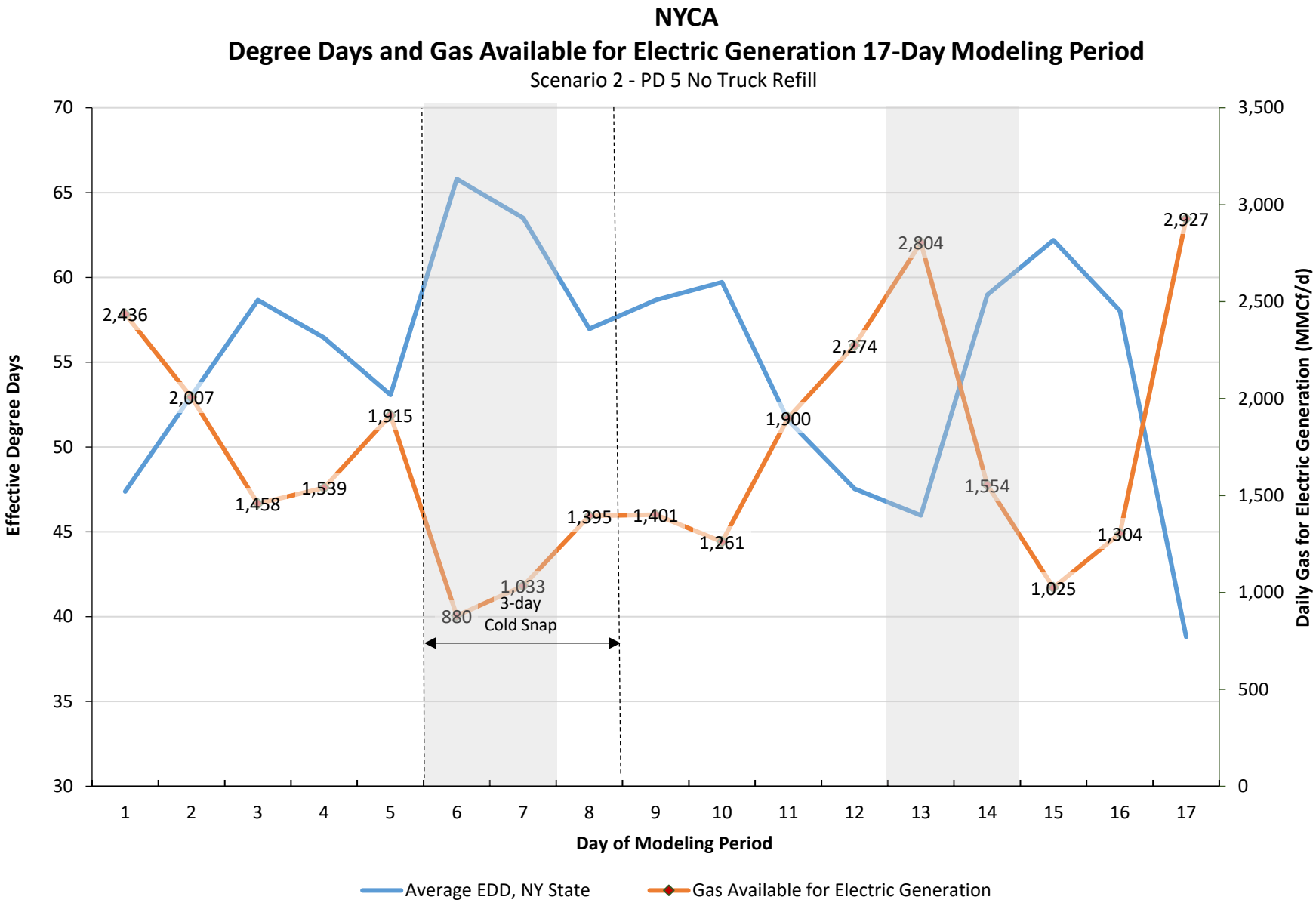

NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 2 - PD 5 No Truck Refill
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 2 - PD 5 No Truck Refill
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

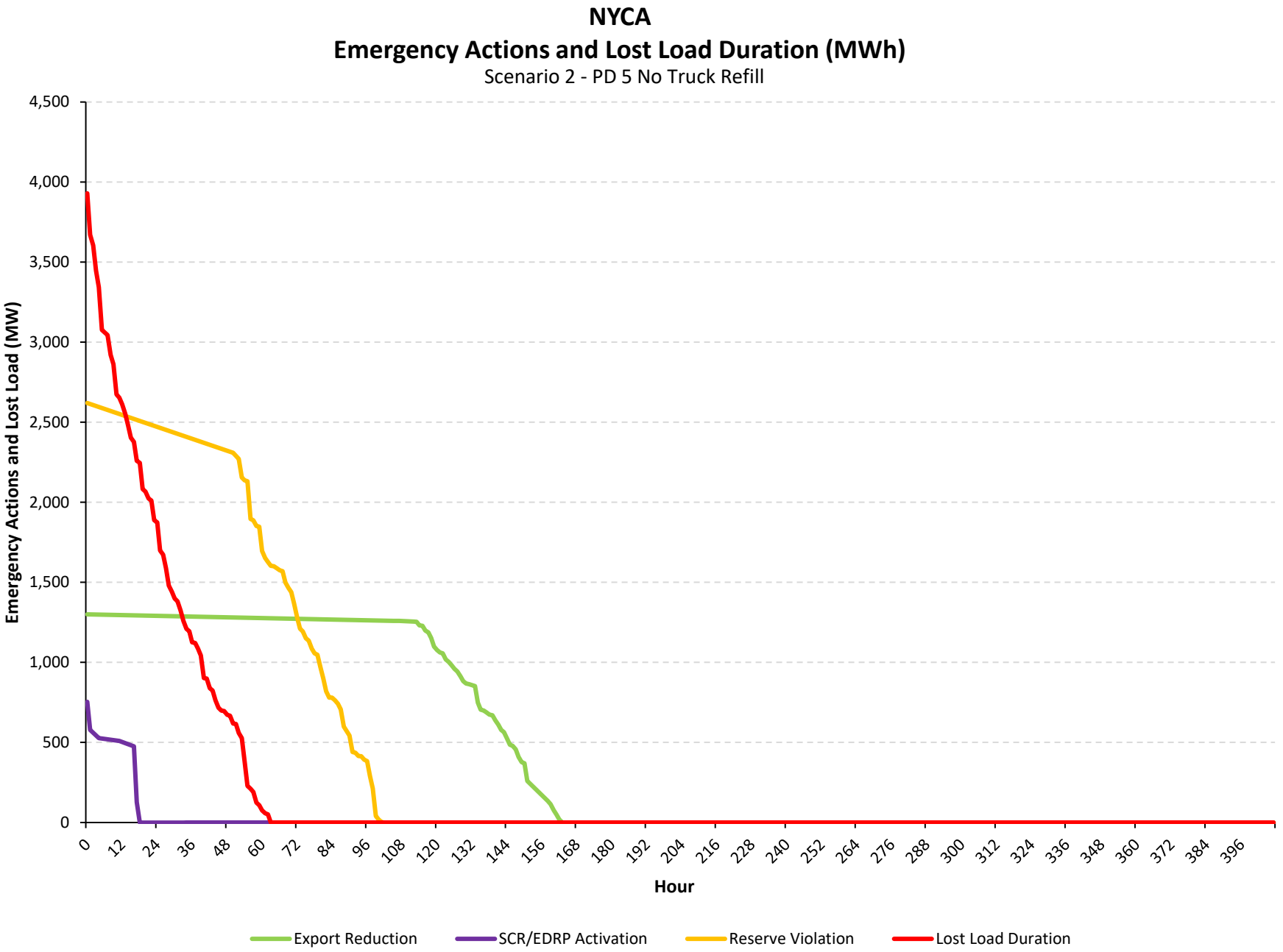
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 2 - PD 5 No Truck Refill

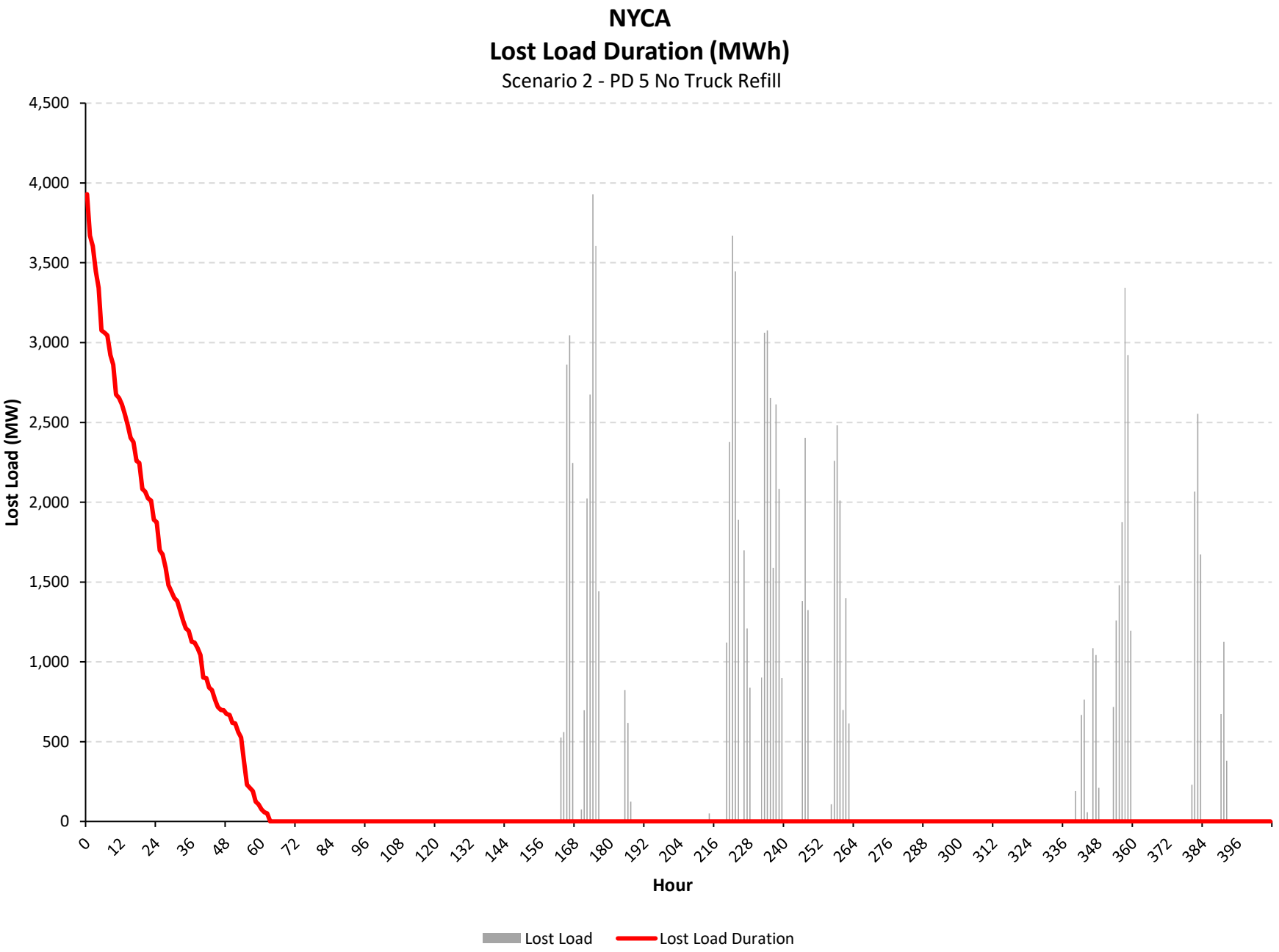



NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 2 - PD 5 No Truck Refill
Energy Stored (MWh)
2,000,000
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Zones A-E
Zone F
Zones G-I
Zone J
Zone K



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 2 - PD 5 No Truck Refill
Emergency Actions and Lost Load (MW)
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 2 - PD 5 No Truck Refill
Lost Load (MW)
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

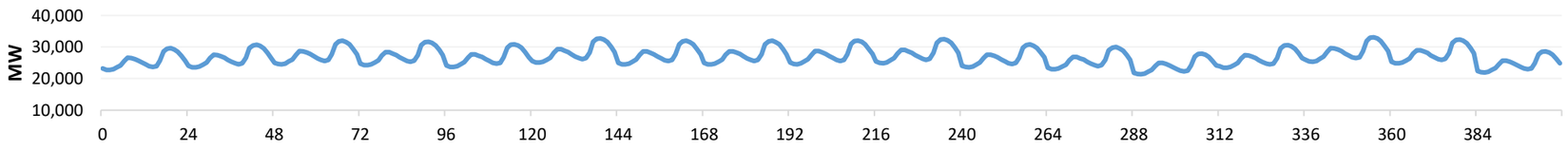
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 2 - PD 6 No Barge Refill (Winter 2030/2031)

Hourly Results Summary

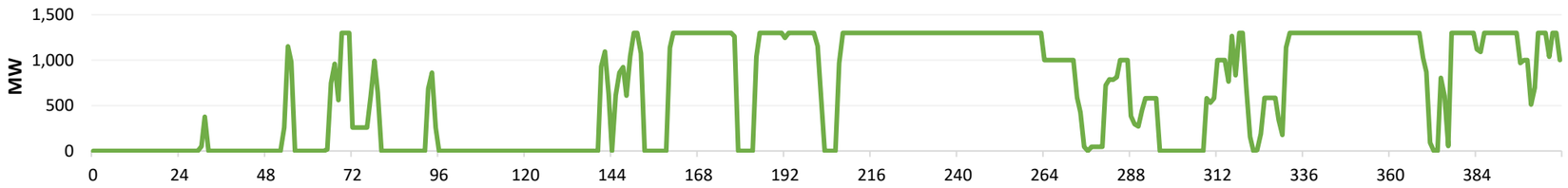
Case Name: Scenario 2 - PD 6 No Barge Refill

Load During Modeling Period



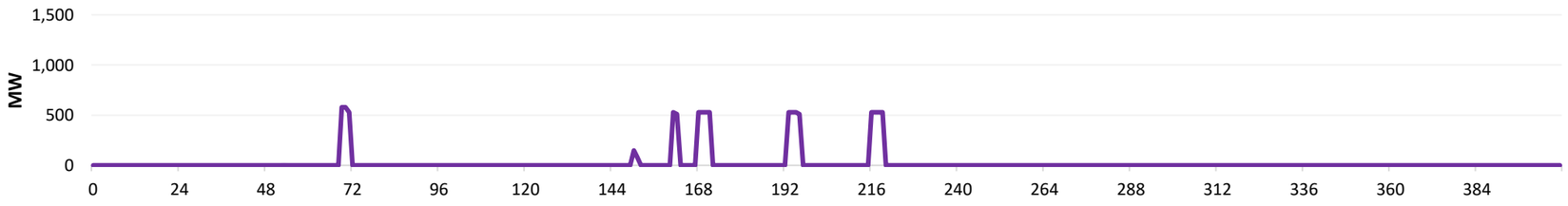
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	No Barge
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

Export to ISO-NE Reduction During Modeling Period



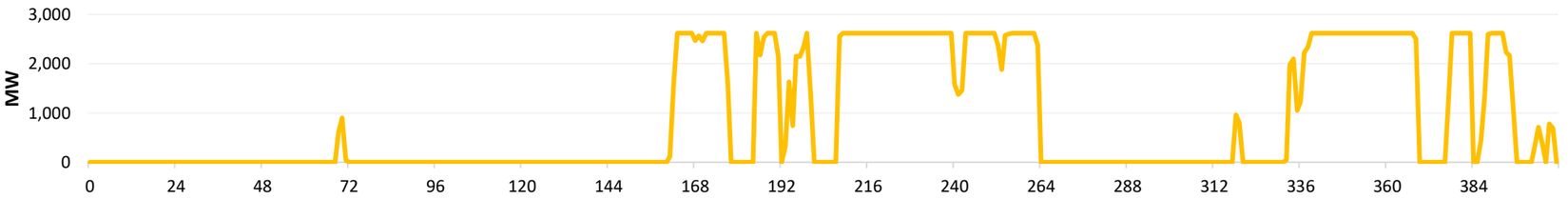
Export Reductions	
Total Hrs.	257
Total MWh	270,397
Avg. MW	662.7

SCR/EDRP Deployed During Modeling Period



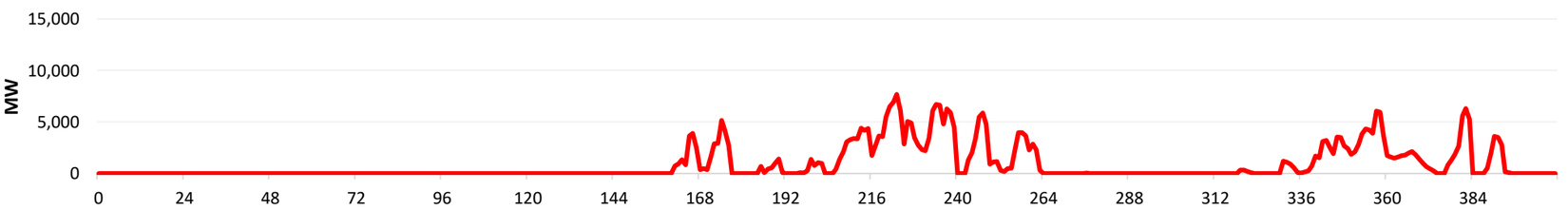
SCR Deployment	
Total Hrs.	19
Total MWh	9,256
Avg. MW	22.7

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	152
Total MWh	345,120
Avg. MW	845.9
First Hour with Viol.	69

Loss of Load During Modeling Period



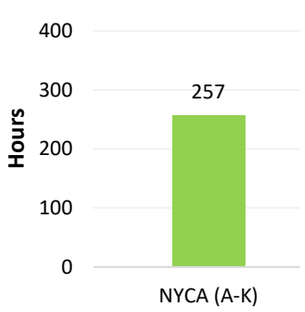
Loss of Load	
Total Hrs.	147
Total MWh	361,898
Avg. MW	887.0
First Hour with Losses	161

Full Period Results Summary

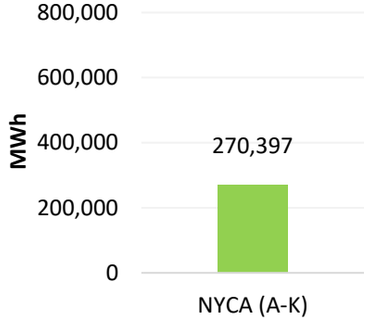
Case Name: Scenario 2 - PD 6 No Barge Refill

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	No Barge
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

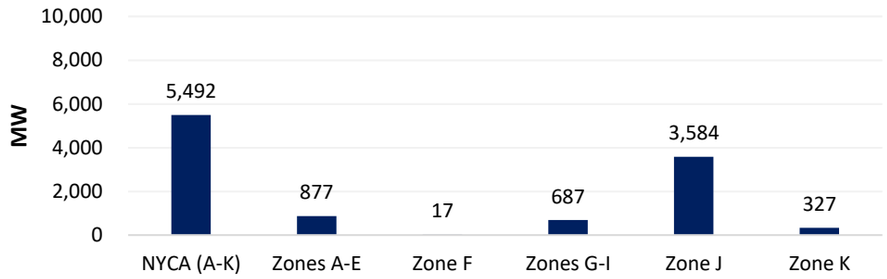
Hours Exports Reduced



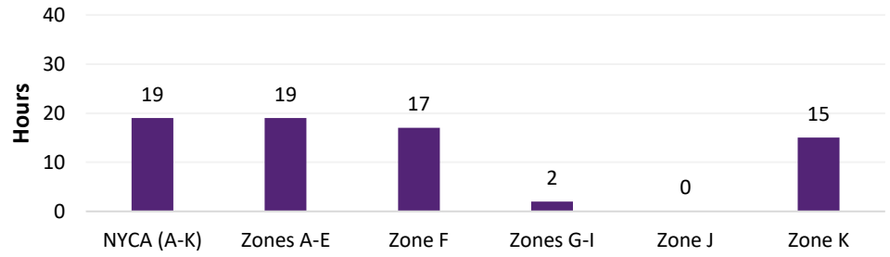
Total MWh of Exports Reduced



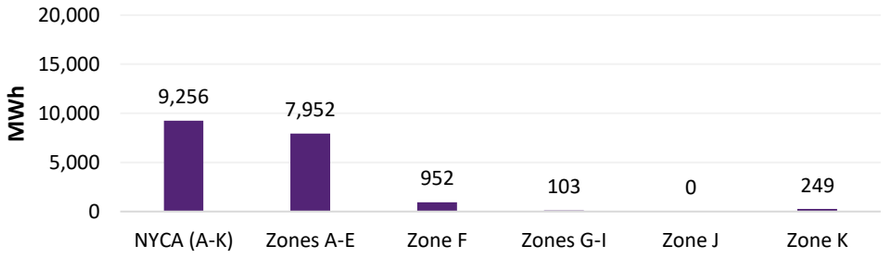
Average Capacity Not Available Due to Exhausted Fuel Inventory



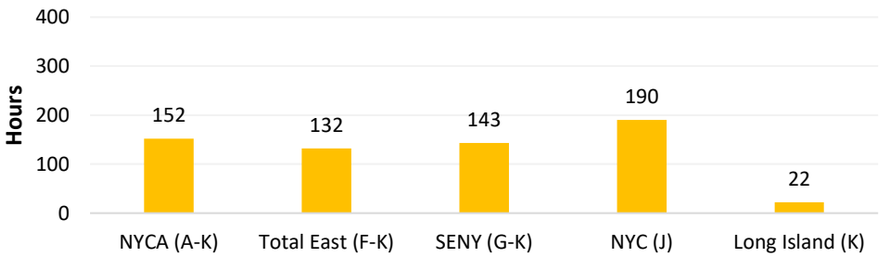
Hours SCR/EDRP Deployed



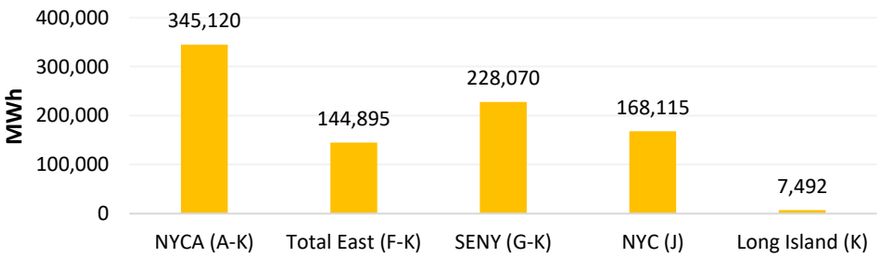
Total MWh SCR/EDRP Deployed



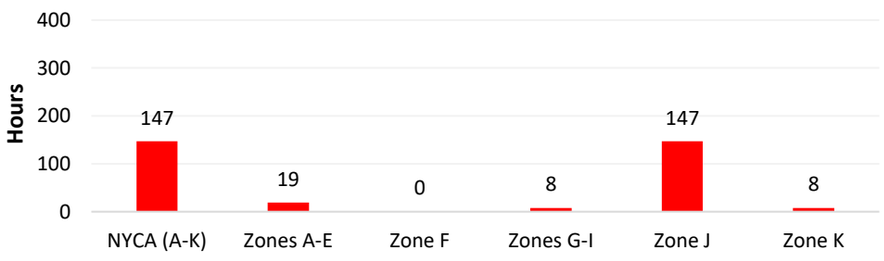
Hours with Reserve Violations



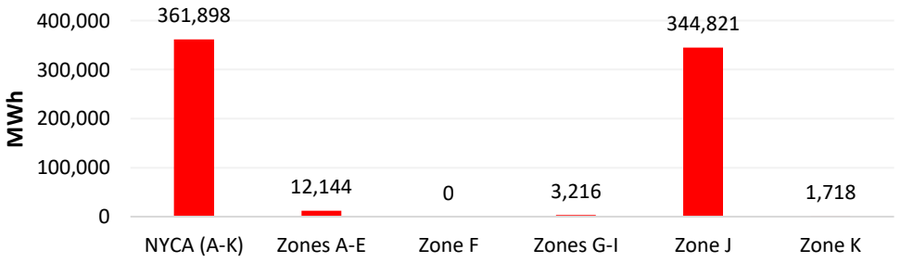
Total MWh of Reserve Violations

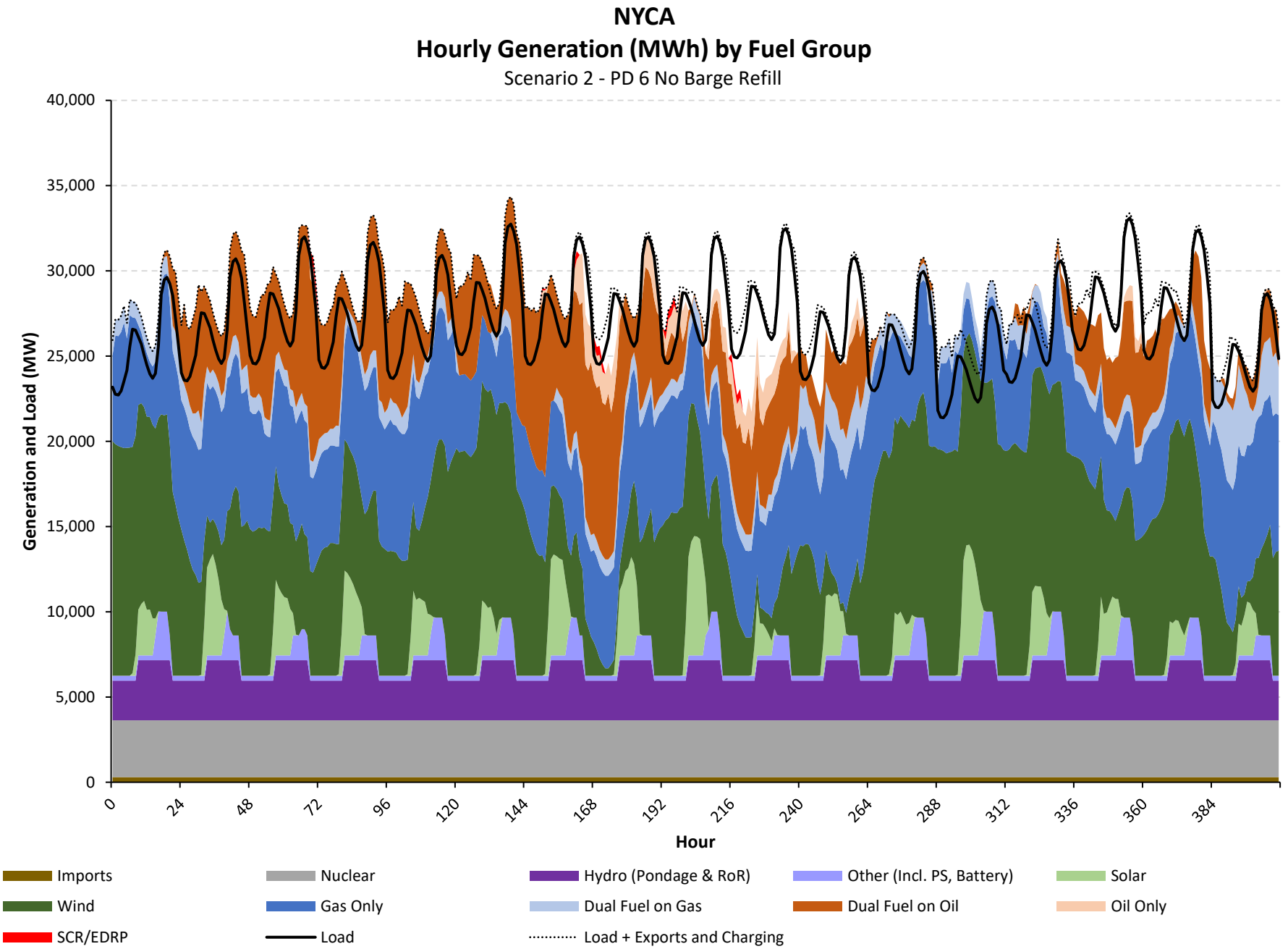


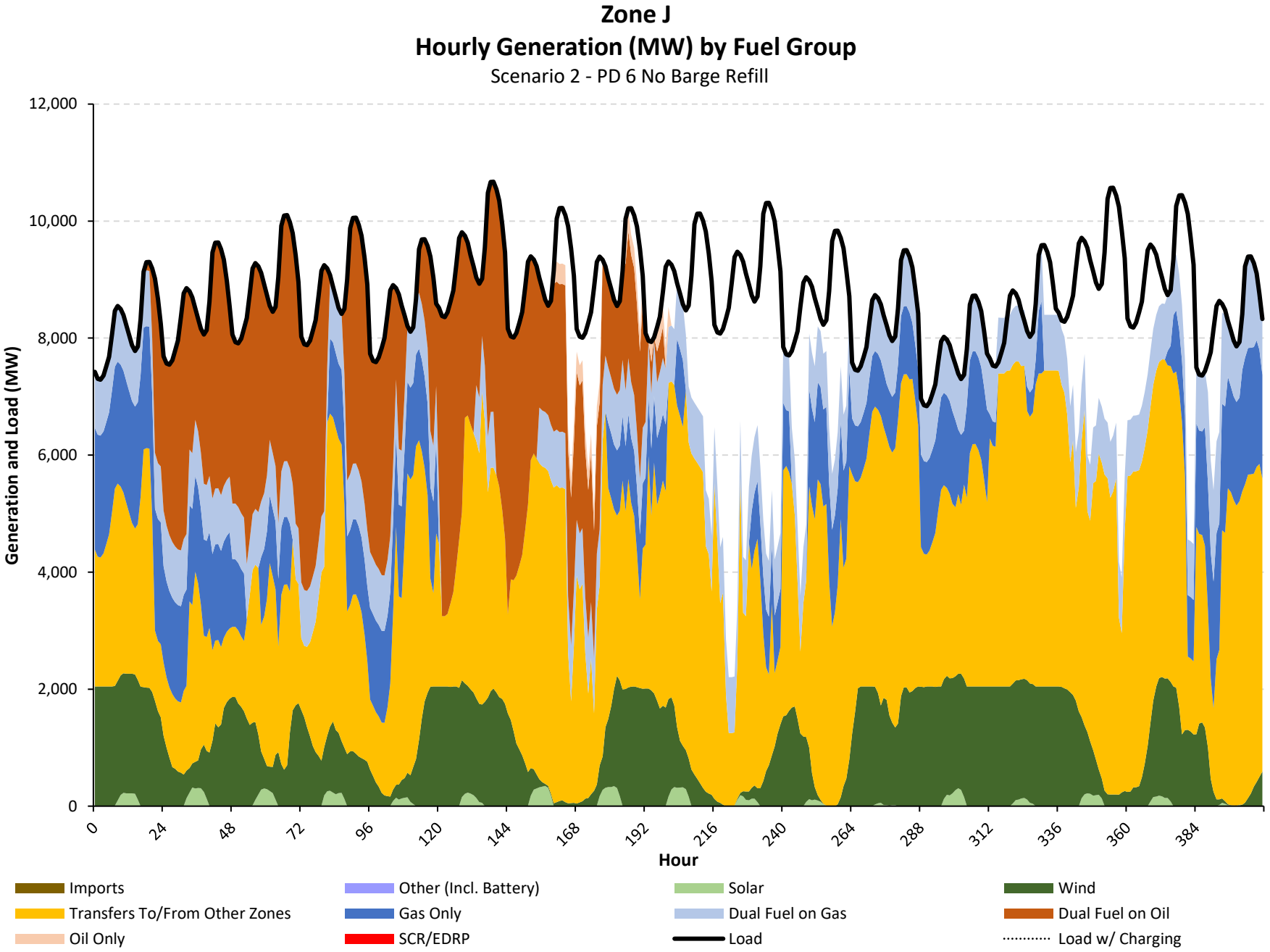
Hours with Loss of Load



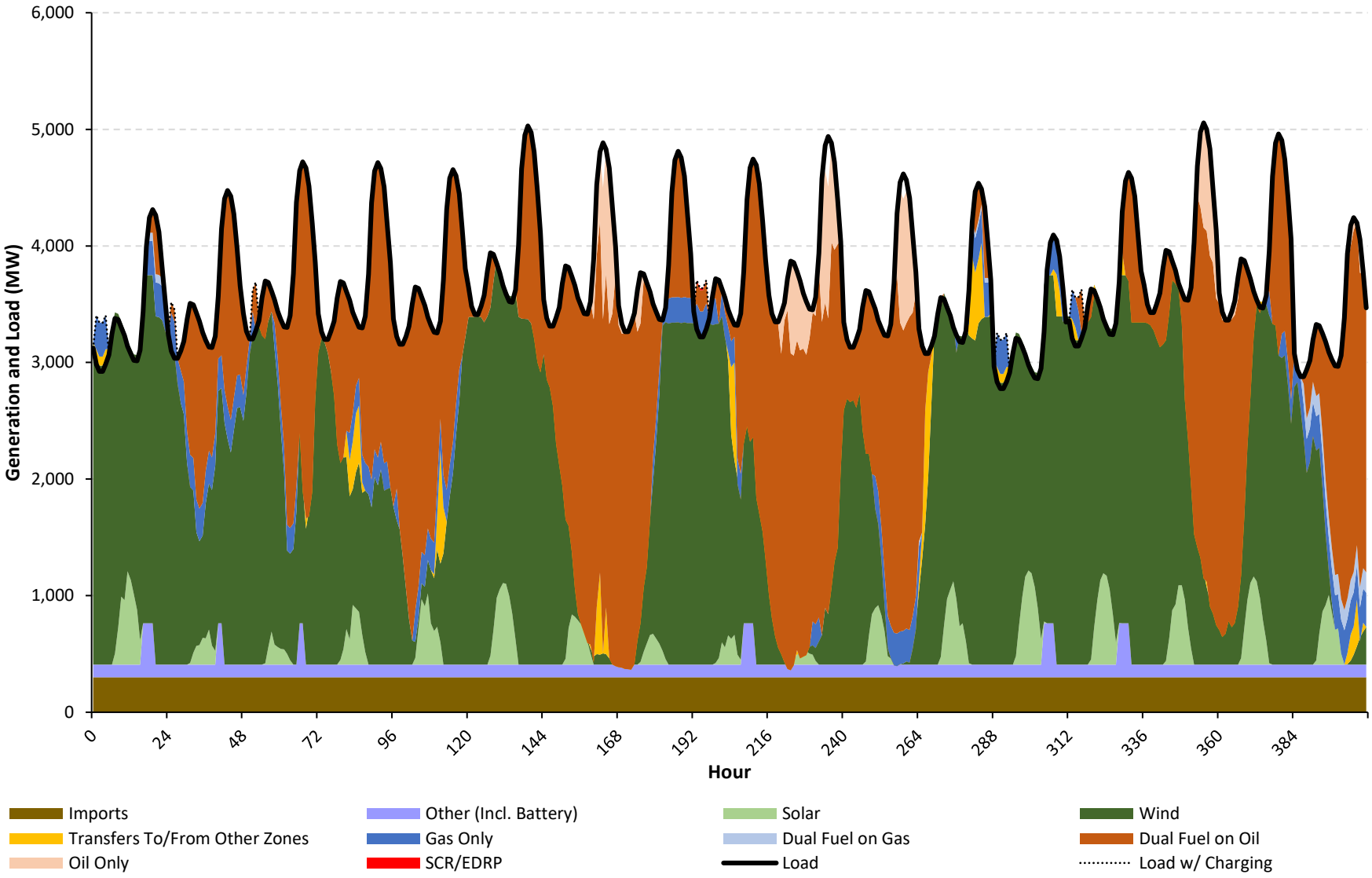
Total MWh of Lost Load

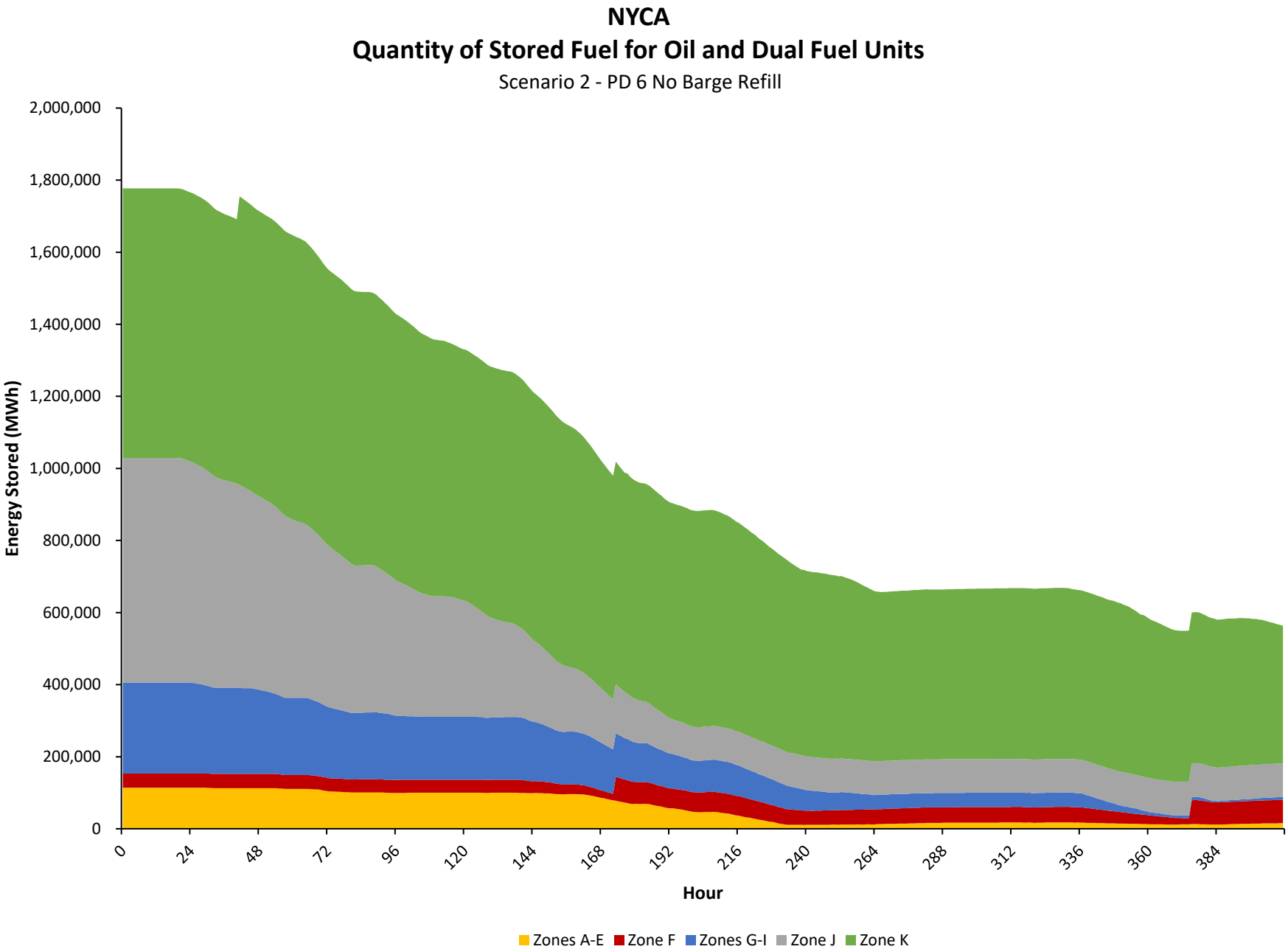


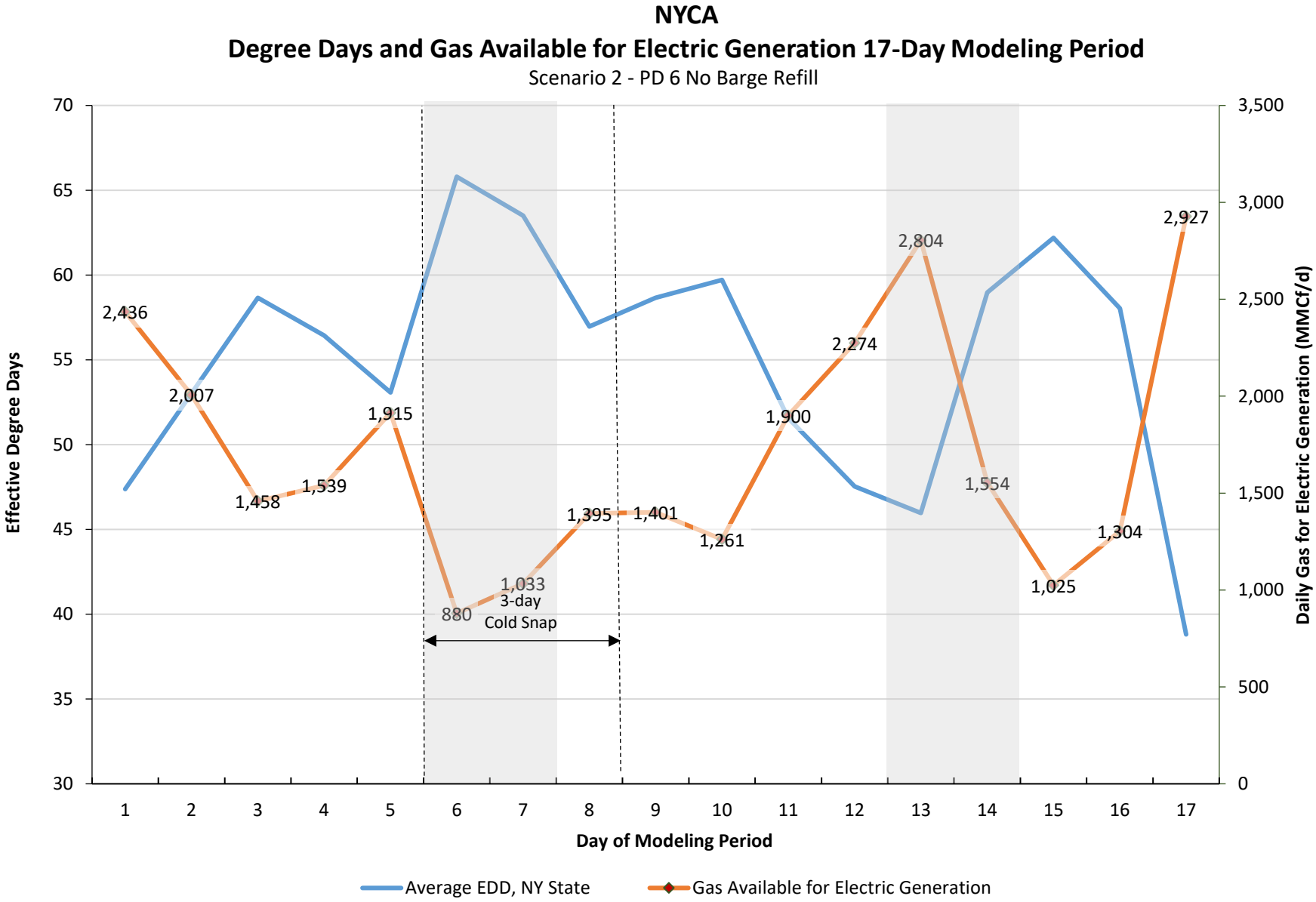

NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 2 - PD 6 No Barge Refill
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 2 - PD 6 No Barge Refill
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

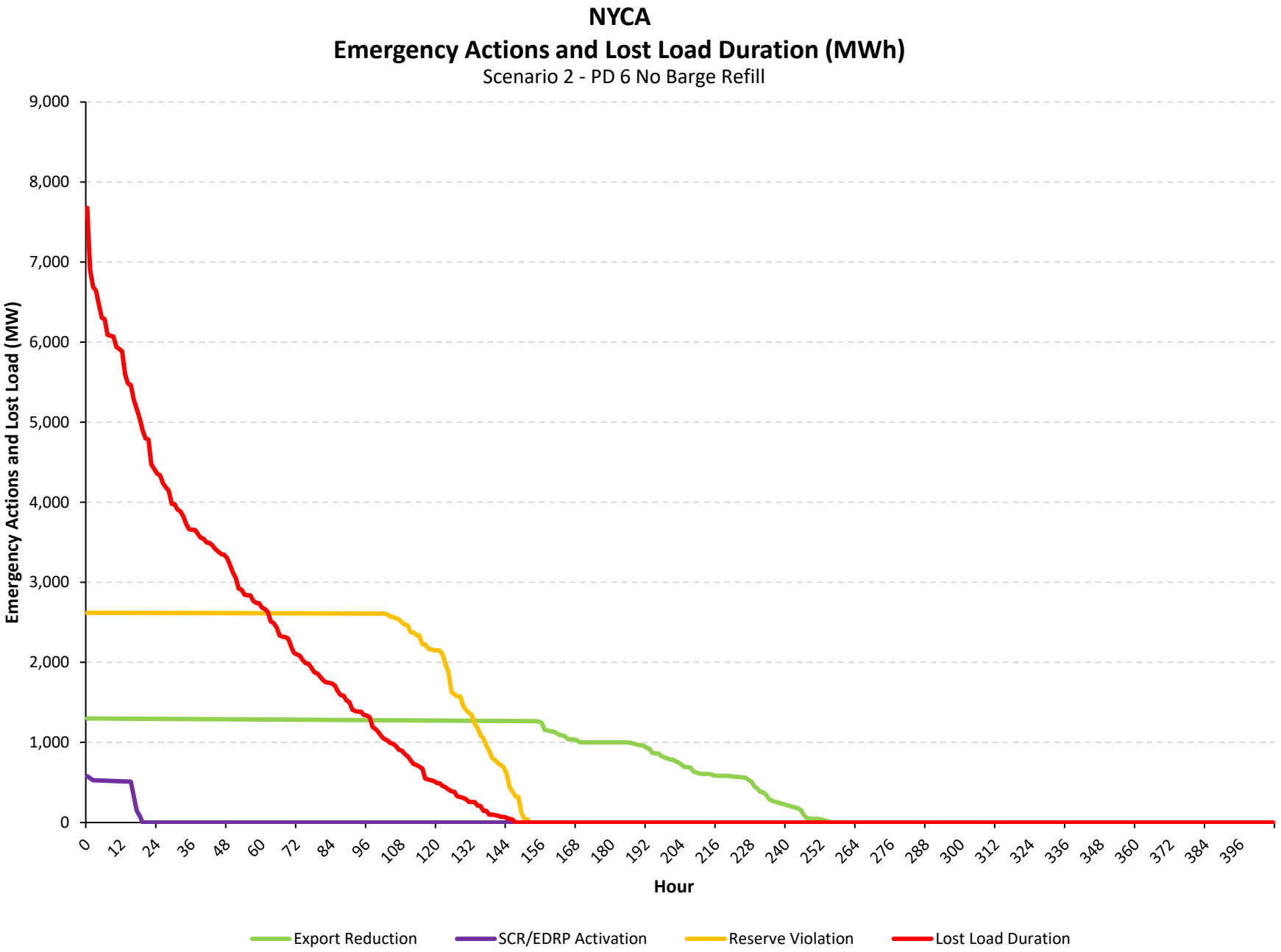
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 2 - PD 6 No Barge Refill

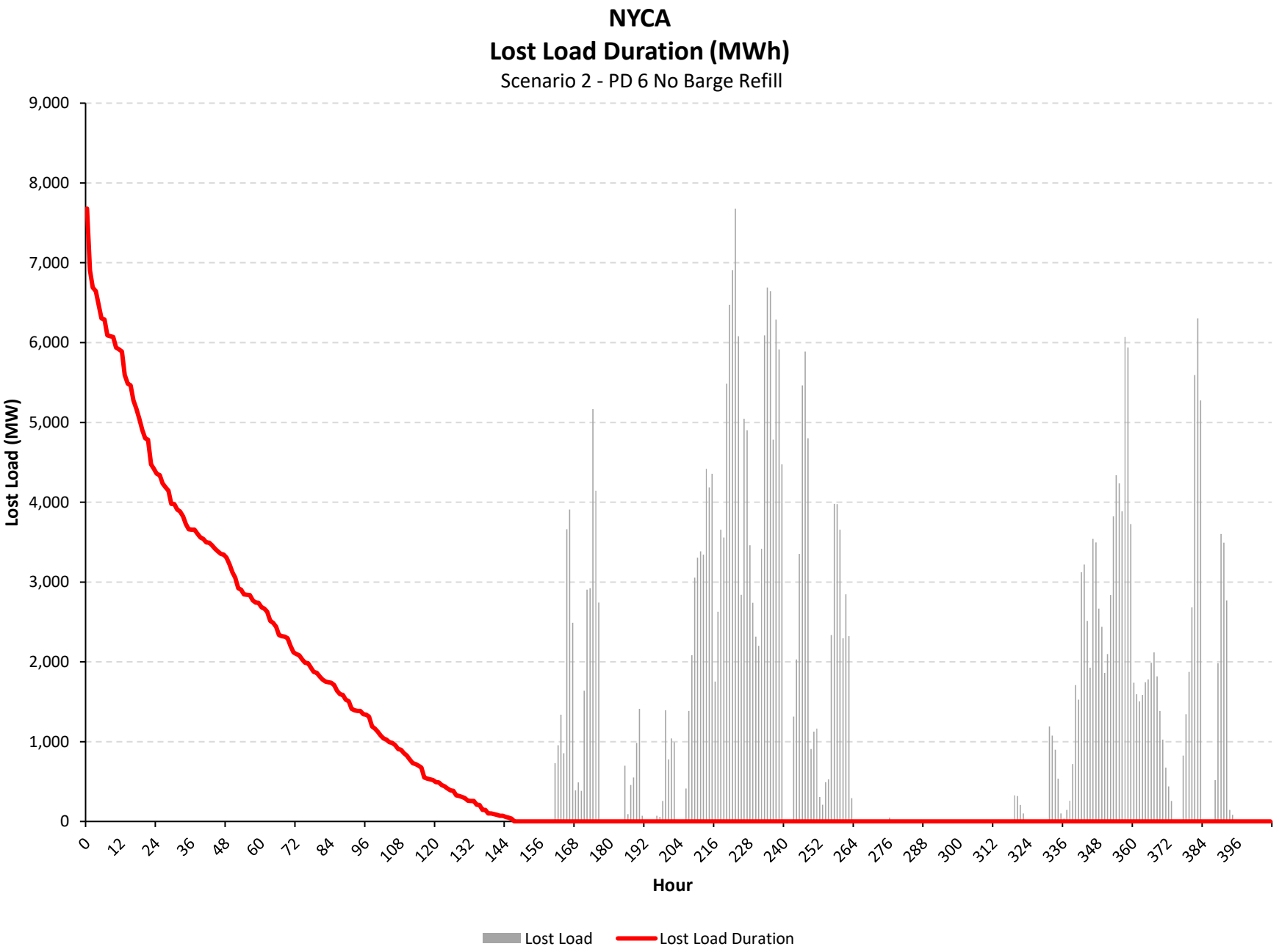



NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 2 - PD 6 No Barge Refill
Energy Stored (MWh)
2,000,000
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Zones A-E
Zone F
Zones G-I
Zone J
Zone K



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 2 - PD 6 No Barge Refill
Emergency Actions and Lost Load (MW)
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 2 - PD 6 No Barge Refill
Lost Load (MW)
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

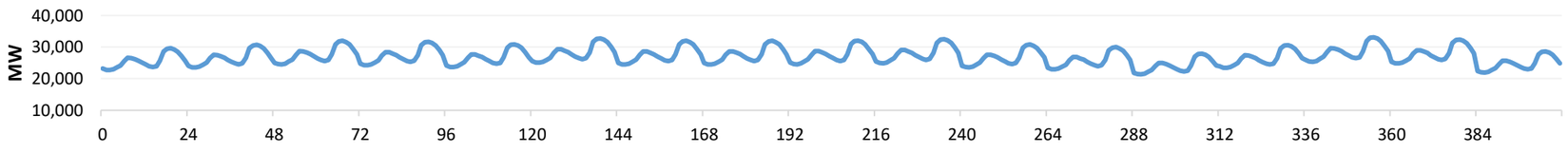
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 2 - PD 7 No Refill (Winter 2030/2031)

Hourly Results Summary

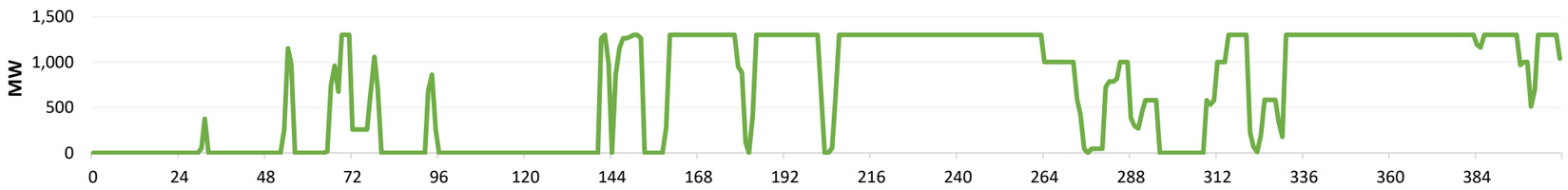
Case Name: Scenario 2 - PD 7 No Refill

Load During Modeling Period



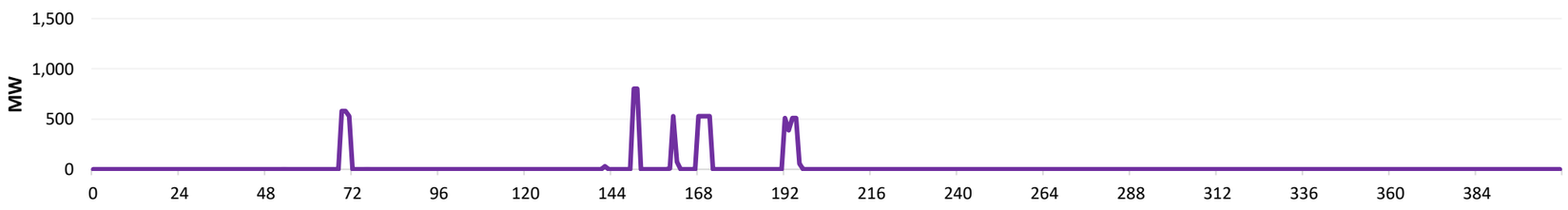
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	No Refill
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

Export to ISO-NE Reduction During Modeling Period



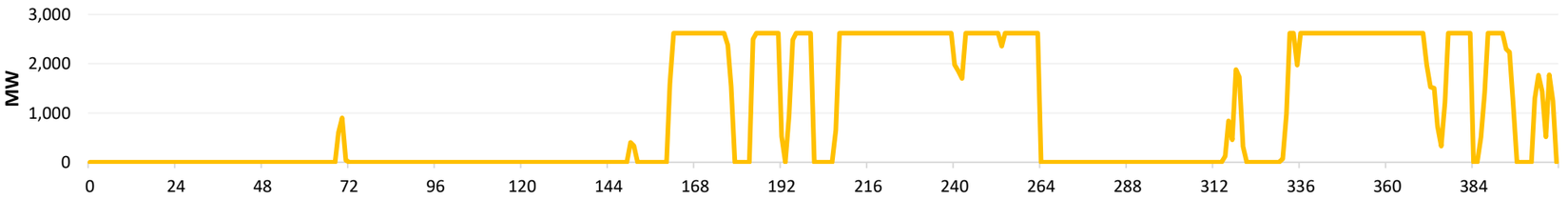
Export Reductions	
Total Hrs.	266
Total MWh	287,241
Avg. MW	704.0

SCR/EDRP Deployed During Modeling Period



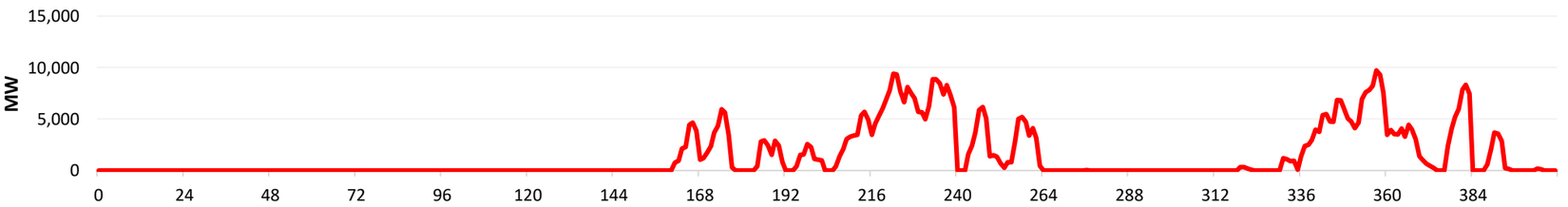
SCR Deployment	
Total Hrs.	18
Total MWh	8,007
Avg. MW	19.6

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	171
Total MWh	389,429
Avg. MW	954.5
First Hour with Viol.	69

Loss of Load During Modeling Period



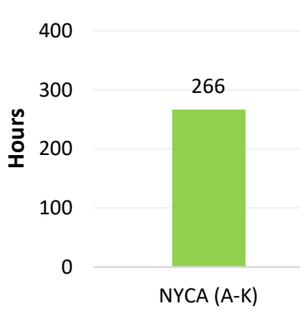
Loss of Load	
Total Hrs.	152
Total MWh	567,281
Avg. MW	1,390.4
First Hour with Losses	161

Full Period Results Summary

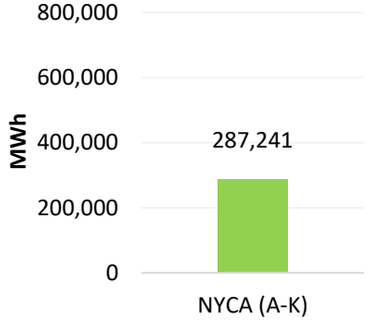
Case Name: Scenario 2 - PD 7 No Refill

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	No Refill
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

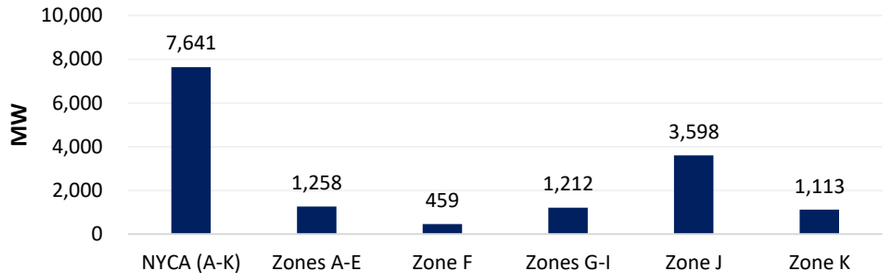
Hours Exports Reduced



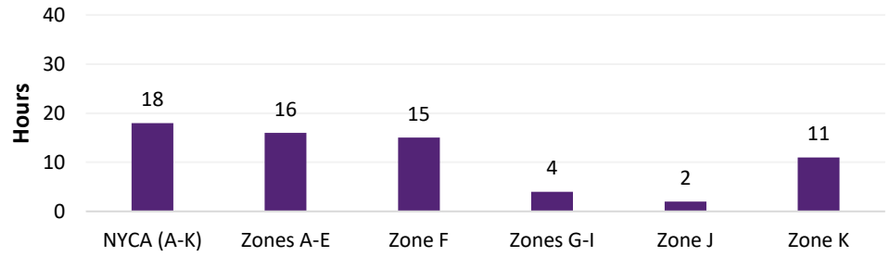
Total MWh of Exports Reduced



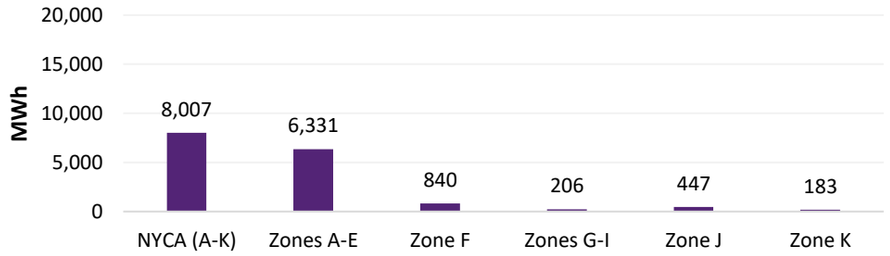
Average Capacity Not Available Due to Exhausted Fuel Inventory



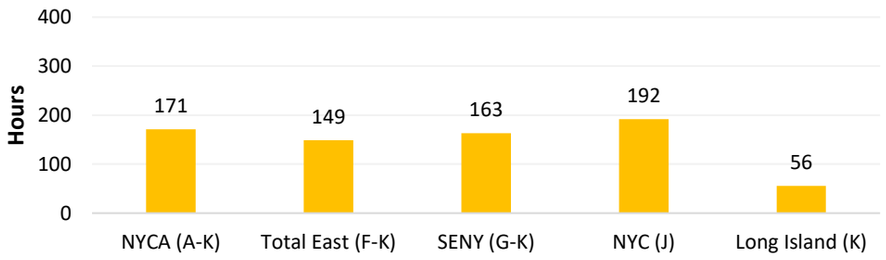
Hours SCR/EDRP Deployed



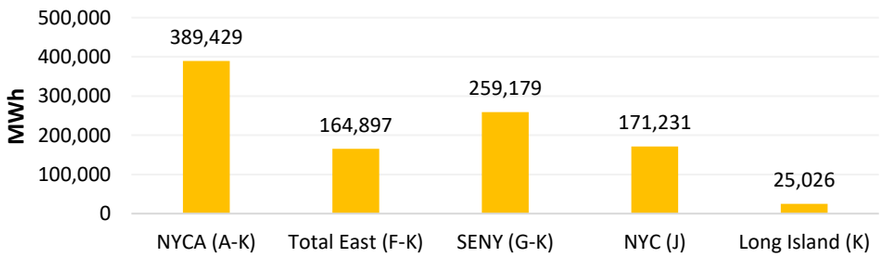
Total MWh SCR/EDRP Deployed



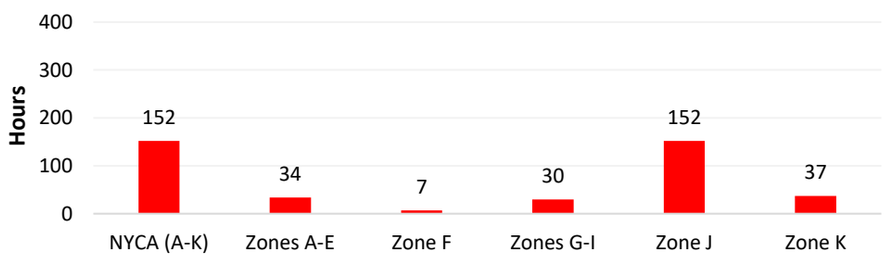
Hours with Reserve Violations



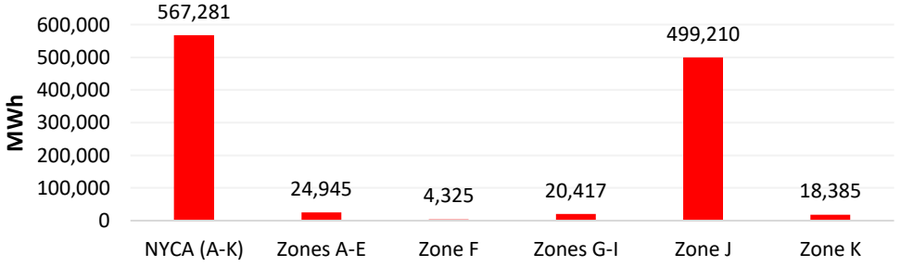
Total MWh of Reserve Violations

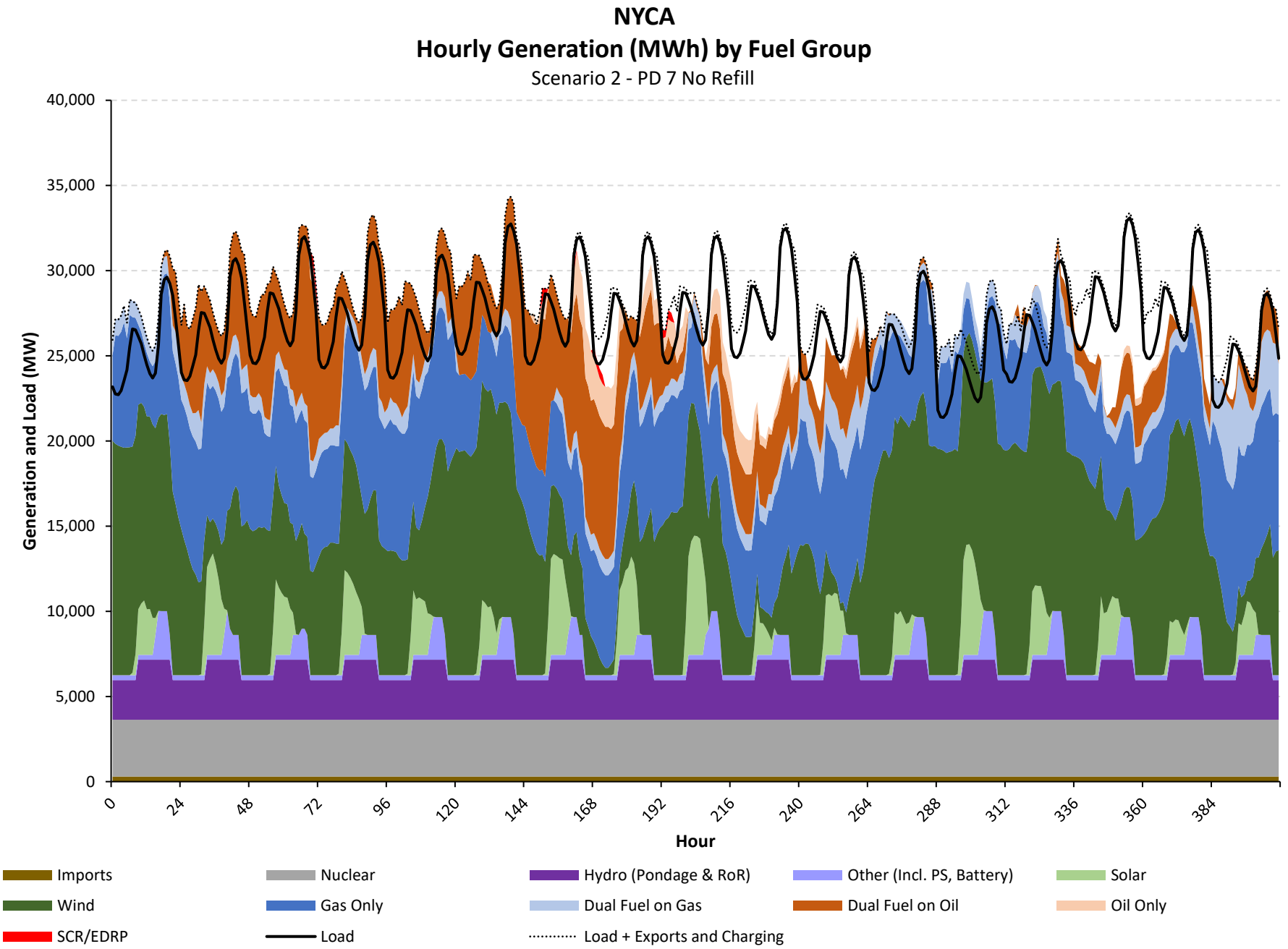


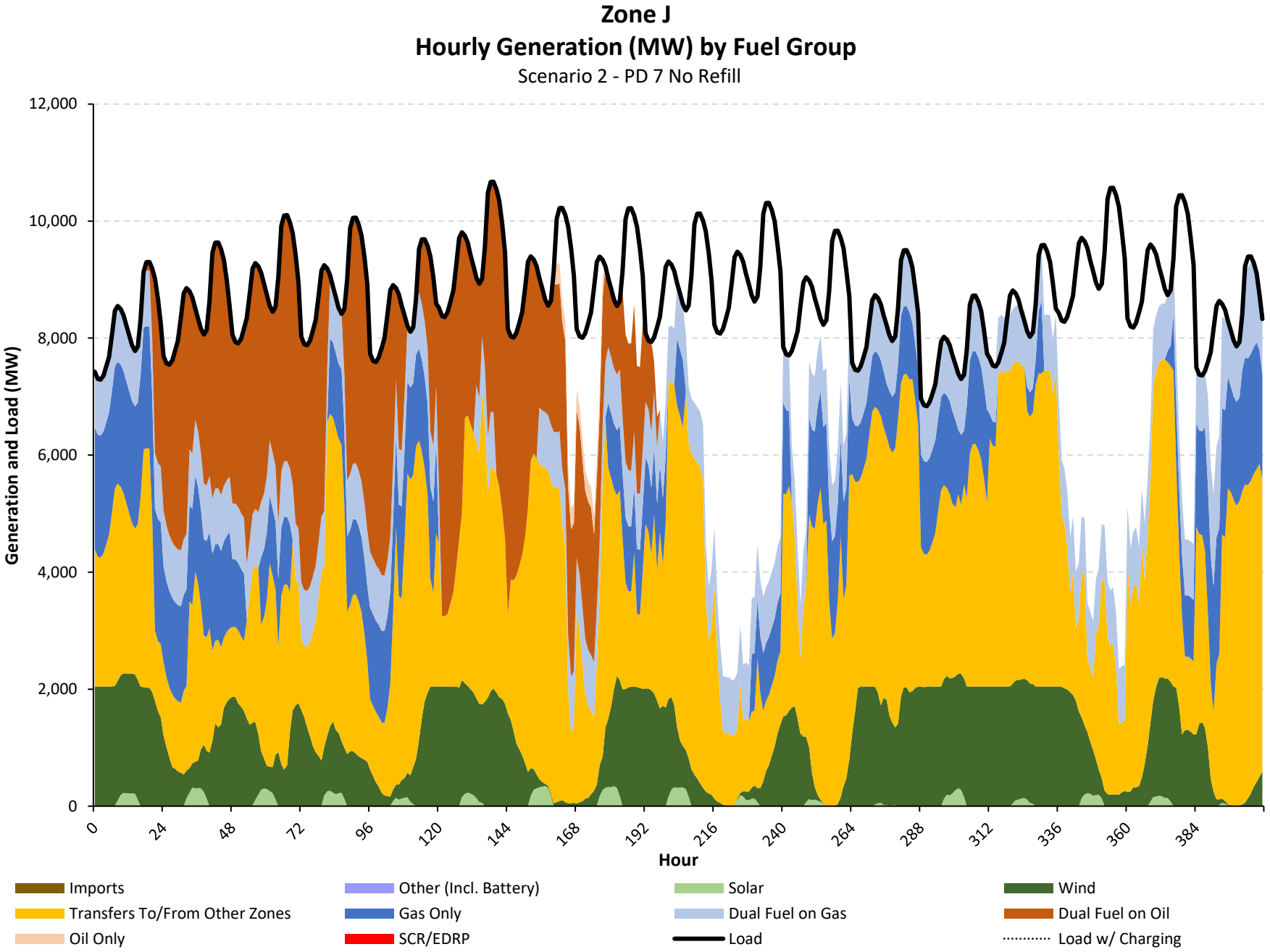
Hours with Loss of Load



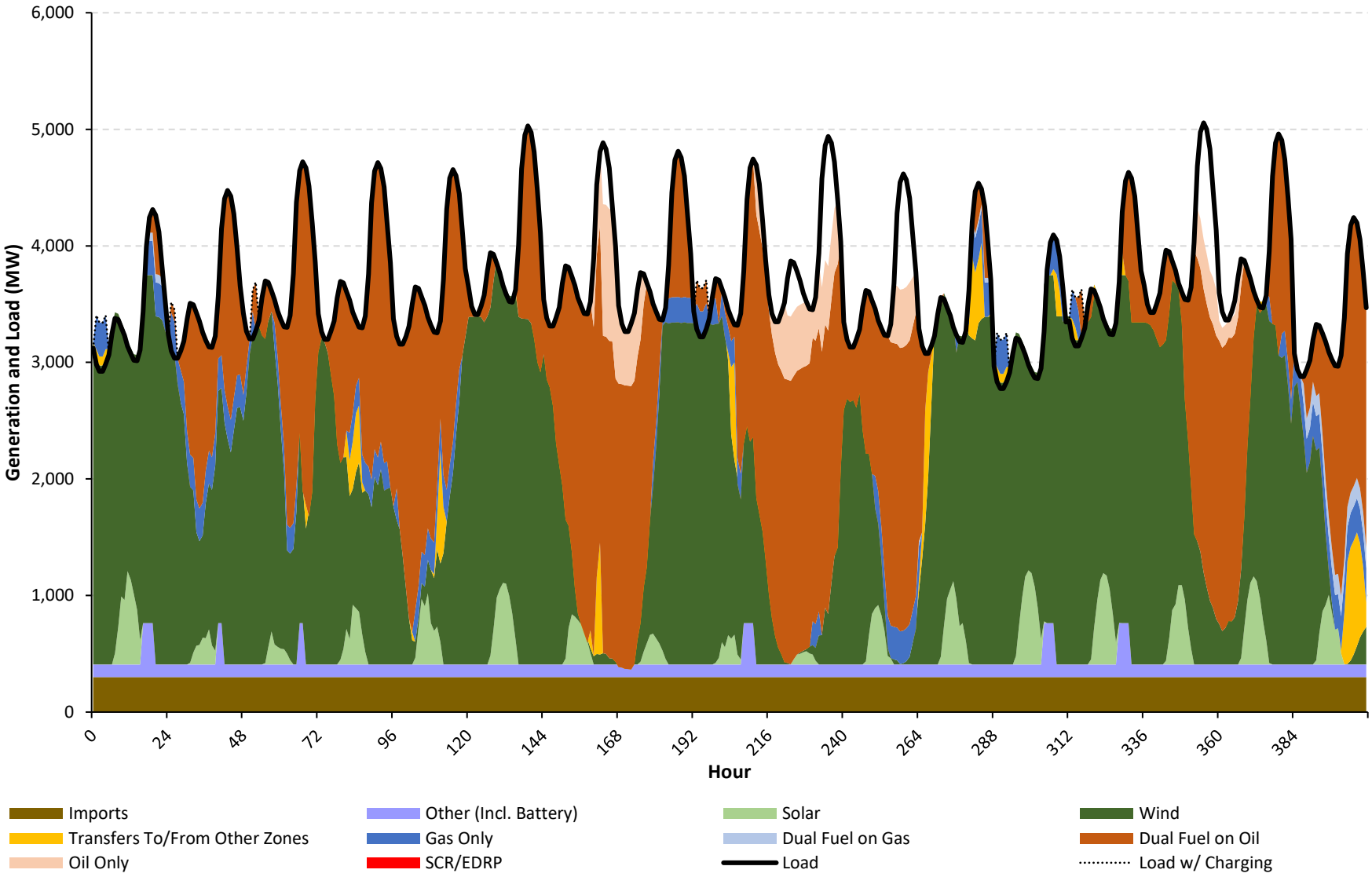
Total MWh of Lost Load




NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 2 - PD 7 No Refill
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 2 - PD 7 No Refill
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

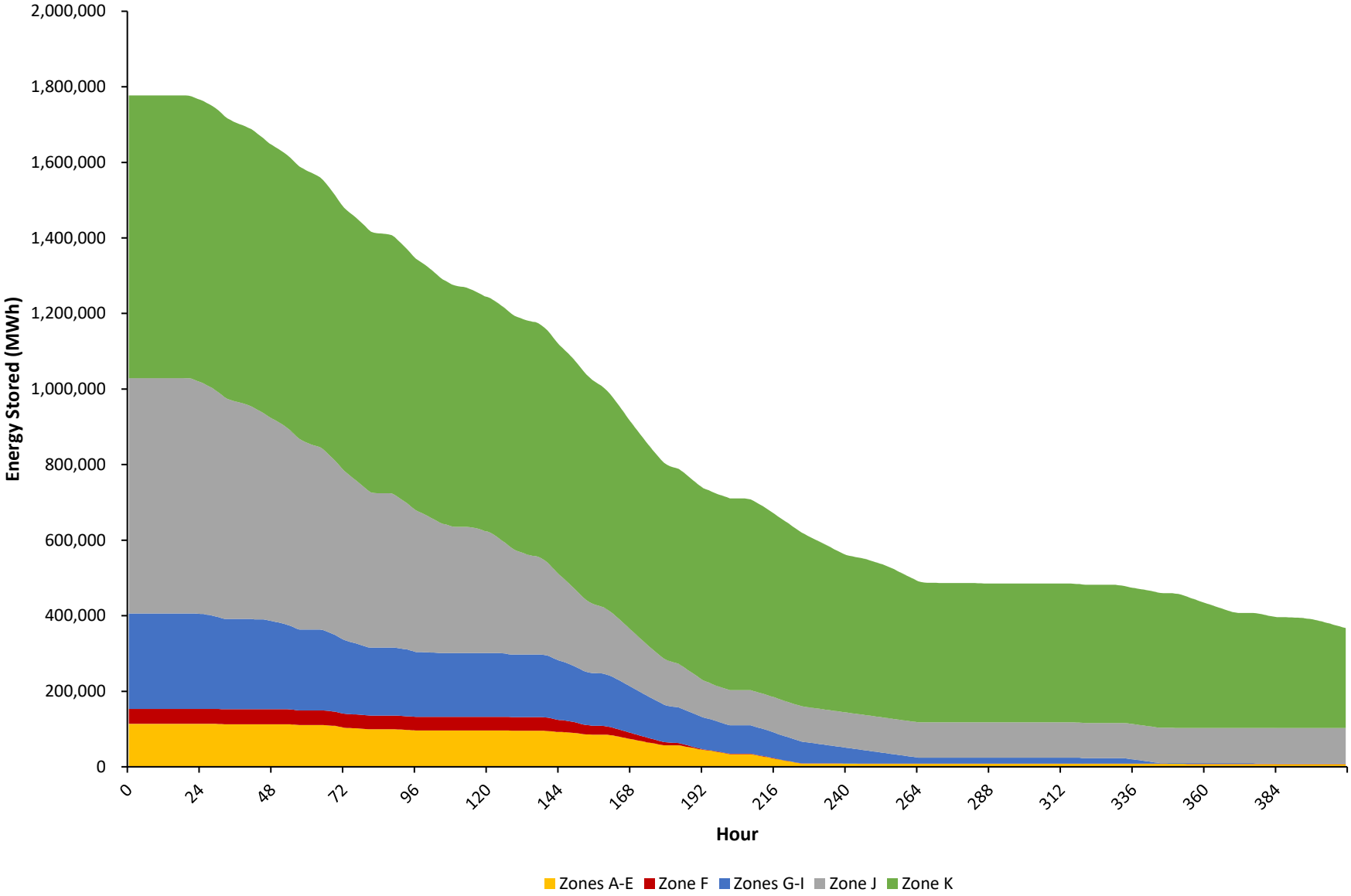
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 2 - PD 7 No Refill

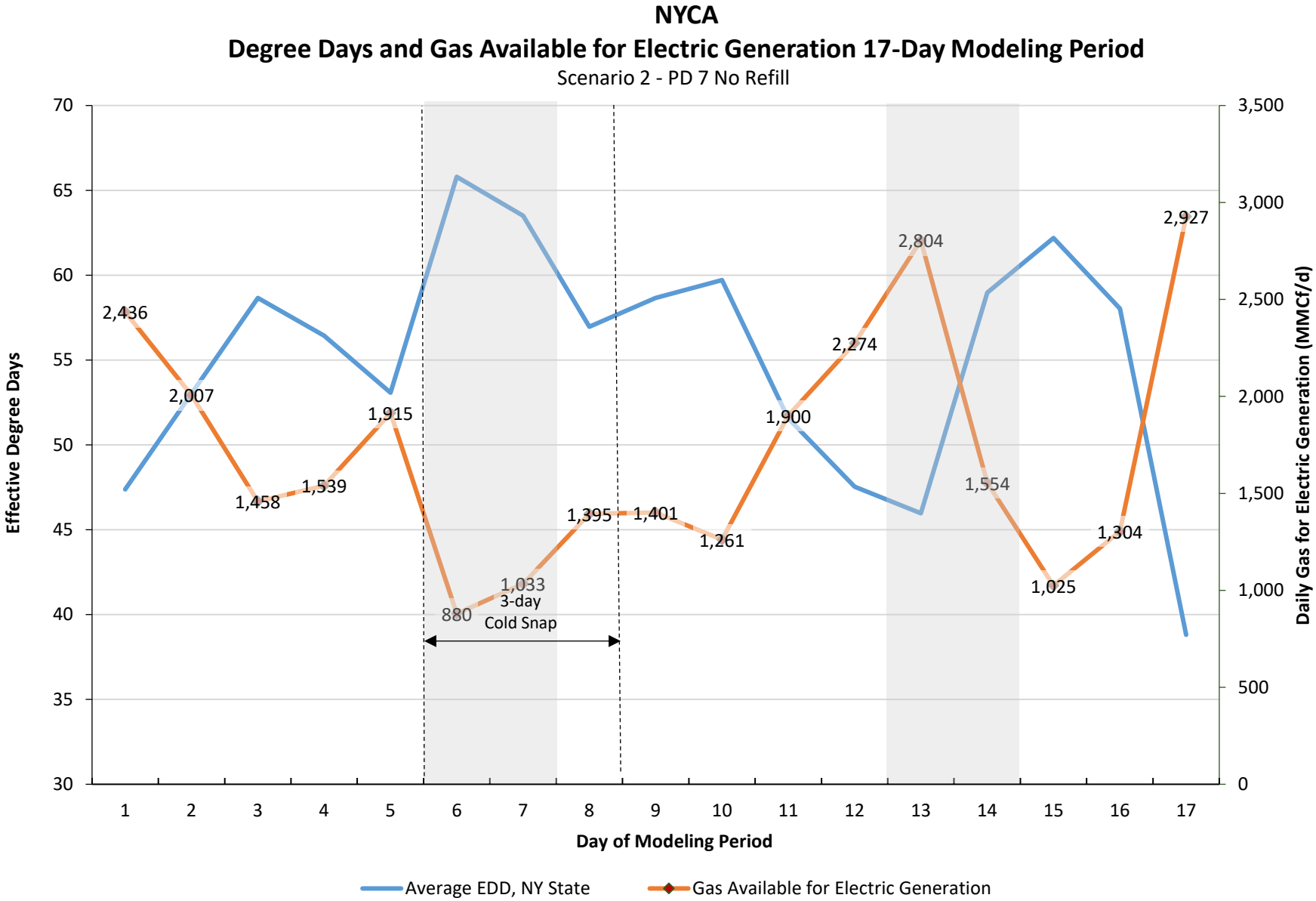


NYCA

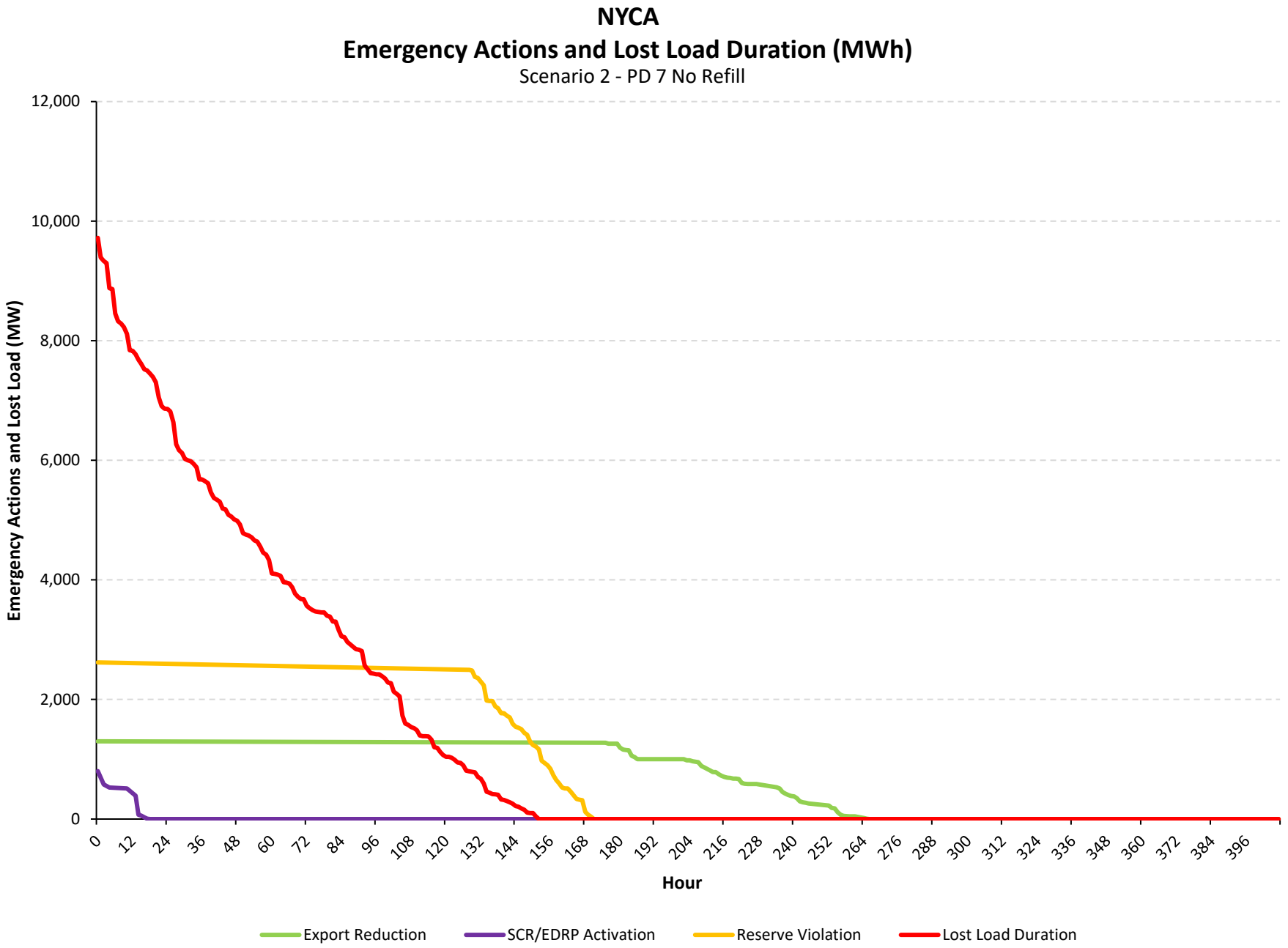
Quantity of Stored Fuel for Oil and Dual Fuel Units

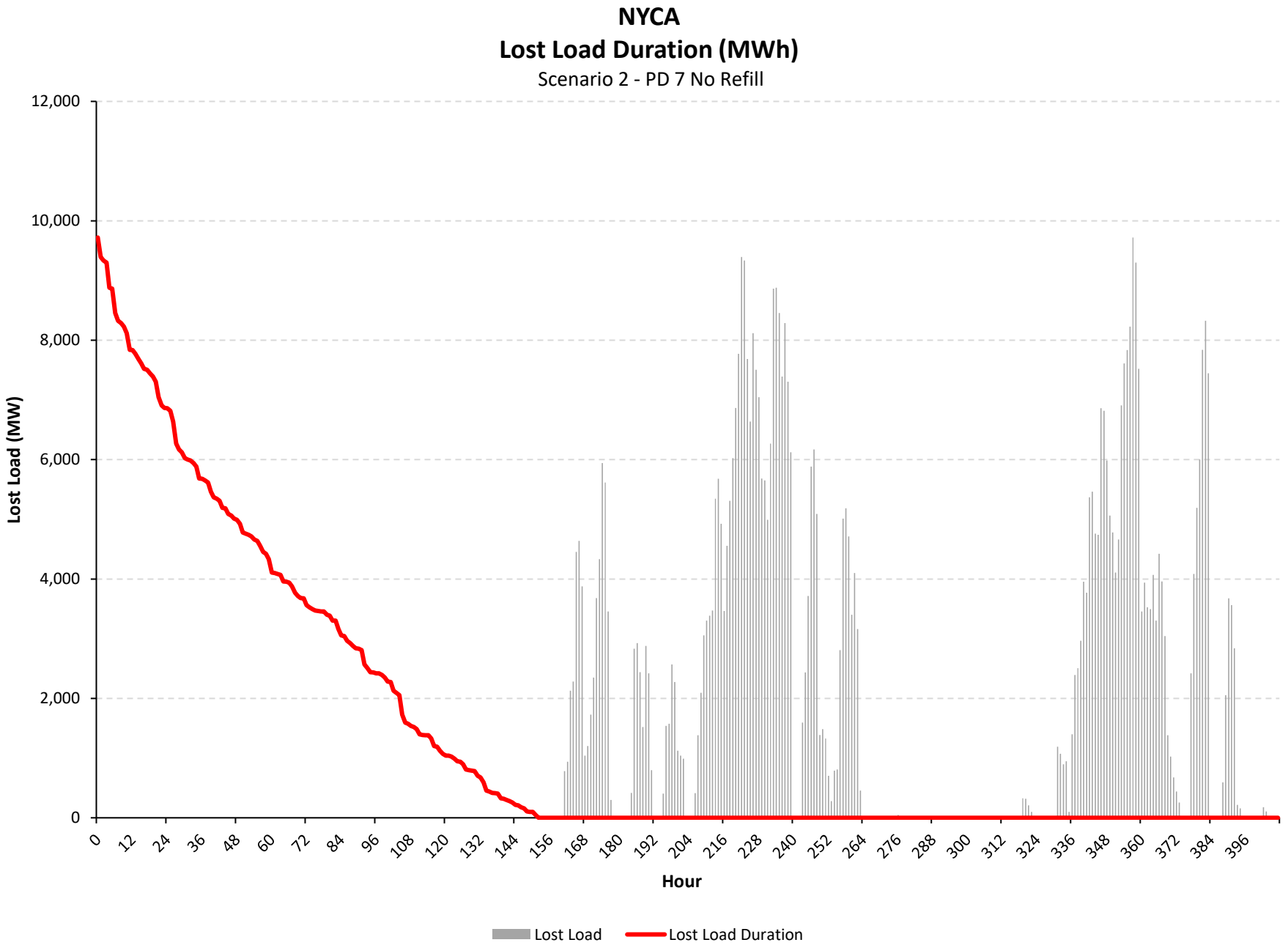
Scenario 2 - PD 7 No Refill





Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 2 - PD 7 No Refill
Emergency Actions and Lost Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 2 - PD 7 No Refill
Lost Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

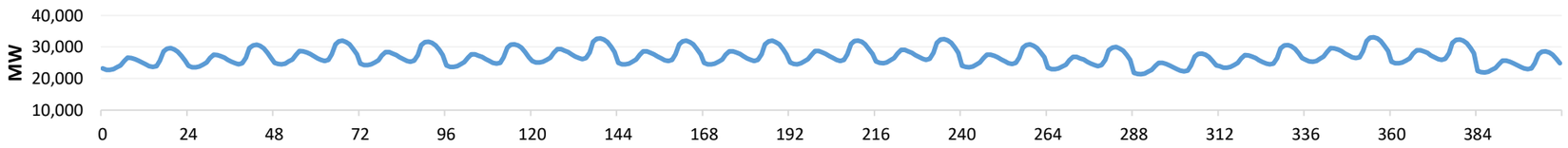
Case: Scenario 2 - PD 8 Non-Firm Gas Unavailable (F-K) (Winter 2030/2031)

Hourly Results Summary

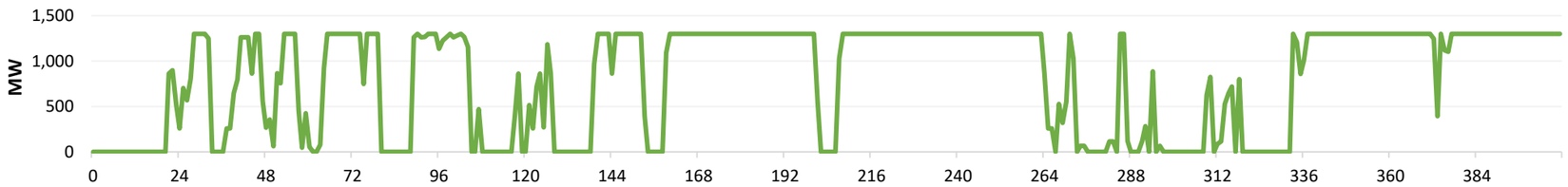
Case Name: Scenario 2 - PD 8 Non-Firm Gas Unavailable (F-K)

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	F-K
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

Load During Modeling Period

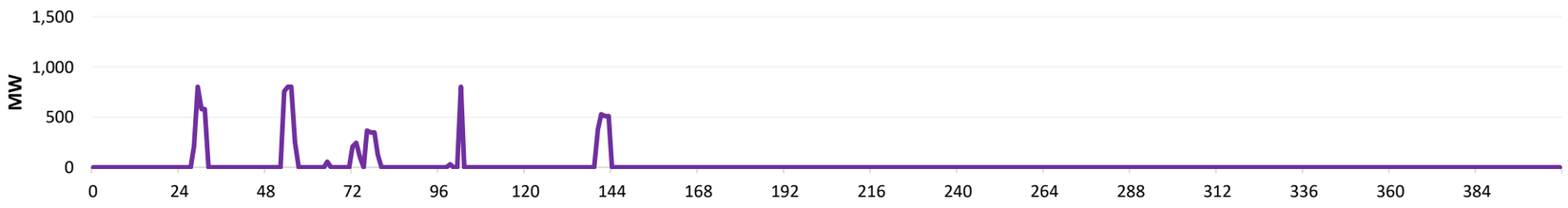


Export to ISO-NE Reduction During Modeling Period



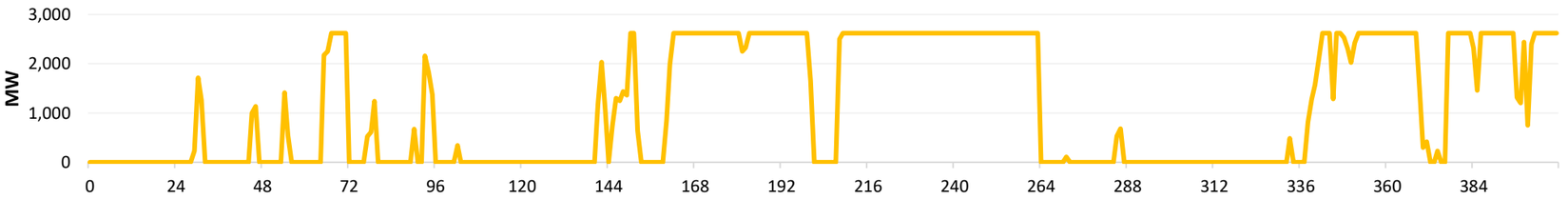
Export Reductions	
Total Hrs.	296
Total MWh	331,651
Avg. MW	812.9

SCR/EDRP Deployed During Modeling Period



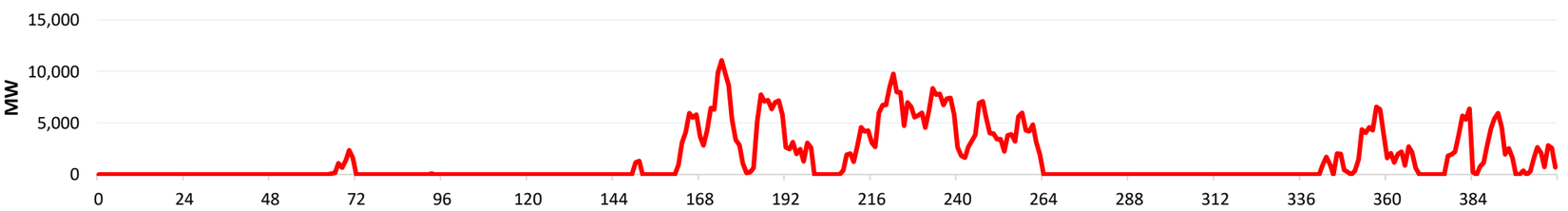
SCR Deployment	
Total Hrs.	22
Total MWh	9,326
Avg. MW	22.9

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	201
Total MWh	452,643
Avg. MW	1,109.4
First Hour with Viol.	29

Loss of Load During Modeling Period



Loss of Load	
Total Hrs.	157
Total MWh	589,248
Avg. MW	1,444.2
First Hour with Losses	65

Full Period Results Summary

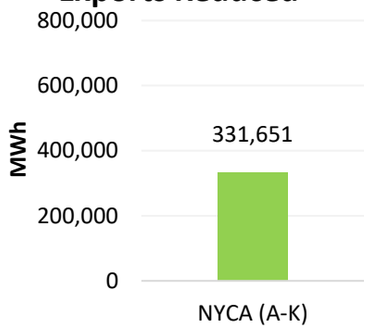
Case Name: Scenario 2 - PD 8 Non-Firm Gas Unavailable (F-K)

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	F-K
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

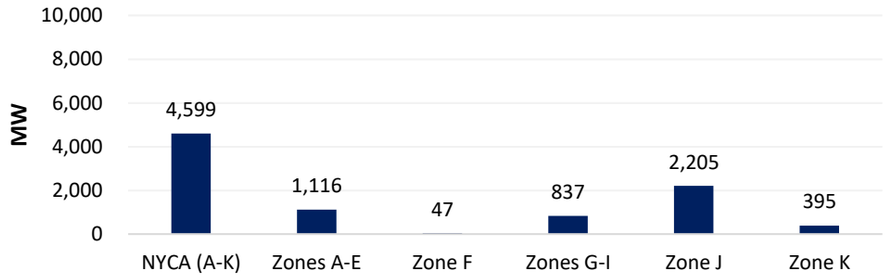
Hours Exports Reduced



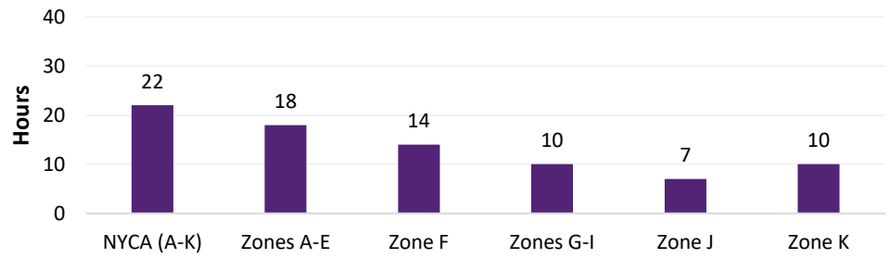
Total MWh of Exports Reduced



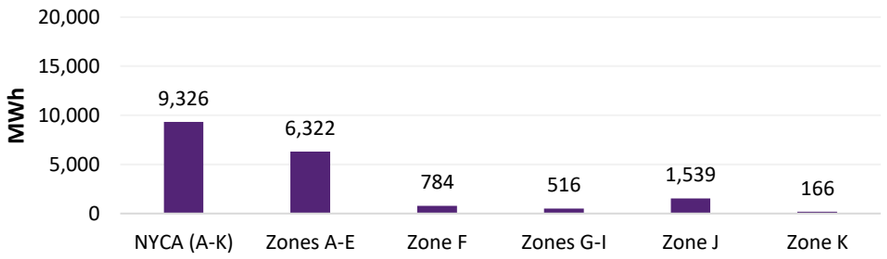
Average Capacity Not Available Due to Exhausted Fuel Inventory



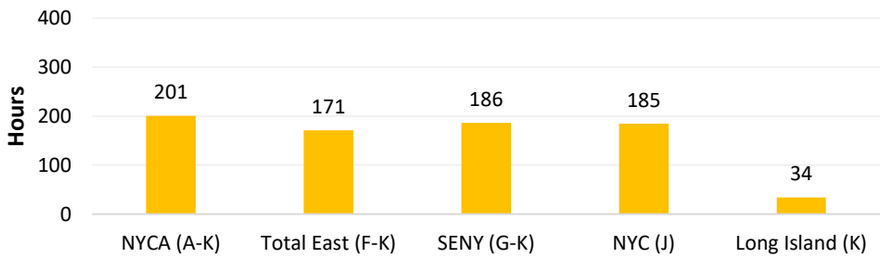
Hours SCR/EDRP Deployed



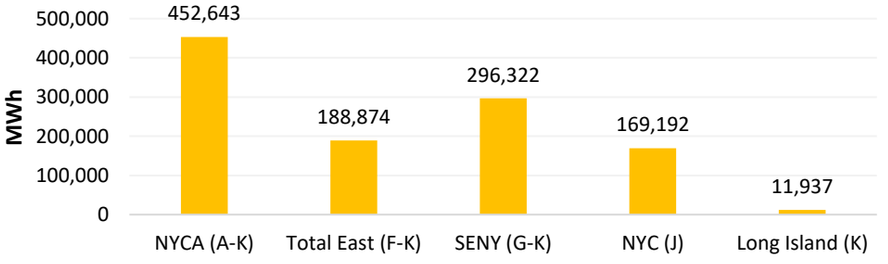
Total MWh SCR/EDRP Deployed



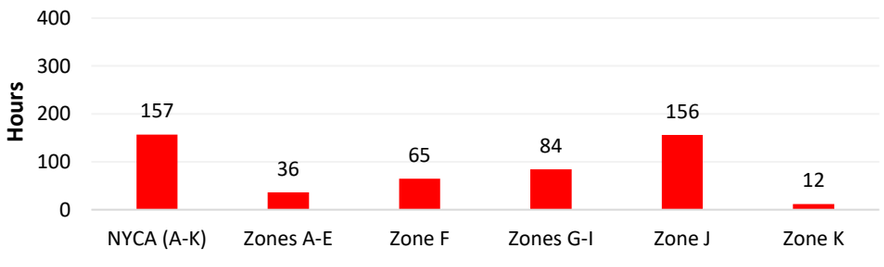
Hours with Reserve Violations



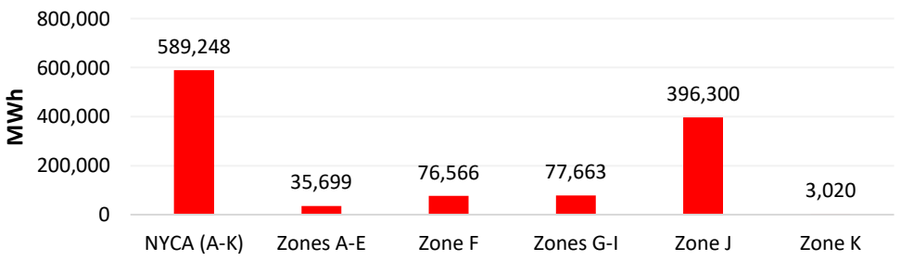
Total MWh of Reserve Violations

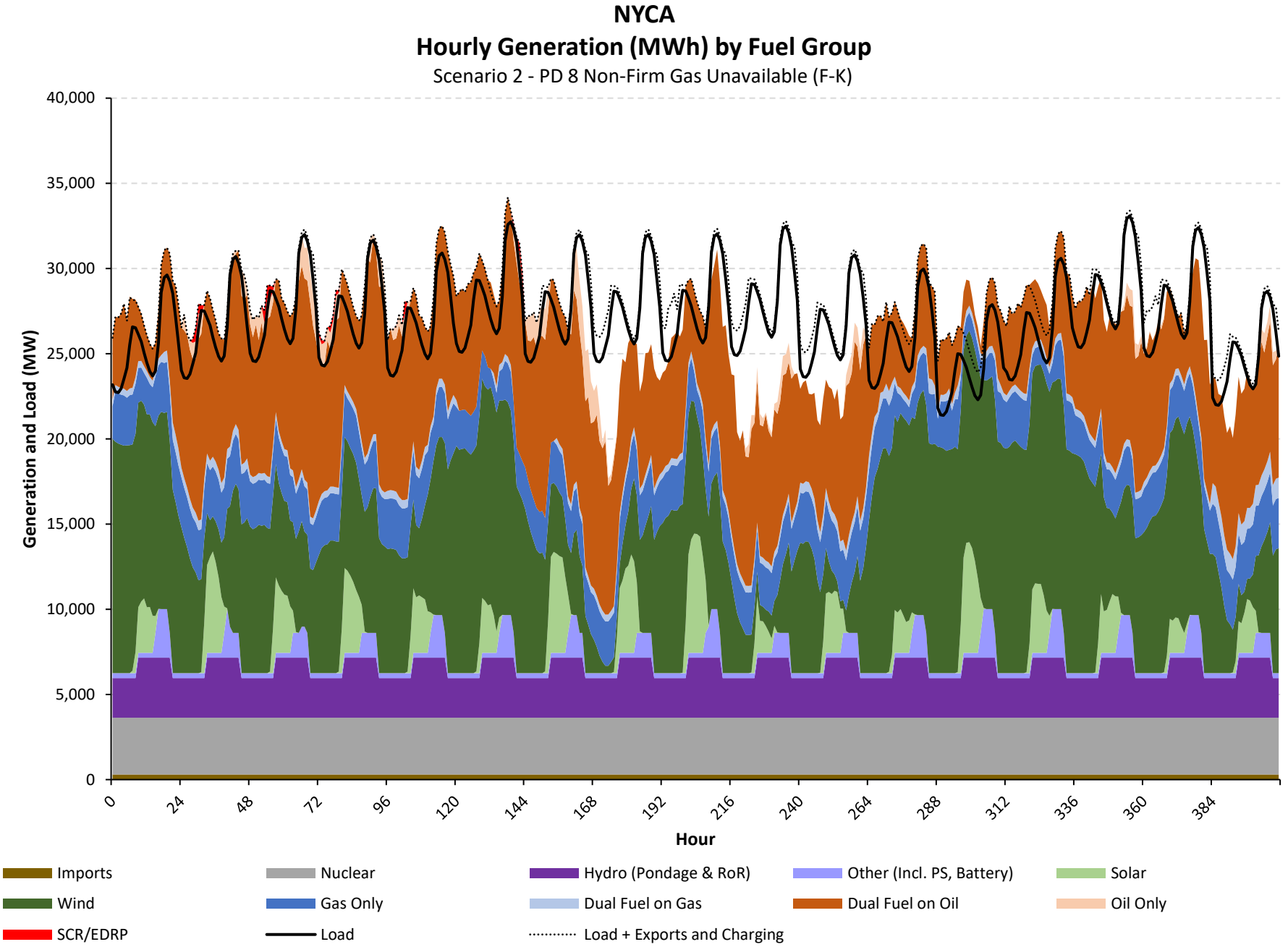


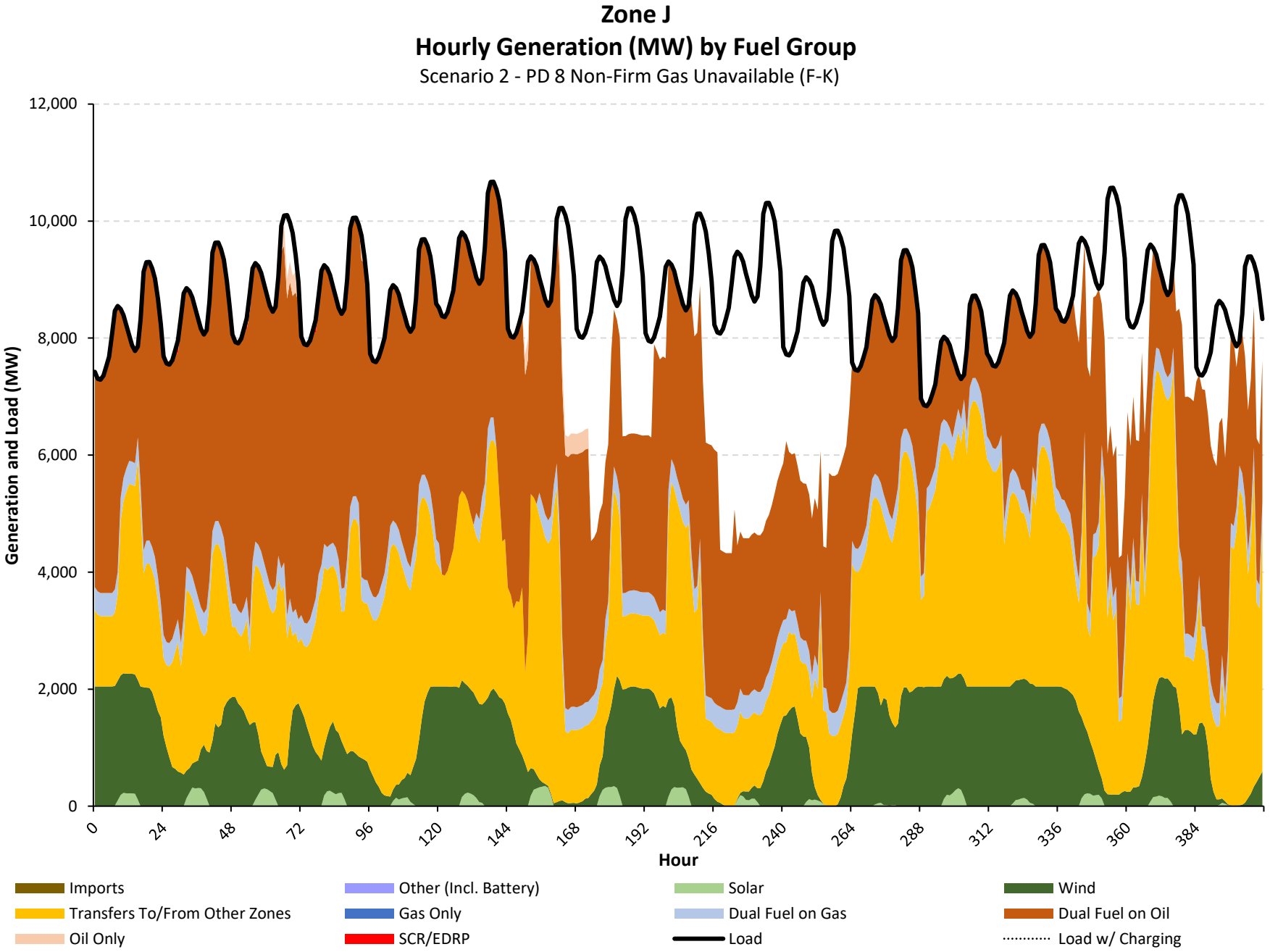
Hours with Loss of Load



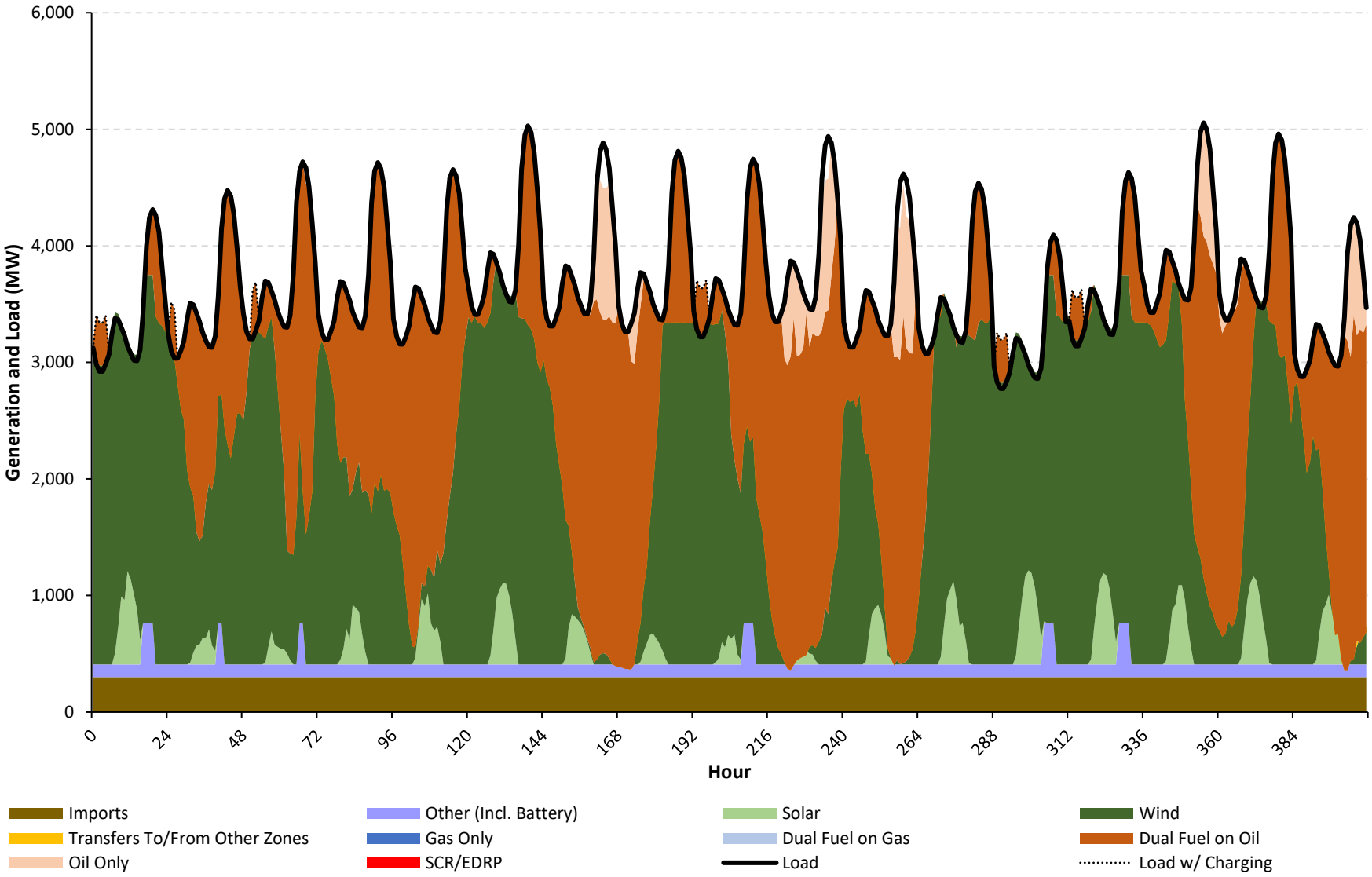
Total MWh of Lost Load




NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 2 - PD 8 Non-Firm Gas Unavailable (F-K)
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 2 - PD 8 Non-Firm Gas Unavailable (F-K)
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

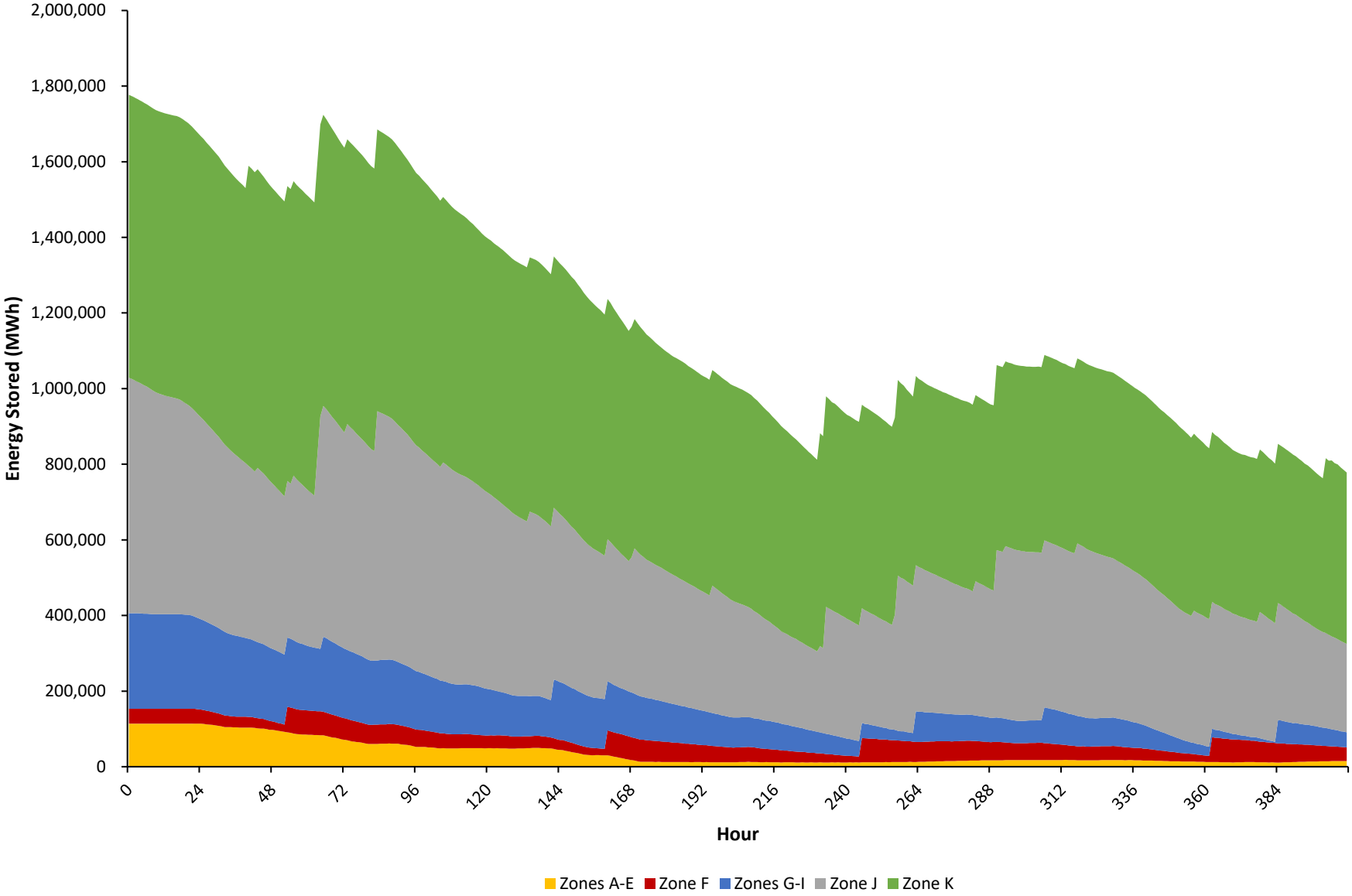
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 2 - PD 8 Non-Firm Gas Unavailable (F-K)



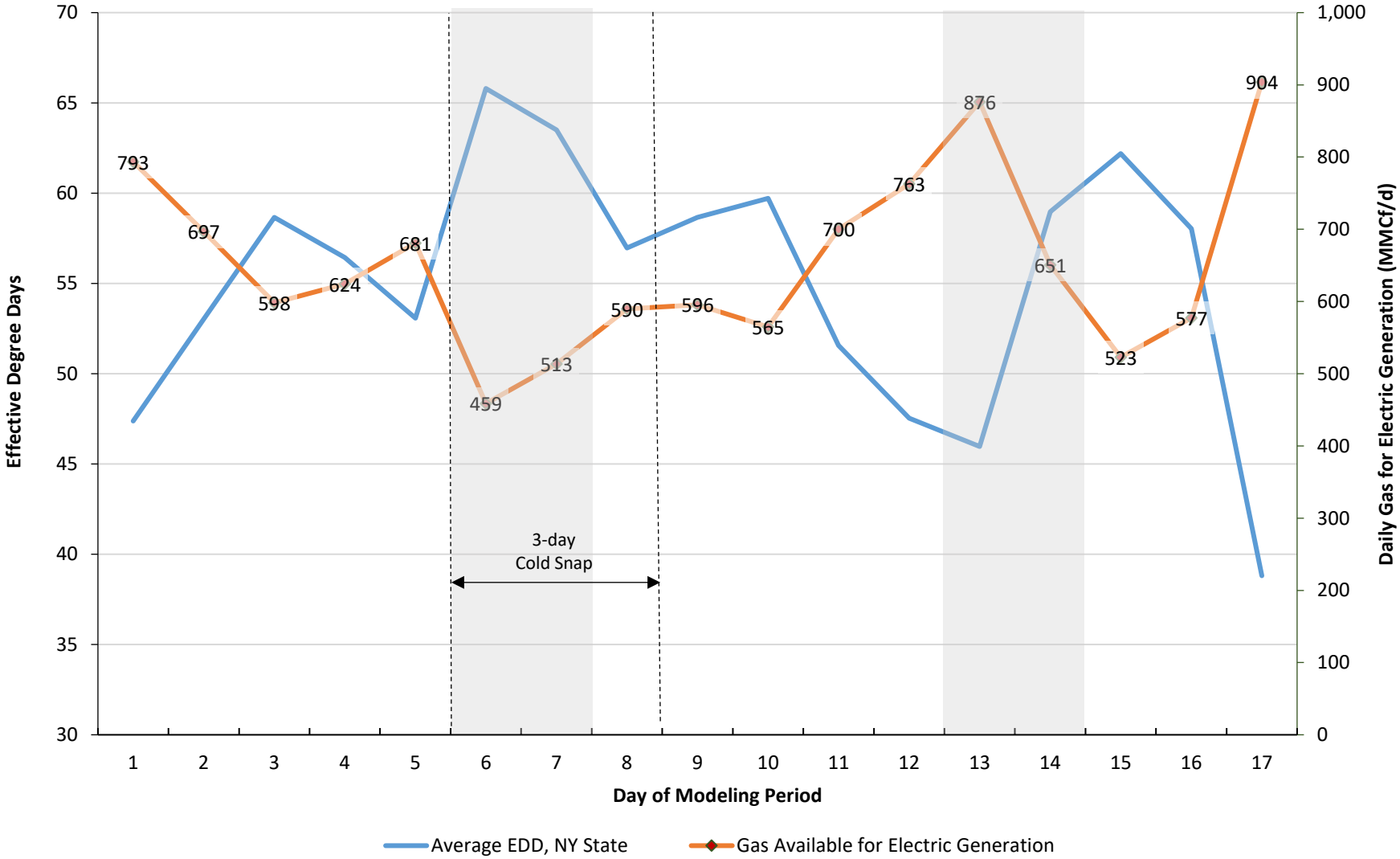
NYCA

Quantity of Stored Fuel for Oil and Dual Fuel Units

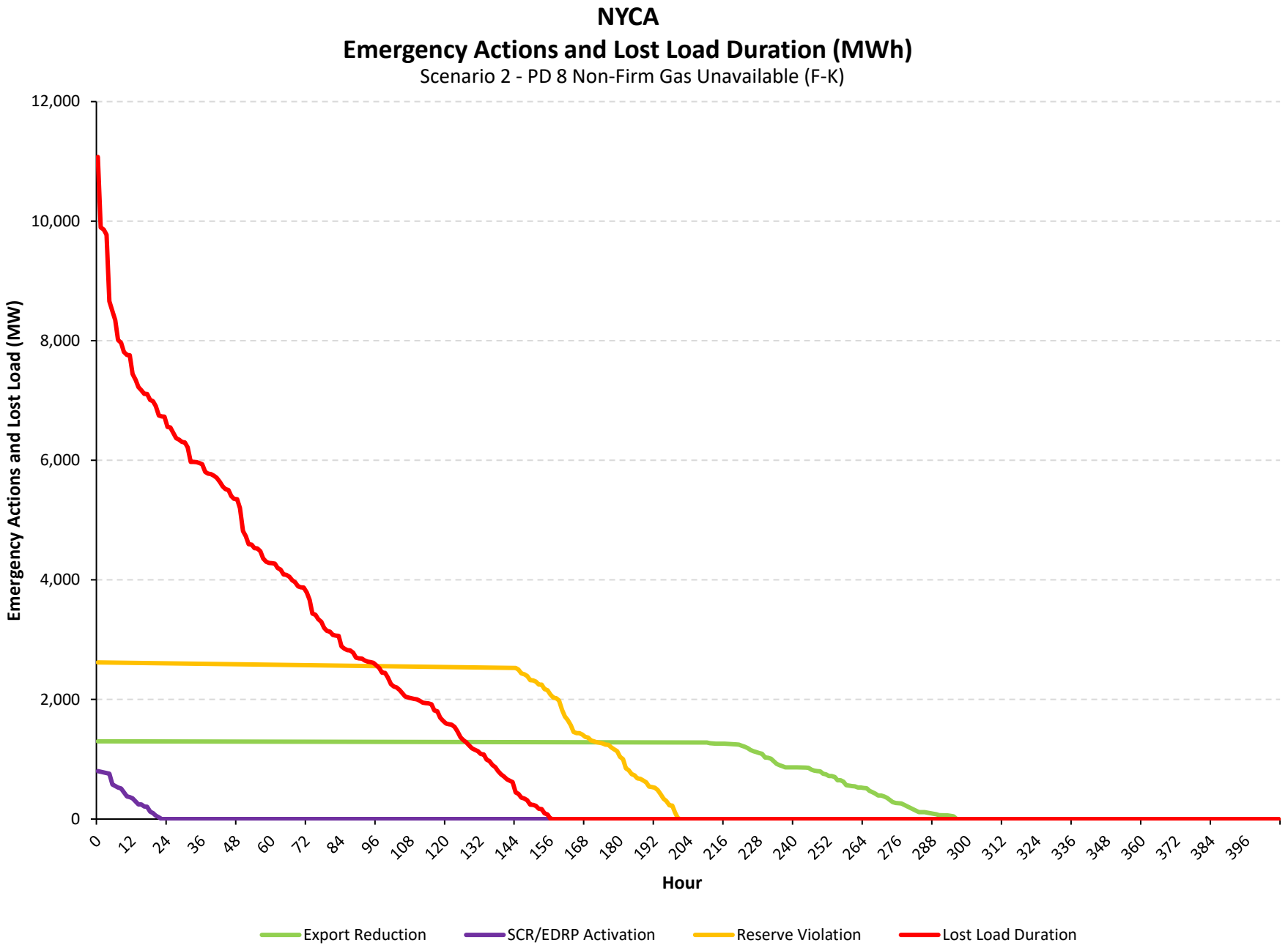
Scenario 2 - PD 8 Non-Firm Gas Unavailable (F-K)

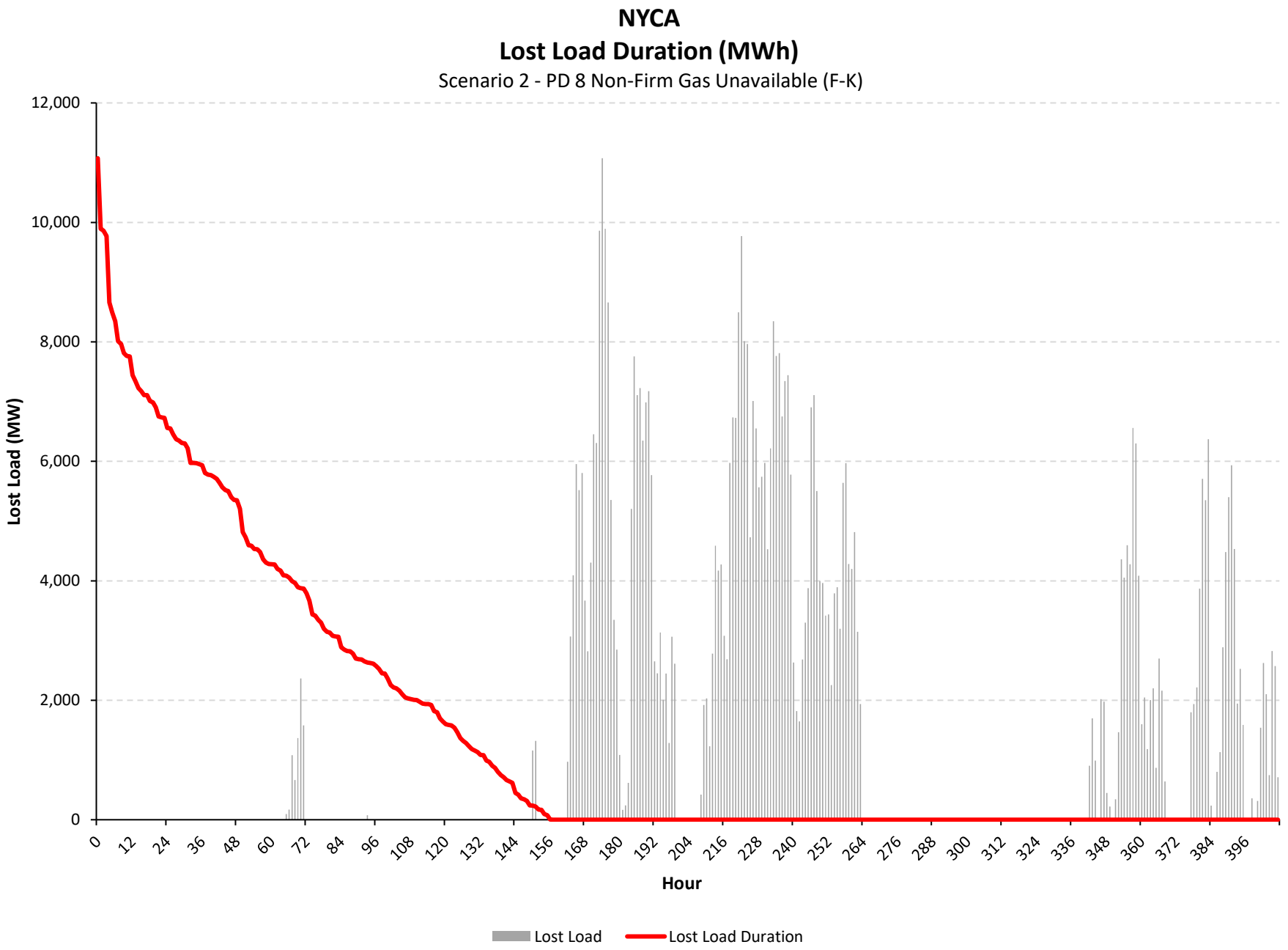


NYCA
Degree Days and Gas Available for Electric Generation 17-Day Modeling Period
Scenario 2 - PD 8 Non-Firm Gas Unavailable (F-K)



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 2 - PD 8 Non-Firm Gas Unavailable (F-K)
Emergency Actions and Lost Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 2 - PD 8 Non-Firm Gas Unavailable (F-K)
Lost Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

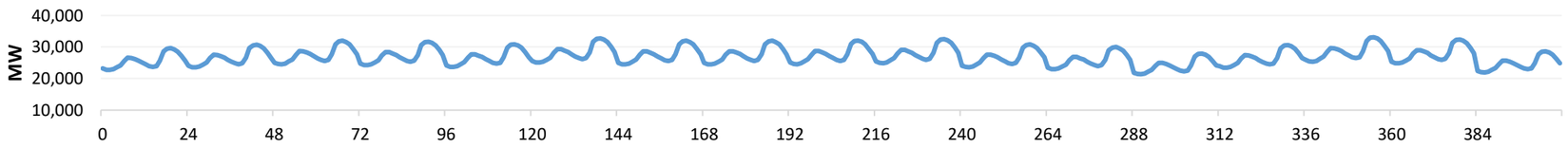
Case: Scenario 2 - PD 9 Non-Firm Gas Unavailable (NYCA) (Winter 2030/2031)

Hourly Results Summary

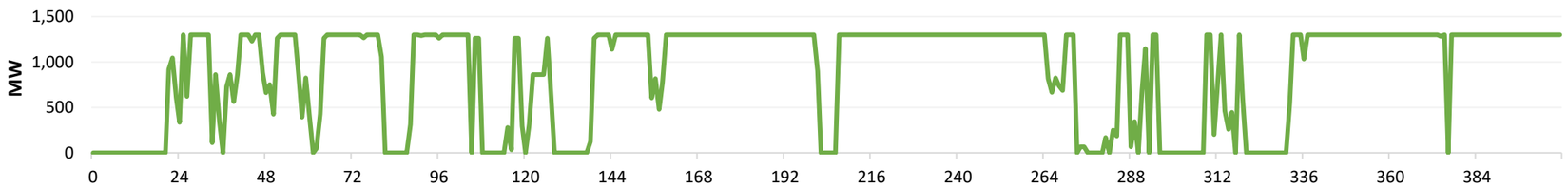
Case Name: Scenario 2 - PD 9 Non-Firm Gas Unavailable (NYCA)

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	NYISO
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

Load During Modeling Period

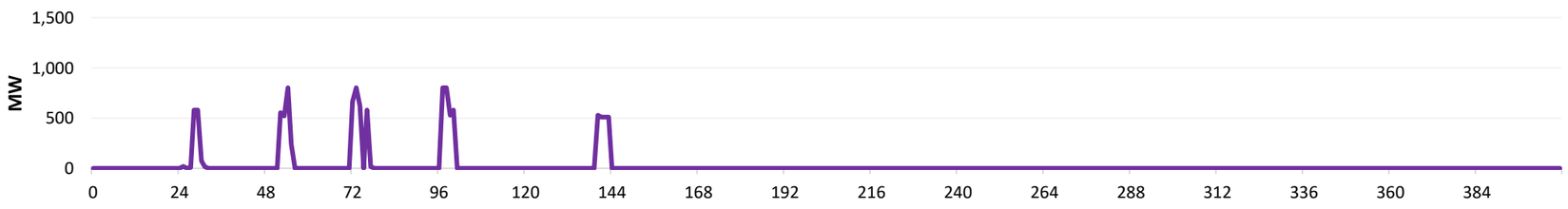


Export to ISO-NE Reduction During Modeling Period



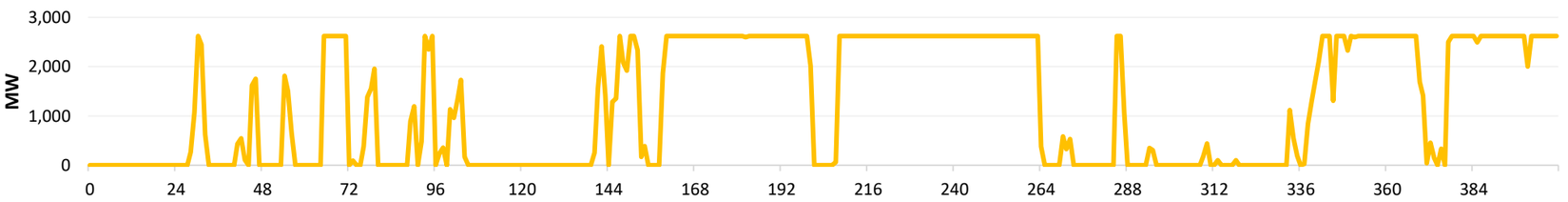
Export Reductions	
Total Hrs.	318
Total MWh	368,137
Avg. MW	902.3

SCR/EDRP Deployed During Modeling Period



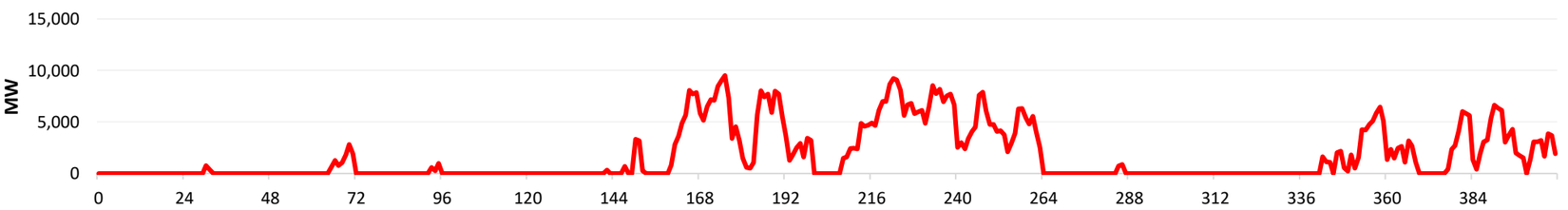
SCR Deployment	
Total Hrs.	23
Total MWh	10,843
Avg. MW	26.6

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	236
Total MWh	504,626
Avg. MW	1,236.8
First Hour with Viol.	28

Loss of Load During Modeling Period



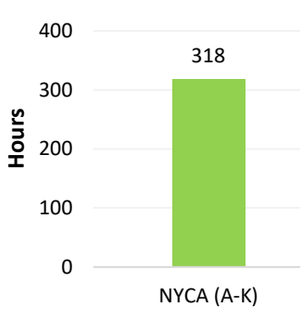
Loss of Load	
Total Hrs.	173
Total MWh	686,033
Avg. MW	1,681.5
First Hour with Losses	30

Full Period Results Summary

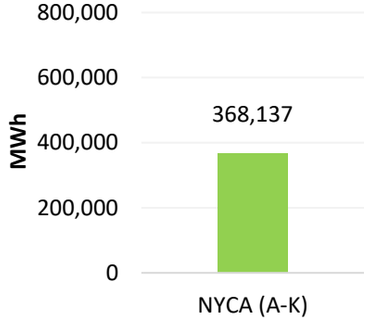
Case Name: Scenario 2 - PD 9 Non-Firm Gas Unavailable (NYCA)

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	NYISO
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

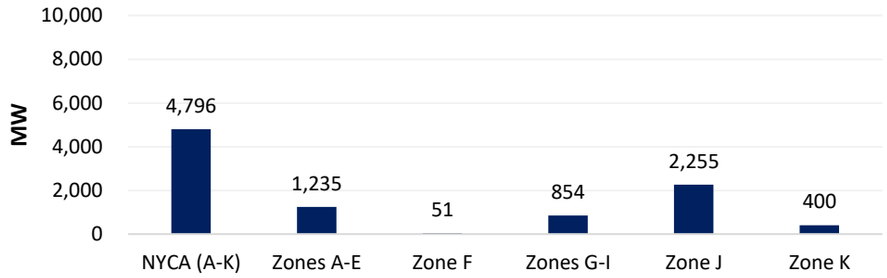
Hours Exports Reduced



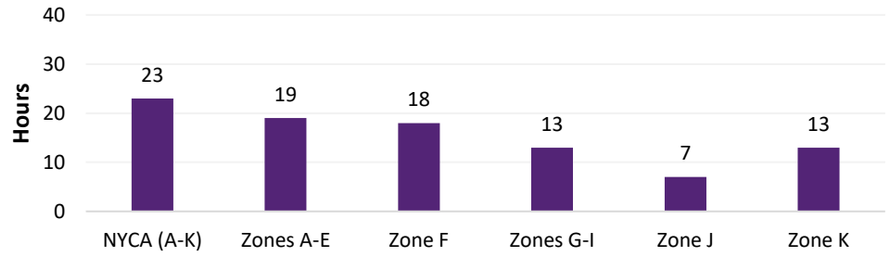
Total MWh of Exports Reduced



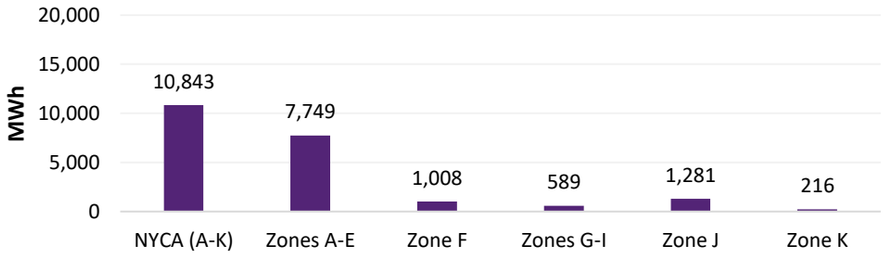
Average Capacity Not Available Due to Exhausted Fuel Inventory



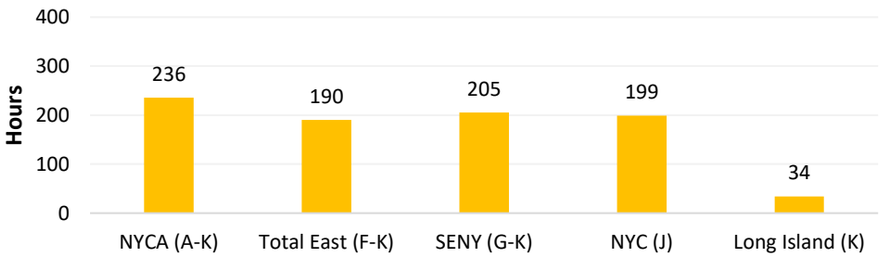
Hours SCR/EDRP Deployed



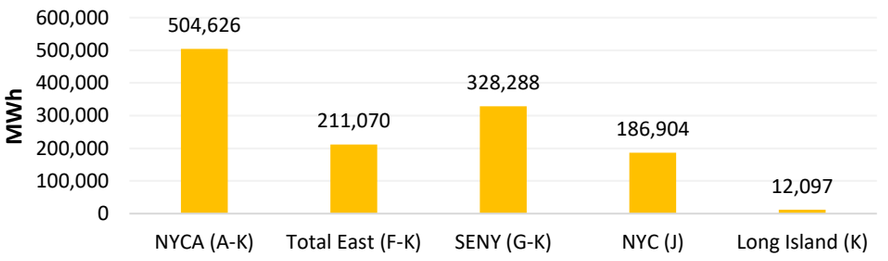
Total MWh SCR/EDRP Deployed



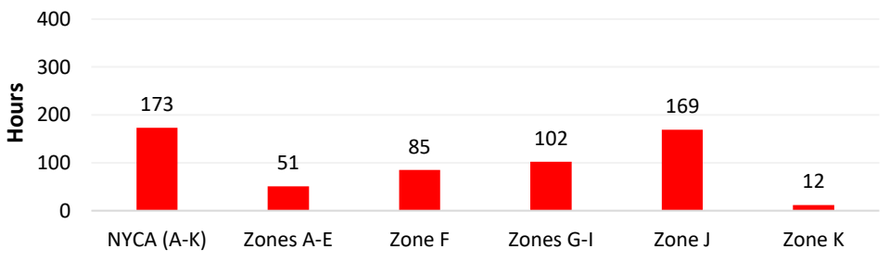
Hours with Reserve Violations



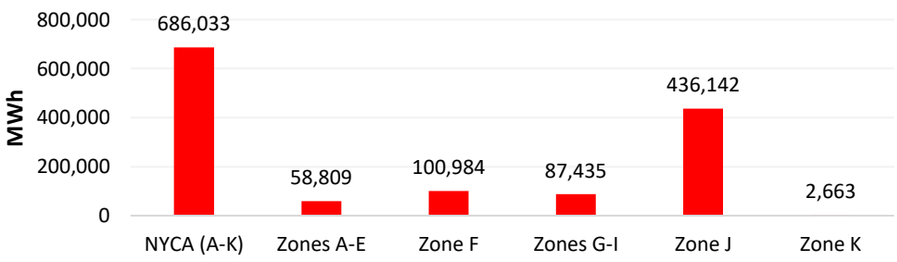
Total MWh of Reserve Violations

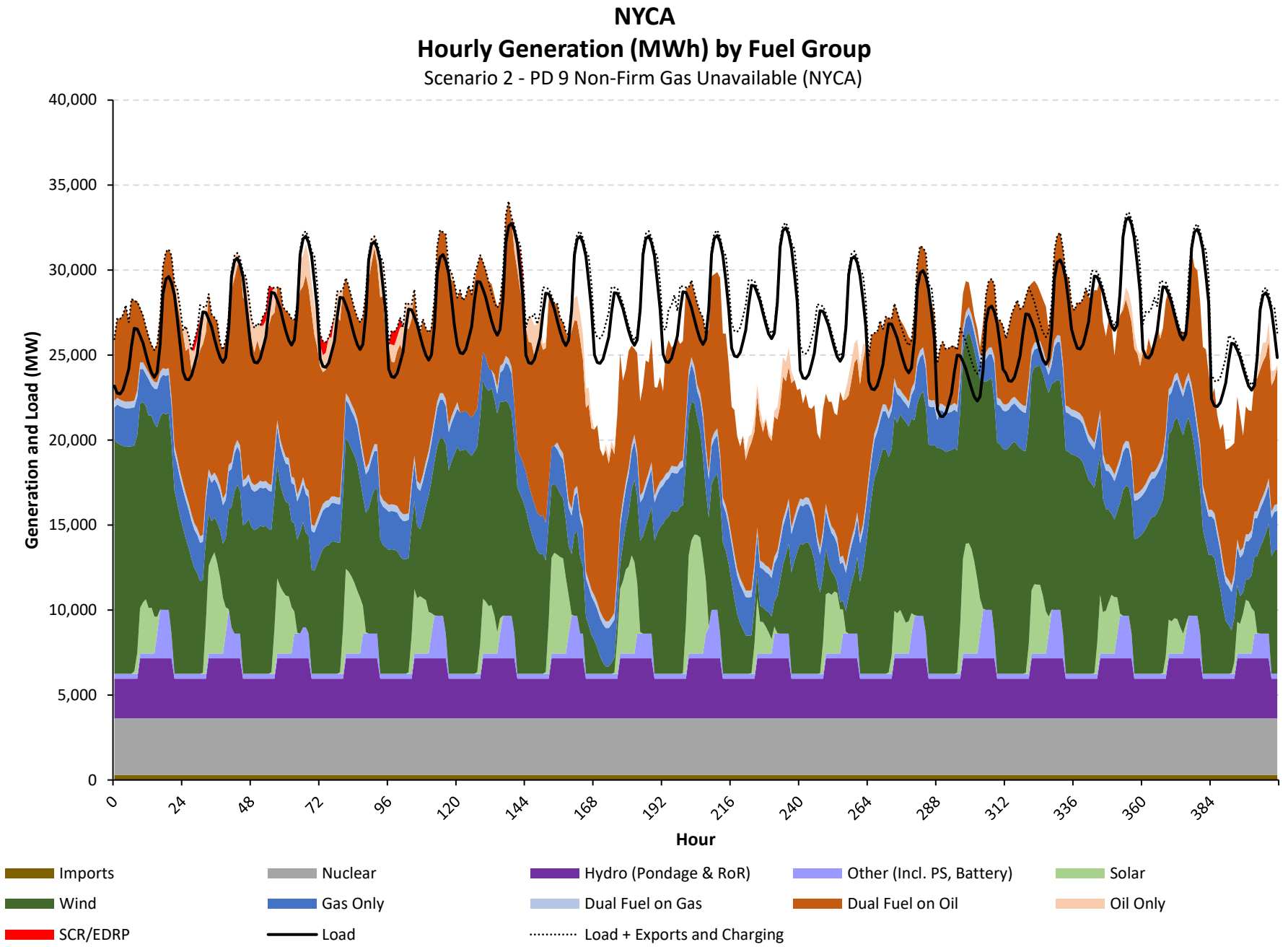


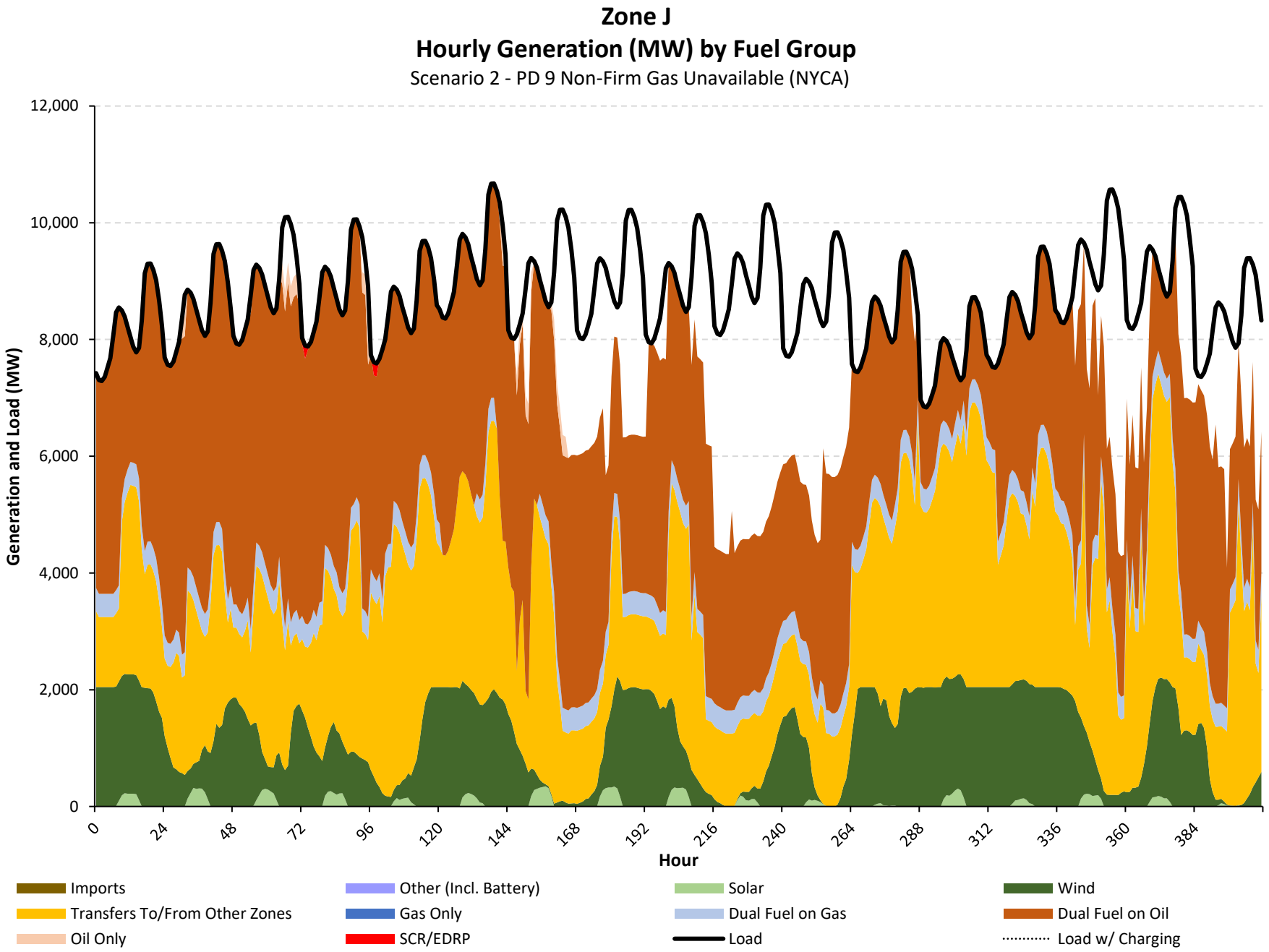
Hours with Loss of Load



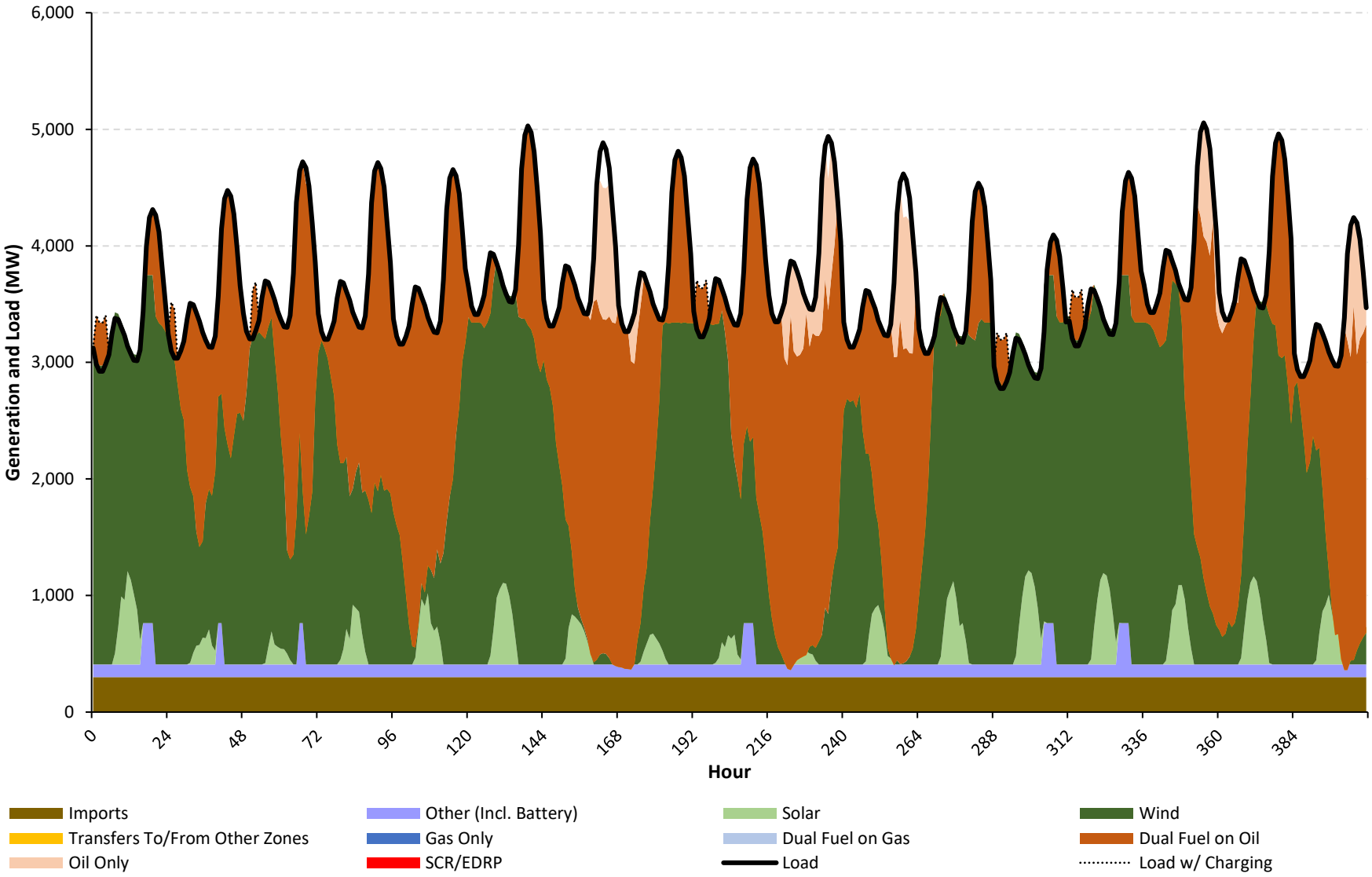
Total MWh of Lost Load




NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 2 - PD 9 Non-Firm Gas Unavailable (NYCA)
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 2 - PD 9 Non-Firm Gas Unavailable (NYCA)
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

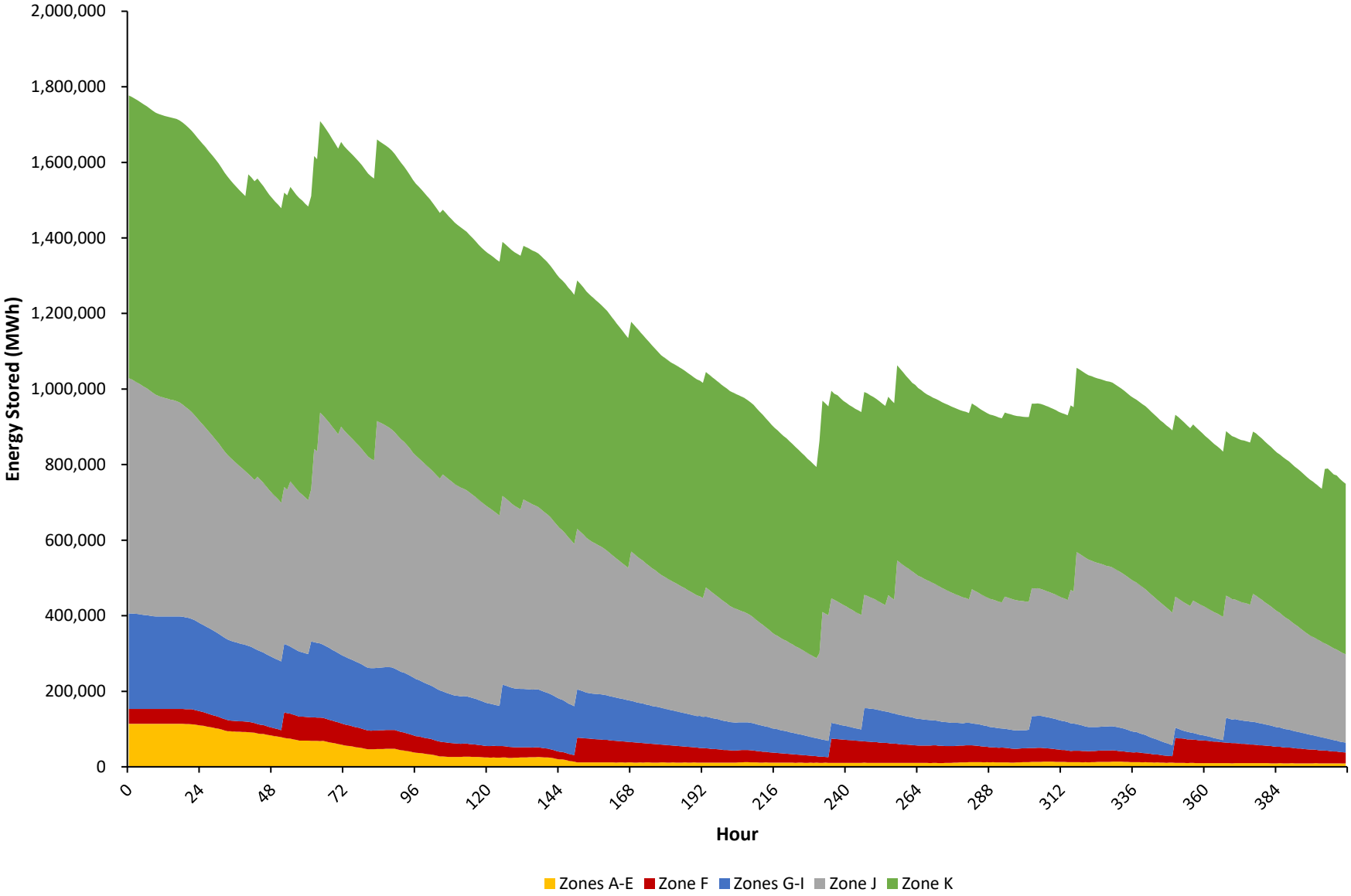
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 2 - PD 9 Non-Firm Gas Unavailable (NYCA)

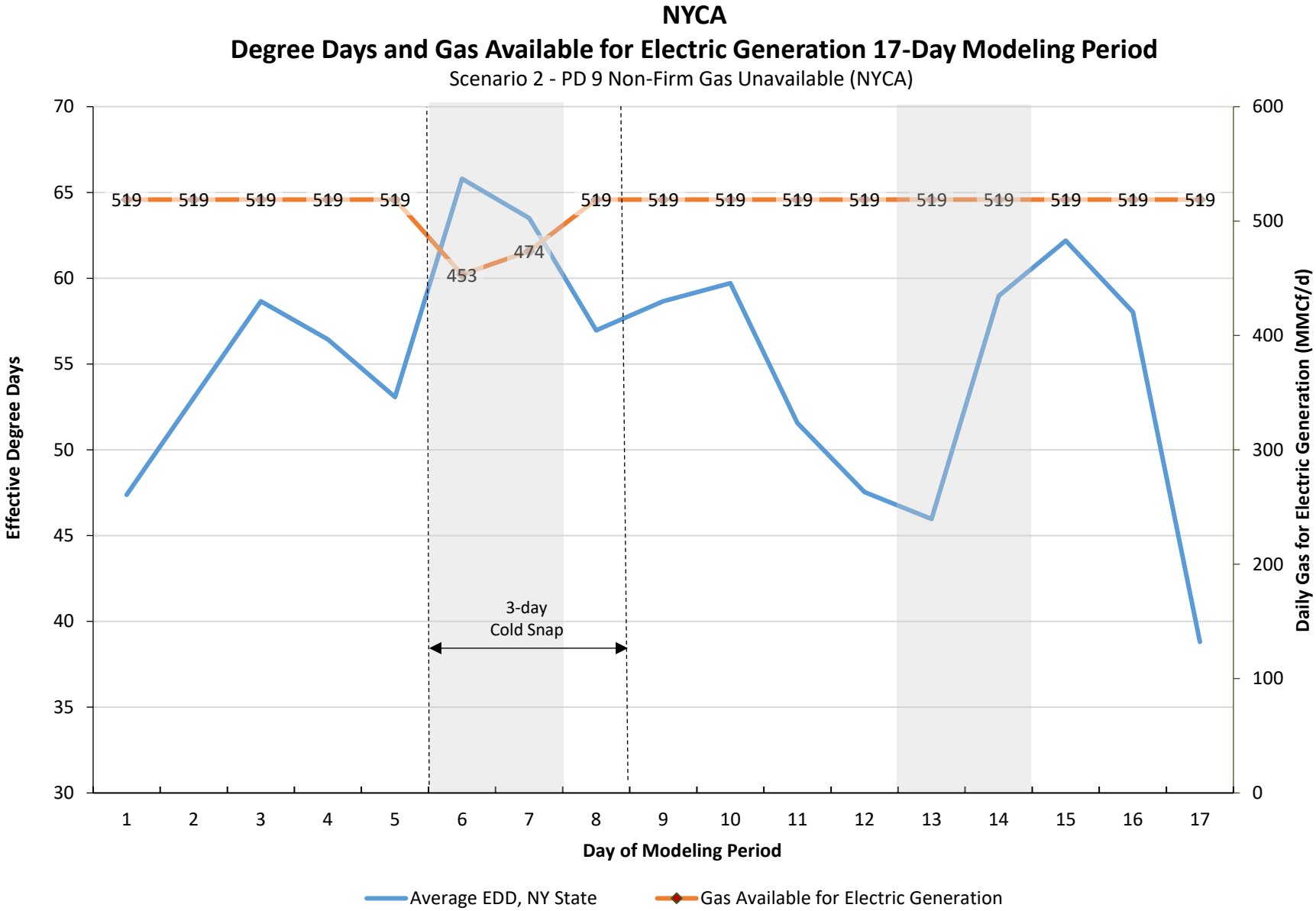


NYCA

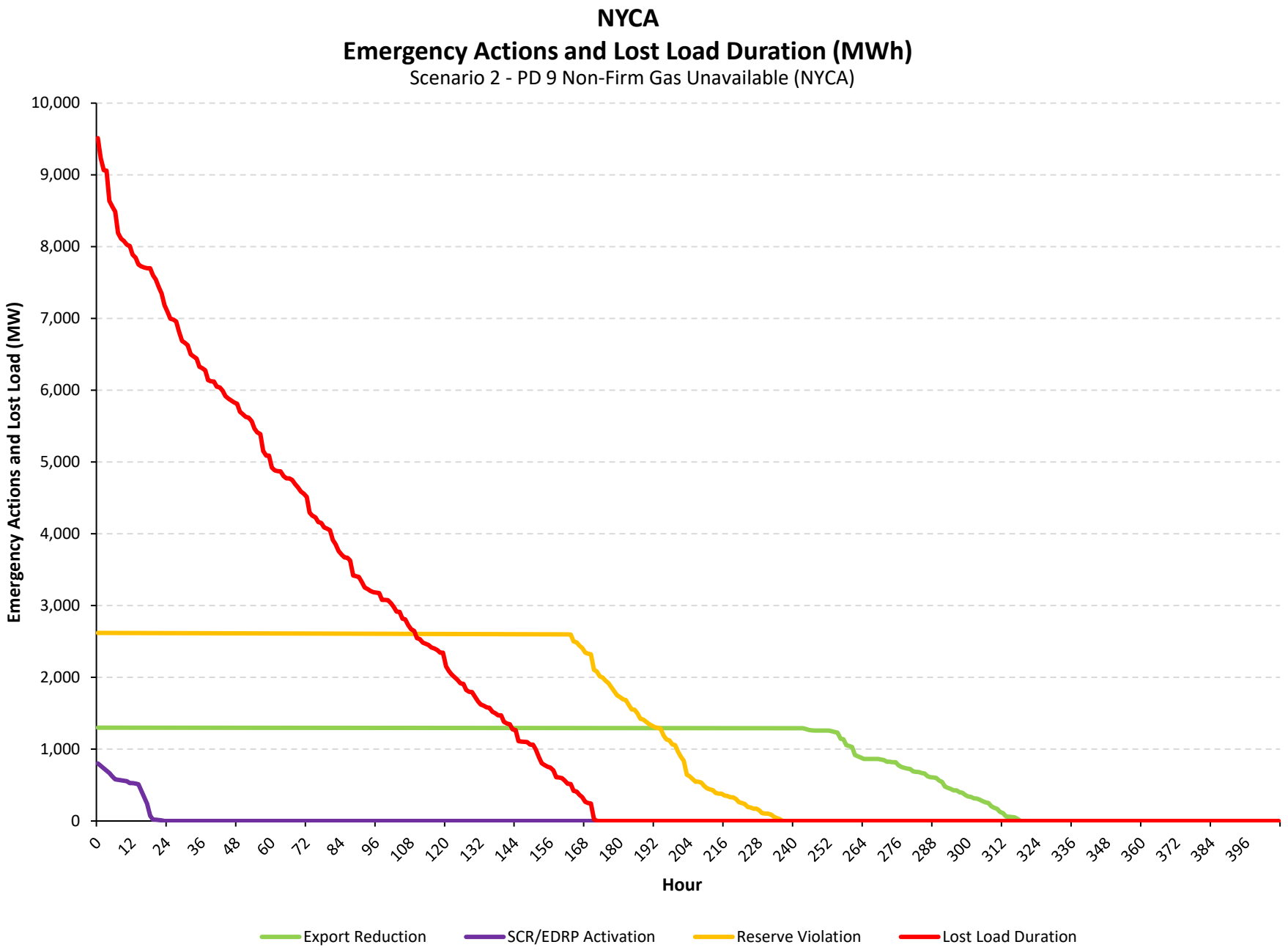
Quantity of Stored Fuel for Oil and Dual Fuel Units

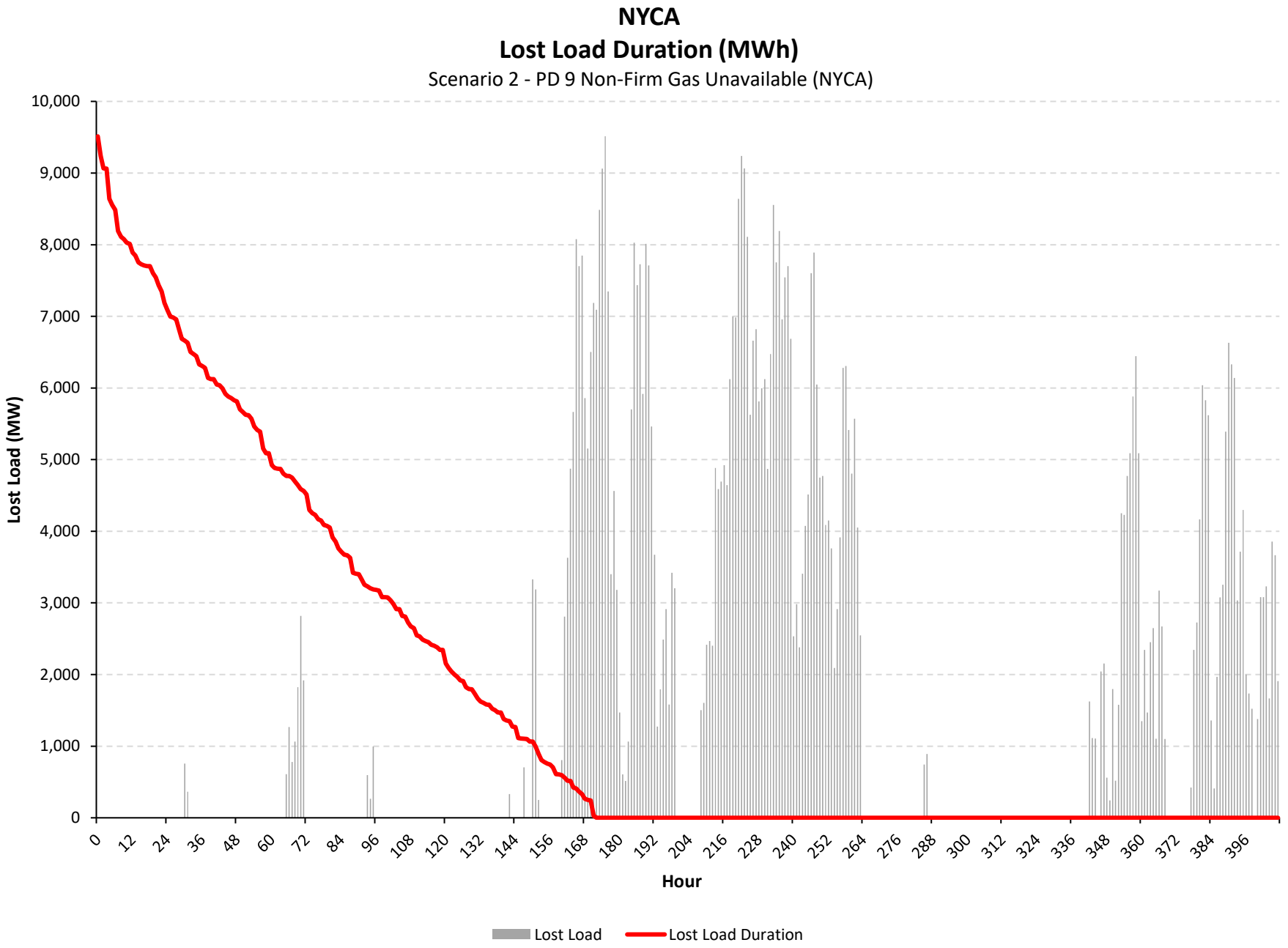
Scenario 2 - PD 9 Non-Firm Gas Unavailable (NYCA)





Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 2 - PD 9 Non-Firm Gas Unavailable (NYCA)
Emergency Actions and Lost Load (MW)
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 2 - PD 9 Non-Firm Gas Unavailable (NYCA)
Lost Load (MW)
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

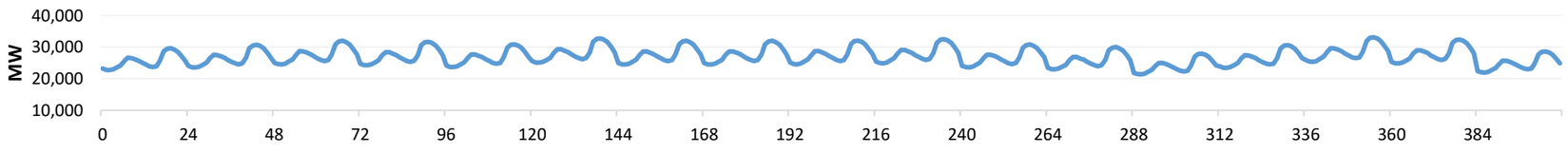
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 2 - PD 10 Non-Firm Gas Unavailable (4 days) (Winter 2030/2031)

Hourly Results Summary

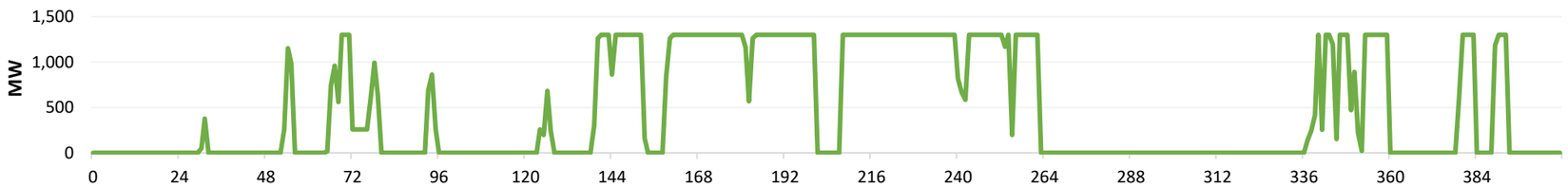
Case Name: Scenario 2 - PD 10 Non-Firm Gas Unavailable (4 days)

Load During Modeling Period



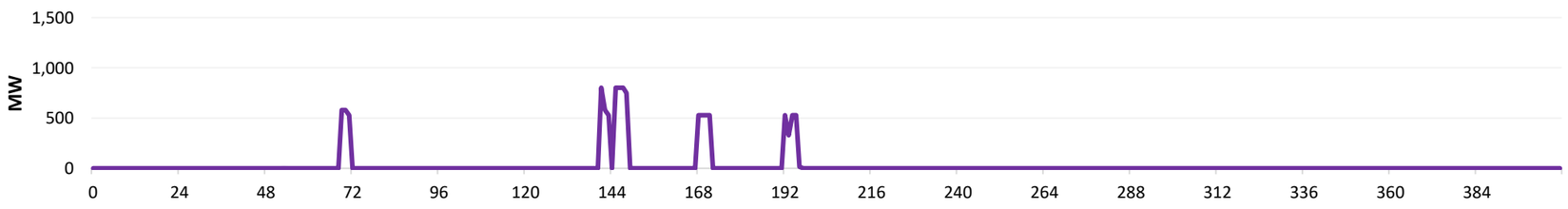
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	3-4 days
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

Export to ISO-NE Reduction During Modeling Period



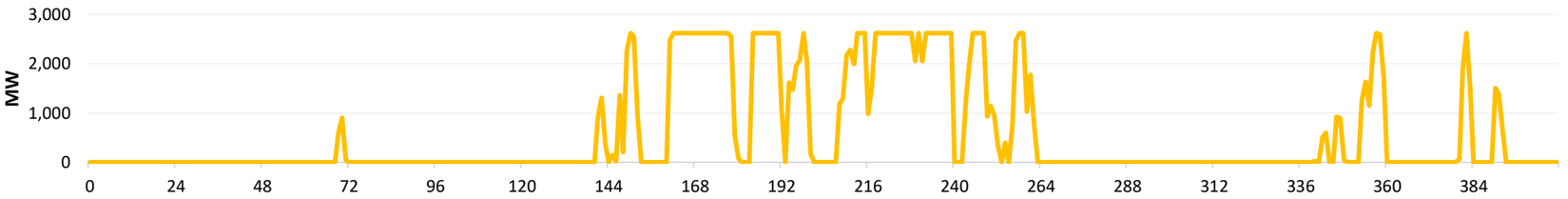
Export Reductions	
Total Hrs.	171
Total MWh	186,030
Avg. MW	456.0

SCR/EDRP Deployed During Modeling Period



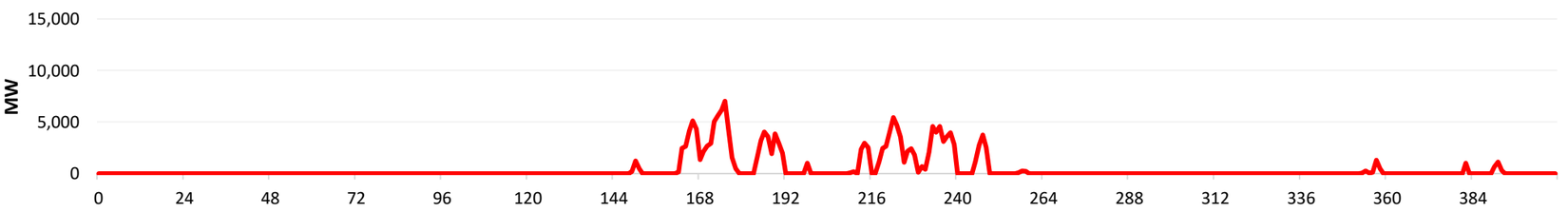
SCR Deployment	
Total Hrs.	19
Total MWh	10,780
Avg. MW	26.4

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	120
Total MWh	226,855
Avg. MW	556.0
First Hour with Viol.	69

Loss of Load During Modeling Period



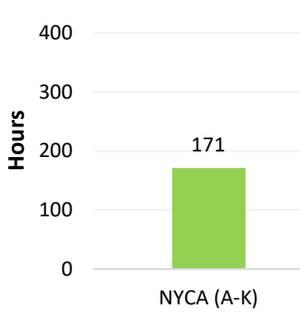
Loss of Load	
Total Hrs.	73
Total MWh	169,785
Avg. MW	416.1
First Hour with Losses	149

Full Period Results Summary

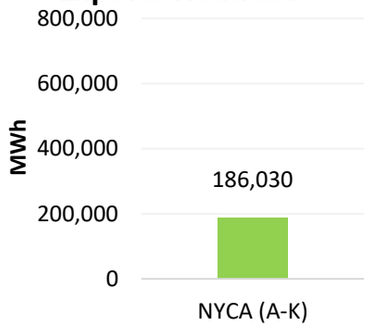
Case Name: Scenario 2 - PD 10 Non-Firm Gas Unavailable (4 days)

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	3-4 days
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

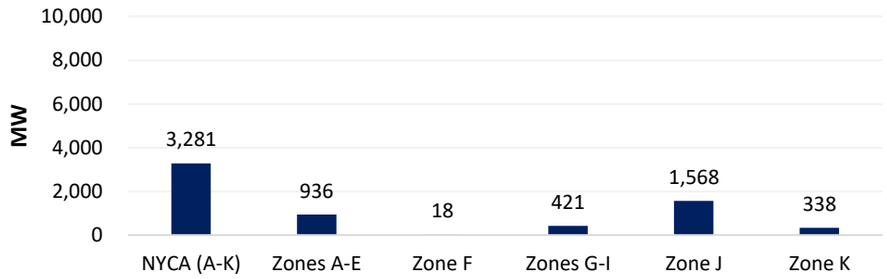
Hours Exports Reduced



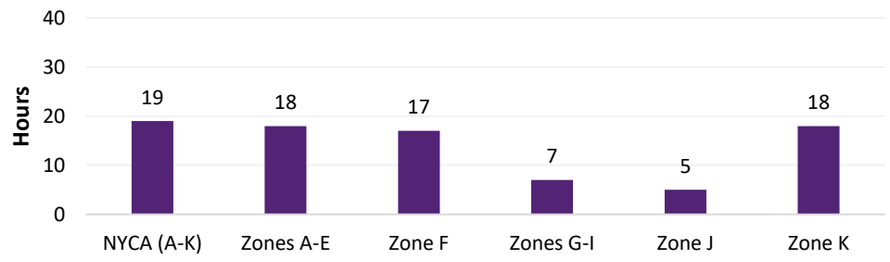
Total MWh of Exports Reduced



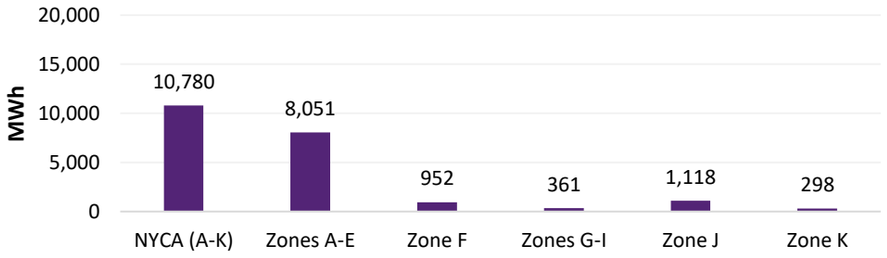
Average Capacity Not Available Due to Exhausted Fuel Inventory



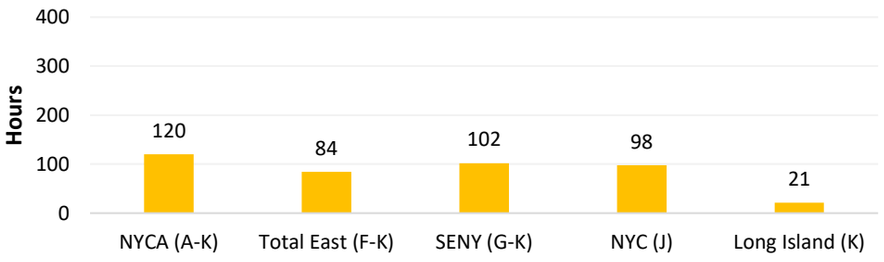
Hours SCR/EDRP Deployed



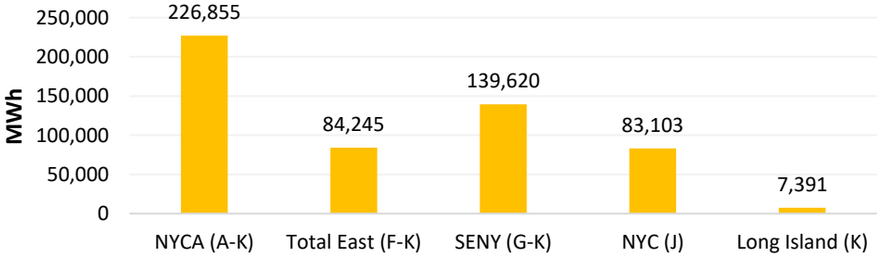
Total MWh SCR/EDRP Deployed



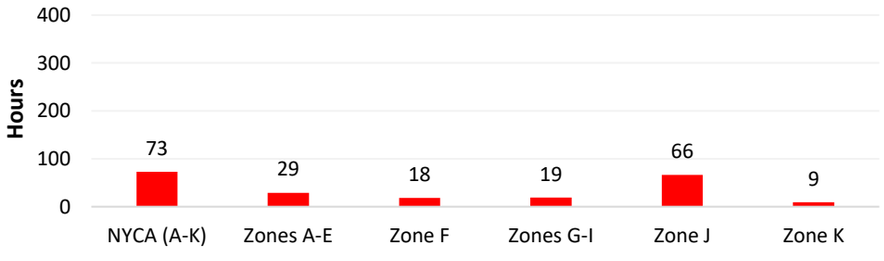
Hours with Reserve Violations



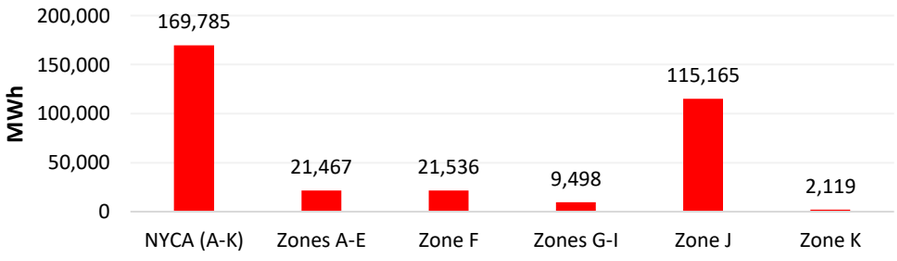
Total MWh of Reserve Violations

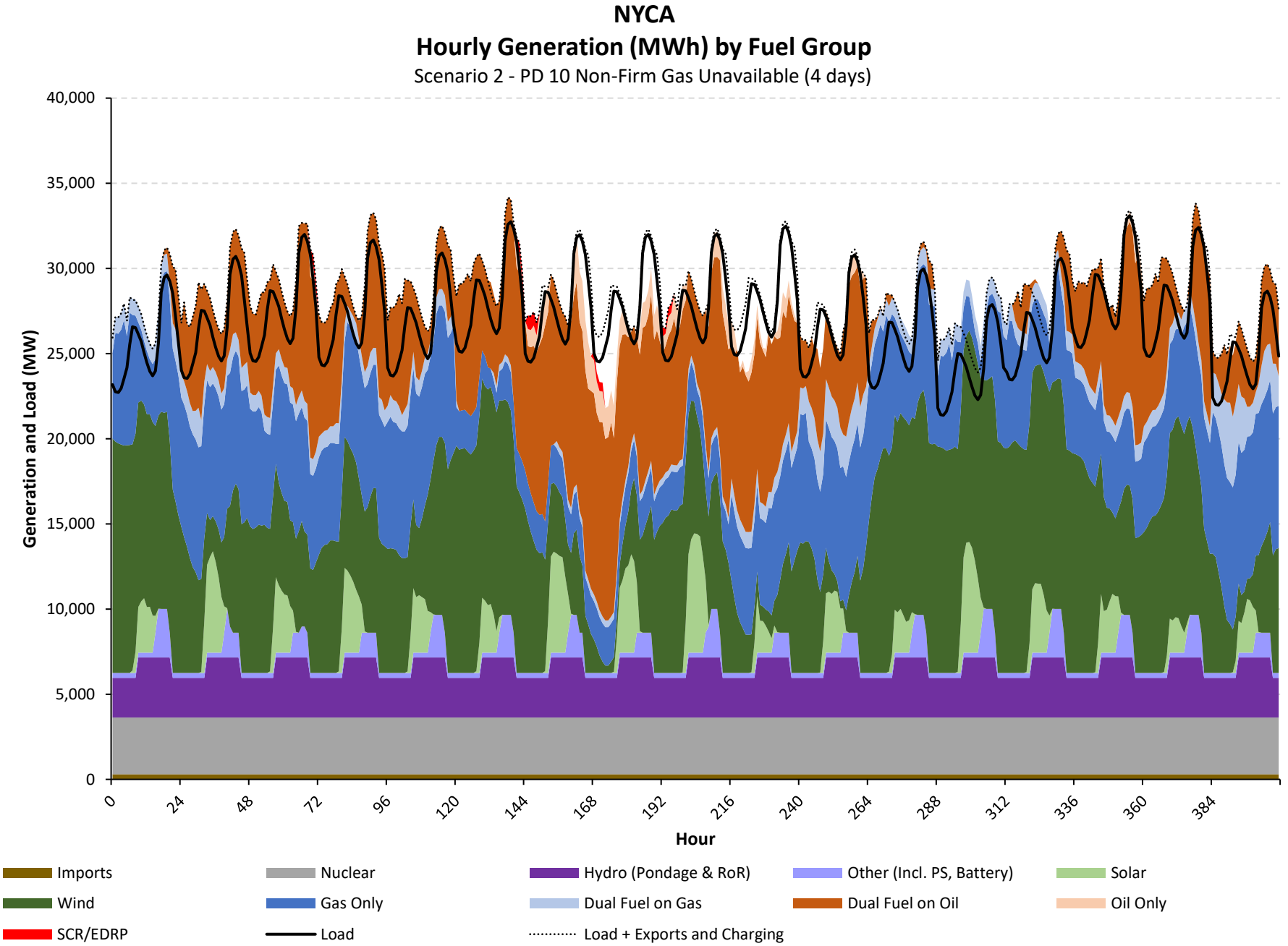


Hours with Loss of Load

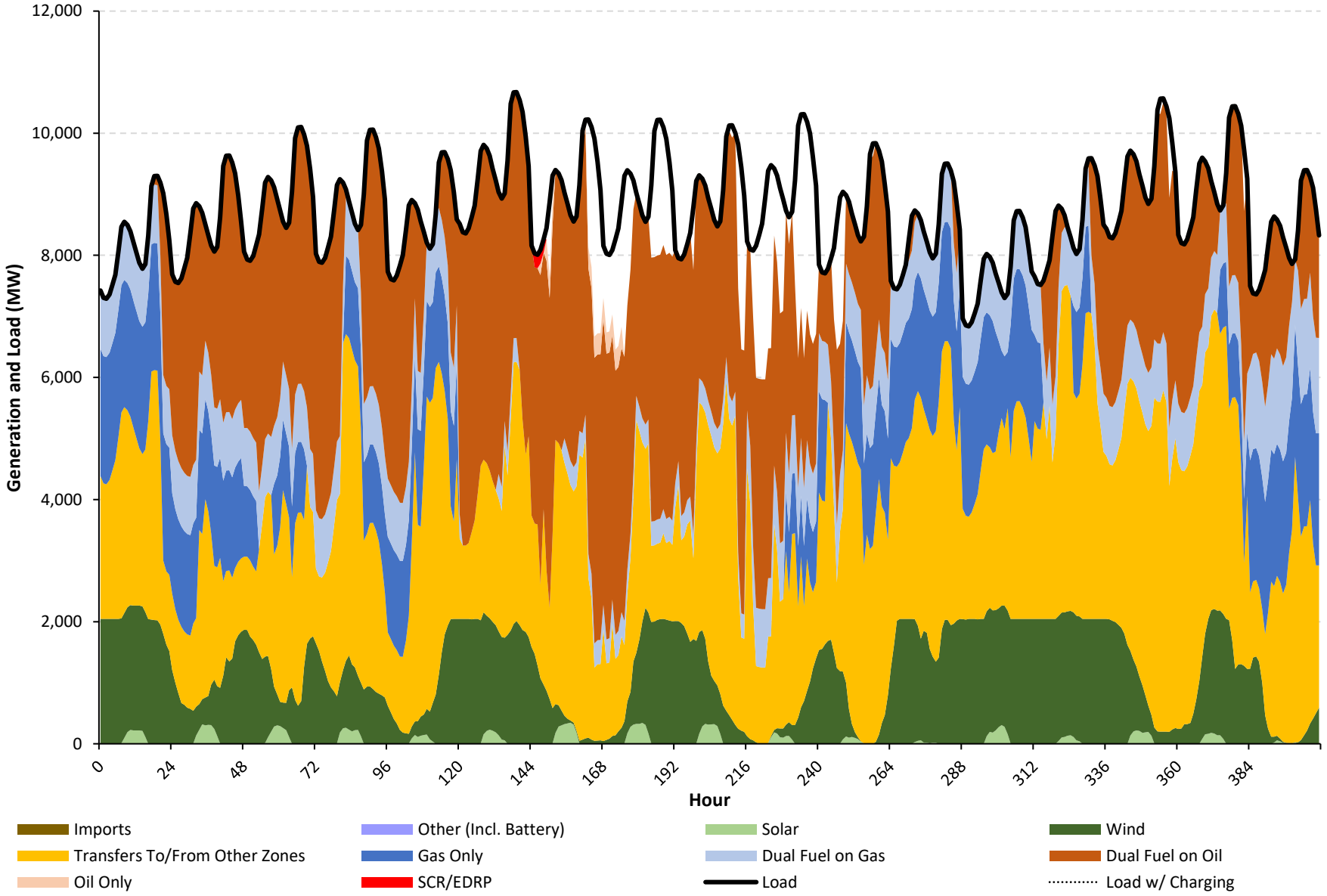


Total MWh of Lost Load

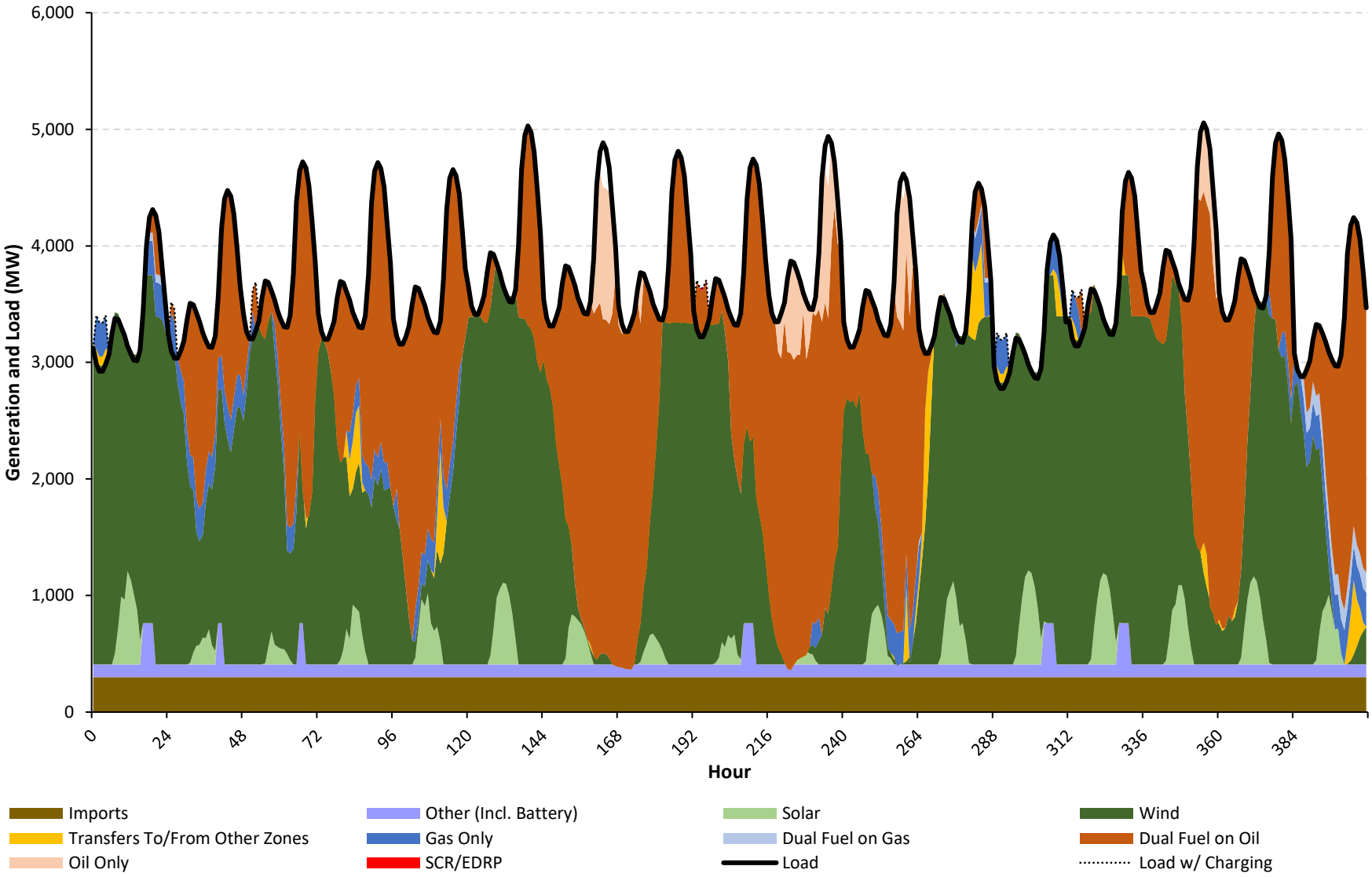



NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 2 - PD 10 Non-Firm Gas Unavailable (4 days)
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

Zone J
Hourly Generation (MW) by Fuel Group
Scenario 2 - PD 10 Non-Firm Gas Unavailable (4 days)



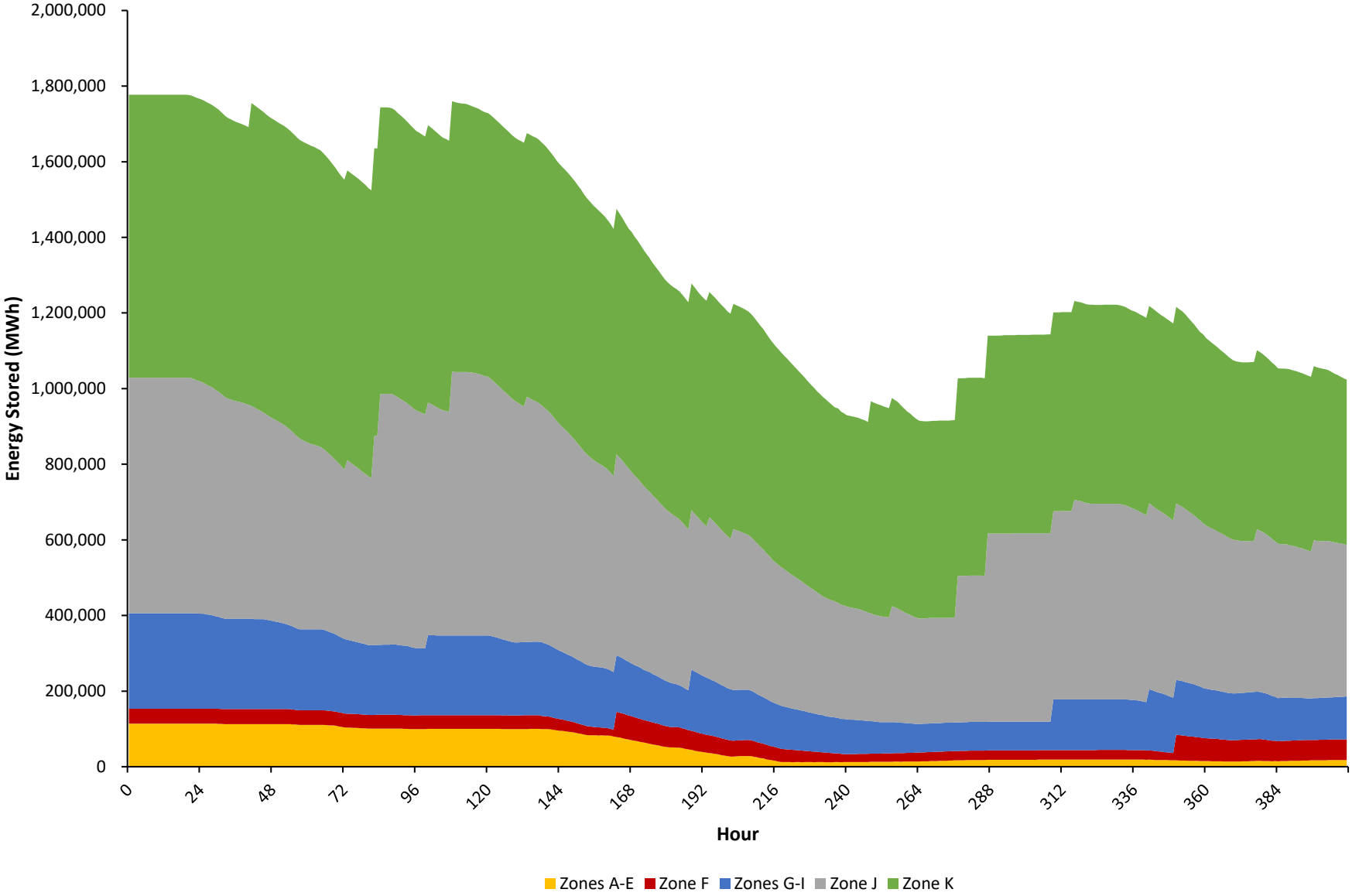
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 2 - PD 10 Non-Firm Gas Unavailable (4 days)



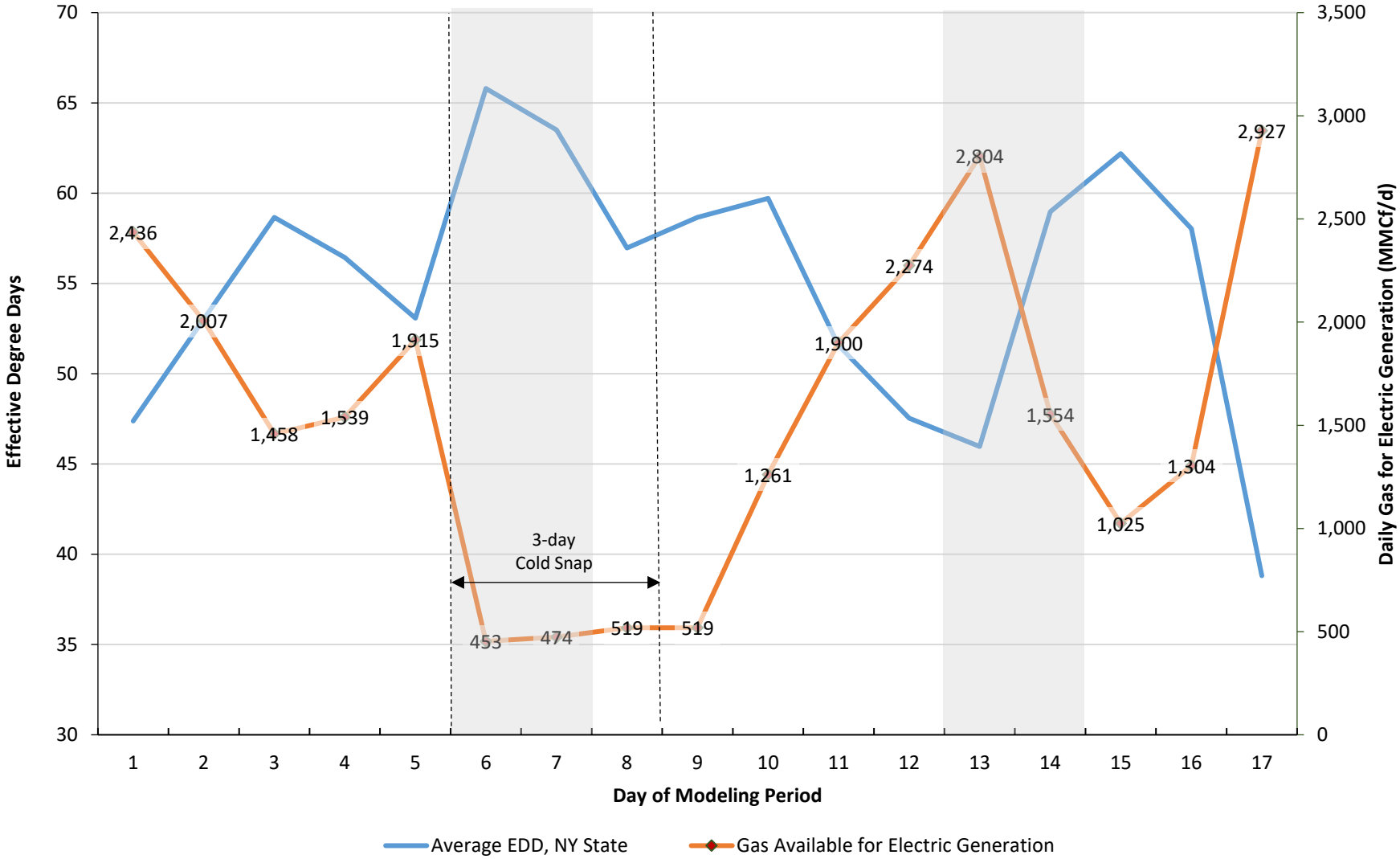
NYCA

Quantity of Stored Fuel for Oil and Dual Fuel Units

Scenario 2 - PD 10 Non-Firm Gas Unavailable (4 days)



NYCA
Degree Days and Gas Available for Electric Generation 17-Day Modeling Period
Scenario 2 - PD 10 Non-Firm Gas Unavailable (4 days)

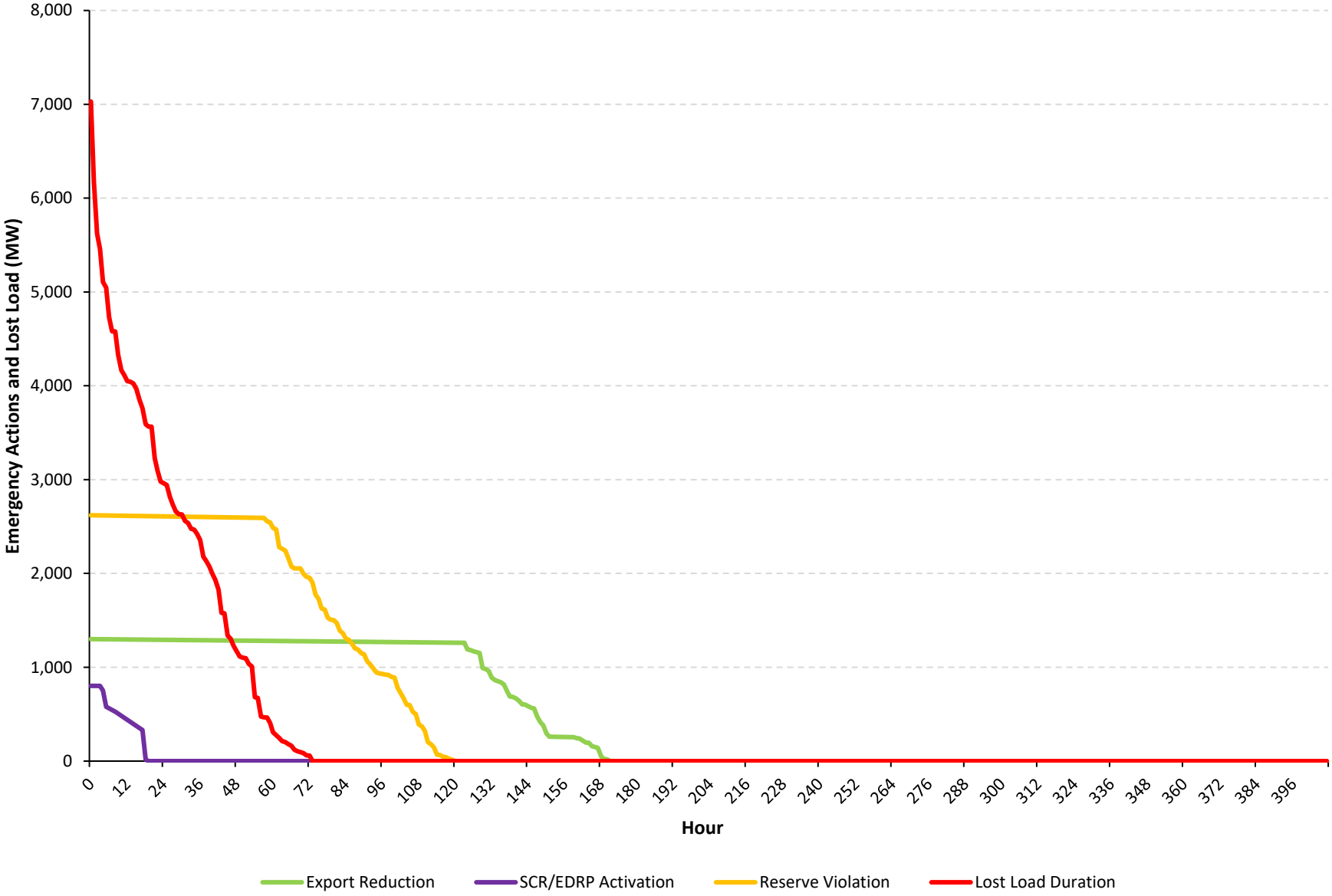


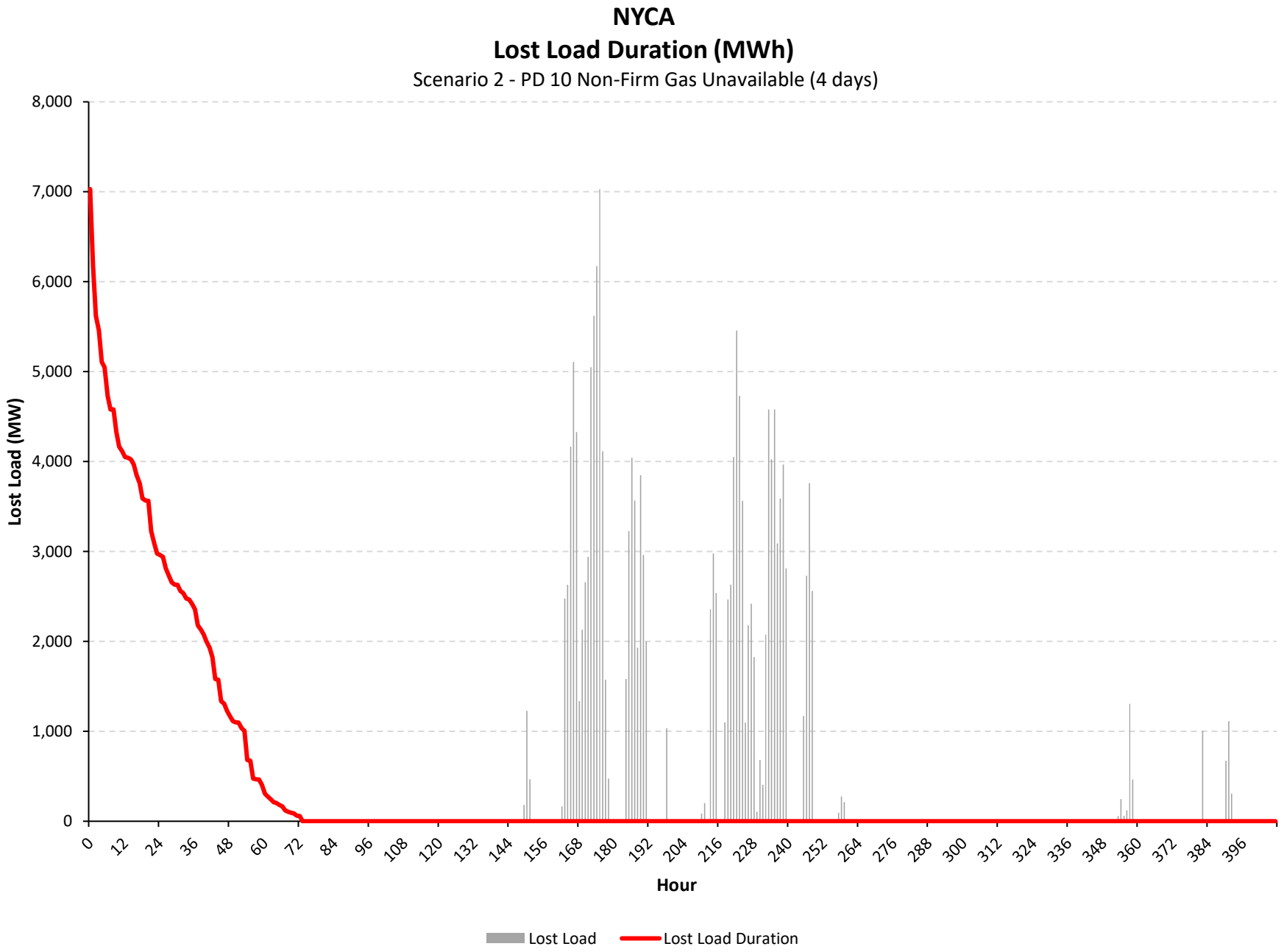
Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.

NYCA

Emergency Actions and Lost Load Duration (MWh)

Scenario 2 - PD 10 Non-Firm Gas Unavailable (4 days)




NYCA
Lost Load Duration (MWh)
Scenario 2 - PD 10 Non-Firm Gas Unavailable (4 days)
Lost Load (MW)
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

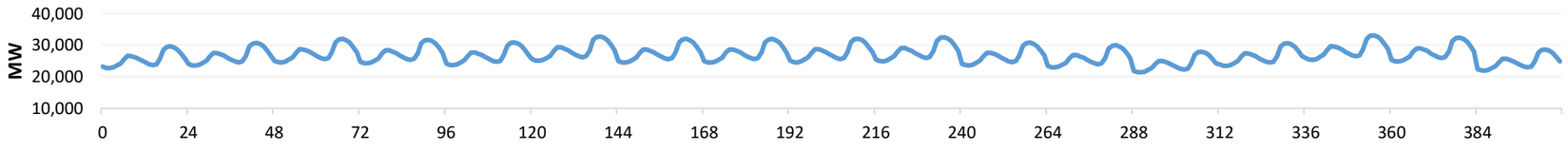
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 2 - PD 11 Combination Disruption (Winter 2030/2031)

Hourly Results Summary

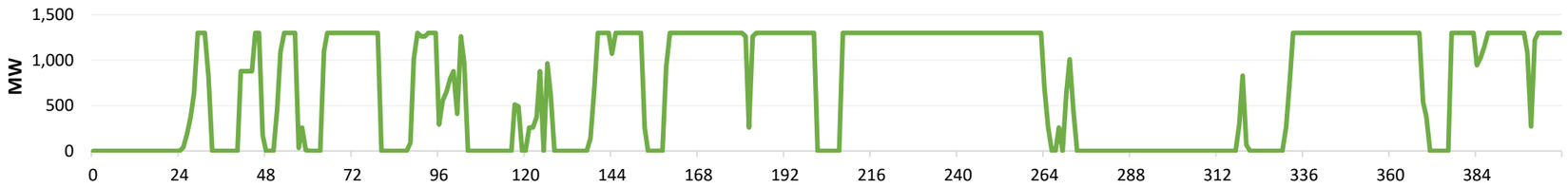
Case Name: Scenario 2 - PD 11 Combination Disruption

Load During Modeling Period



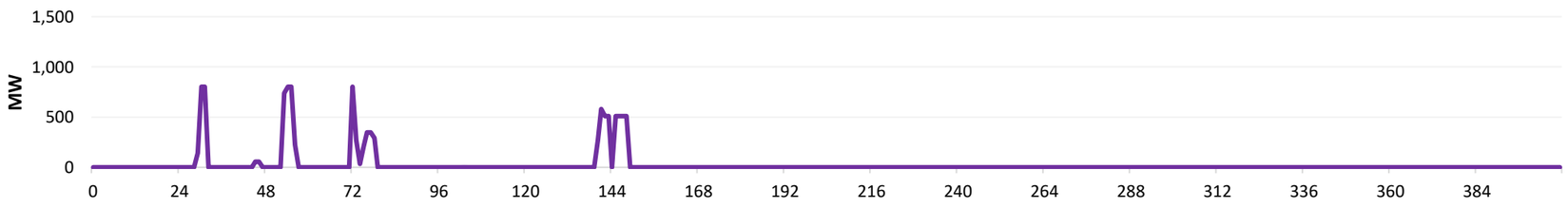
Case Summary	
Derate (EFORd) Increase:	High
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	Reduced
Loss of Gas Fired Gen.	Reduced
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

Export to ISO-NE Reduction During Modeling Period



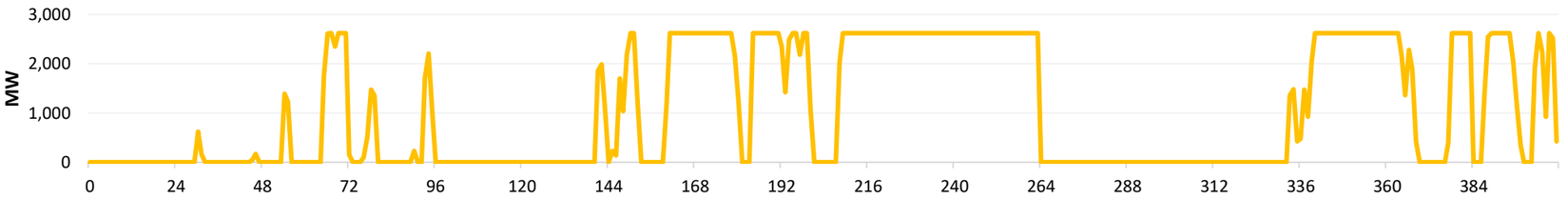
Export Reductions	
Total Hrs.	259
Total MWh	293,958
Avg. MW	720.5

SCR/EDRP Deployed During Modeling Period



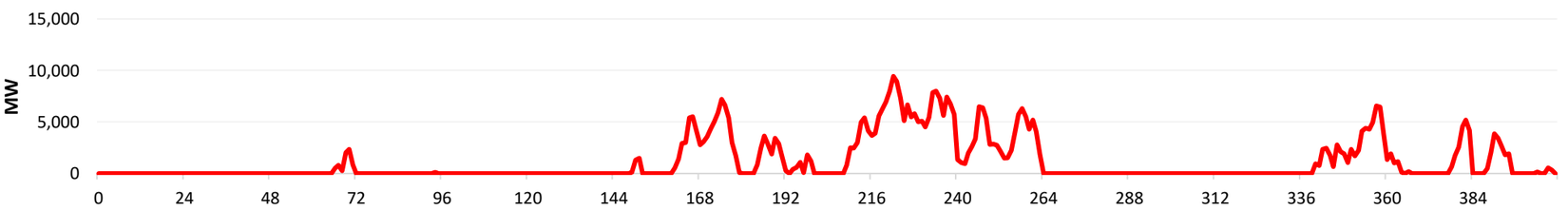
SCR Deployment	
Total Hrs.	24
Total MWh	10,640
Avg. MW	26.1

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	188
Total MWh	416,660
Avg. MW	1,021.2
First Hour with Viol.	30

Loss of Load During Modeling Period



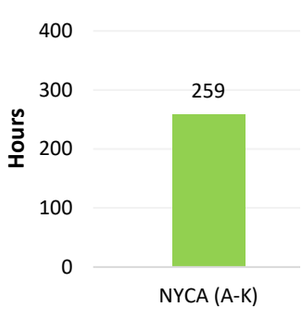
Loss of Load	
Total Hrs.	141
Total MWh	463,926
Avg. MW	1,137.1
First Hour with Losses	66

Full Period Results Summary

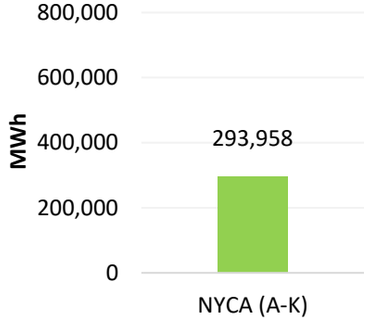
Case Name: Scenario 2 - PD 11 Combination Disruption

Case Summary	
Derate (EFORd) Increase:	High
Starting Storage:	Historical
Renewables:	Base Case
Refill Contingency:	Reduced
Loss of Gas Fired Gen.	Reduced
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

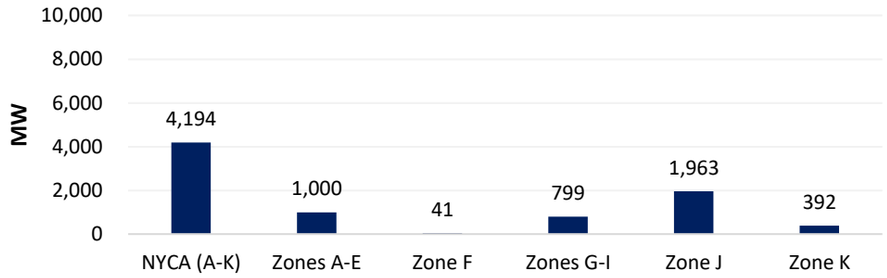
Hours Exports Reduced



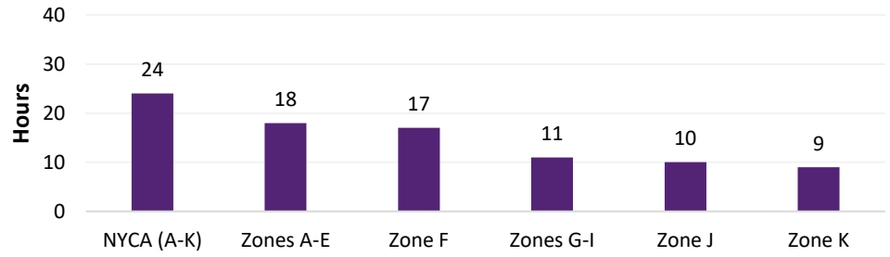
Total MWh of Exports Reduced



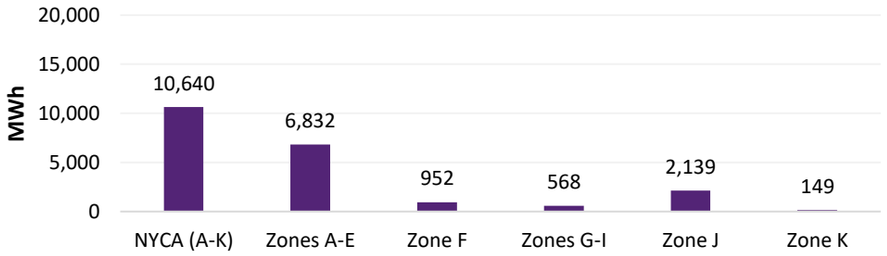
Average Capacity Not Available Due to Exhausted Fuel Inventory



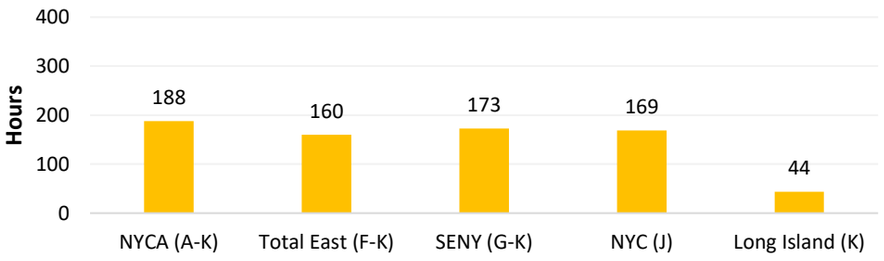
Hours SCR/EDRP Deployed



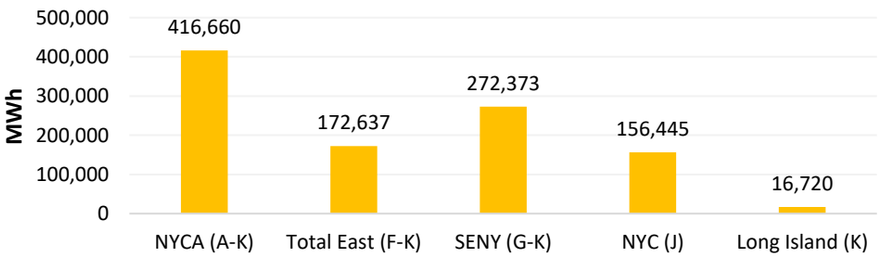
Total MWh SCR/EDRP Deployed



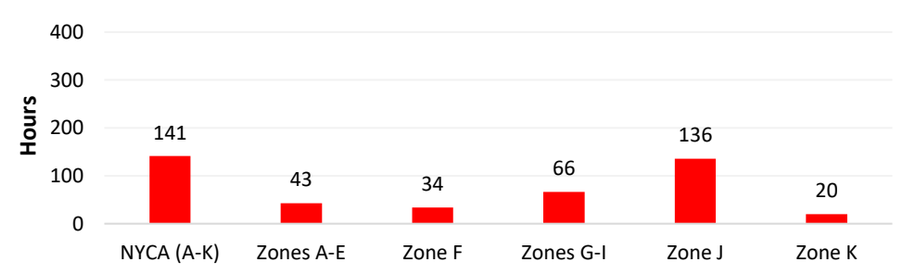
Hours with Reserve Violations



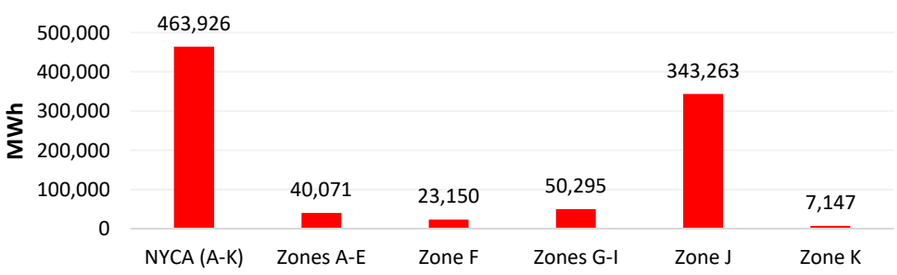
Total MWh of Reserve Violations

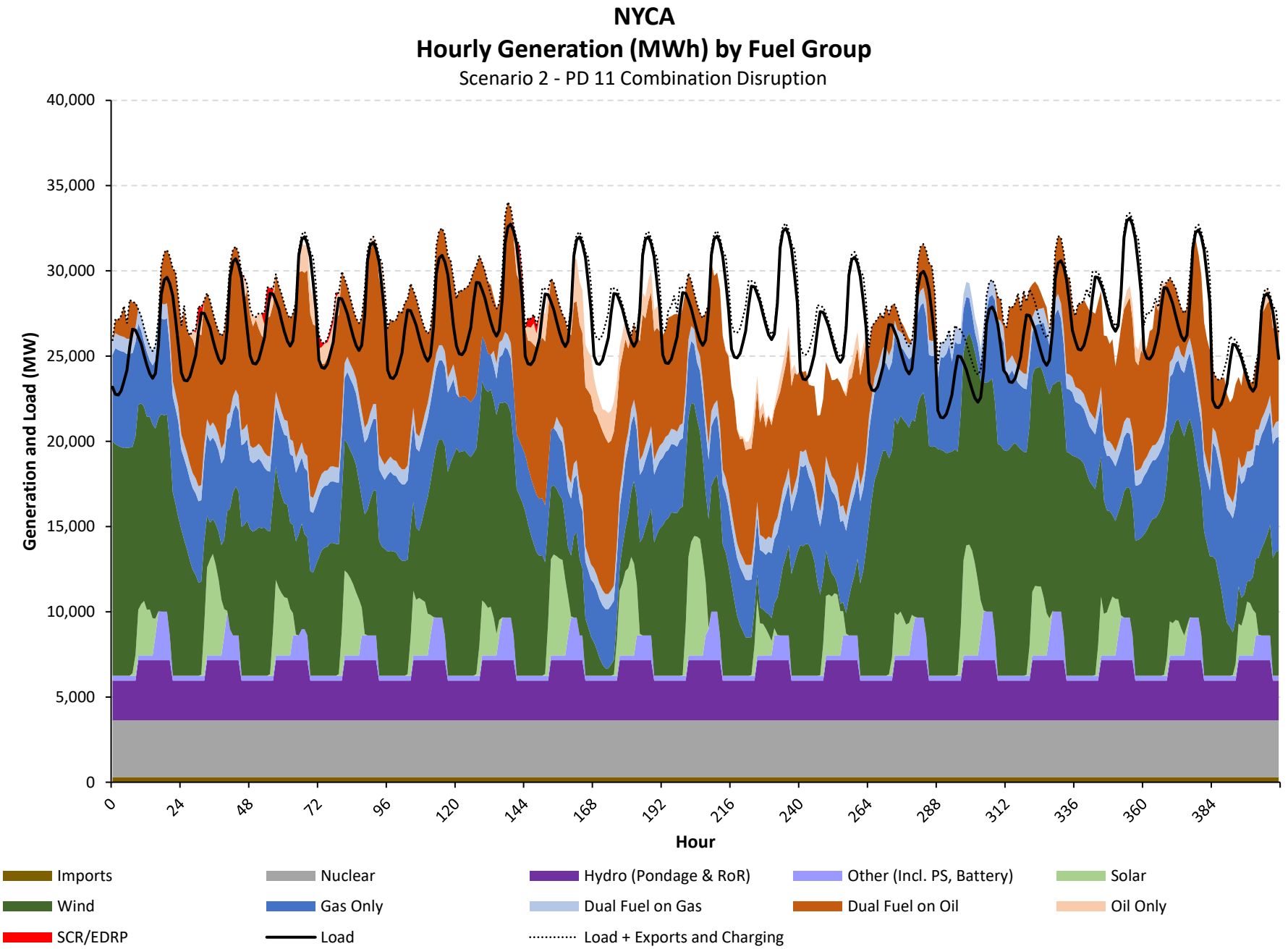


Hours with Loss of Load

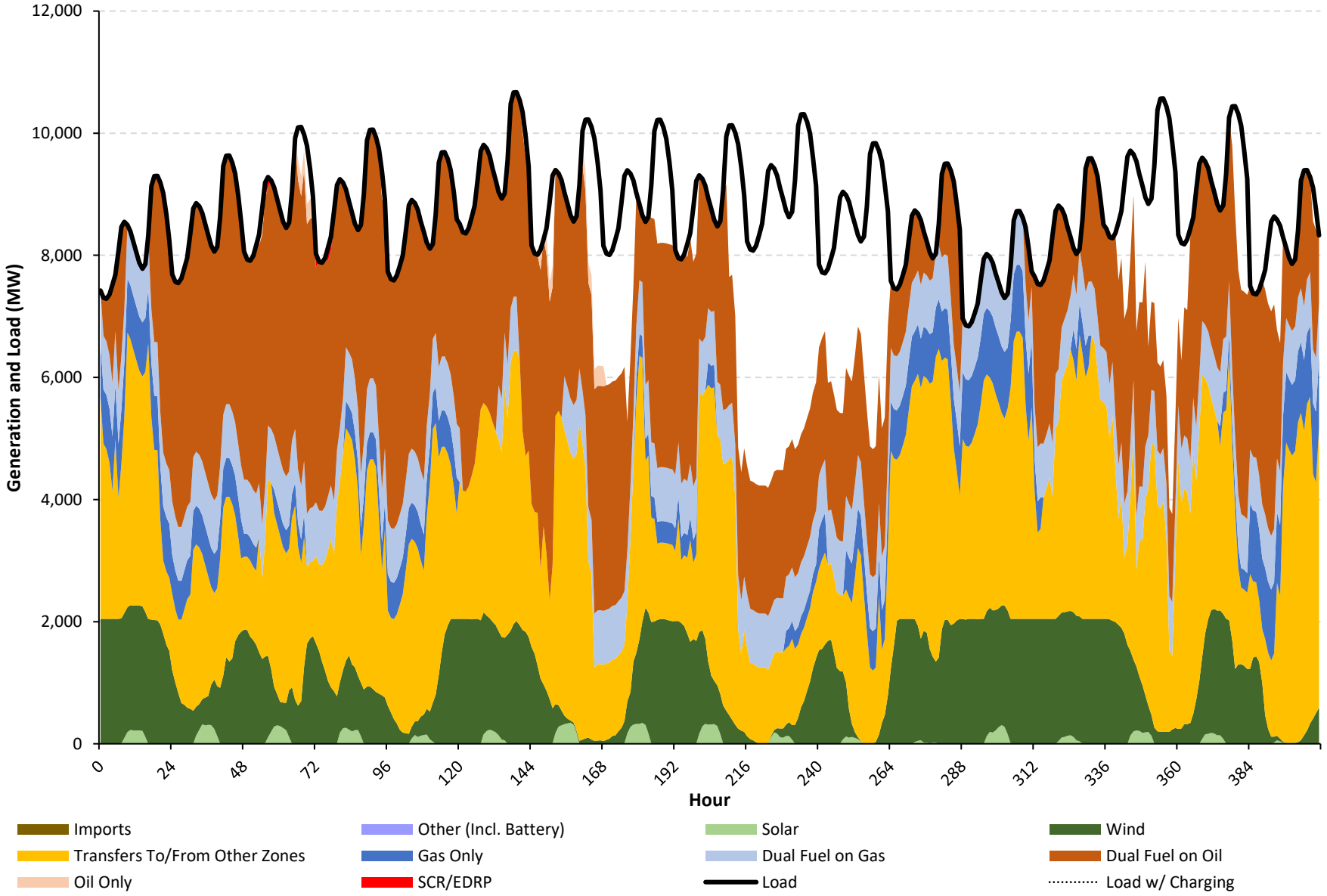


Total MWh of Lost Load

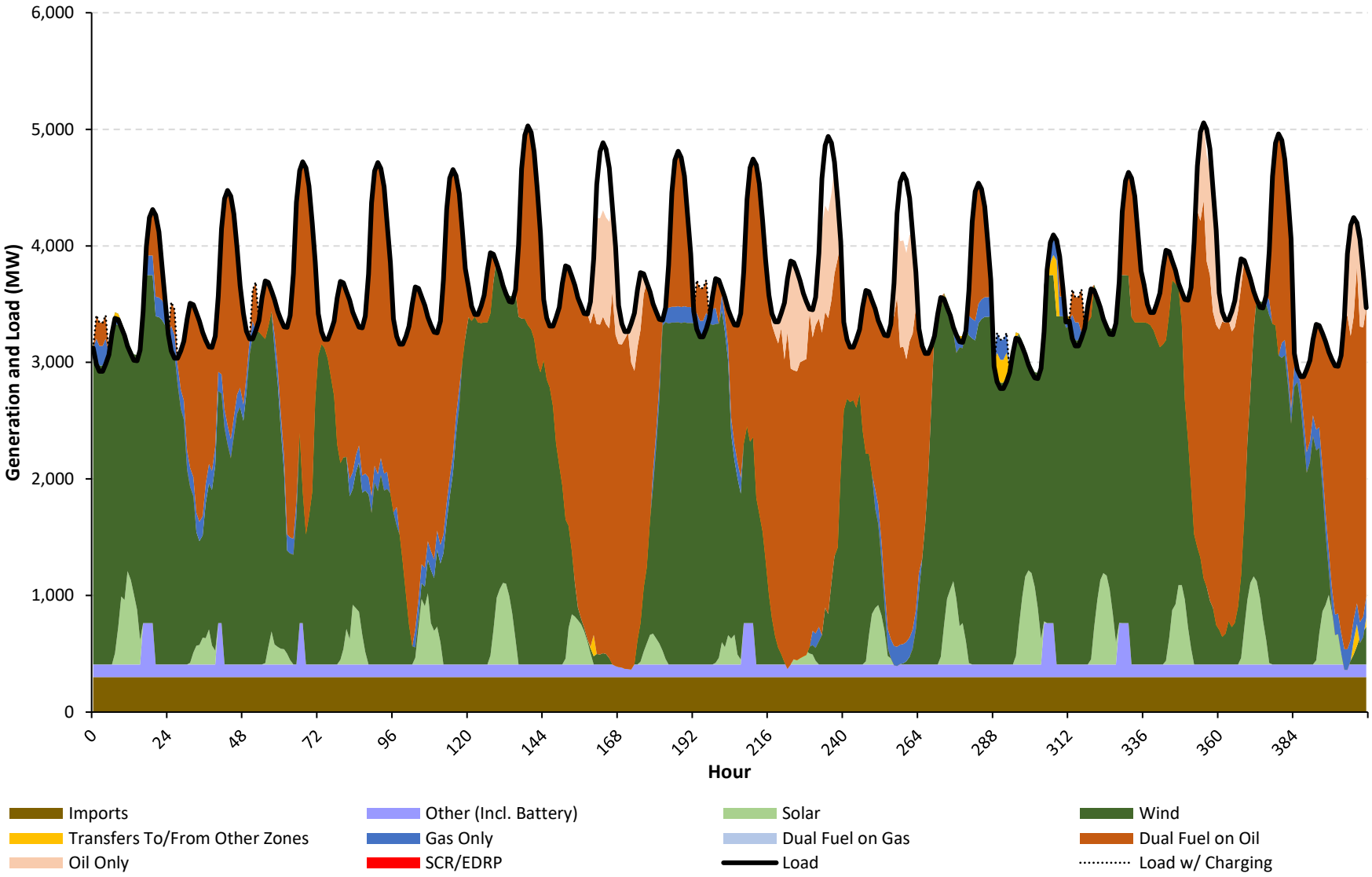



NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 2 - PD 11 Combination Disruption
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

Zone J
Hourly Generation (MW) by Fuel Group
Scenario 2 - PD 11 Combination Disruption



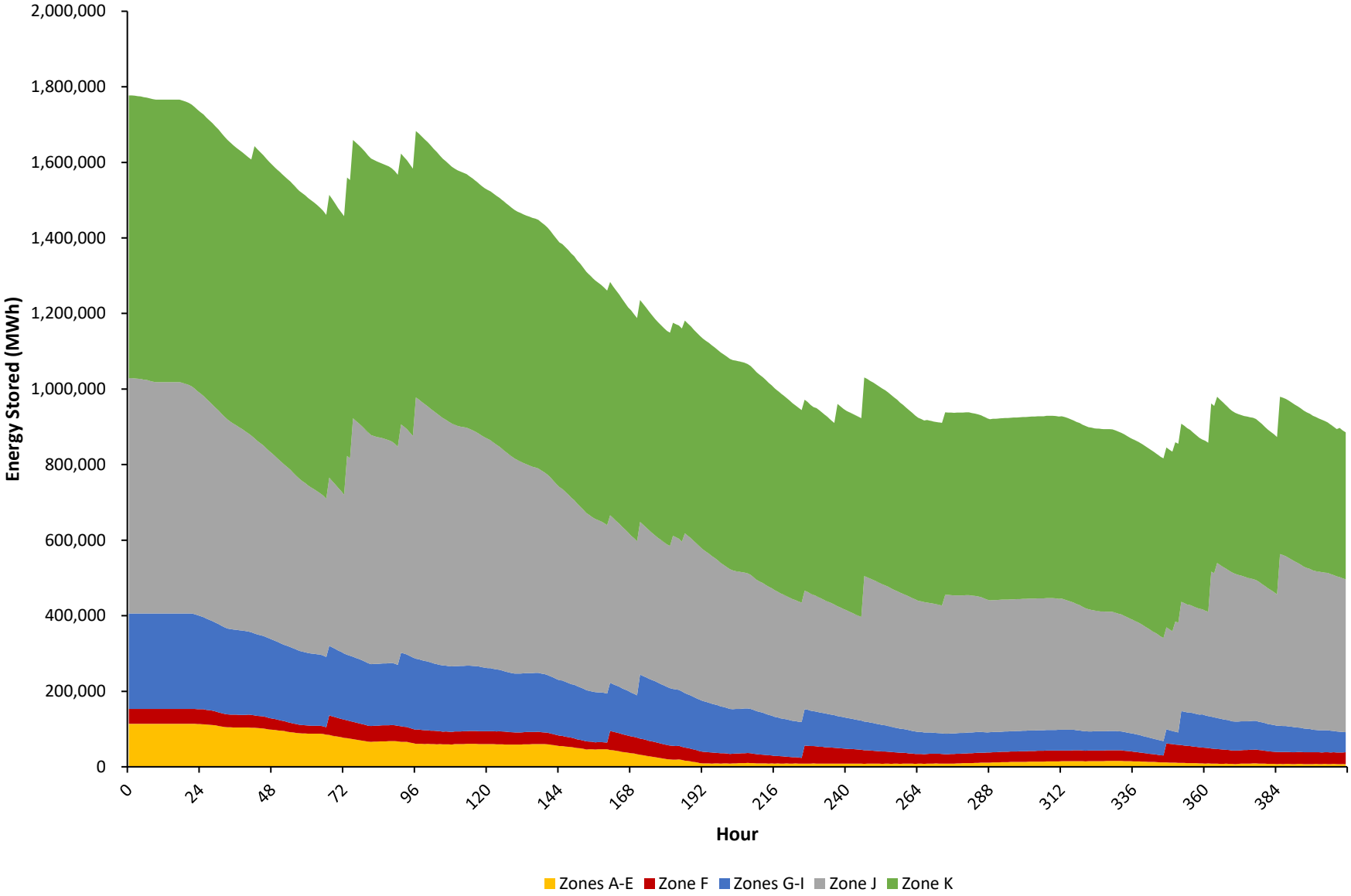
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 2 - PD 11 Combination Disruption

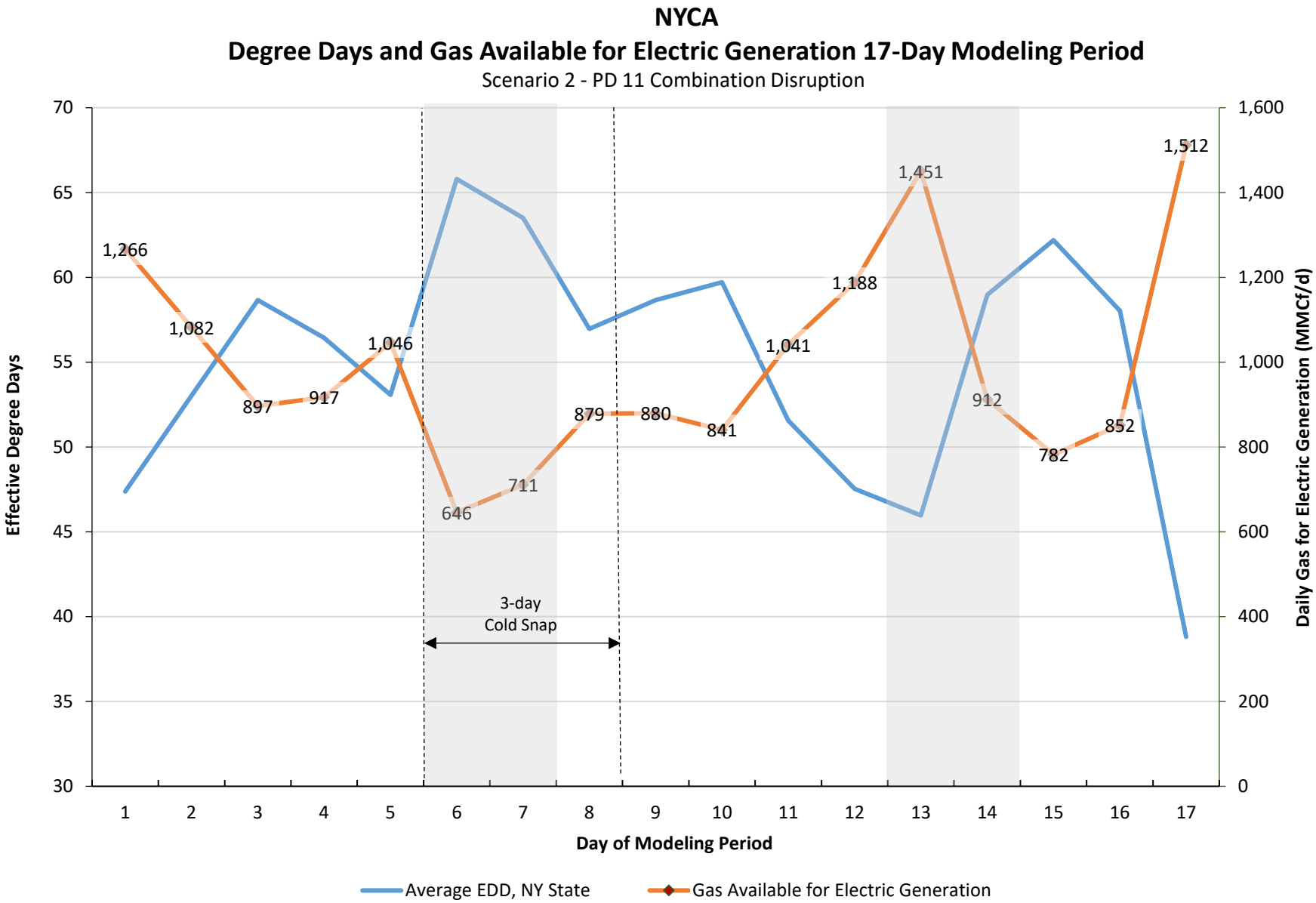


NYCA

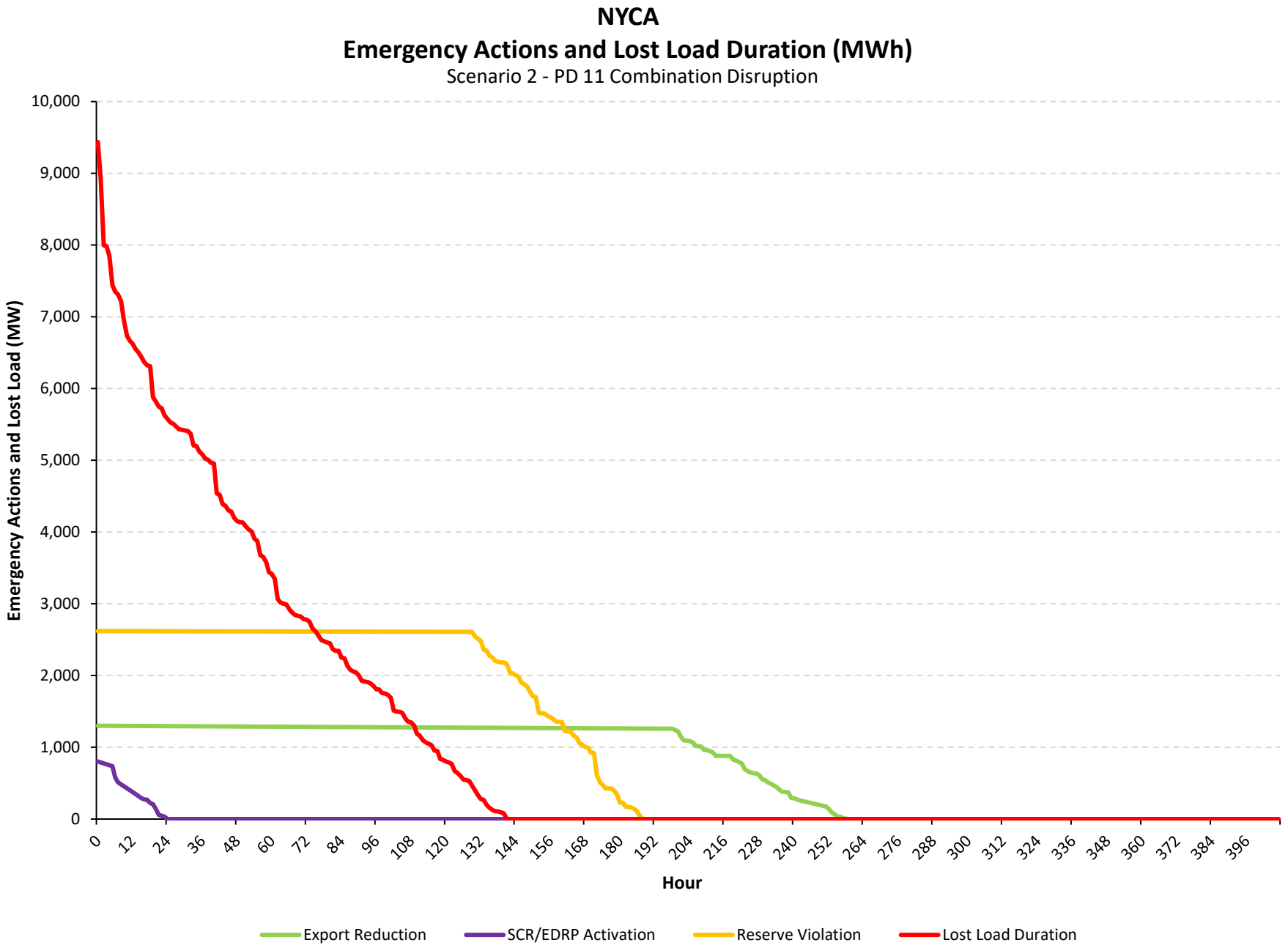
Quantity of Stored Fuel for Oil and Dual Fuel Units

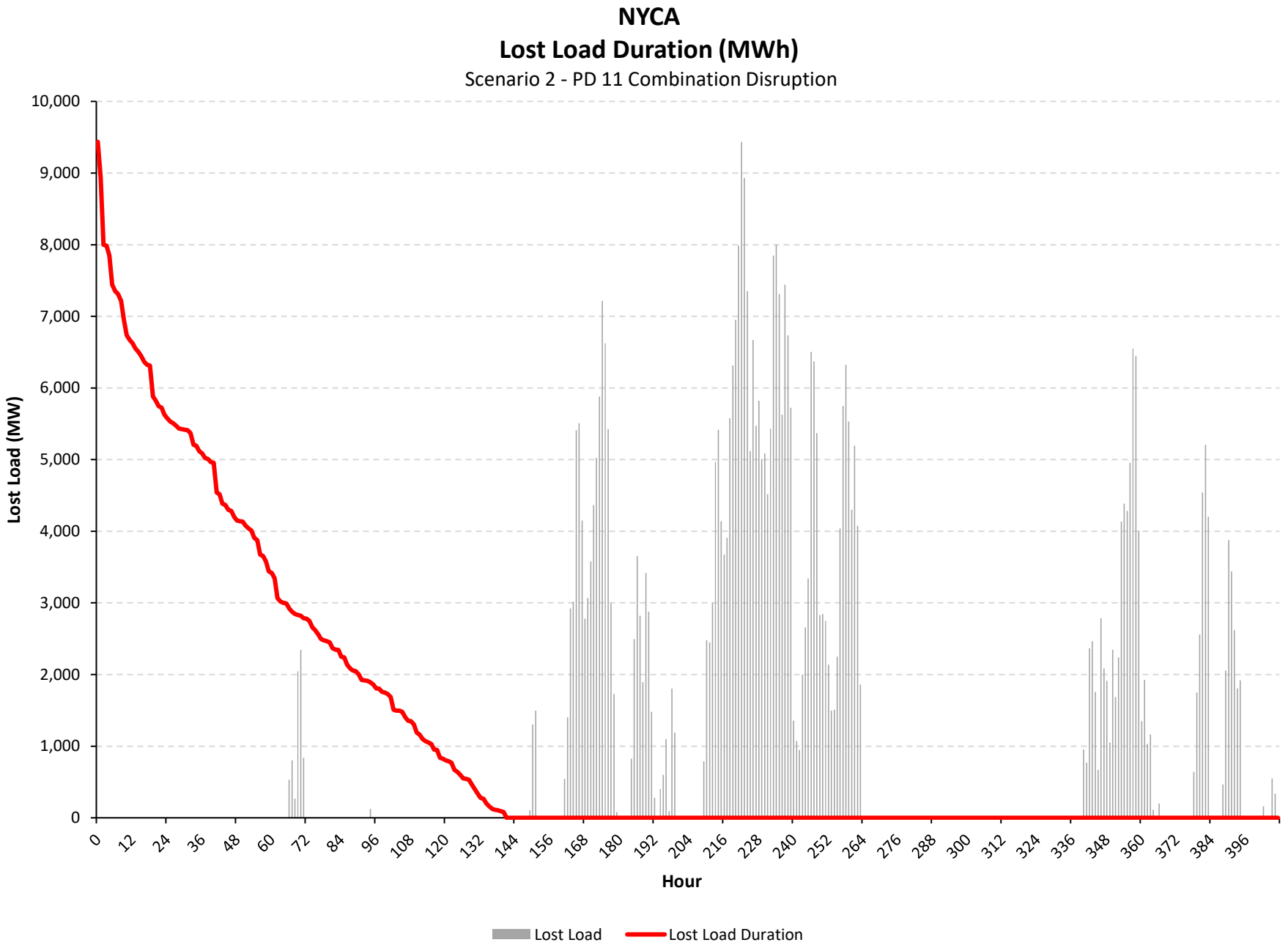
Scenario 2 - PD 11 Combination Disruption





Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 2 - PD 11 Combination Disruption
Emergency Actions and Lost Load (MW)
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 2 - PD 11 Combination Disruption
Lost Load (MW)
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

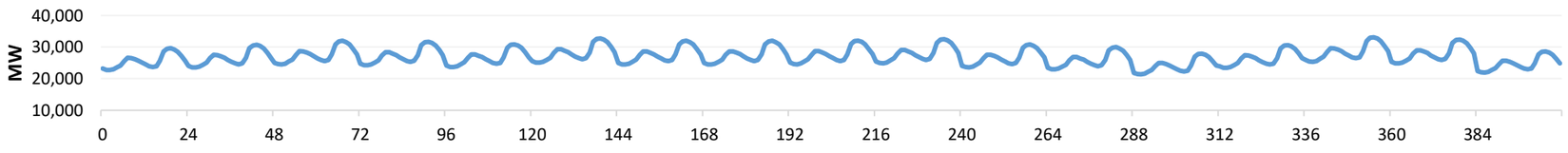
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 3 - PD 1 No Disruptions (Winter 2030/2031)

Hourly Results Summary

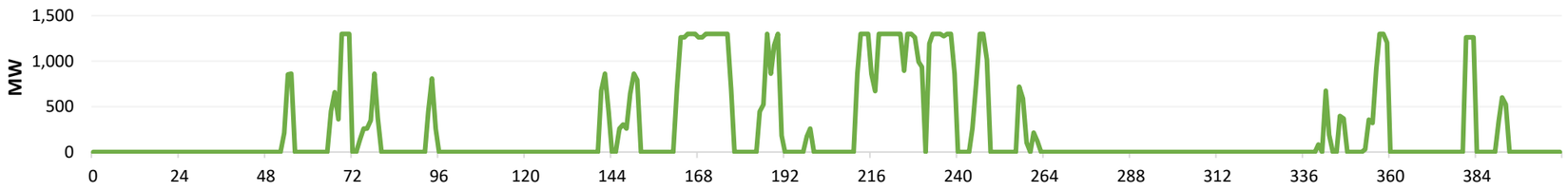
Case Name: Scenario 3 - PD 1 No Disruptions

Load During Modeling Period



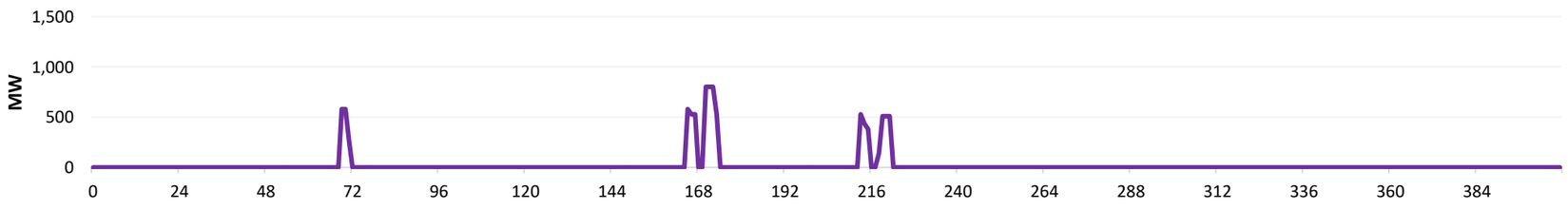
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



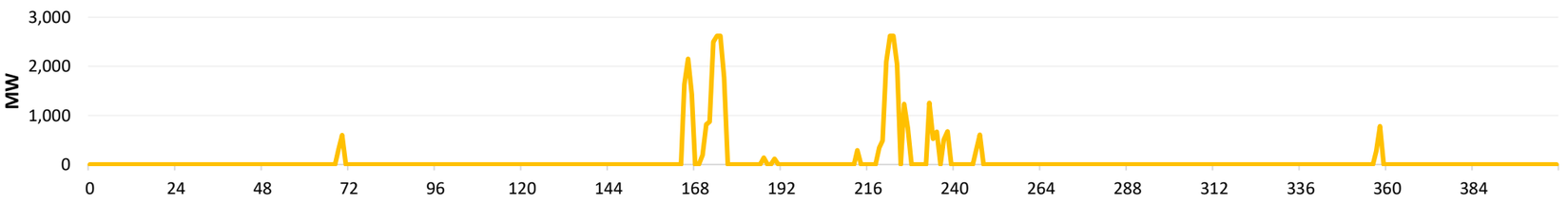
Export Reductions	
Total Hrs.	107
Total MWh	92,453
Avg. MW	226.6

SCR/EDRP Deployed During Modeling Period



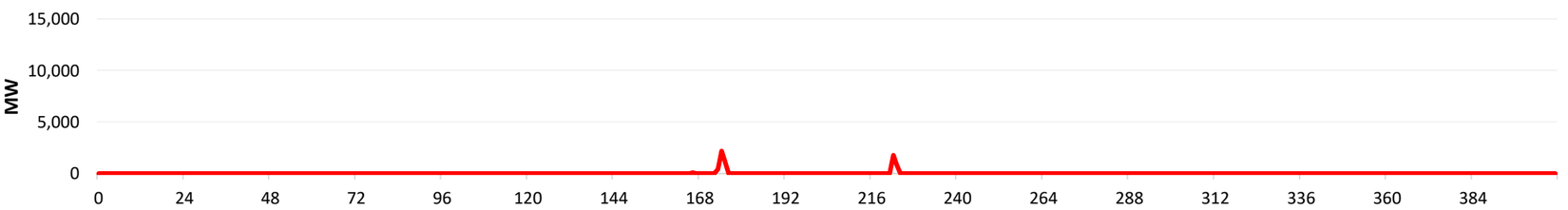
SCR Deployment	
Total Hrs.	17
Total MWh	8,982
Avg. MW	22.0

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	32
Total MWh	35,828
Avg. MW	87.8
First Hour with Viol.	69

Loss of Load During Modeling Period



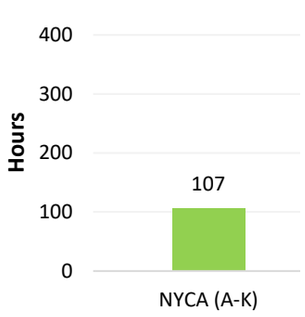
Loss of Load	
Total Hrs.	7
Total MWh	6,484
Avg. MW	15.9
First Hour with Losses	166

Full Period Results Summary

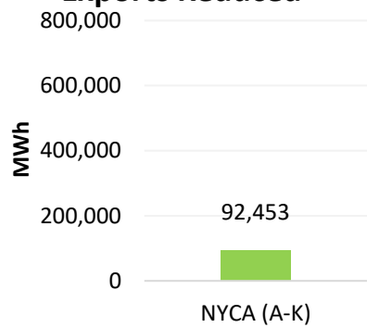
Case Name: Scenario 3 - PD 1 No Disruptions

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

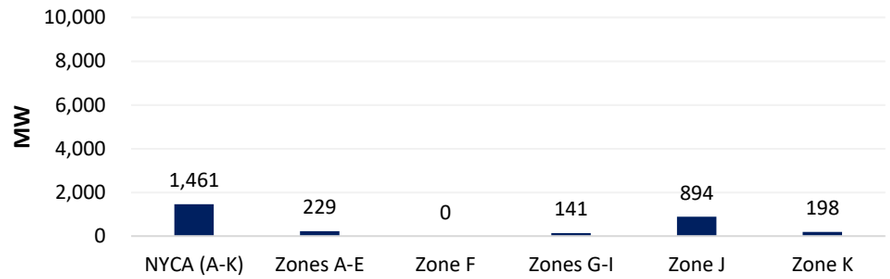
Hours Exports Reduced



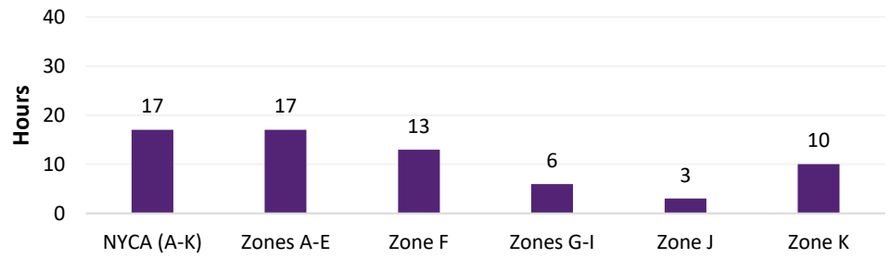
Total MWh of Exports Reduced



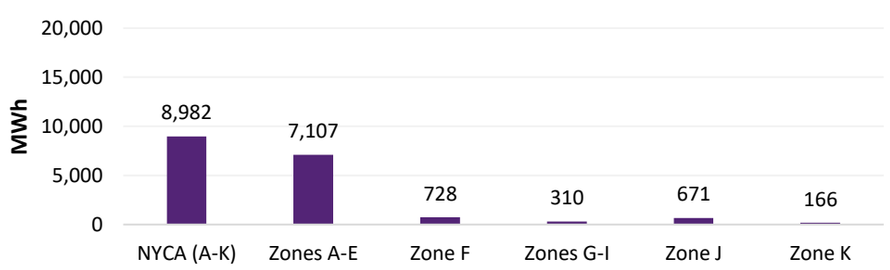
Average Capacity Not Available Due to Exhausted Fuel Inventory



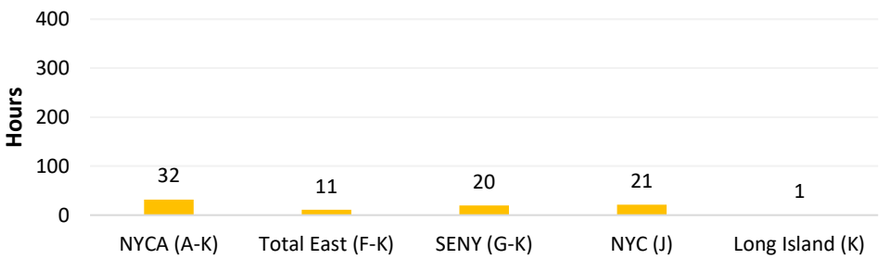
Hours SCR/EDRP Deployed



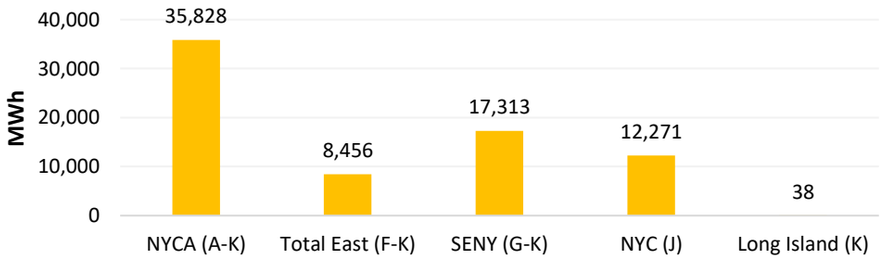
Total MWh SCR/EDRP Deployed



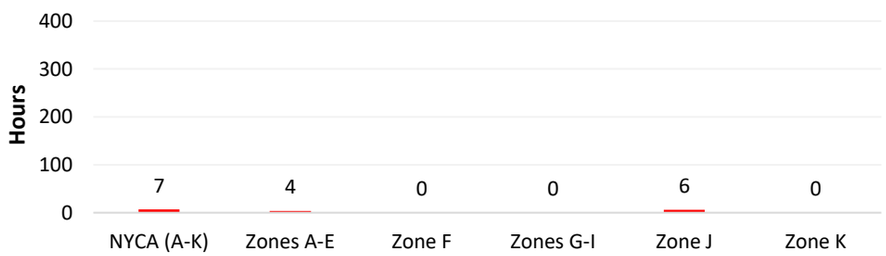
Hours with Reserve Violations



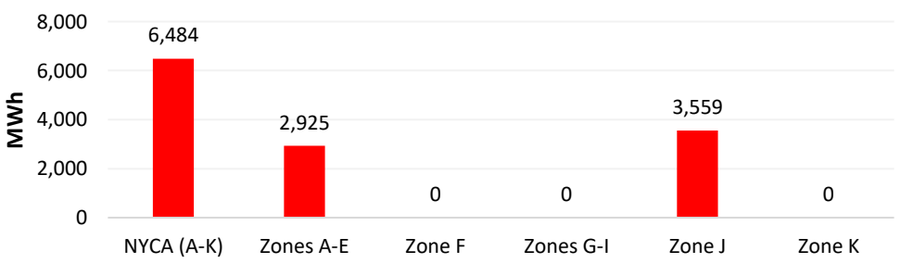
Total MWh of Reserve Violations

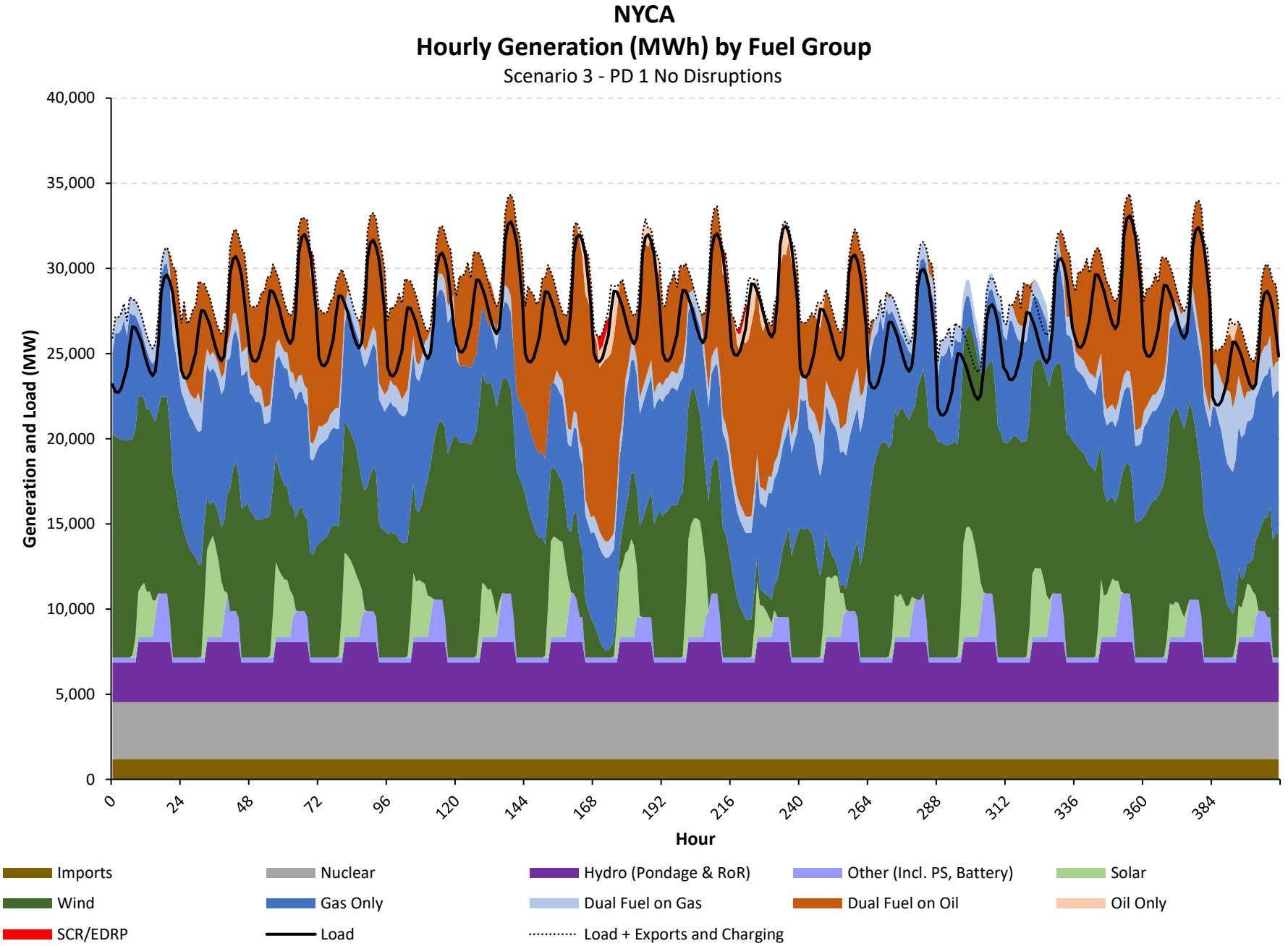


Hours with Loss of Load

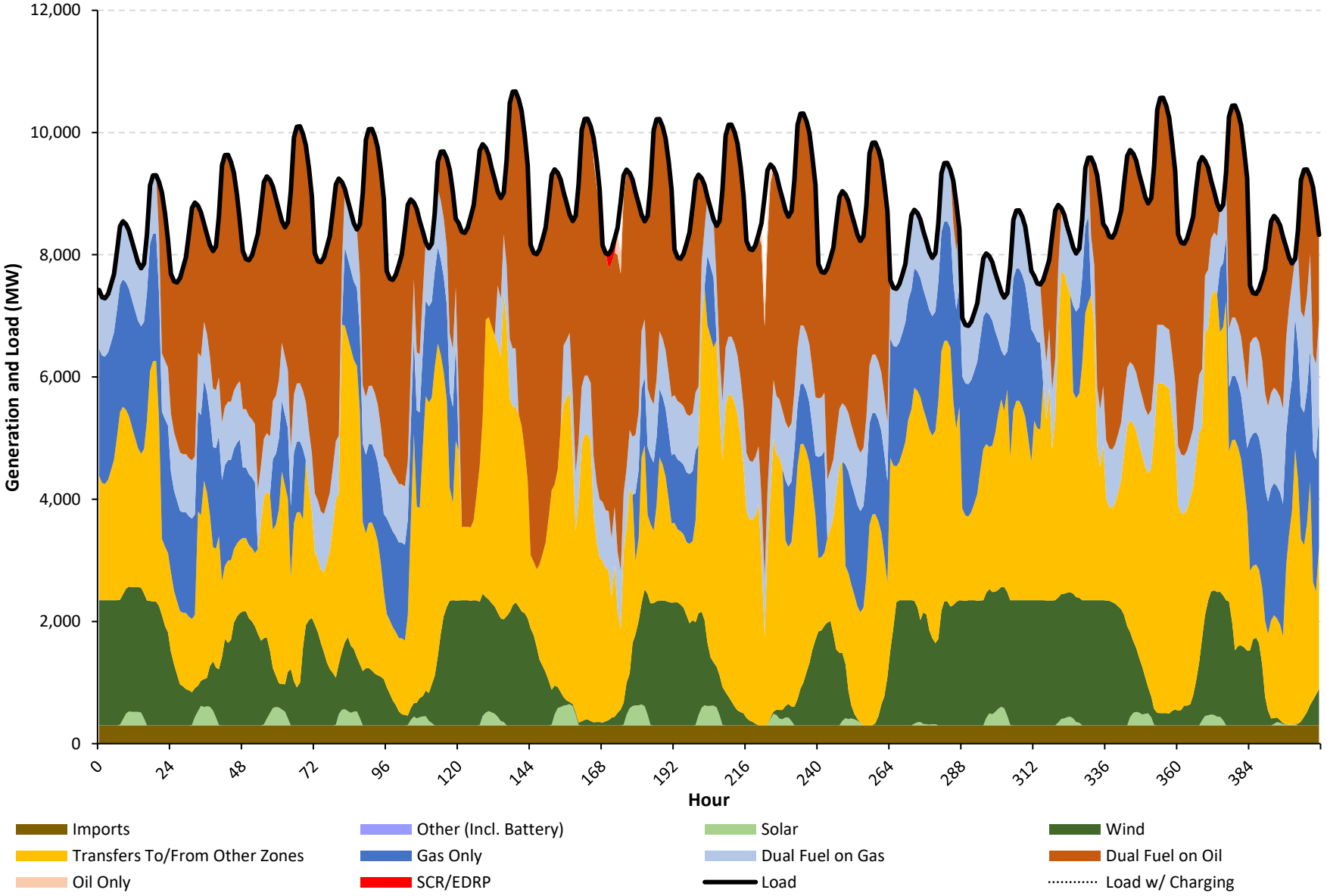


Total MWh of Lost Load

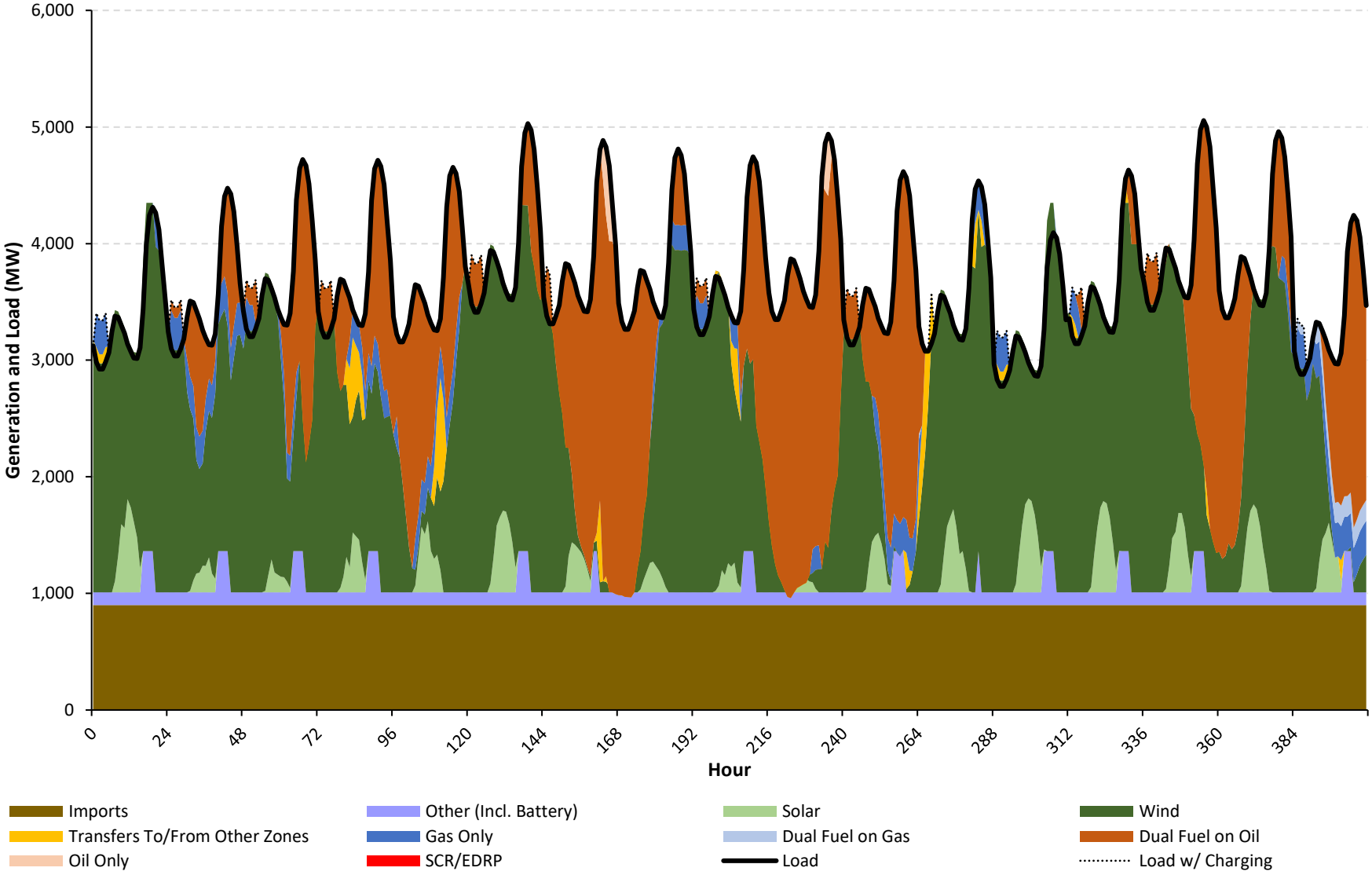


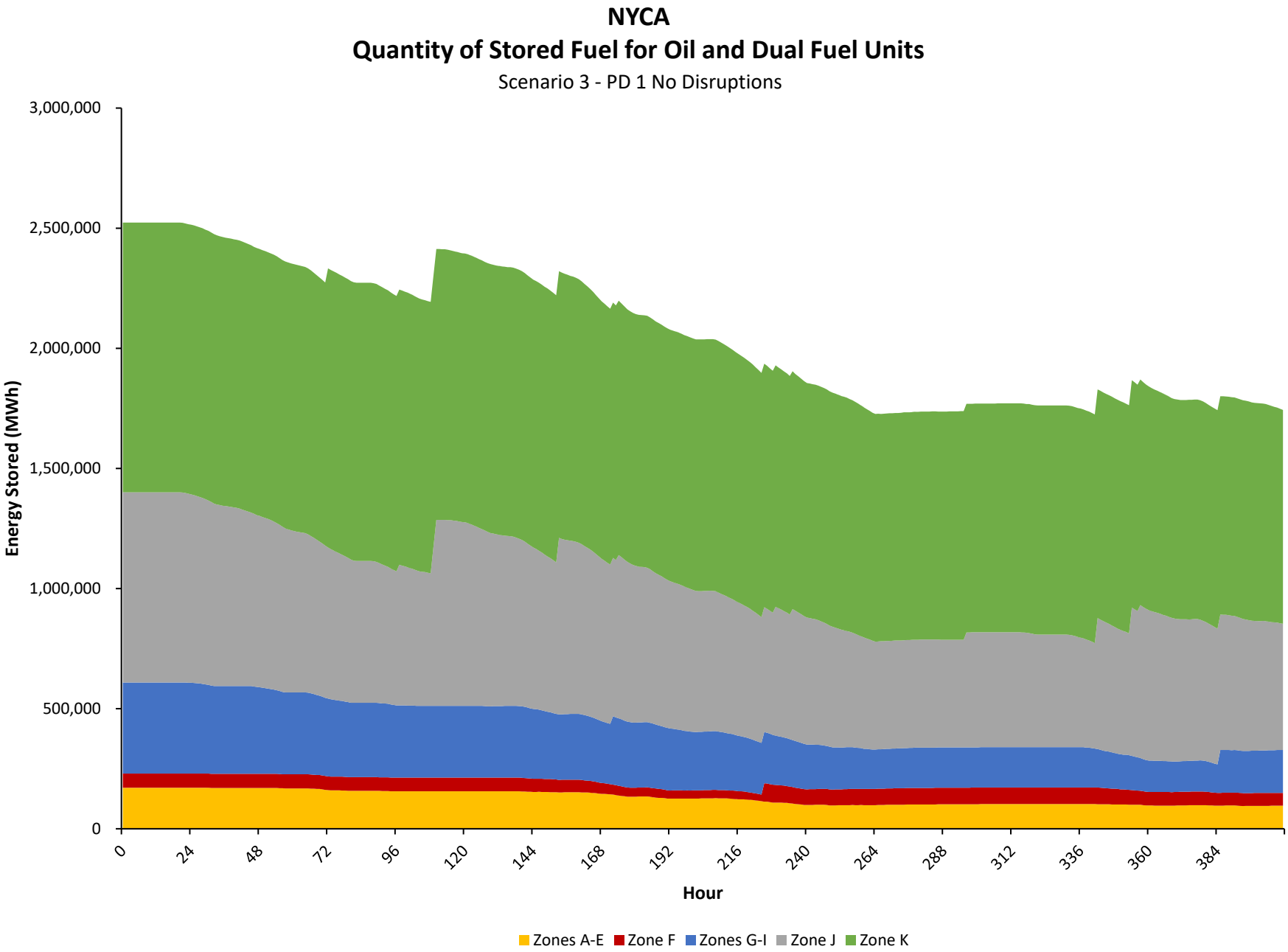

NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 3 - PD 1 No Disruptions
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

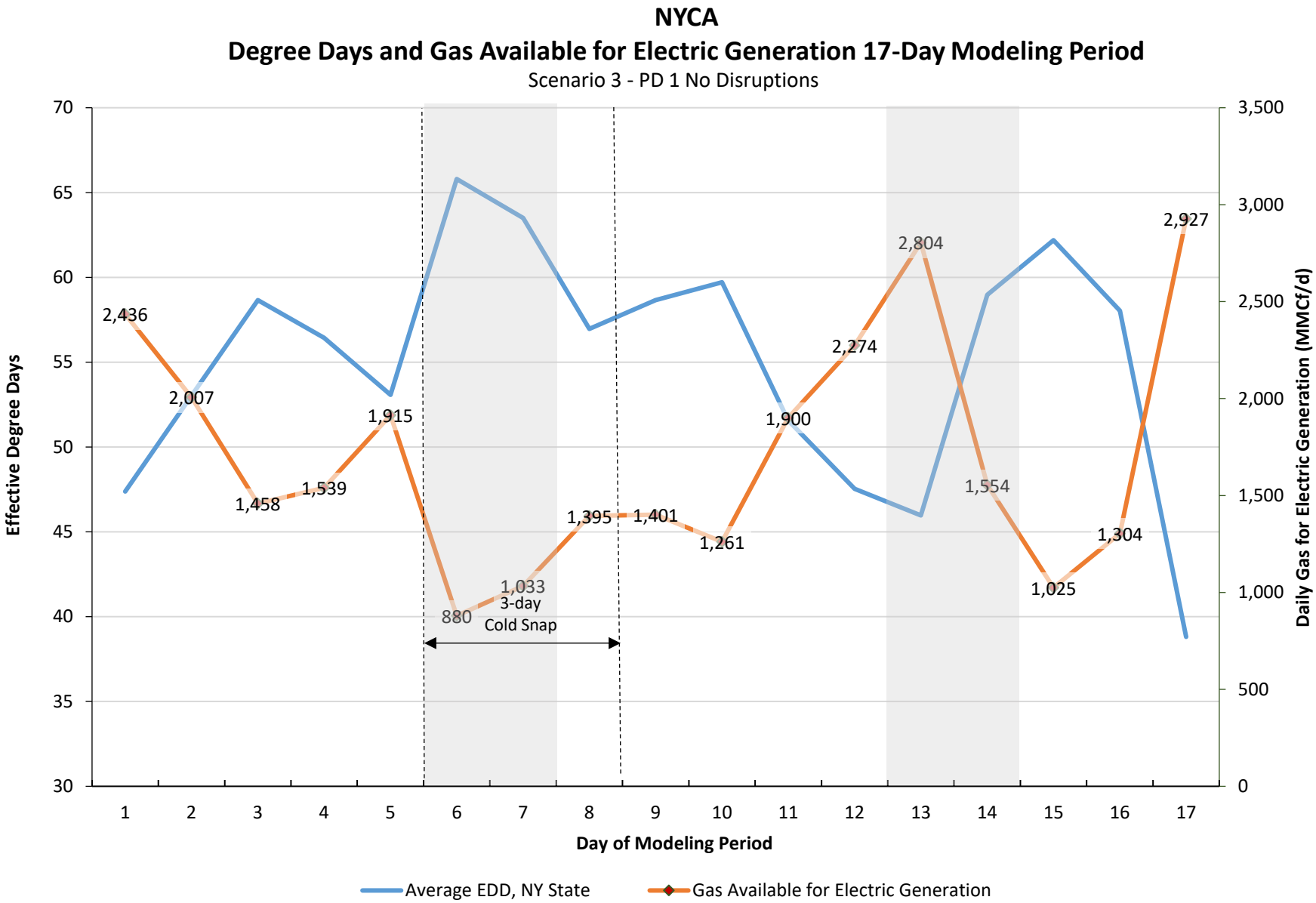
Zone J
Hourly Generation (MW) by Fuel Group
Scenario 3 - PD 1 No Disruptions



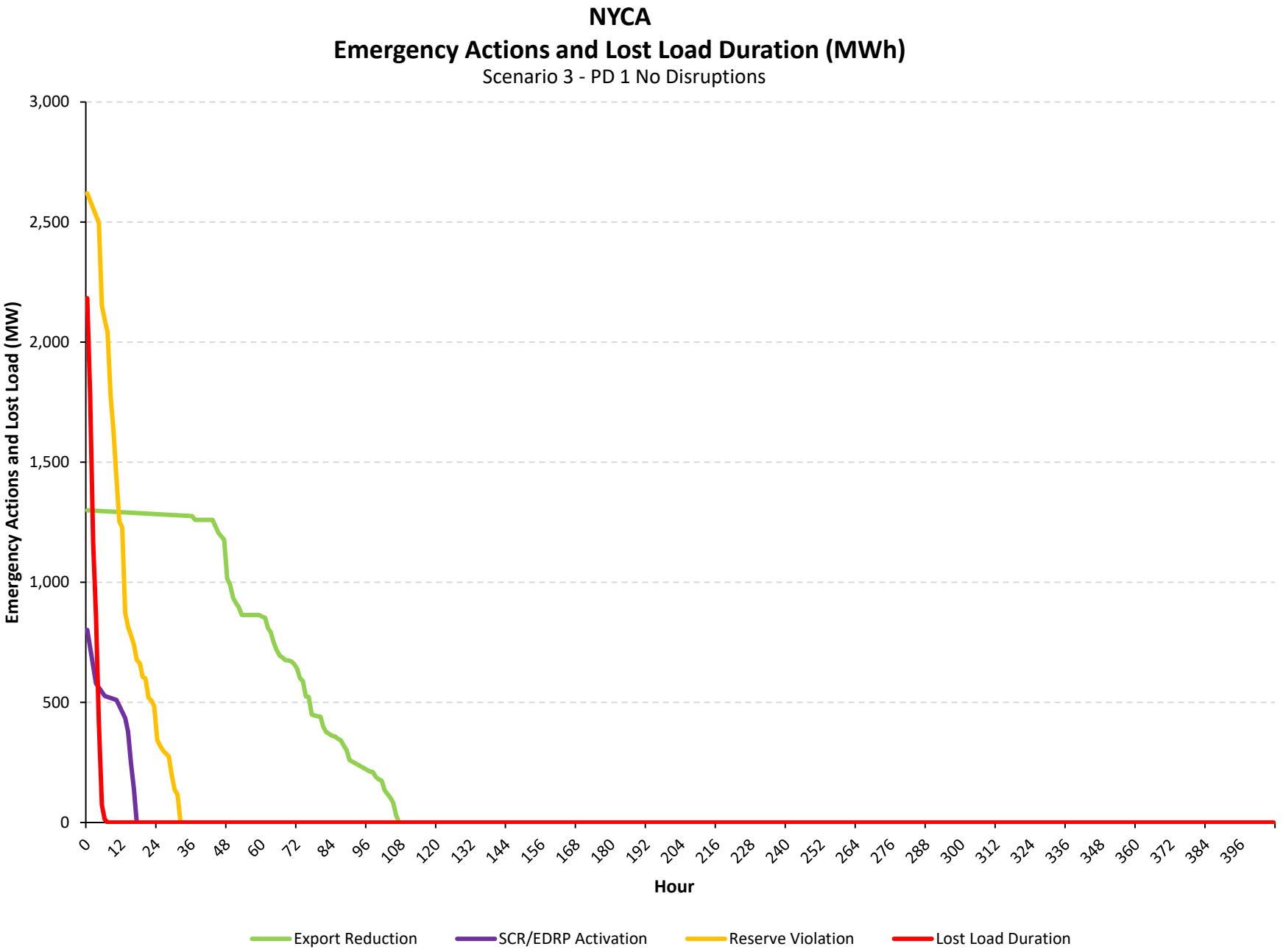
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 3 - PD 1 No Disruptions

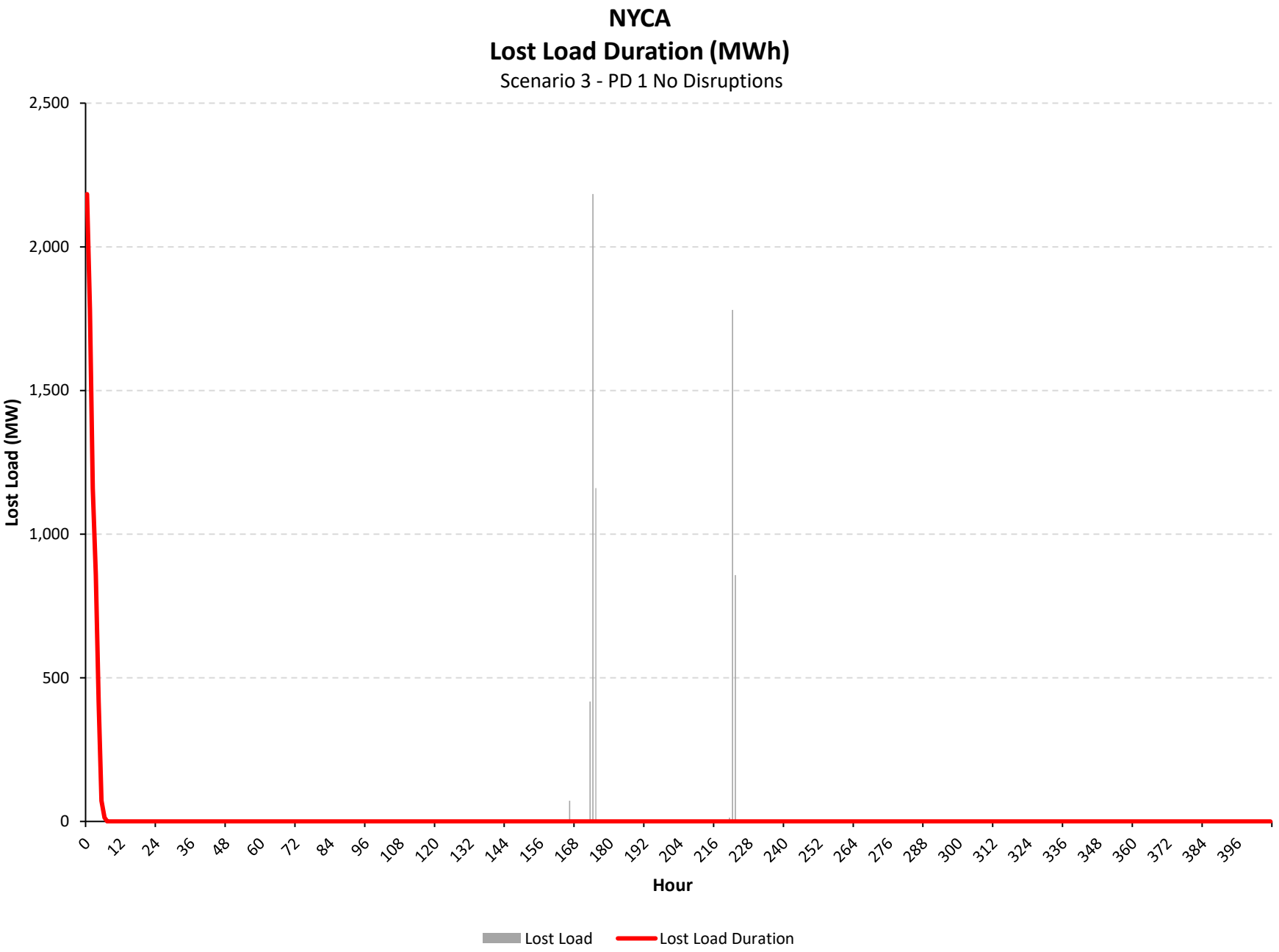



NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 3 - PD 1 No Disruptions
Energy Stored (MWh)
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Zones A-E
Zone F
Zones G-I
Zone J
Zone K



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 3 - PD 1 No Disruptions
Emergency Actions and Lost Load (MW)
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 3 - PD 1 No Disruptions
Lost Load (MW)
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

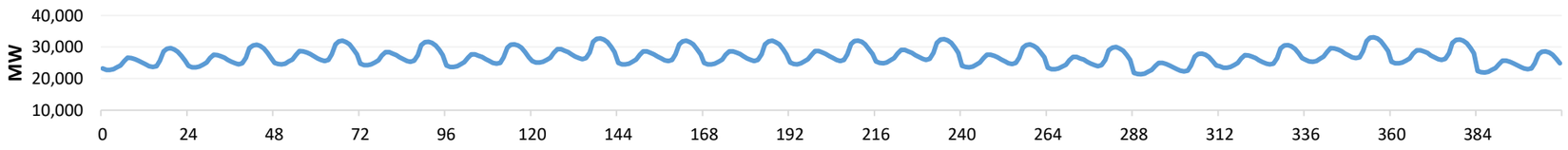
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 3 - PD 2 High Outage (Winter 2030/2031)

Hourly Results Summary

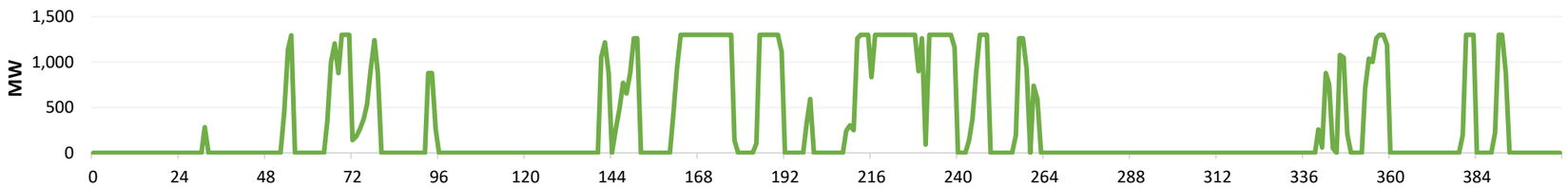
Case Name: Scenario 3 - PD 2 High Outage

Load During Modeling Period



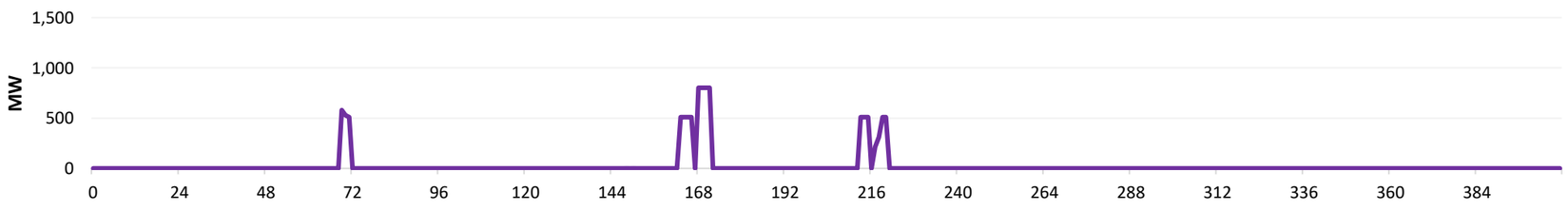
Case Summary	
Derate (EFORd) Increase:	High
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



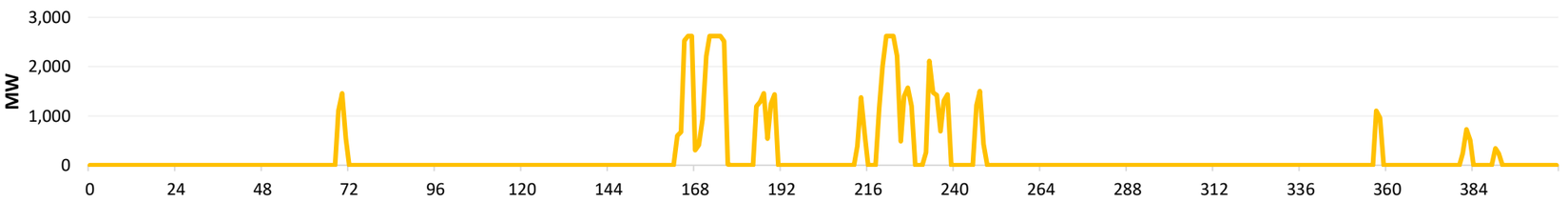
Export Reductions	
Total Hrs.	126
Total MWh	121,776
Avg. MW	298.5

SCR/EDRP Deployed During Modeling Period



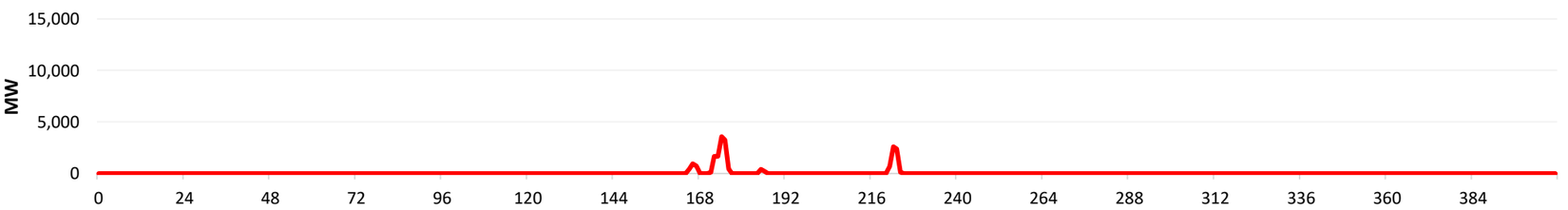
SCR Deployment	
Total Hrs.	18
Total MWh	9,939
Avg. MW	24.4

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	54
Total MWh	72,437
Avg. MW	177.5
First Hour with Viol.	69

Loss of Load During Modeling Period



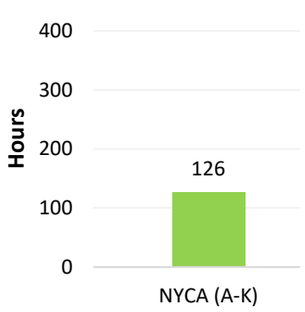
Loss of Load	
Total Hrs.	15
Total MWh	19,362
Avg. MW	47.5
First Hour with Losses	165

Full Period Results Summary

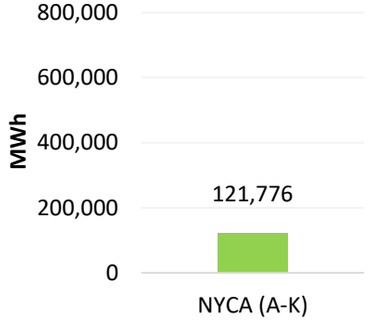
Case Name: Scenario 3 - PD 2 High Outage

Case Summary	
Derate (EFORd) Increase:	High
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

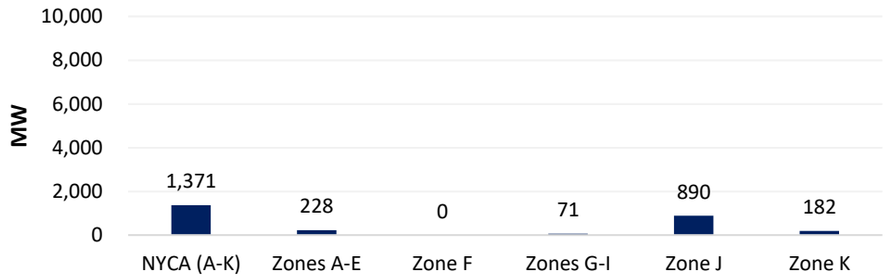
Hours Exports Reduced



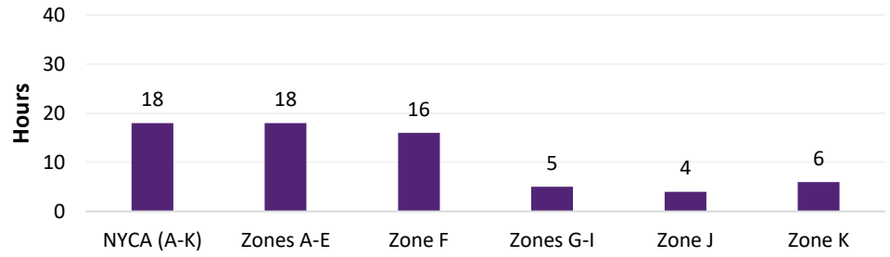
Total MWh of Exports Reduced



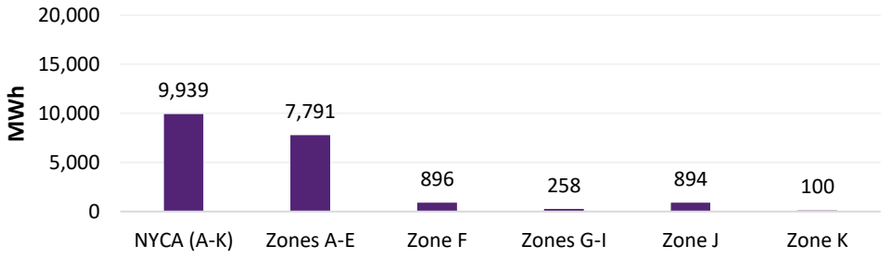
Average Capacity Not Available Due to Exhausted Fuel Inventory



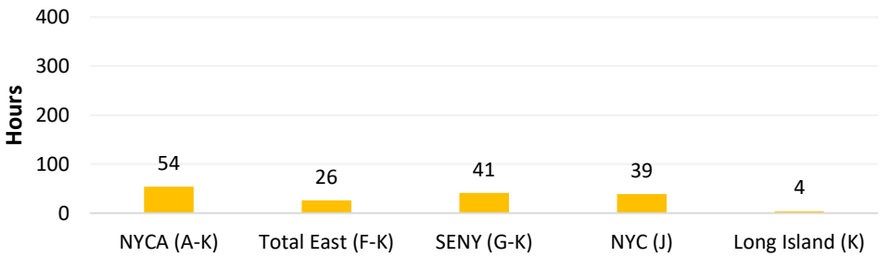
Hours SCR/EDRP Deployed



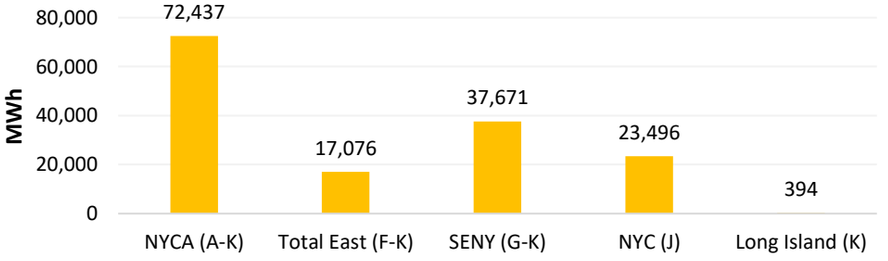
Total MWh SCR/EDRP Deployed



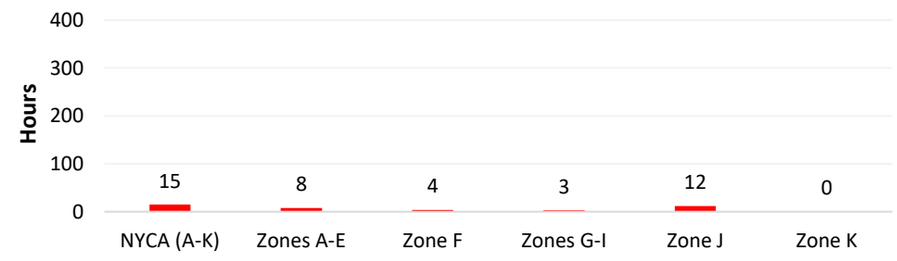
Hours with Reserve Violations



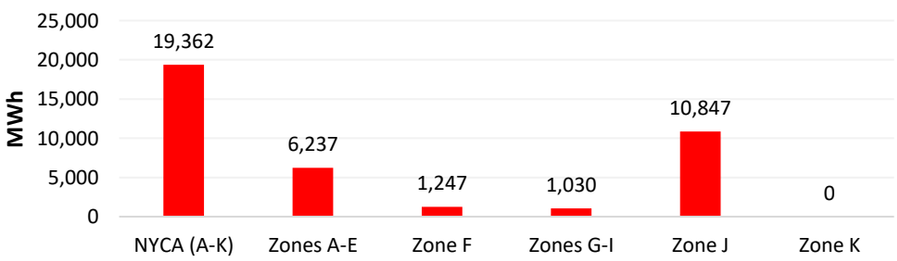
Total MWh of Reserve Violations

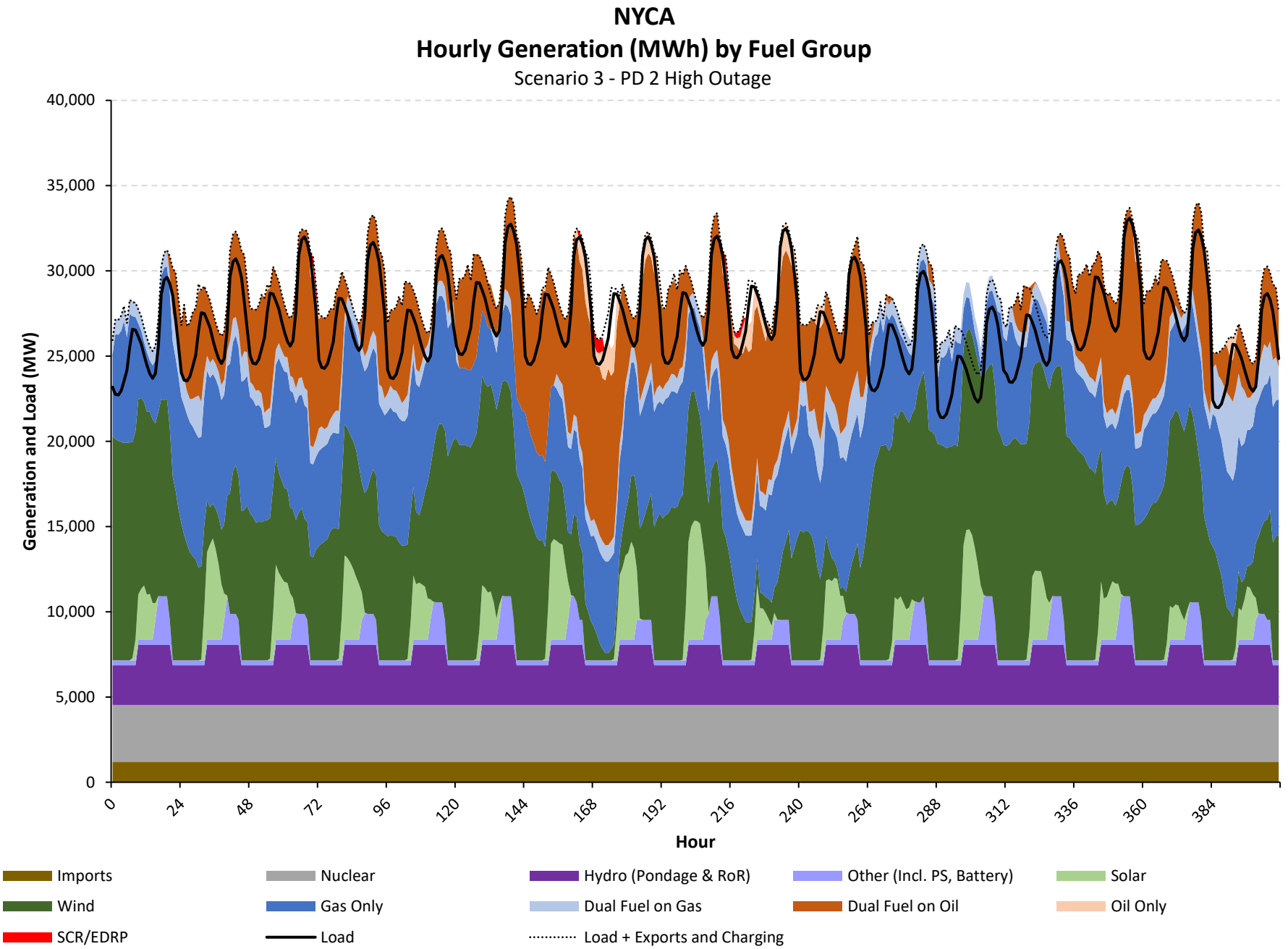


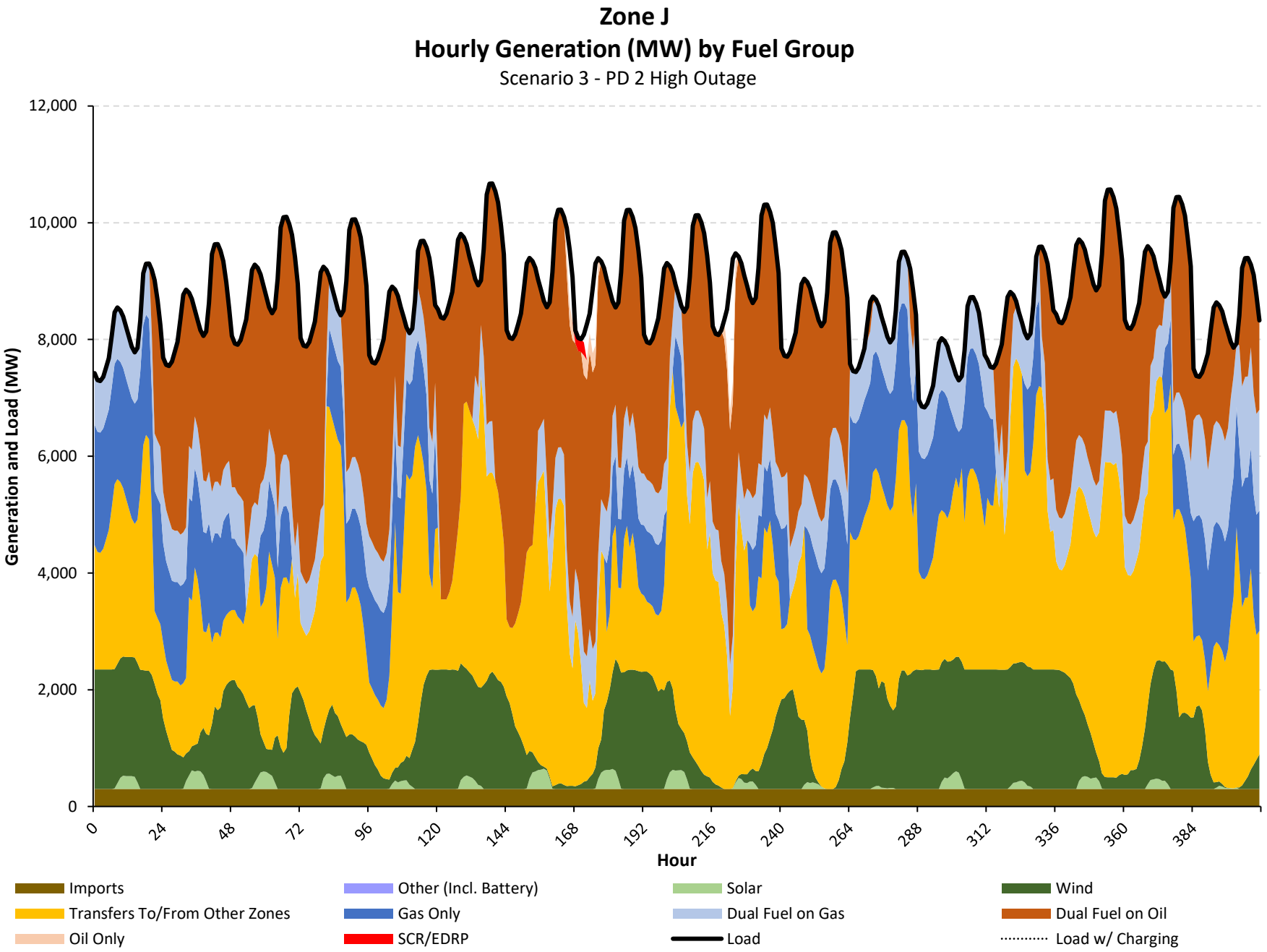
Hours with Loss of Load



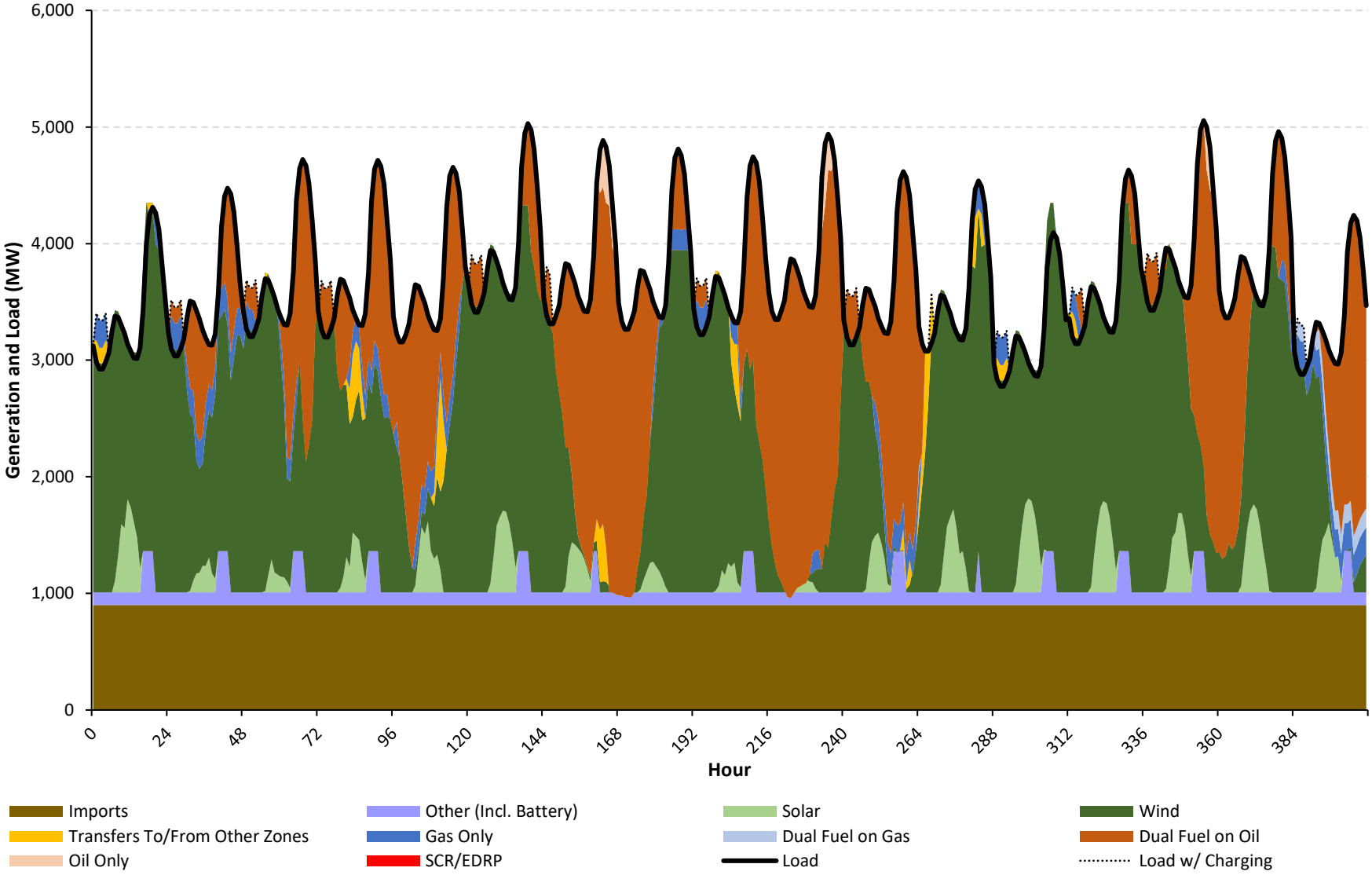
Total MWh of Lost Load



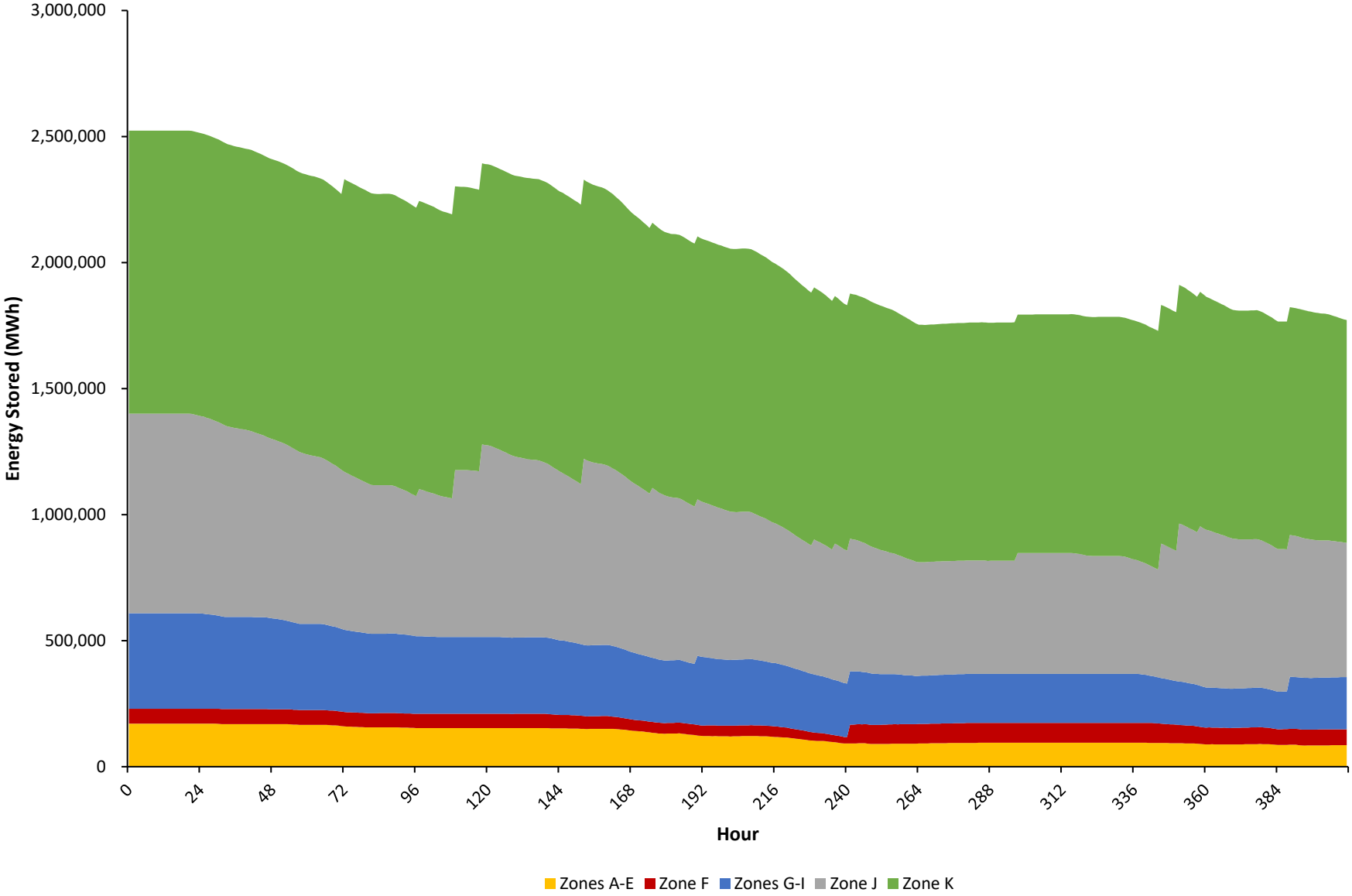

NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 3 - PD 2 High Outage
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

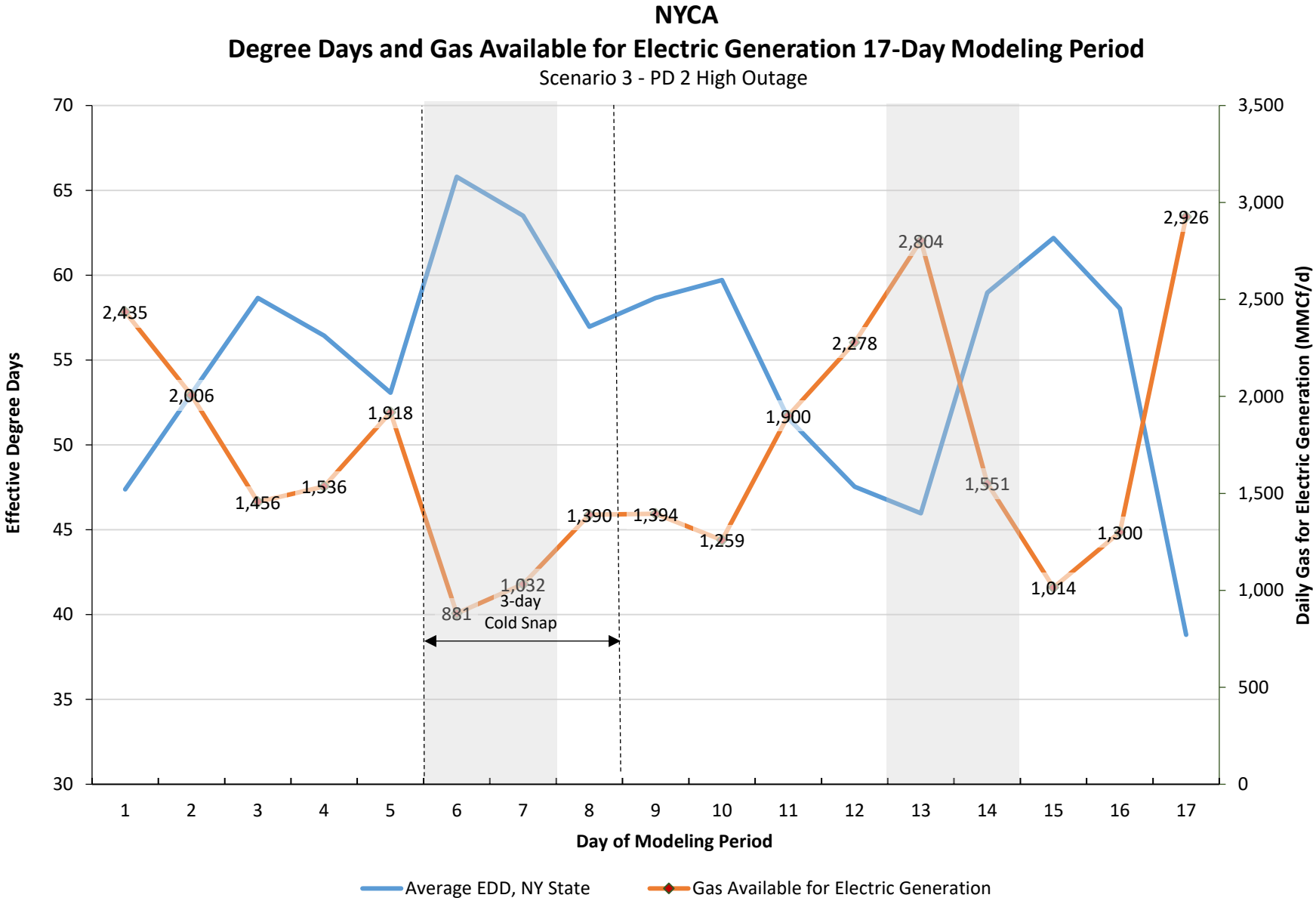

Zone J
Hourly Generation (MW) by Fuel Group
Scenario 3 - PD 2 High Outage
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

Zone K
Hourly Generation (MW) by Fuel Group
Scenario 3 - PD 2 High Outage

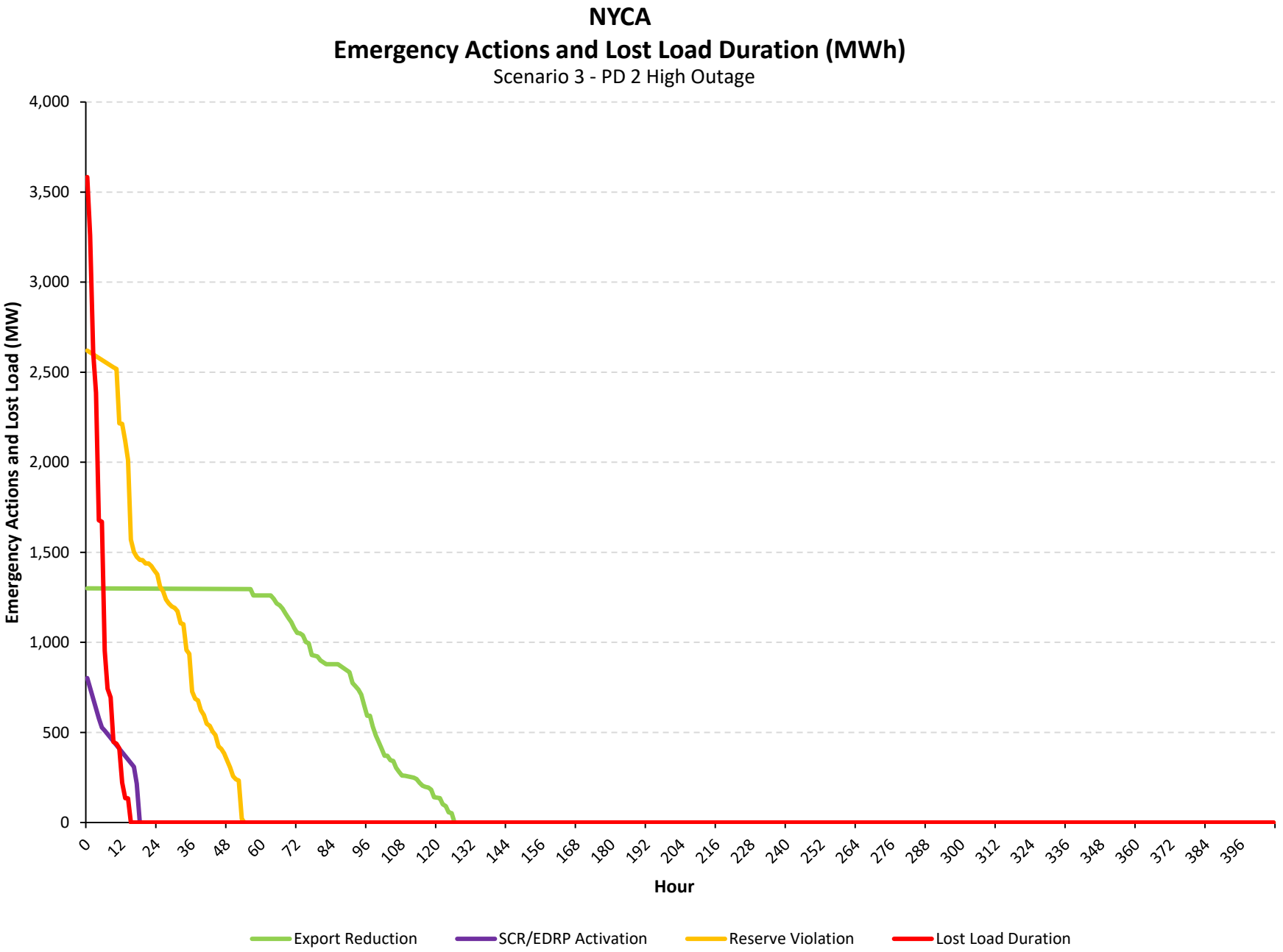


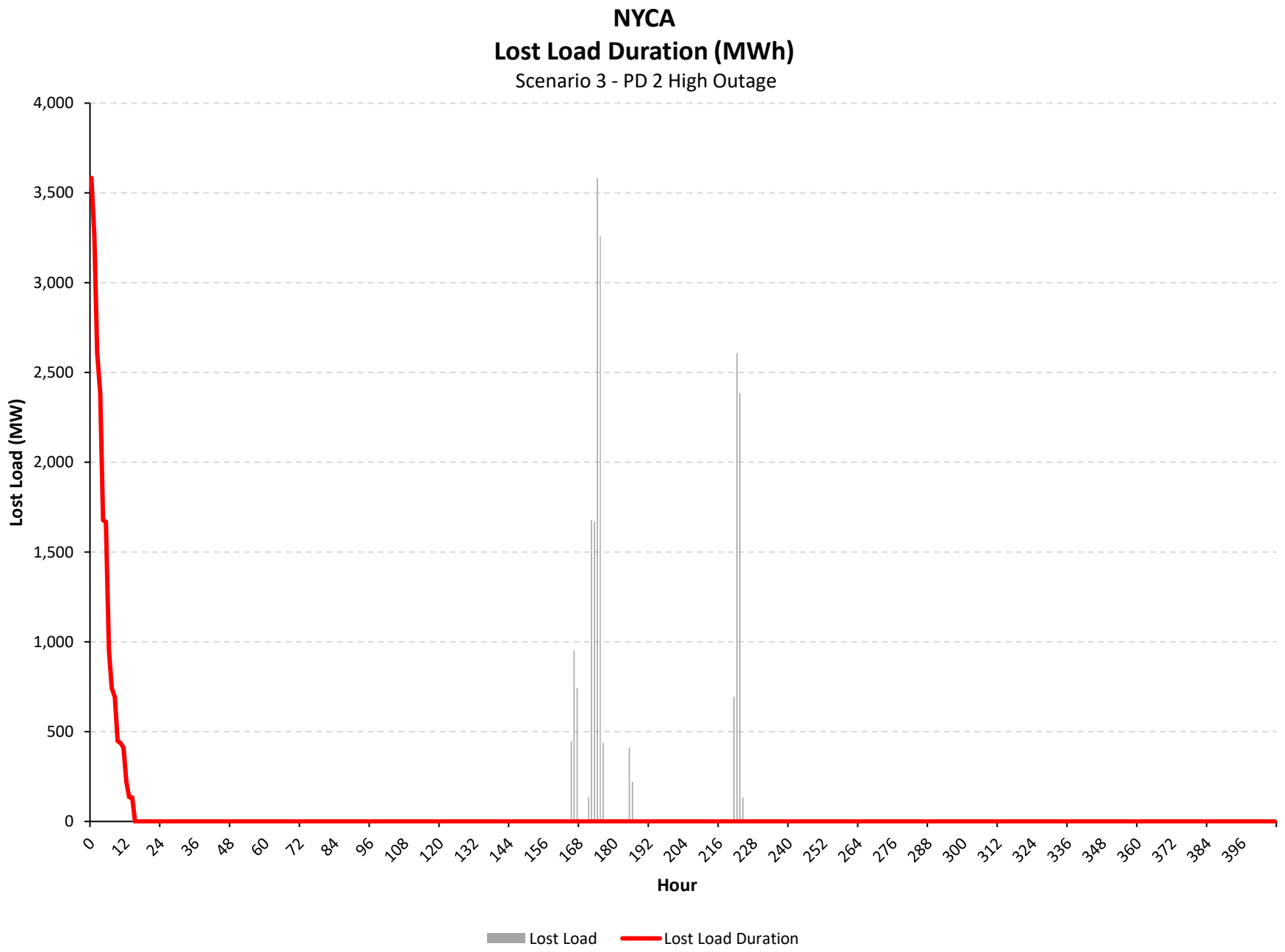
NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 3 - PD 2 High Outage





Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 3 - PD 2 High Outage
Emergency Actions and Lost Load (MW)
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 3 - PD 2 High Outage
Lost Load (MW)
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

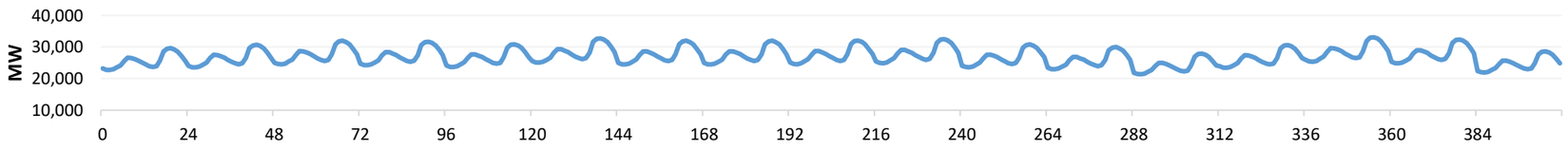
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 3 - PD 3 SENY Deactivation (Winter 2030/2031)

Hourly Results Summary

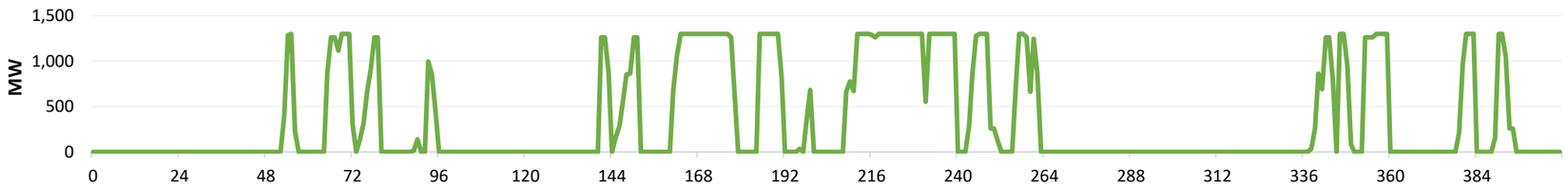
Case Name: Scenario 3 - PD 3 SENY Deactivation

Load During Modeling Period



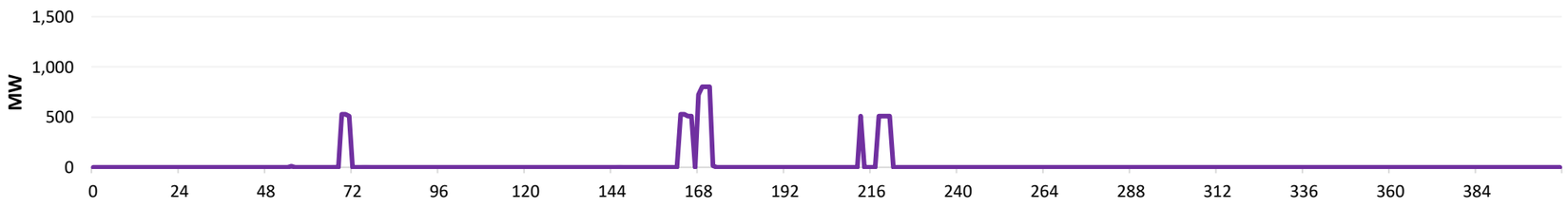
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	Roseton
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



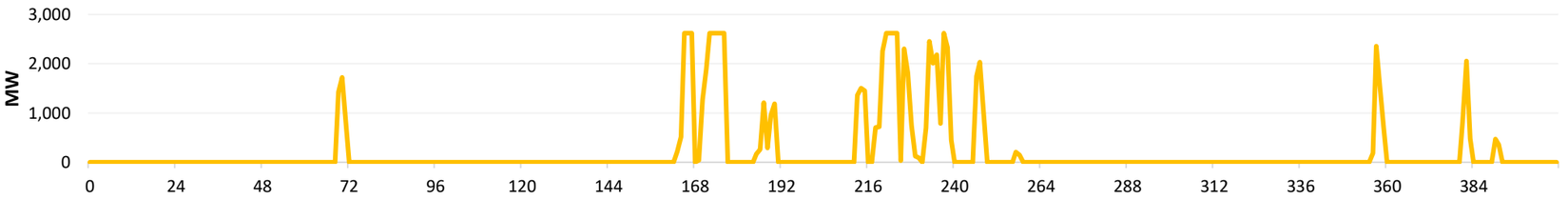
Export Reductions	
Total Hrs.	137
Total MWh	138,279
Avg. MW	338.9

SCR/EDRP Deployed During Modeling Period



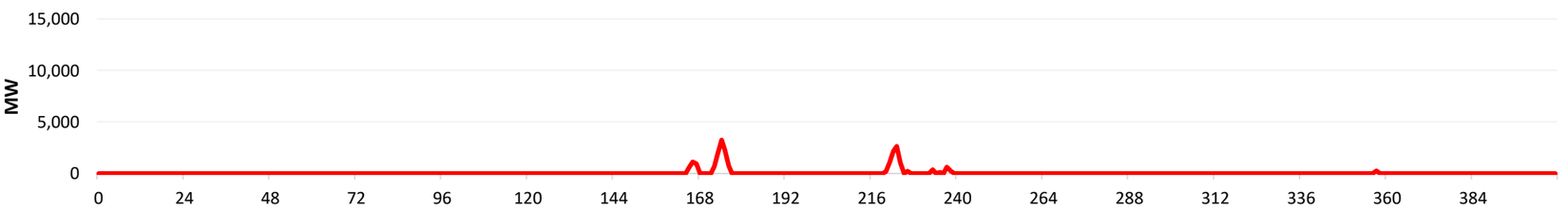
SCR Deployment	
Total Hrs.	18
Total MWh	9,346
Avg. MW	22.9

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	60
Total MWh	84,127
Avg. MW	206.2
First Hour with Viol.	69

Loss of Load During Modeling Period



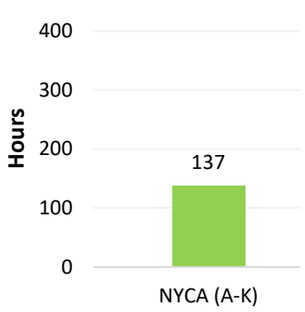
Loss of Load	
Total Hrs.	19
Total MWh	20,540
Avg. MW	50.3
First Hour with Losses	165

Full Period Results Summary

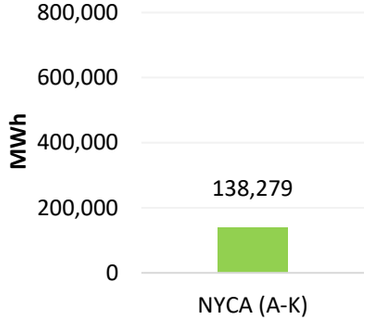
Case Name: Scenario 3 - PD 3 SENY Deactivation

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	Roseton
Import Scenario:	All

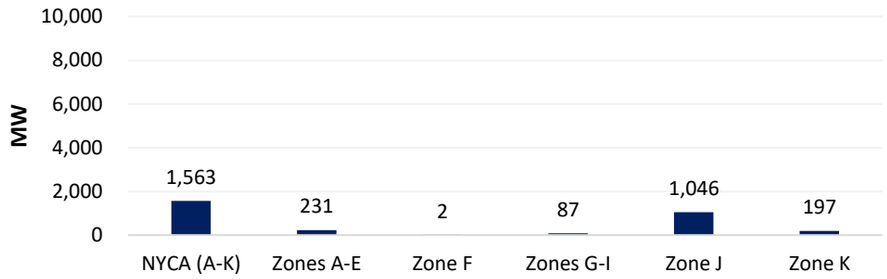
Hours Exports Reduced



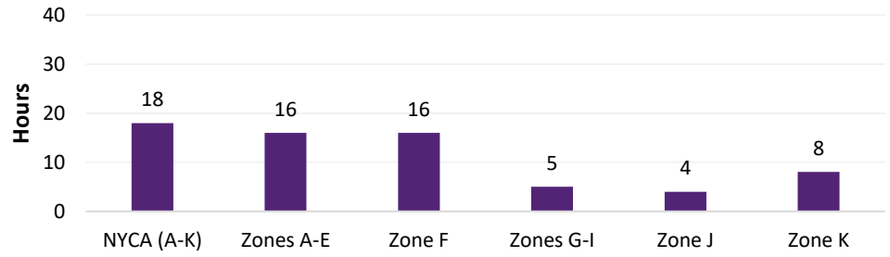
Total MWh of Exports Reduced



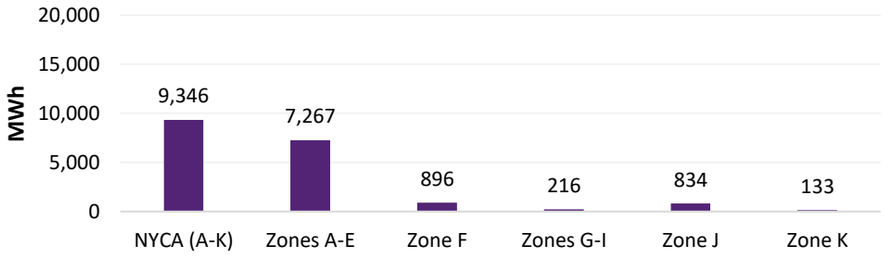
Average Capacity Not Available Due to Exhausted Fuel Inventory



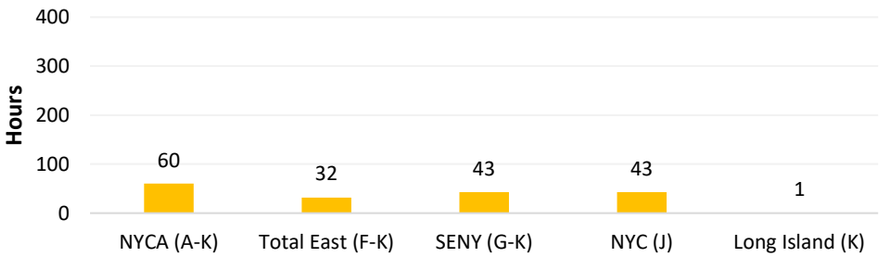
Hours SCR/EDRP Deployed



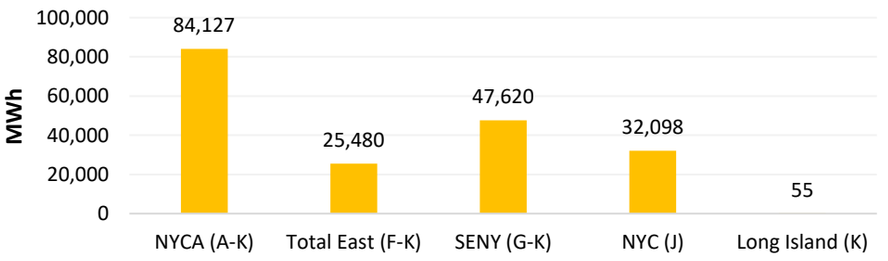
Total MWh SCR/EDRP Deployed



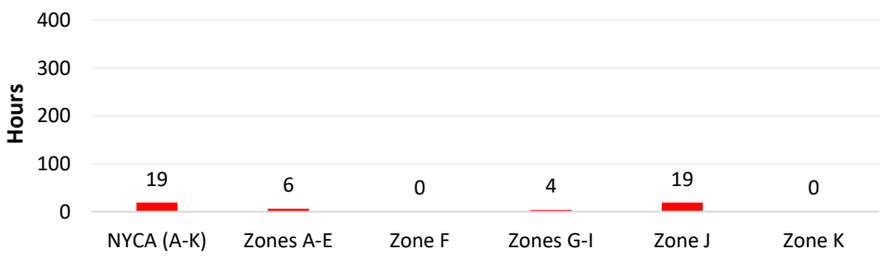
Hours with Reserve Violations



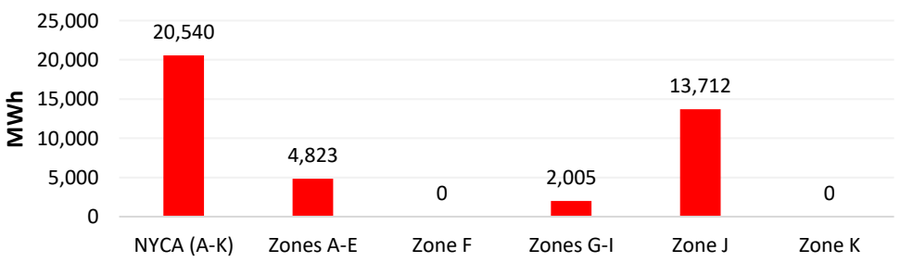
Total MWh of Reserve Violations

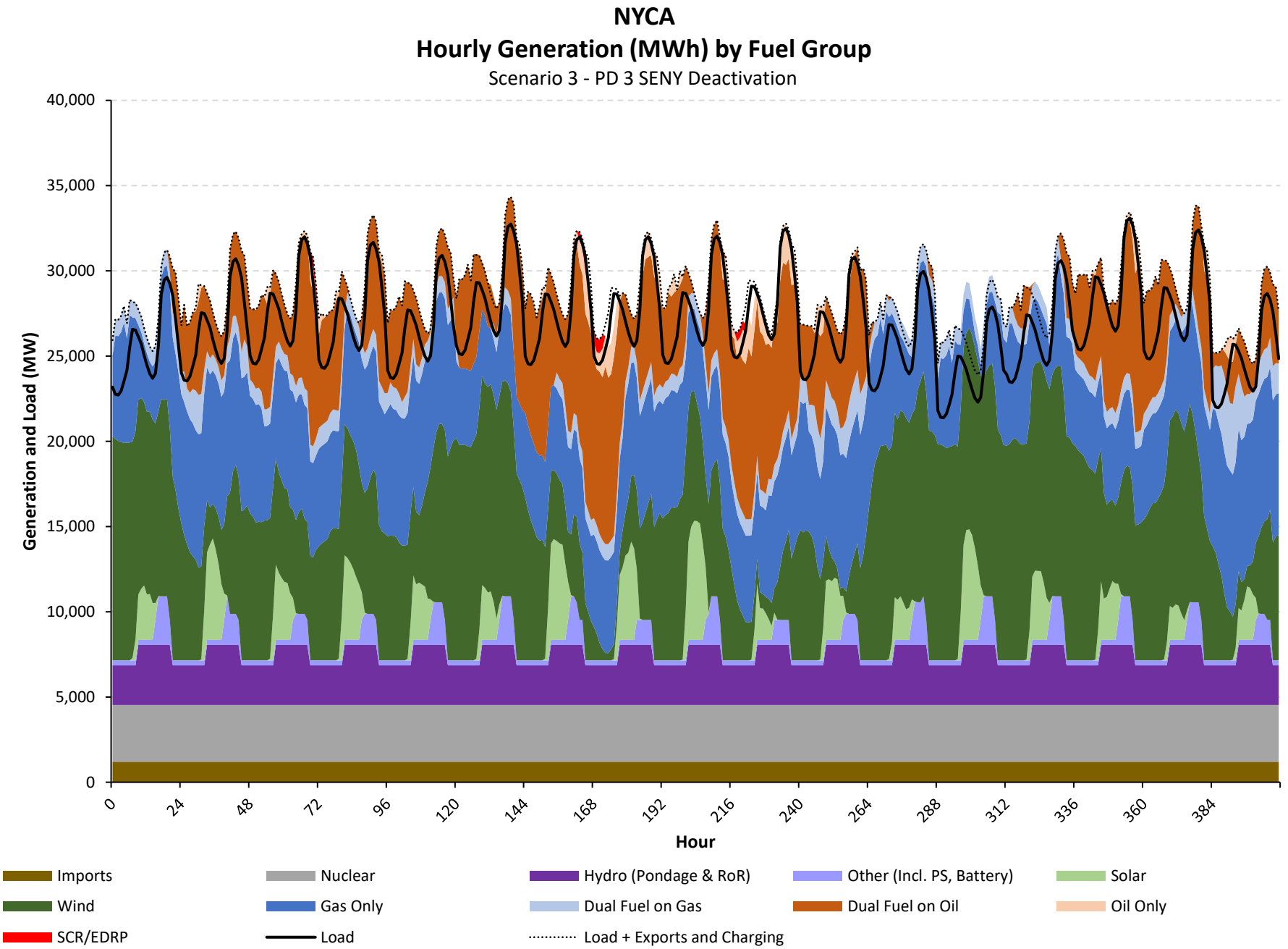


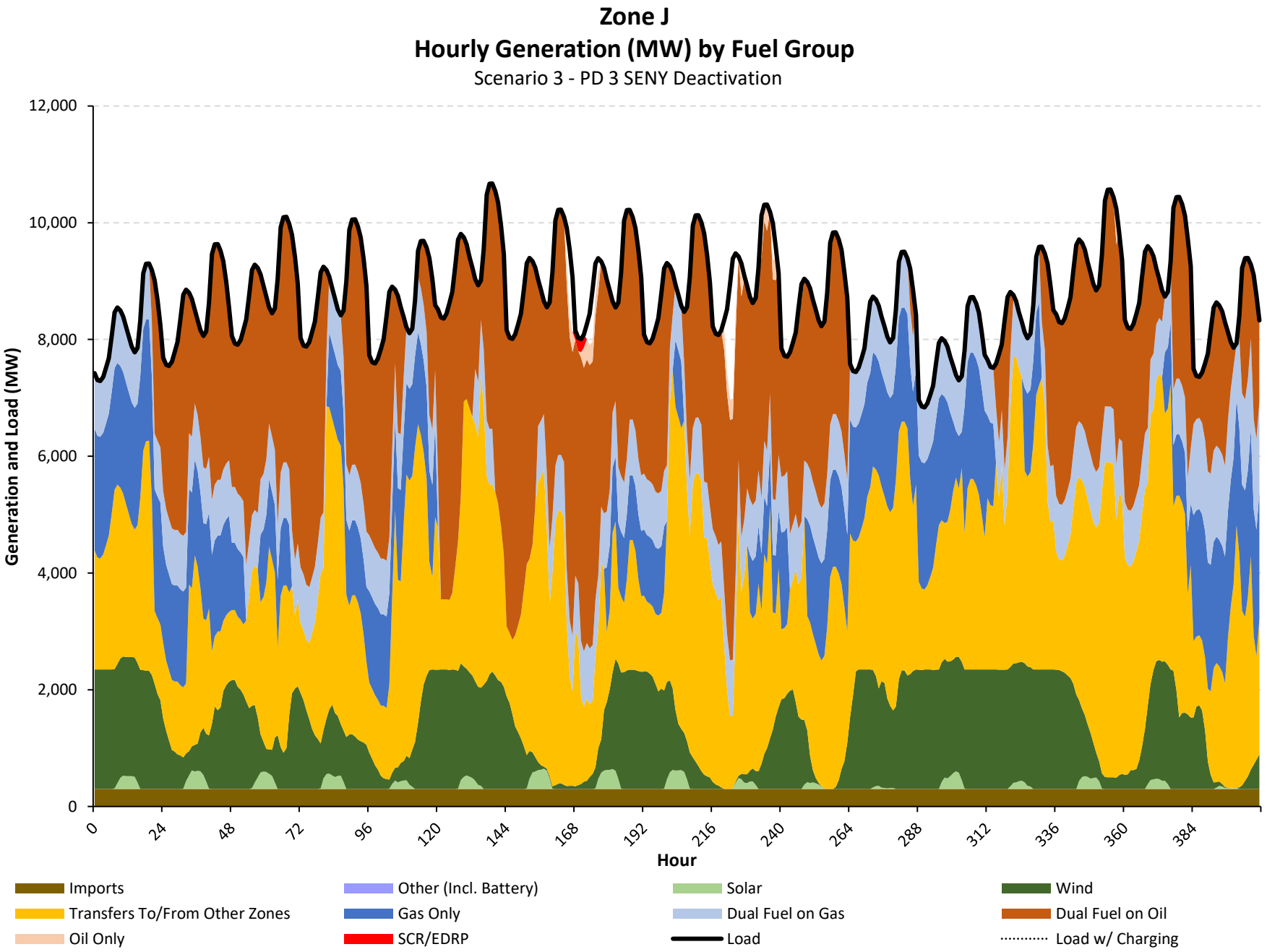
Hours with Loss of Load



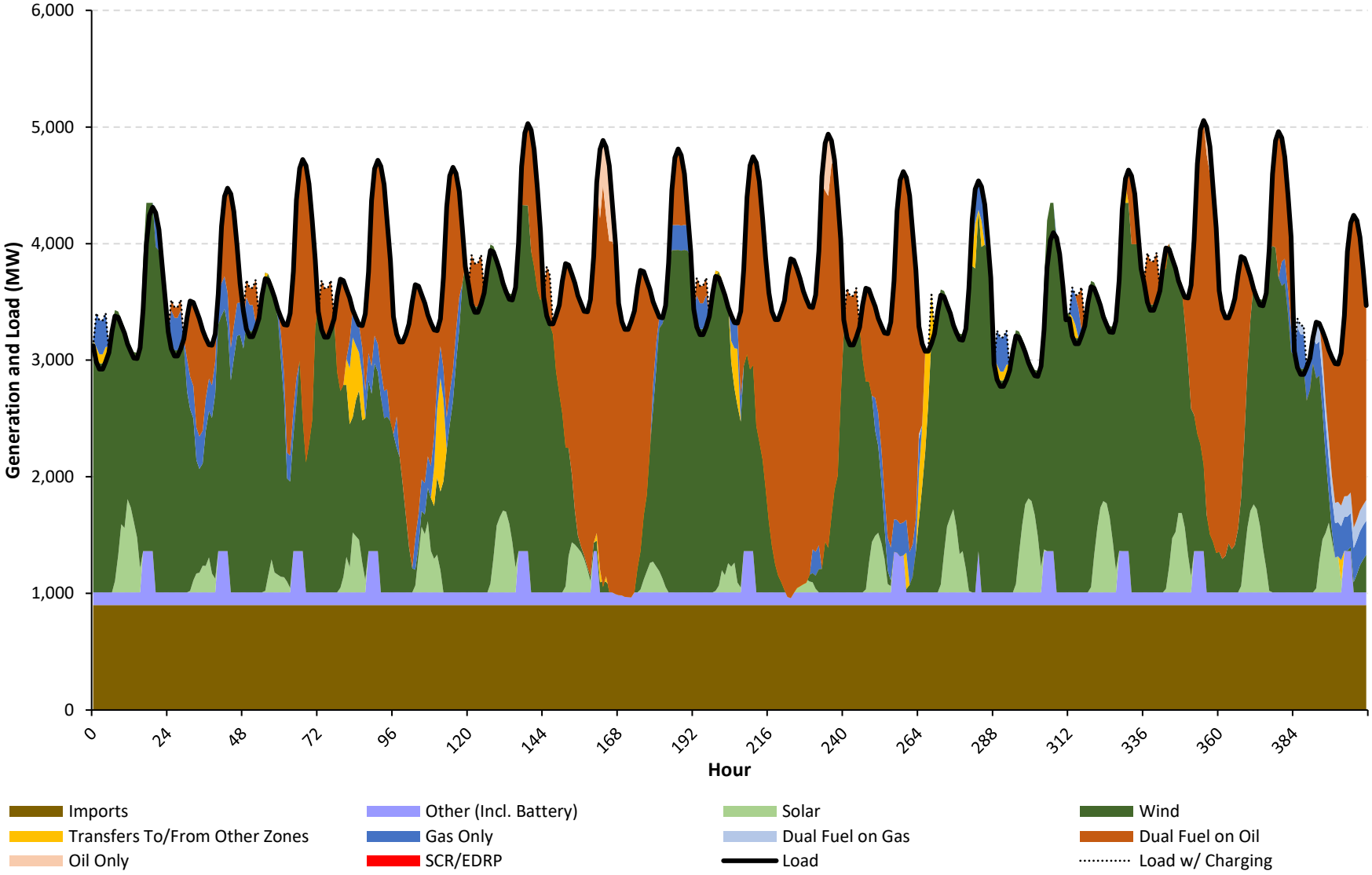
Total MWh of Lost Load




NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 3 - PD 3 SENY Deactivation
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 3 - PD 3 SENY Deactivation
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

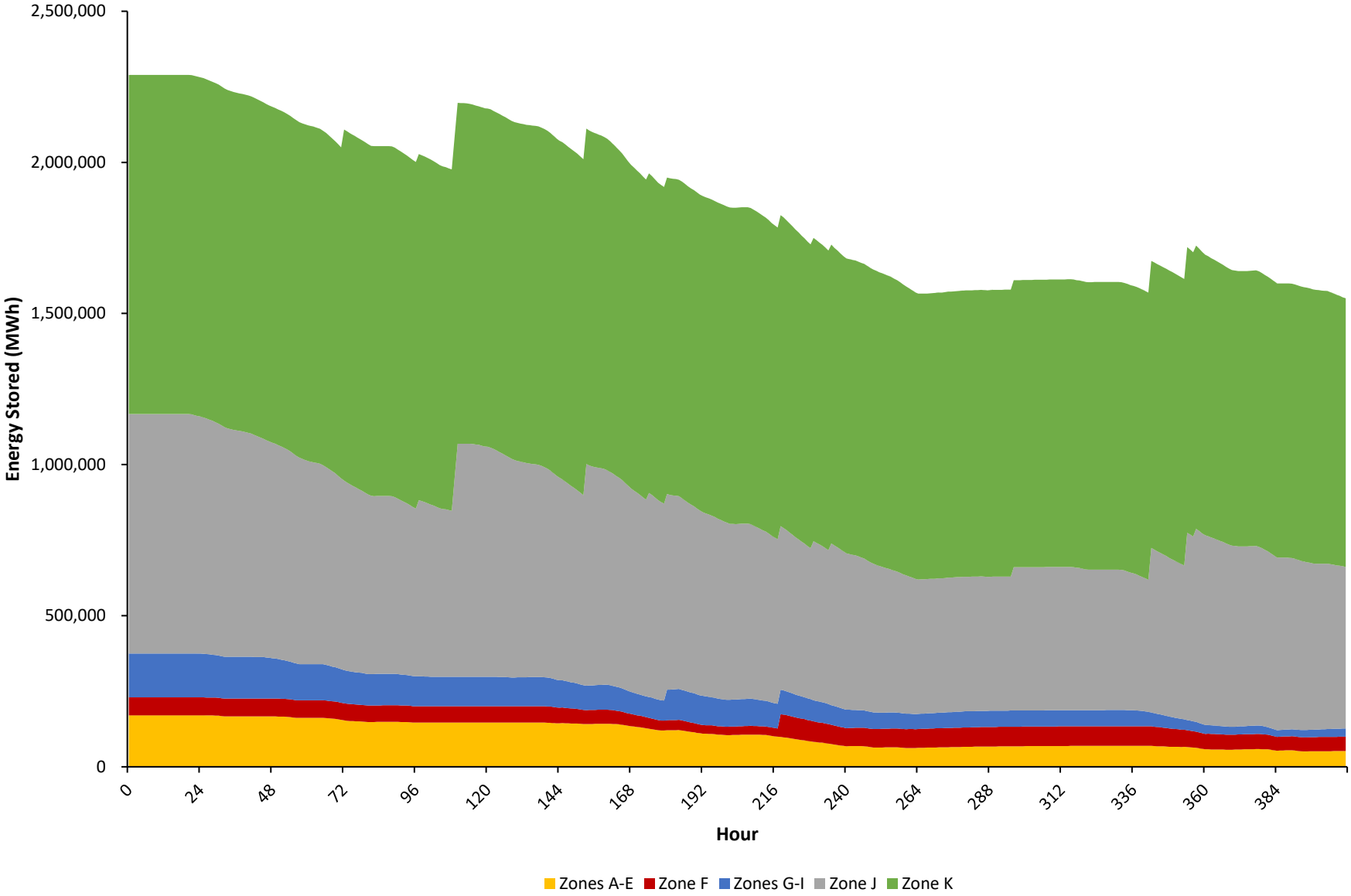
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 3 - PD 3 SENY Deactivation

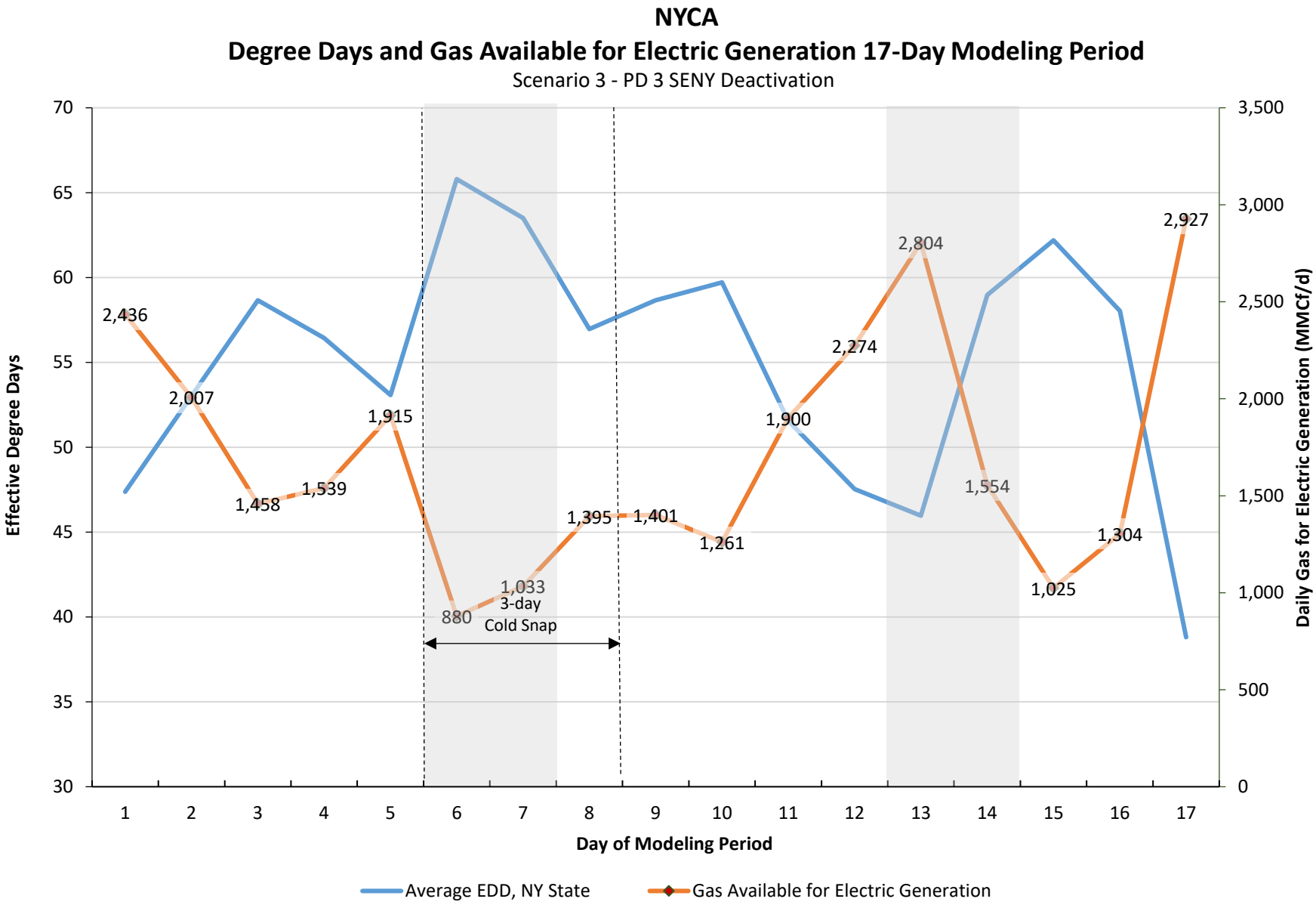


NYCA

Quantity of Stored Fuel for Oil and Dual Fuel Units

Scenario 3 - PD 3 SENY Deactivation



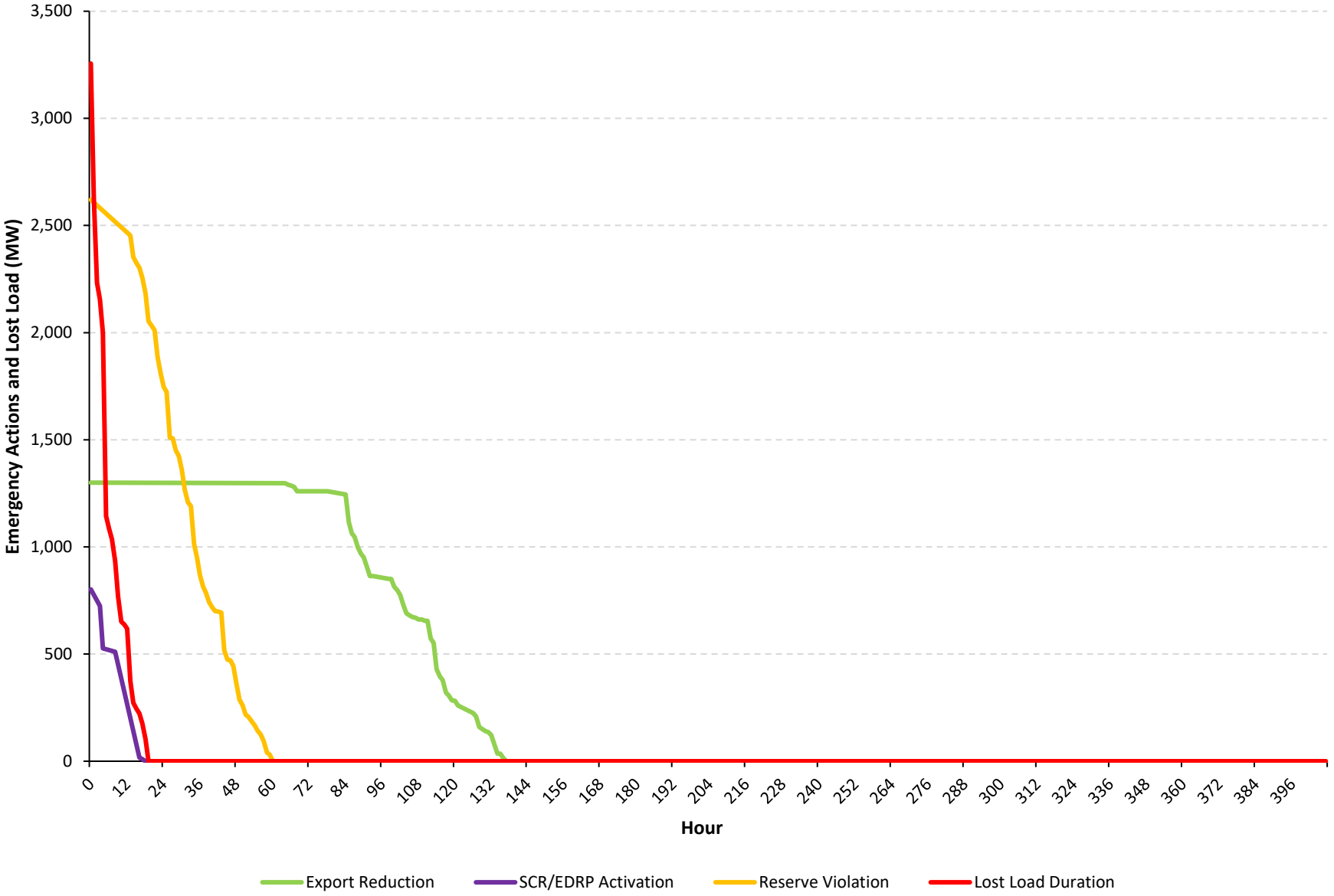


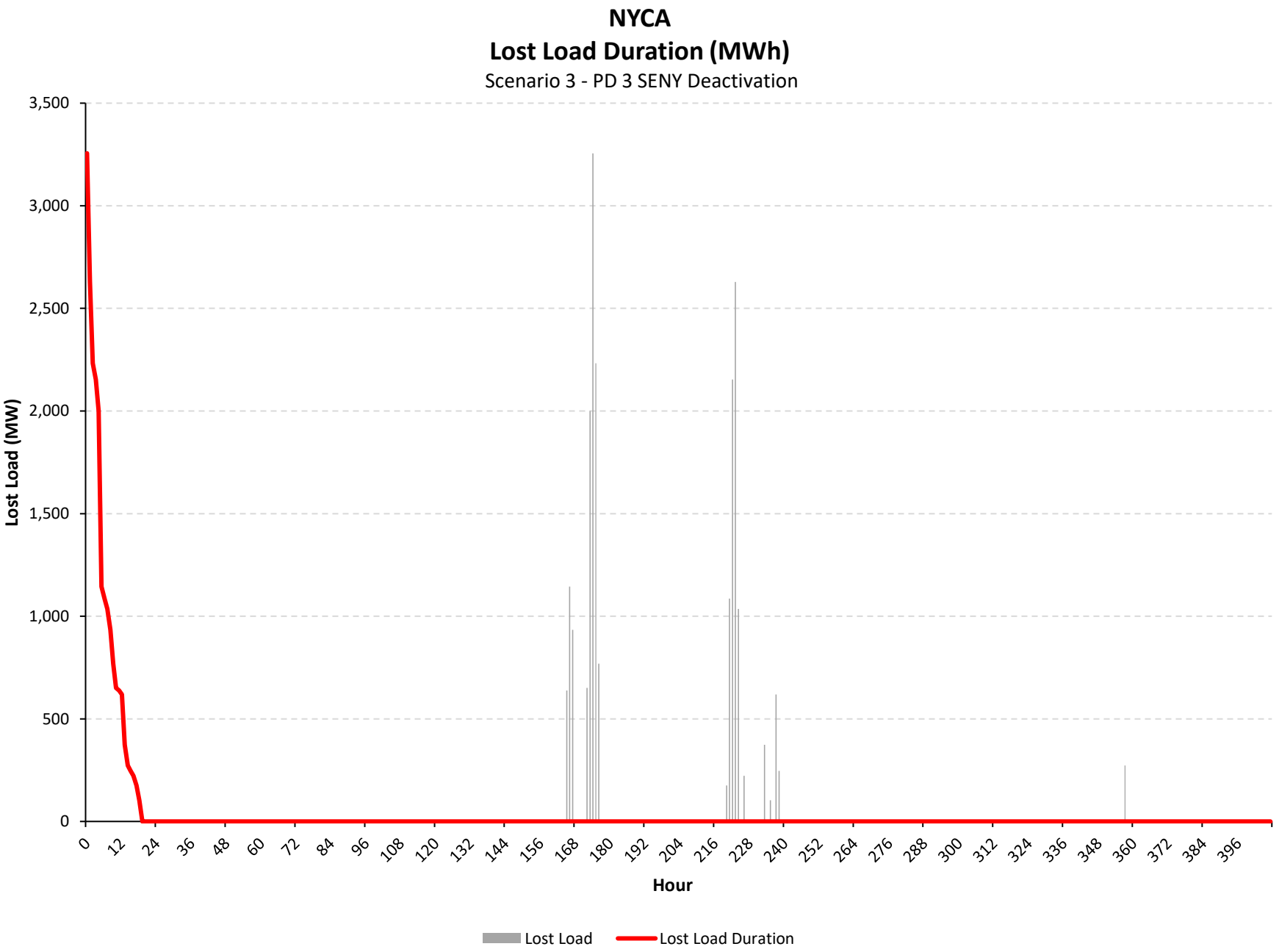
Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.

NYCA

Emergency Actions and Lost Load Duration (MWh)

Scenario 3 - PD 3 SENY Deactivation




NYCA
Lost Load Duration (MWh)
Scenario 3 - PD 3 SENY Deactivation
Lost Load (MW)
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

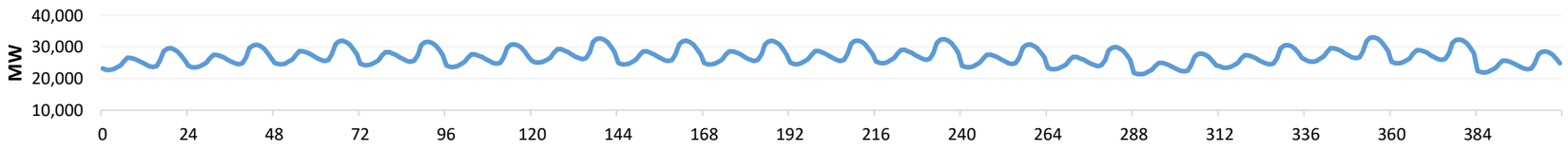
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 3 - PD 4 Nuclear Station Outage (Winter 2030/2031)

Hourly Results Summary

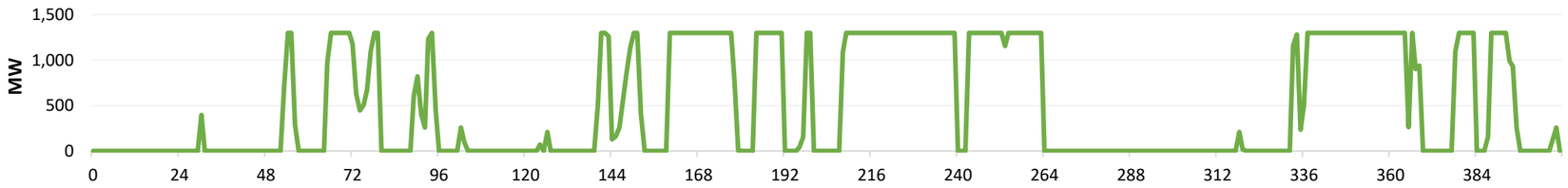
Case Name: Scenario 3 - PD 4 Nuclear Station Outage

Load During Modeling Period



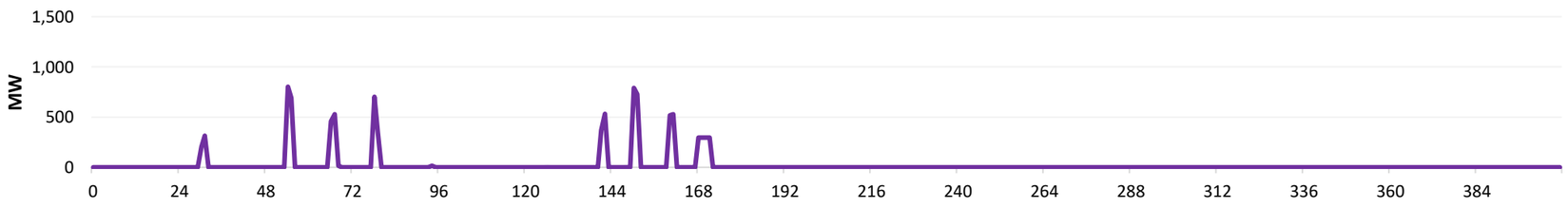
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	On
Plant Outage:	None
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



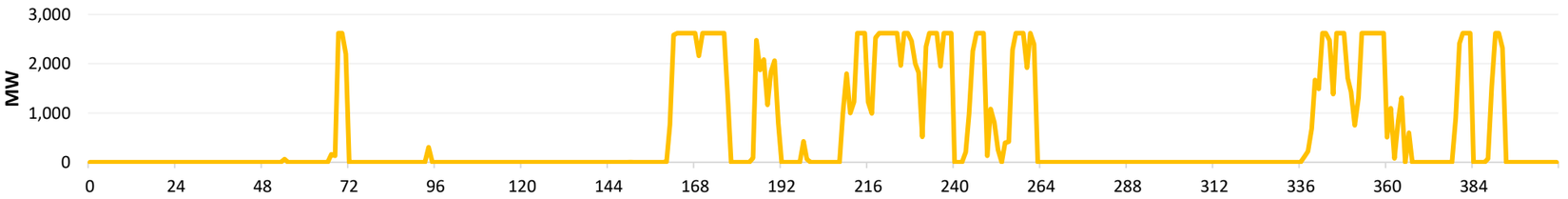
Export Reductions	
Total Hrs.	184
Total MWh	202,045
Avg. MW	495.2

SCR/EDRP Deployed During Modeling Period



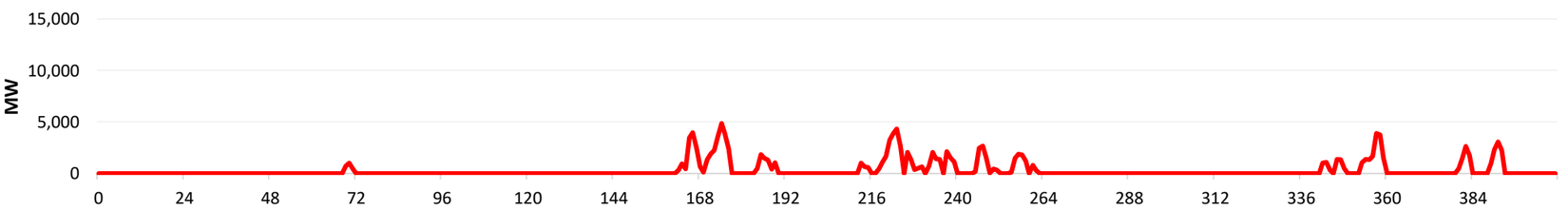
SCR Deployment	
Total Hrs.	20
Total MWh	8,731
Avg. MW	21.4

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	126
Total MWh	230,067
Avg. MW	563.9
First Hour with Viol.	54

Loss of Load During Modeling Period



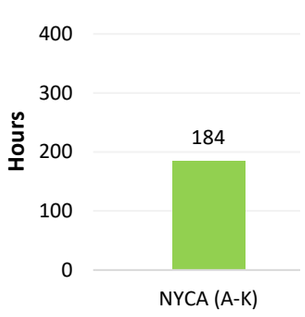
Loss of Load	
Total Hrs.	82
Total MWh	127,255
Avg. MW	311.9
First Hour with Losses	69

Full Period Results Summary

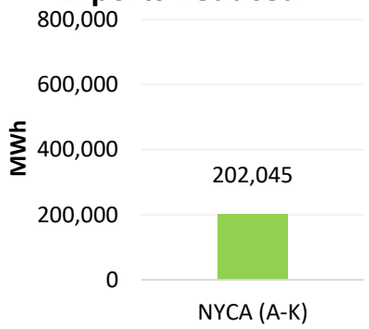
Case Name: Scenario 3 - PD 4 Nuclear Station Outage

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	On
Plant Outage:	None
Import Scenario:	All

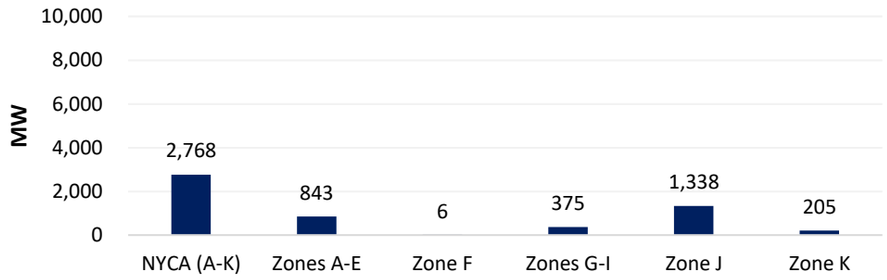
Hours Exports Reduced



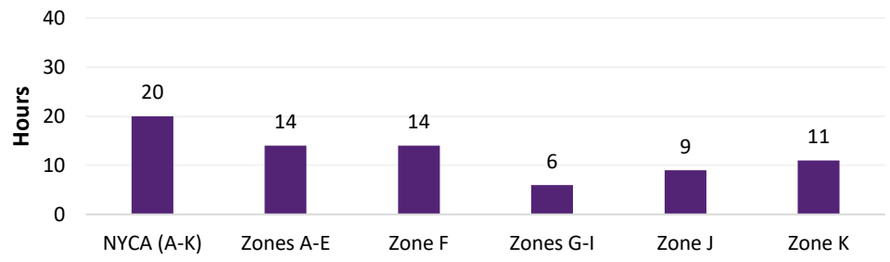
Total MWh of Exports Reduced



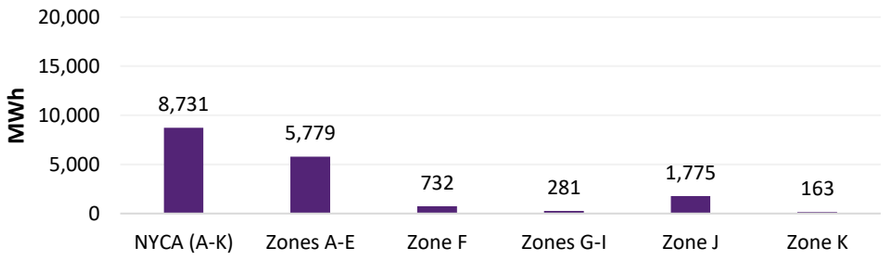
Average Capacity Not Available Due to Exhausted Fuel Inventory



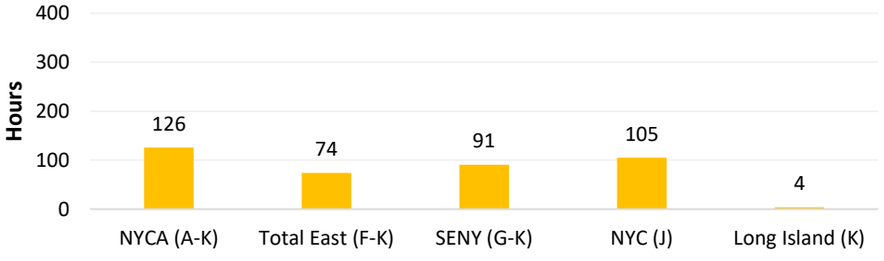
Hours SCR/EDRP Deployed



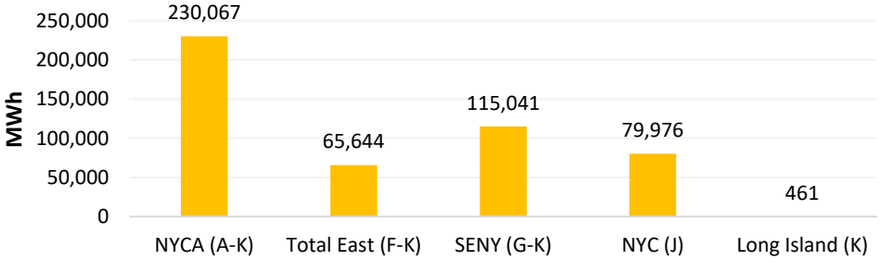
Total MWh SCR/EDRP Deployed



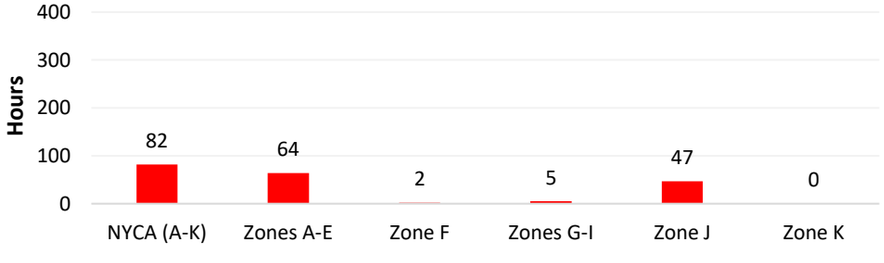
Hours with Reserve Violations



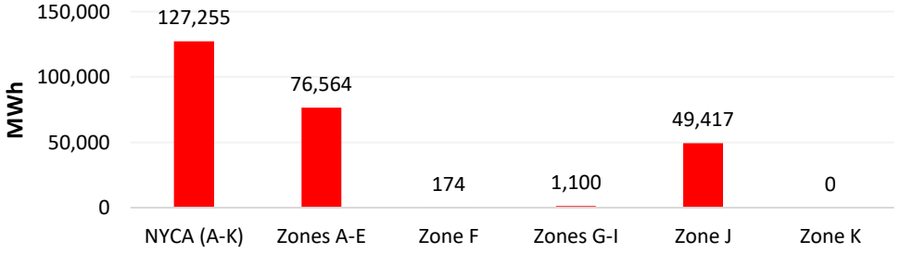
Total MWh of Reserve Violations

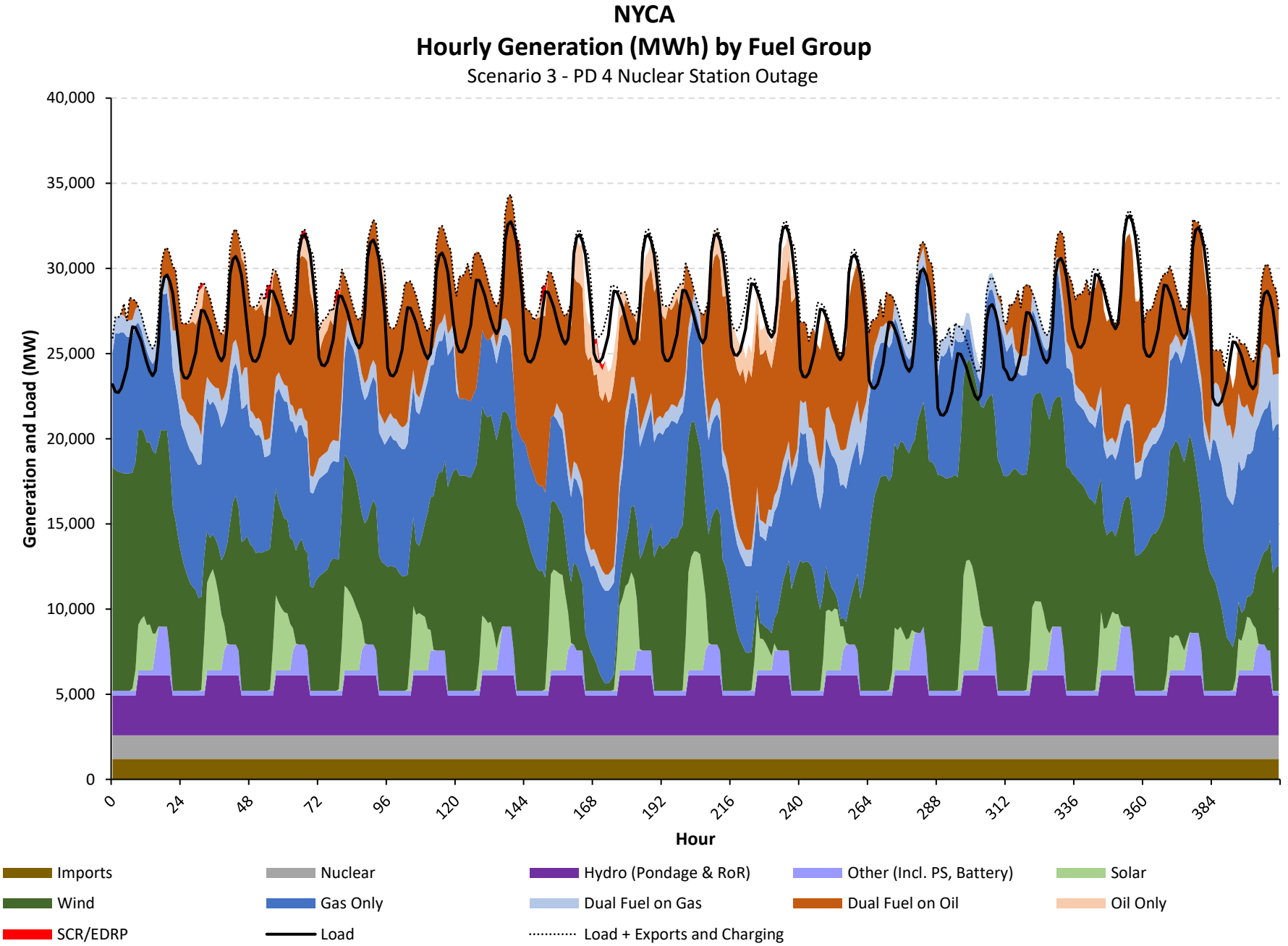


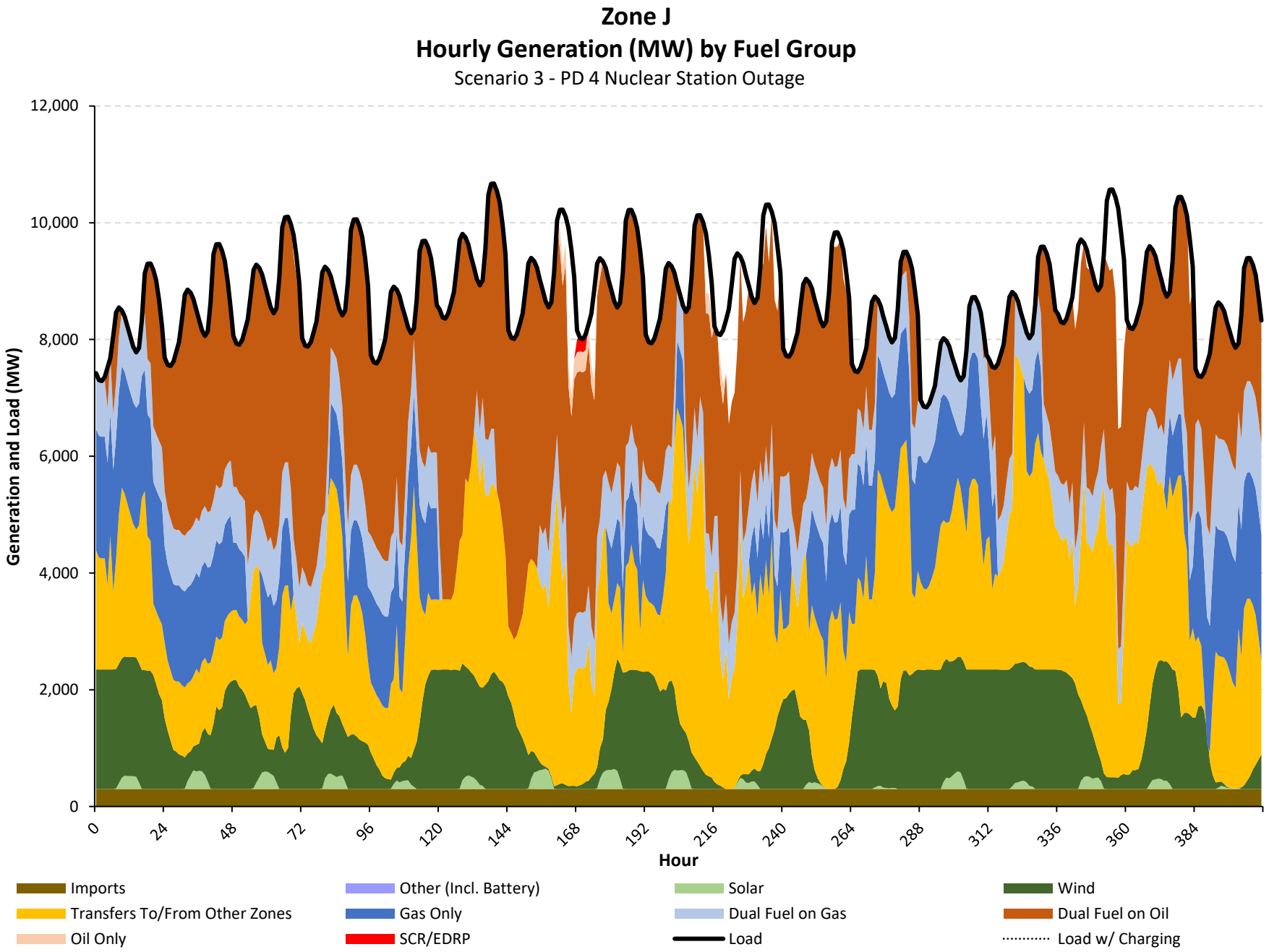
Hours with Loss of Load



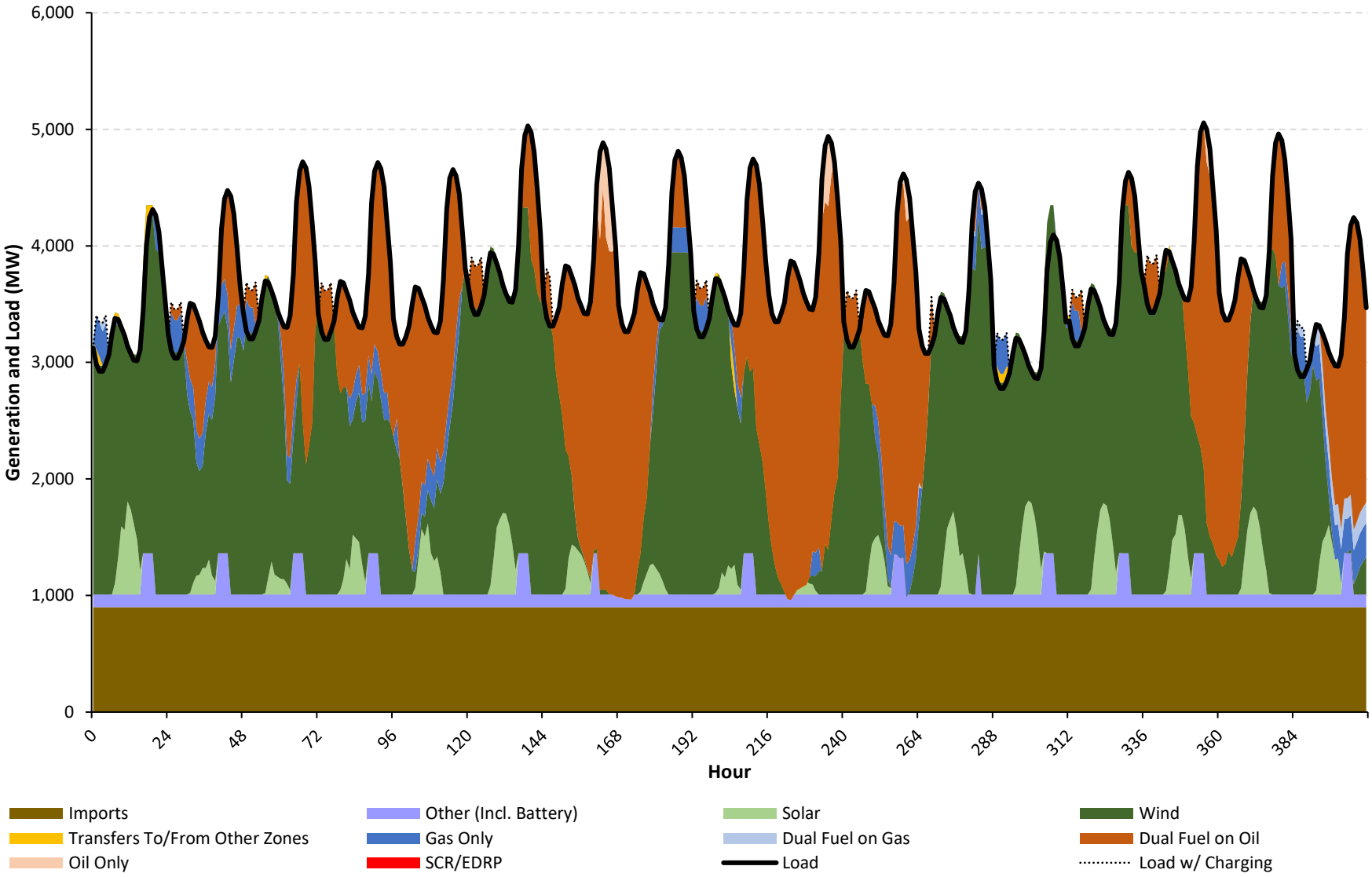
Total MWh of Lost Load



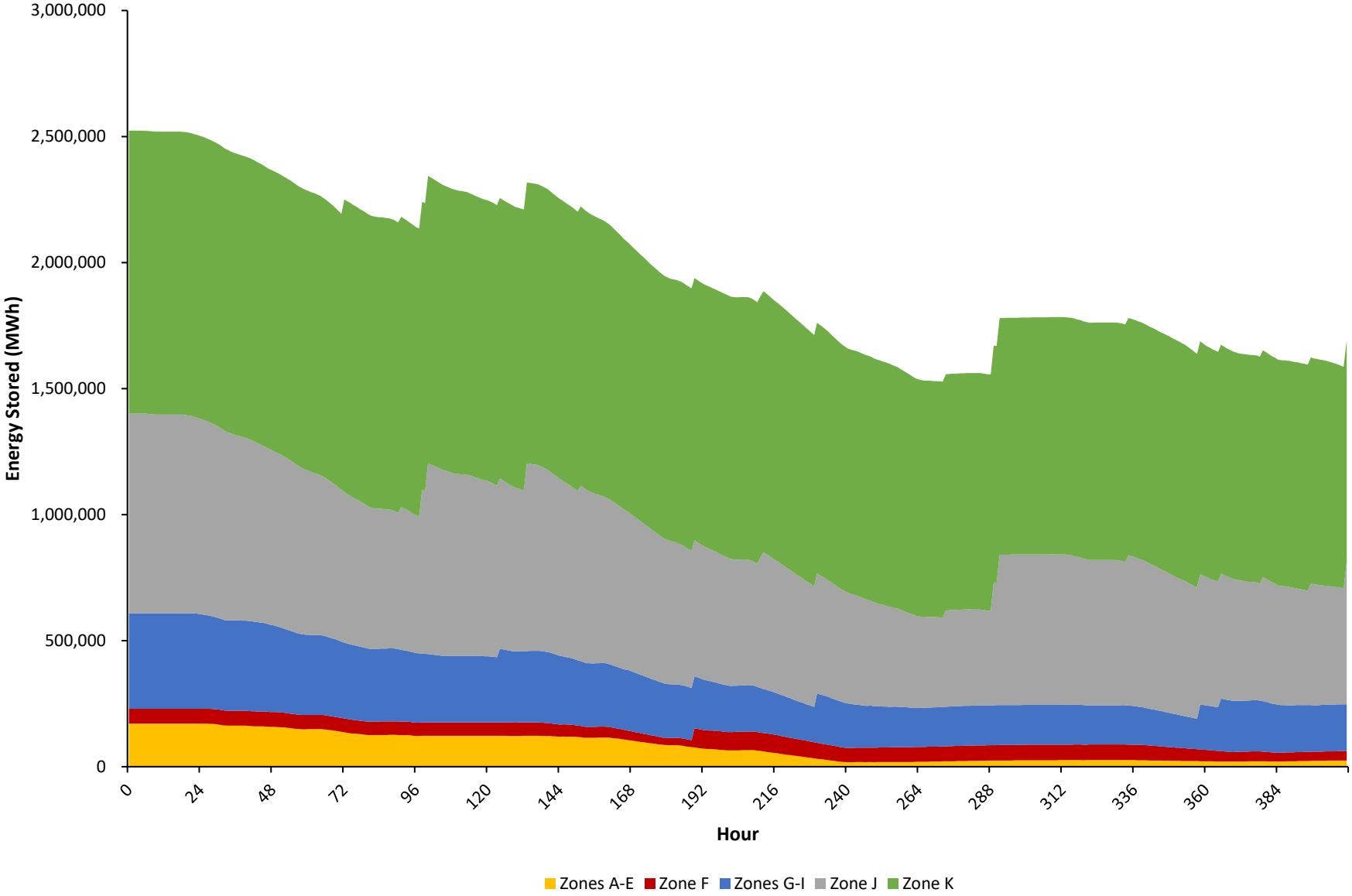

NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 3 - PD 4 Nuclear Station Outage
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 3 - PD 4 Nuclear Station Outage
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

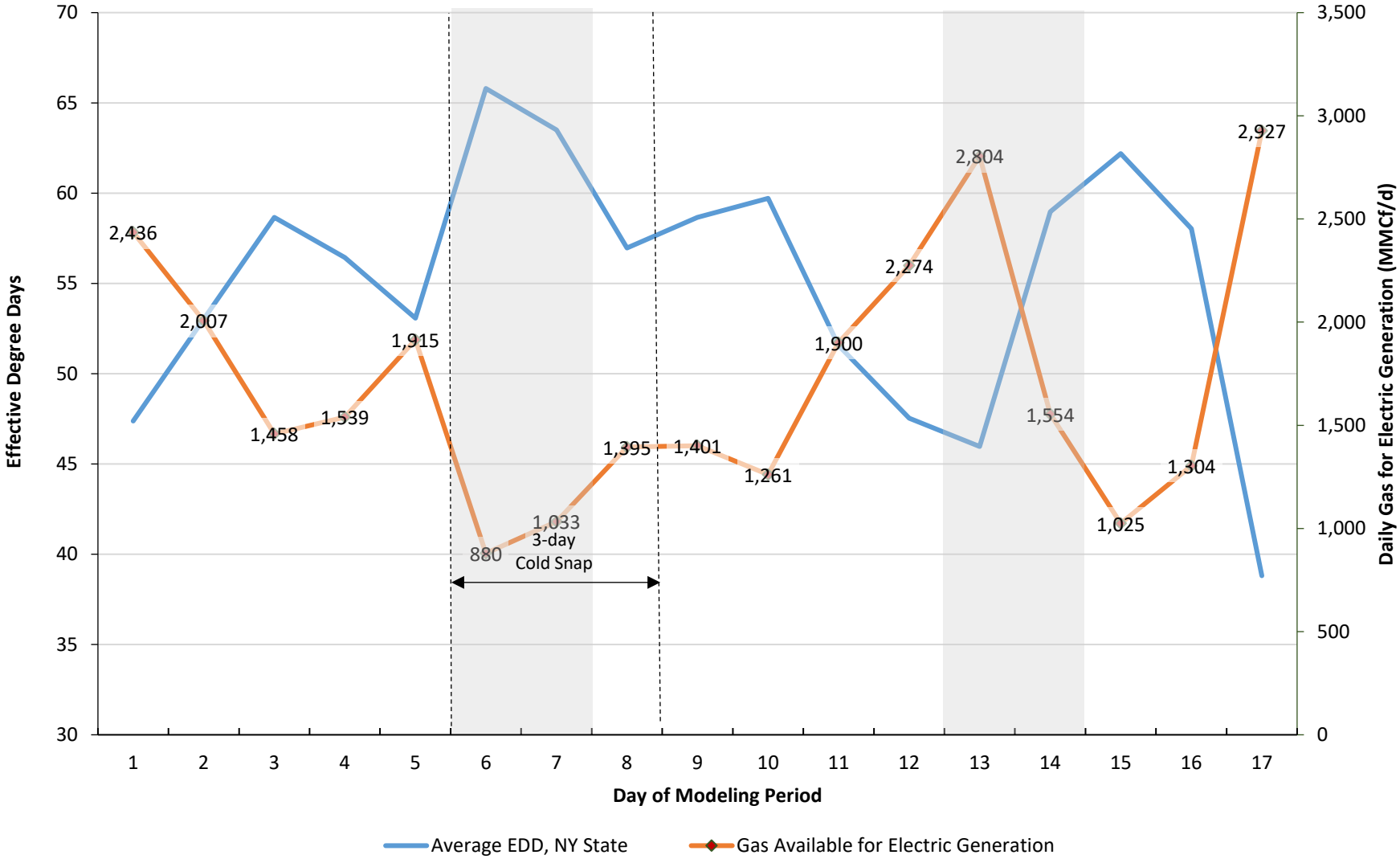
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 3 - PD 4 Nuclear Station Outage



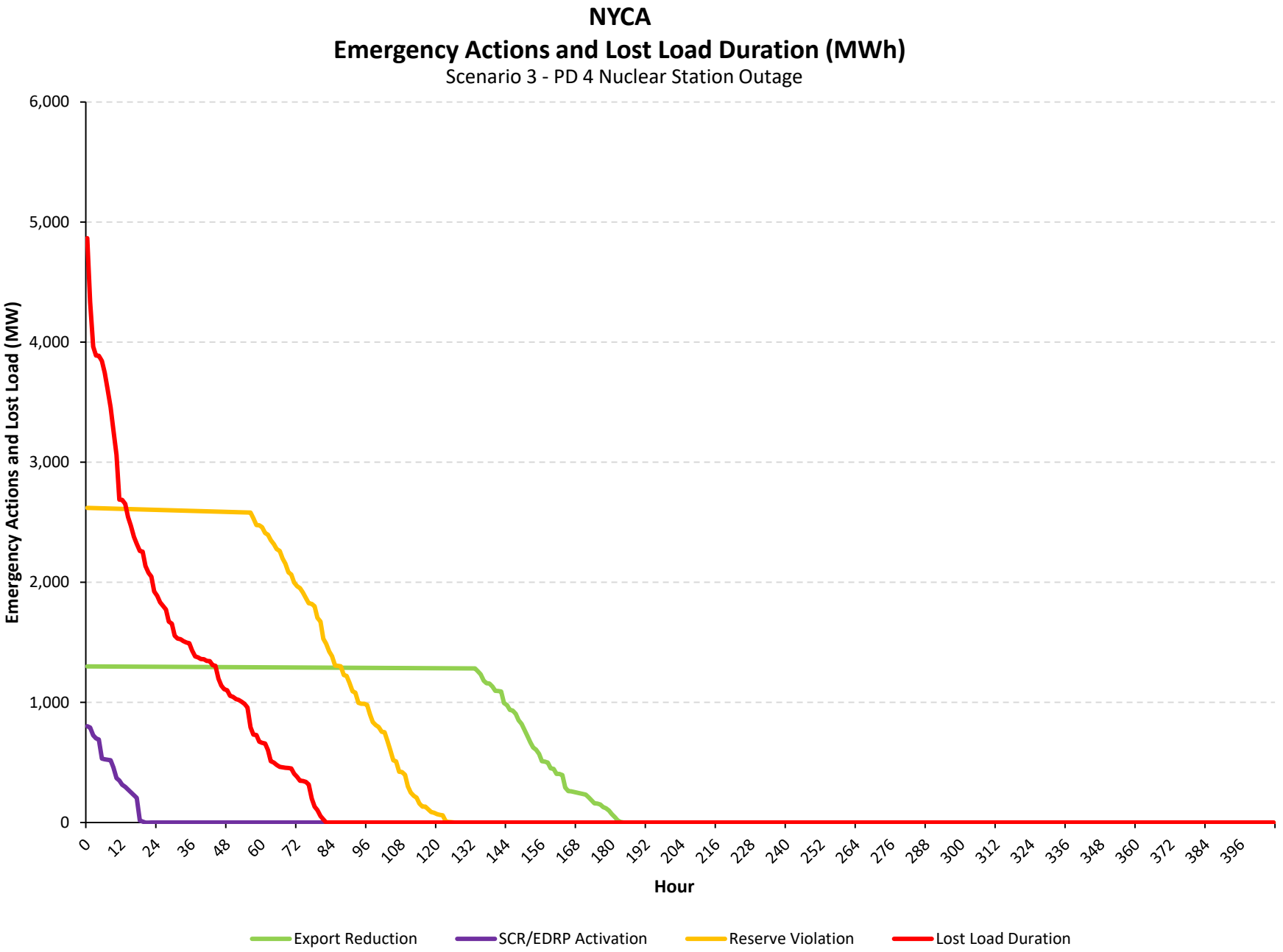
NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 3 - PD 4 Nuclear Station Outage

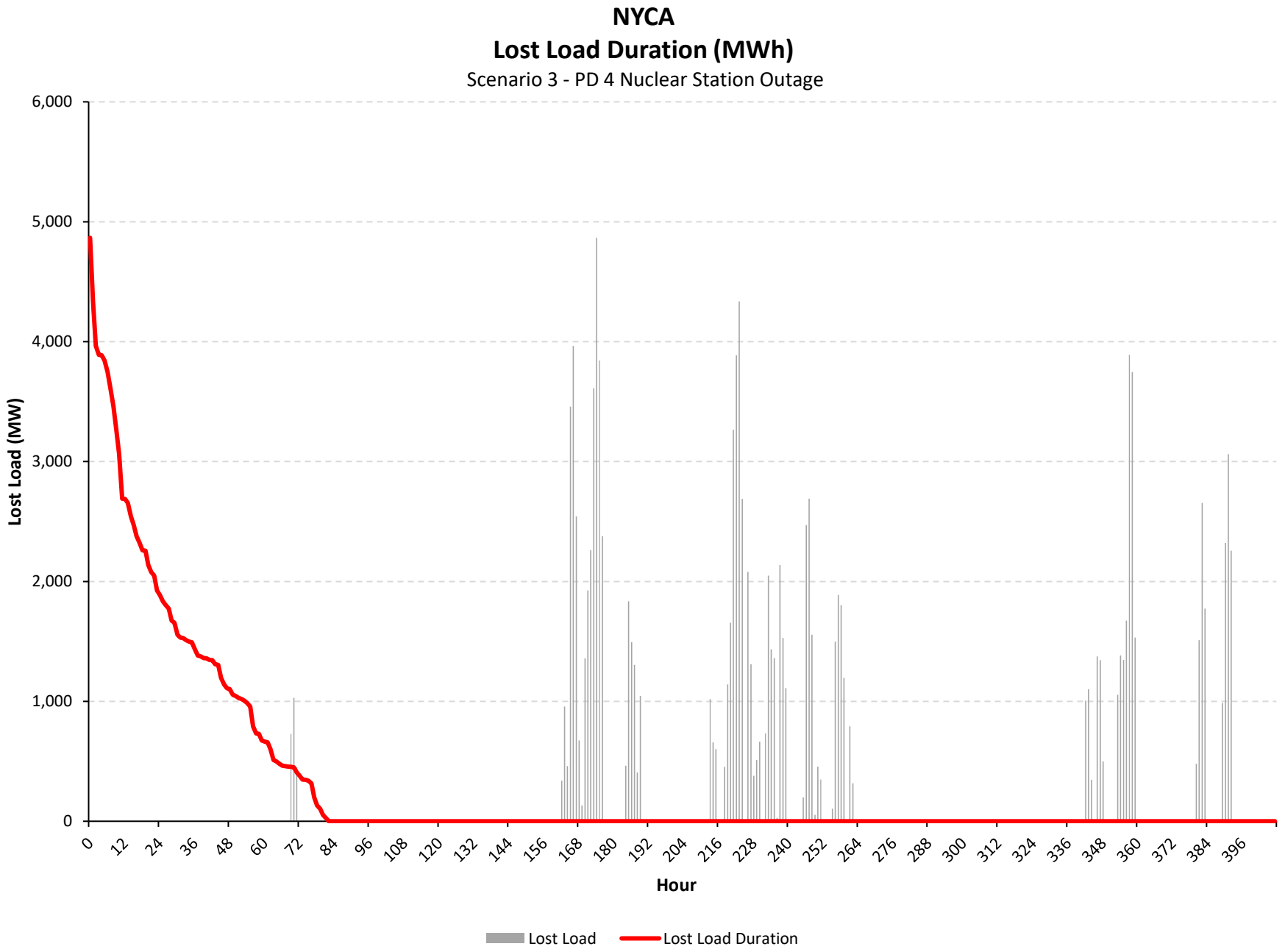


NYCA
Degree Days and Gas Available for Electric Generation 17-Day Modeling Period
Scenario 3 - PD 4 Nuclear Station Outage



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 3 - PD 4 Nuclear Station Outage
Emergency Actions and Lost Load (MW)
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 3 - PD 4 Nuclear Station Outage
Lost Load (MW)
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

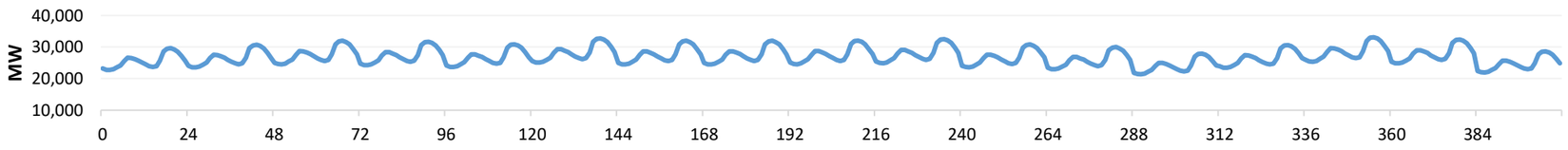
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 3 - PD 5 No Truck Refill (Winter 2030/2031)

Hourly Results Summary

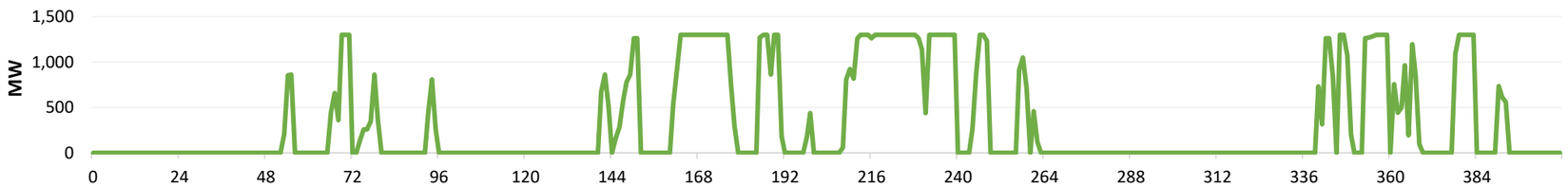
Case Name: Scenario 3 - PD 5 No Truck Refill

Load During Modeling Period



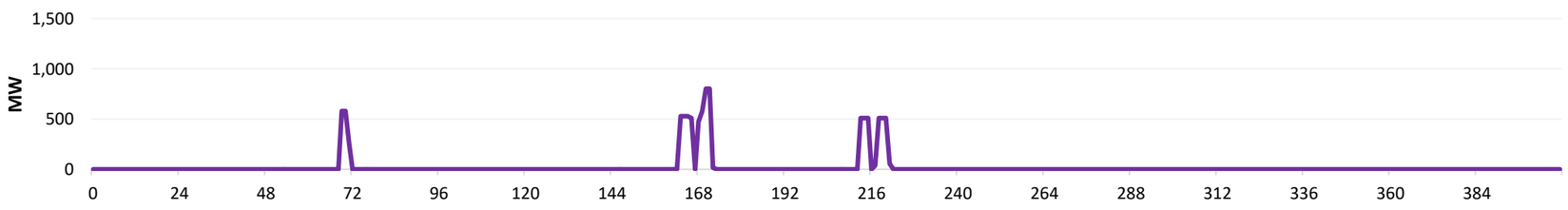
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	No Trucks
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



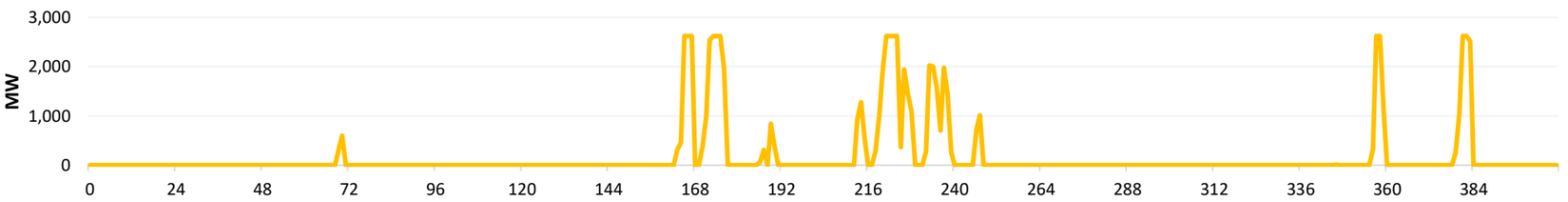
Export Reductions	
Total Hrs.	130
Total MWh	124,939
Avg. MW	306.2

SCR/EDRP Deployed During Modeling Period



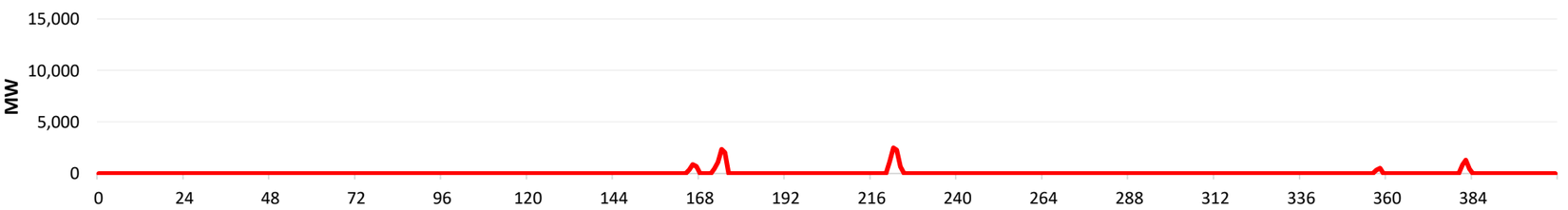
SCR Deployment	
Total Hrs.	20
Total MWh	9,321
Avg. MW	22.8

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	52
Total MWh	73,834
Avg. MW	181.0
First Hour with Viol.	69

Loss of Load During Modeling Period



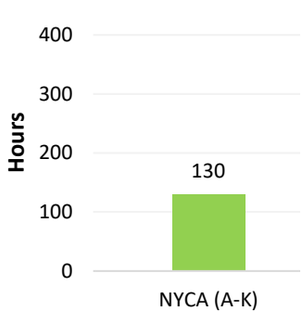
Loss of Load	
Total Hrs.	16
Total MWh	17,955
Avg. MW	44.0
First Hour with Losses	165

Full Period Results Summary

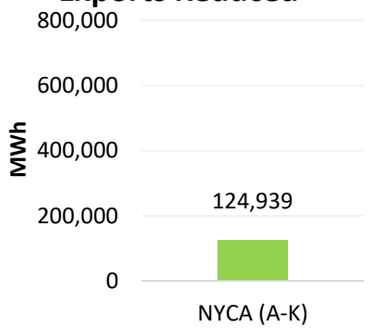
Case Name: Scenario 3 - PD 5 No Truck Refill

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	No Trucks
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

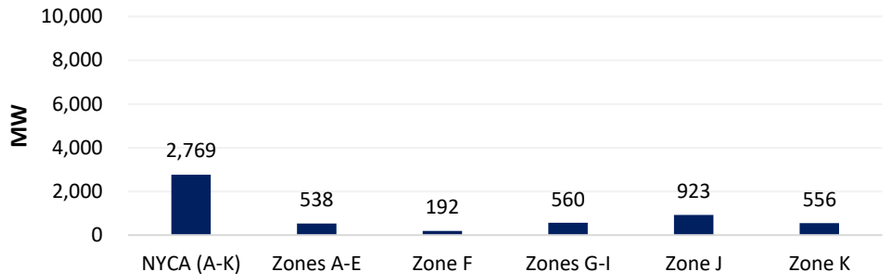
Hours Exports Reduced



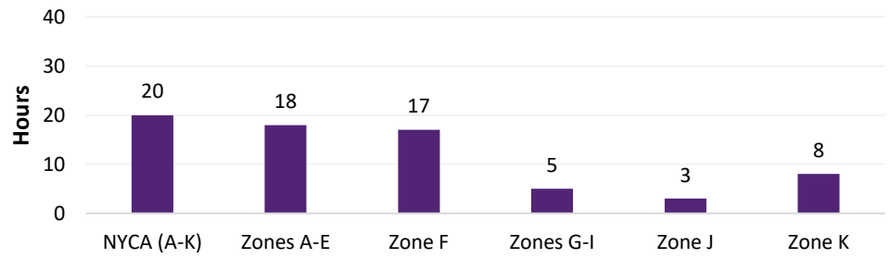
Total MWh of Exports Reduced



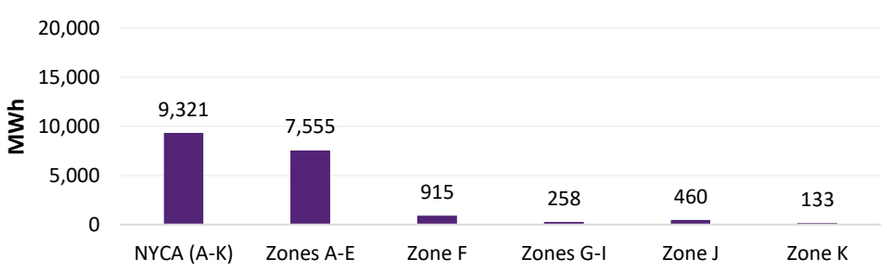
Average Capacity Not Available Due to Exhausted Fuel Inventory



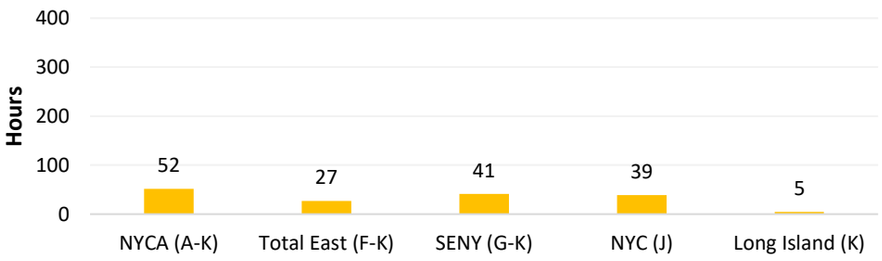
Hours SCR/EDRP Deployed



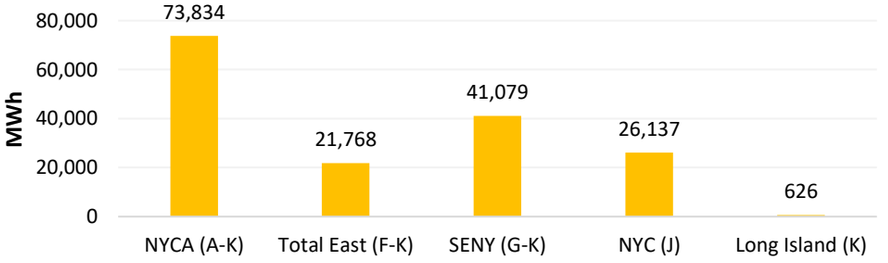
Total MWh SCR/EDRP Deployed



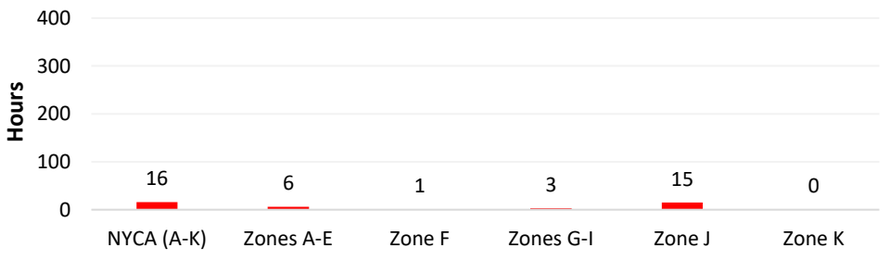
Hours with Reserve Violations



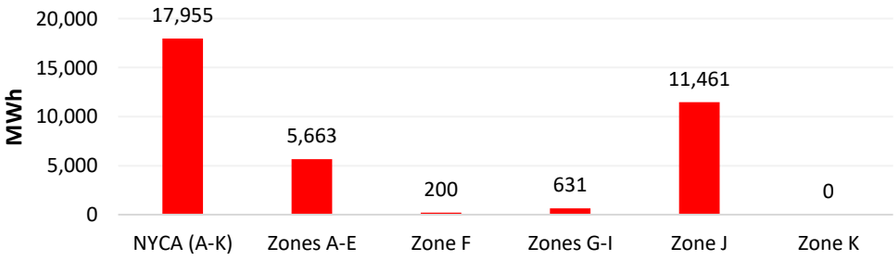
Total MWh of Reserve Violations

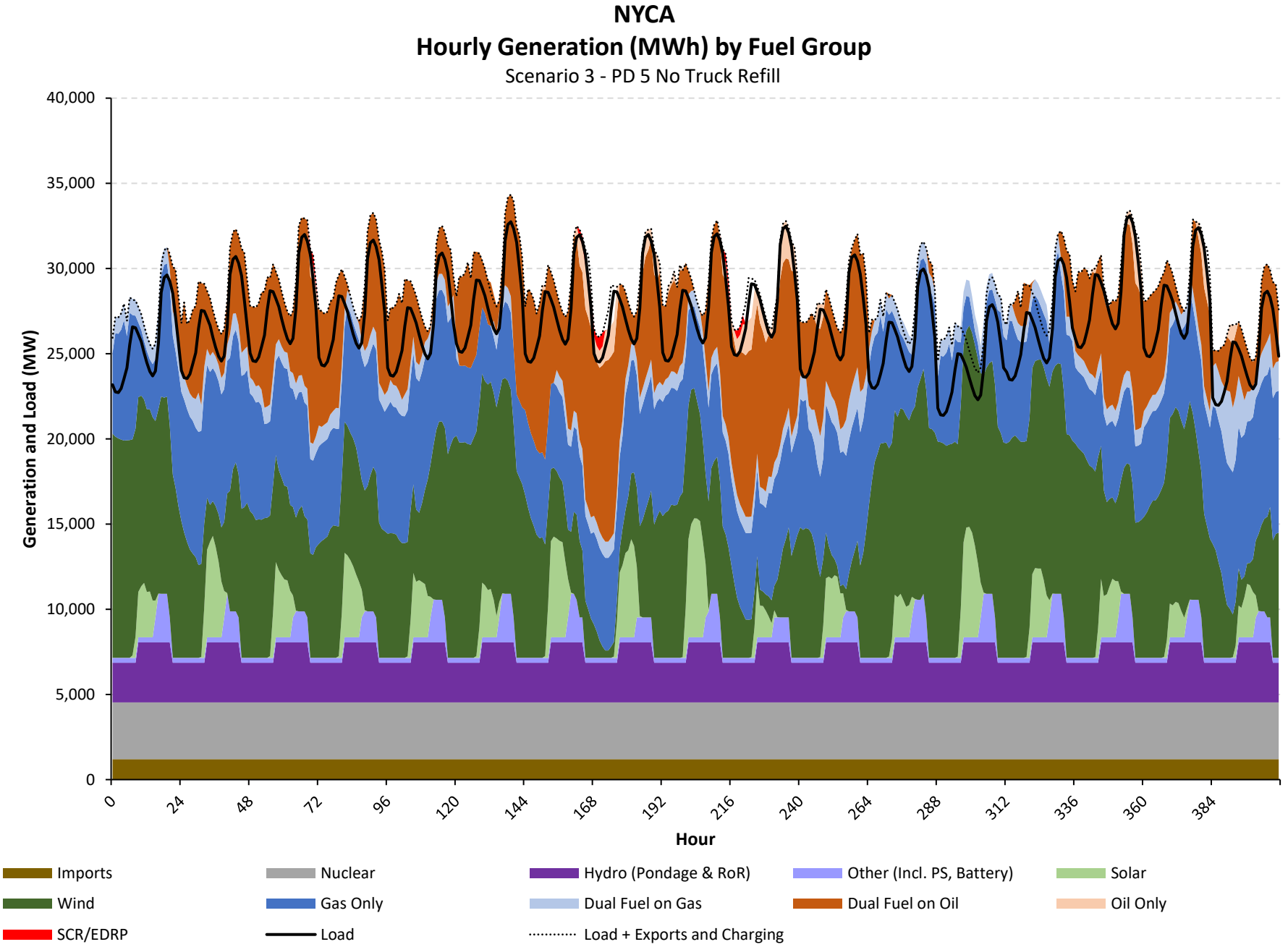


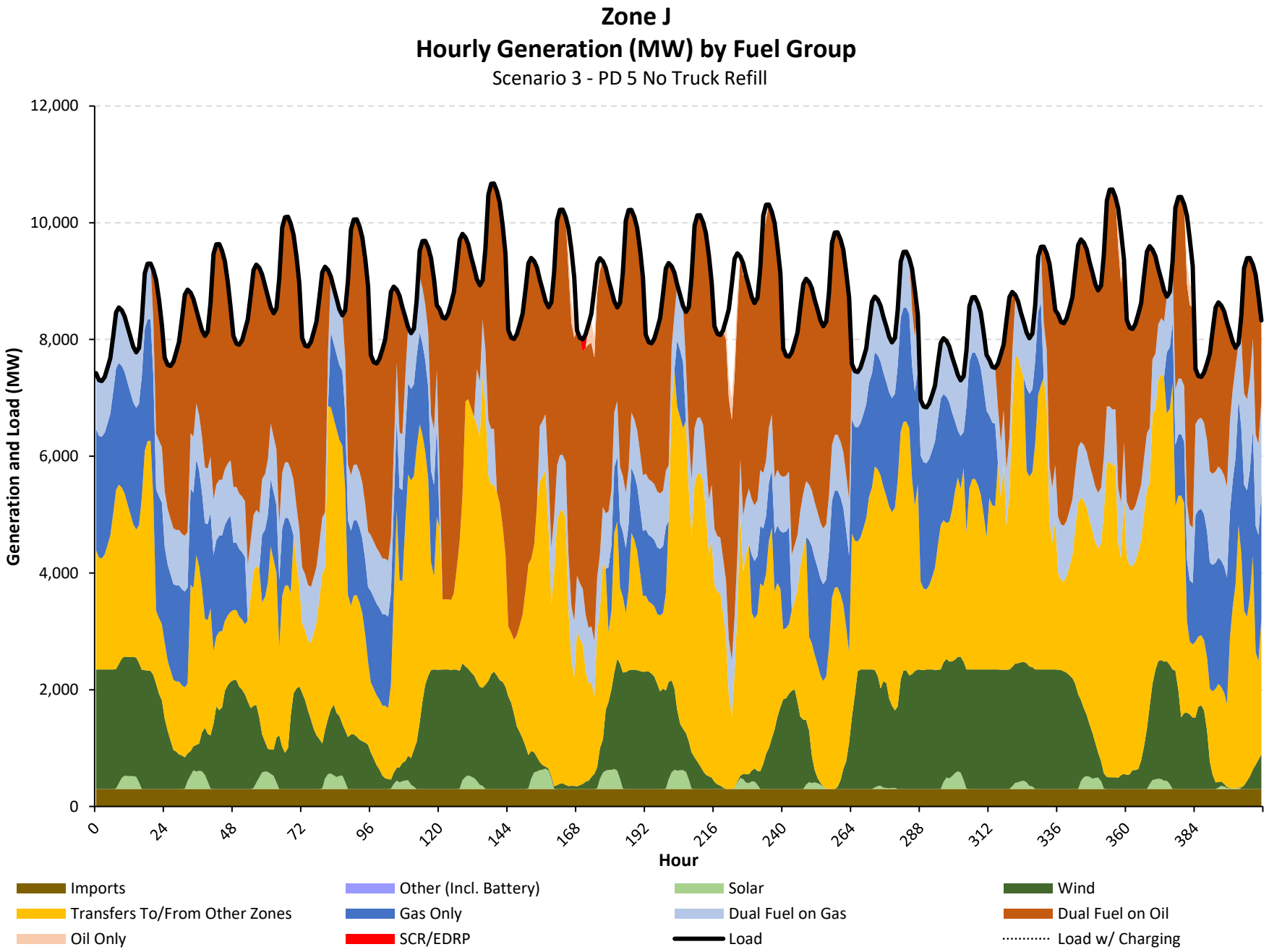
Hours with Loss of Load



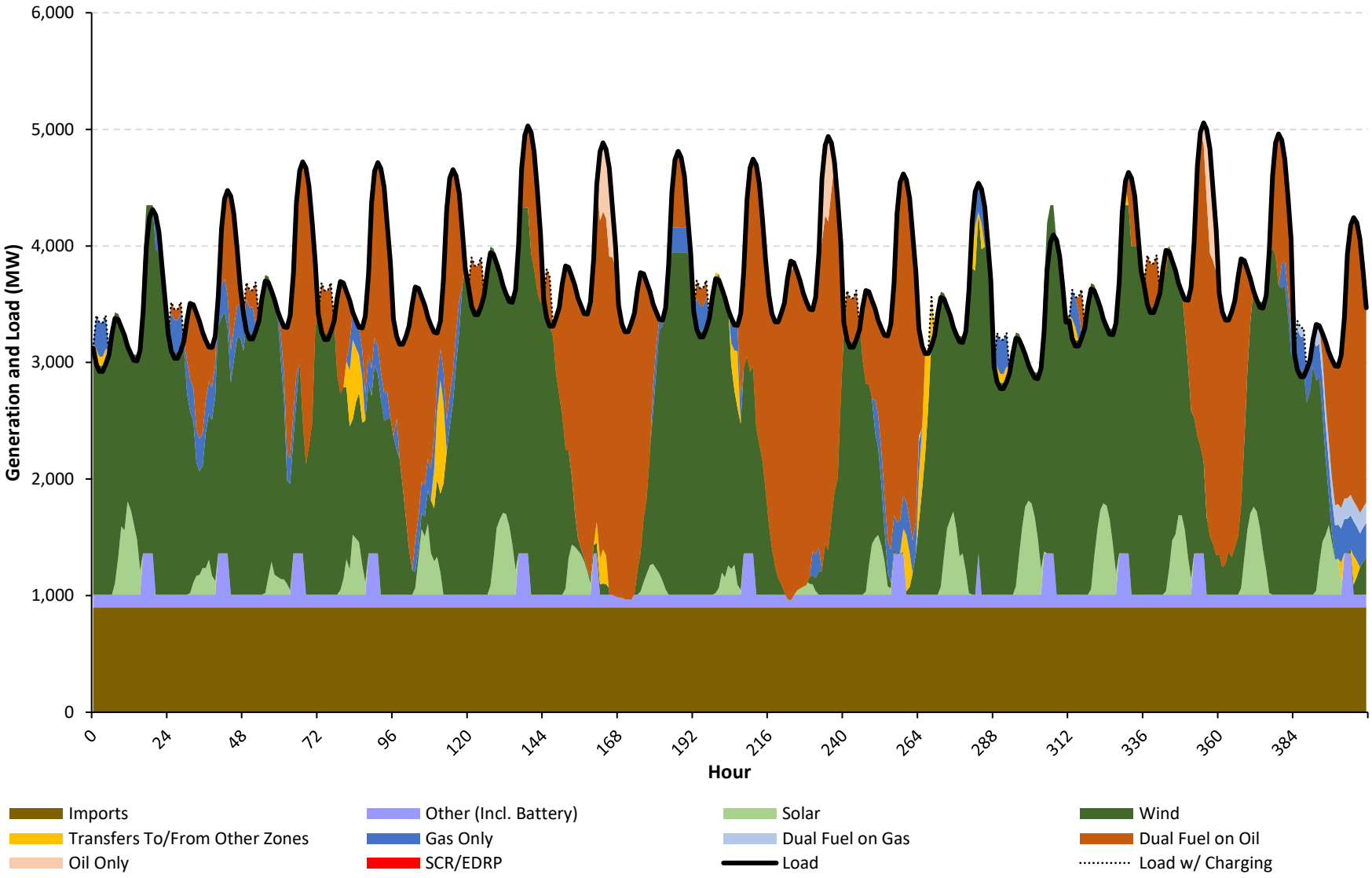
Total MWh of Lost Load




NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 3 - PD 5 No Truck Refill
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 3 - PD 5 No Truck Refill
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

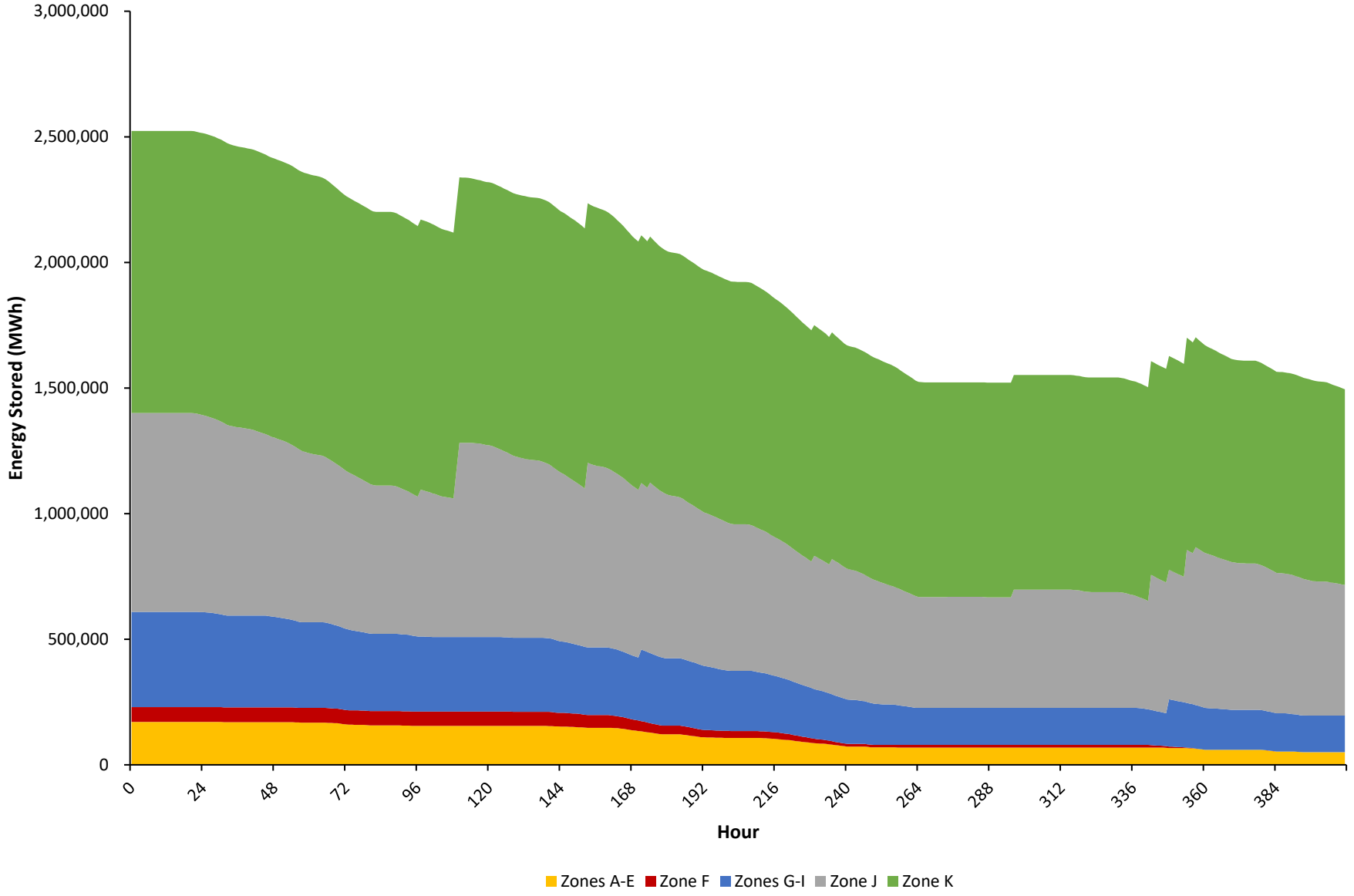
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 3 - PD 5 No Truck Refill

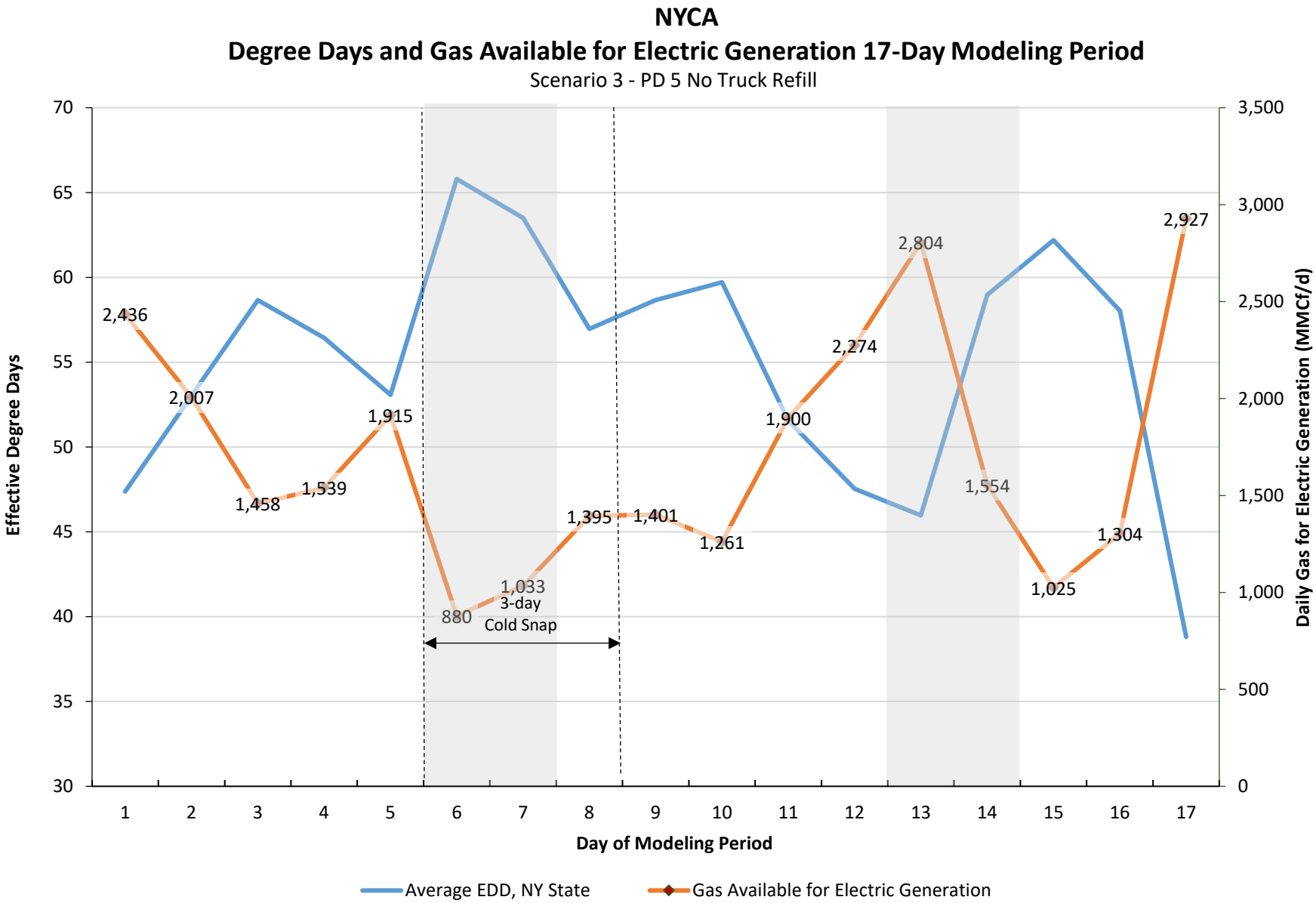


NYCA

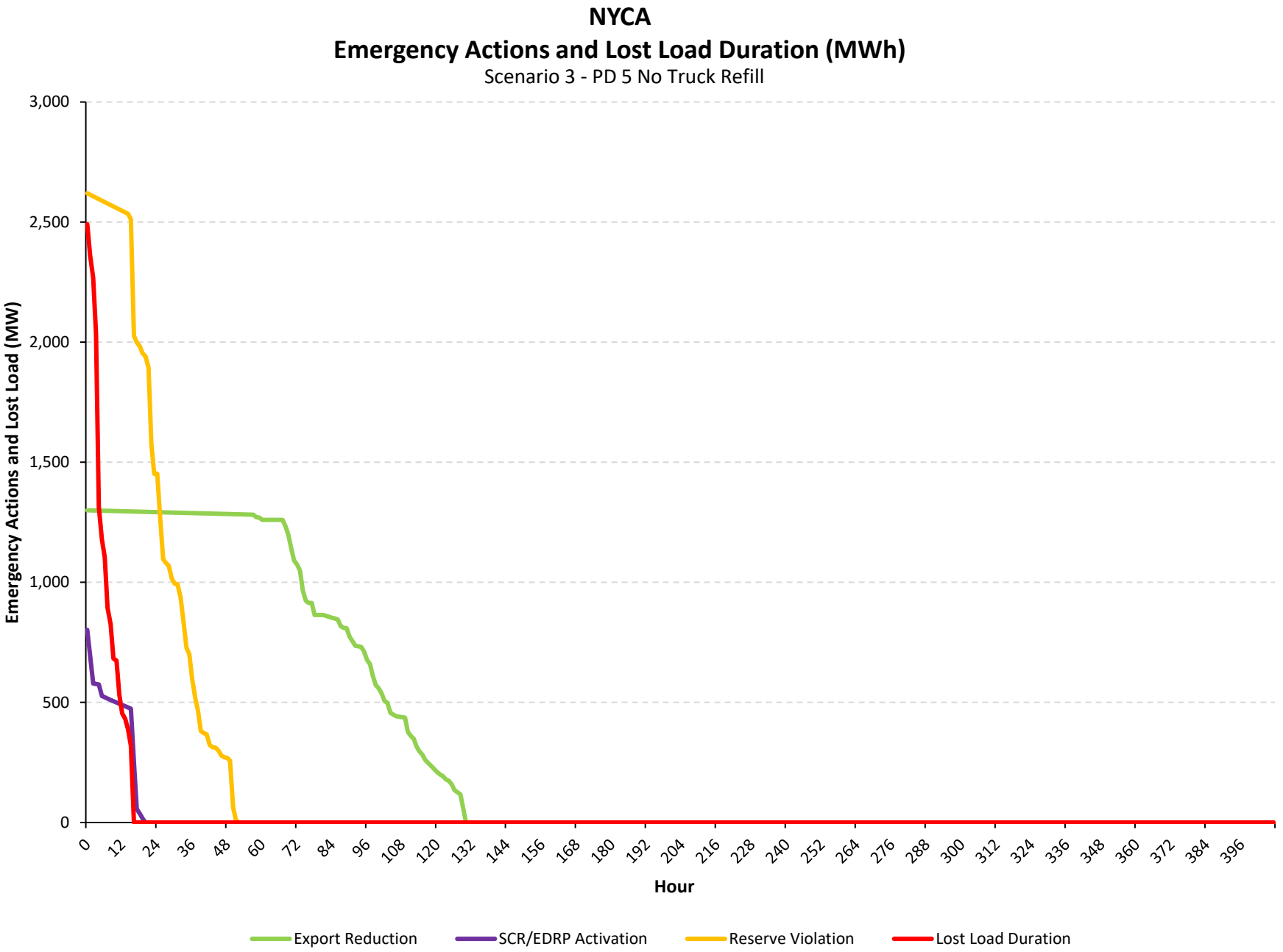
Quantity of Stored Fuel for Oil and Dual Fuel Units

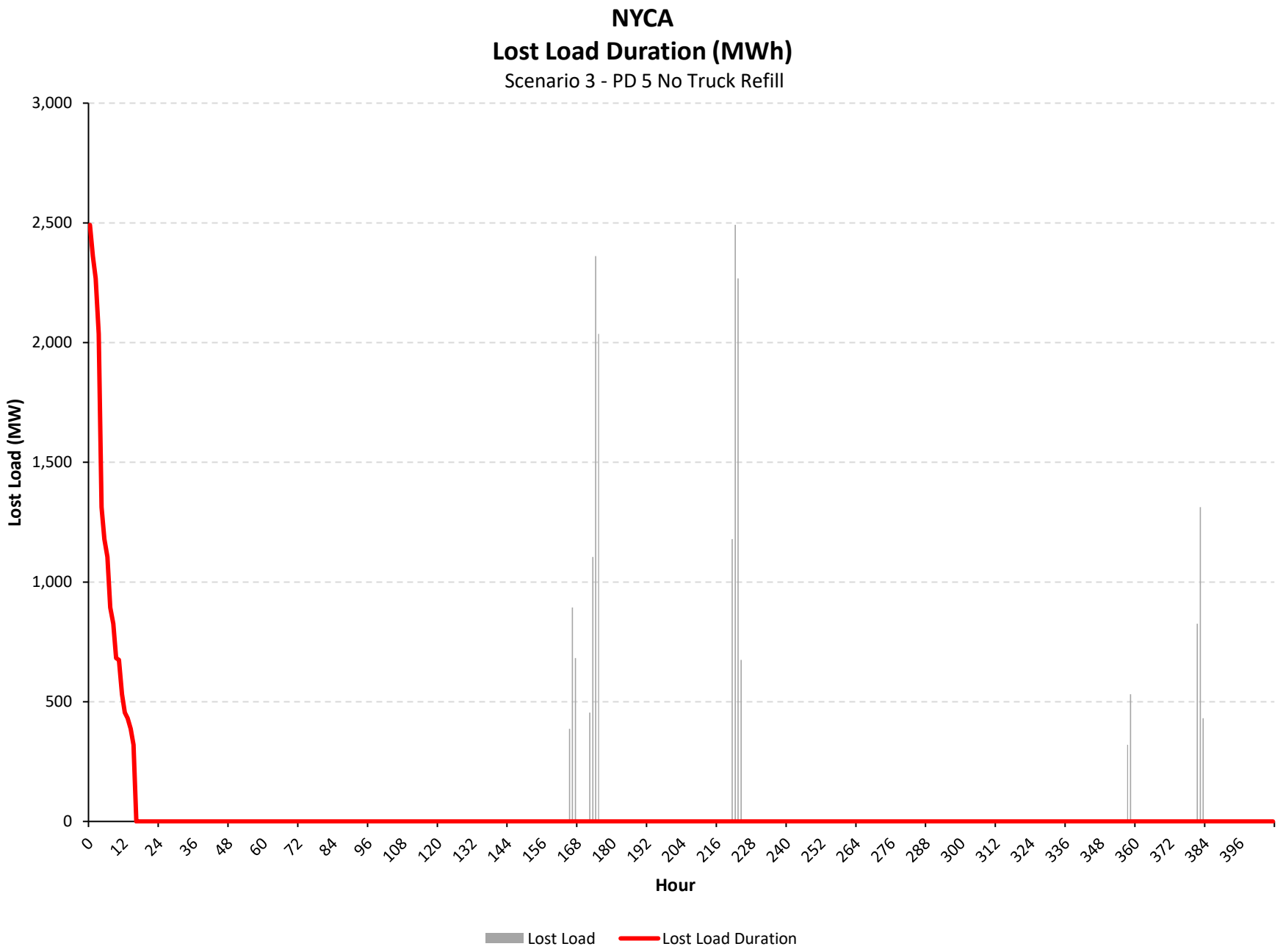
Scenario 3 - PD 5 No Truck Refill





Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 3 - PD 5 No Truck Refill
Emergency Actions and Lost Load (MW)
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 3 - PD 5 No Truck Refill
Lost Load (MW)
3,000
2,500
2,000
1,500
1,000
500
0
0
12
24
36
48
60
72
84
96
108
120
132
144
156
168
180
192
204
216
228
240
252
264
276
288
300
312
324
336
348
360
372
384
396
Hour
Lost Load
Lost Load Duration

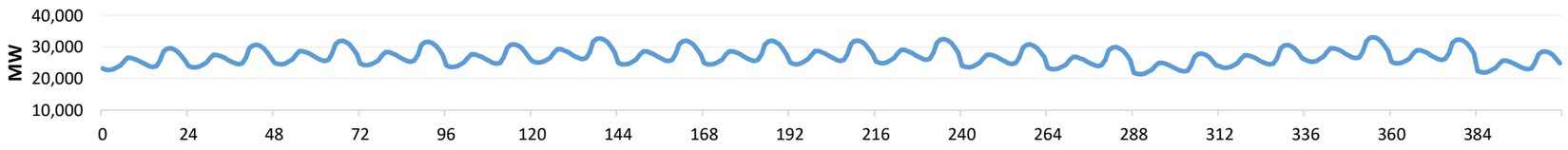
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 3 - PD 6 No Barge Refill (Winter 2030/2031)

Hourly Results Summary

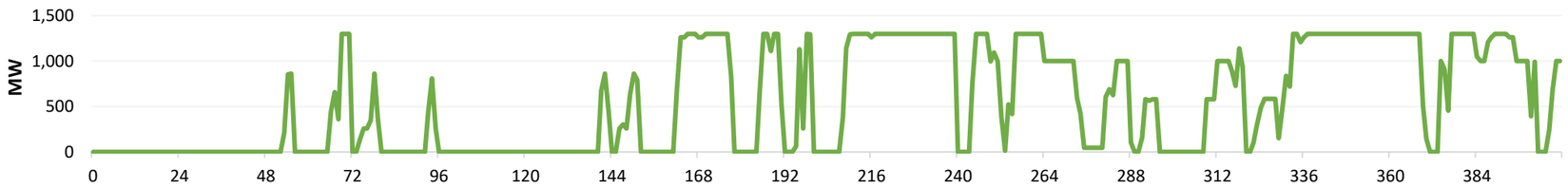
Case Name: Scenario 3 - PD 6 No Barge Refill

Load During Modeling Period



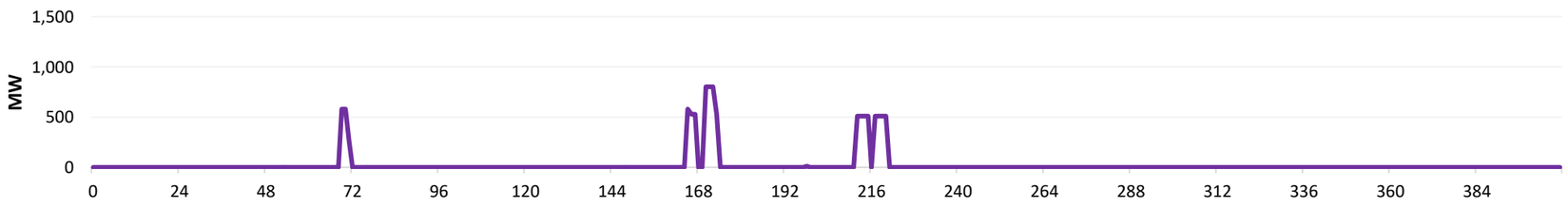
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	No Barge
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



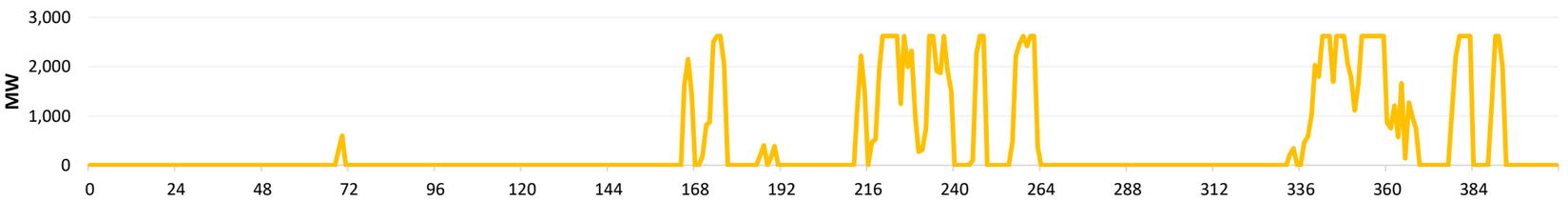
Export Reductions	
Total Hrs.	228
Total MWh	222,470
Avg. MW	545.3

SCR/EDRP Deployed During Modeling Period



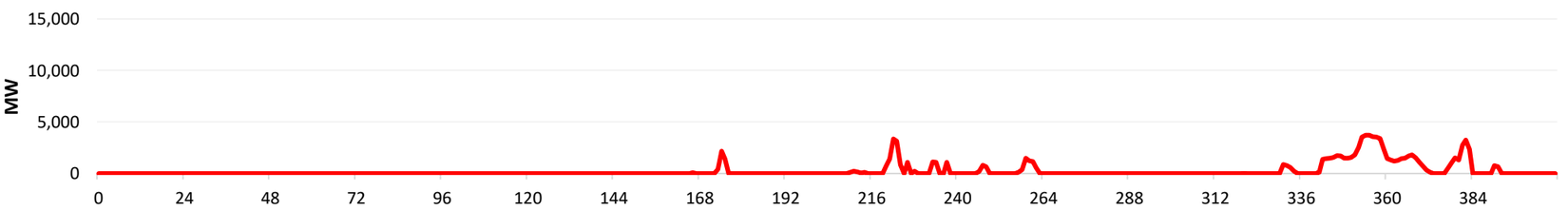
SCR Deployment	
Total Hrs.	19
Total MWh	10,064
Avg. MW	24.7

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	99
Total MWh	168,116
Avg. MW	412.1
First Hour with Viol.	69

Loss of Load During Modeling Period



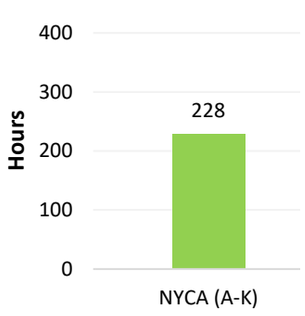
Loss of Load	
Total Hrs.	74
Total MWh	99,996
Avg. MW	245.1
First Hour with Losses	166

Full Period Results Summary

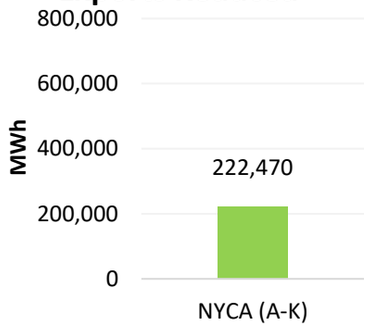
Case Name: Scenario 3 - PD 6 No Barge Refill

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	No Barge
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

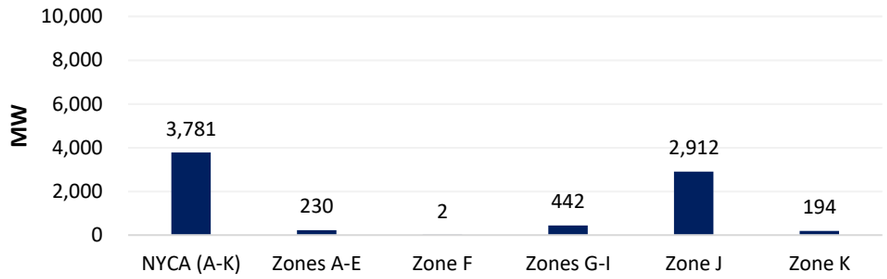
Hours Exports Reduced



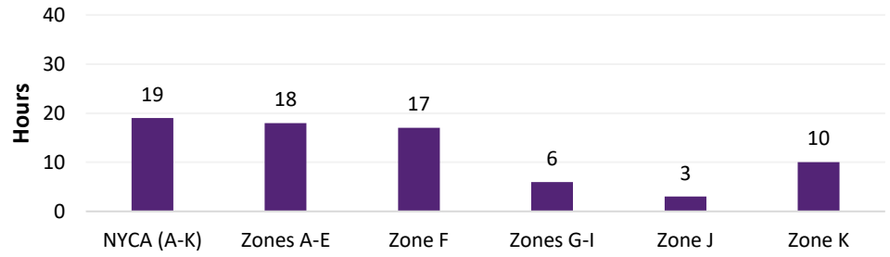
Total MWh of Exports Reduced



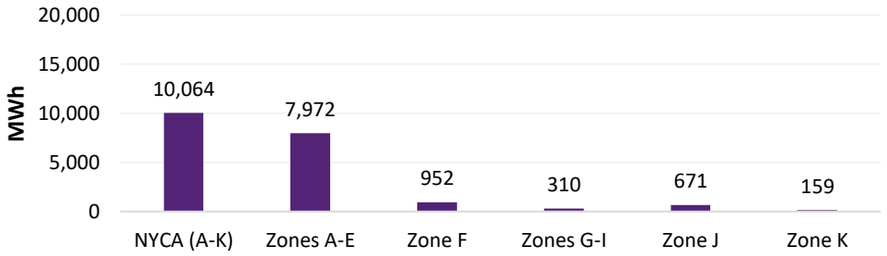
Average Capacity Not Available Due to Exhausted Fuel Inventory



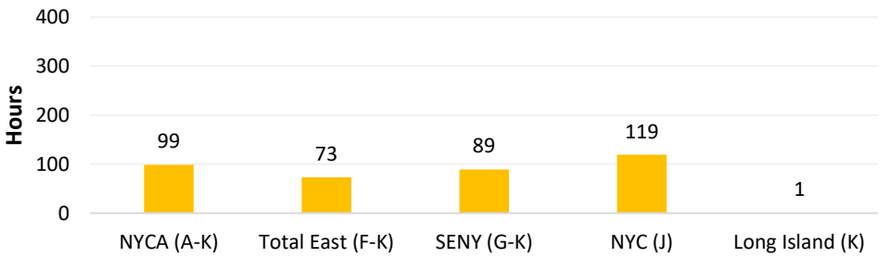
Hours SCR/EDRP Deployed



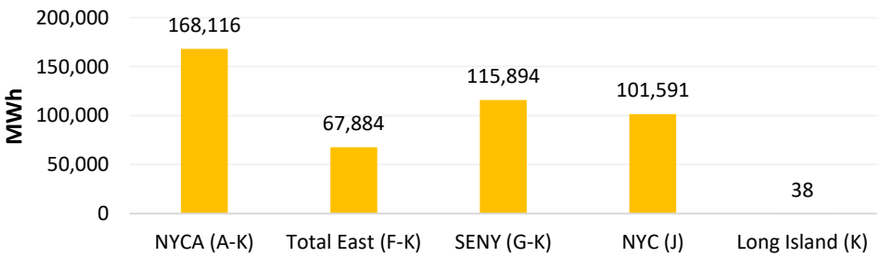
Total MWh SCR/EDRP Deployed



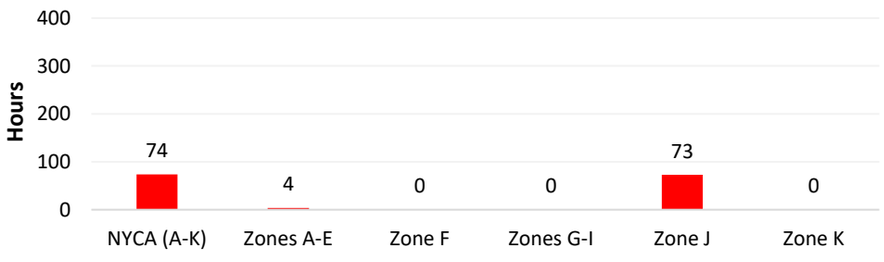
Hours with Reserve Violations



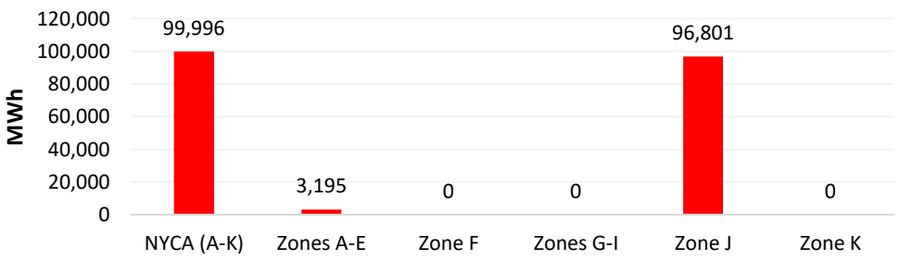
Total MWh of Reserve Violations

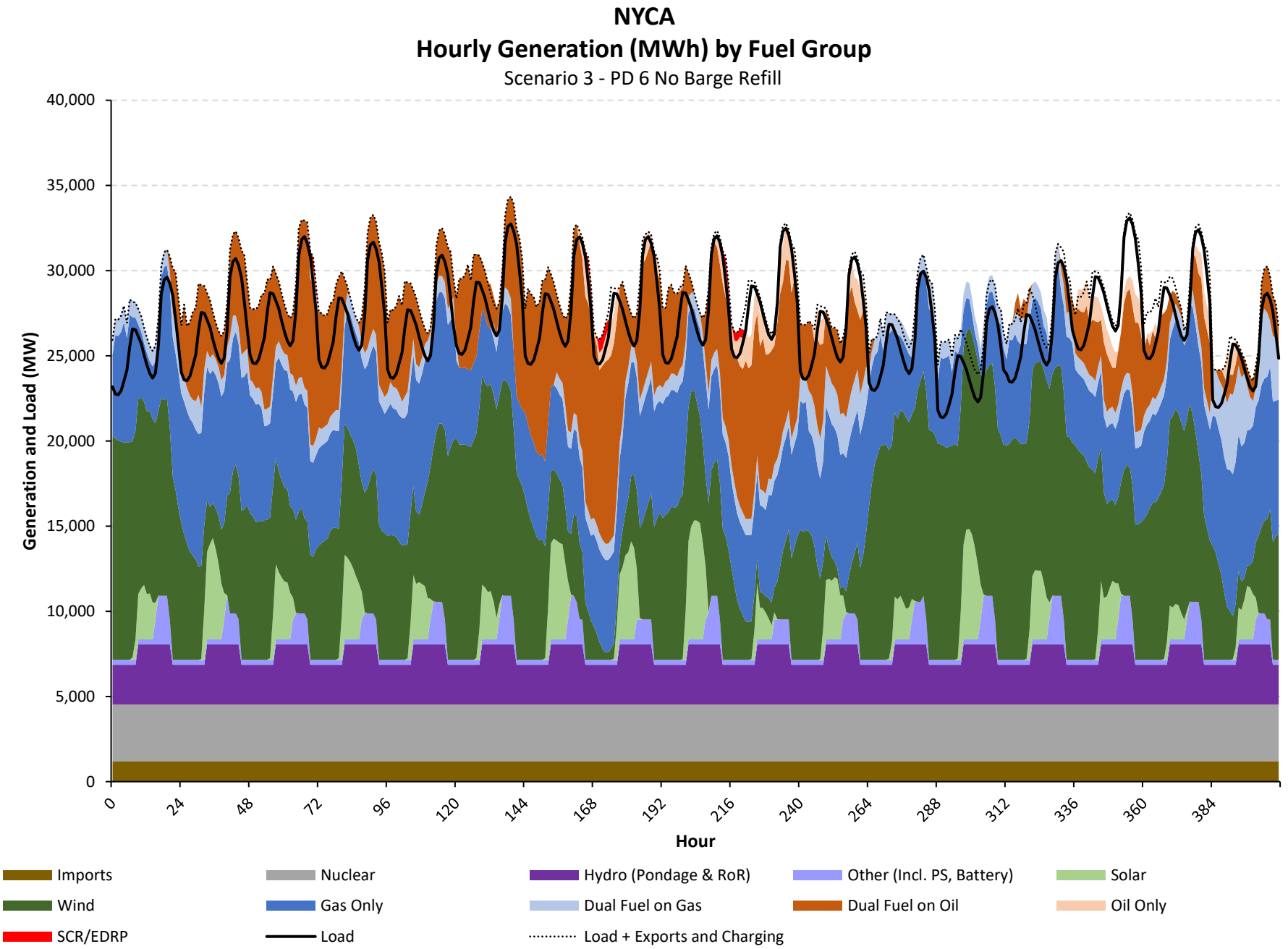


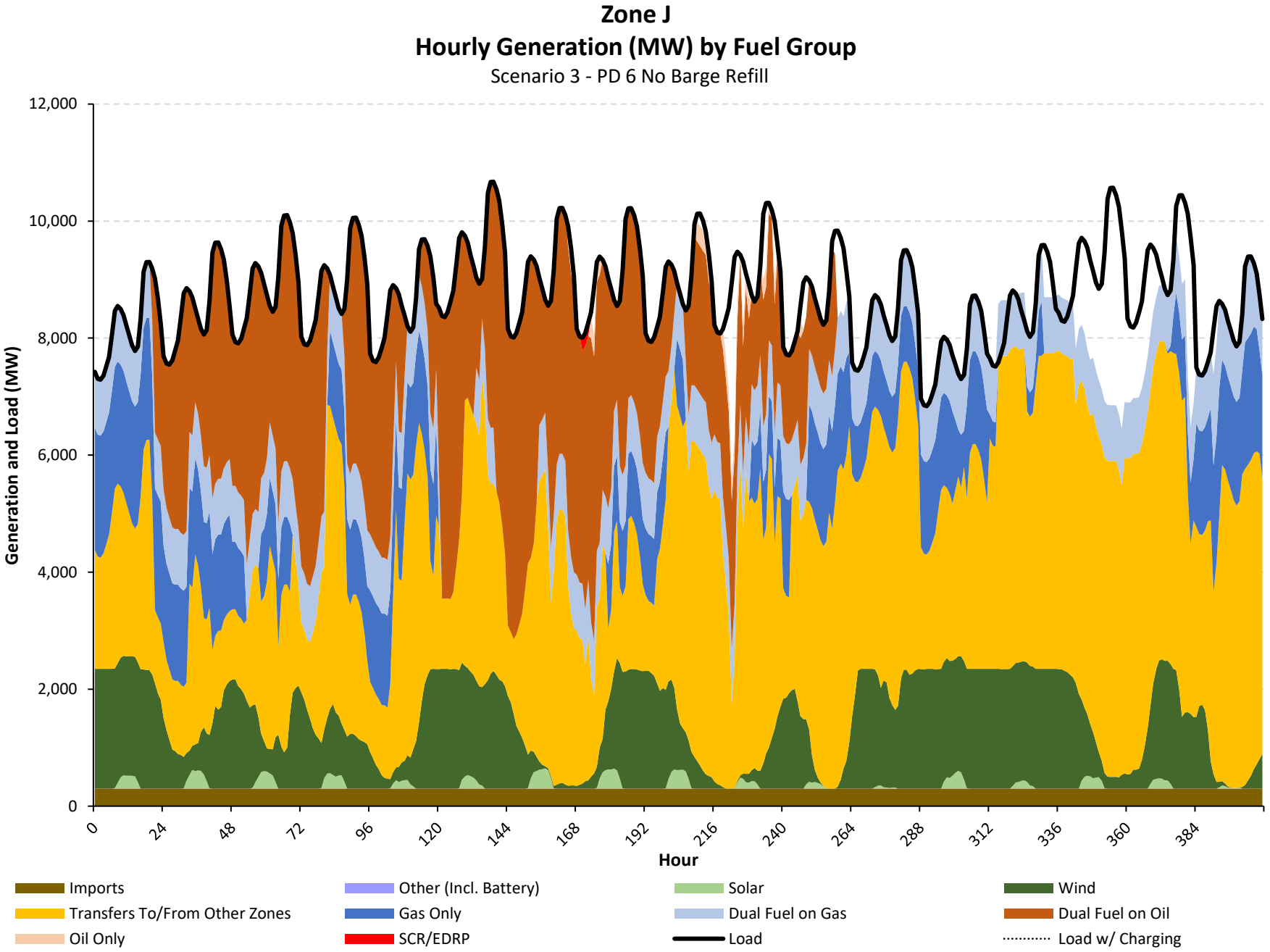
Hours with Loss of Load



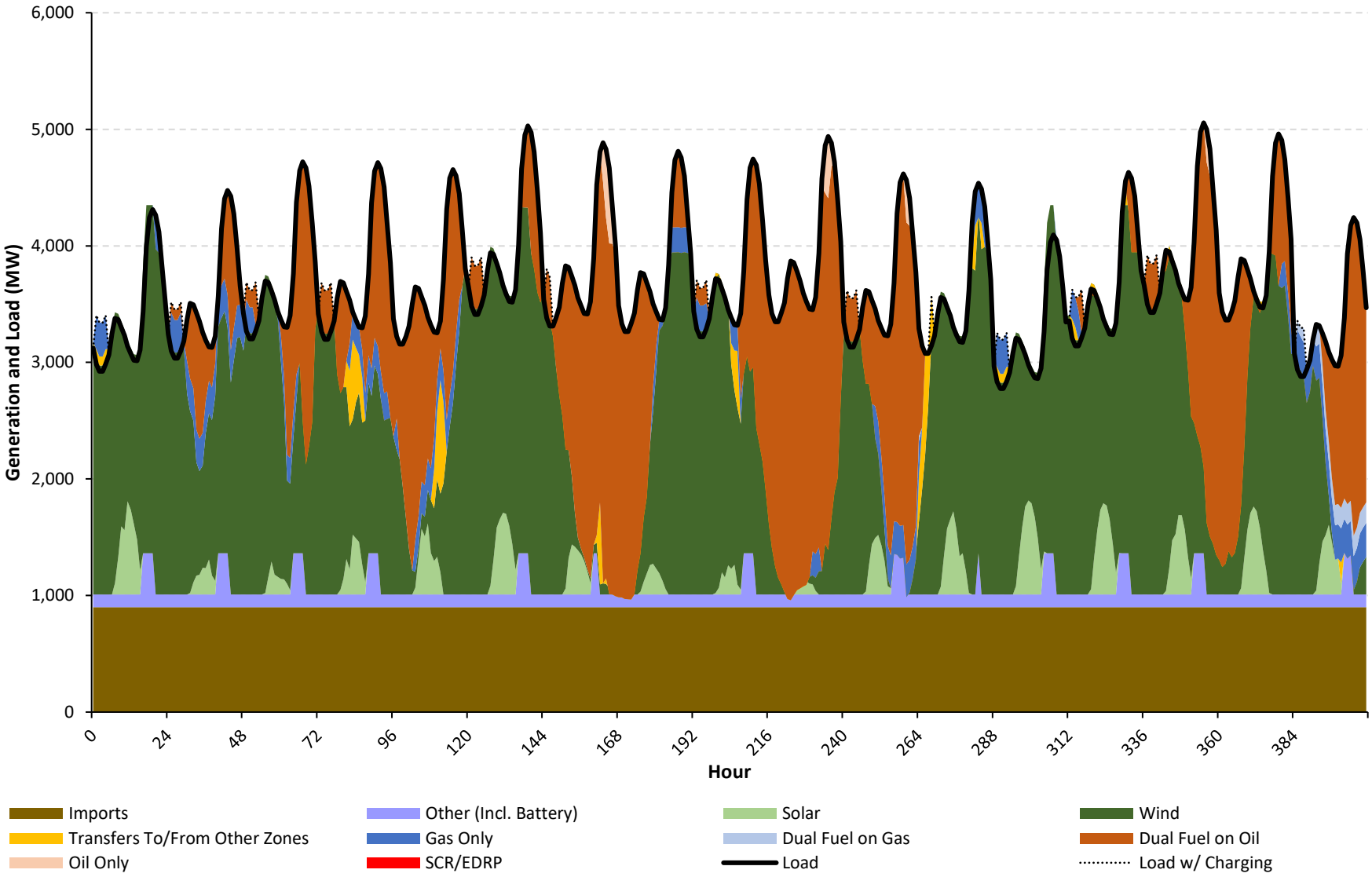
Total MWh of Lost Load




NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 3 - PD 6 No Barge Refill
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 3 - PD 6 No Barge Refill
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

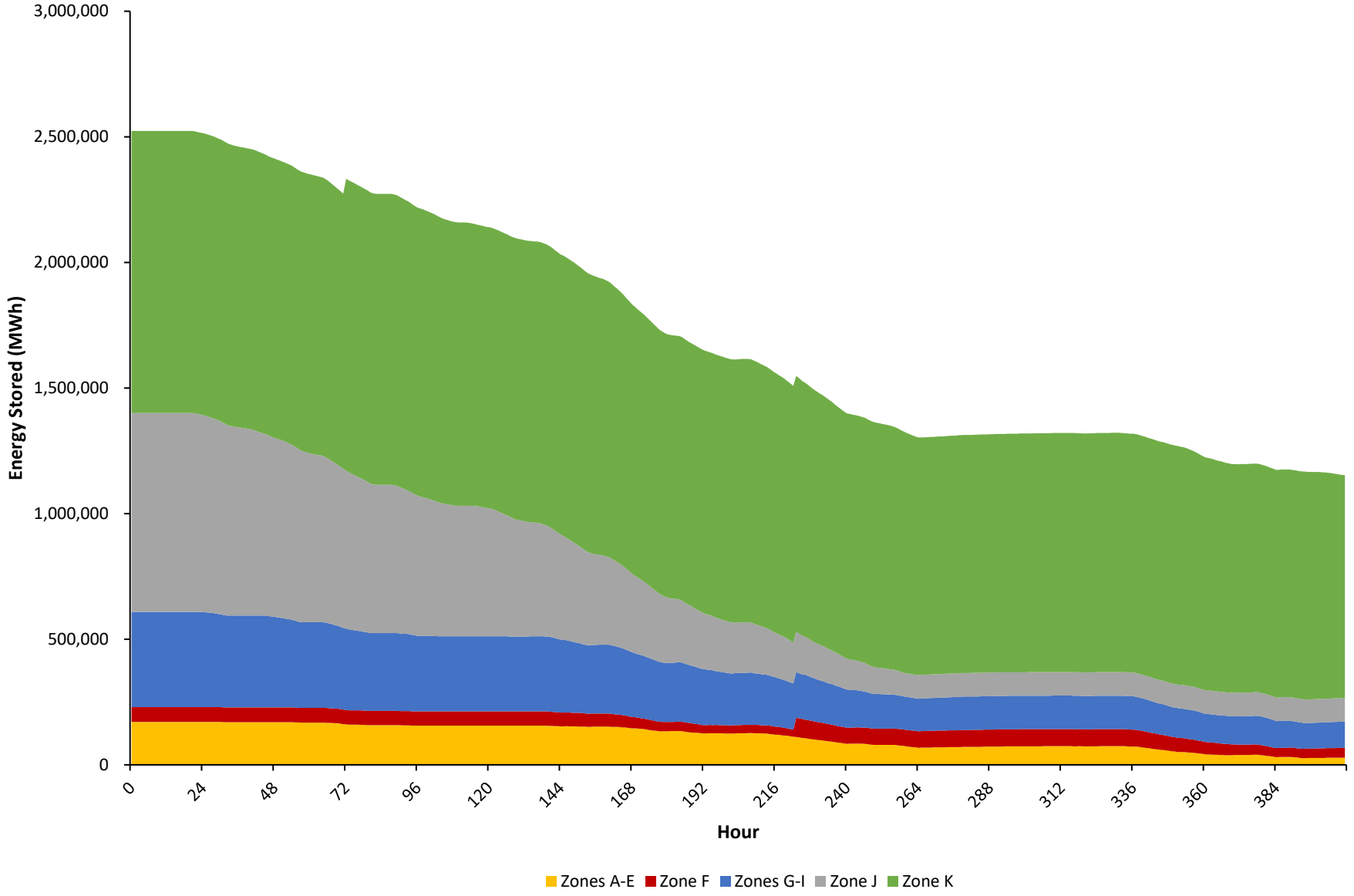
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 3 - PD 6 No Barge Refill

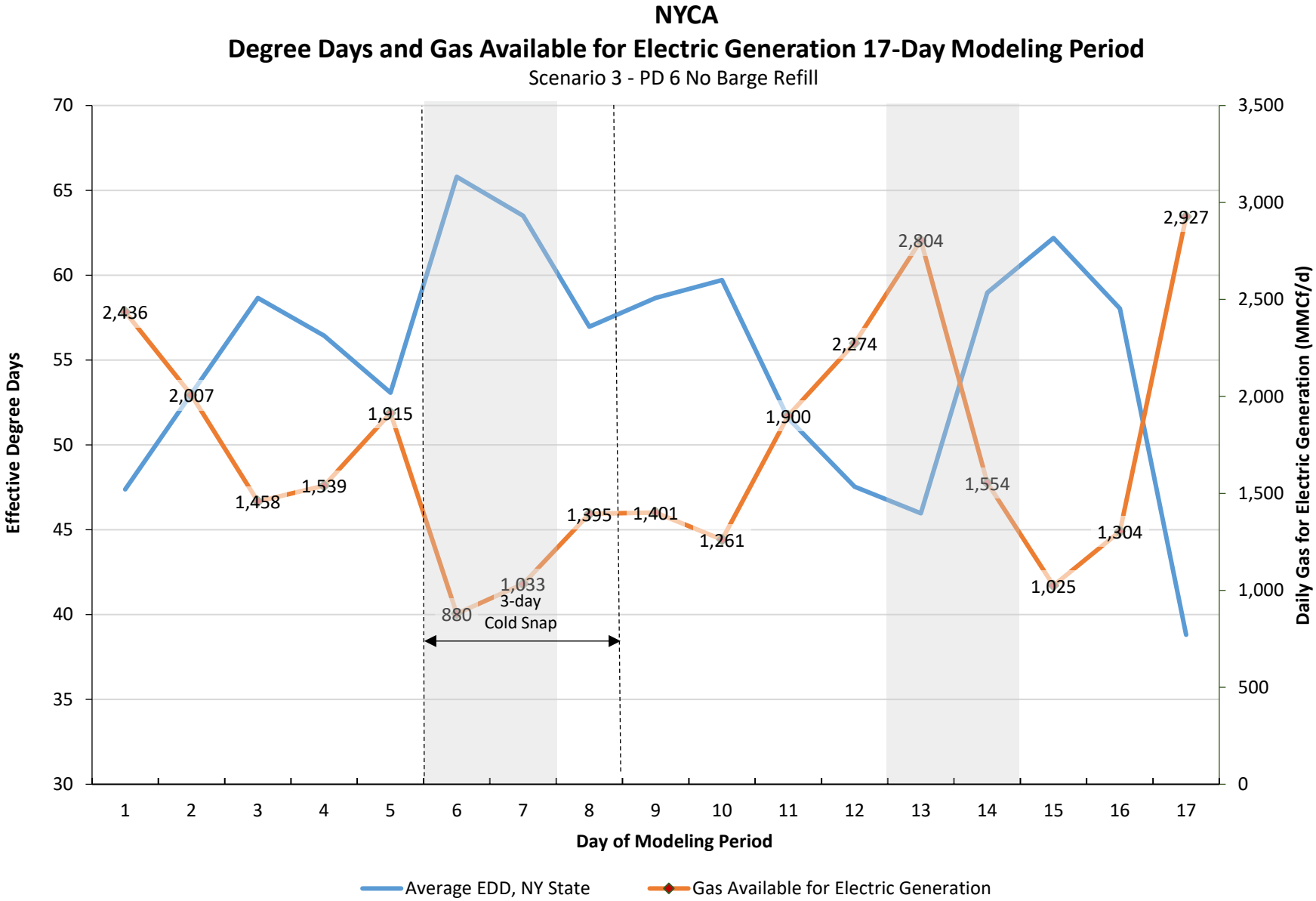


NYCA

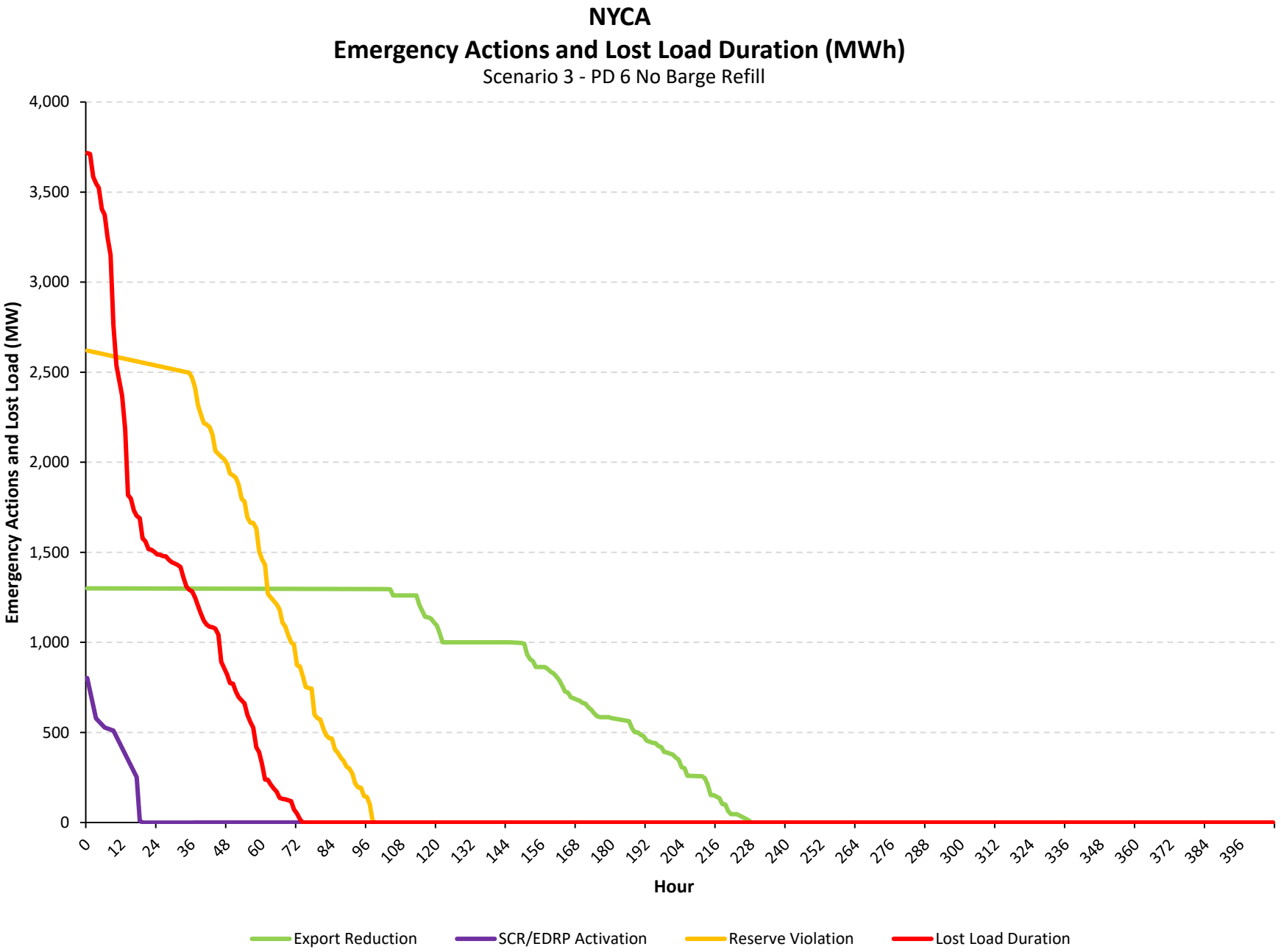
Quantity of Stored Fuel for Oil and Dual Fuel Units

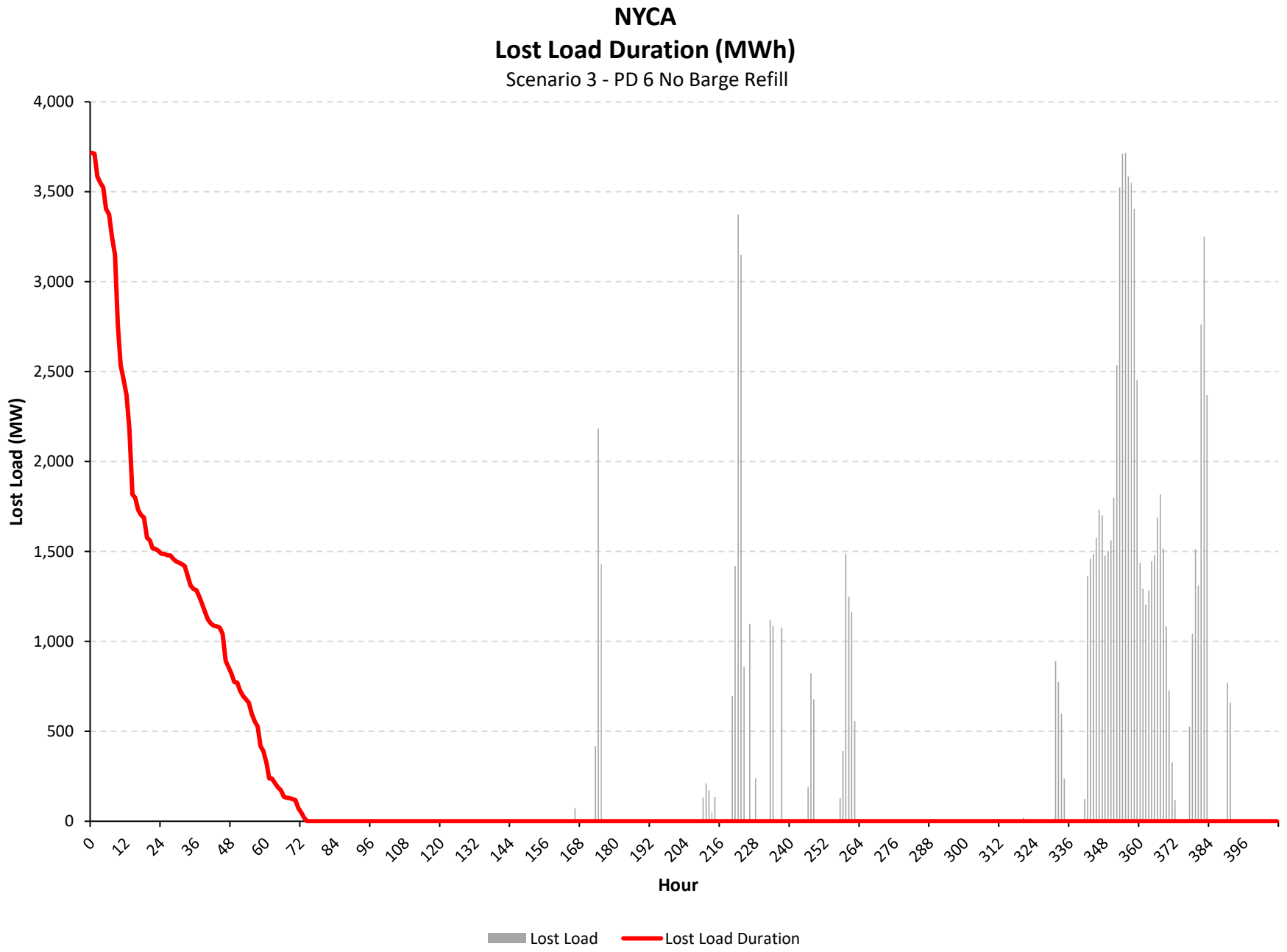
Scenario 3 - PD 6 No Barge Refill





Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 3 - PD 6 No Barge Refill
Emergency Actions and Lost Load (MW)
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 3 - PD 6 No Barge Refill
Lost Load (MW)
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

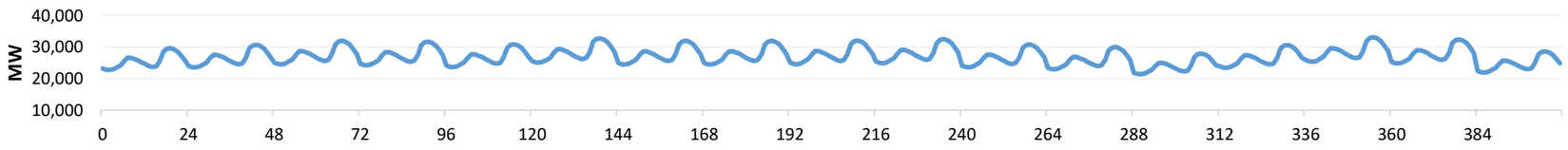
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 3 - PD 7 No Refill (Winter 2030/2031)

Hourly Results Summary

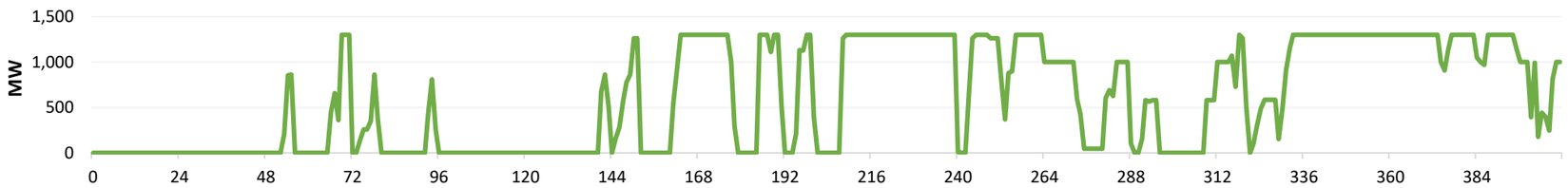
Case Name: Scenario 3 - PD 7 No Refill

Load During Modeling Period



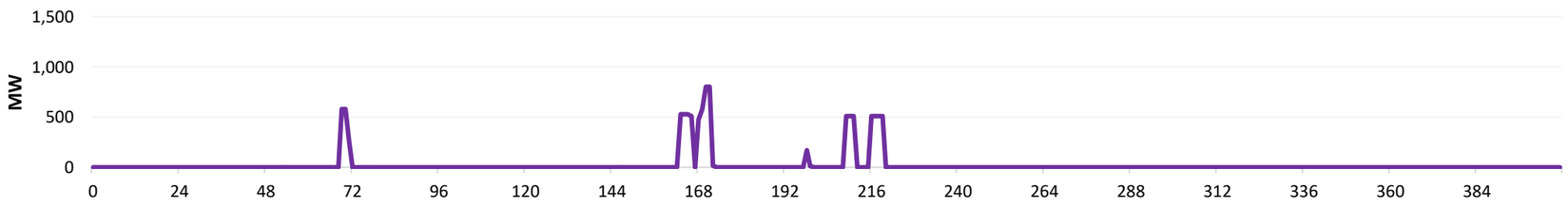
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	No Refill
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



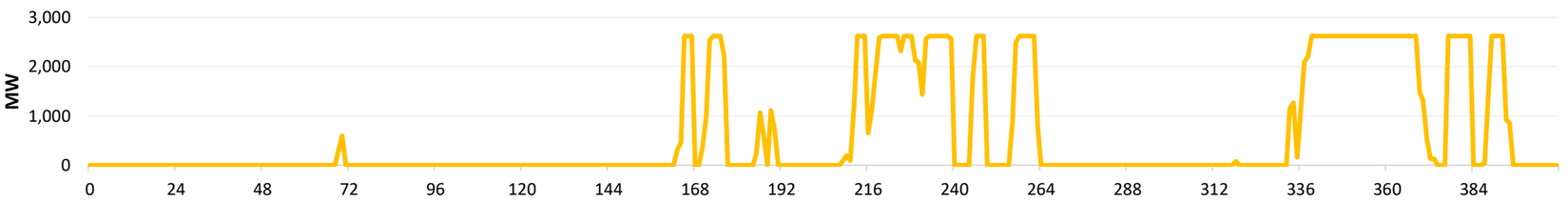
Export Reductions	
Total Hrs.	241
Total MWh	242,388
Avg. MW	594.1

SCR/EDRP Deployed During Modeling Period



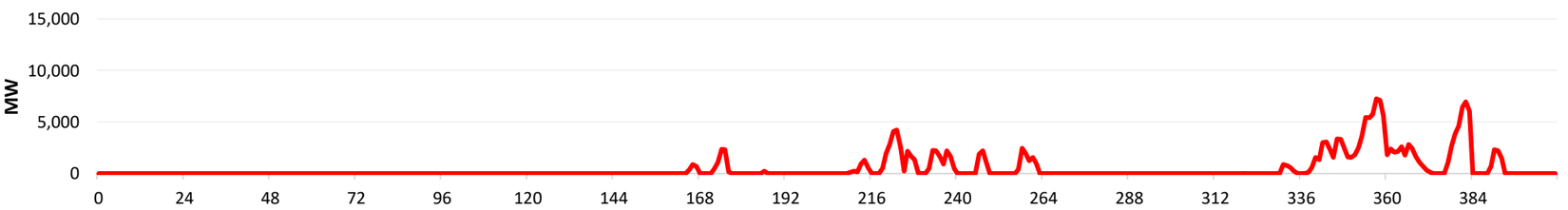
SCR Deployment	
Total Hrs.	21
Total MWh	9,920
Avg. MW	24.3

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	119
Total MWh	241,700
Avg. MW	592.4
First Hour with Viol.	69

Loss of Load During Modeling Period



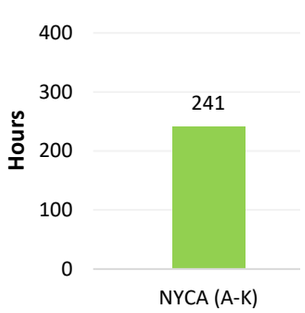
Loss of Load	
Total Hrs.	96
Total MWh	192,444
Avg. MW	471.7
First Hour with Losses	165

Full Period Results Summary

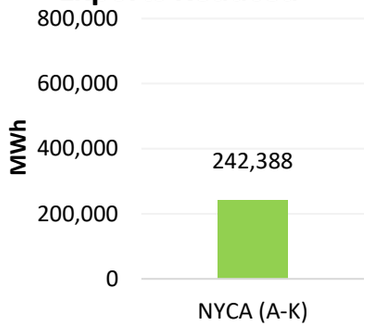
Case Name: Scenario 3 - PD 7 No Refill

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	No Refill
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

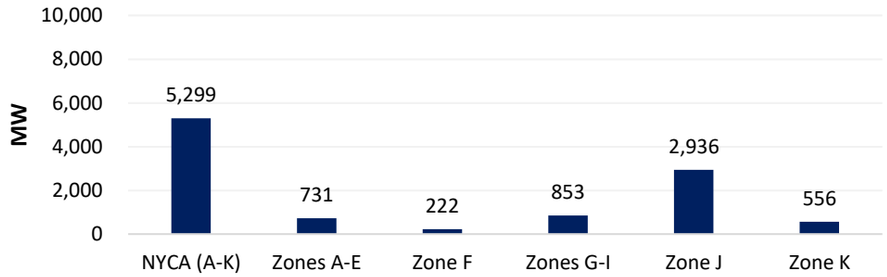
Hours Exports Reduced



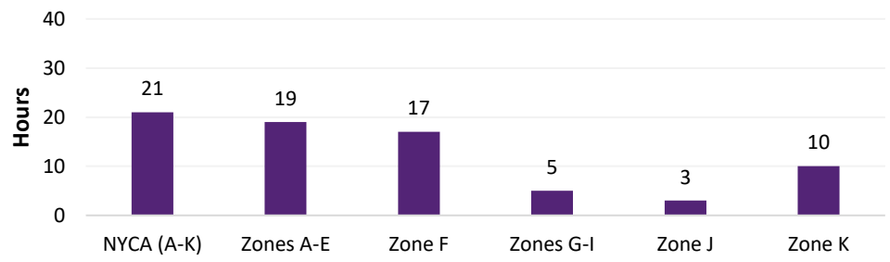
Total MWh of Exports Reduced



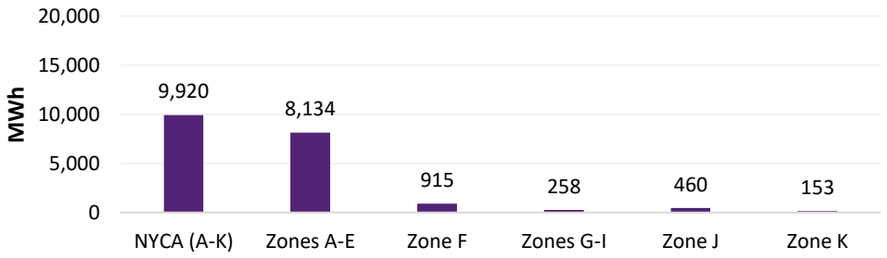
Average Capacity Not Available Due to Exhausted Fuel Inventory



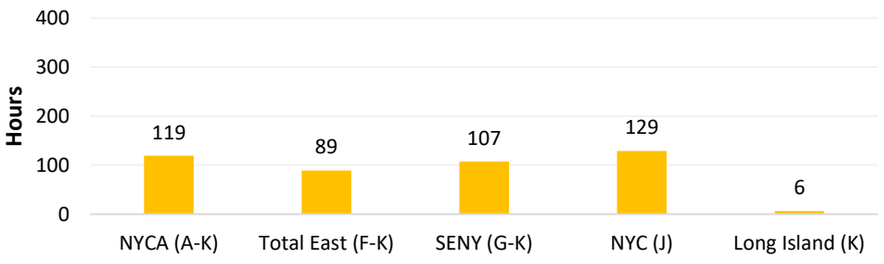
Hours SCR/EDRP Deployed



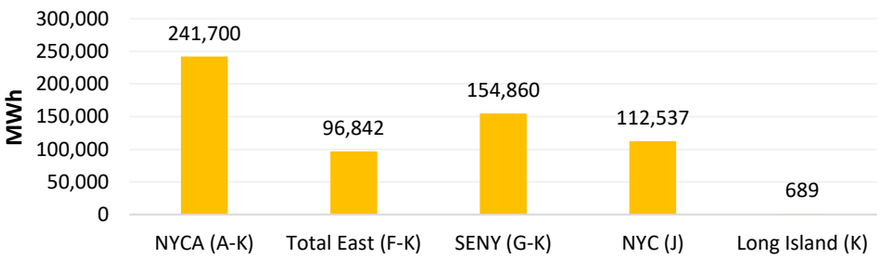
Total MWh SCR/EDRP Deployed



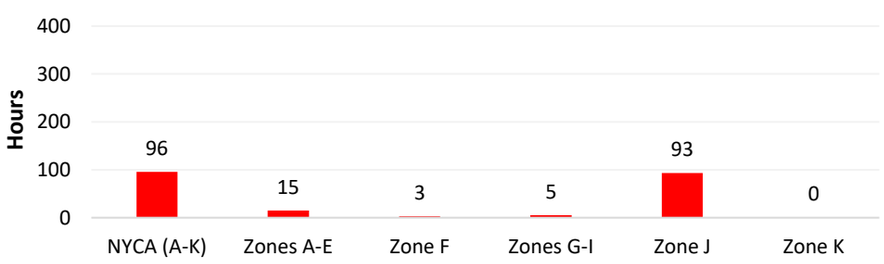
Hours with Reserve Violations



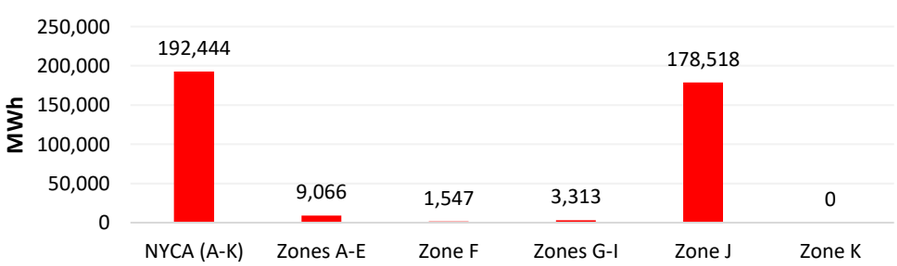
Total MWh of Reserve Violations

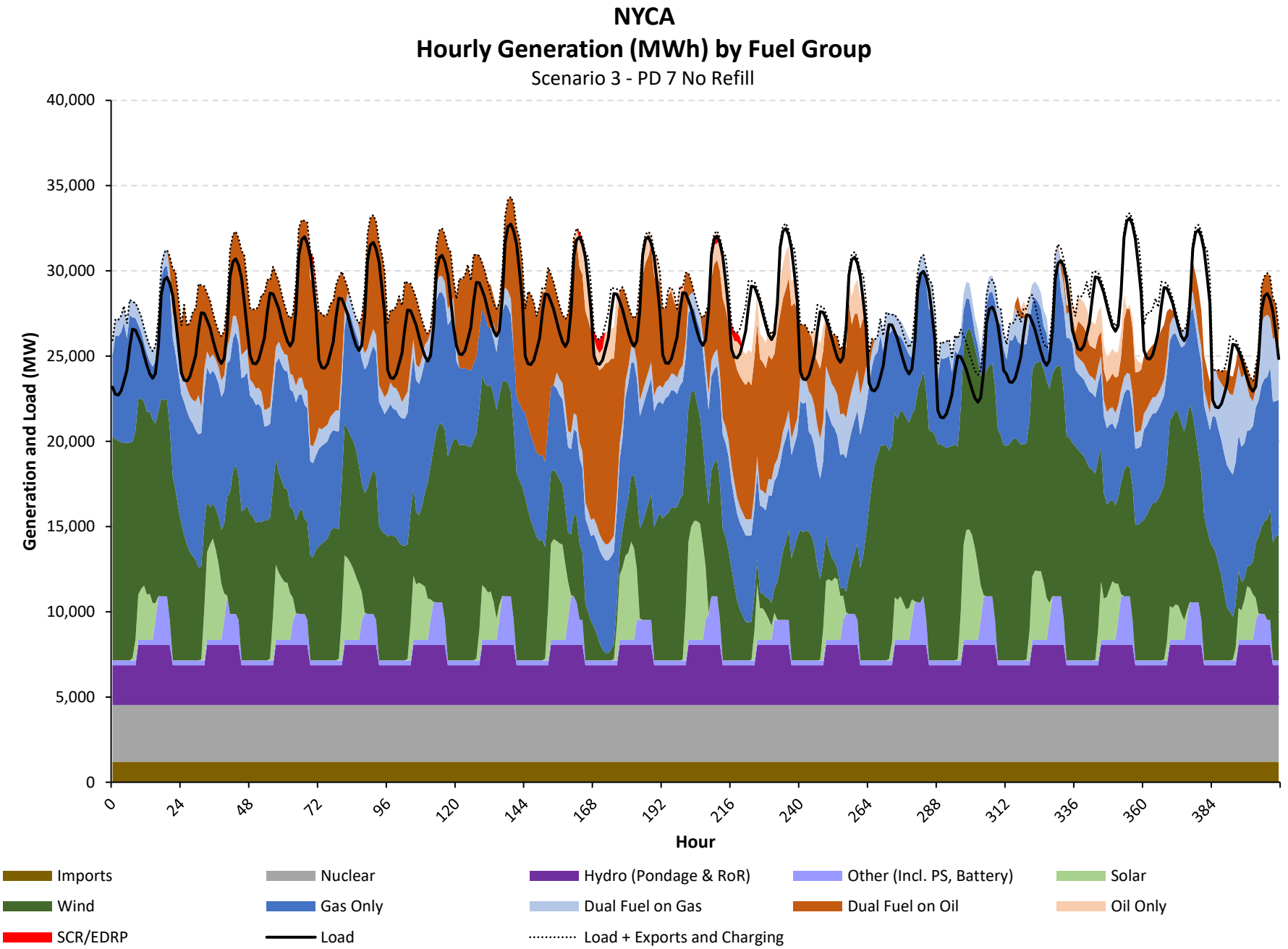


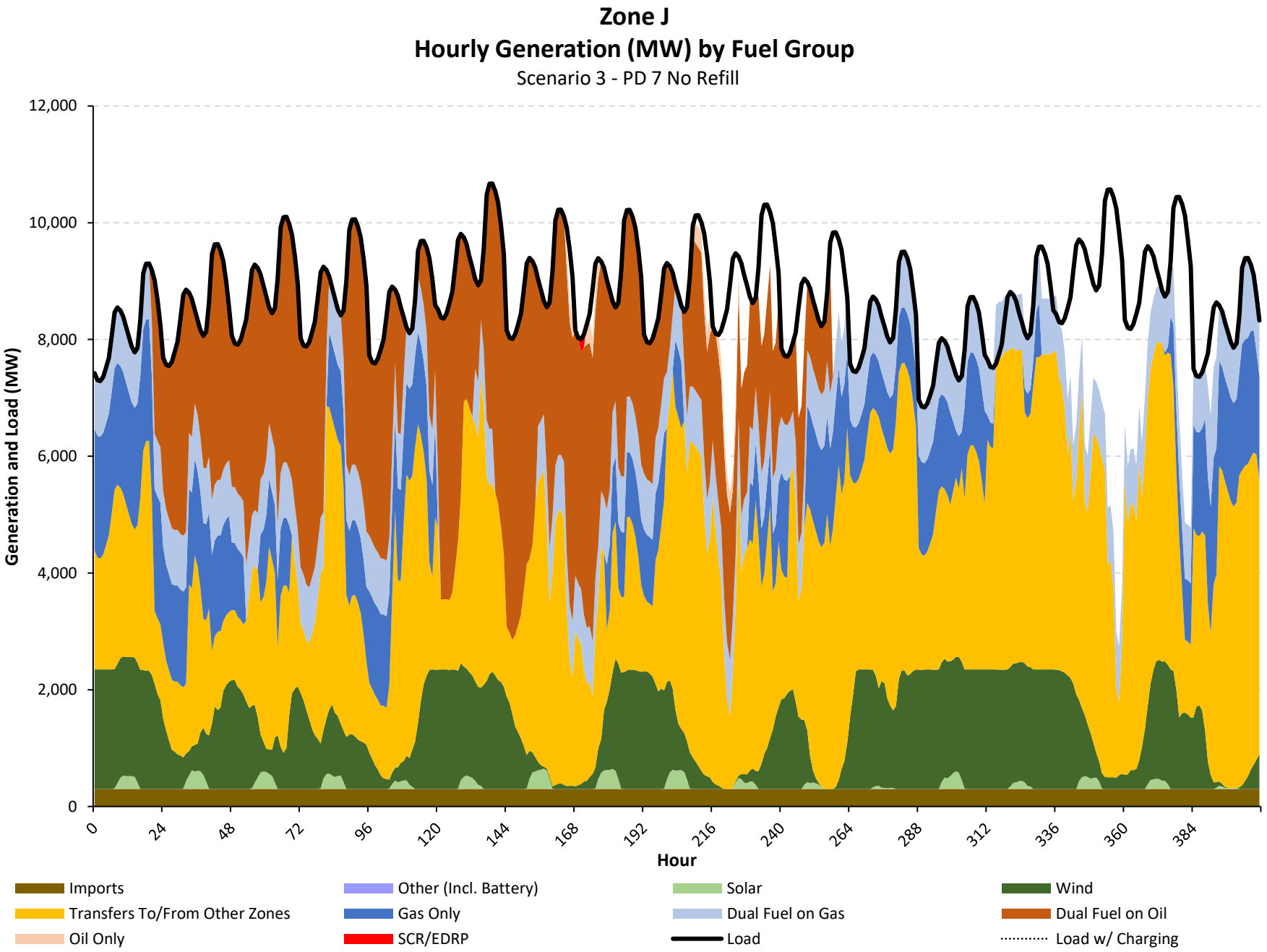
Hours with Loss of Load



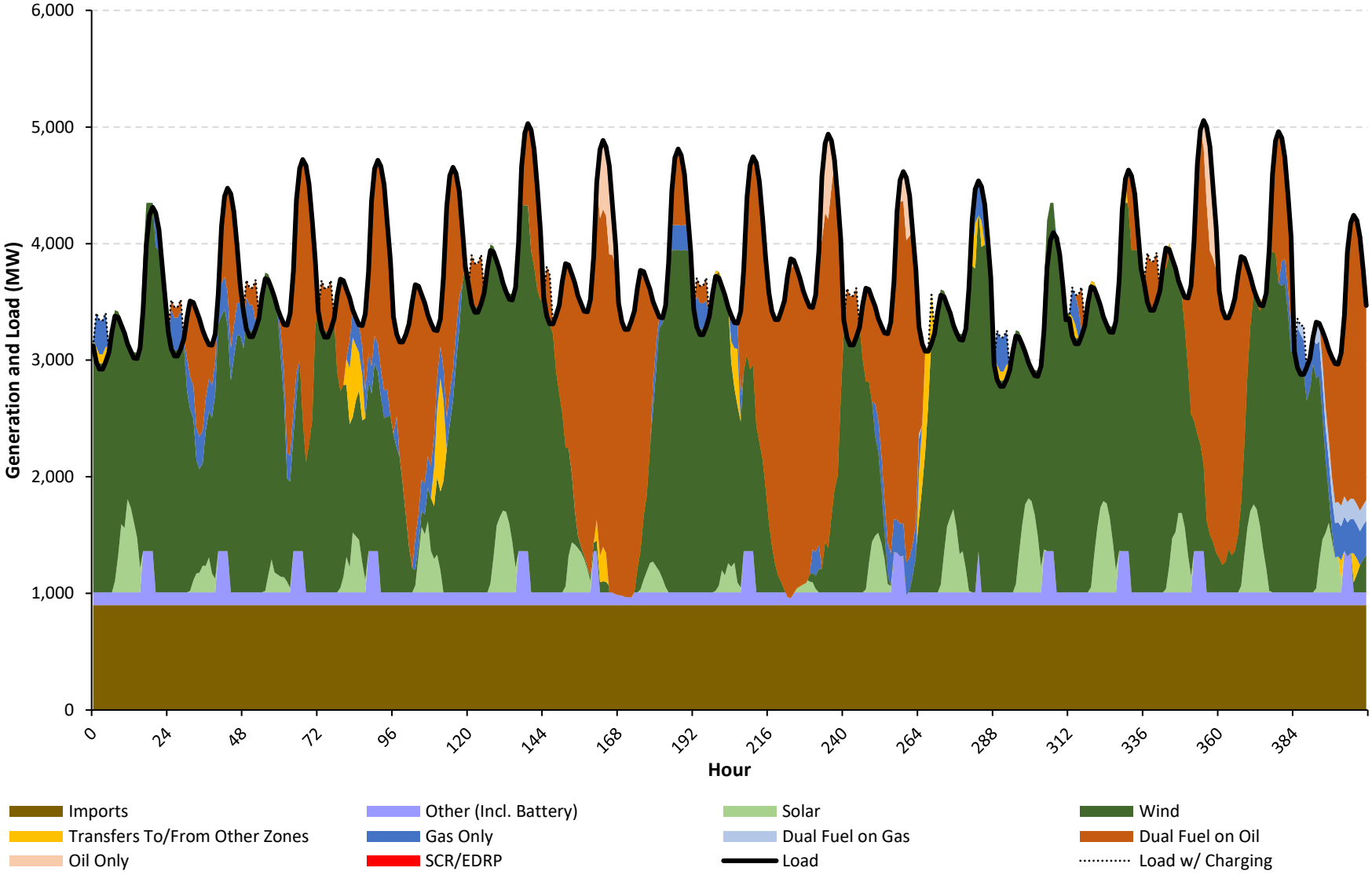
Total MWh of Lost Load




NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 3 - PD 7 No Refill
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 3 - PD 7 No Refill
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

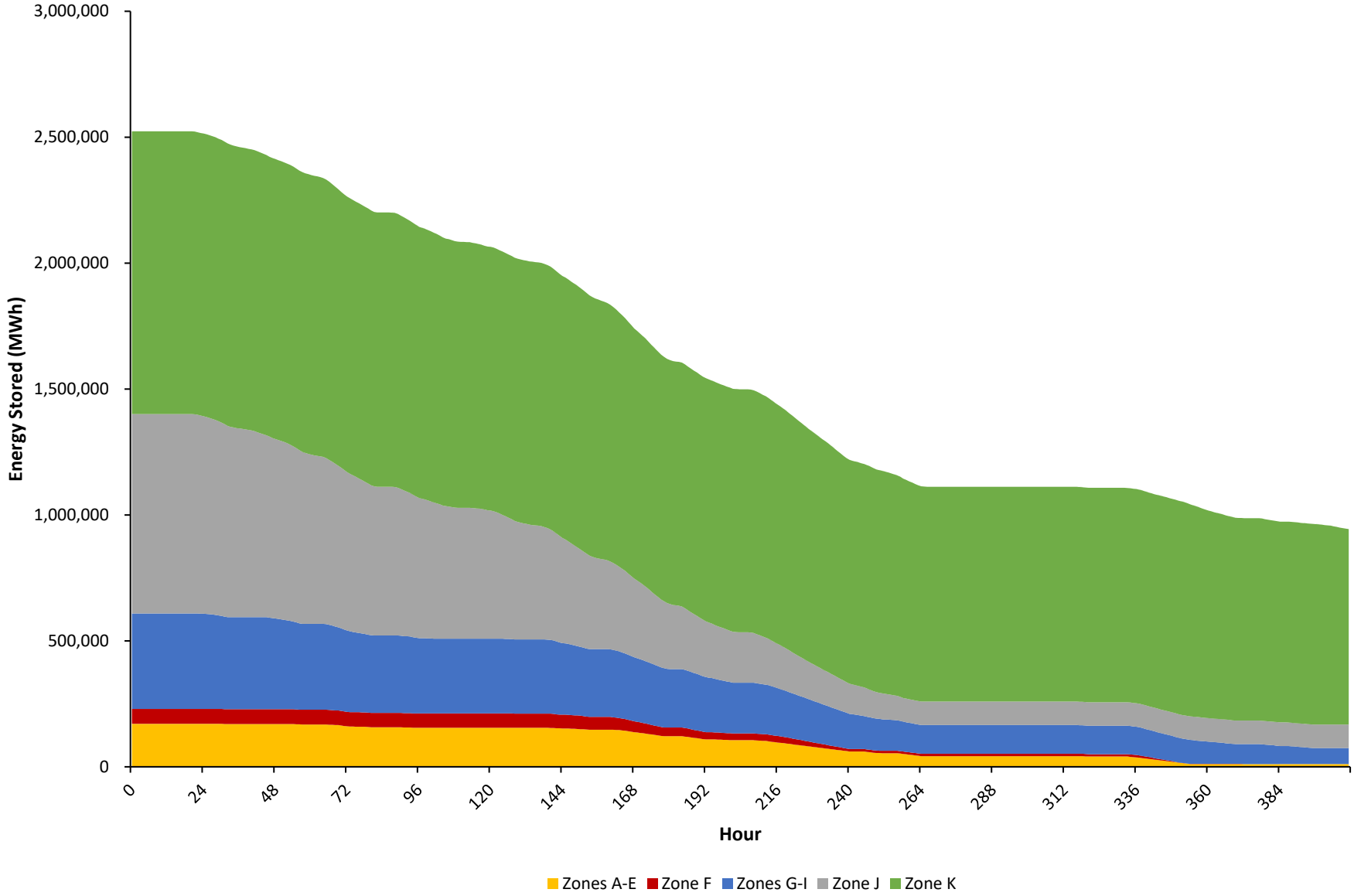
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 3 - PD 7 No Refill

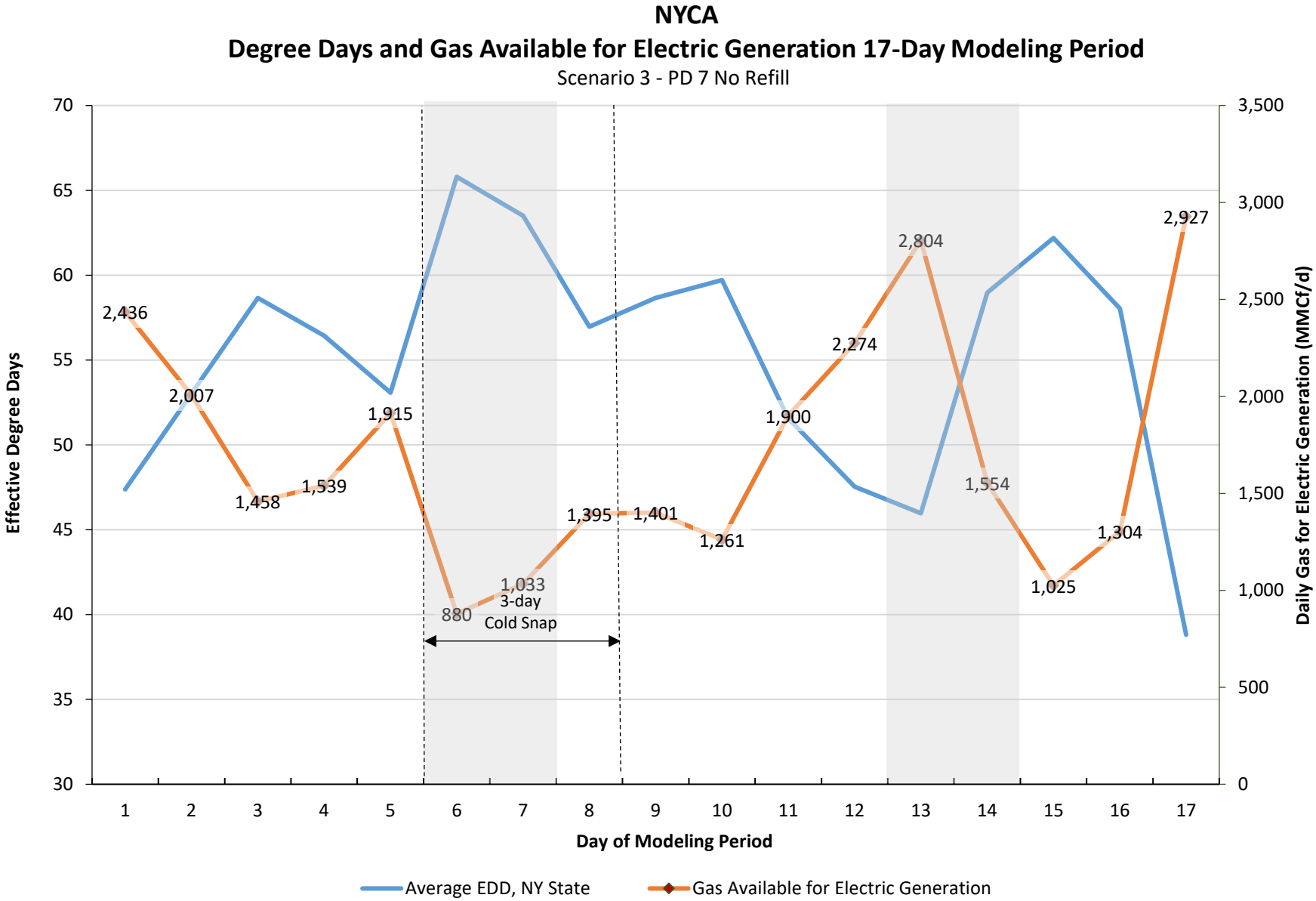


NYCA

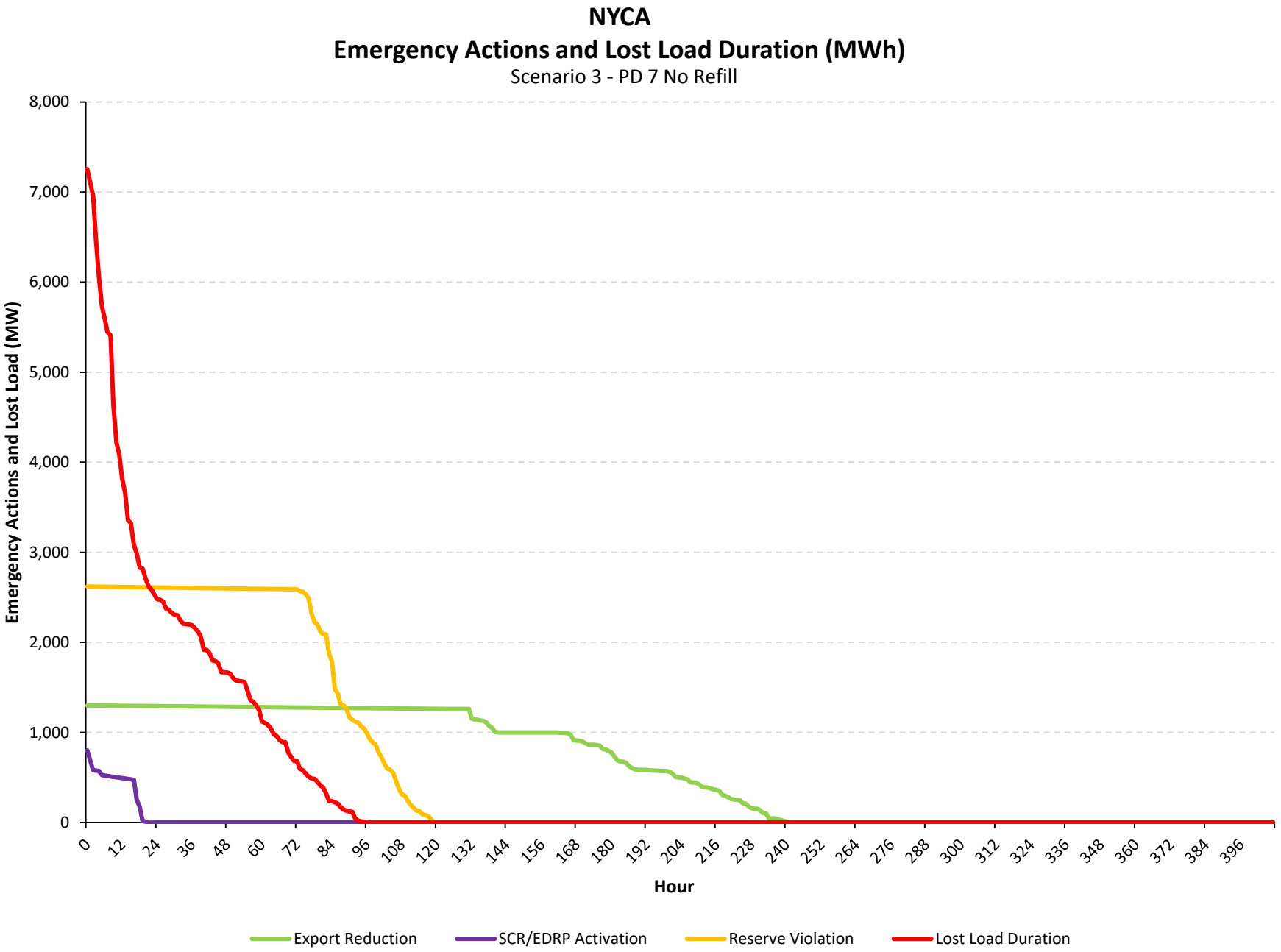
Quantity of Stored Fuel for Oil and Dual Fuel Units

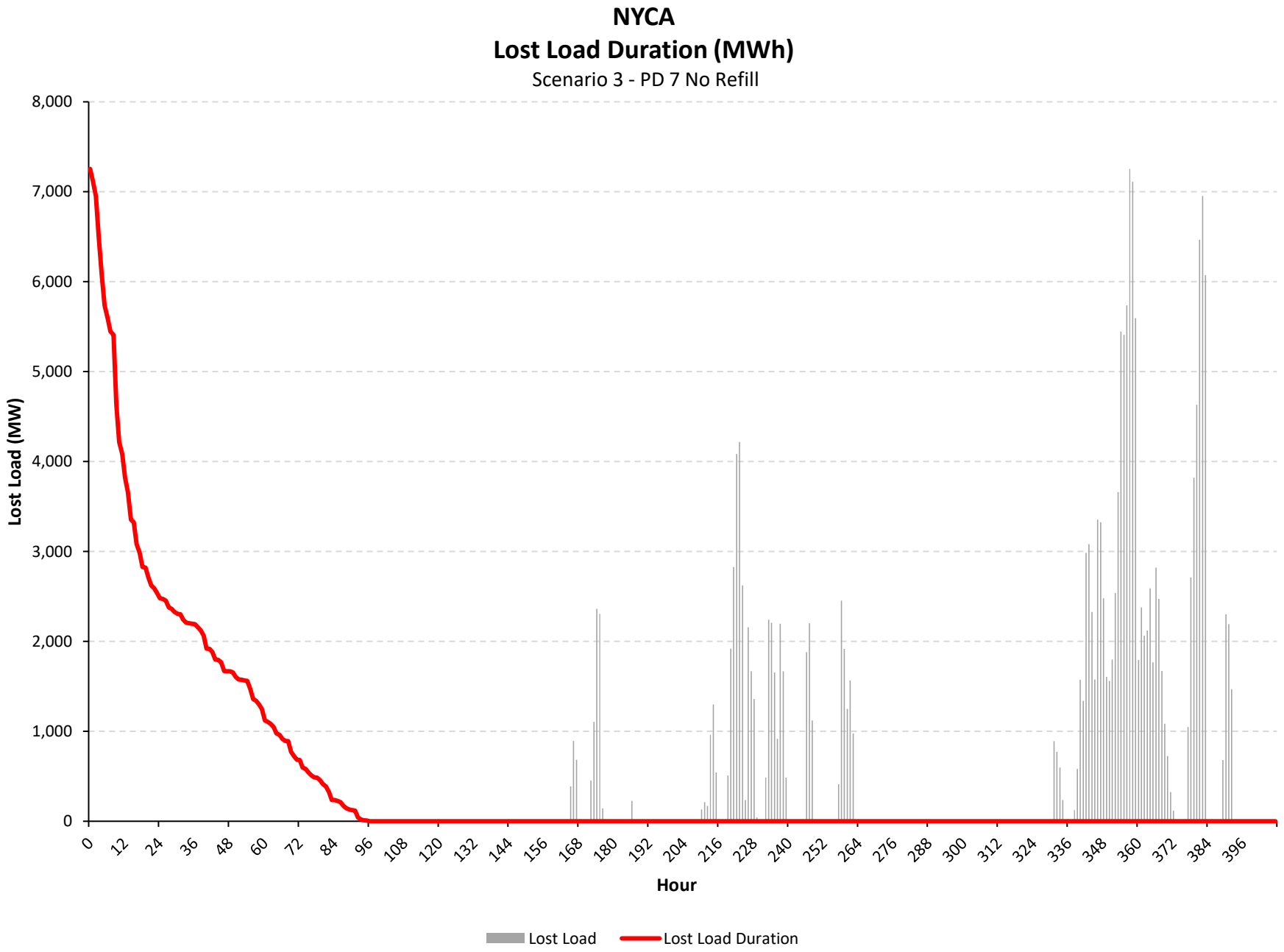
Scenario 3 - PD 7 No Refill





Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 3 - PD 7 No Refill
Emergency Actions and Lost Load (MW)
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 3 - PD 7 No Refill
Lost Load (MW)
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

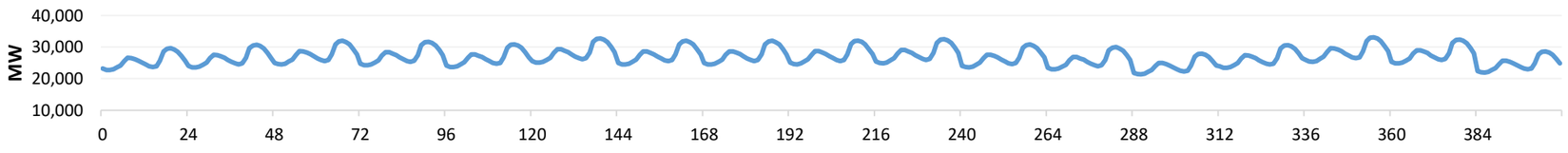
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 3 - PD 8 Non-Firm Gas Unavailable (F-K) (Winter 2030/2031)

Hourly Results Summary

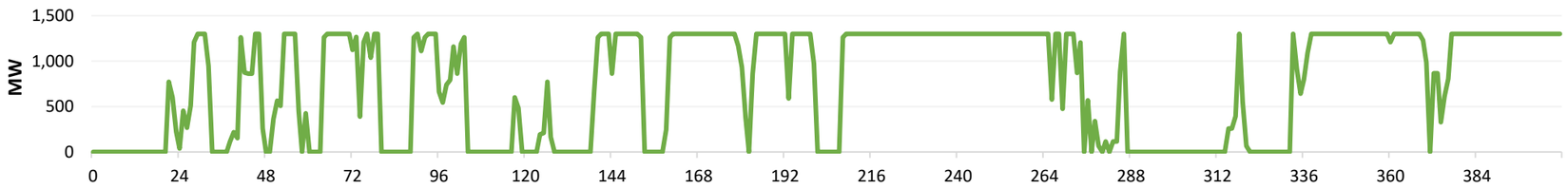
Case Name: Scenario 3 - PD 8 Non-Firm Gas Unavailable (F-K)

Load During Modeling Period



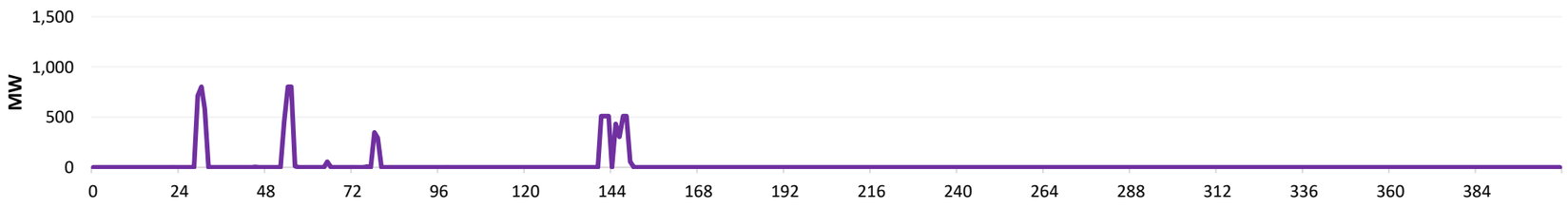
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	F-K
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



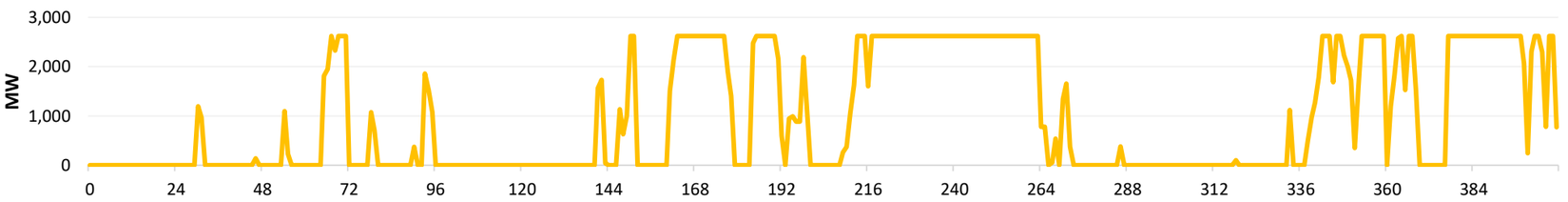
Export Reductions	
Total Hrs.	279
Total MWh	309,996
Avg. MW	759.8

SCR/EDRP Deployed During Modeling Period



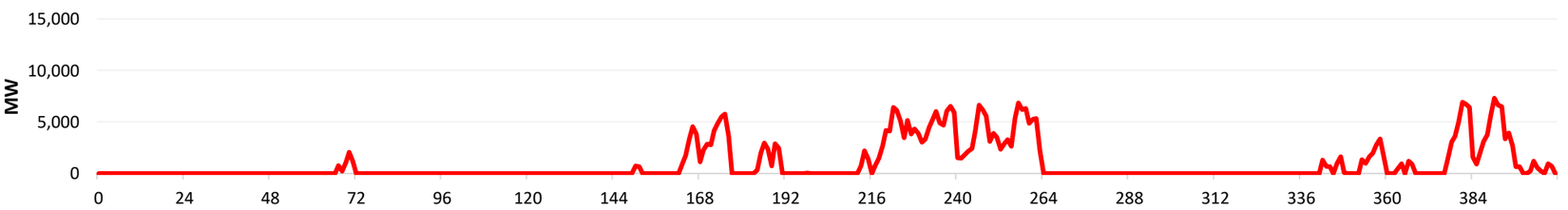
SCR Deployment	
Total Hrs.	20
Total MWh	8,212
Avg. MW	20.1

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	185
Total MWh	388,827
Avg. MW	953.0
First Hour with Viol.	30

Loss of Load During Modeling Period



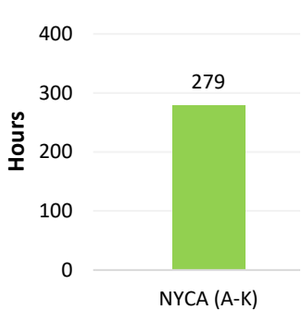
Loss of Load	
Total Hrs.	124
Total MWh	379,123
Avg. MW	929.2
First Hour with Losses	67

Full Period Results Summary

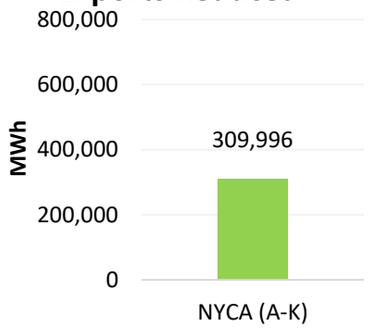
Case Name: Scenario 3 - PD 8 Non-Firm Gas Unavailable (F-K)

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	F-K
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

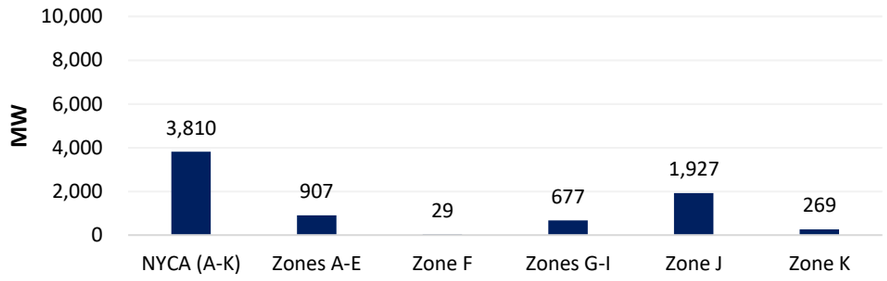
Hours Exports Reduced



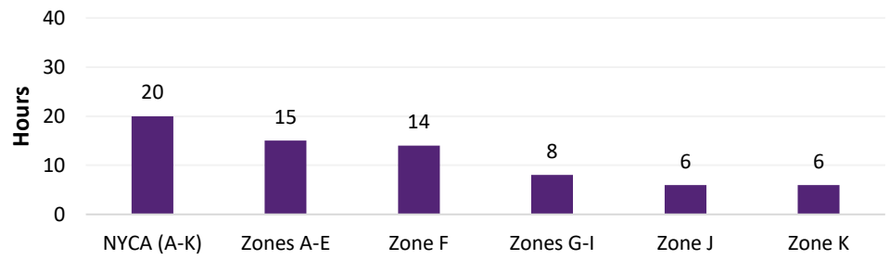
Total MWh of Exports Reduced



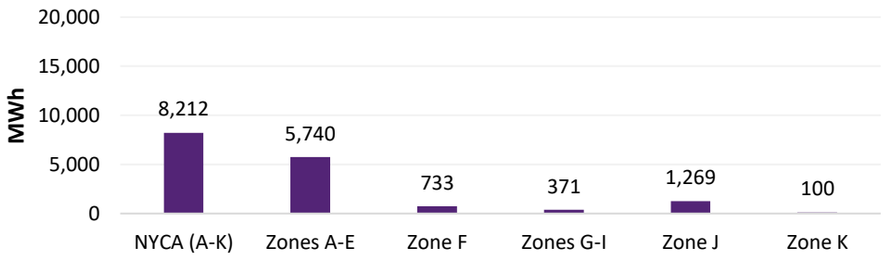
Average Capacity Not Available Due to Exhausted Fuel Inventory



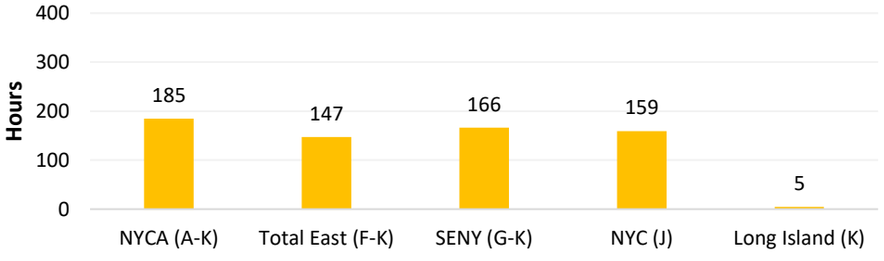
Hours SCR/EDRP Deployed



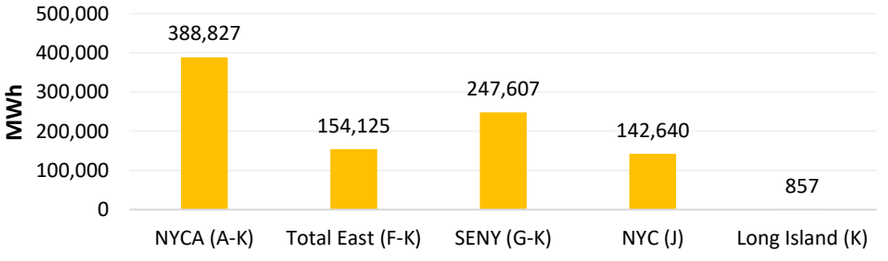
Total MWh SCR/EDRP Deployed



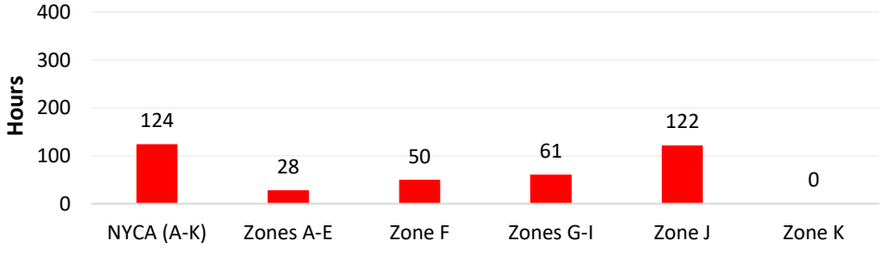
Hours with Reserve Violations



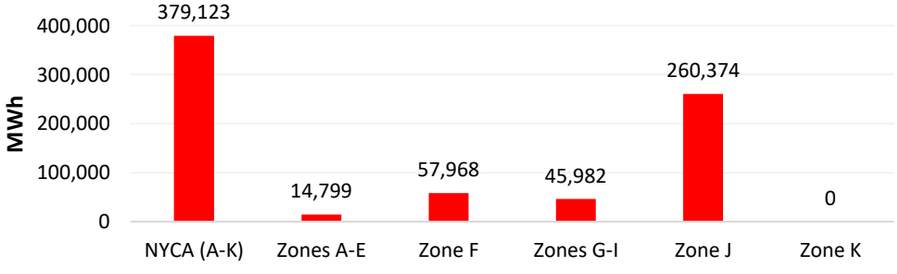
Total MWh of Reserve Violations

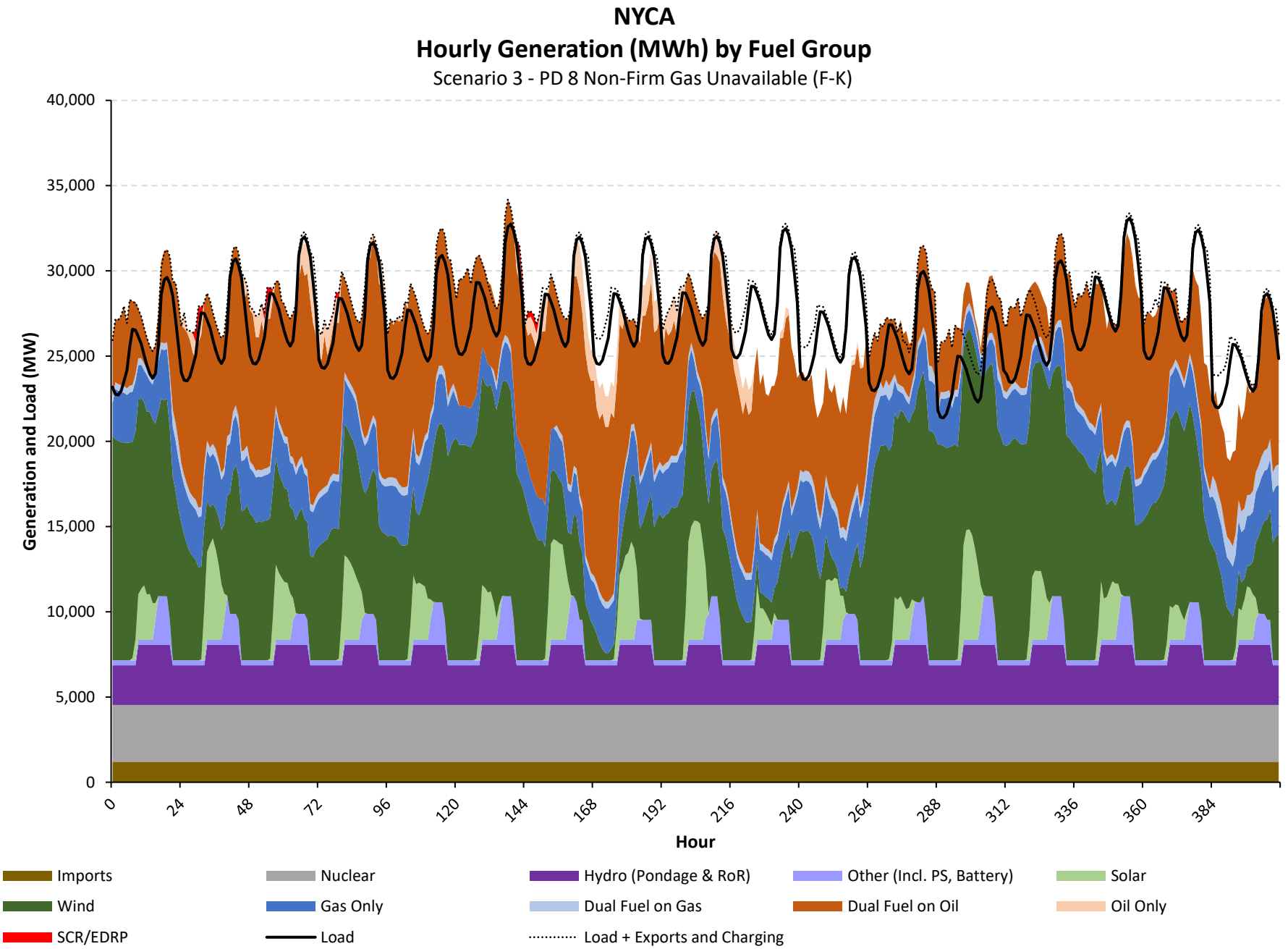


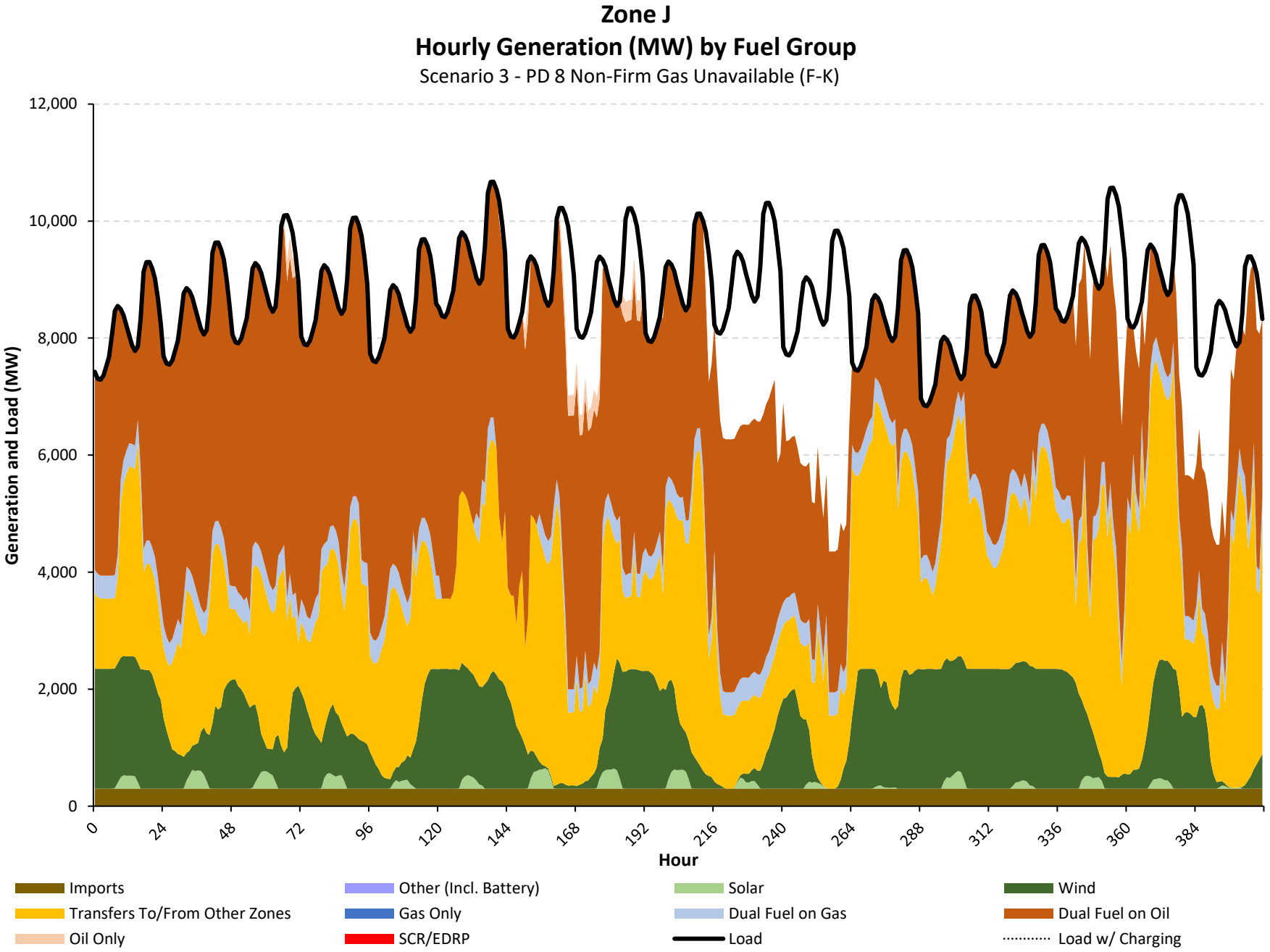
Hours with Loss of Load



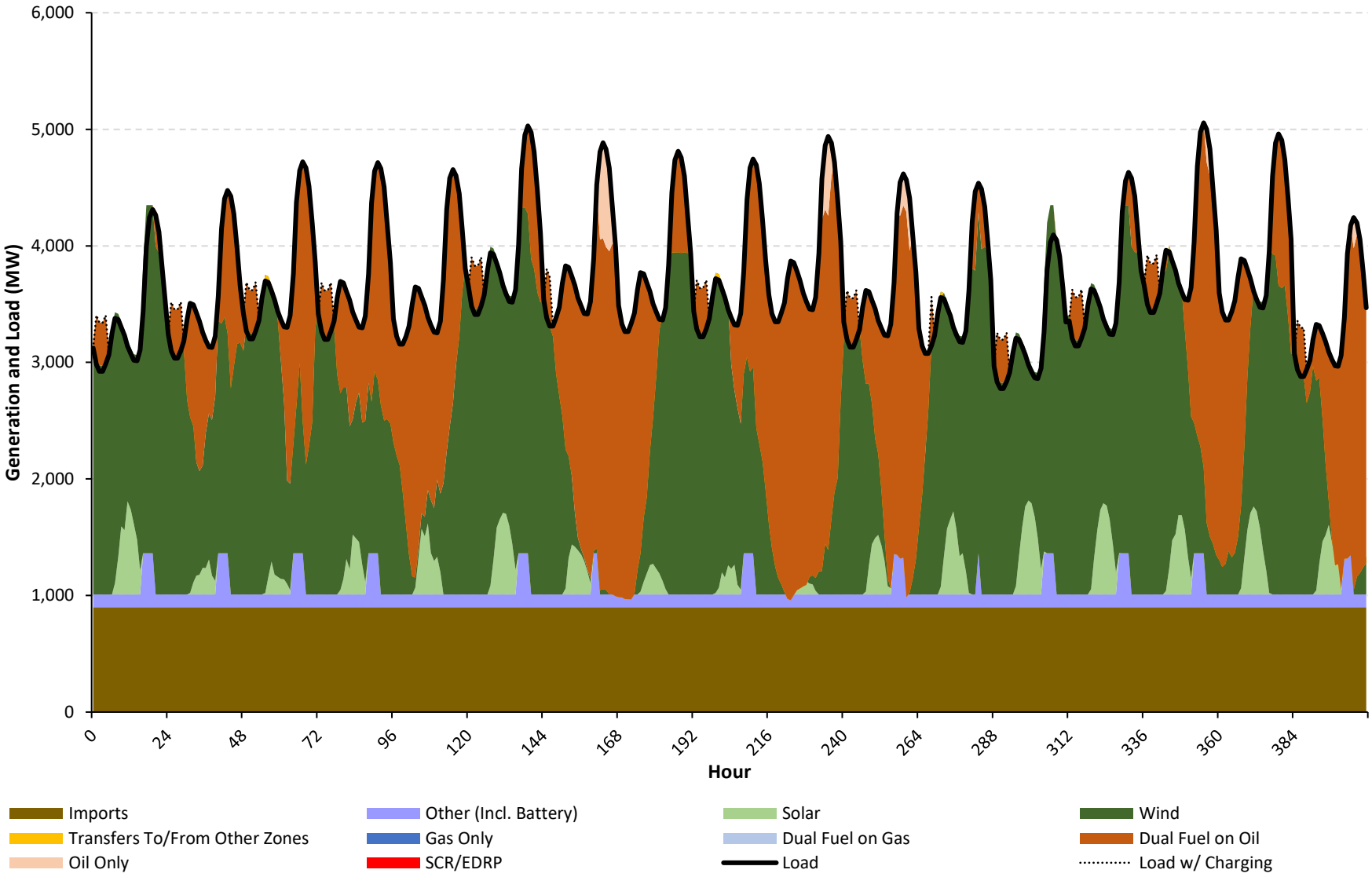
Total MWh of Lost Load




NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 3 - PD 8 Non-Firm Gas Unavailable (F-K)
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 3 - PD 8 Non-Firm Gas Unavailable (F-K)
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

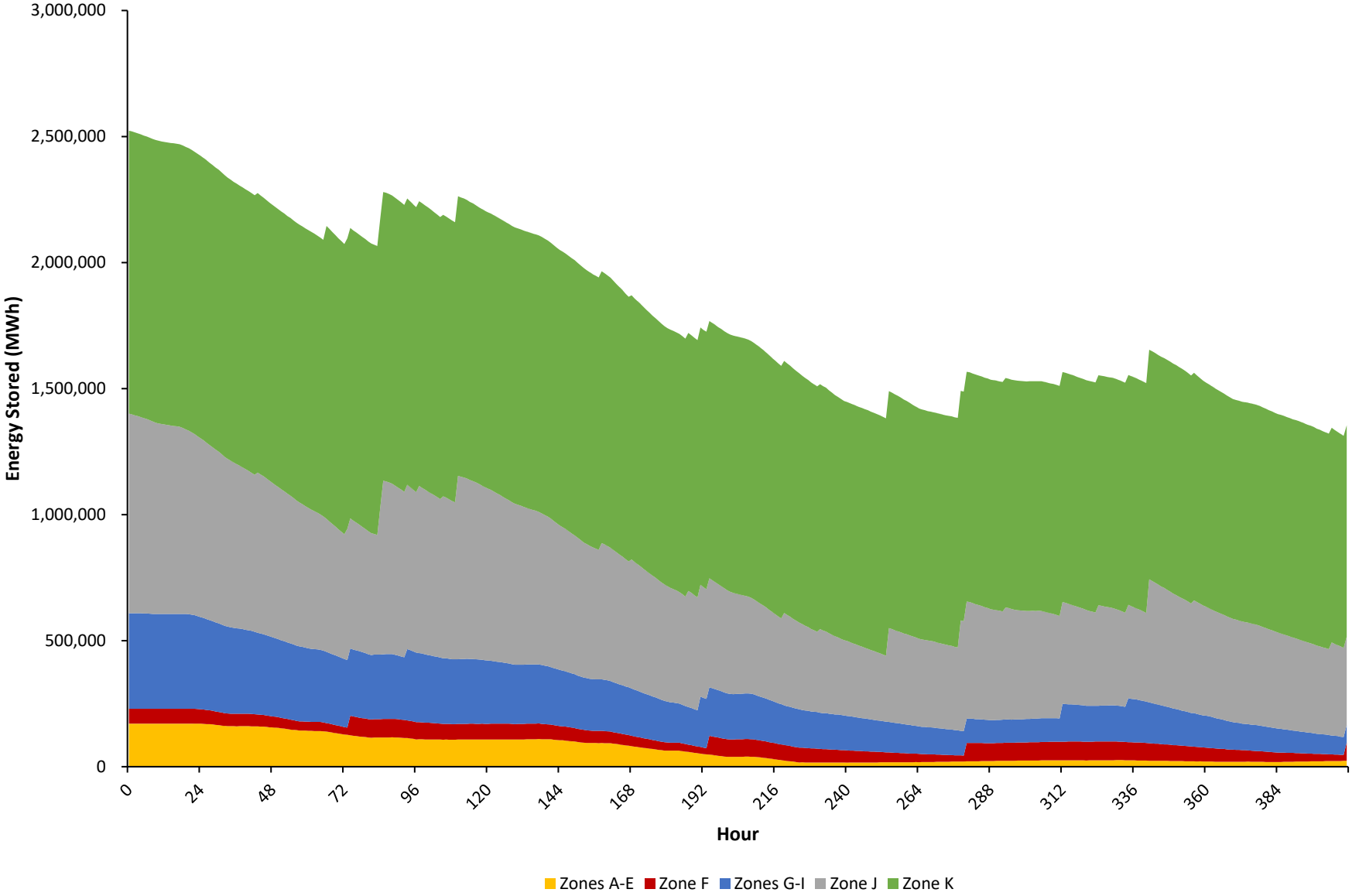
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 3 - PD 8 Non-Firm Gas Unavailable (F-K)



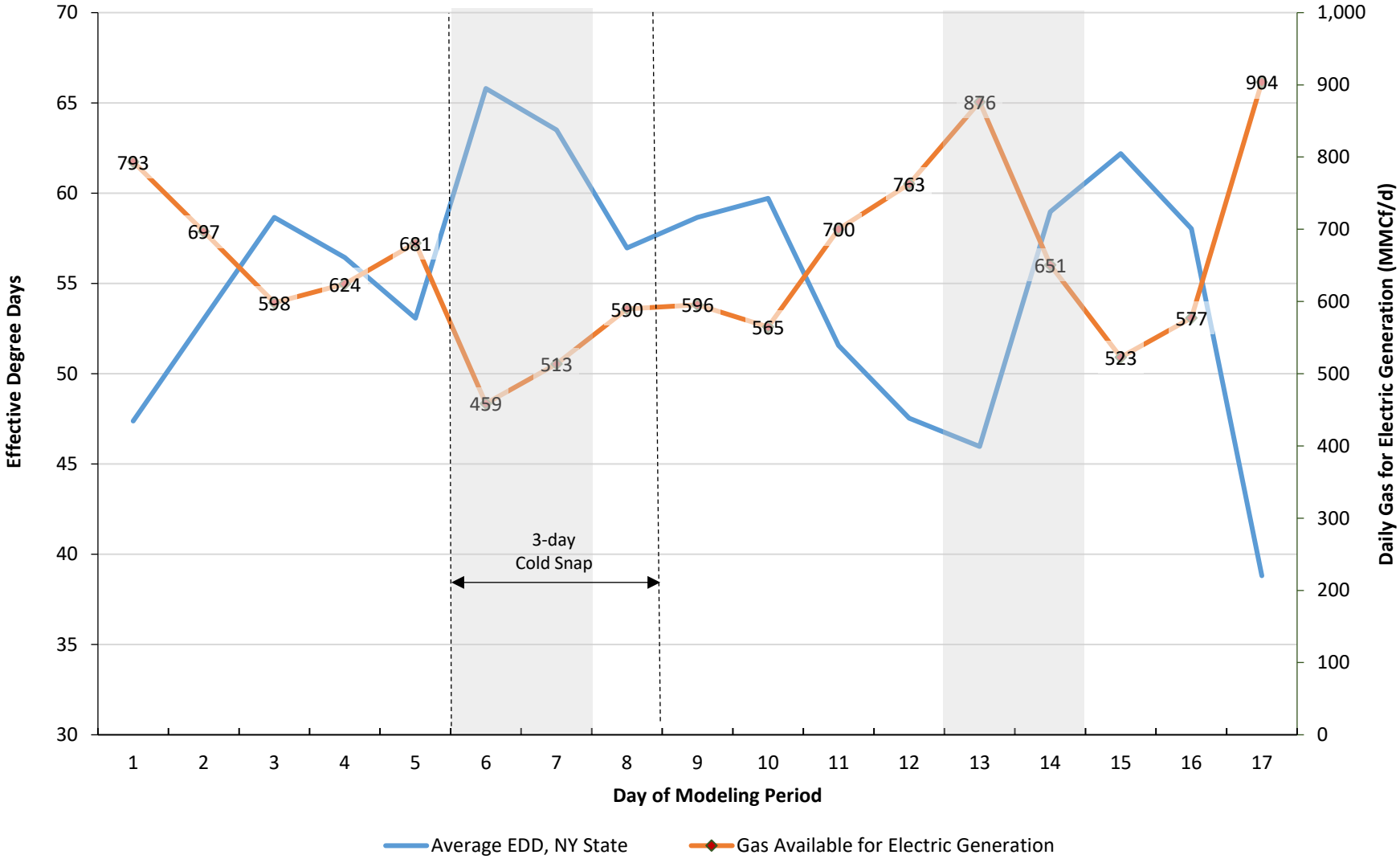
NYCA

Quantity of Stored Fuel for Oil and Dual Fuel Units

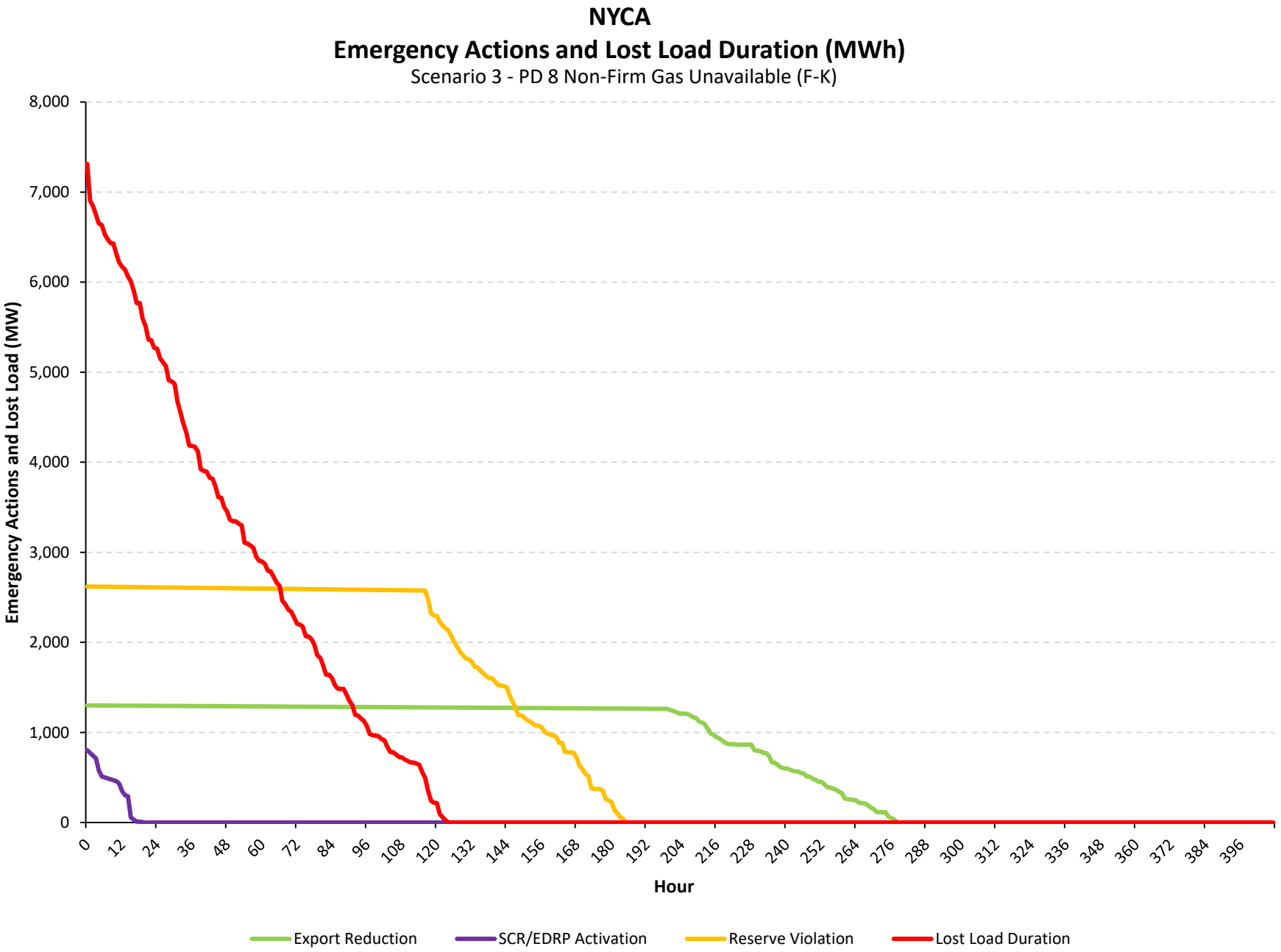
Scenario 3 - PD 8 Non-Firm Gas Unavailable (F-K)

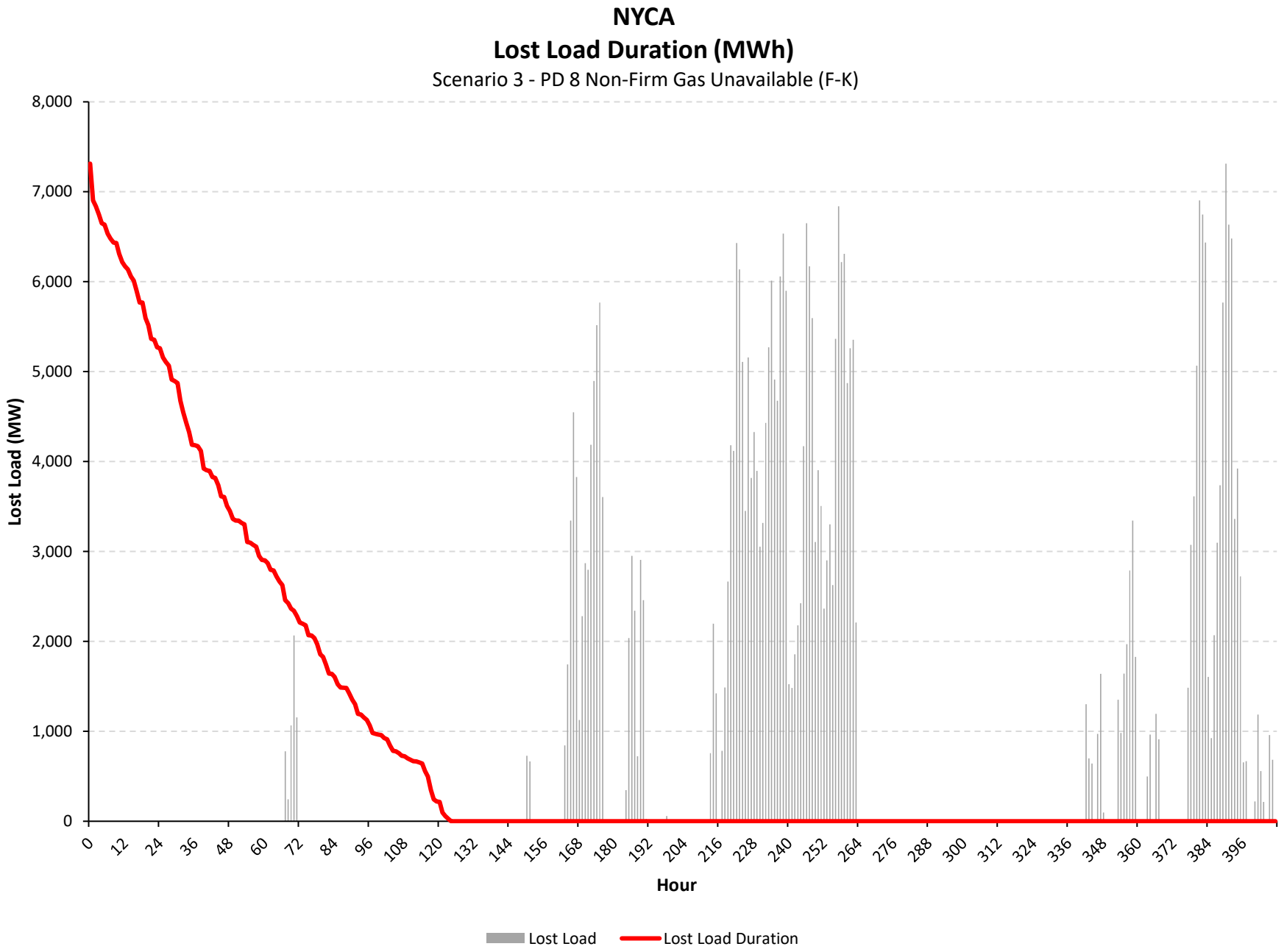


NYCA
Degree Days and Gas Available for Electric Generation 17-Day Modeling Period
Scenario 3 - PD 8 Non-Firm Gas Unavailable (F-K)



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 3 - PD 8 Non-Firm Gas Unavailable (F-K)
Emergency Actions and Lost Load (MW)
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 3 - PD 8 Non-Firm Gas Unavailable (F-K)
Lost Load (MW)
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

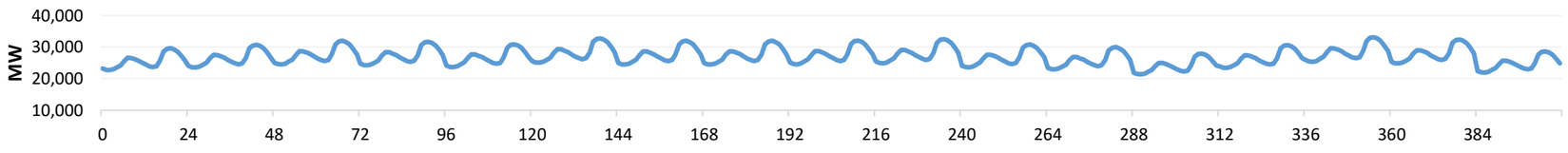
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 3 - PD 9 Non-Firm Gas Unavailable (NYCA) (Winter 2030/2031)

Hourly Results Summary

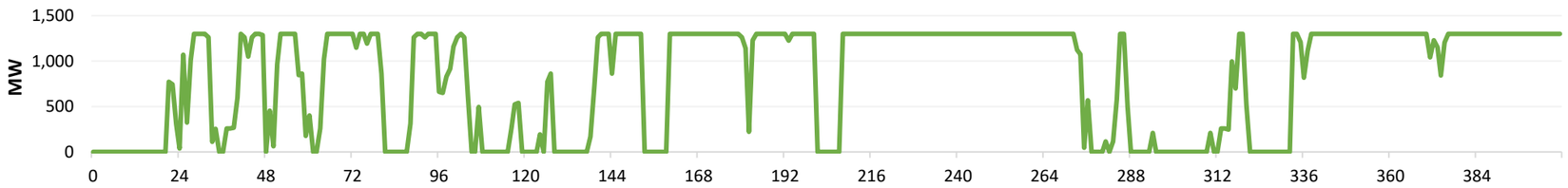
Case Name: Scenario 3 - PD 9 Non-Firm Gas Unavailable (NYCA)

Load During Modeling Period



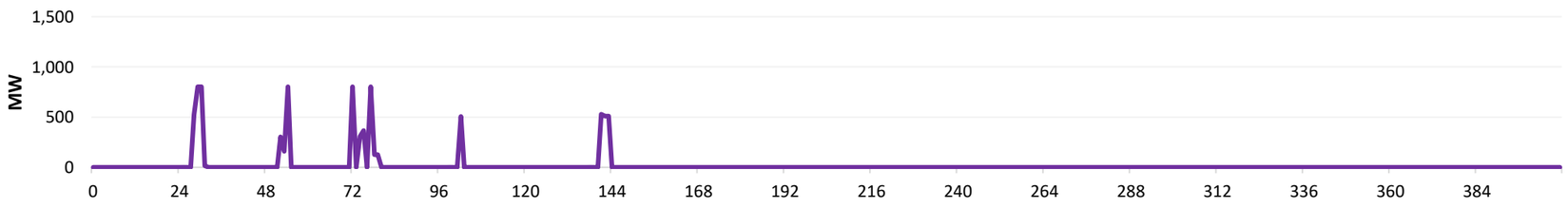
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	NYISO
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



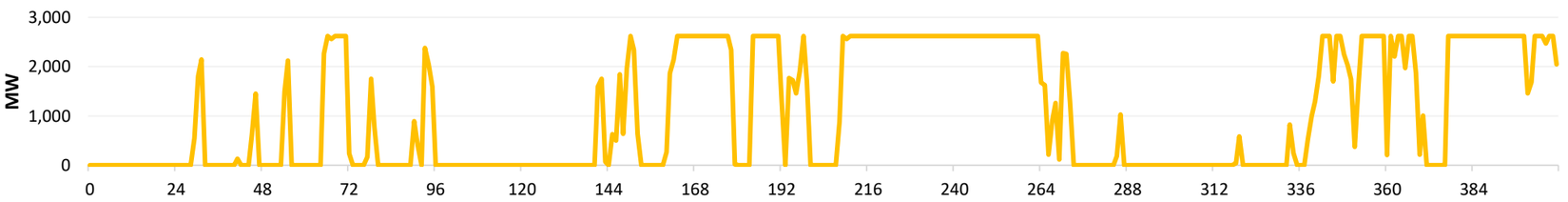
Export Reductions	
Total Hrs.	296
Total MWh	336,604
Avg. MW	825.0

SCR/EDRP Deployed During Modeling Period



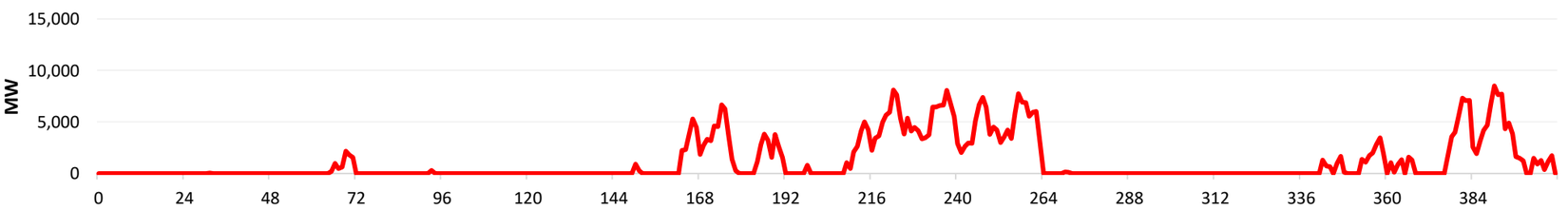
SCR Deployment	
Total Hrs.	17
Total MWh	7,989
Avg. MW	19.6

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	206
Total MWh	436,619
Avg. MW	1,070.1
First Hour with Viol.	29

Loss of Load During Modeling Period



Loss of Load	
Total Hrs.	140
Total MWh	481,385
Avg. MW	1,179.9
First Hour with Losses	31

Full Period Results Summary

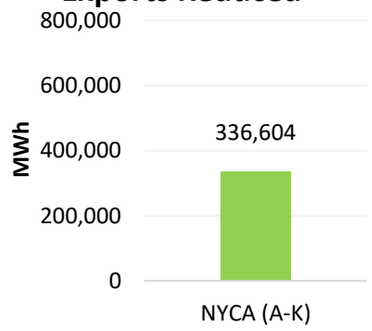
Case Name: Scenario 3 - PD 9 Non-Firm Gas Unavailable (NYCA)

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	NYISO
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

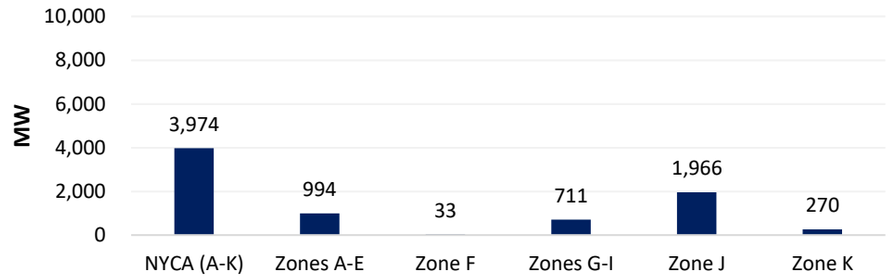
Hours Exports Reduced



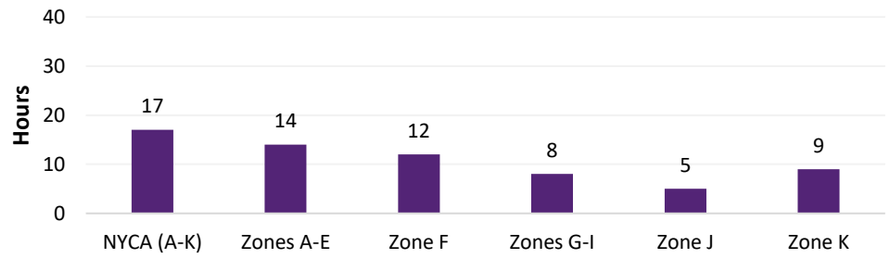
Total MWh of Exports Reduced



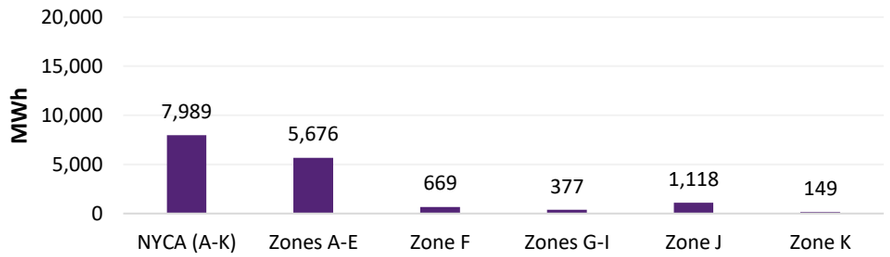
Average Capacity Not Available Due to Exhausted Fuel Inventory



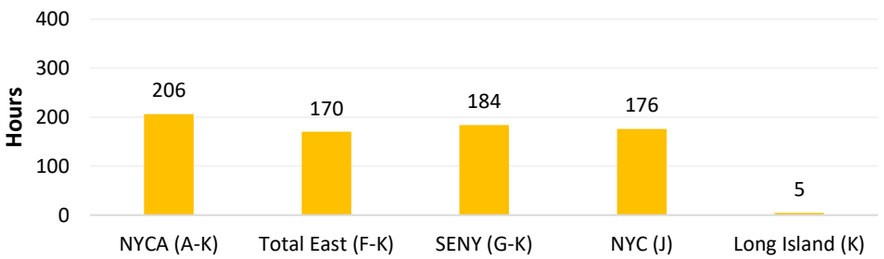
Hours SCR/EDRP Deployed



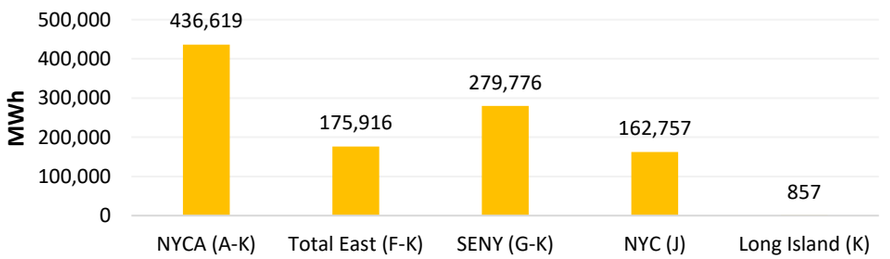
Total MWh SCR/EDRP Deployed



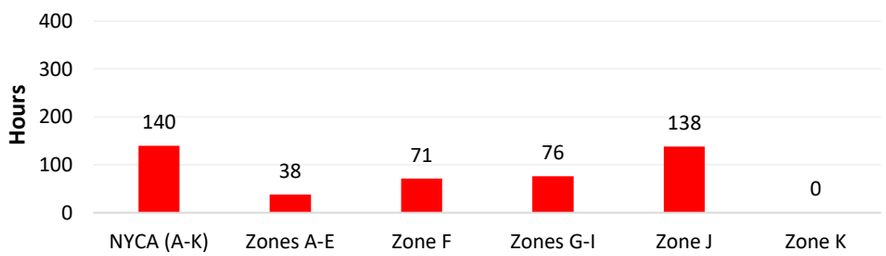
Hours with Reserve Violations



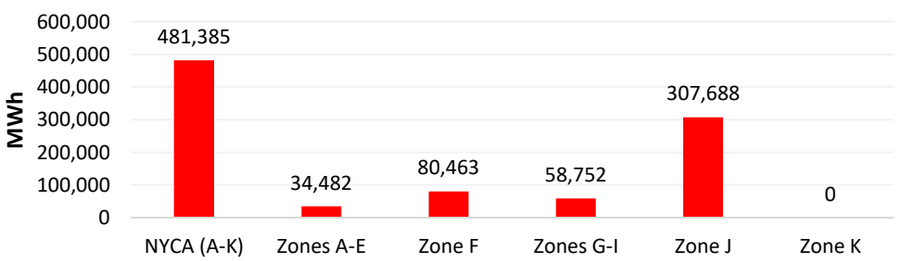
Total MWh of Reserve Violations

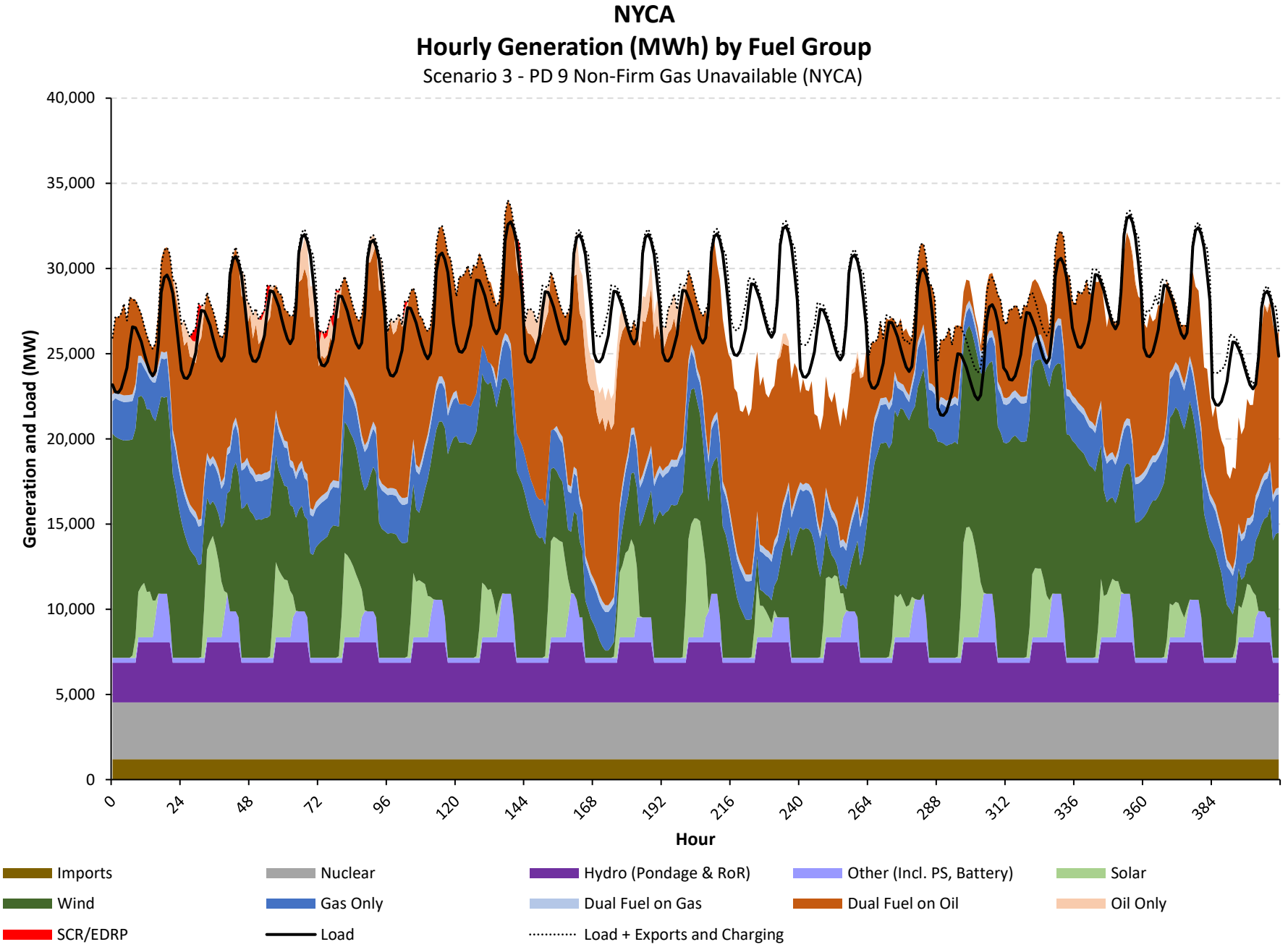


Hours with Loss of Load

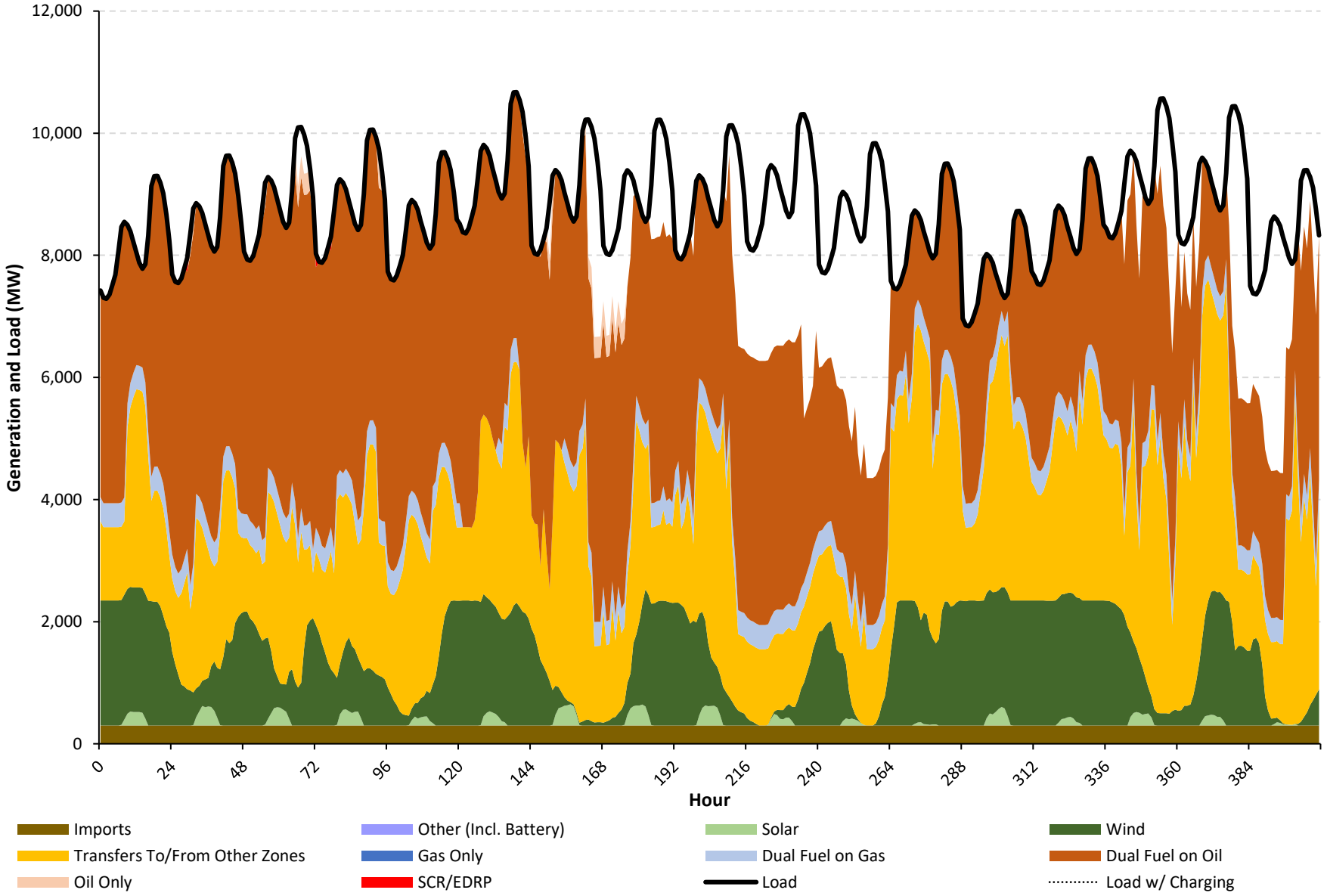


Total MWh of Lost Load

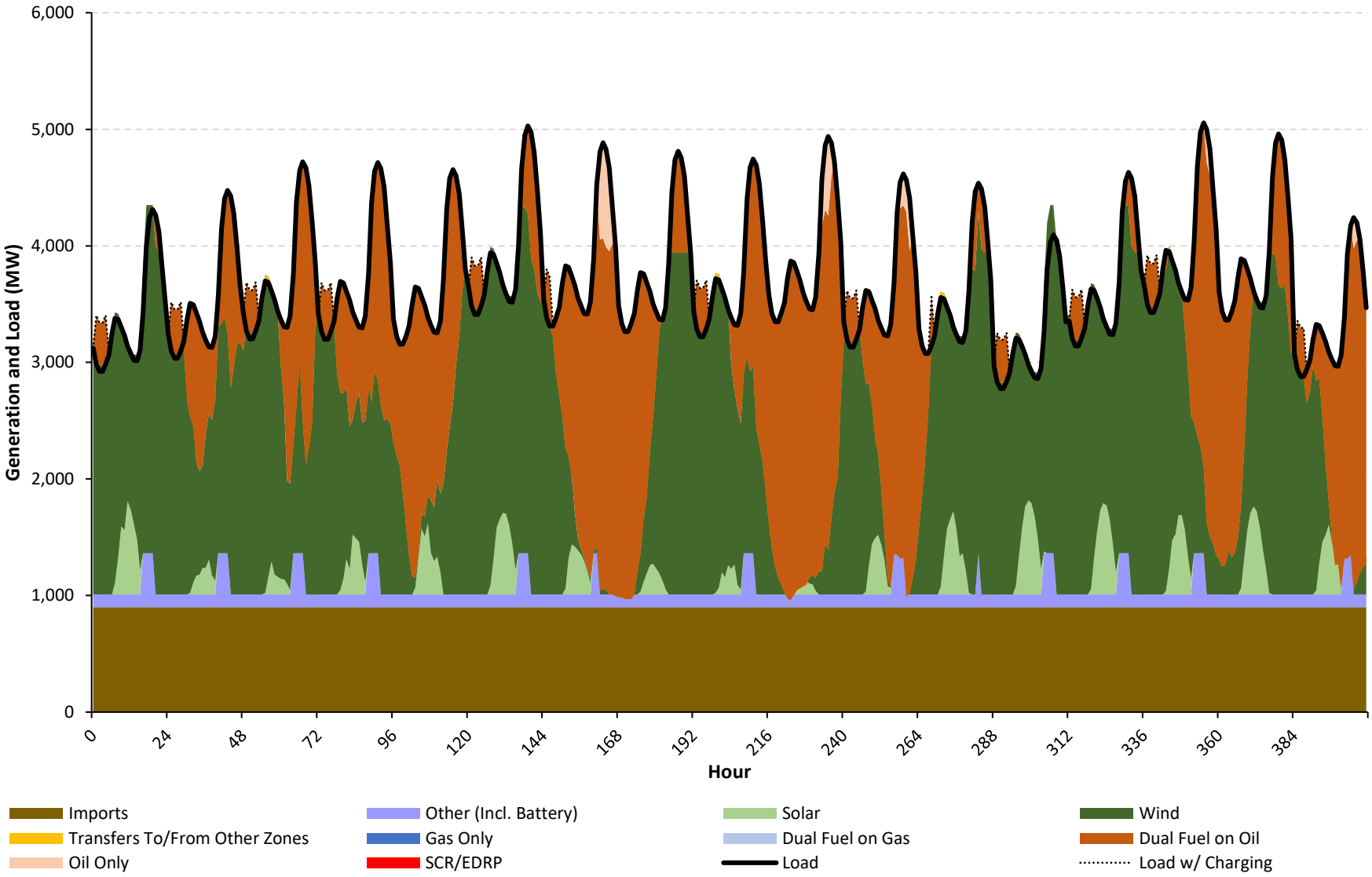



NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 3 - PD 9 Non-Firm Gas Unavailable (NYCA)
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

Zone J
Hourly Generation (MW) by Fuel Group
Scenario 3 - PD 9 Non-Firm Gas Unavailable (NYCA)



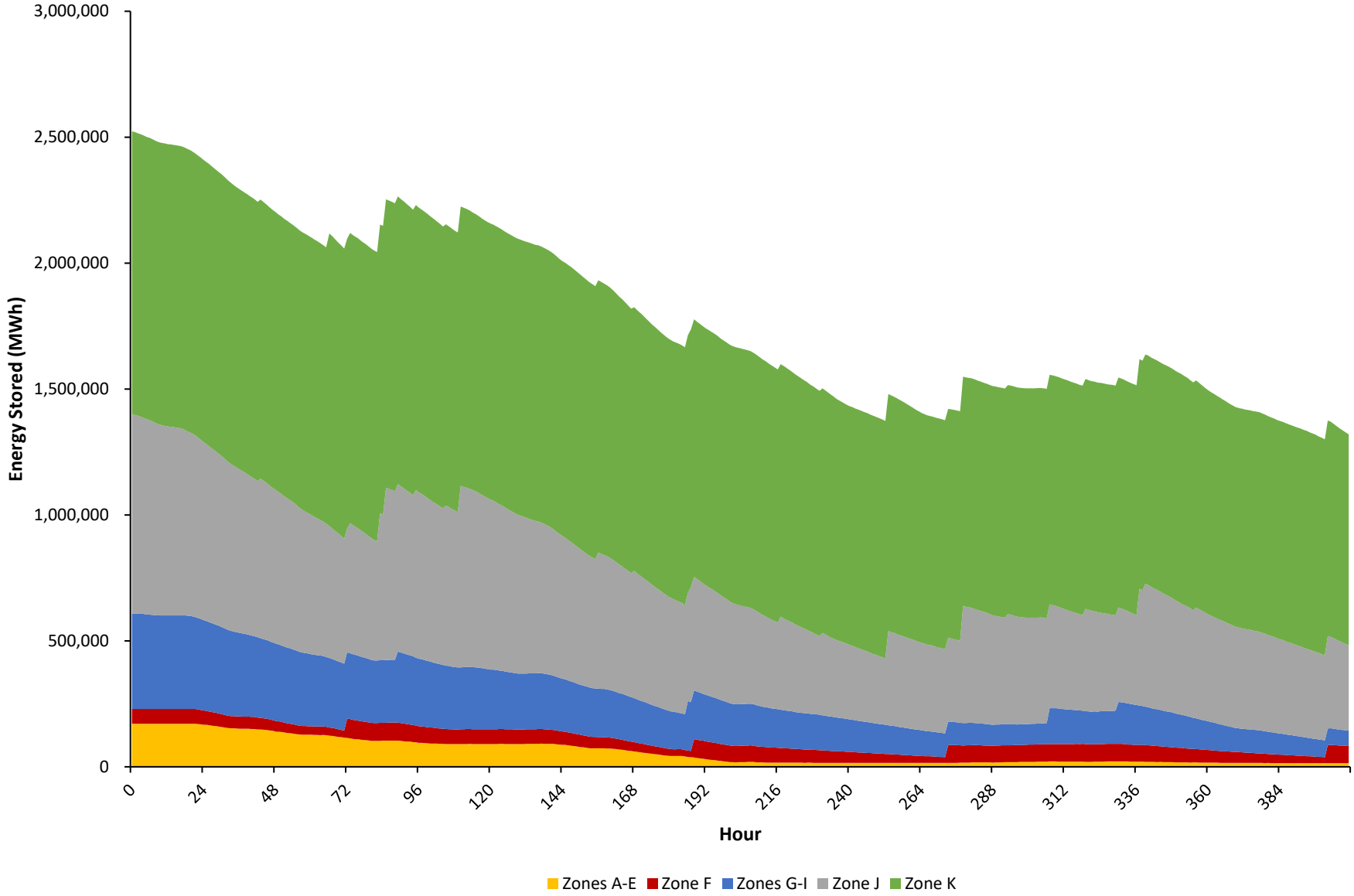
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 3 - PD 9 Non-Firm Gas Unavailable (NYCA)

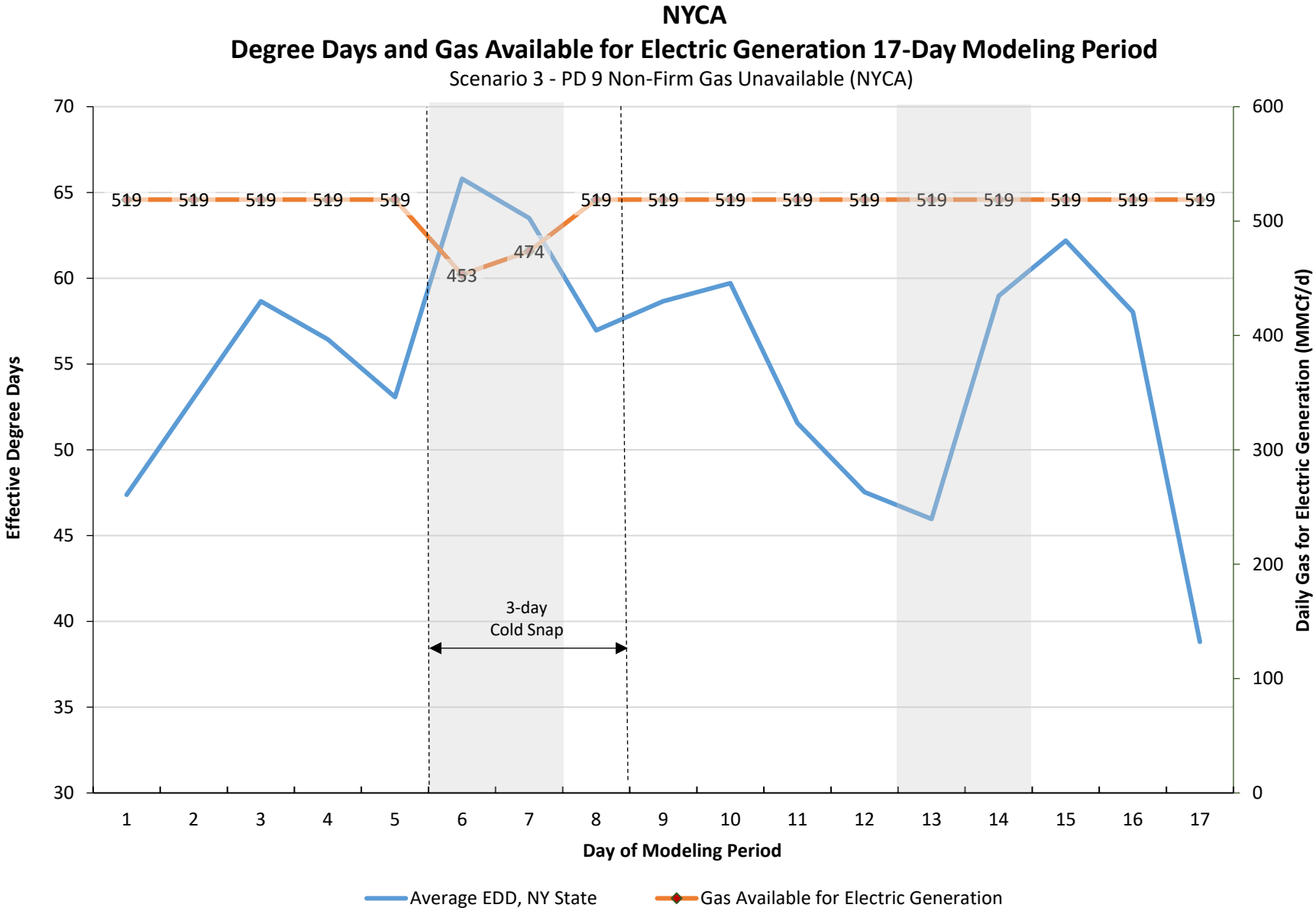


NYCA

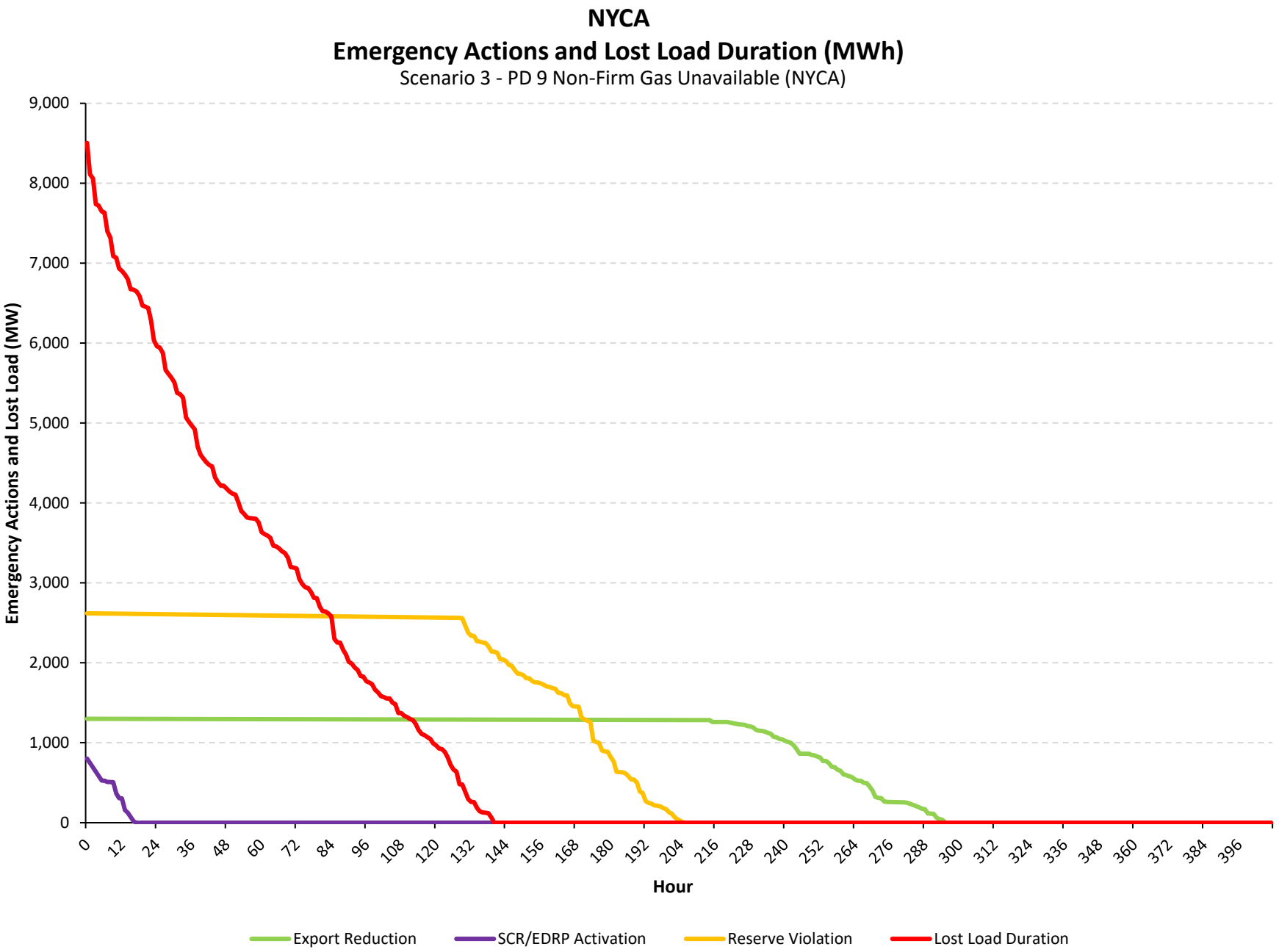
Quantity of Stored Fuel for Oil and Dual Fuel Units

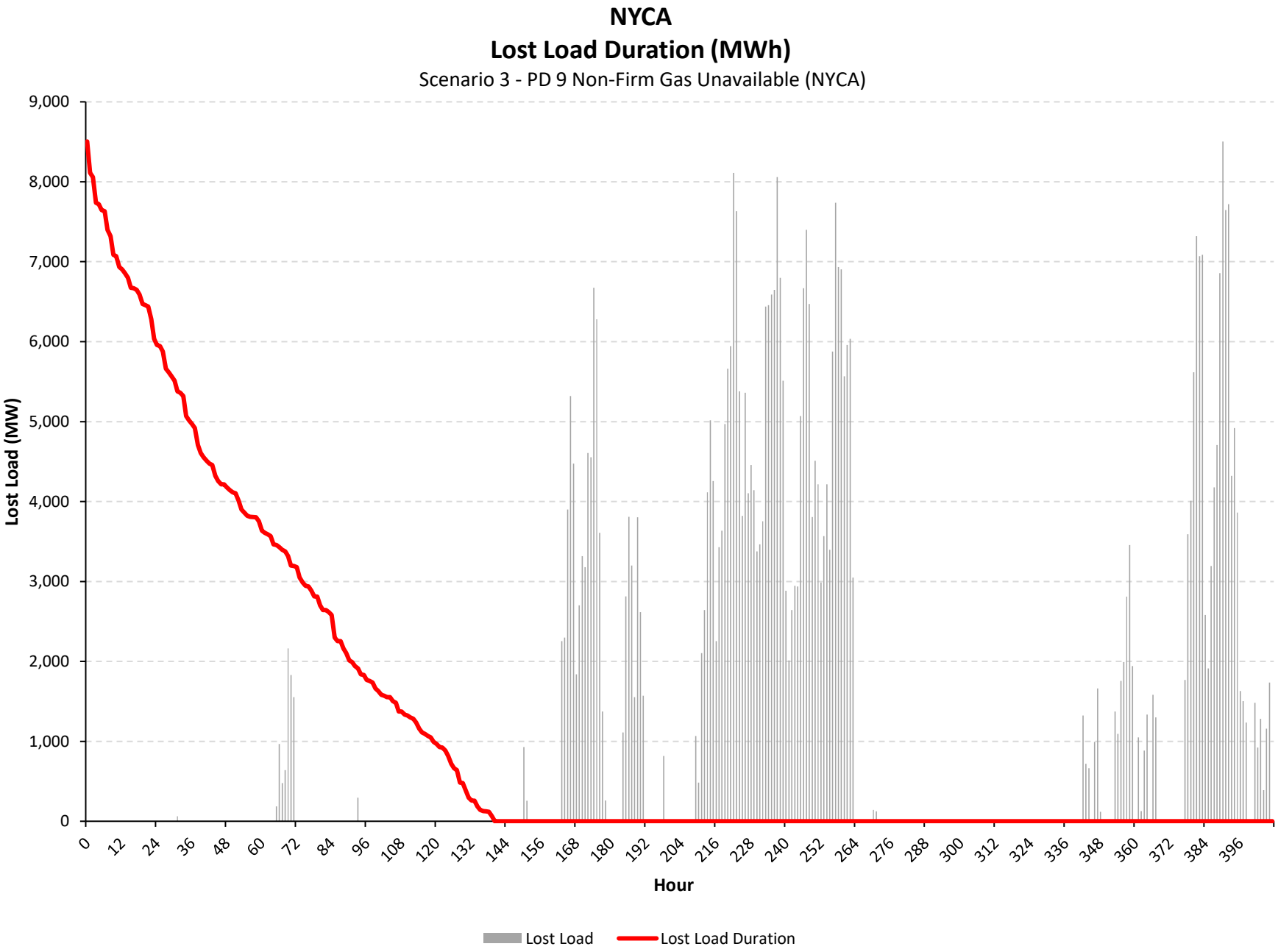
Scenario 3 - PD 9 Non-Firm Gas Unavailable (NYCA)





Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 3 - PD 9 Non-Firm Gas Unavailable (NYCA)
Emergency Actions and Lost Load (MW)
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 3 - PD 9 Non-Firm Gas Unavailable (NYCA)
Lost Load (MW)
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

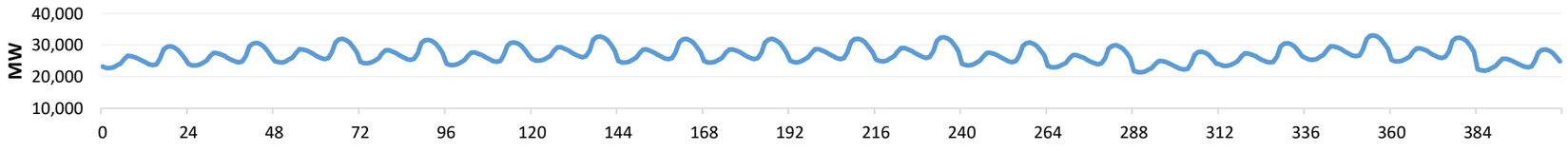
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 3 - PD 10 Non-Firm Gas Unavailable (4 days) (Winter 2030/2031)

Hourly Results Summary

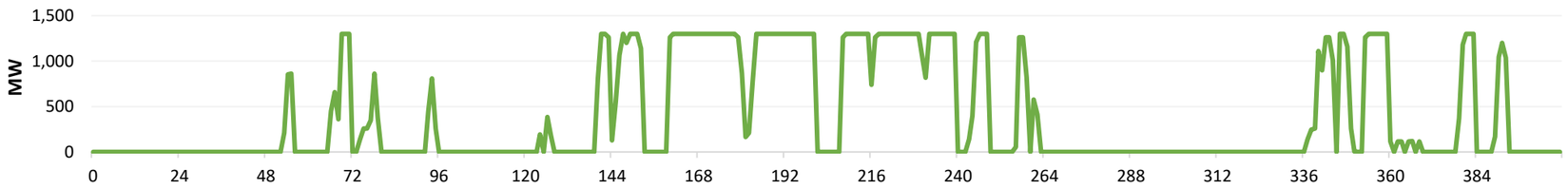
Case Name: Scenario 3 - PD 10 Non-Firm Gas Unavailable (4 days)

Load During Modeling Period



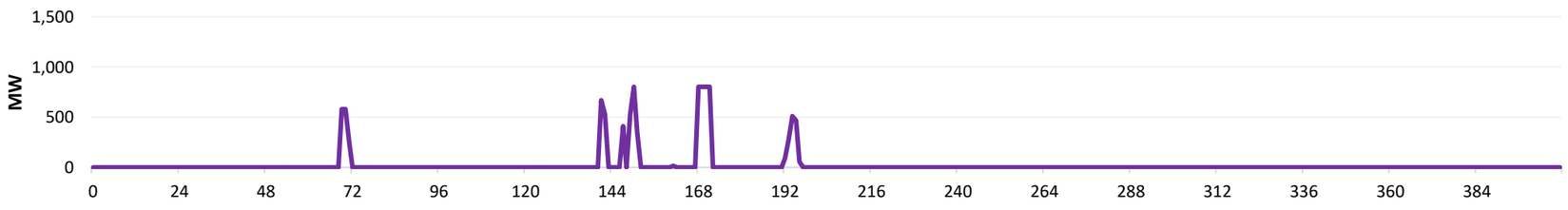
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	3-4 days
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



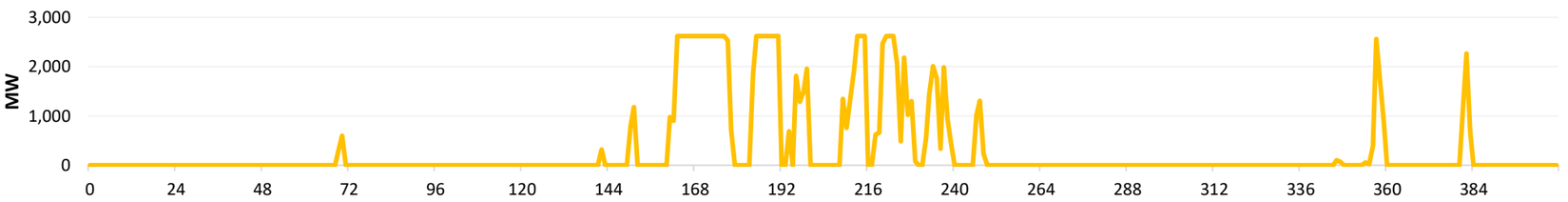
Export Reductions	
Total Hrs.	154
Total MWh	154,950
Avg. MW	379.8

SCR/EDRP Deployed During Modeling Period



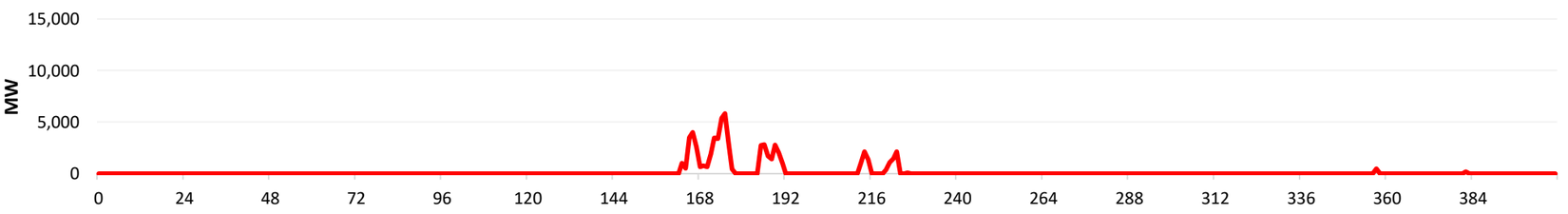
SCR Deployment	
Total Hrs.	19
Total MWh	9,315
Avg. MW	22.8

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	77
Total MWh	126,210
Avg. MW	309.3
First Hour with Viol.	69

Loss of Load During Modeling Period



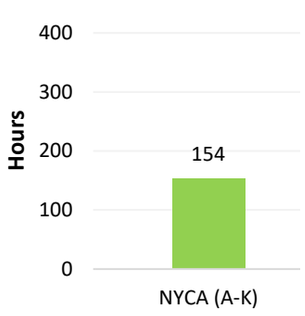
Loss of Load	
Total Hrs.	32
Total MWh	61,939
Avg. MW	151.8
First Hour with Losses	163

Full Period Results Summary

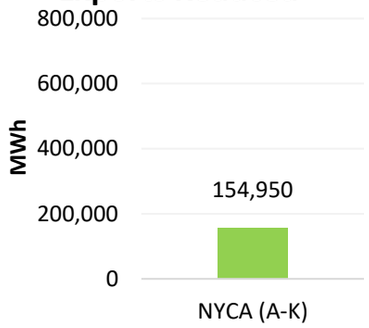
Case Name: Scenario 3 - PD 10 Non-Firm Gas Unavailable (4 days)

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	3-4 days
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

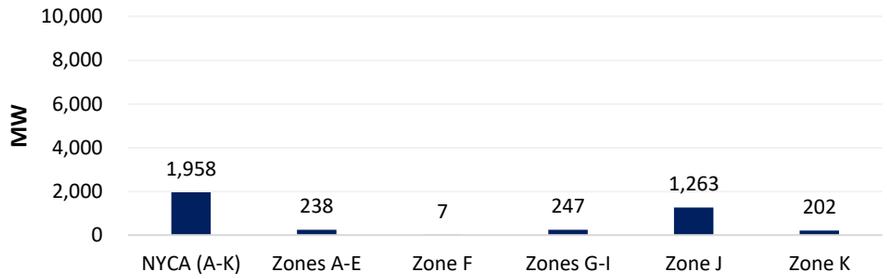
Hours Exports Reduced



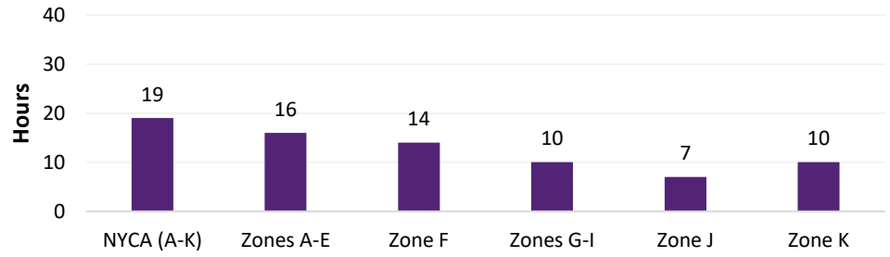
Total MWh of Exports Reduced



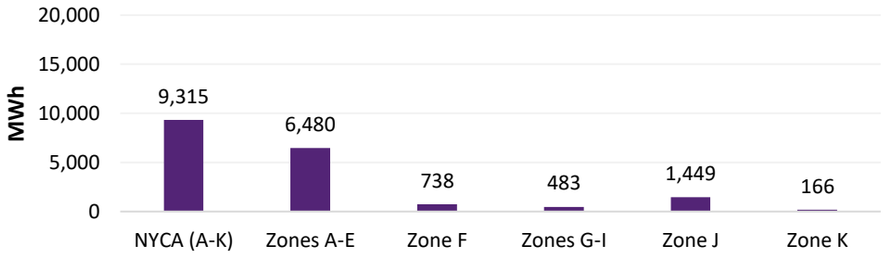
Average Capacity Not Available Due to Exhausted Fuel Inventory



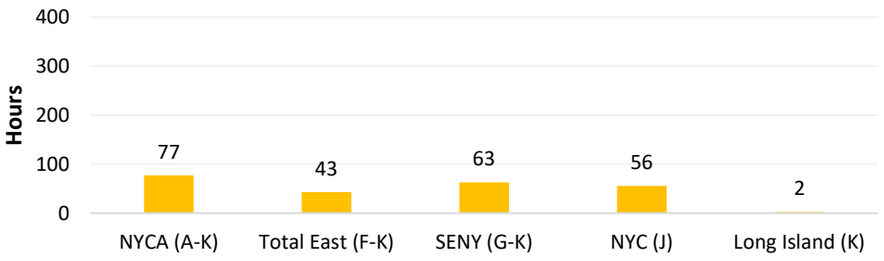
Hours SCR/EDRP Deployed



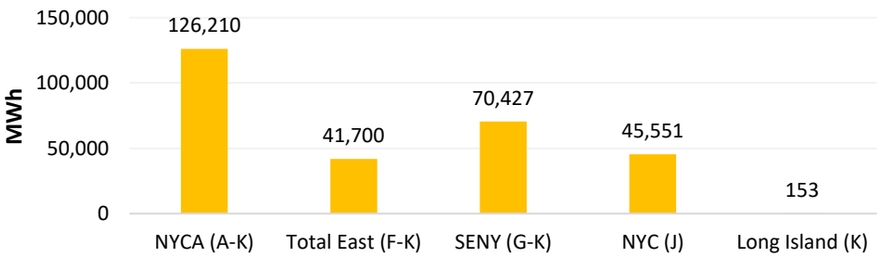
Total MWh SCR/EDRP Deployed



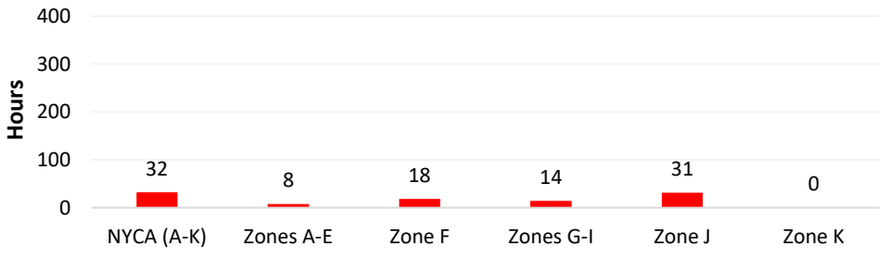
Hours with Reserve Violations



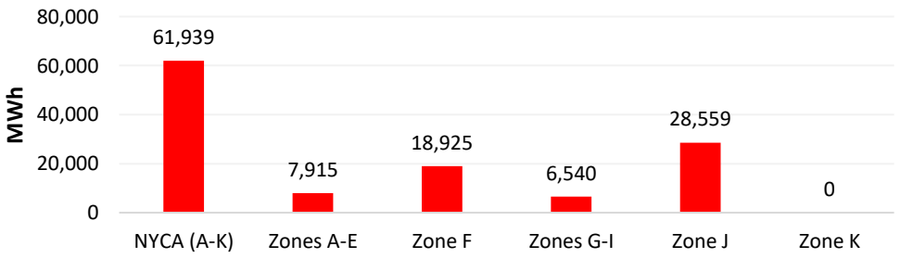
Total MWh of Reserve Violations

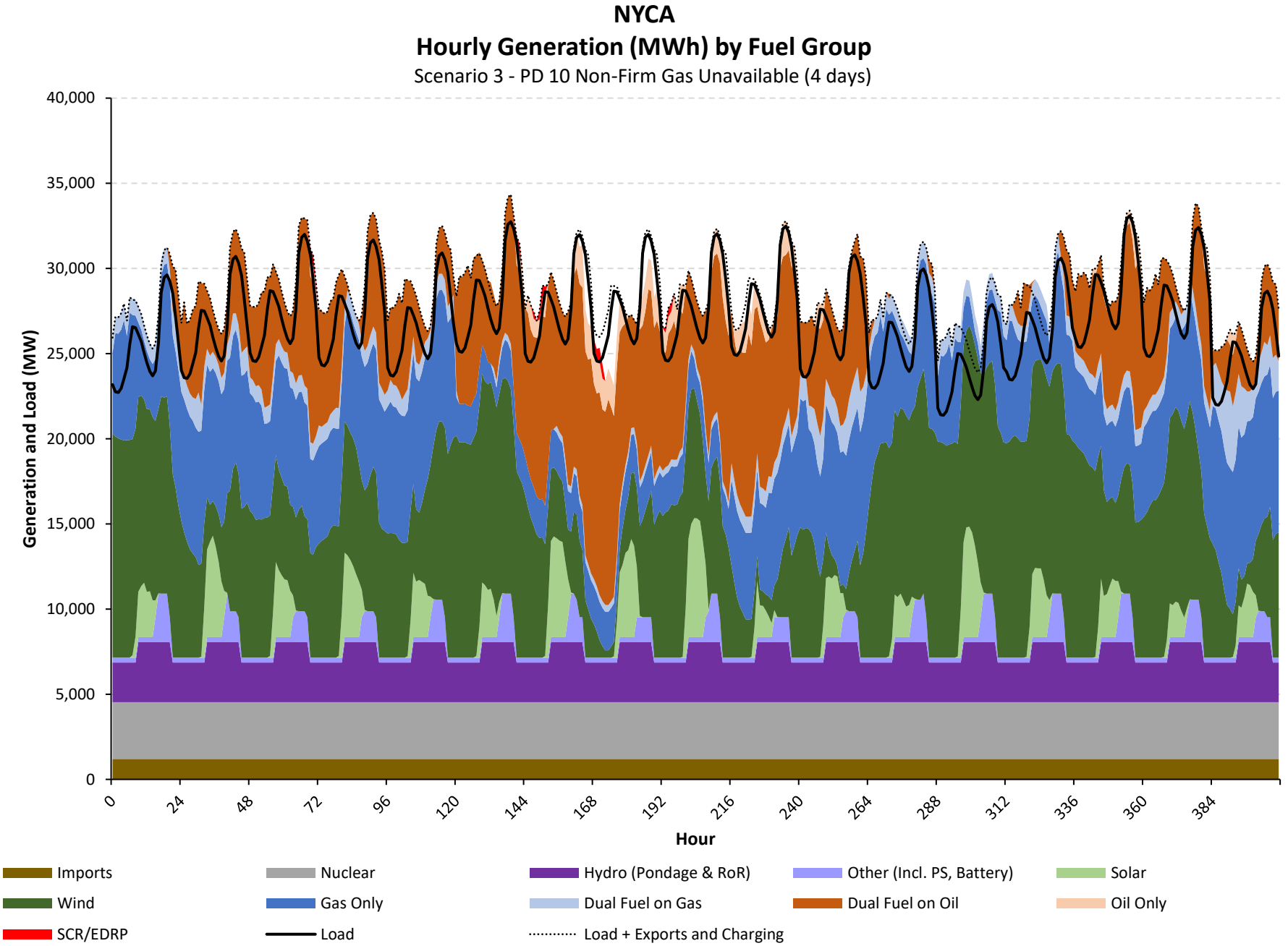


Hours with Loss of Load

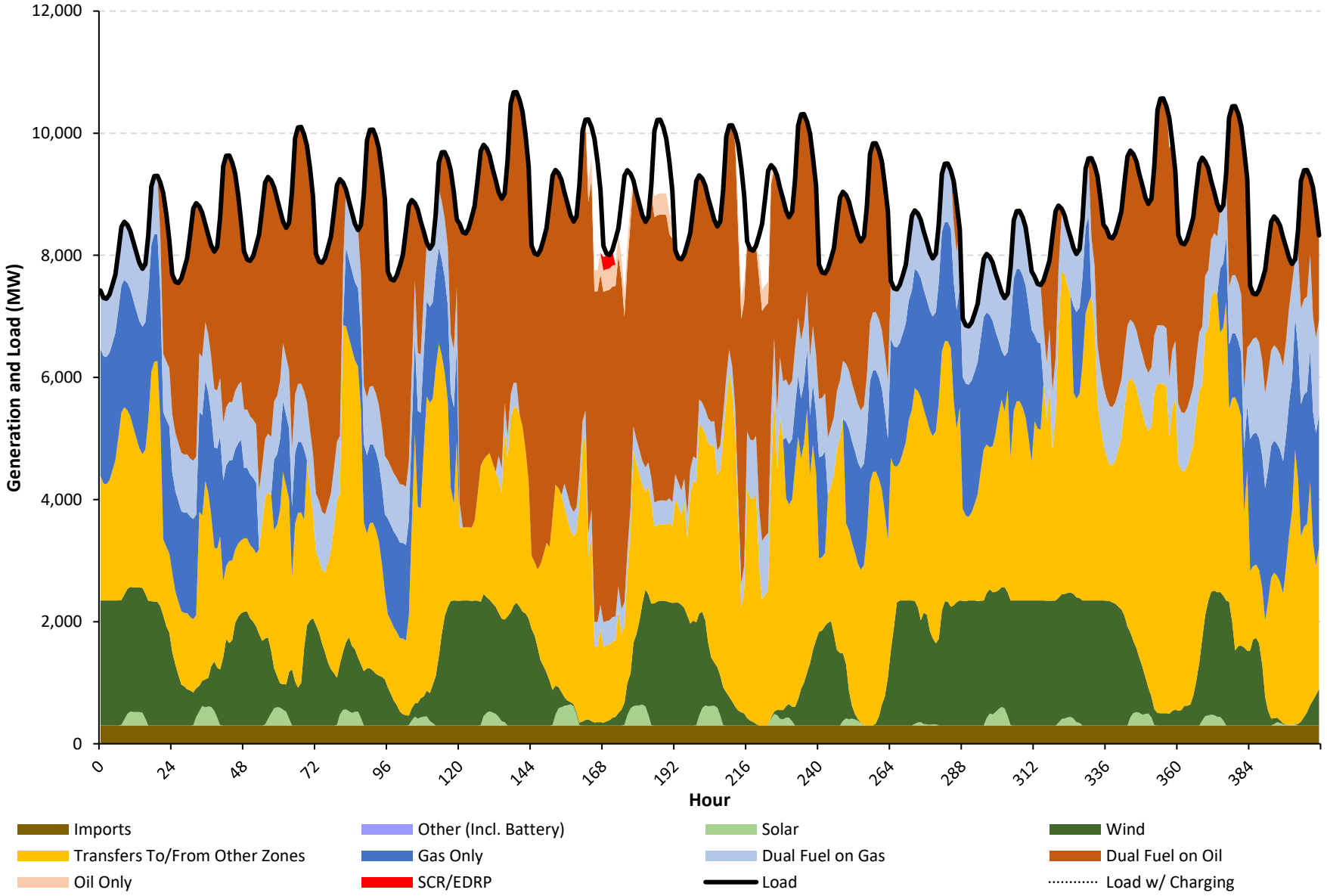


Total MWh of Lost Load

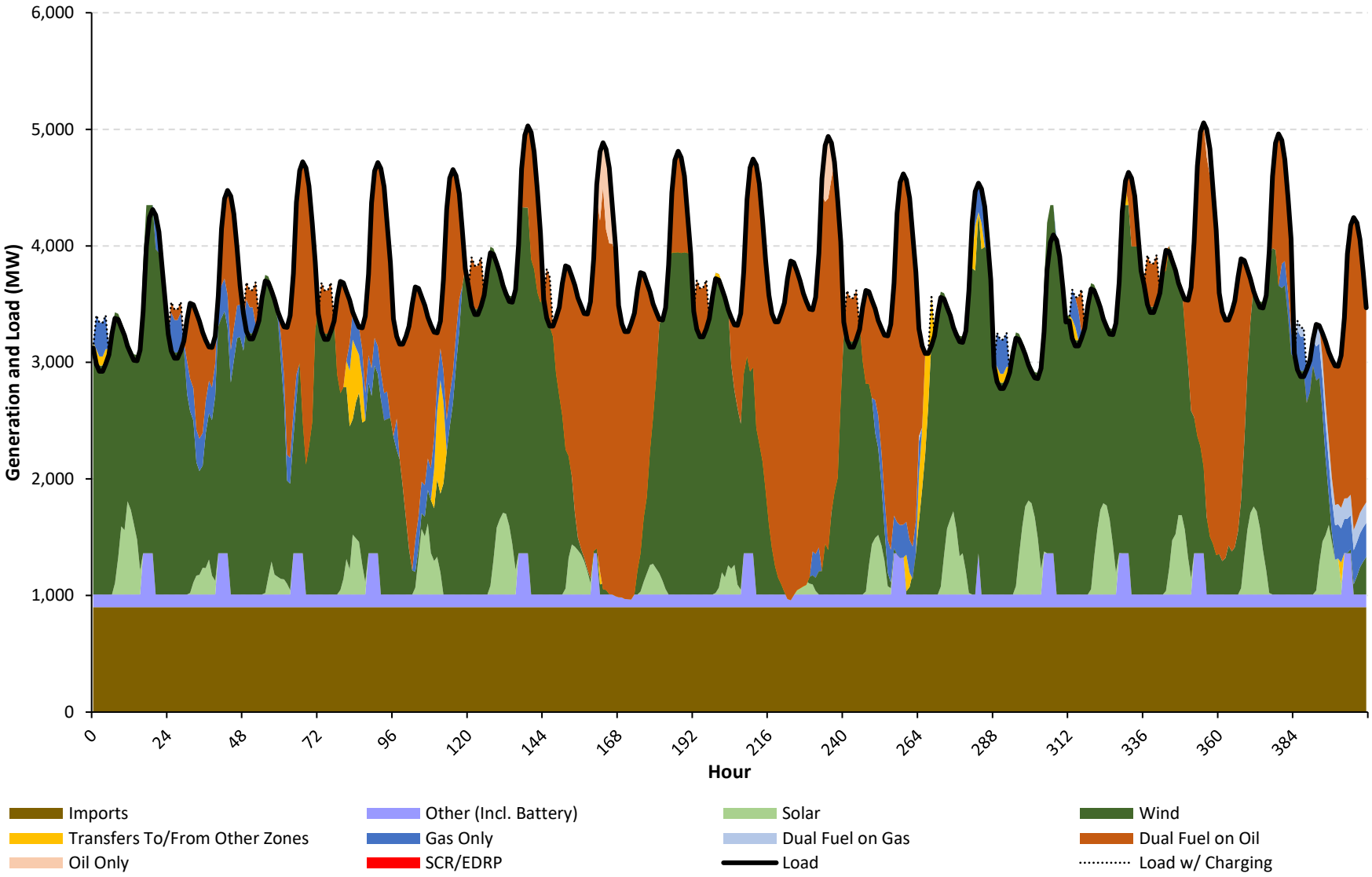



NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 3 - PD 10 Non-Firm Gas Unavailable (4 days)
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

Zone J
Hourly Generation (MW) by Fuel Group
Scenario 3 - PD 10 Non-Firm Gas Unavailable (4 days)



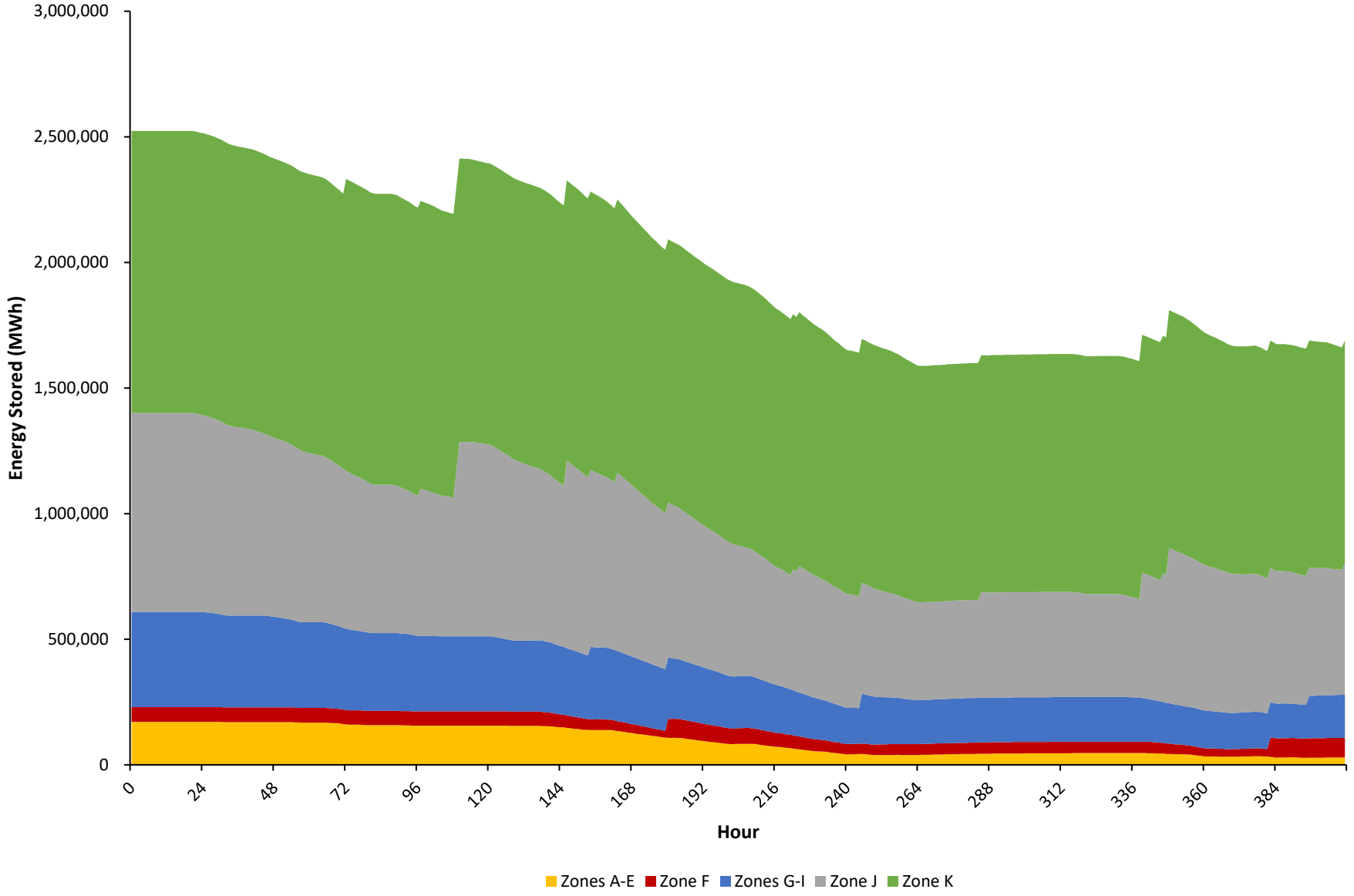
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 3 - PD 10 Non-Firm Gas Unavailable (4 days)



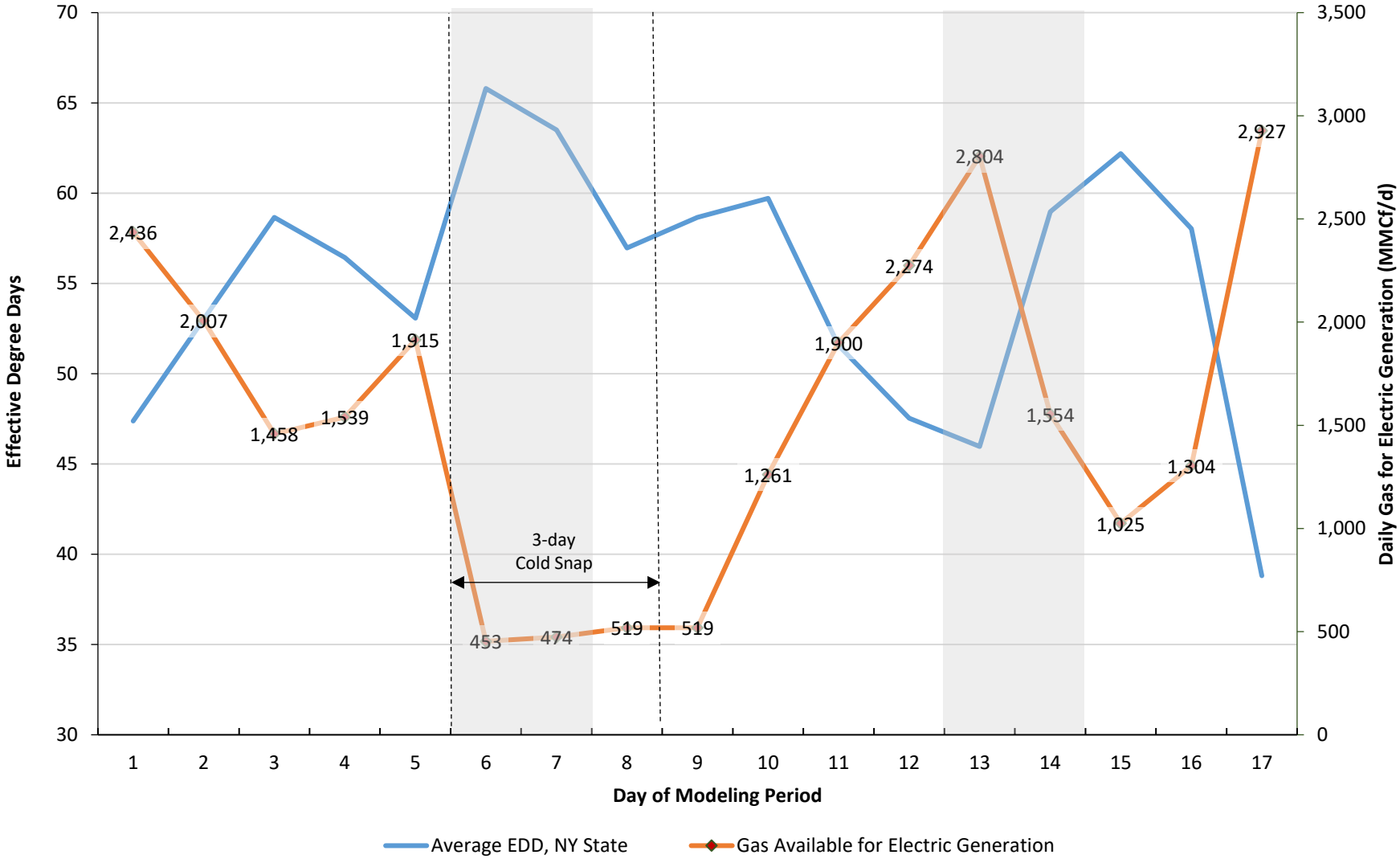
NYCA

Quantity of Stored Fuel for Oil and Dual Fuel Units

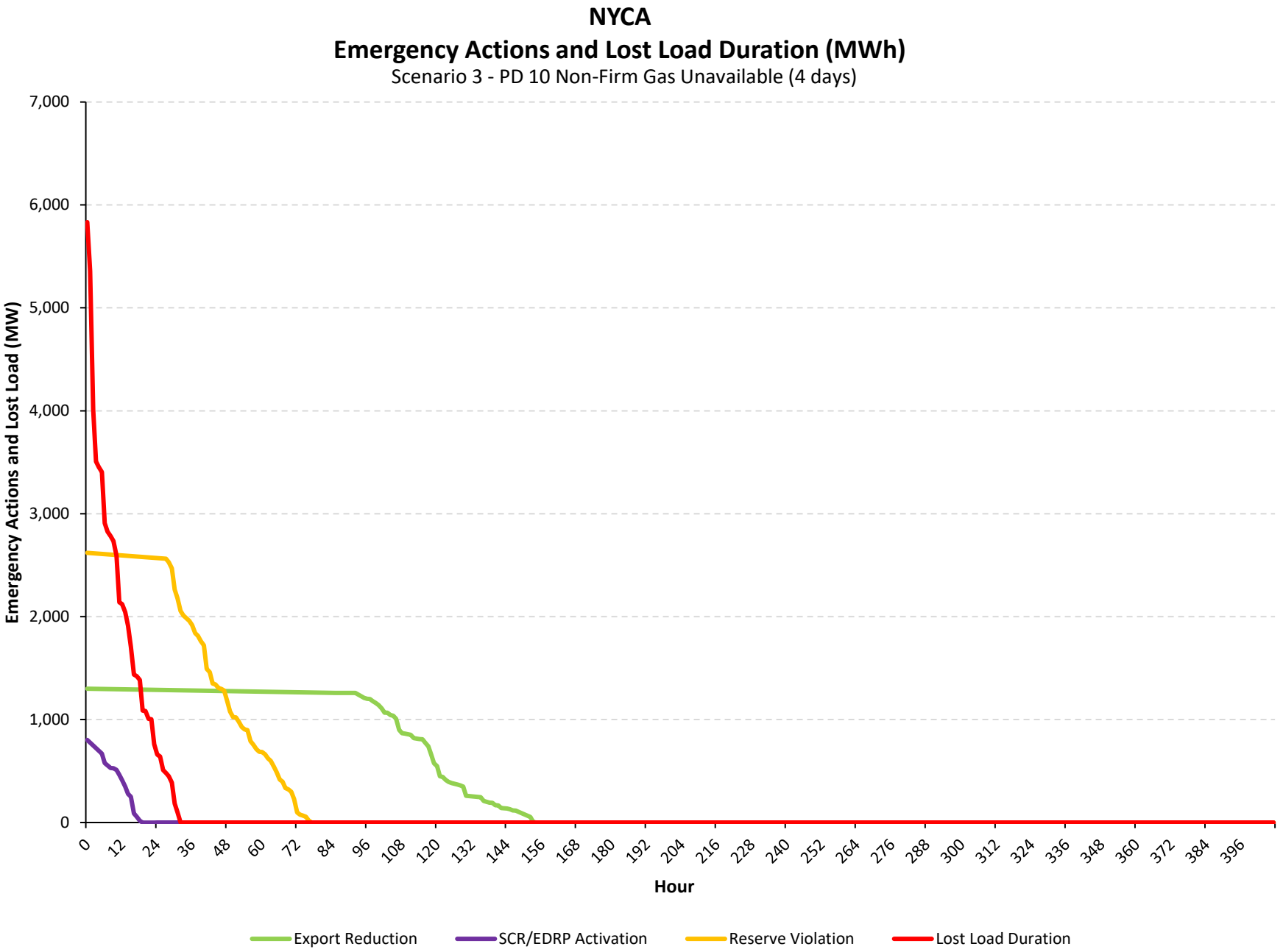
Scenario 3 - PD 10 Non-Firm Gas Unavailable (4 days)

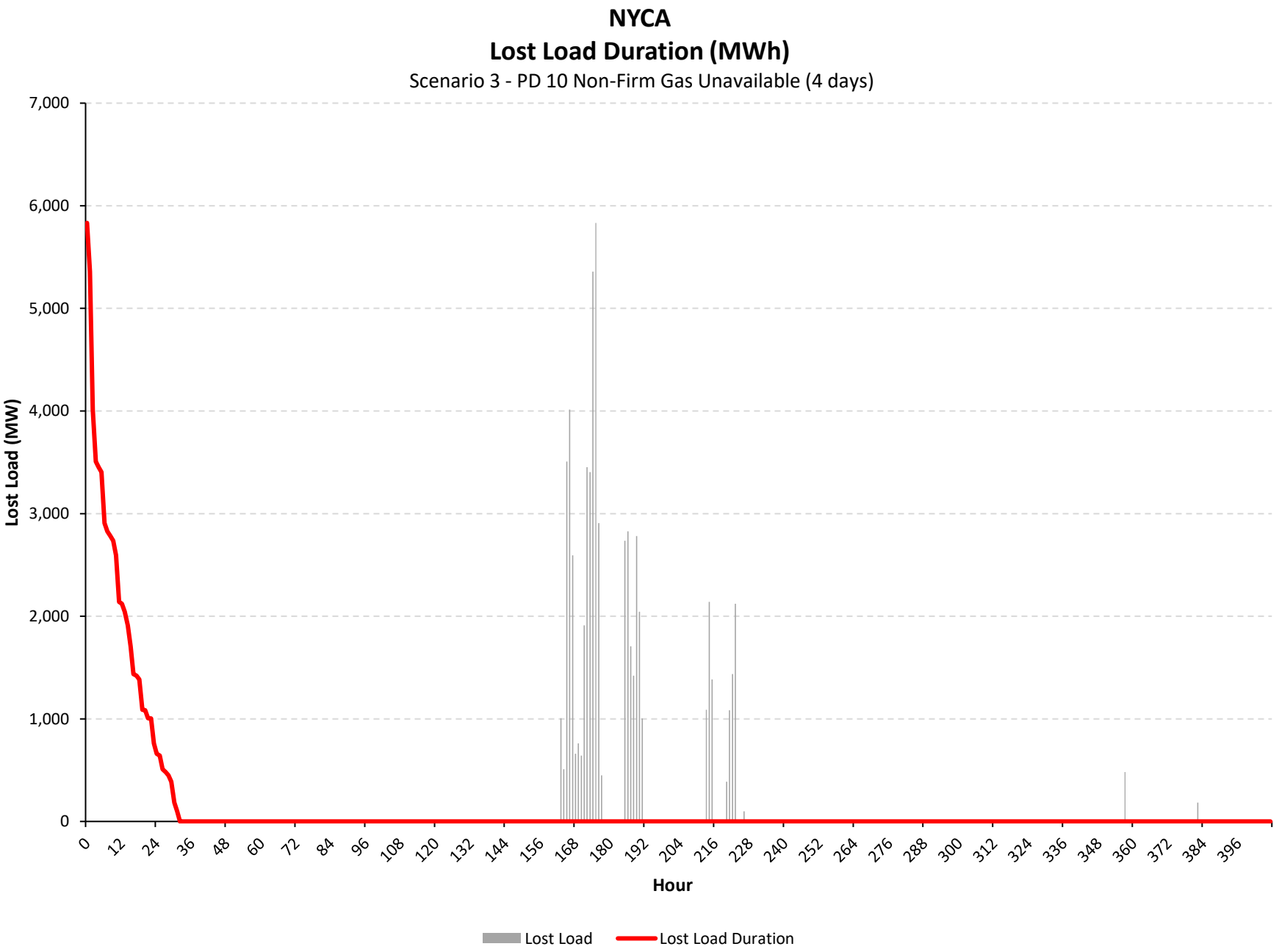


NYCA
Degree Days and Gas Available for Electric Generation 17-Day Modeling Period
Scenario 3 - PD 10 Non-Firm Gas Unavailable (4 days)



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 3 - PD 10 Non-Firm Gas Unavailable (4 days)
Emergency Actions and Lost Load (MW)
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 3 - PD 10 Non-Firm Gas Unavailable (4 days)
Lost Load (MW)
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

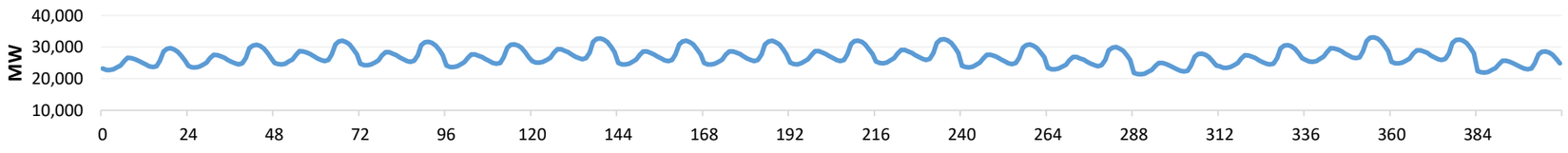
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 3 - PD 11 Combination Disruption (Winter 2030/2031)

Hourly Results Summary

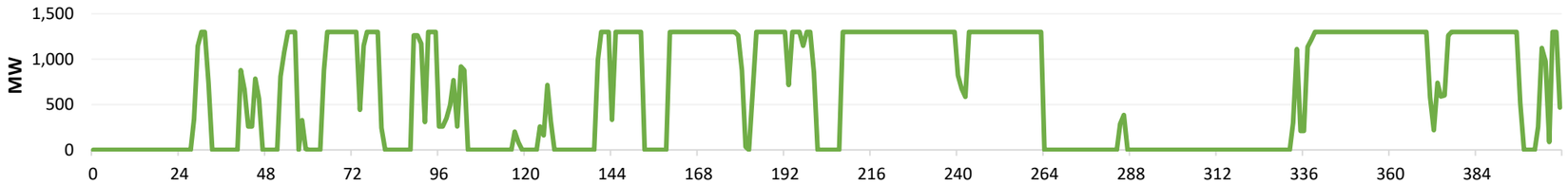
Case Name: Scenario 3 - PD 11 Combination Disruption

Load During Modeling Period



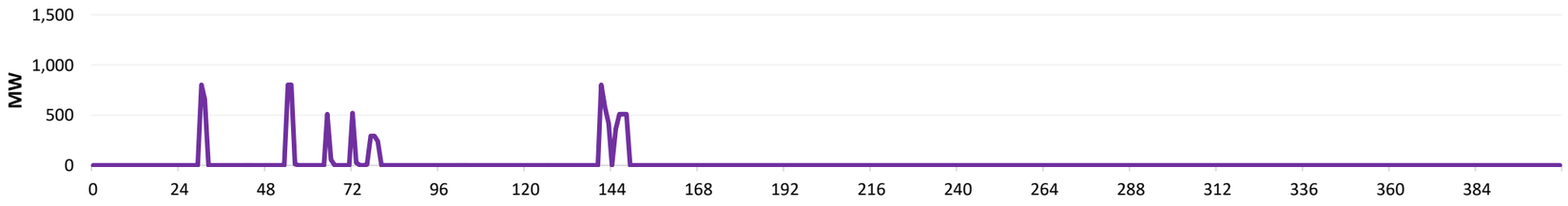
Case Summary	
Derate (EFORd) Increase:	High
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	Reduced
Loss of Gas Fired Gen.	Reduced
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



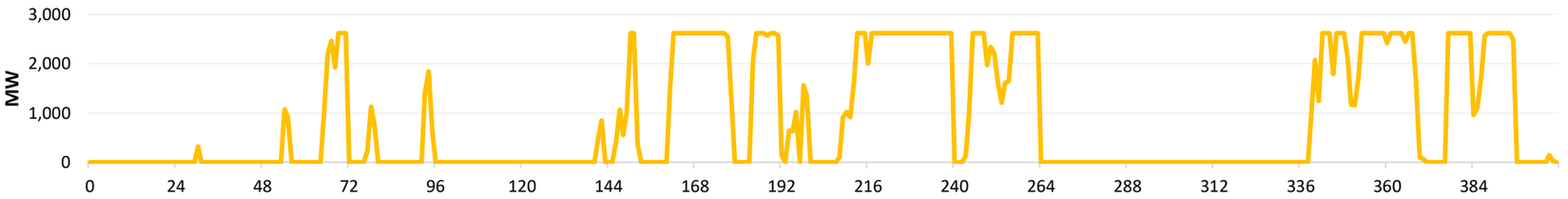
Export Reductions	
Total Hrs.	238
Total MWh	263,962
Avg. MW	647.0

SCR/EDRP Deployed During Modeling Period



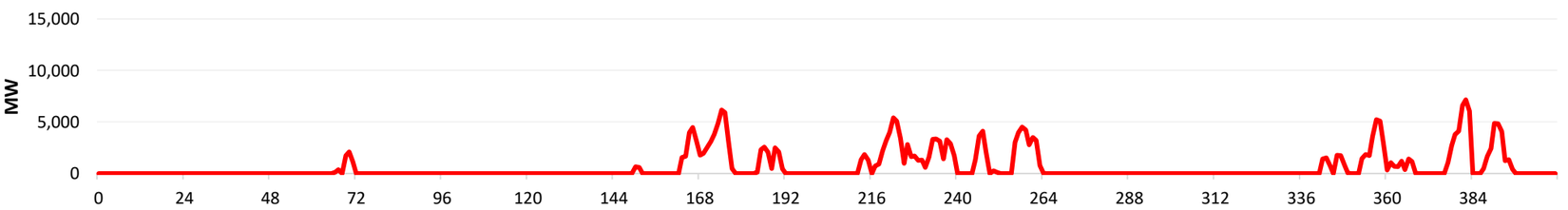
SCR Deployment	
Total Hrs.	20
Total MWh	8,708
Avg. MW	21.3

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	163
Total MWh	338,295
Avg. MW	829.2
First Hour with Viol.	30

Loss of Load During Modeling Period



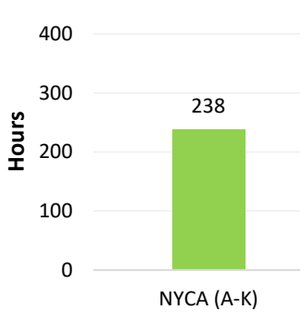
Loss of Load	
Total Hrs.	108
Total MWh	255,603
Avg. MW	626.5
First Hour with Losses	66

Full Period Results Summary

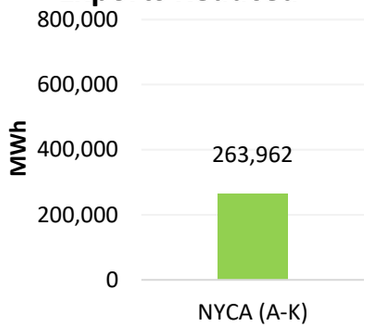
Case Name: Scenario 3 - PD 11 Combination Disruption

Case Summary	
Derate (EFORd) Increase:	High
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	Reduced
Loss of Gas Fired Gen.	Reduced
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

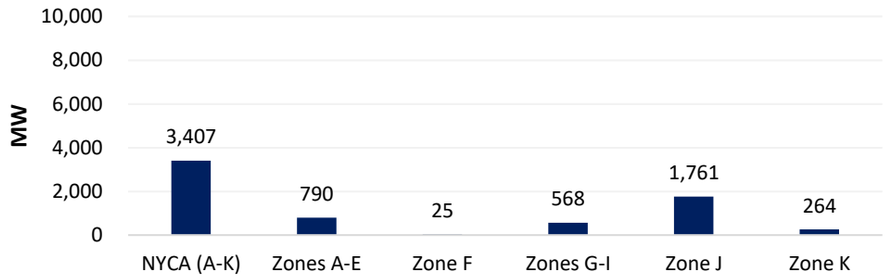
Hours Exports Reduced



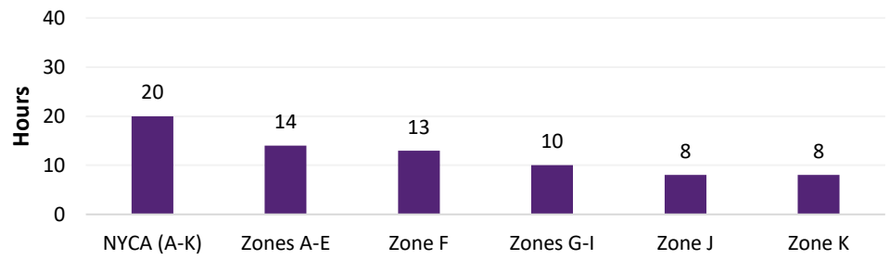
Total MWh of Exports Reduced



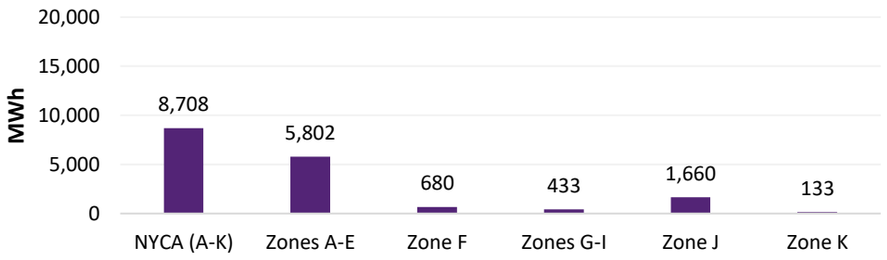
Average Capacity Not Available Due to Exhausted Fuel Inventory



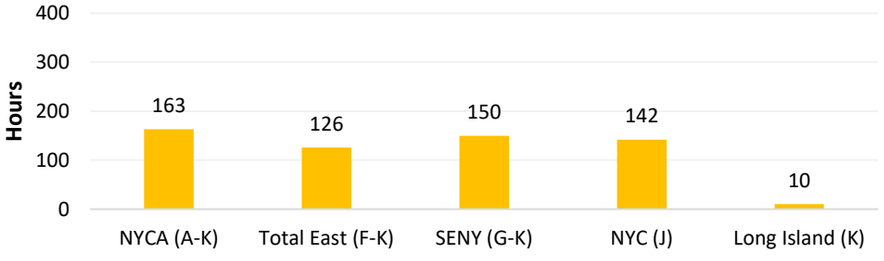
Hours SCR/EDRP Deployed



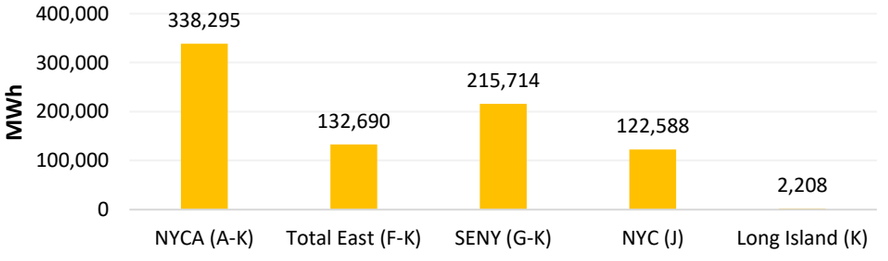
Total MWh SCR/EDRP Deployed



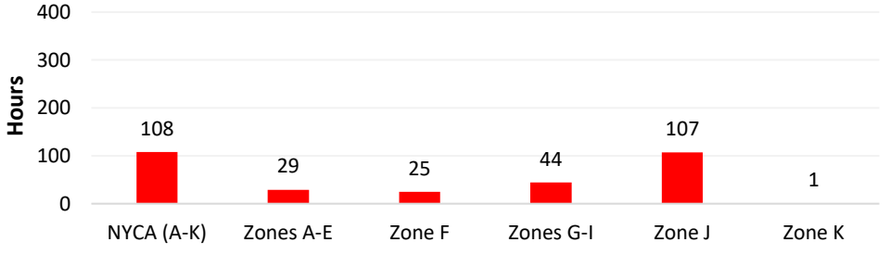
Hours with Reserve Violations



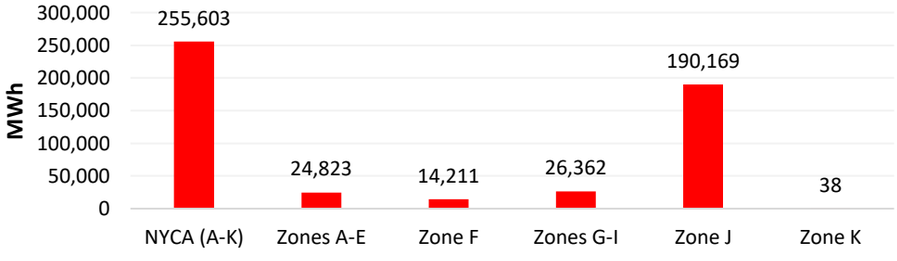
Total MWh of Reserve Violations

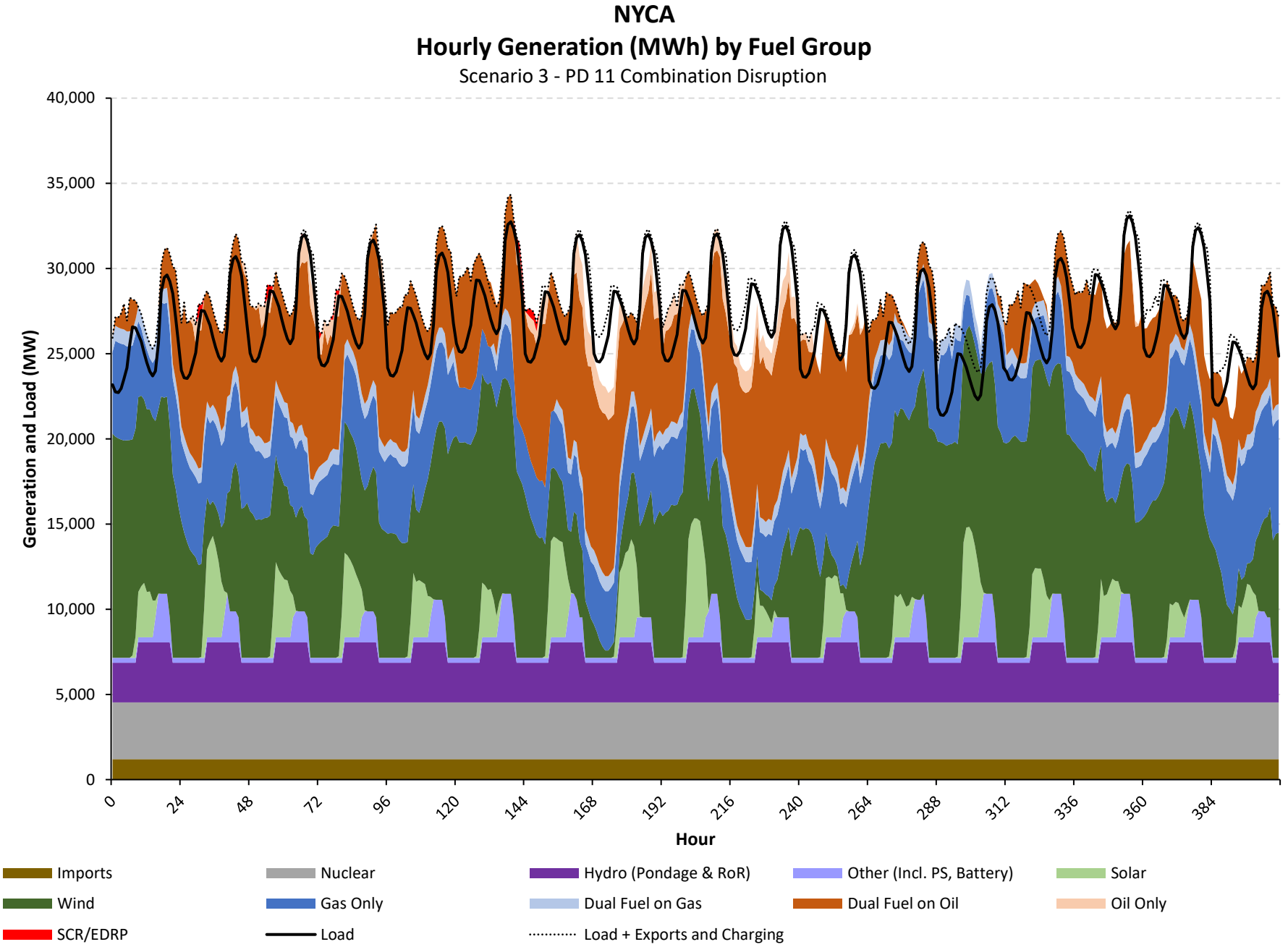


Hours with Loss of Load

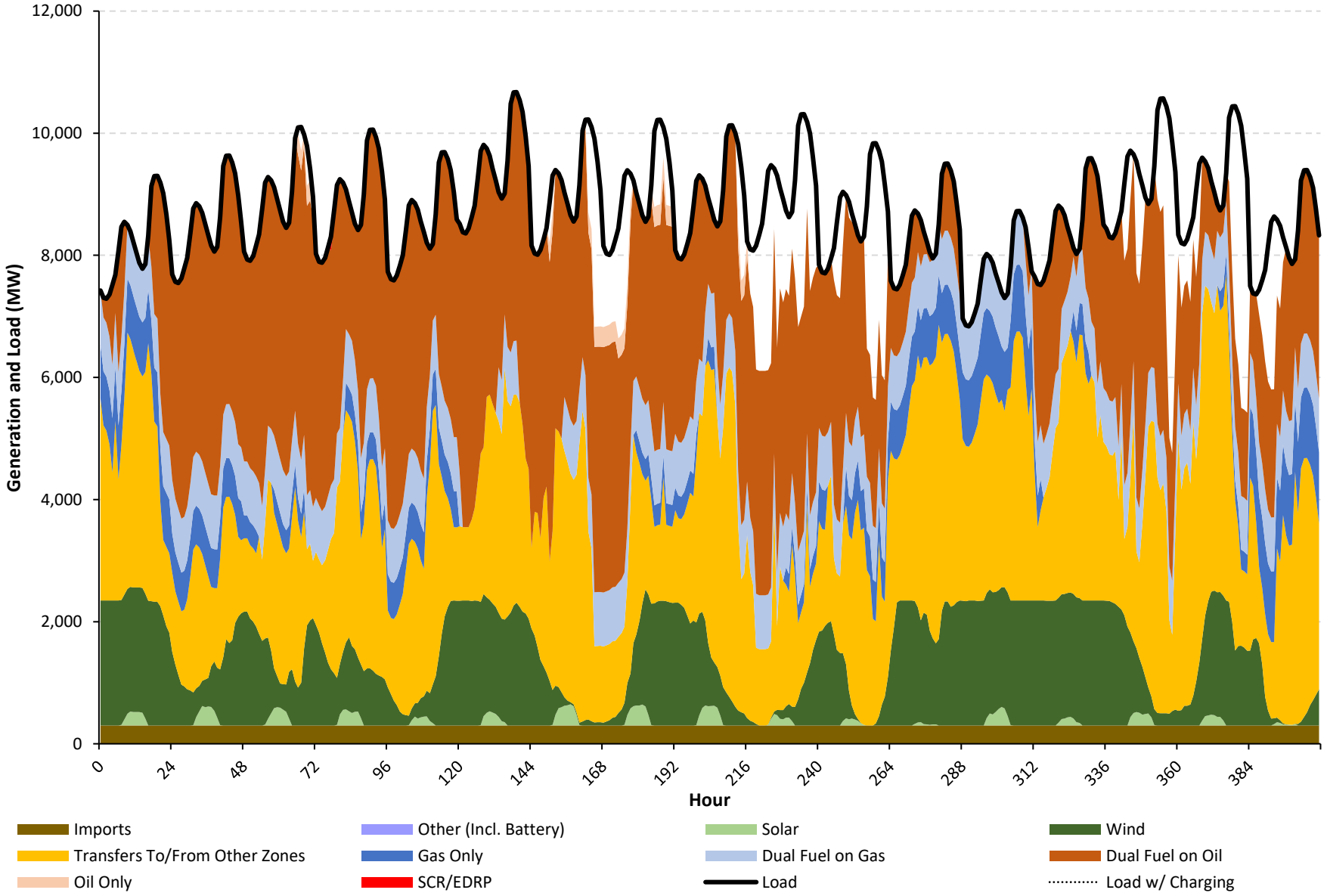


Total MWh of Lost Load

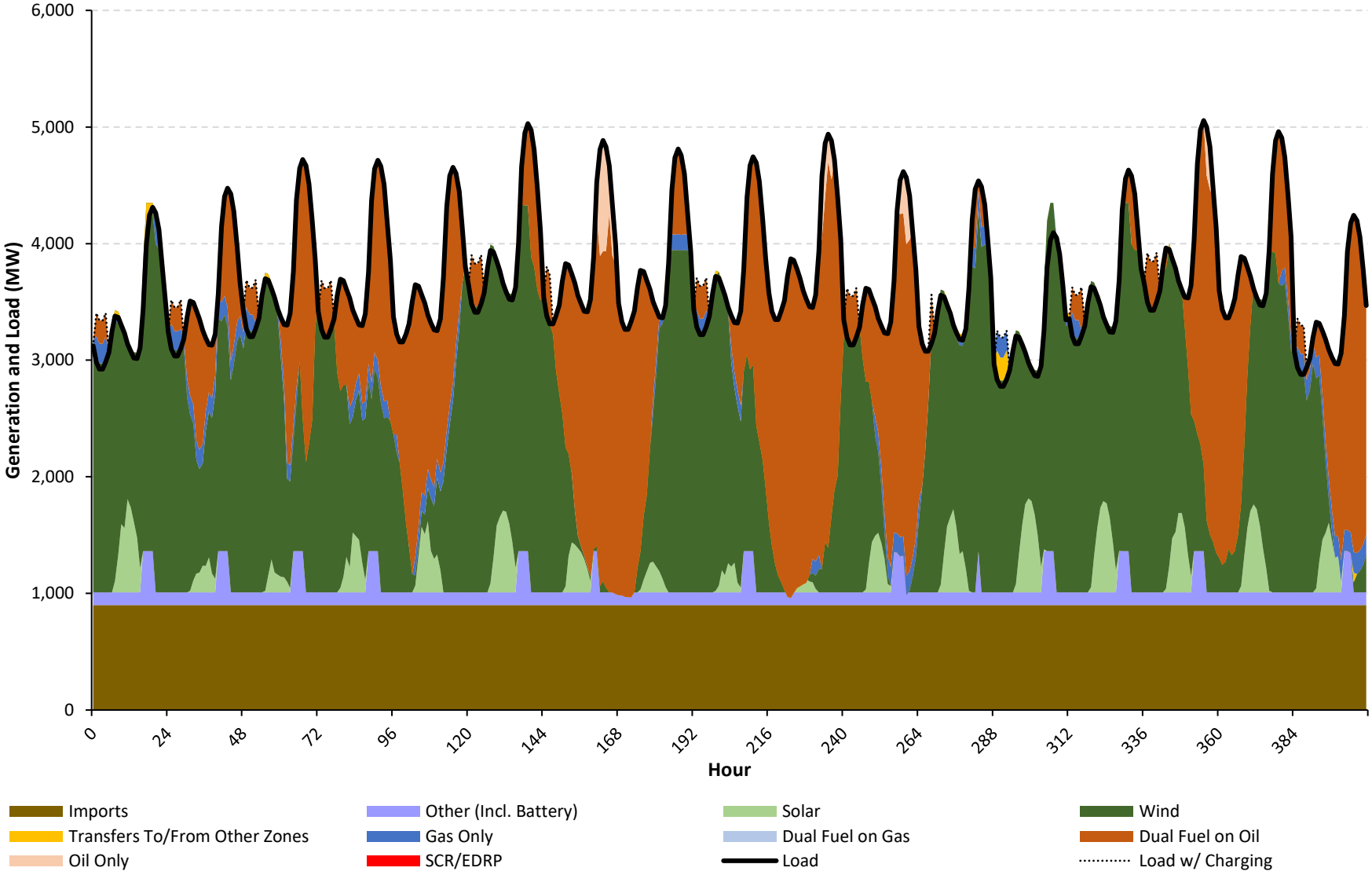



NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 3 - PD 11 Combination Disruption
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

Zone J
Hourly Generation (MW) by Fuel Group
Scenario 3 - PD 11 Combination Disruption



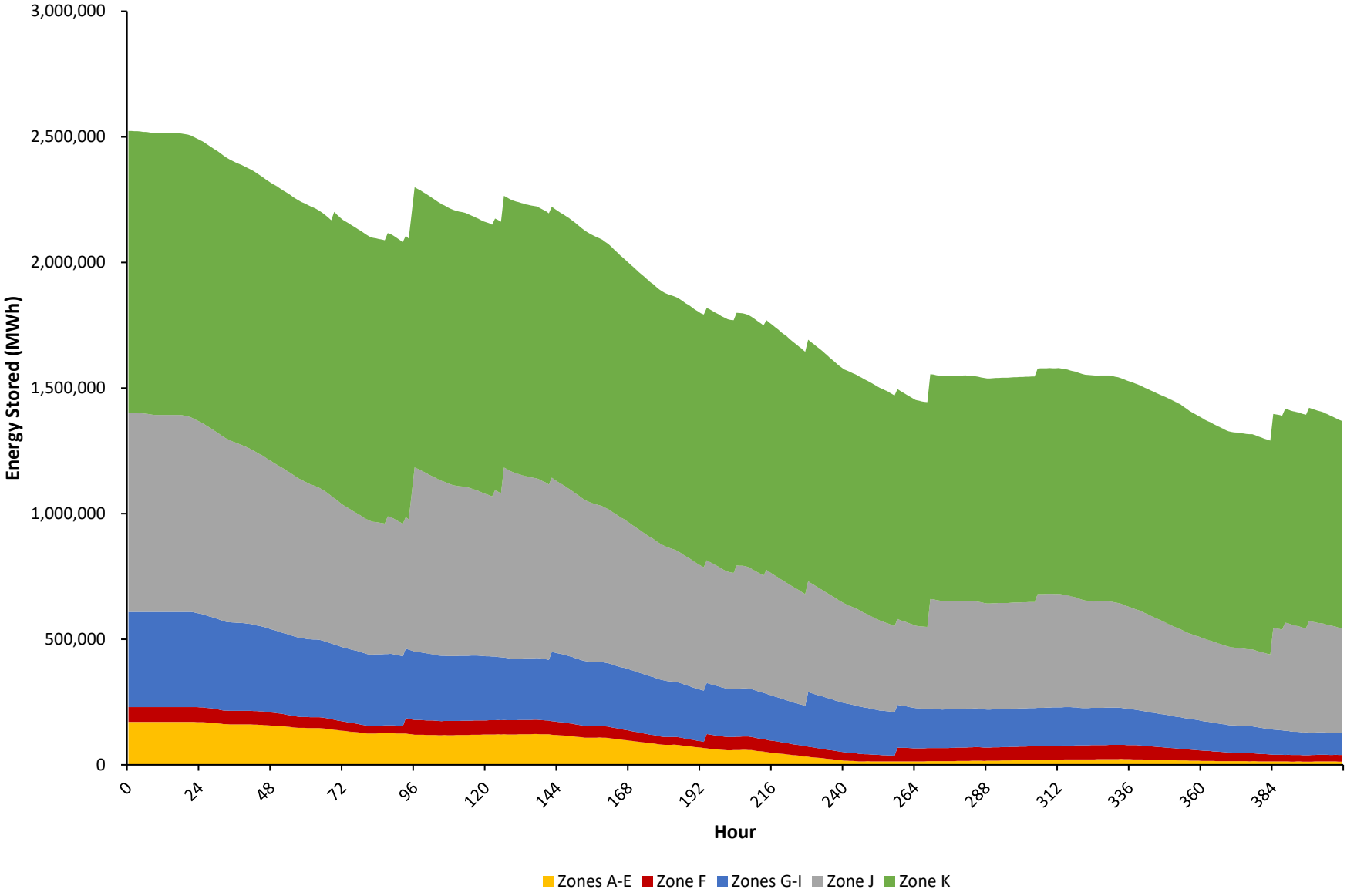
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 3 - PD 11 Combination Disruption

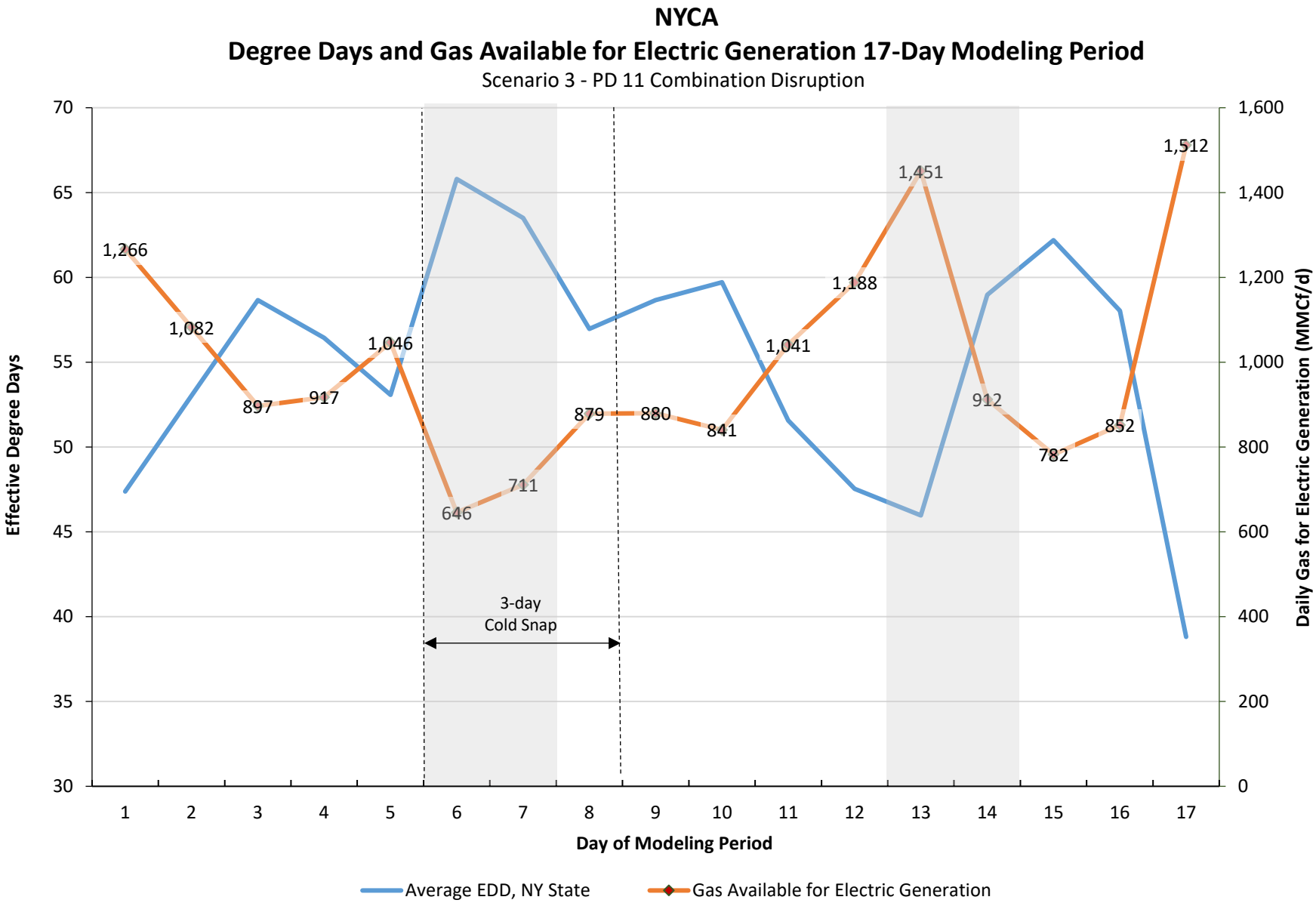


NYCA

Quantity of Stored Fuel for Oil and Dual Fuel Units

Scenario 3 - PD 11 Combination Disruption



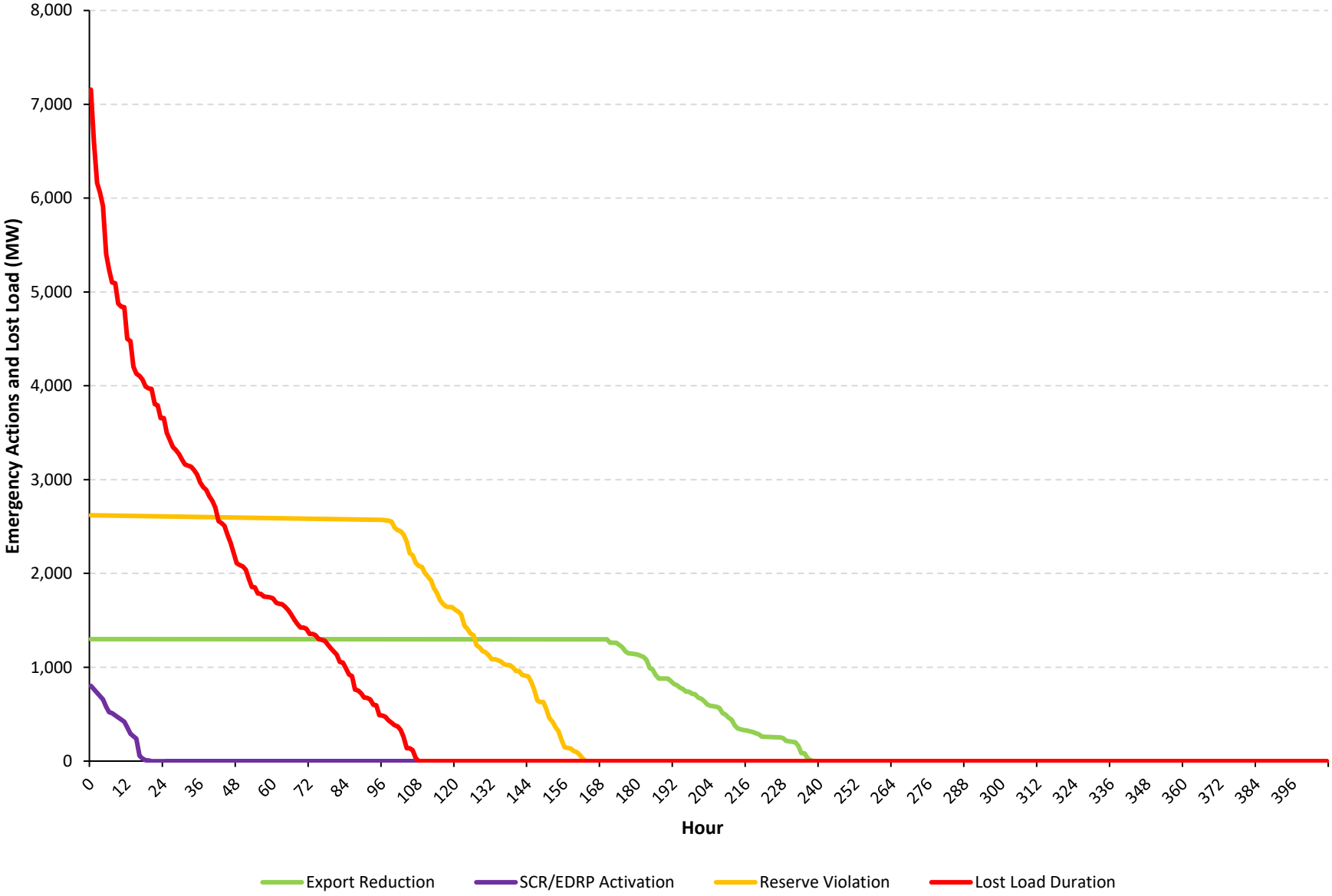


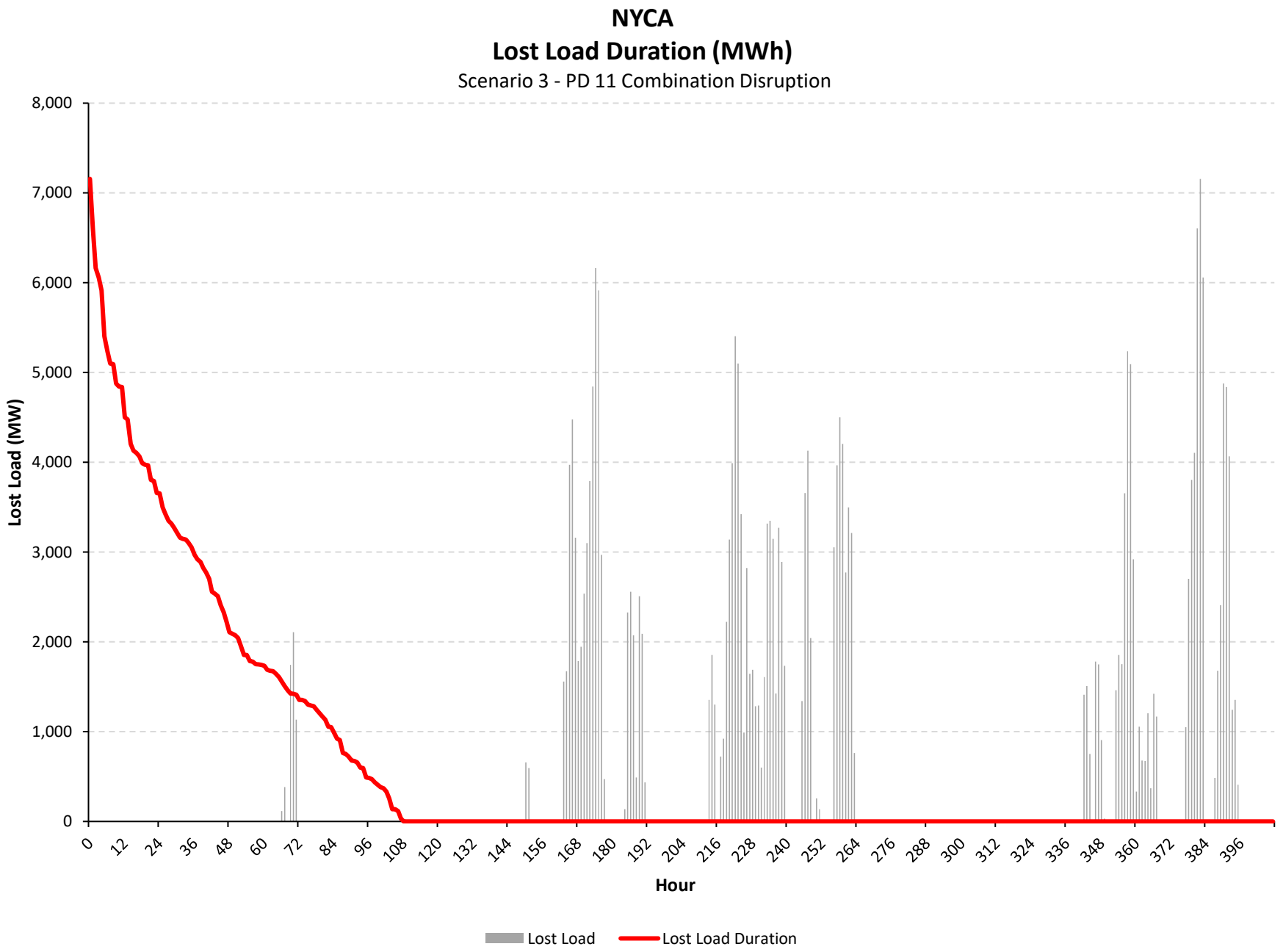
Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.

NYCA

Emergency Actions and Lost Load Duration (MWh)

Scenario 3 - PD 11 Combination Disruption




NYCA
Lost Load Duration (MWh)
Scenario 3 - PD 11 Combination Disruption
Lost Load (MW)
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

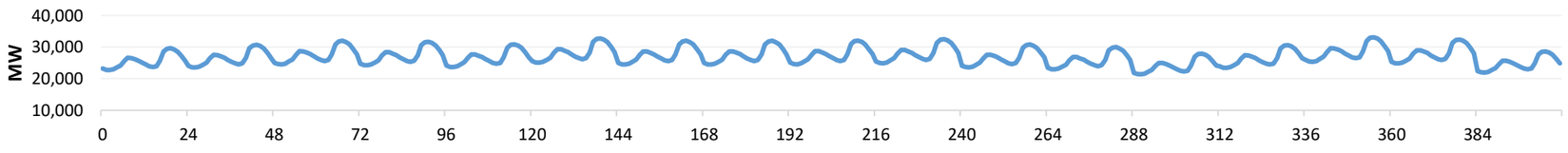
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 4 - PD 1 No Disruptions (Winter 2030/2031)

Hourly Results Summary

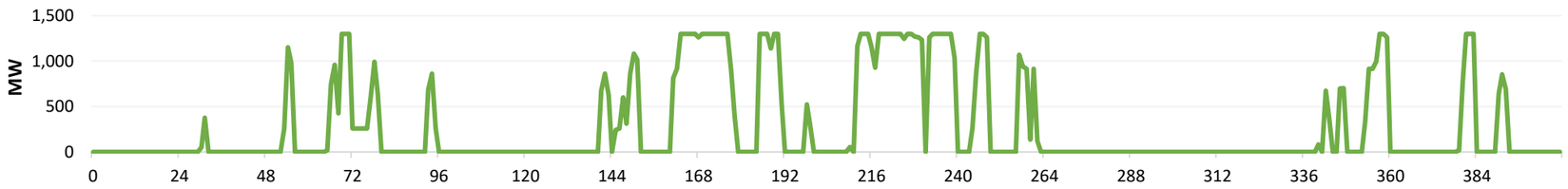
Case Name: Scenario 4 - PD 1 No Disruptions

Load During Modeling Period



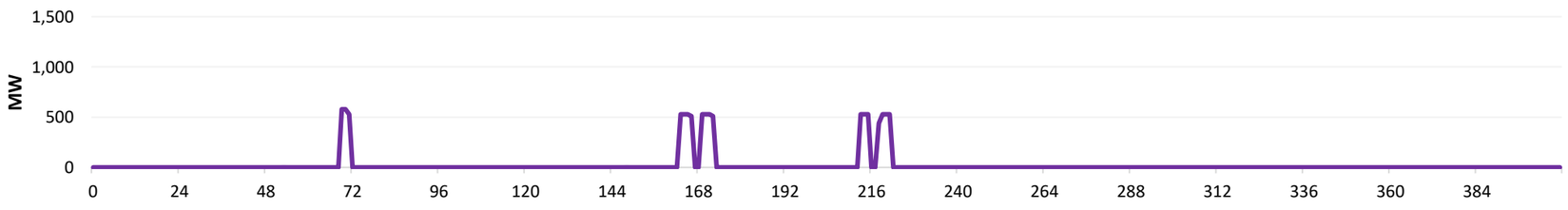
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

Export to ISO-NE Reduction During Modeling Period



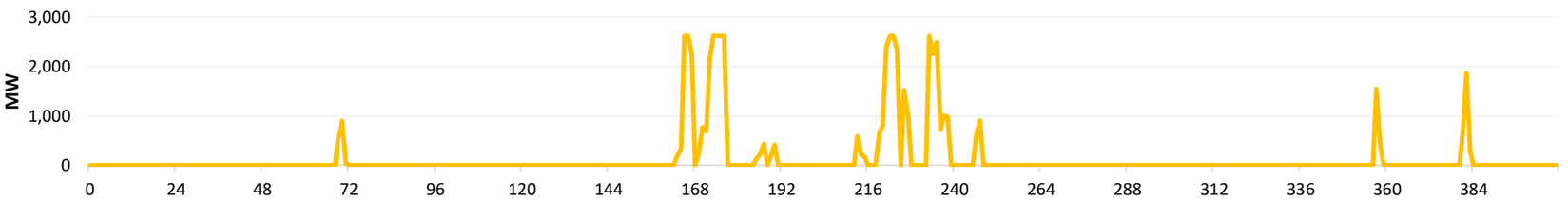
Export Reductions	
Total Hrs.	119
Total MWh	110,458
Avg. MW	270.7

SCR/EDRP Deployed During Modeling Period



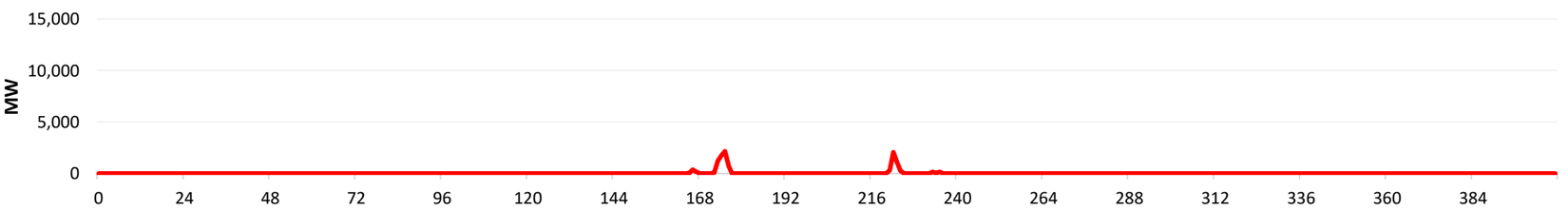
SCR Deployment	
Total Hrs.	18
Total MWh	9,464
Avg. MW	23.2

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	45
Total MWh	56,636
Avg. MW	138.8
First Hour with Viol.	69

Loss of Load During Modeling Period



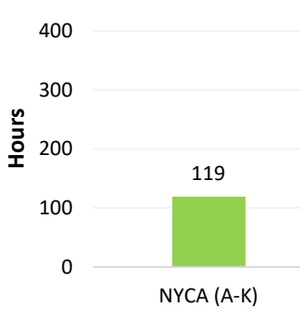
Loss of Load	
Total Hrs.	15
Total MWh	10,708
Avg. MW	26.2
First Hour with Losses	165

Full Period Results Summary

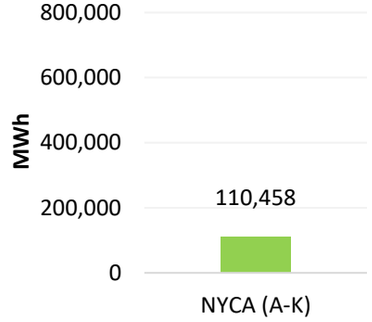
Case Name: Scenario 4 - PD 1 No Disruptions

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

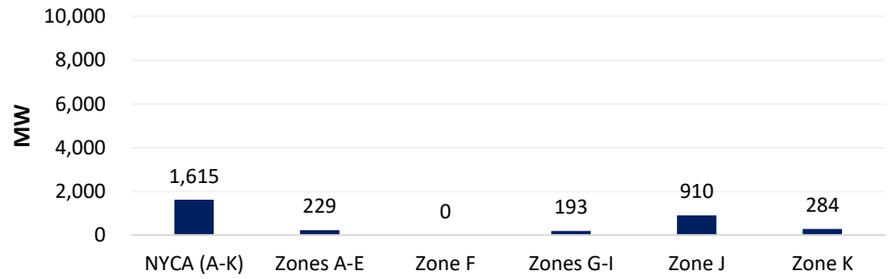
Hours Exports Reduced



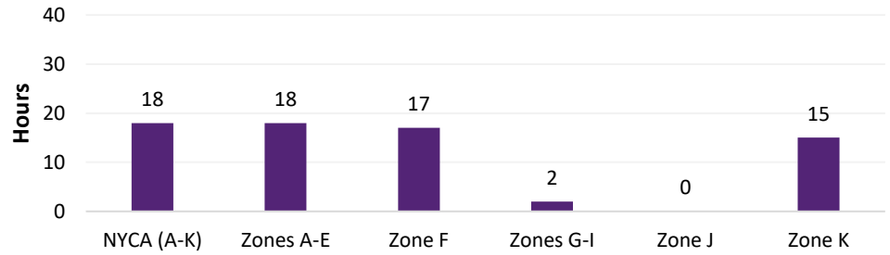
Total MWh of Exports Reduced



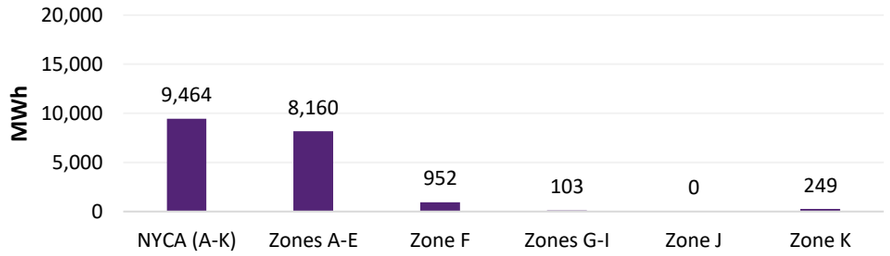
Average Capacity Not Available Due to Exhausted Fuel Inventory



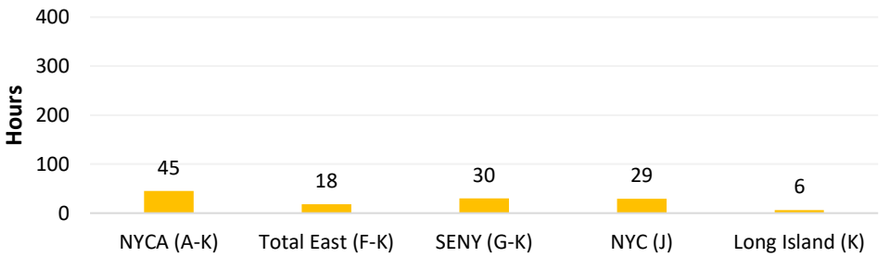
Hours SCR/EDRP Deployed



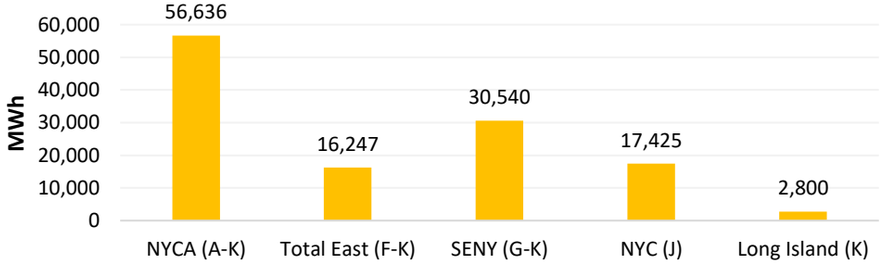
Total MWh SCR/EDRP Deployed



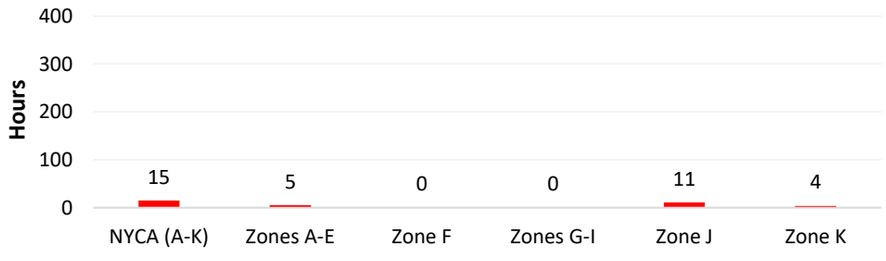
Hours with Reserve Violations



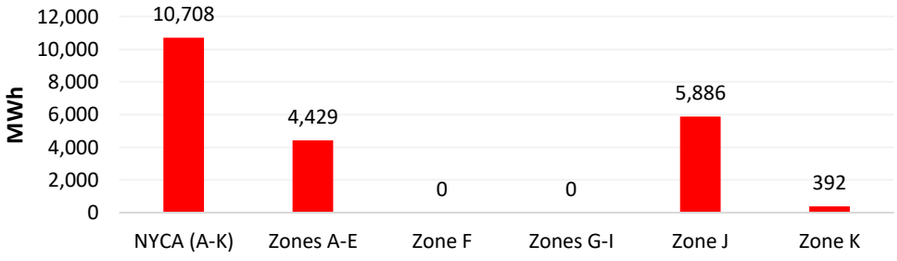
Total MWh of Reserve Violations

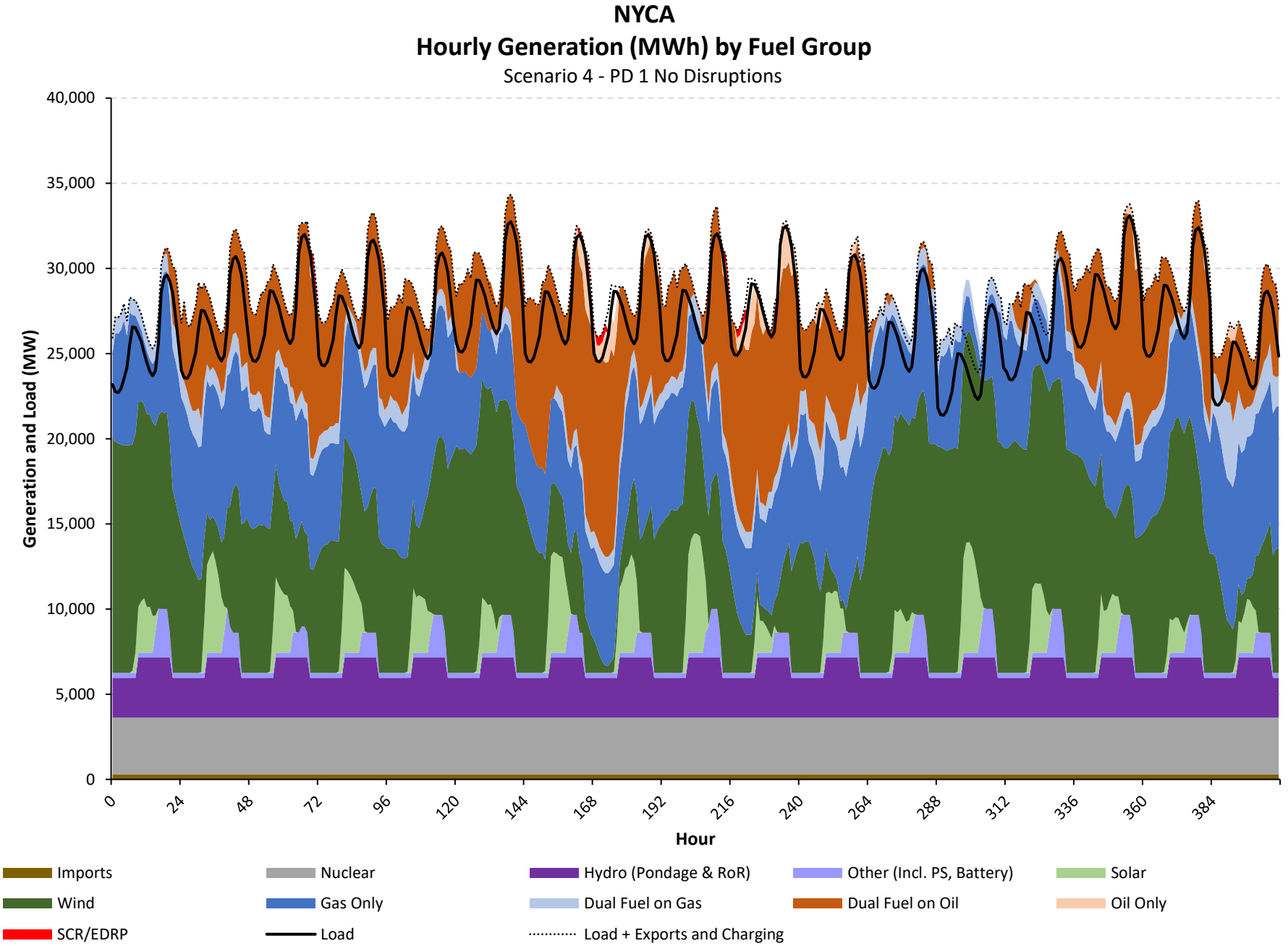


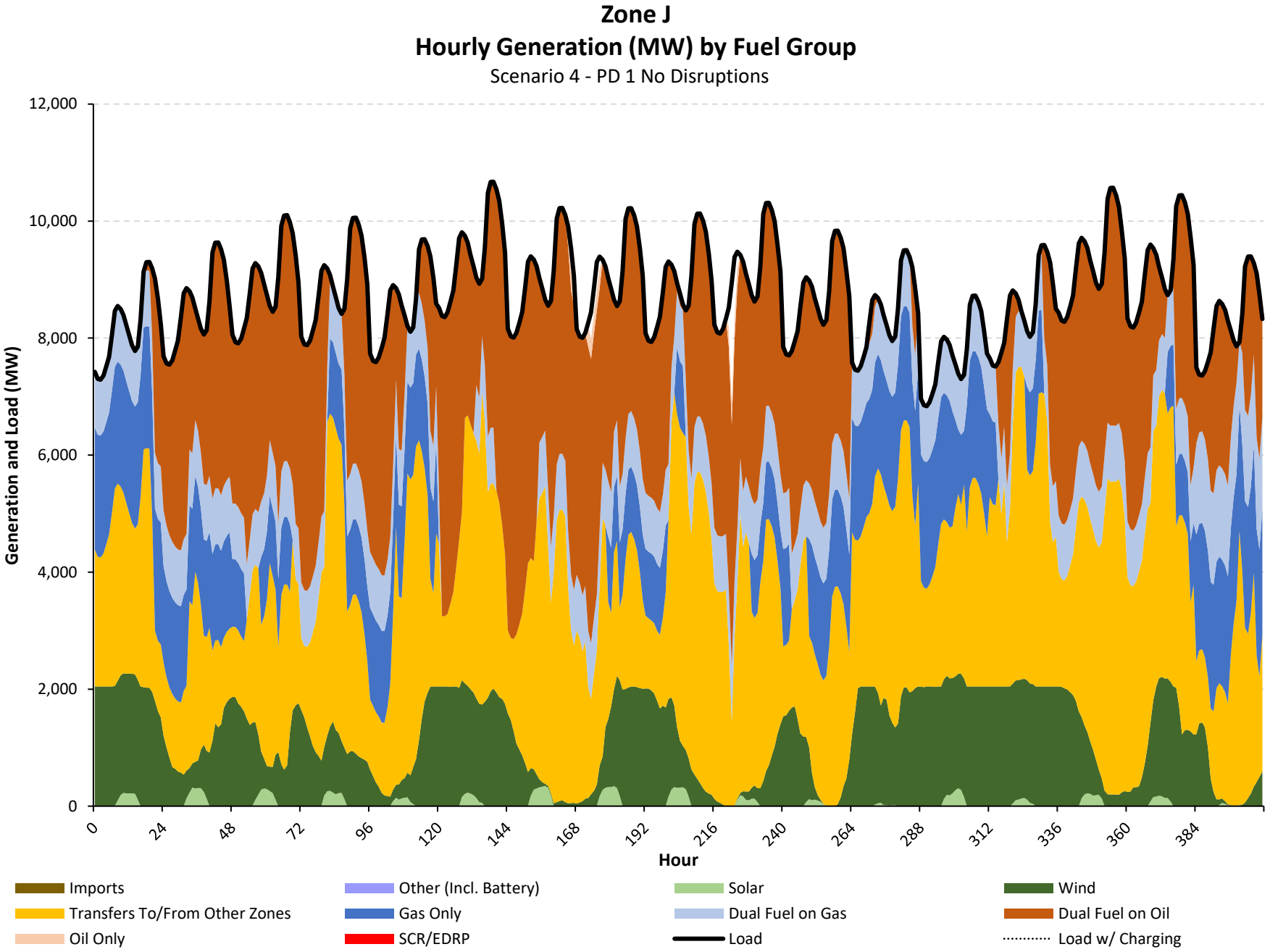
Hours with Loss of Load



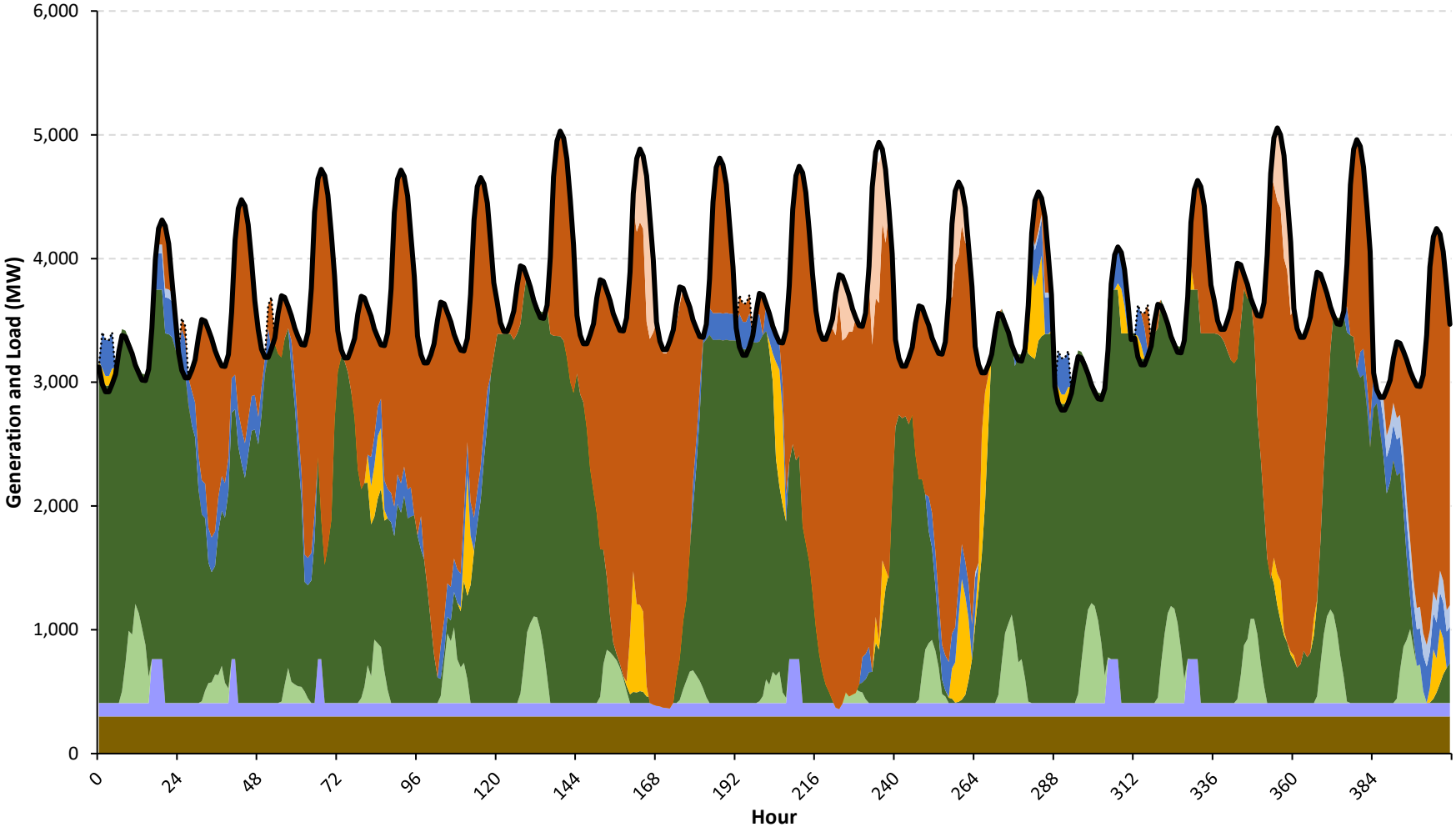
Total MWh of Lost Load

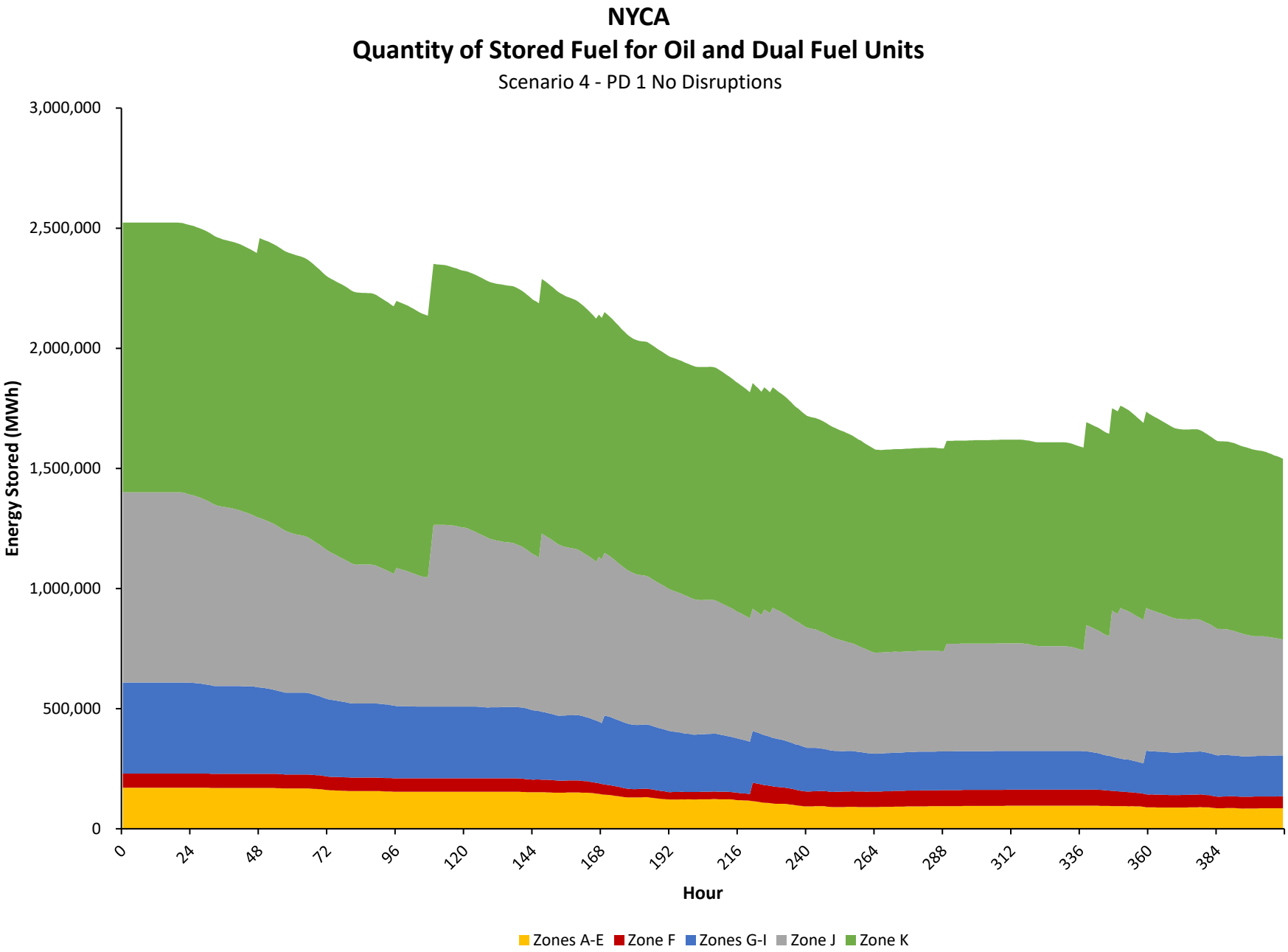



NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 4 - PD 1 No Disruptions
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

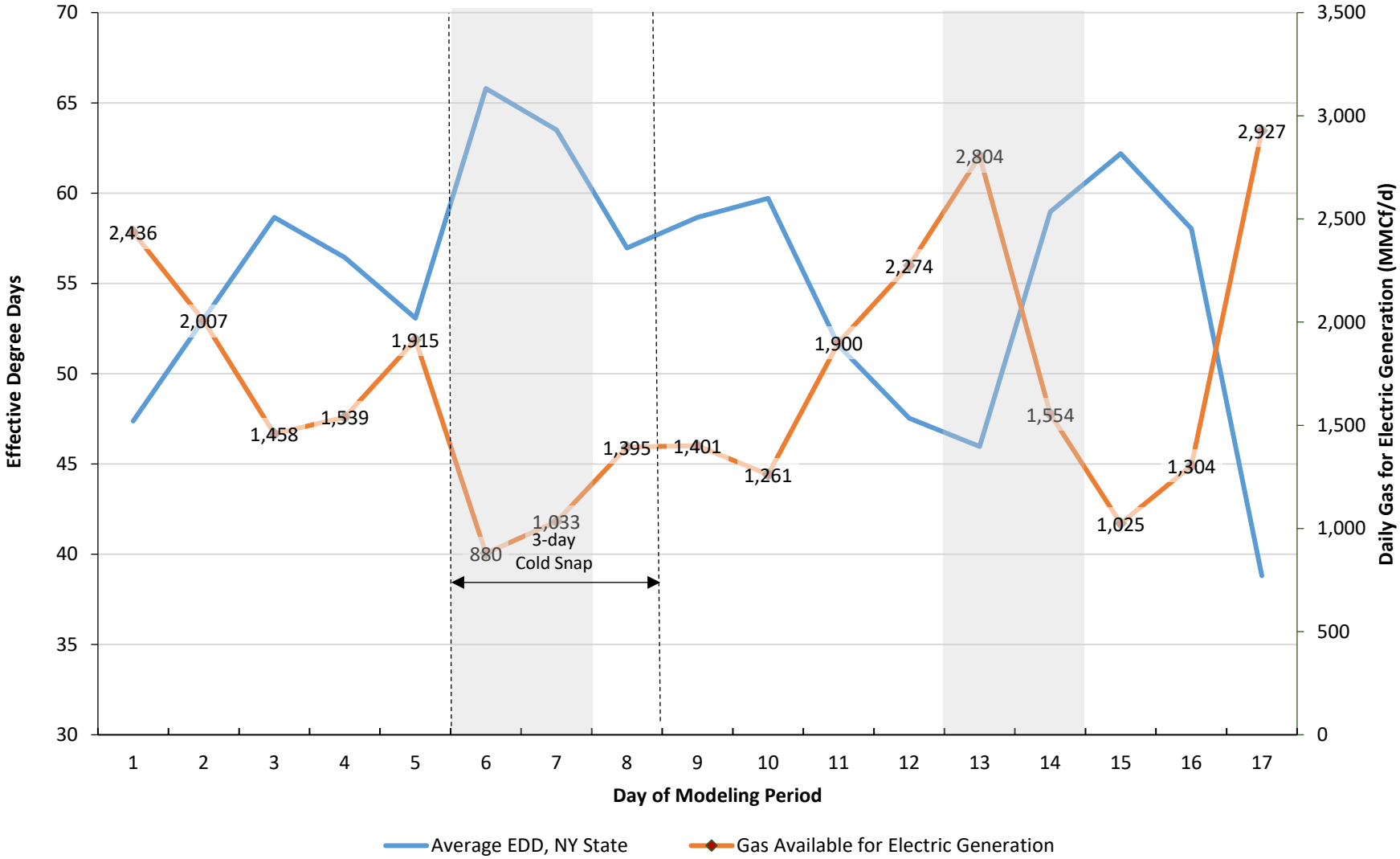

Zone J
Hourly Generation (MW) by Fuel Group
Scenario 4 - PD 1 No Disruptions
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

Zone K
Hourly Generation (MW) by Fuel Group
Scenario 4 - PD 1 No Disruptions

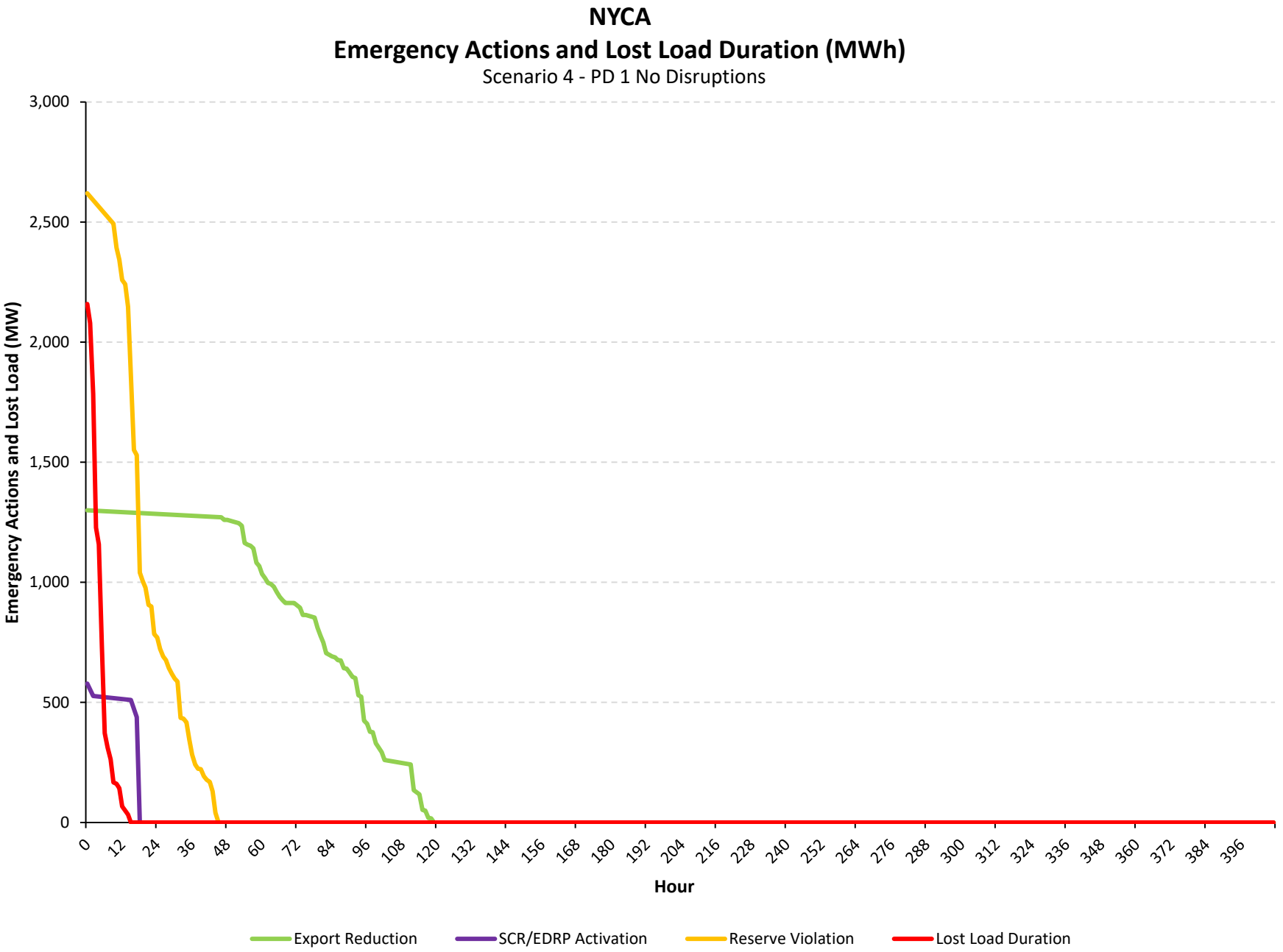


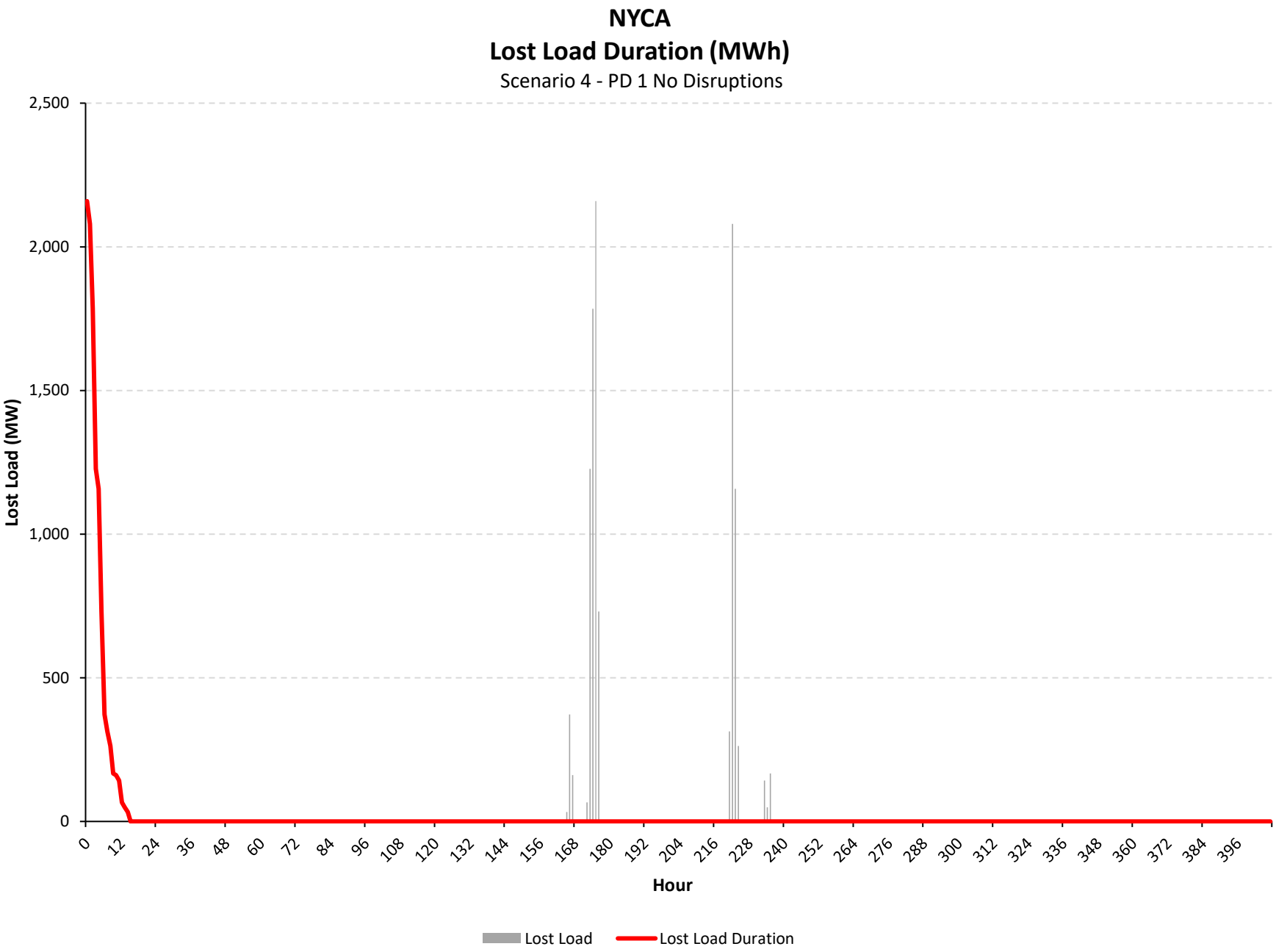

NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 4 - PD 1 No Disruptions
Energy Stored (MWh)
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Zones A-E
Zone F
Zones G-I
Zone J
Zone K

NYCA
Degree Days and Gas Available for Electric Generation 17-Day Modeling Period
Scenario 4 - PD 1 No Disruptions



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 4 - PD 1 No Disruptions
Emergency Actions and Lost Load (MW)
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 4 - PD 1 No Disruptions
Lost Load (MW)
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

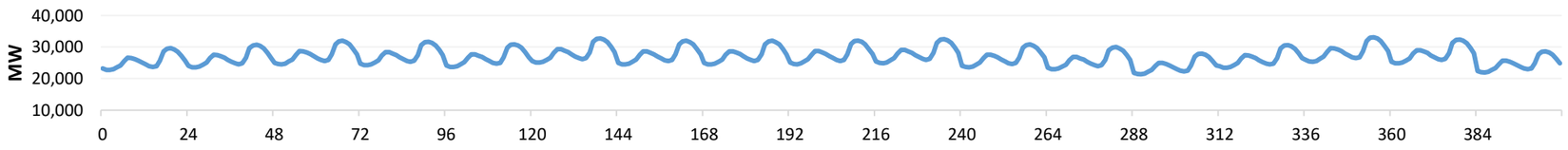
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 4 - PD 2 High Outage (Winter 2030/2031)

Hourly Results Summary

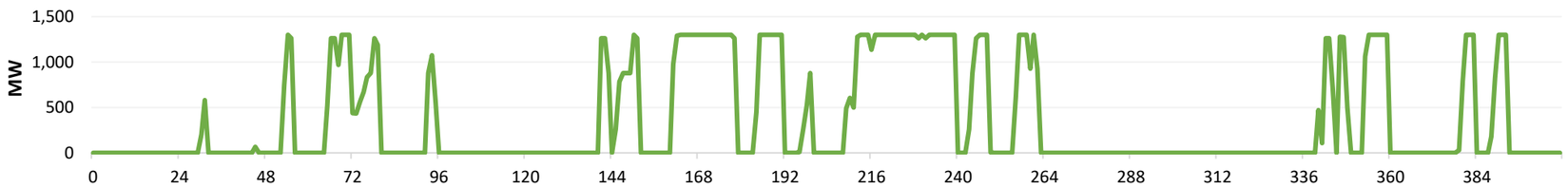
Case Name: Scenario 4 - PD 2 High Outage

Load During Modeling Period



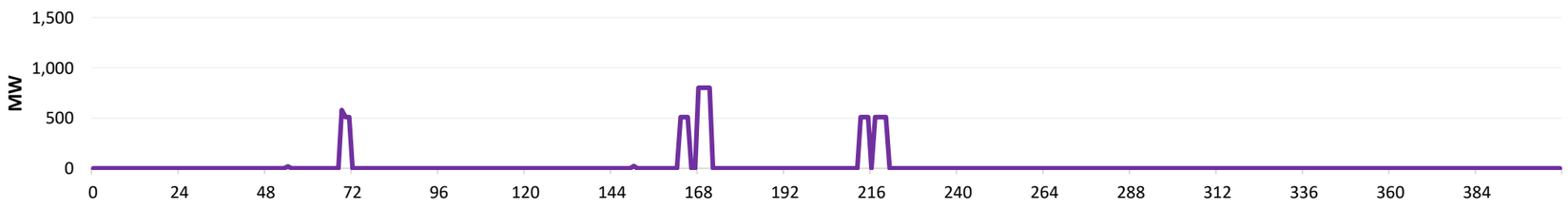
Case Summary	
Derate (EFORd) Increase:	High
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

Export to ISO-NE Reduction During Modeling Period



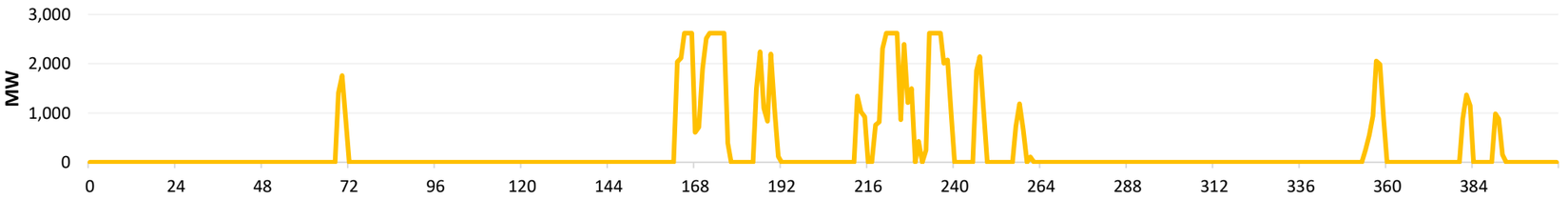
Export Reductions	
Total Hrs.	134
Total MWh	141,769
Avg. MW	347.5

SCR/EDRP Deployed During Modeling Period



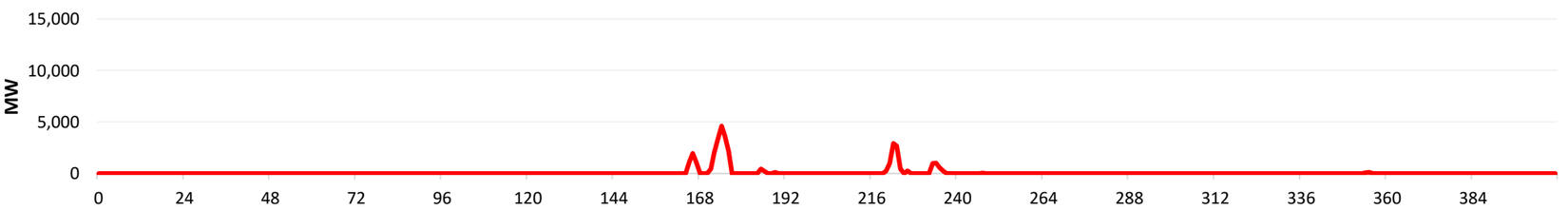
SCR Deployment	
Total Hrs.	19
Total MWh	9,954
Avg. MW	24.4

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	68
Total MWh	103,933
Avg. MW	254.7
First Hour with Viol.	69

Loss of Load During Modeling Period



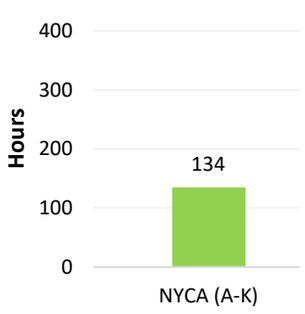
Loss of Load	
Total Hrs.	27
Total MWh	31,684
Avg. MW	77.7
First Hour with Losses	165

Full Period Results Summary

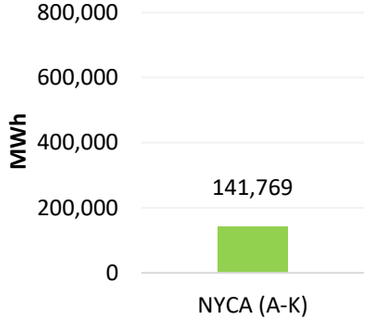
Case Name: Scenario 4 - PD 2 High Outage

Case Summary	
Derate (EFORd) Increase:	High
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

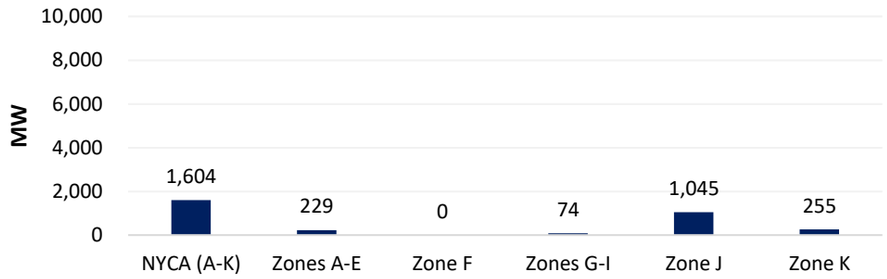
Hours Exports Reduced



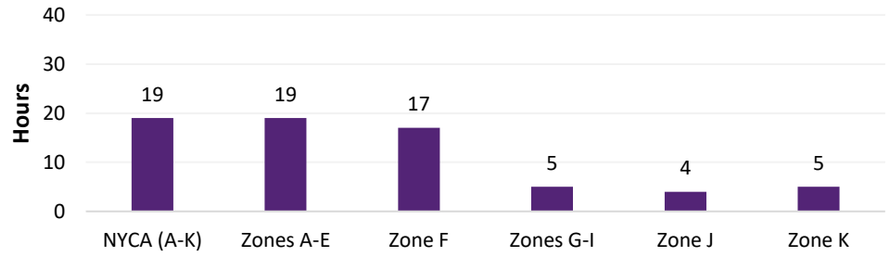
Total MWh of Exports Reduced



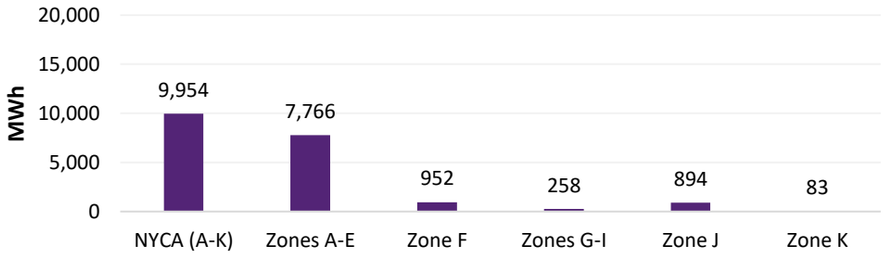
Average Capacity Not Available Due to Exhausted Fuel Inventory



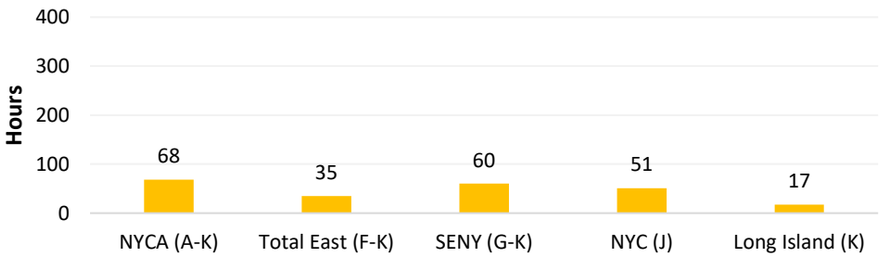
Hours SCR/EDRP Deployed



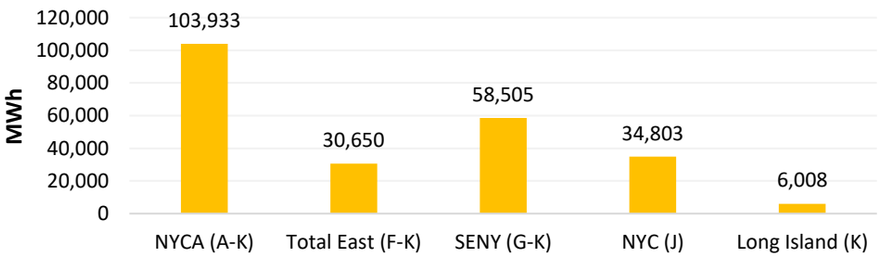
Total MWh SCR/EDRP Deployed



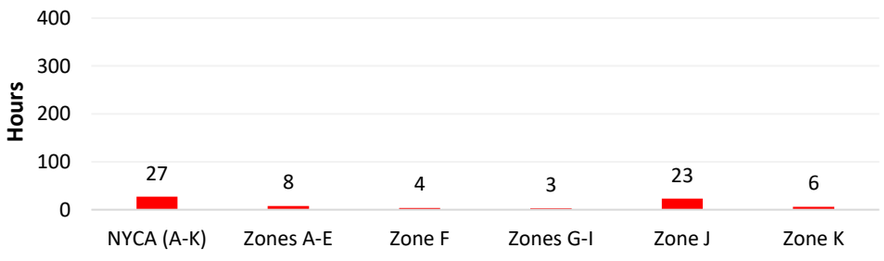
Hours with Reserve Violations



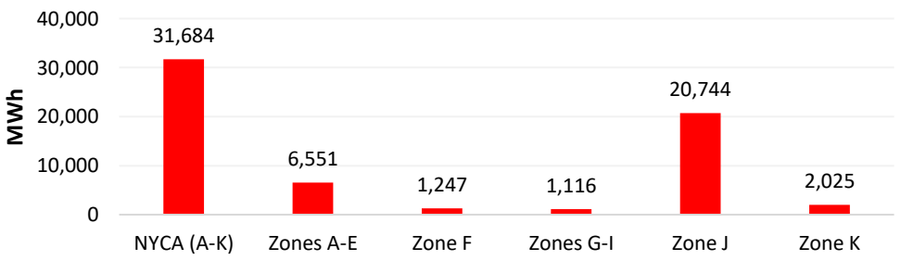
Total MWh of Reserve Violations

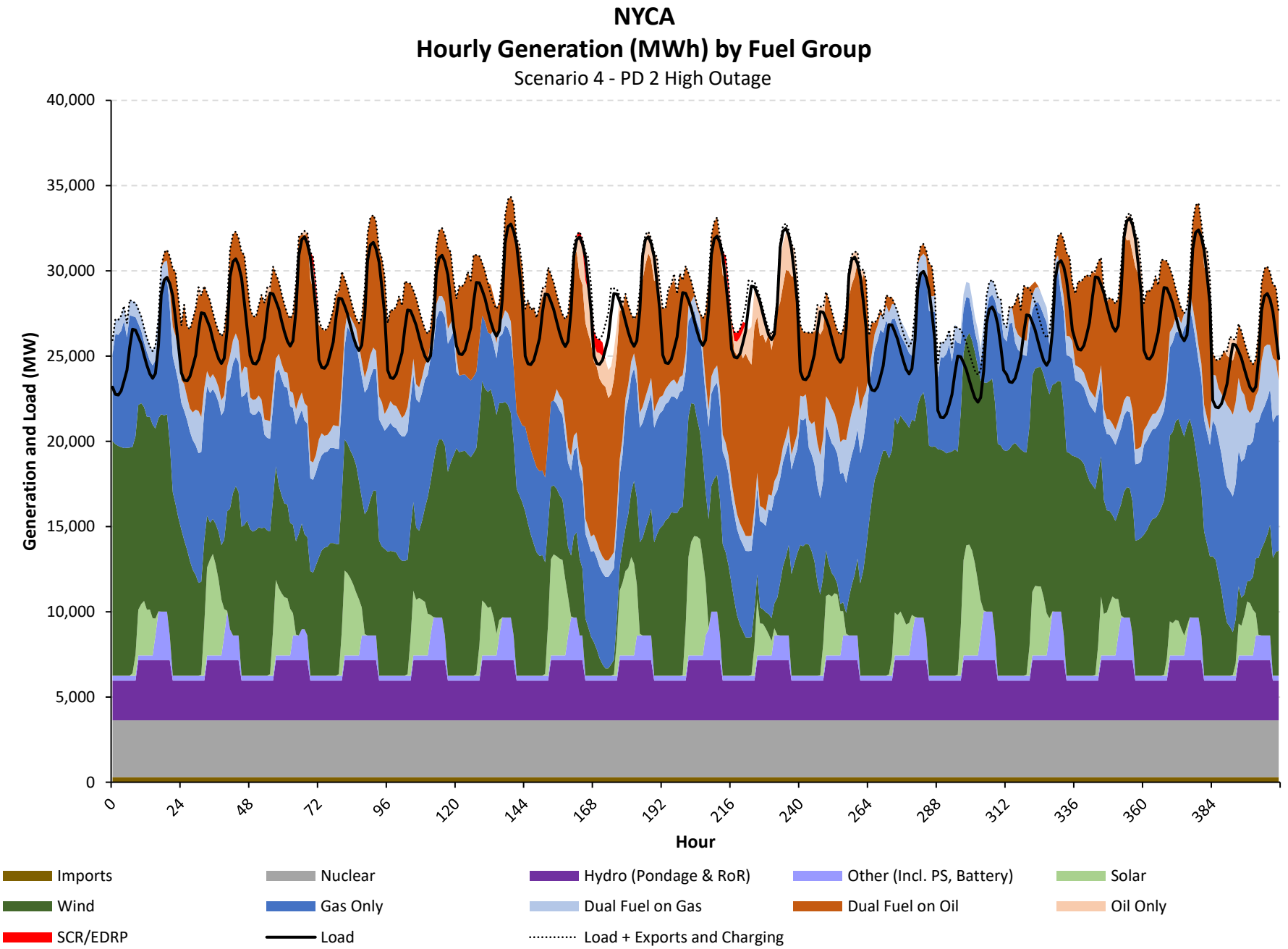


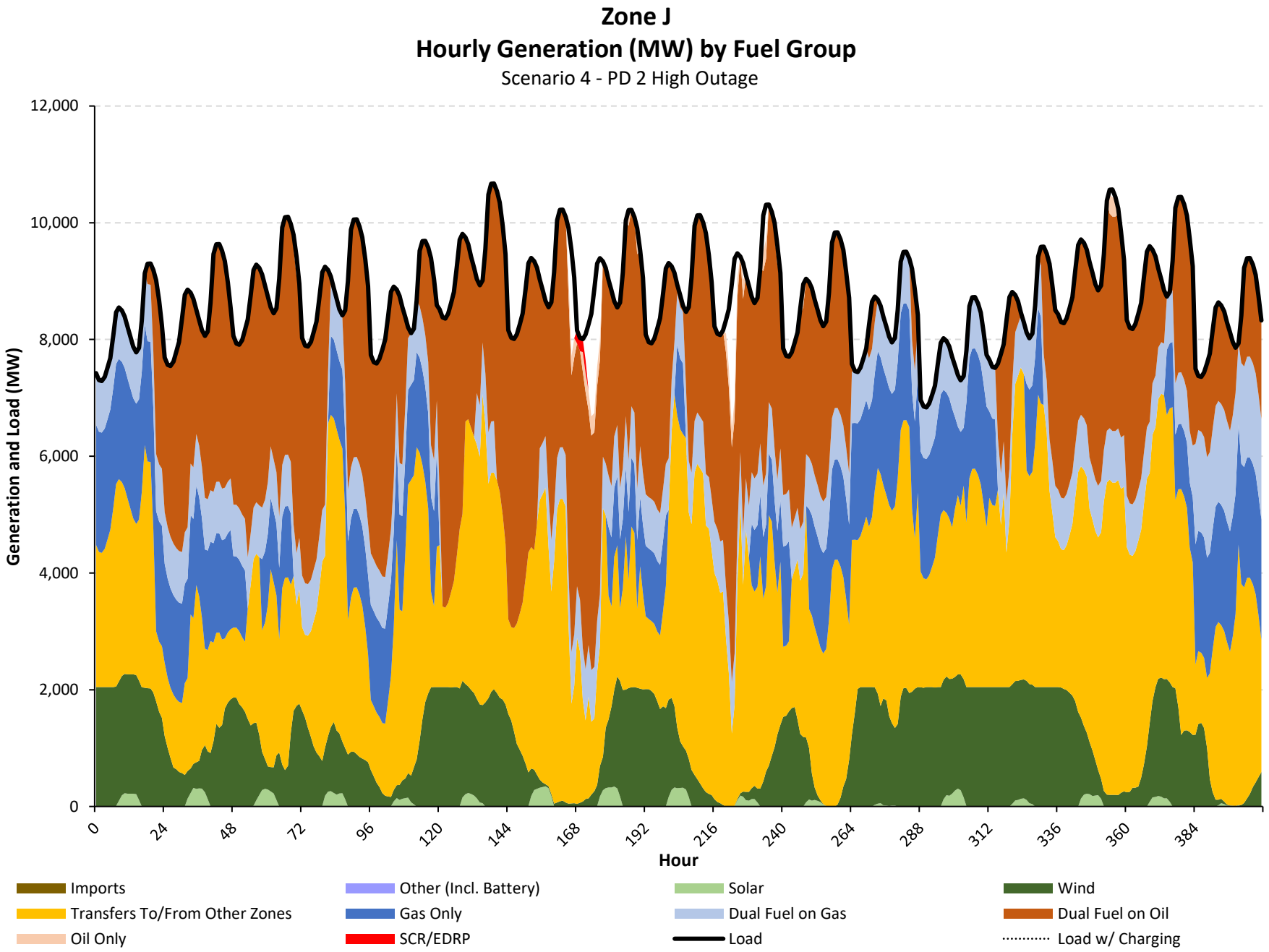
Hours with Loss of Load



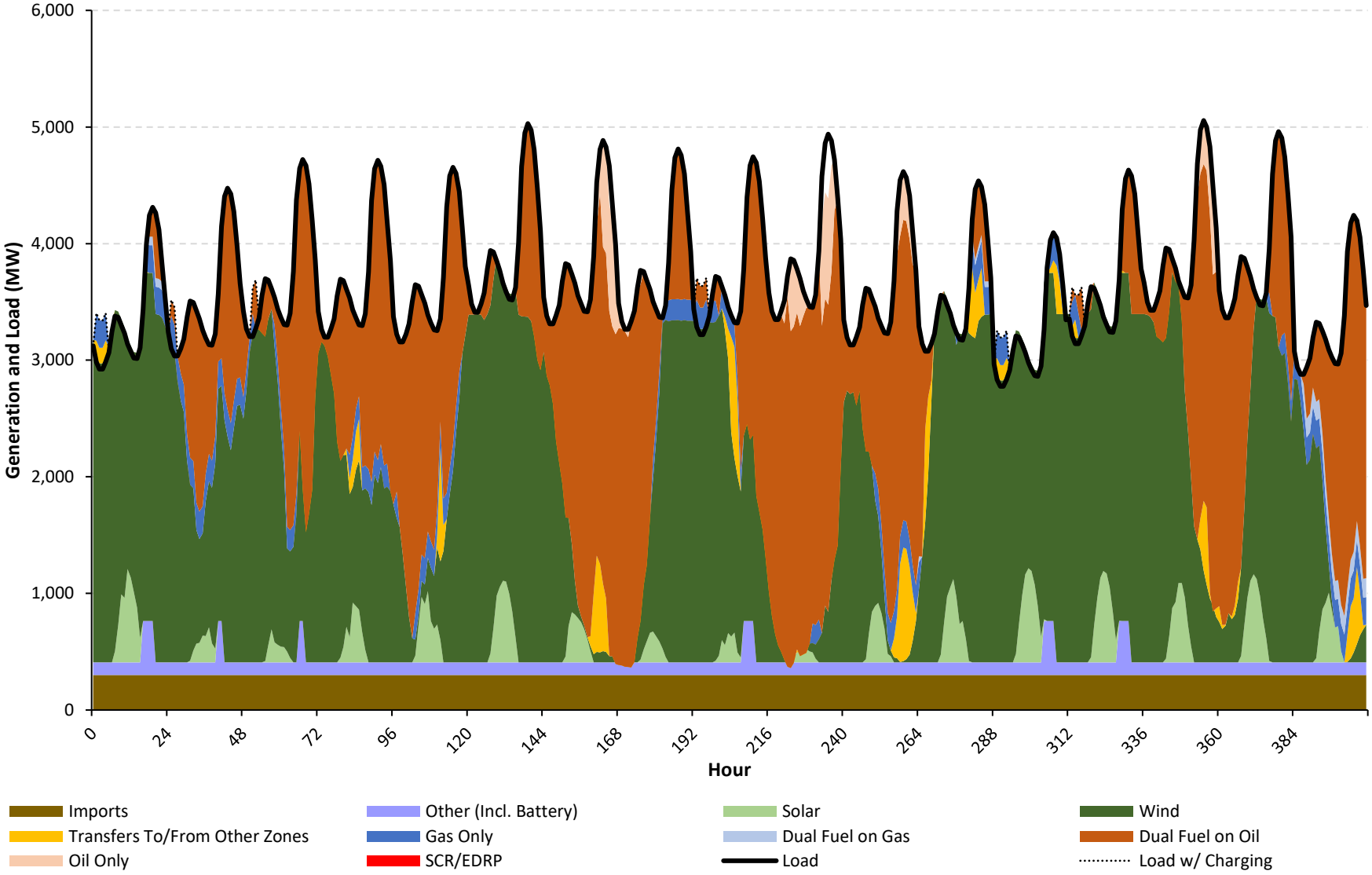
Total MWh of Lost Load



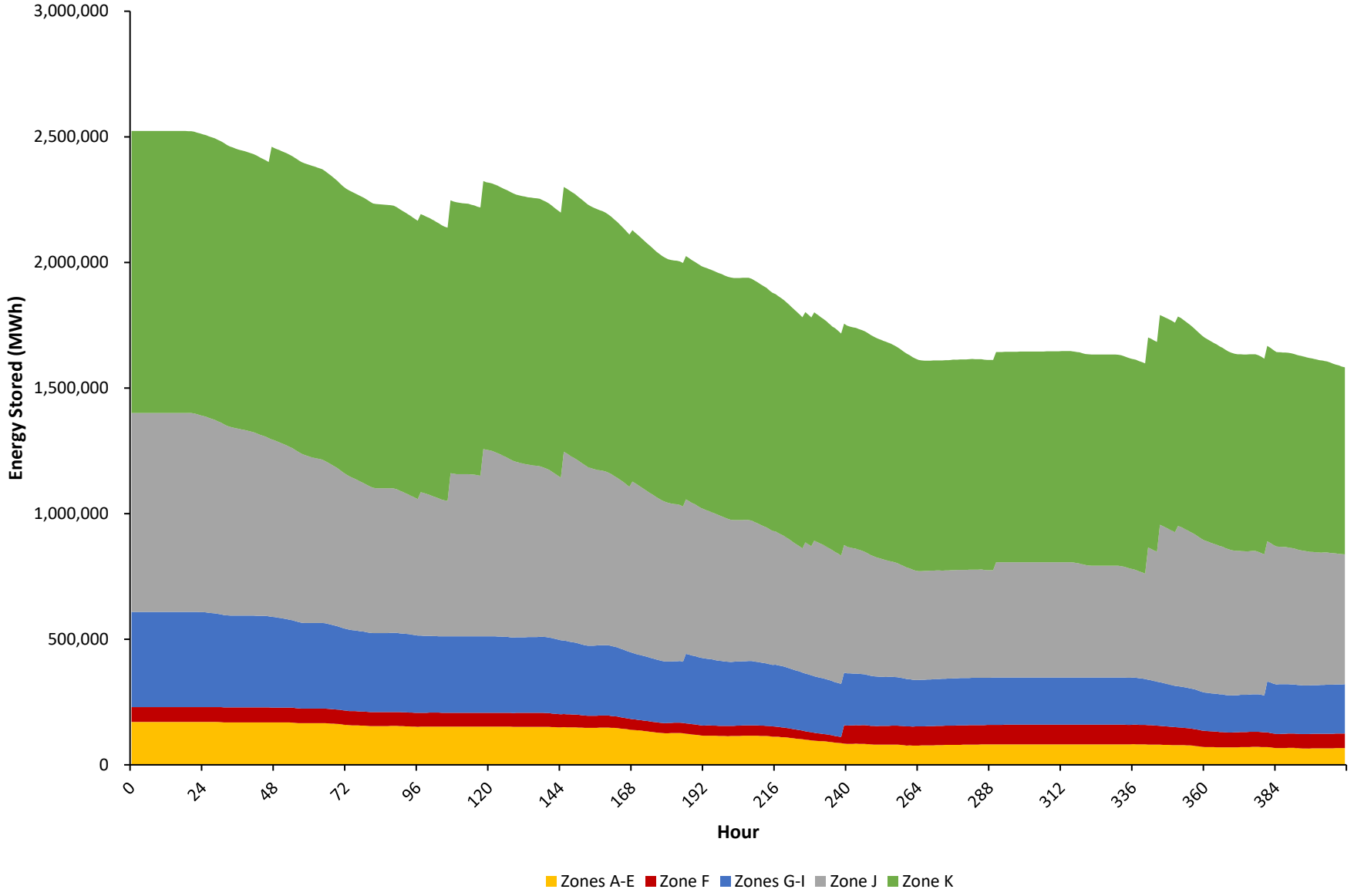

NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 4 - PD 2 High Outage
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

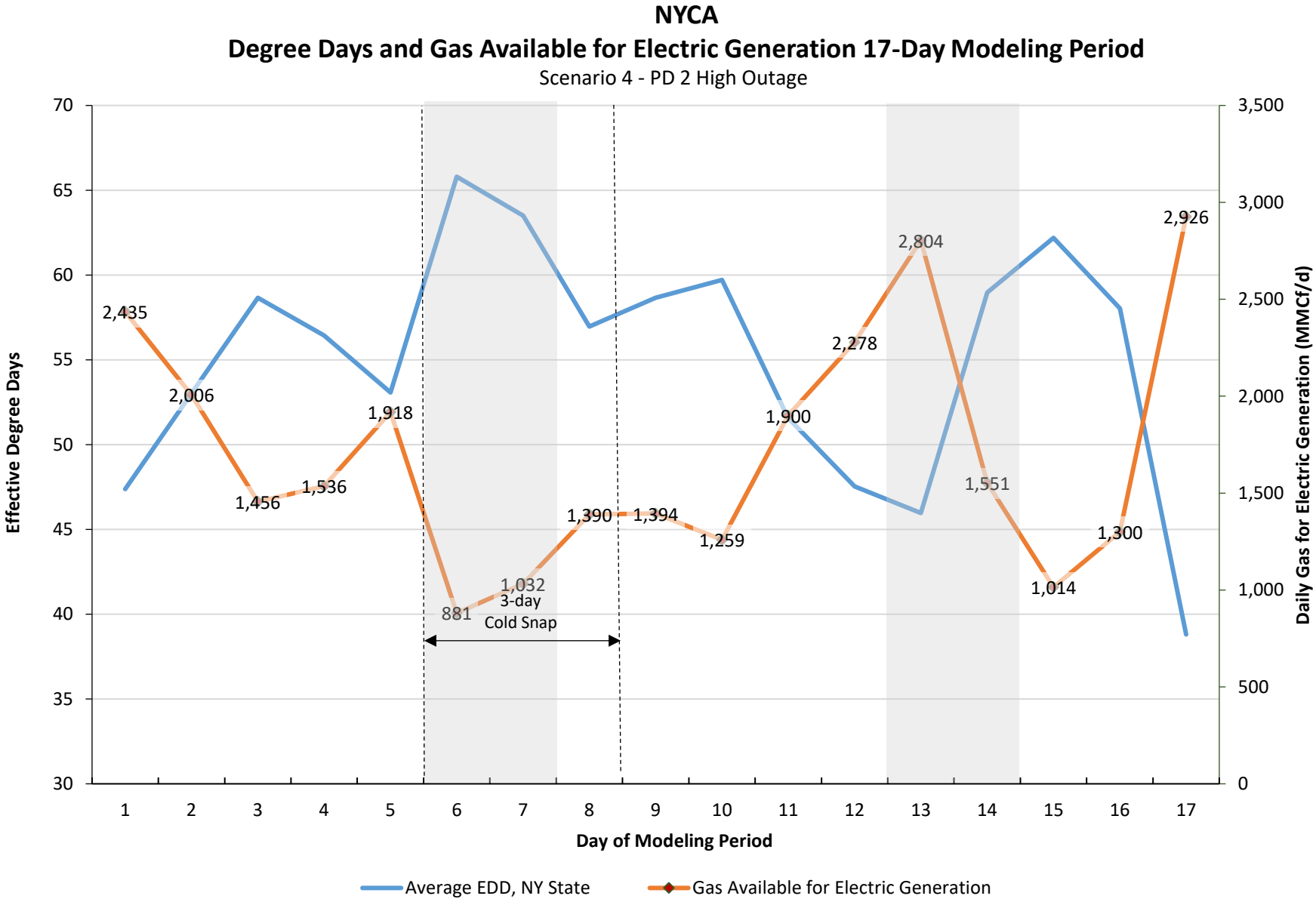

Zone J
Hourly Generation (MW) by Fuel Group
Scenario 4 - PD 2 High Outage
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

Zone K
Hourly Generation (MW) by Fuel Group
Scenario 4 - PD 2 High Outage

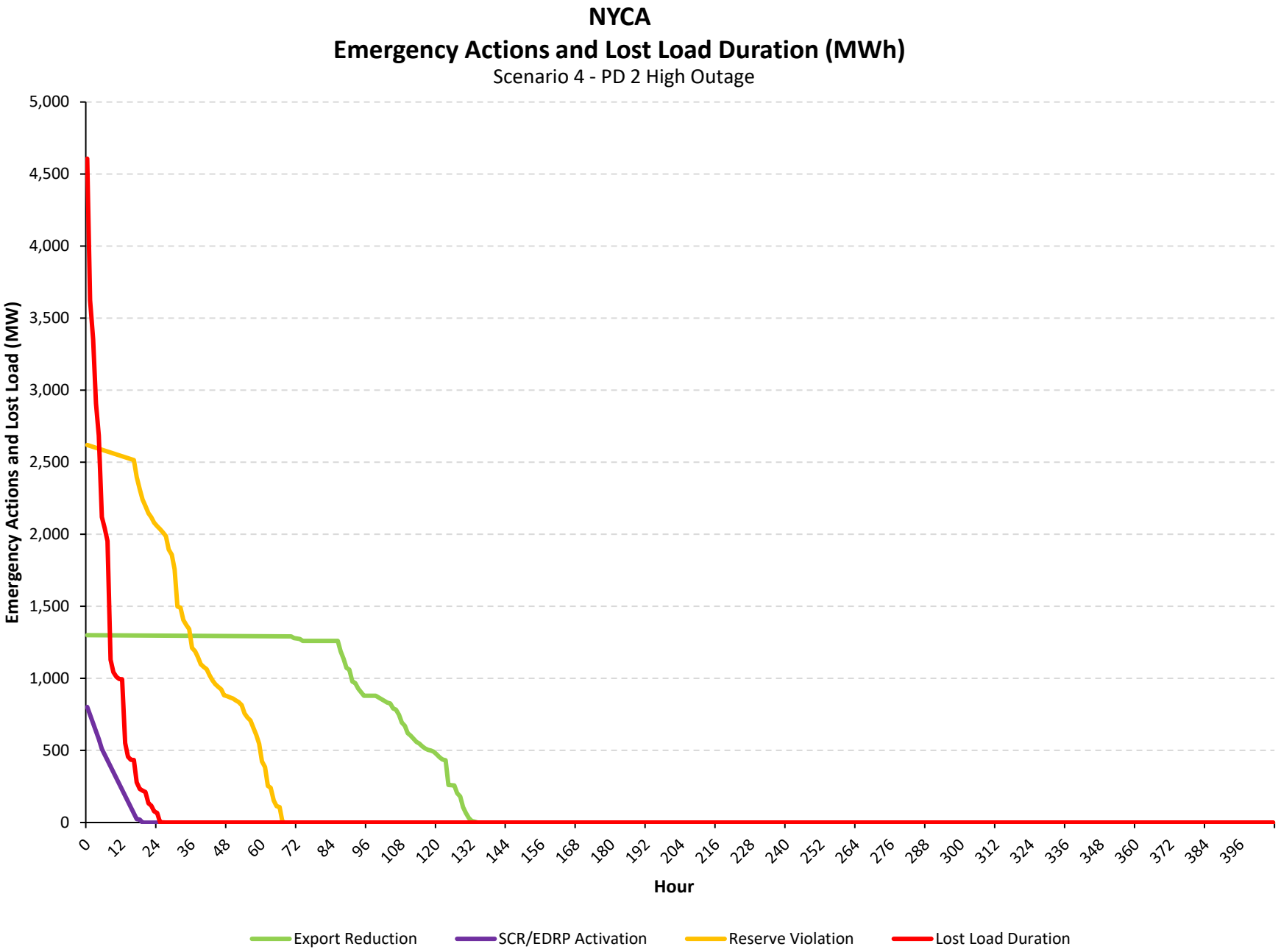


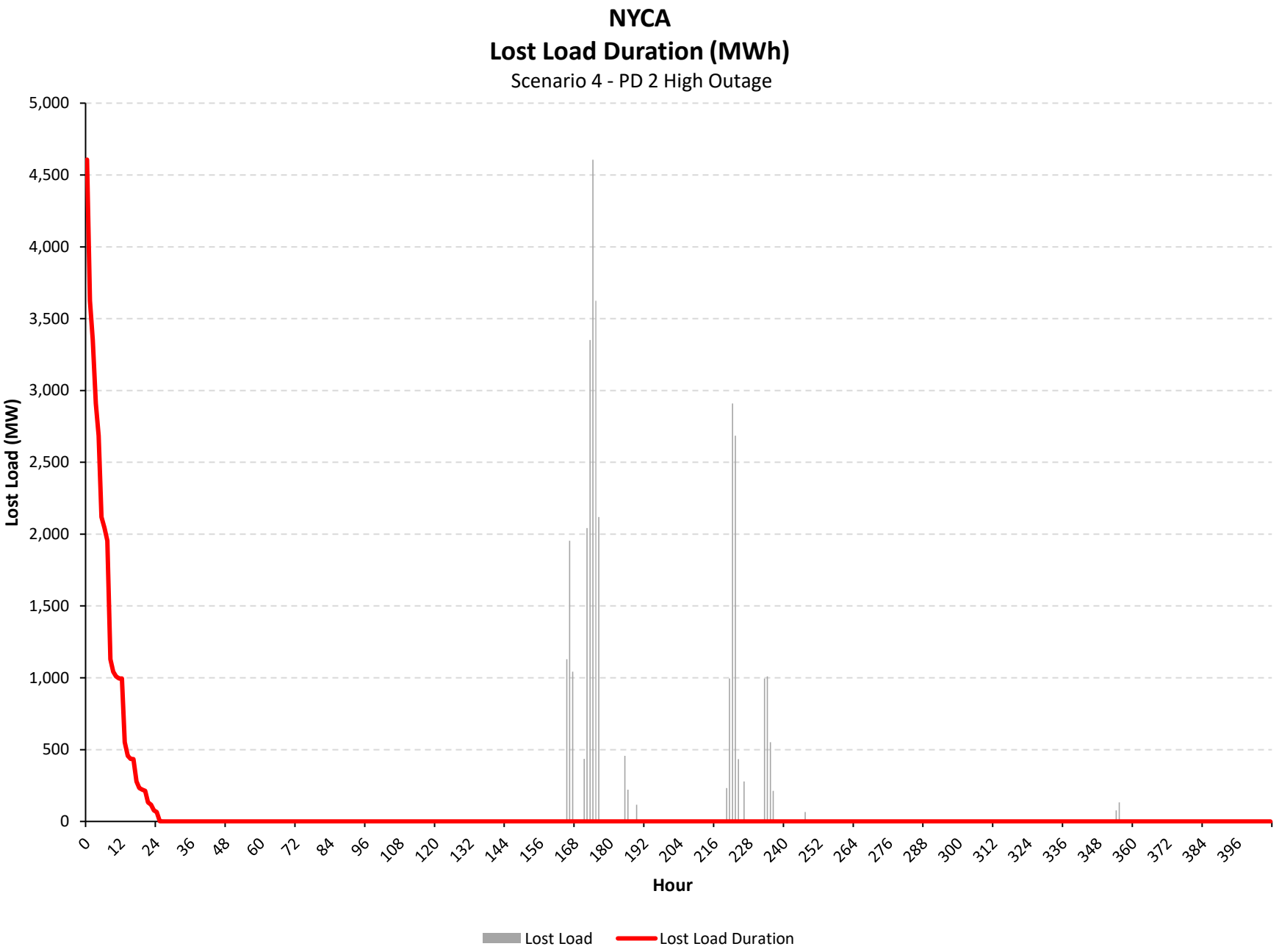
NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 4 - PD 2 High Outage





Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 4 - PD 2 High Outage
Emergency Actions and Lost Load (MW)
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 4 - PD 2 High Outage
Lost Load (MW)
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

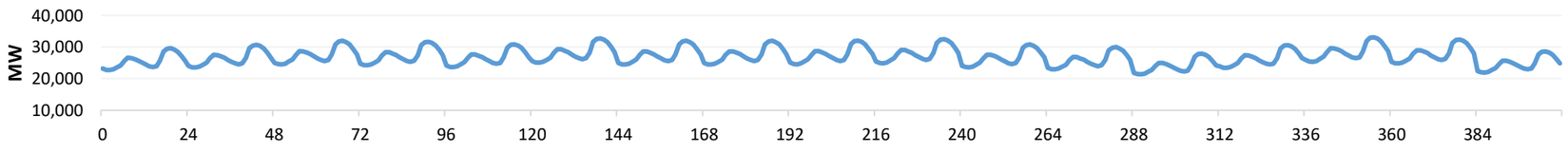
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 4 - PD 3 SENY Deactivation (Winter 2030/2031)

Hourly Results Summary

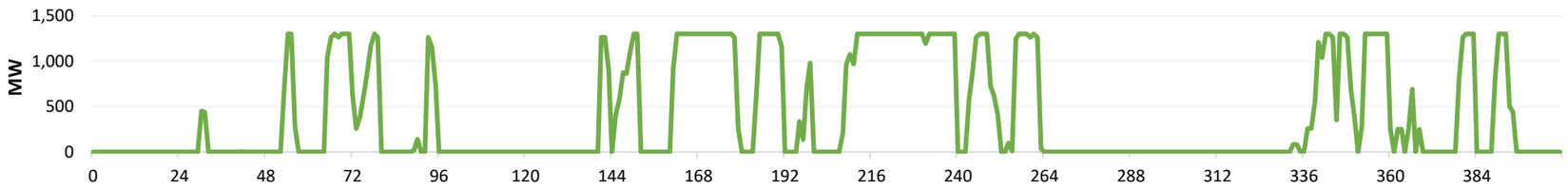
Case Name: Scenario 4 - PD 3 SENY Deactivation

Load During Modeling Period



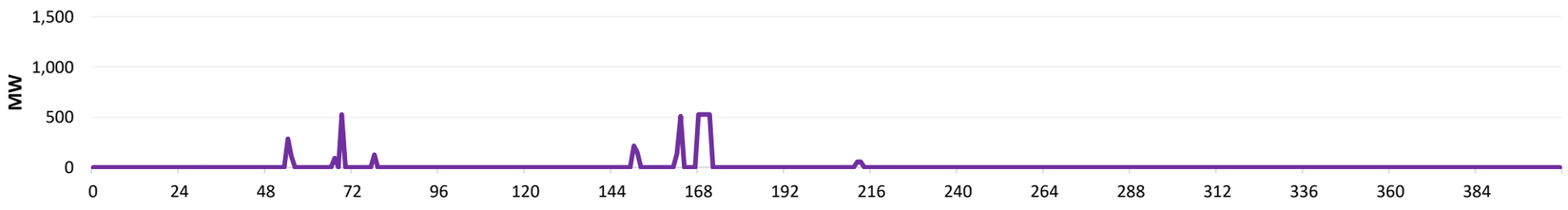
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	Roseton
Import Scenario:	Net Zero

Export to ISO-NE Reduction During Modeling Period



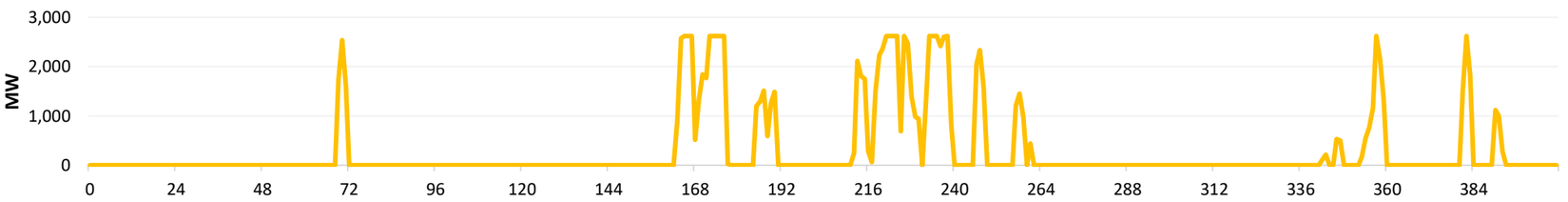
Export Reductions	
Total Hrs.	161
Total MWh	160,422
Avg. MW	393.2

SCR/EDRP Deployed During Modeling Period



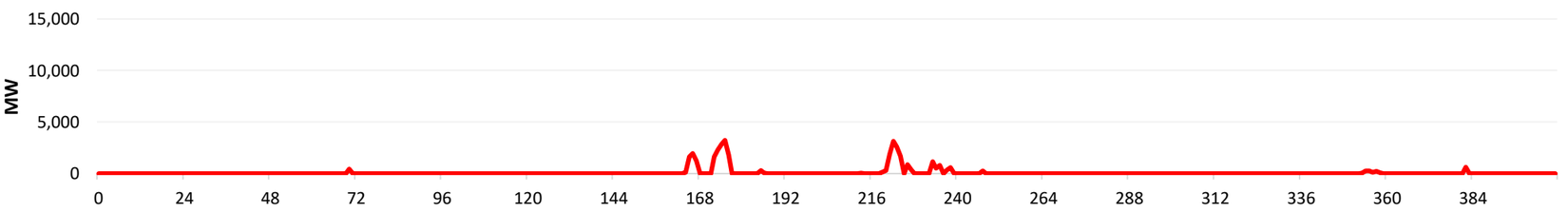
SCR Deployment	
Total Hrs.	15
Total MWh	4,381
Avg. MW	10.7

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	75
Total MWh	121,217
Avg. MW	297.1
First Hour with Viol.	69

Loss of Load During Modeling Period



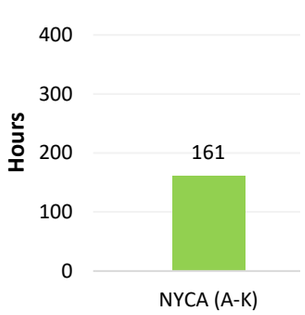
Loss of Load	
Total Hrs.	34
Total MWh	33,875
Avg. MW	83.0
First Hour with Losses	70

Full Period Results Summary

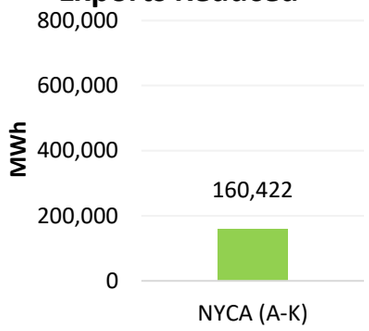
Case Name: Scenario 4 - PD 3 SENY Deactivation

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	Roseton
Import Scenario:	Net Zero

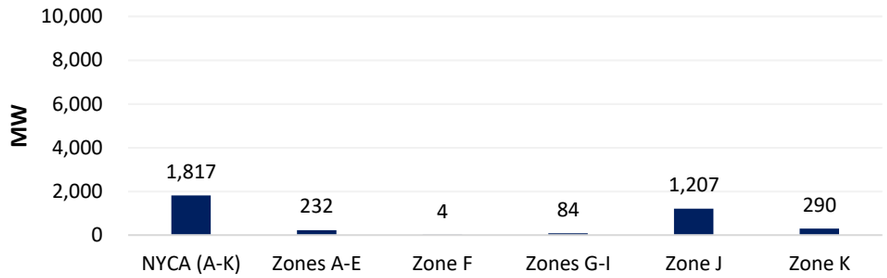
Hours Exports Reduced



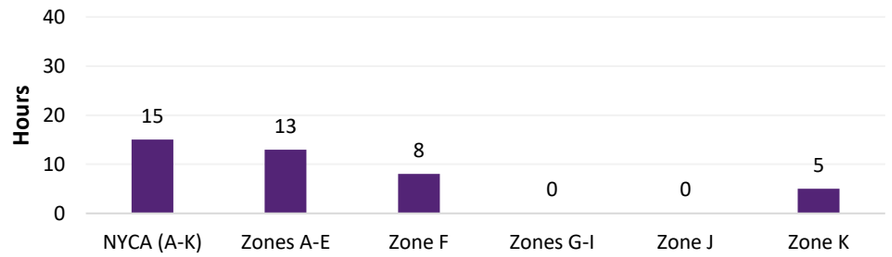
Total MWh of Exports Reduced



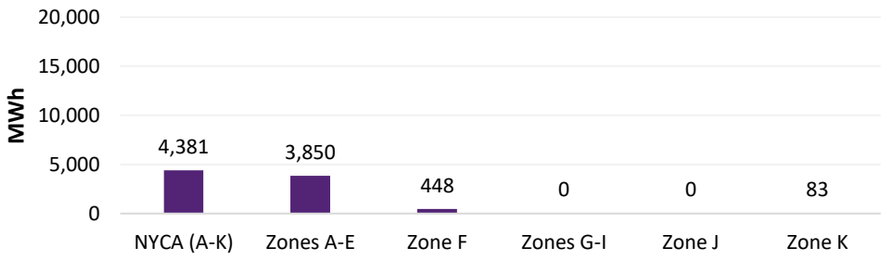
Average Capacity Not Available Due to Exhausted Fuel Inventory



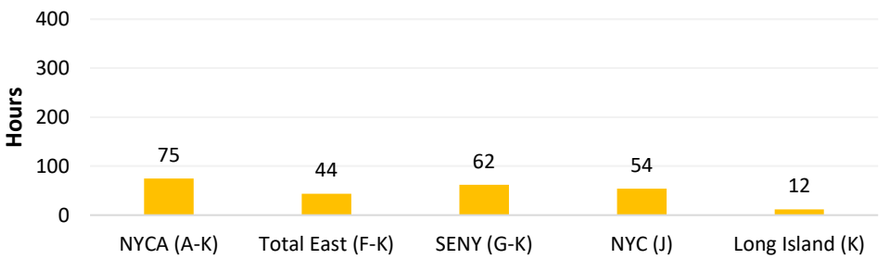
Hours SCR/EDRP Deployed



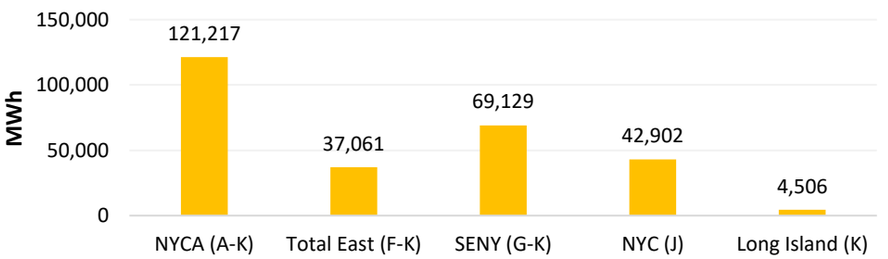
Total MWh SCR/EDRP Deployed



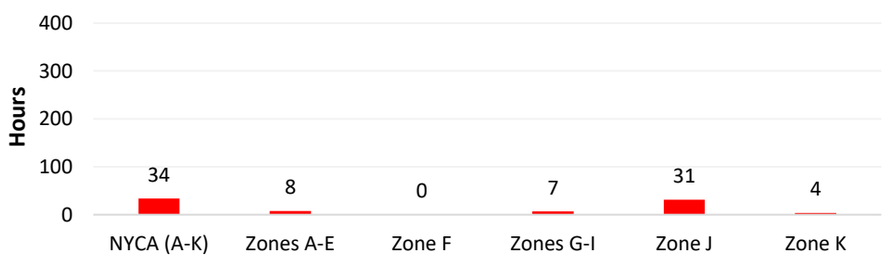
Hours with Reserve Violations



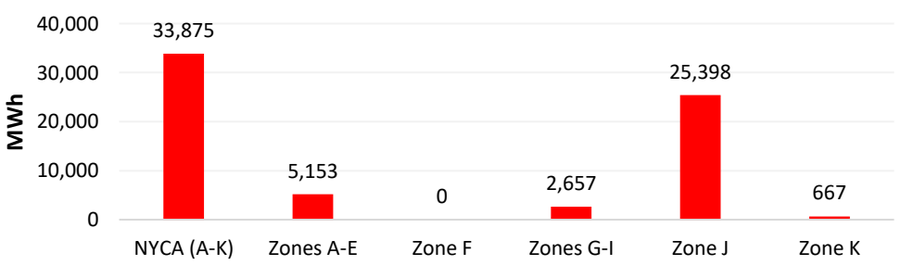
Total MWh of Reserve Violations

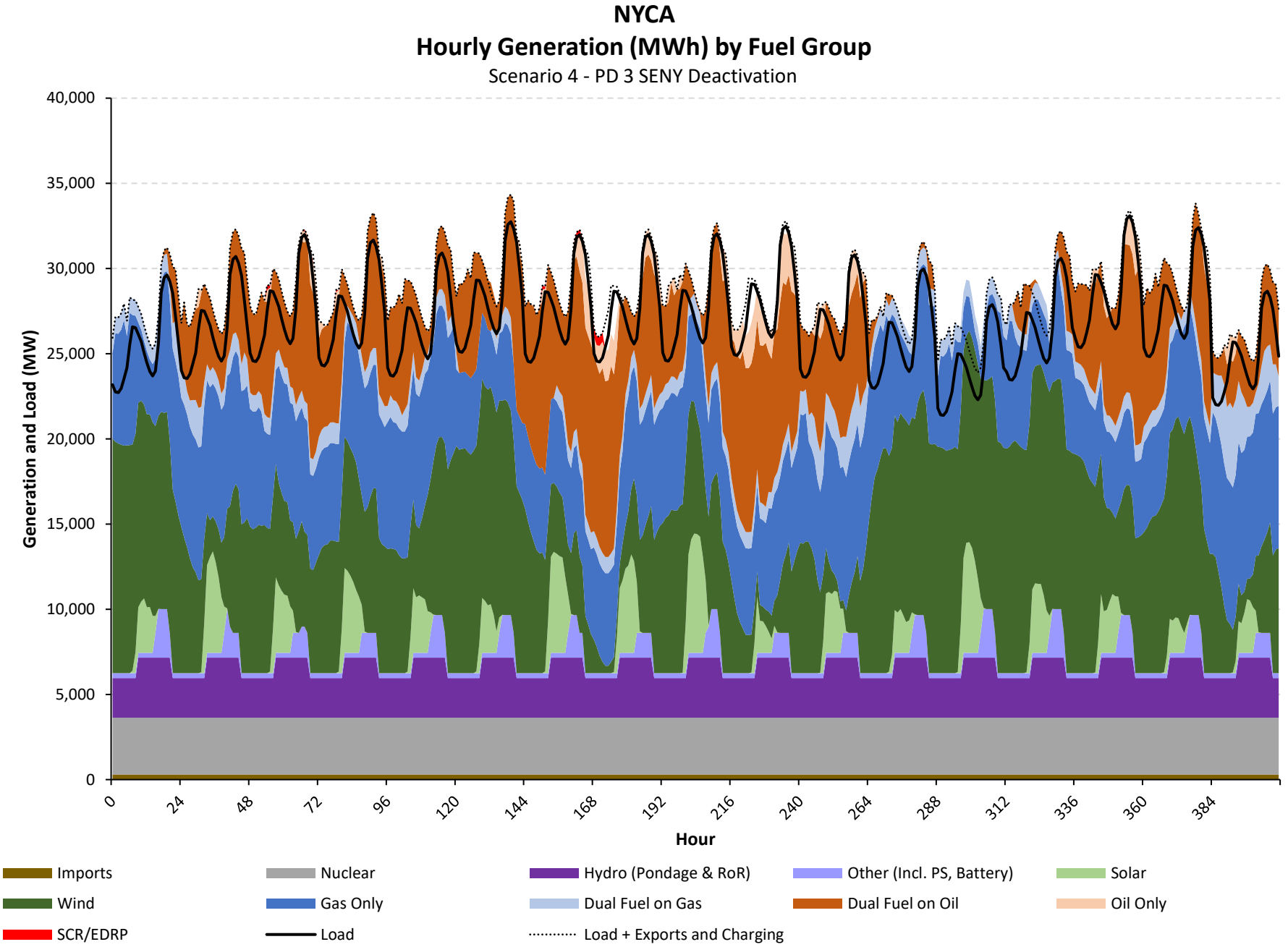


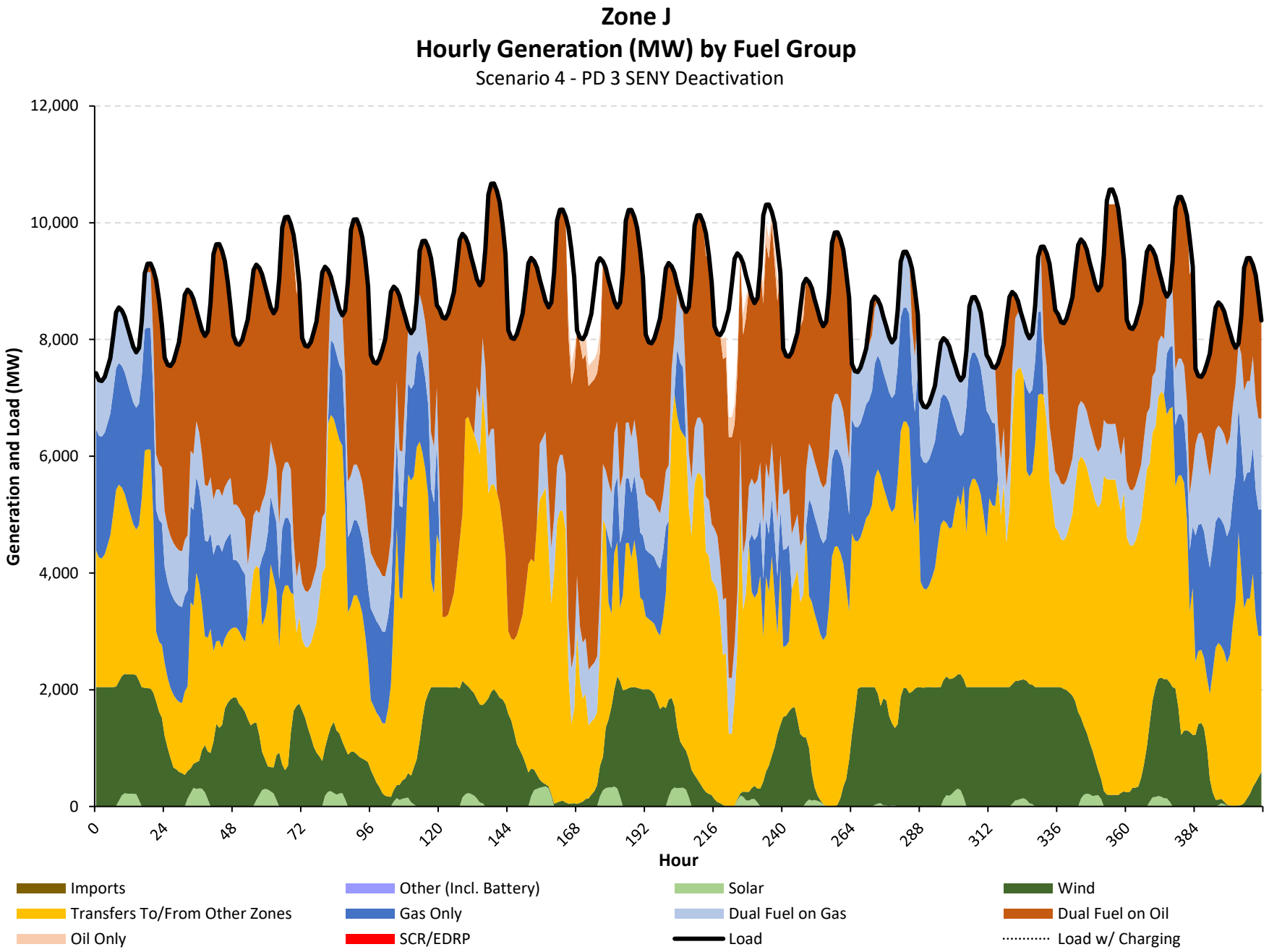
Hours with Loss of Load



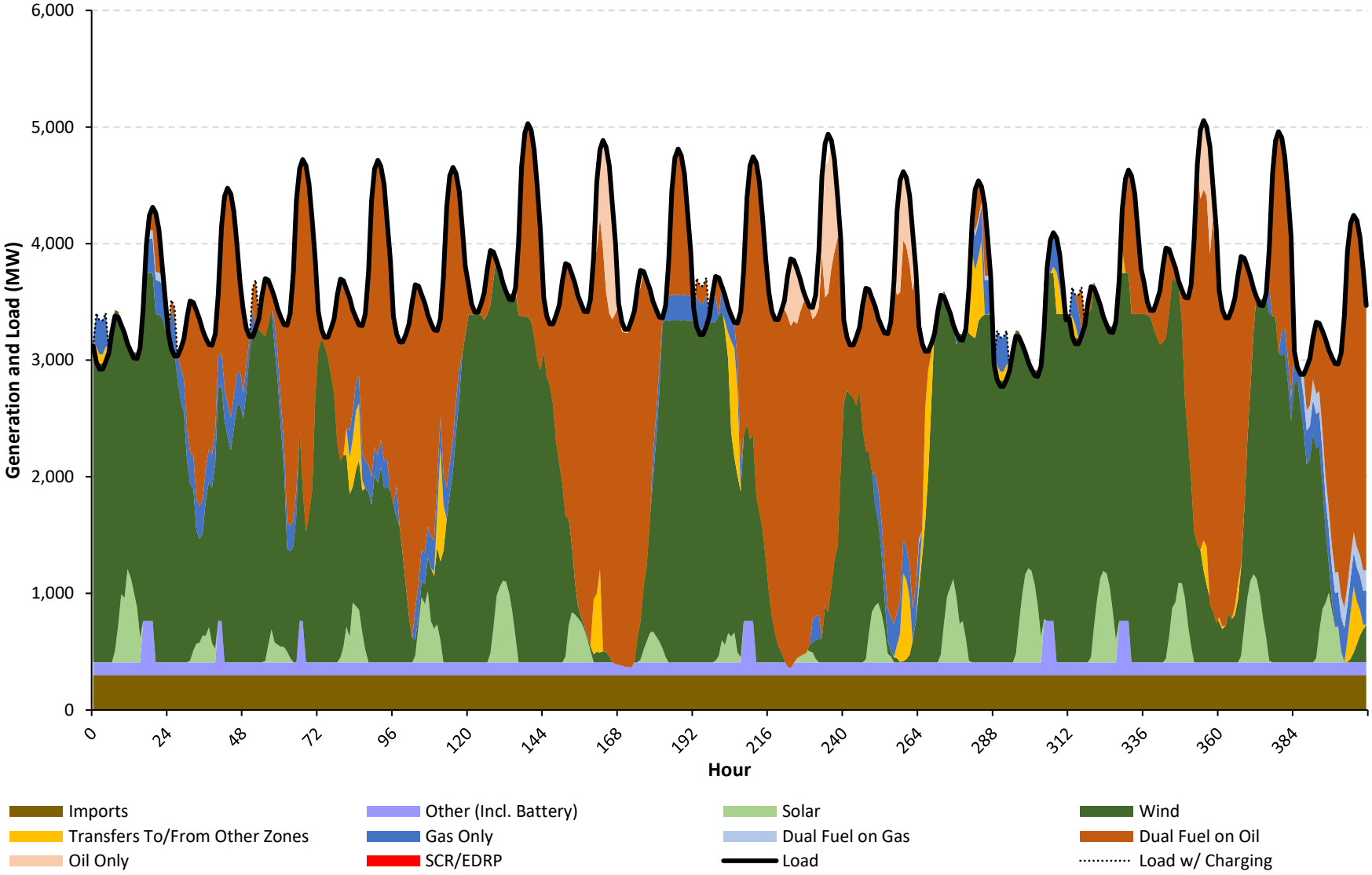
Total MWh of Lost Load



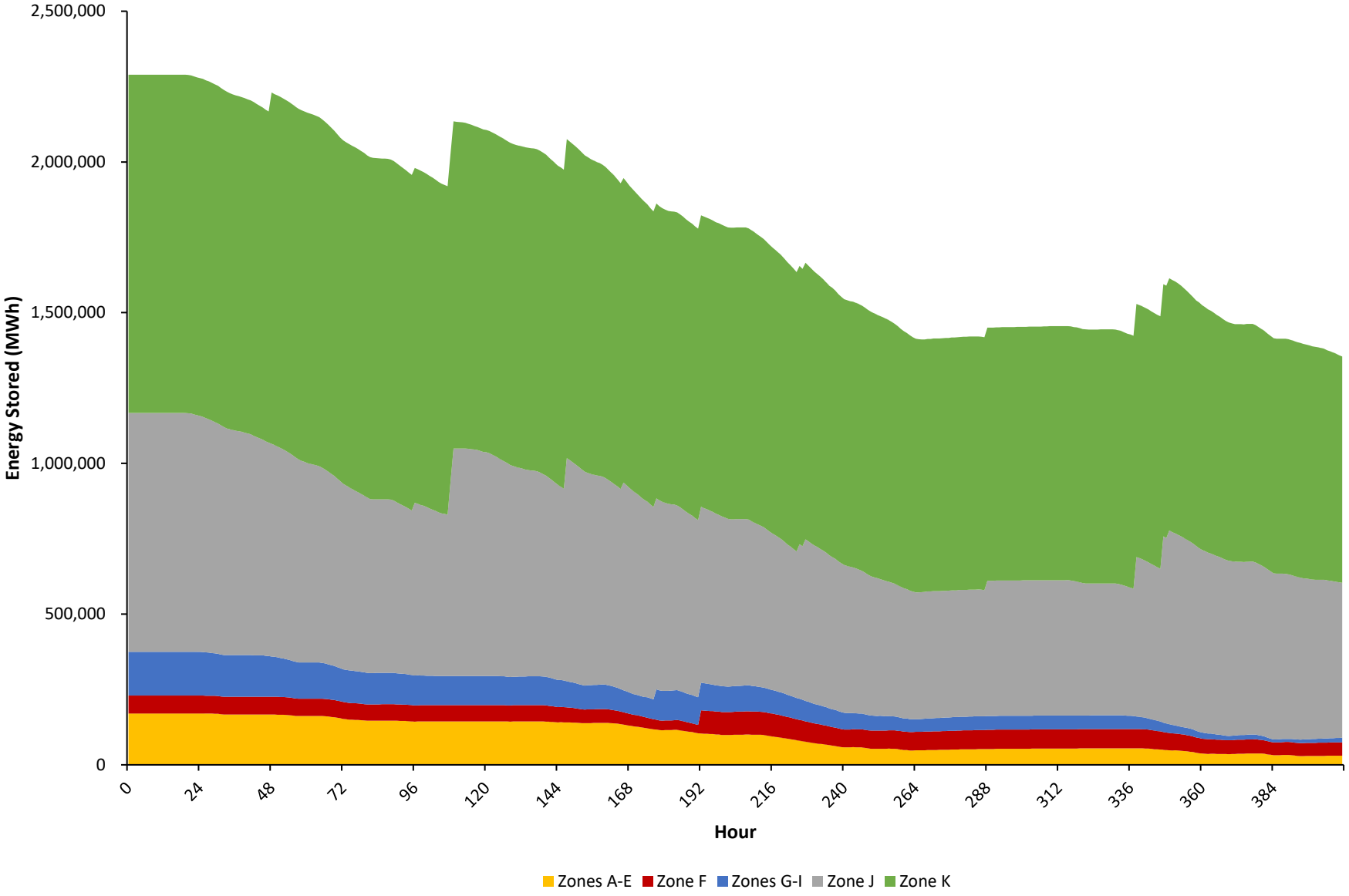

NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 4 - PD 3 SENY Deactivation
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

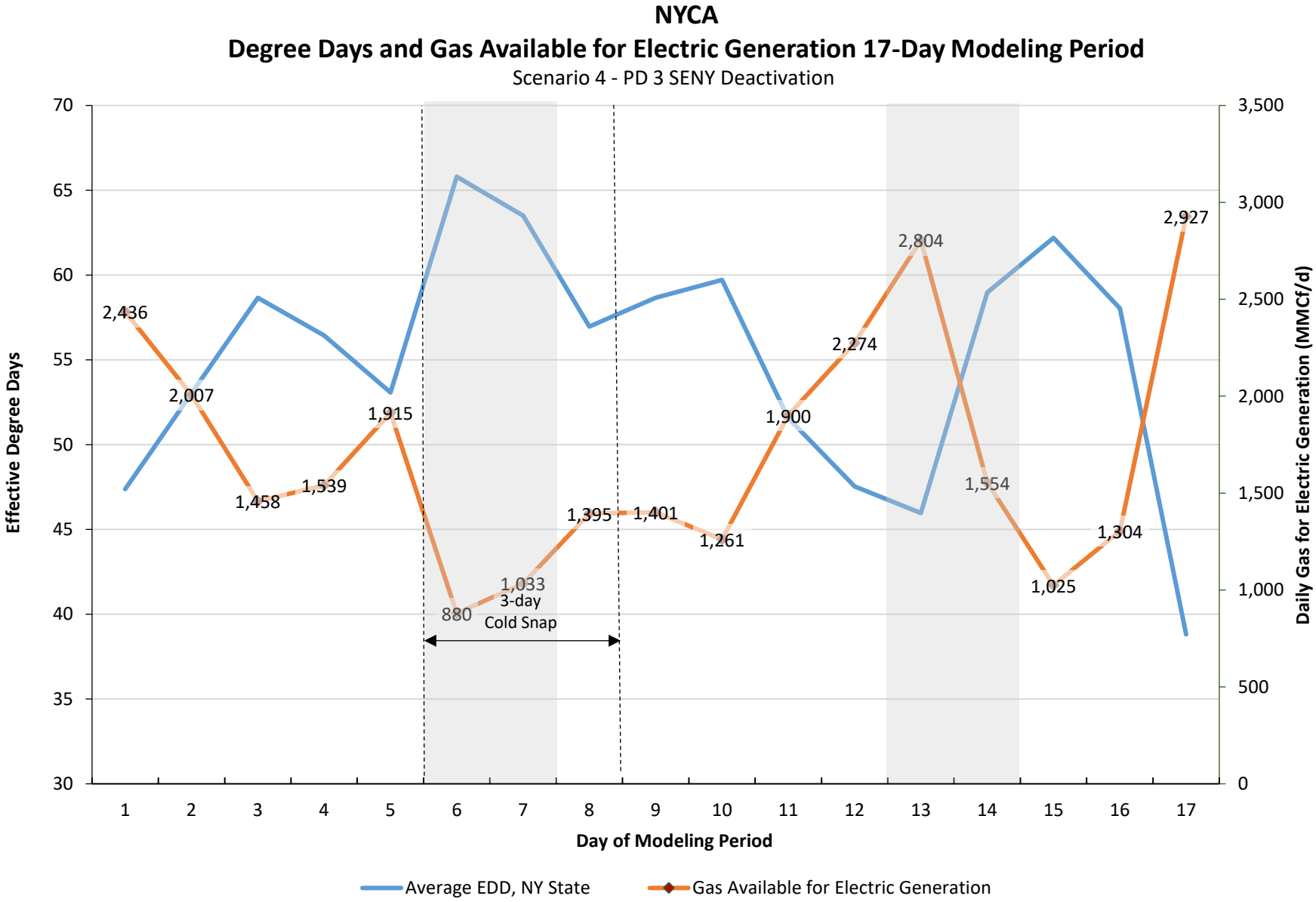

Zone J
Hourly Generation (MW) by Fuel Group
Scenario 4 - PD 3 SENY Deactivation
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

Zone K
Hourly Generation (MW) by Fuel Group
Scenario 4 - PD 3 SENY Deactivation

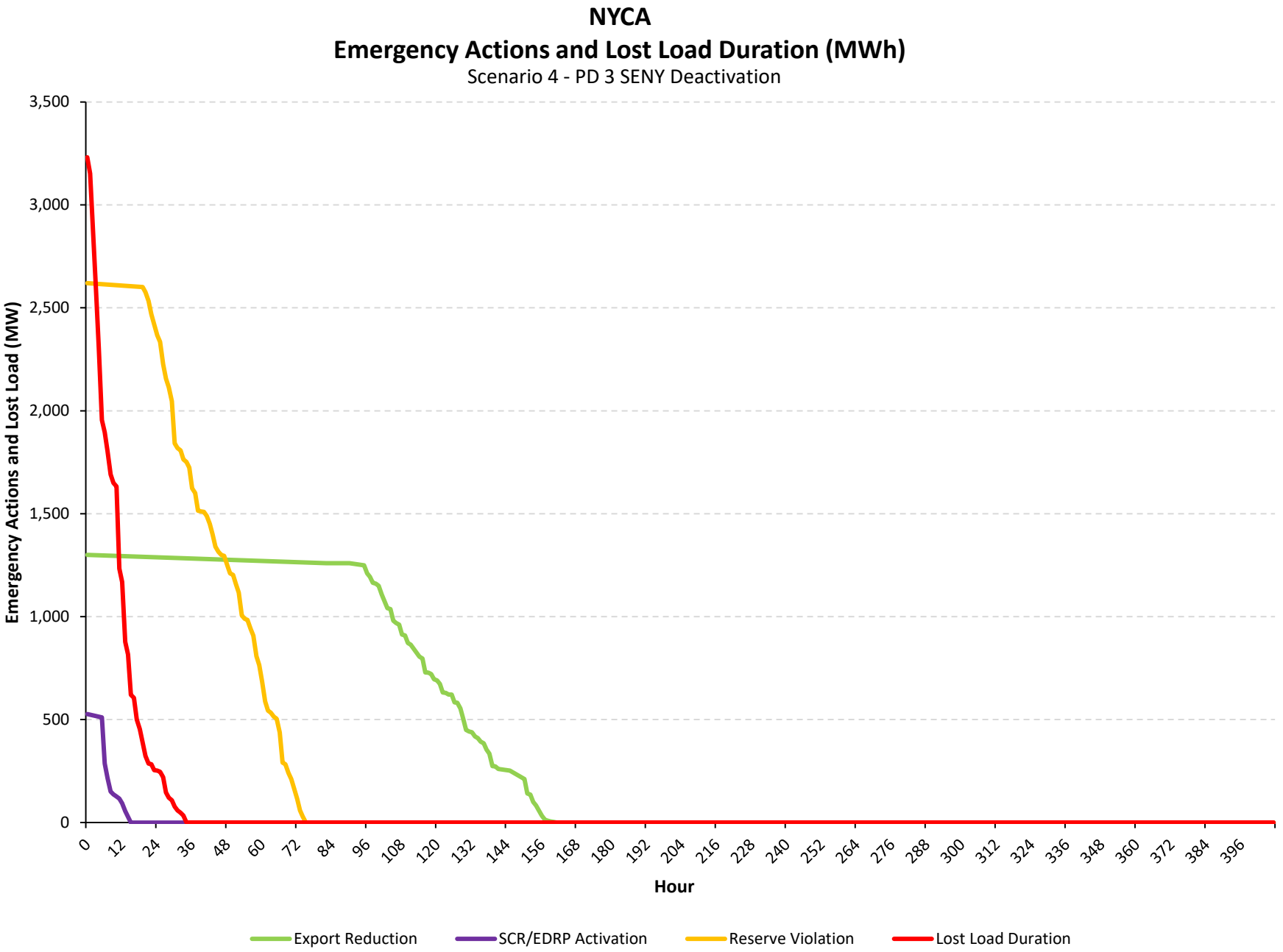


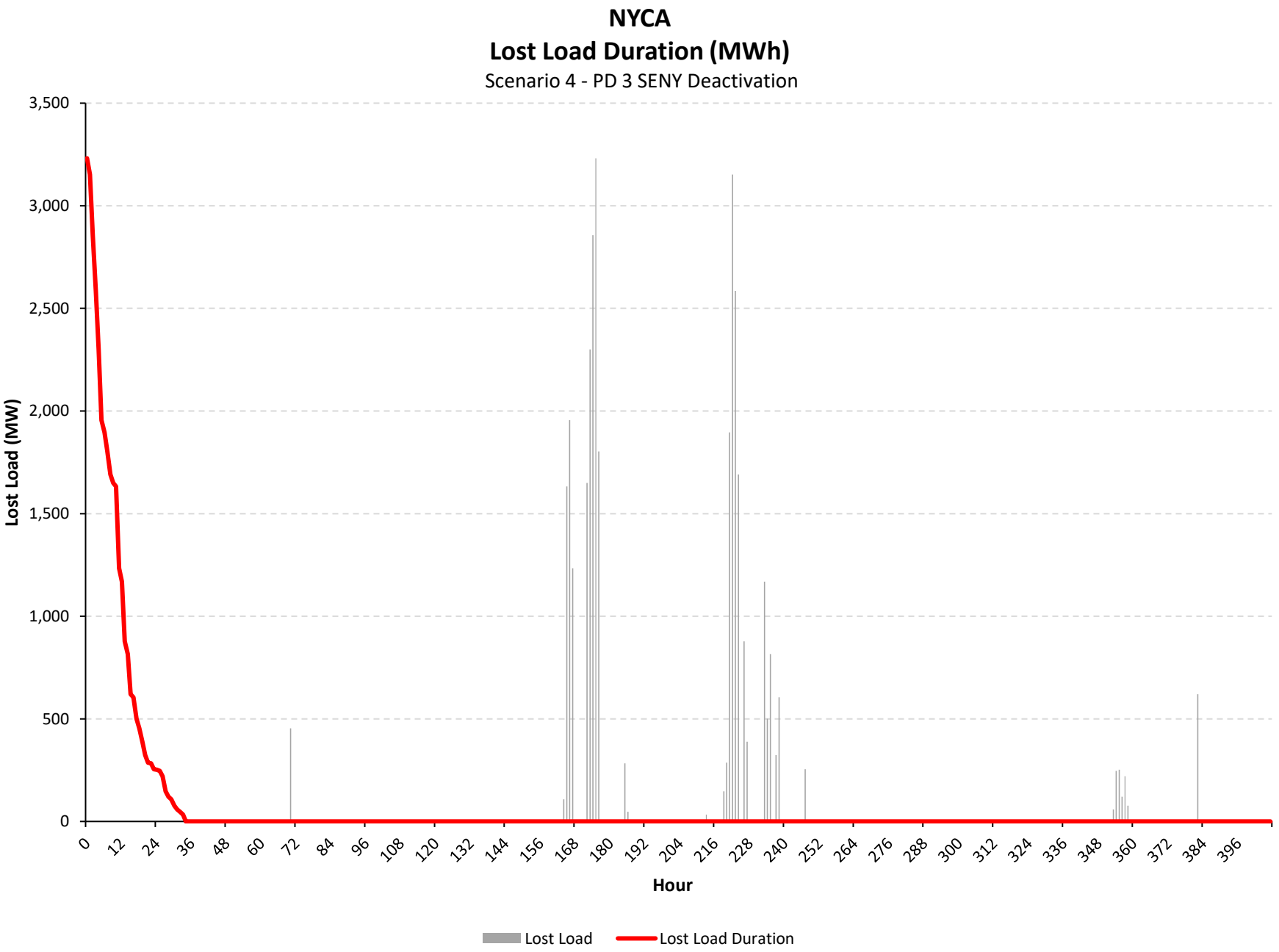
NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 4 - PD 3 SENY Deactivation





Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 4 - PD 3 SENY Deactivation
Emergency Actions and Lost Load (MW)
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 4 - PD 3 SENY Deactivation
Lost Load (MW)
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

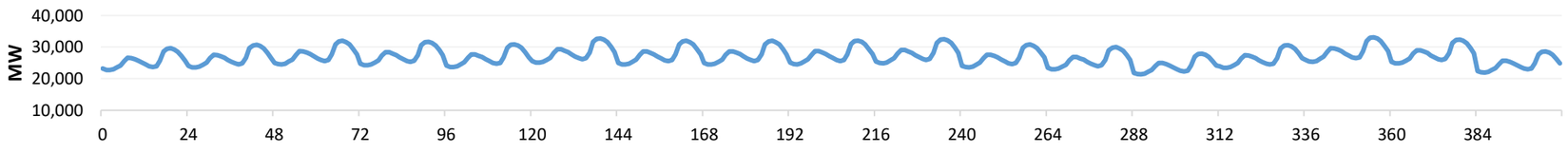
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 4 - PD 4 Nuclear Station Outage (Winter 2030/2031)

Hourly Results Summary

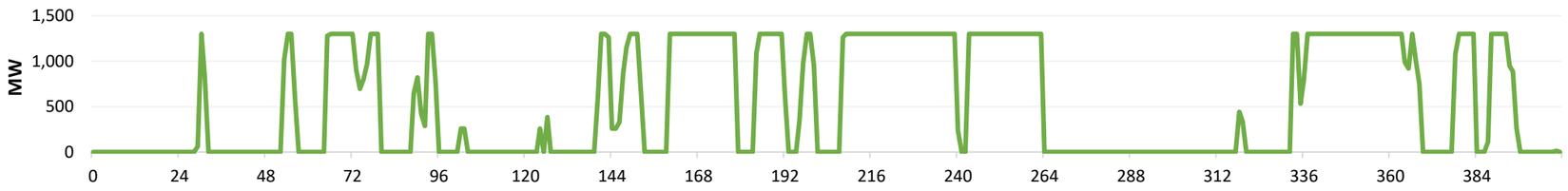
Case Name: Scenario 4 - PD 4 Nuclear Station Outage

Load During Modeling Period



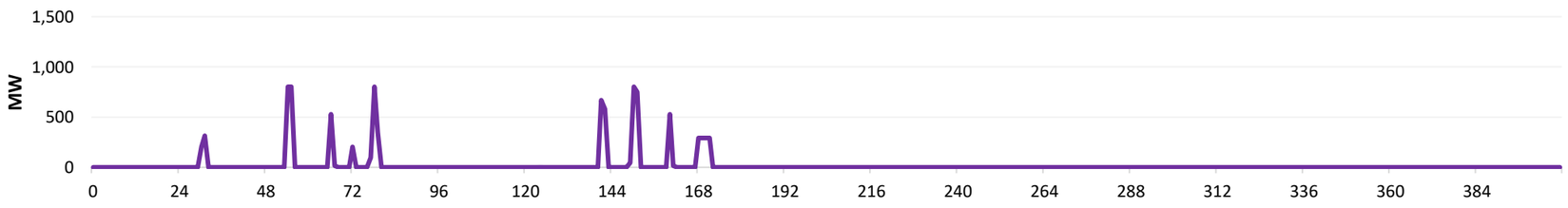
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	On
Plant Outage:	None
Import Scenario:	Net Zero

Export to ISO-NE Reduction During Modeling Period



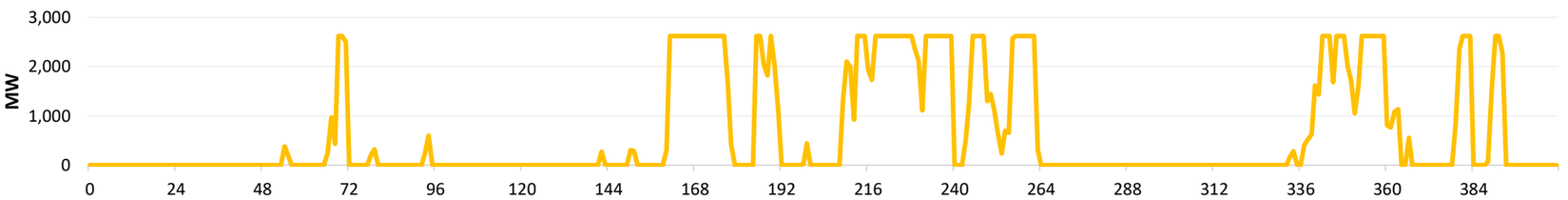
Export Reductions	
Total Hrs.	187
Total MWh	213,192
Avg. MW	522.5

SCR/EDRP Deployed During Modeling Period



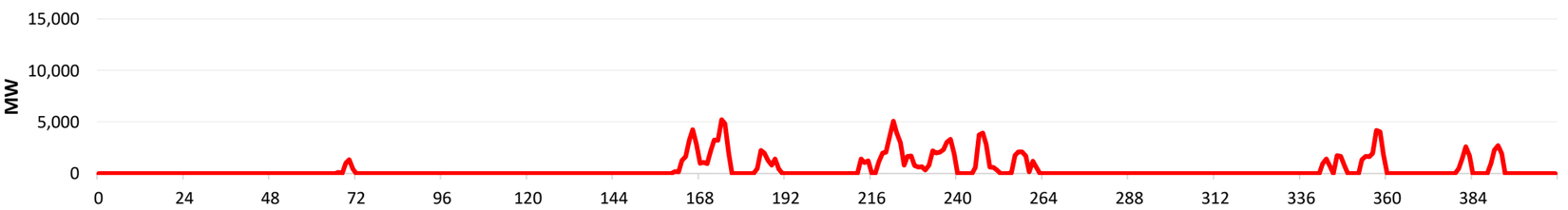
SCR Deployment	
Total Hrs.	21
Total MWh	8,673
Avg. MW	21.3

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	135
Total MWh	253,680
Avg. MW	621.8
First Hour with Viol.	54

Loss of Load During Modeling Period



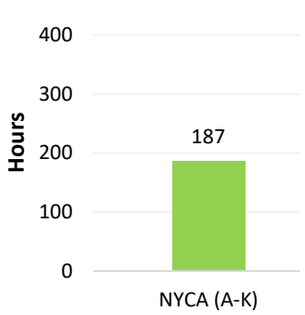
Loss of Load	
Total Hrs.	89
Total MWh	158,362
Avg. MW	388.1
First Hour with Losses	67

Full Period Results Summary

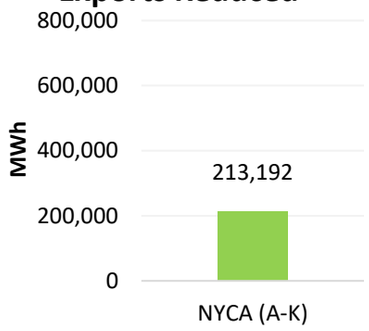
Case Name: Scenario 4 - PD 4 Nuclear Station Outage

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	On
Plant Outage:	None
Import Scenario:	Net Zero

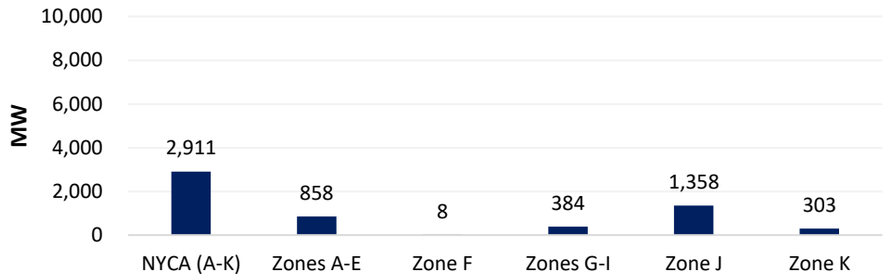
Hours Exports Reduced



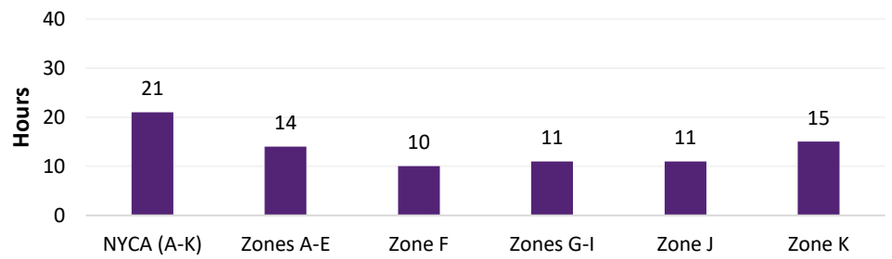
Total MWh of Exports Reduced



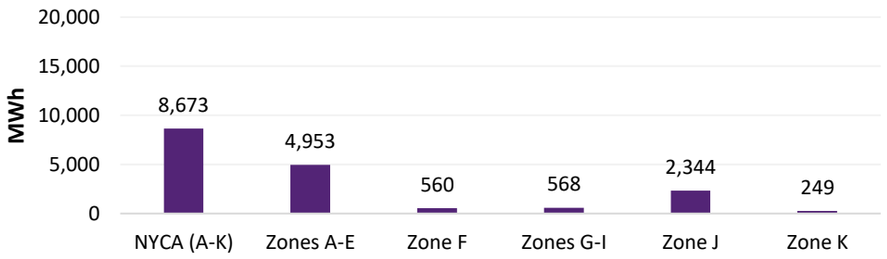
Average Capacity Not Available Due to Exhausted Fuel Inventory



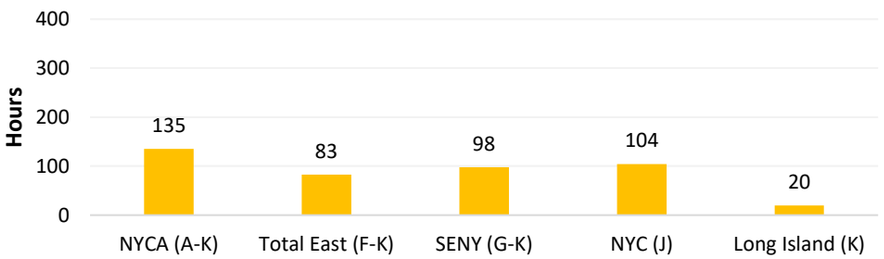
Hours SCR/EDRP Deployed



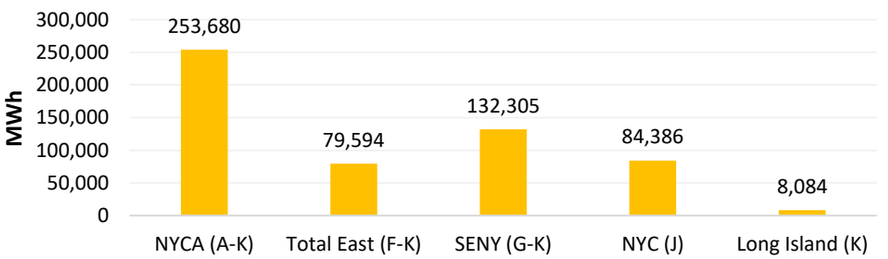
Total MWh SCR/EDRP Deployed



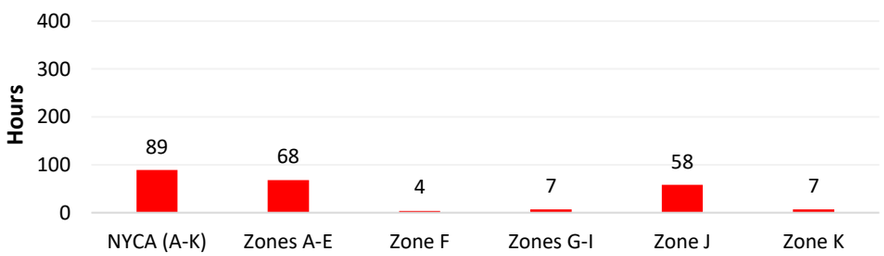
Hours with Reserve Violations



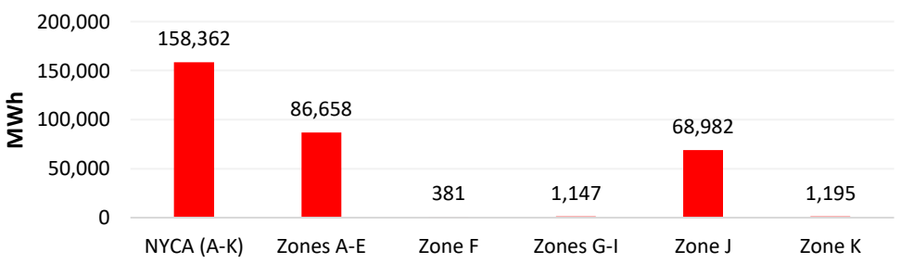
Total MWh of Reserve Violations

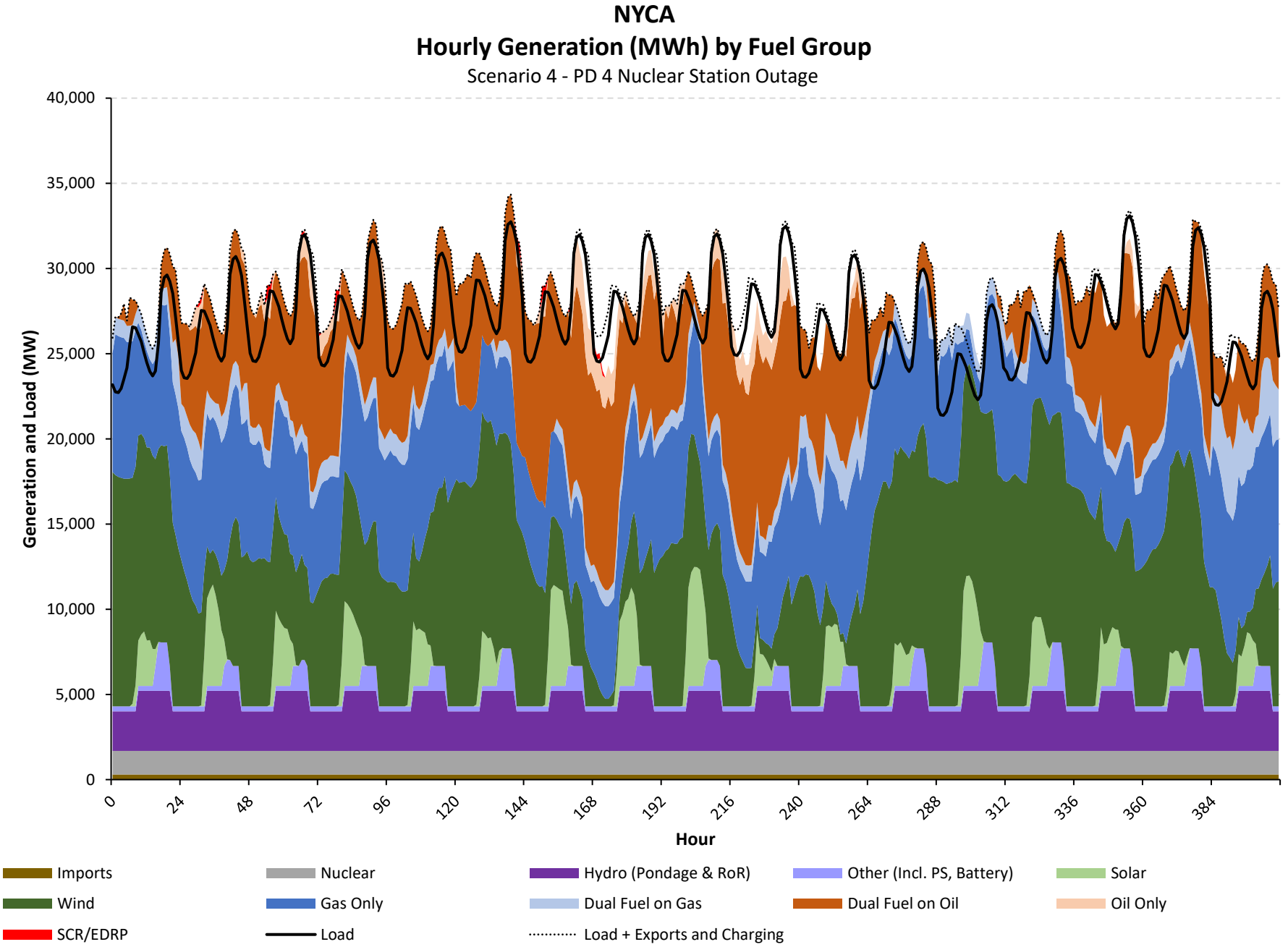


Hours with Loss of Load

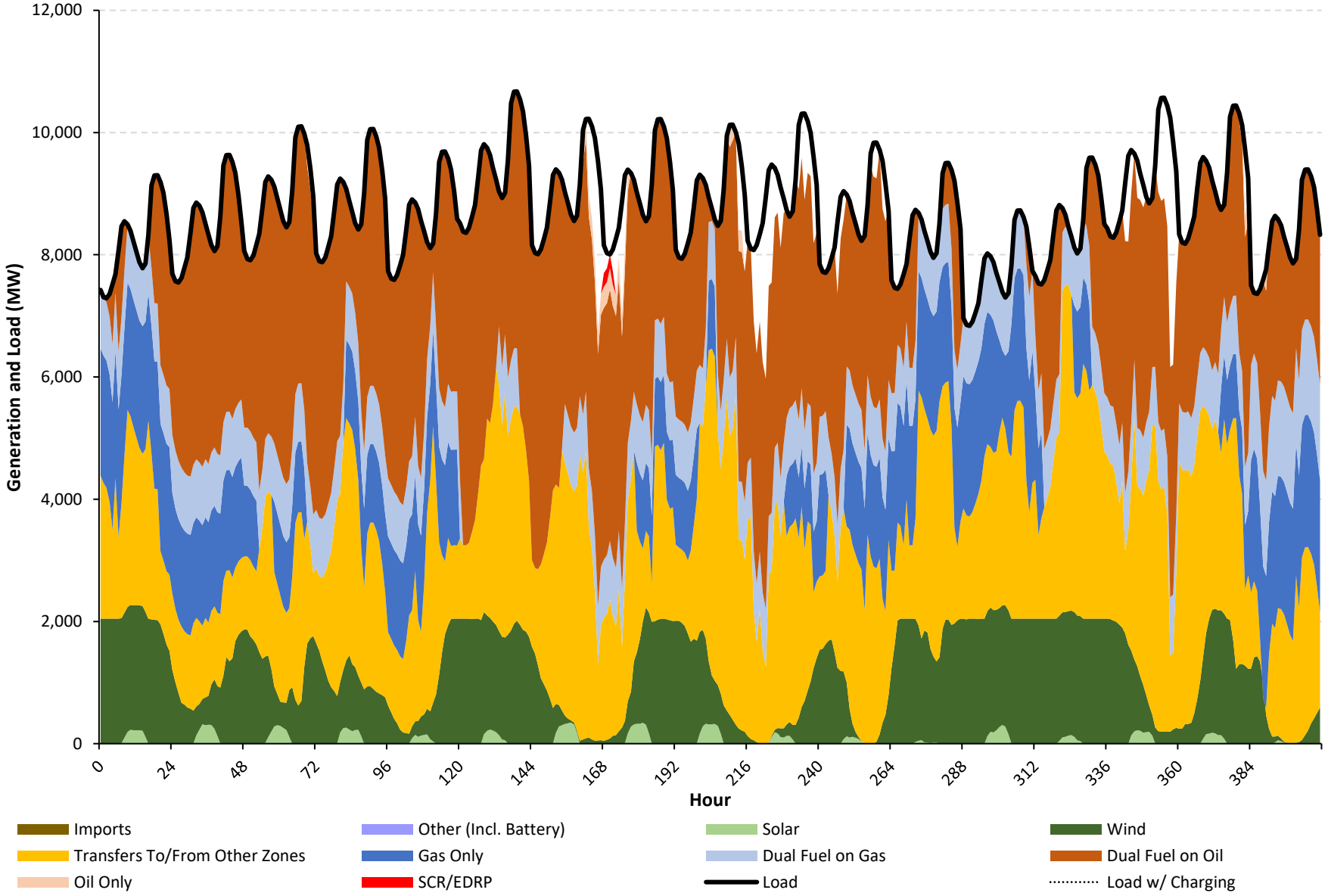


Total MWh of Lost Load

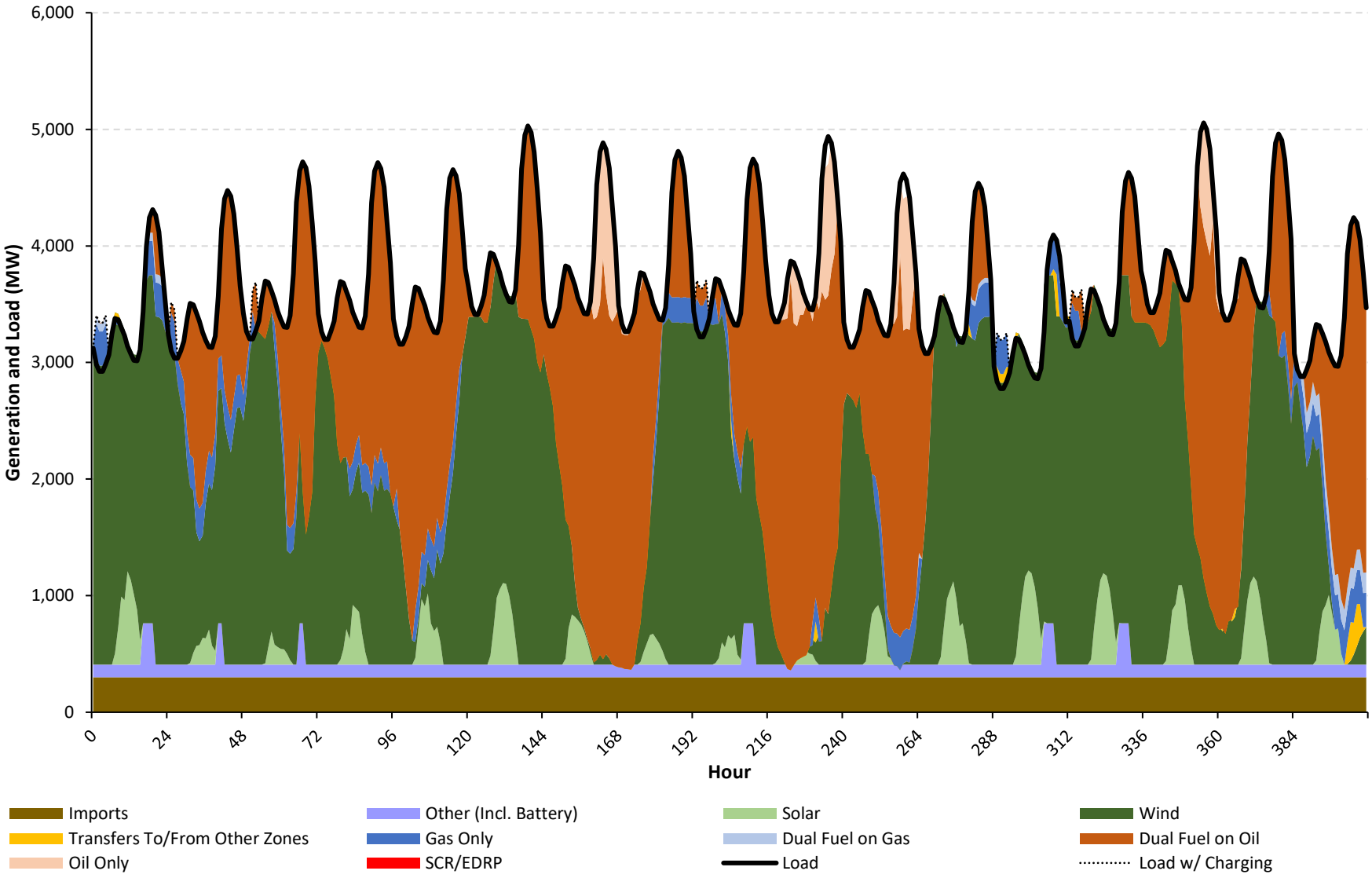



NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 4 - PD 4 Nuclear Station Outage
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

Zone J
Hourly Generation (MW) by Fuel Group
Scenario 4 - PD 4 Nuclear Station Outage



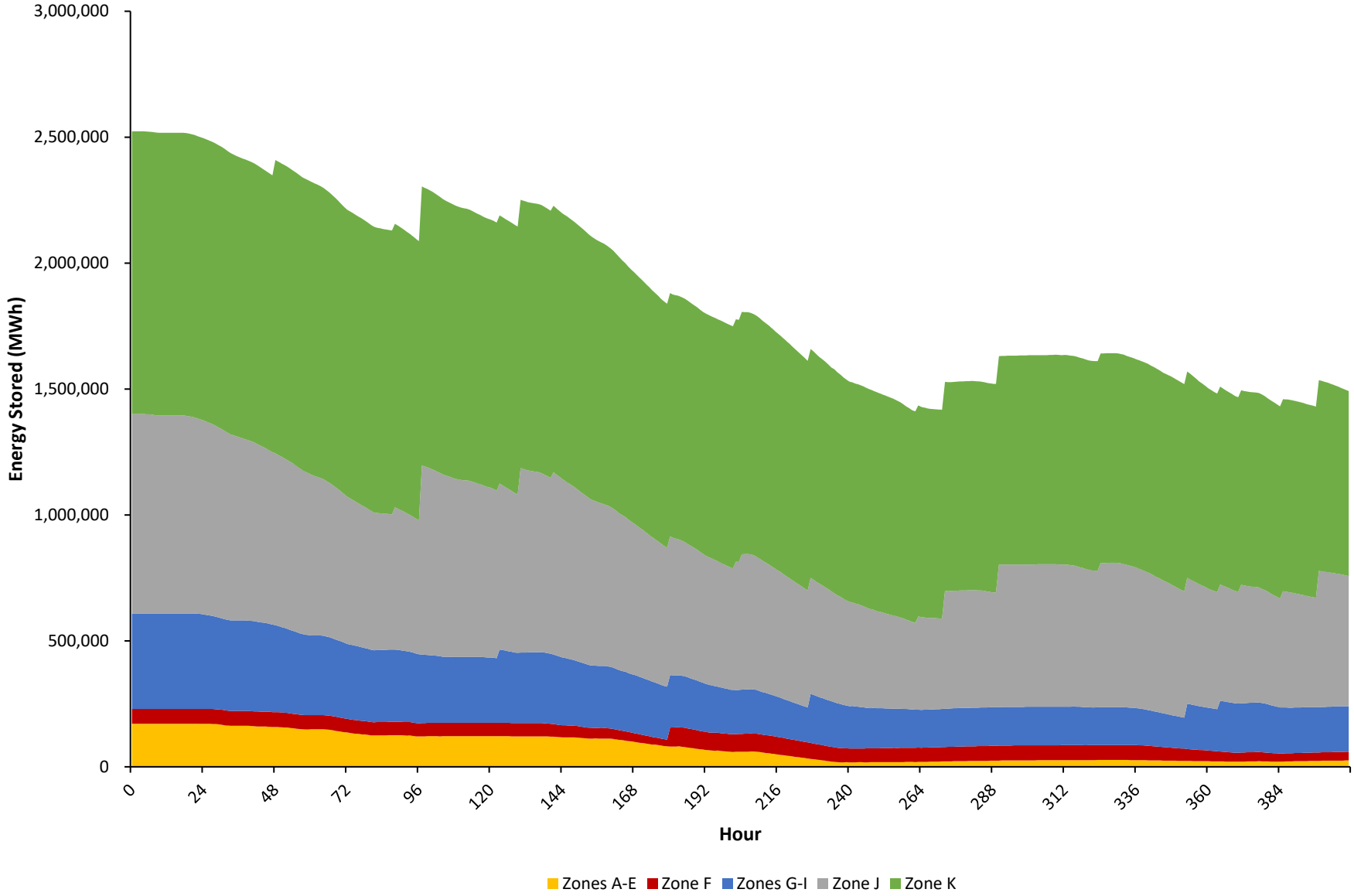
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 4 - PD 4 Nuclear Station Outage

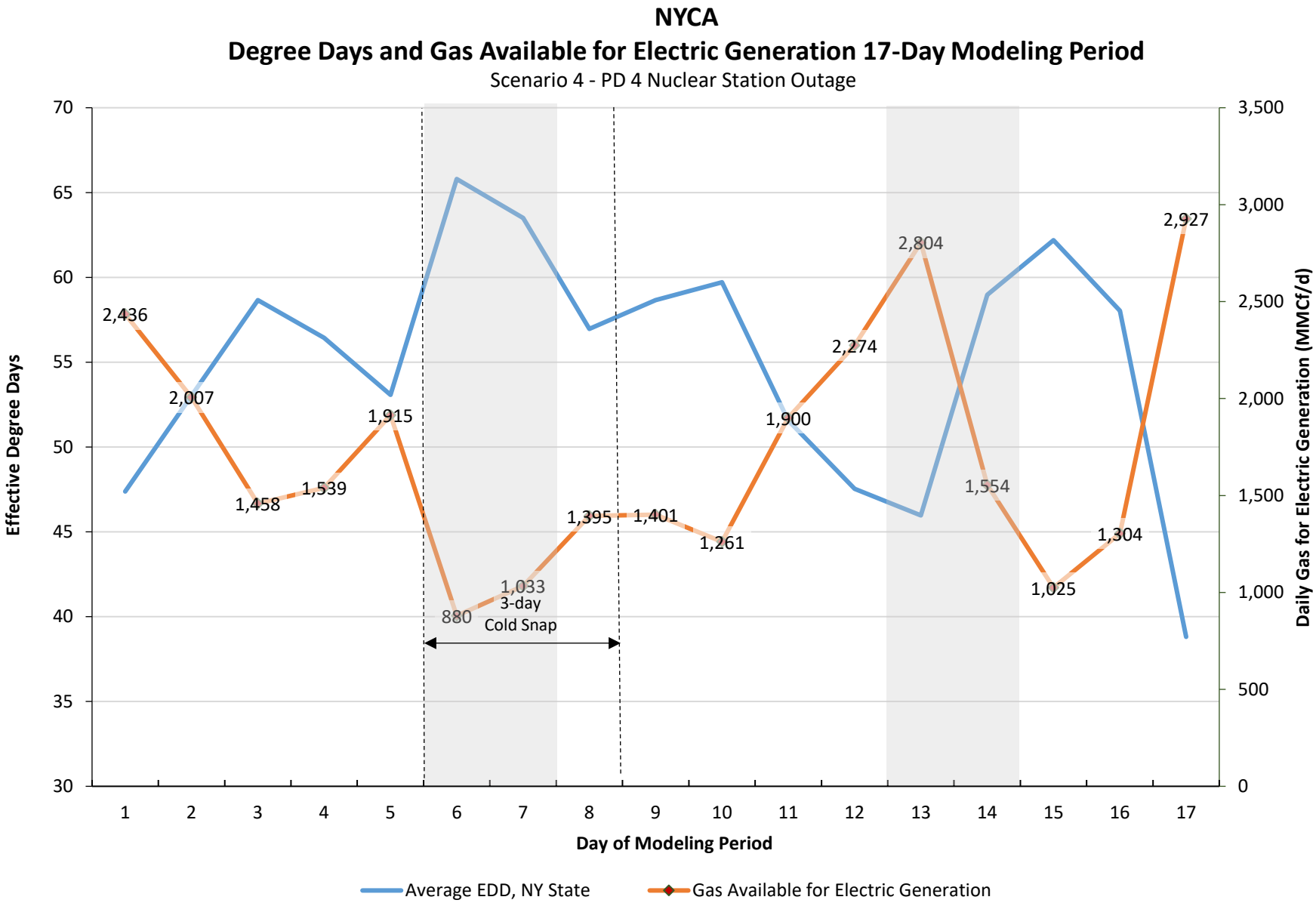


NYCA

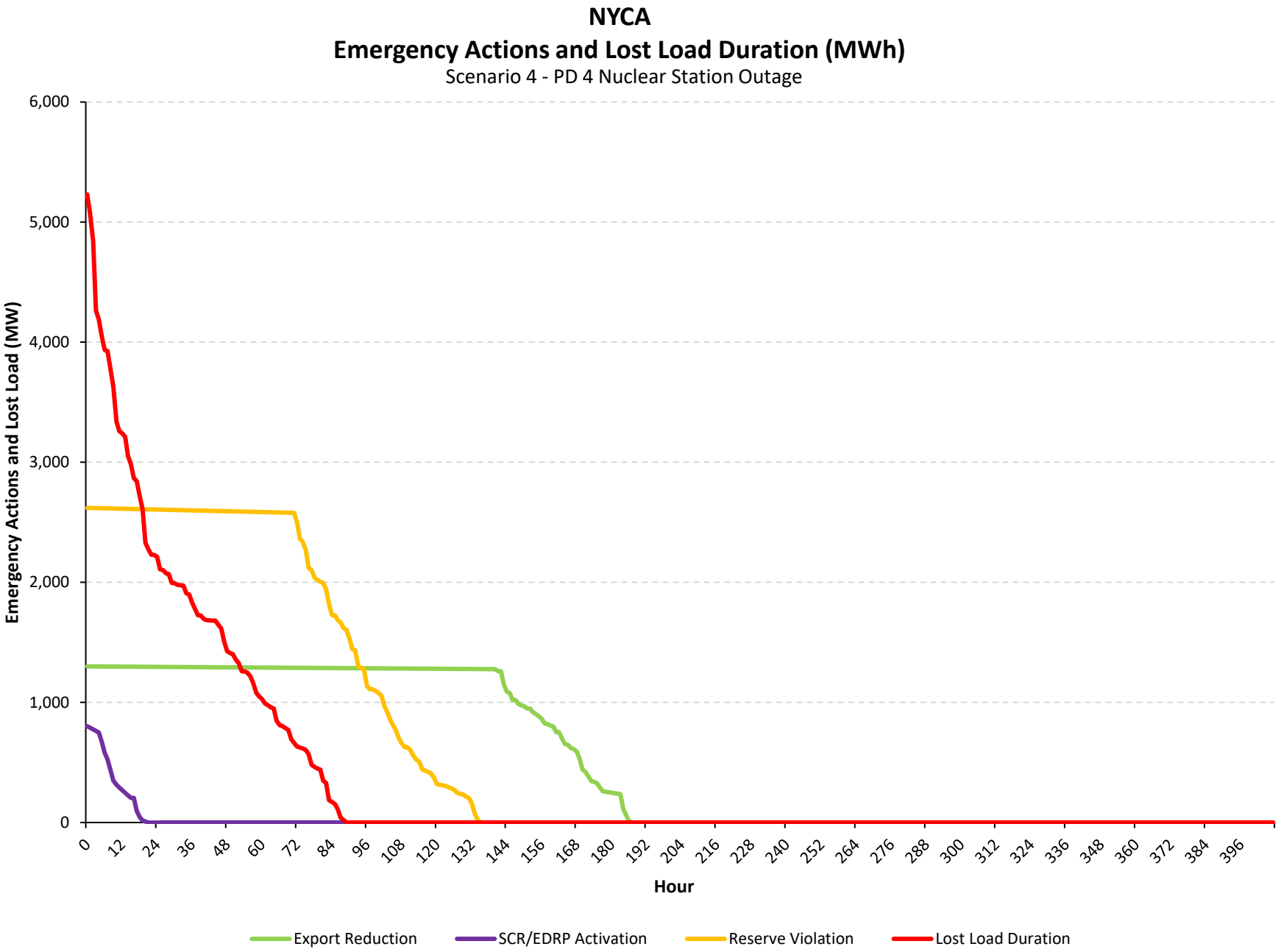
Quantity of Stored Fuel for Oil and Dual Fuel Units

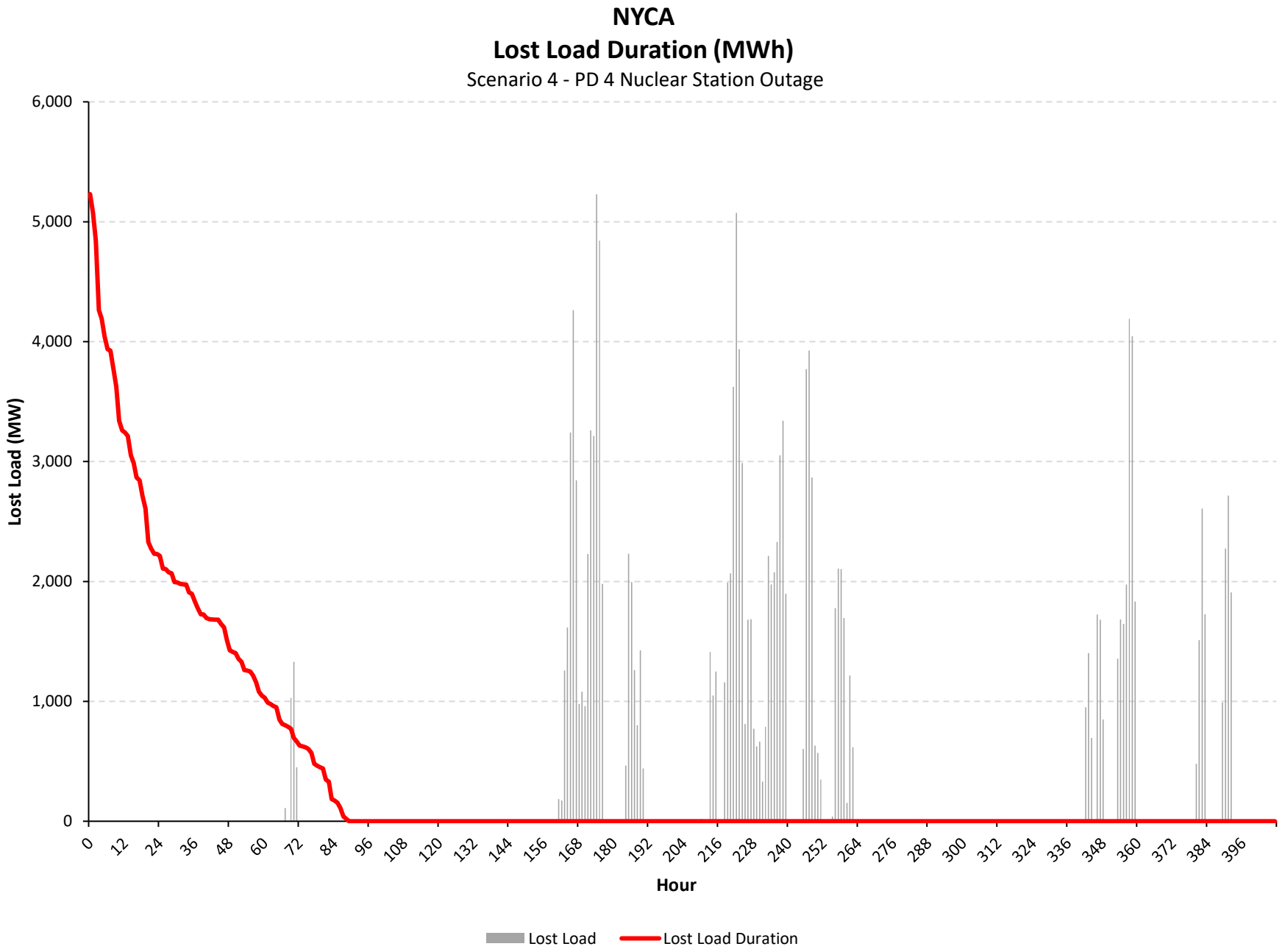
Scenario 4 - PD 4 Nuclear Station Outage





Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 4 - PD 4 Nuclear Station Outage
Emergency Actions and Lost Load (MW)
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 4 - PD 4 Nuclear Station Outage
Lost Load (MW)
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

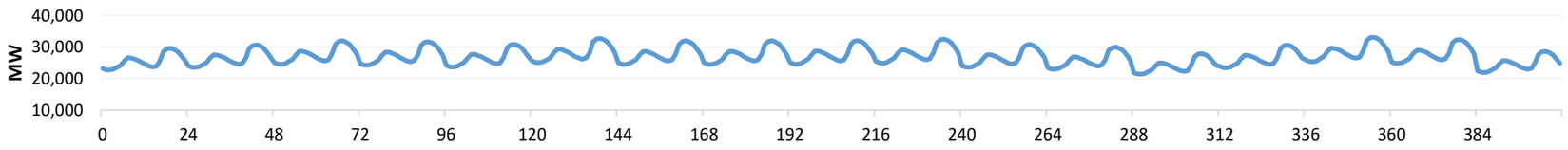
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 4 - PD 5 No Truck Refill (Winter 2030/2031)

Hourly Results Summary

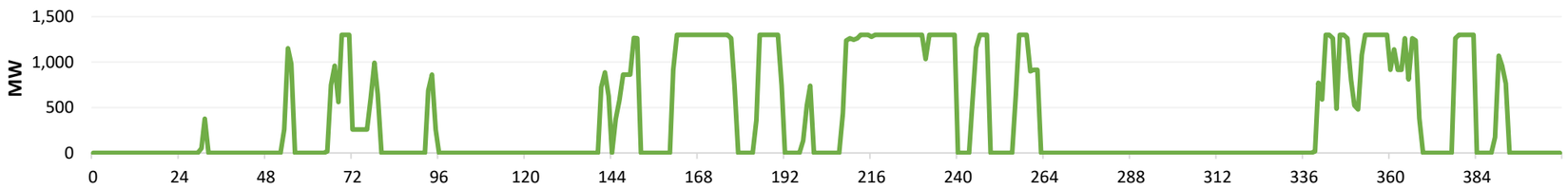
Case Name: Scenario 4 - PD 5 No Truck Refill

Load During Modeling Period



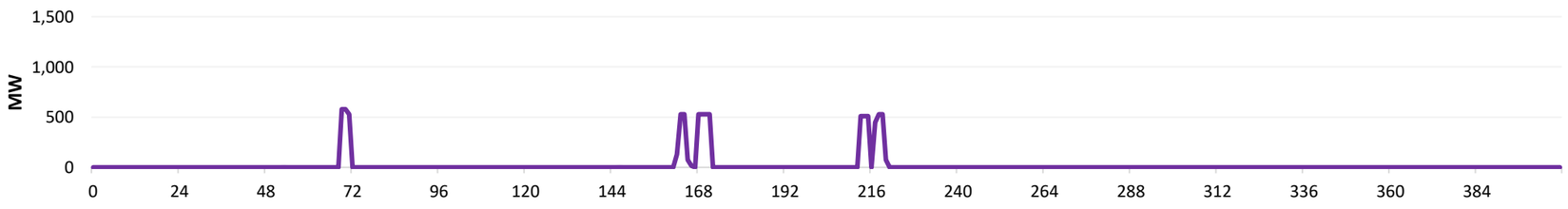
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	No Trucks
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

Export to ISO-NE Reduction During Modeling Period



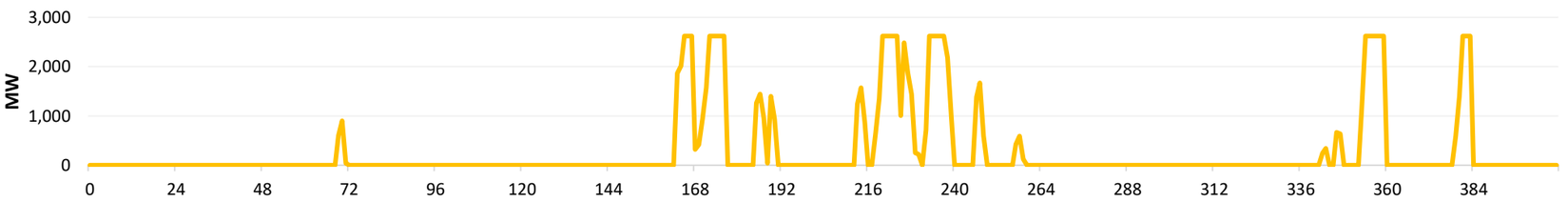
Export Reductions	
Total Hrs.	146
Total MWh	149,652
Avg. MW	366.8

SCR/EDRP Deployed During Modeling Period



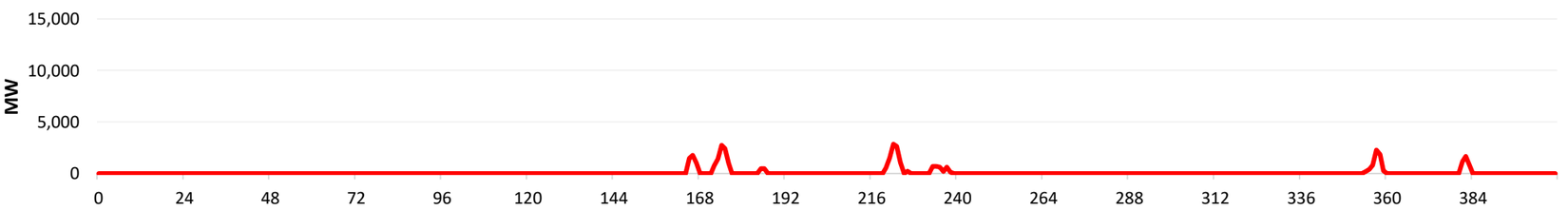
SCR Deployment	
Total Hrs.	19
Total MWh	8,168
Avg. MW	20.0

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	69
Total MWh	112,159
Avg. MW	274.9
First Hour with Viol.	69

Loss of Load During Modeling Period



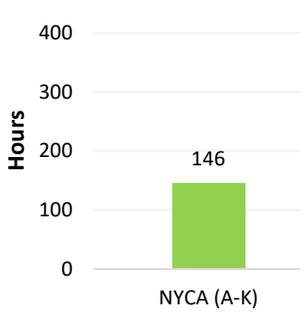
Loss of Load	
Total Hrs.	31
Total MWh	34,821
Avg. MW	85.3
First Hour with Losses	165

Full Period Results Summary

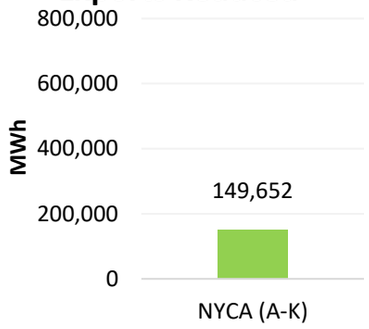
Case Name: Scenario 4 - PD 5 No Truck Refill

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	No Trucks
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

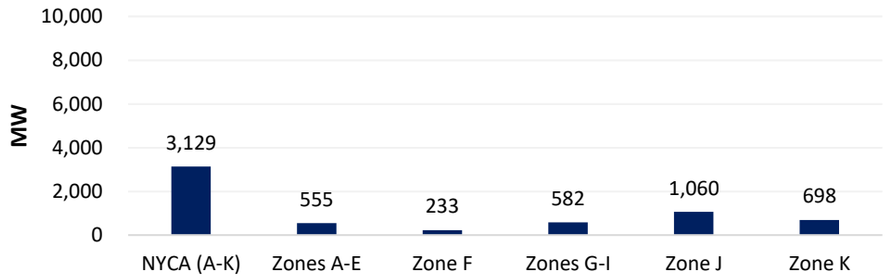
Hours Exports Reduced



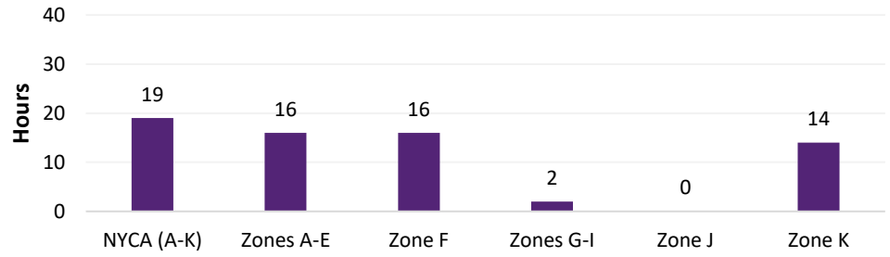
Total MWh of Exports Reduced



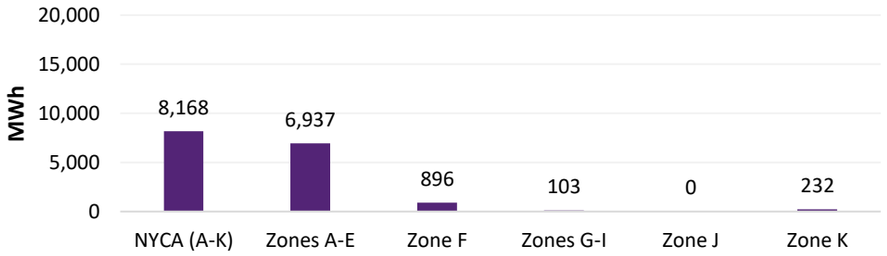
Average Capacity Not Available Due to Exhausted Fuel Inventory



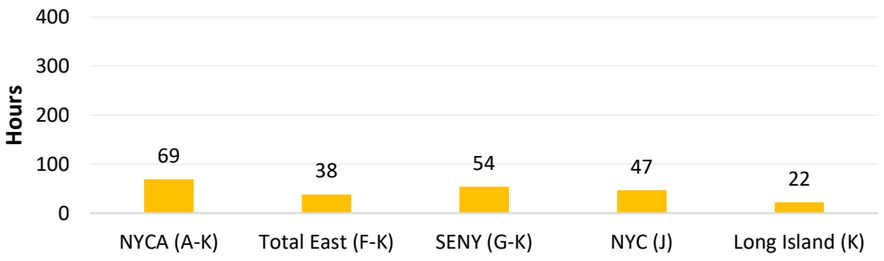
Hours SCR/EDRP Deployed



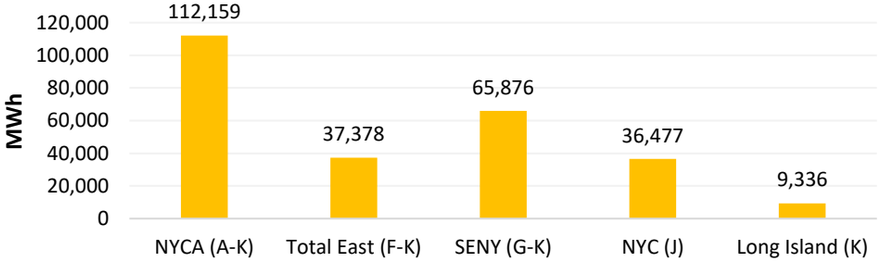
Total MWh SCR/EDRP Deployed



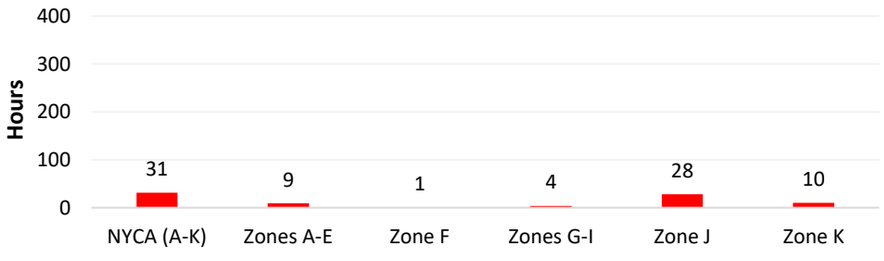
Hours with Reserve Violations



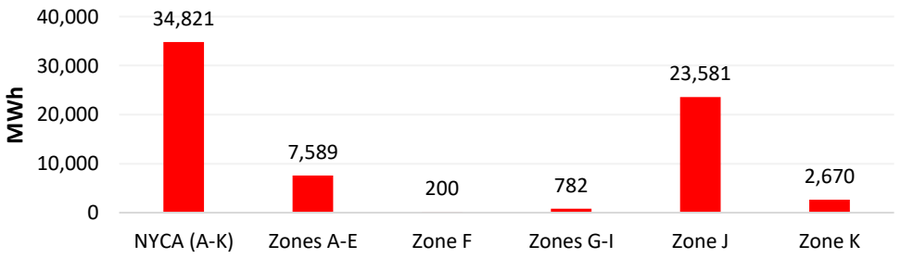
Total MWh of Reserve Violations

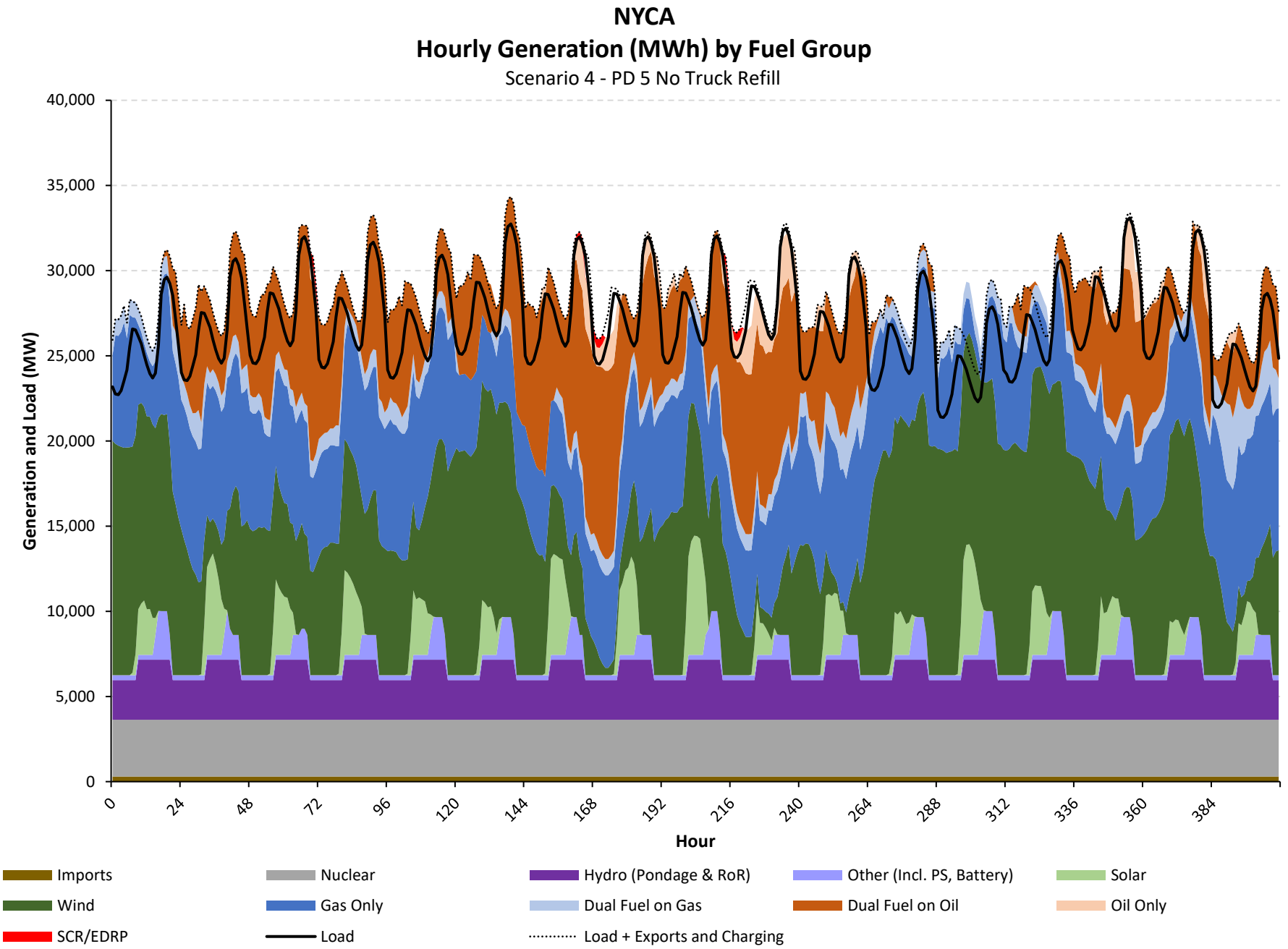


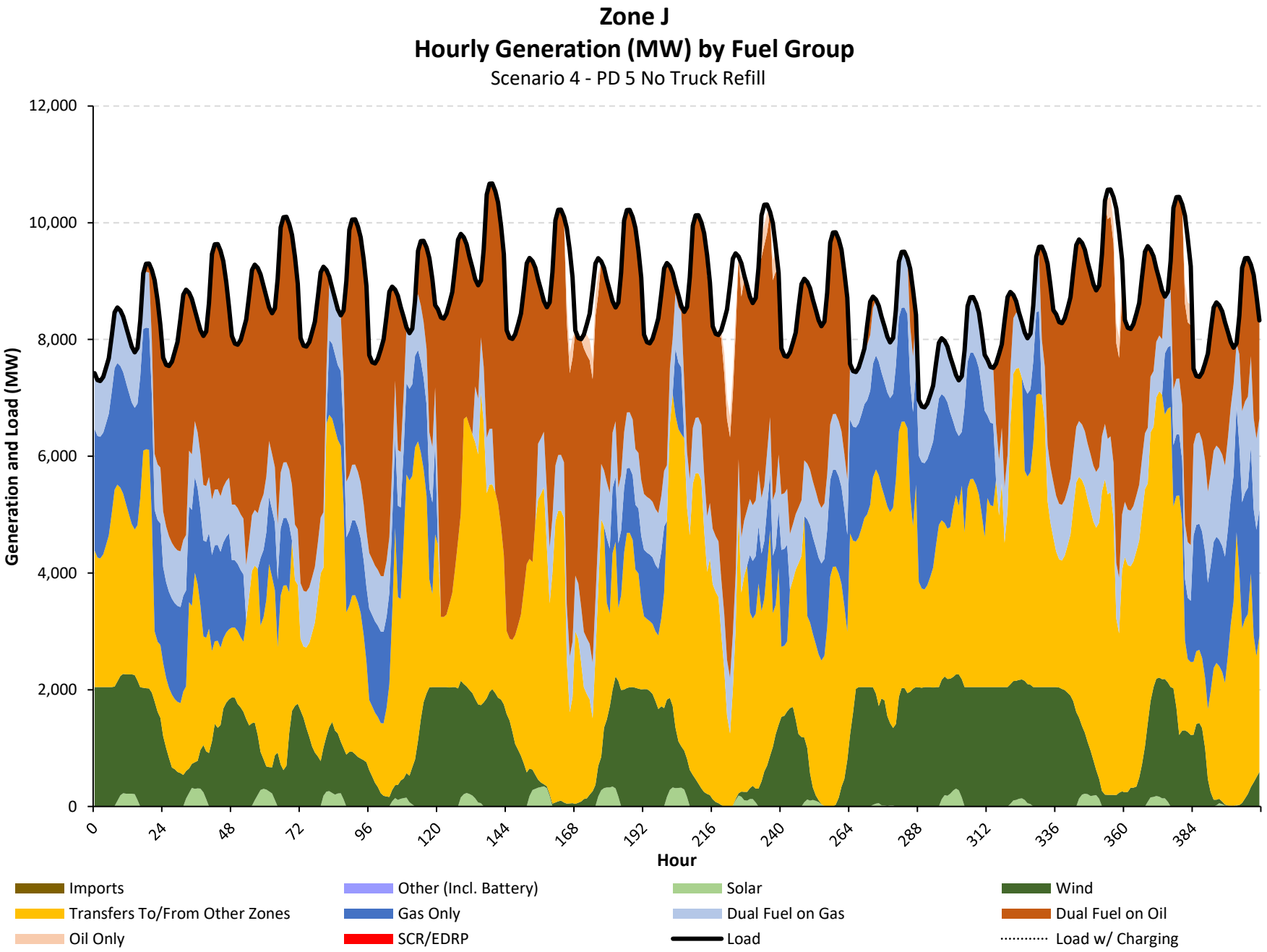
Hours with Loss of Load



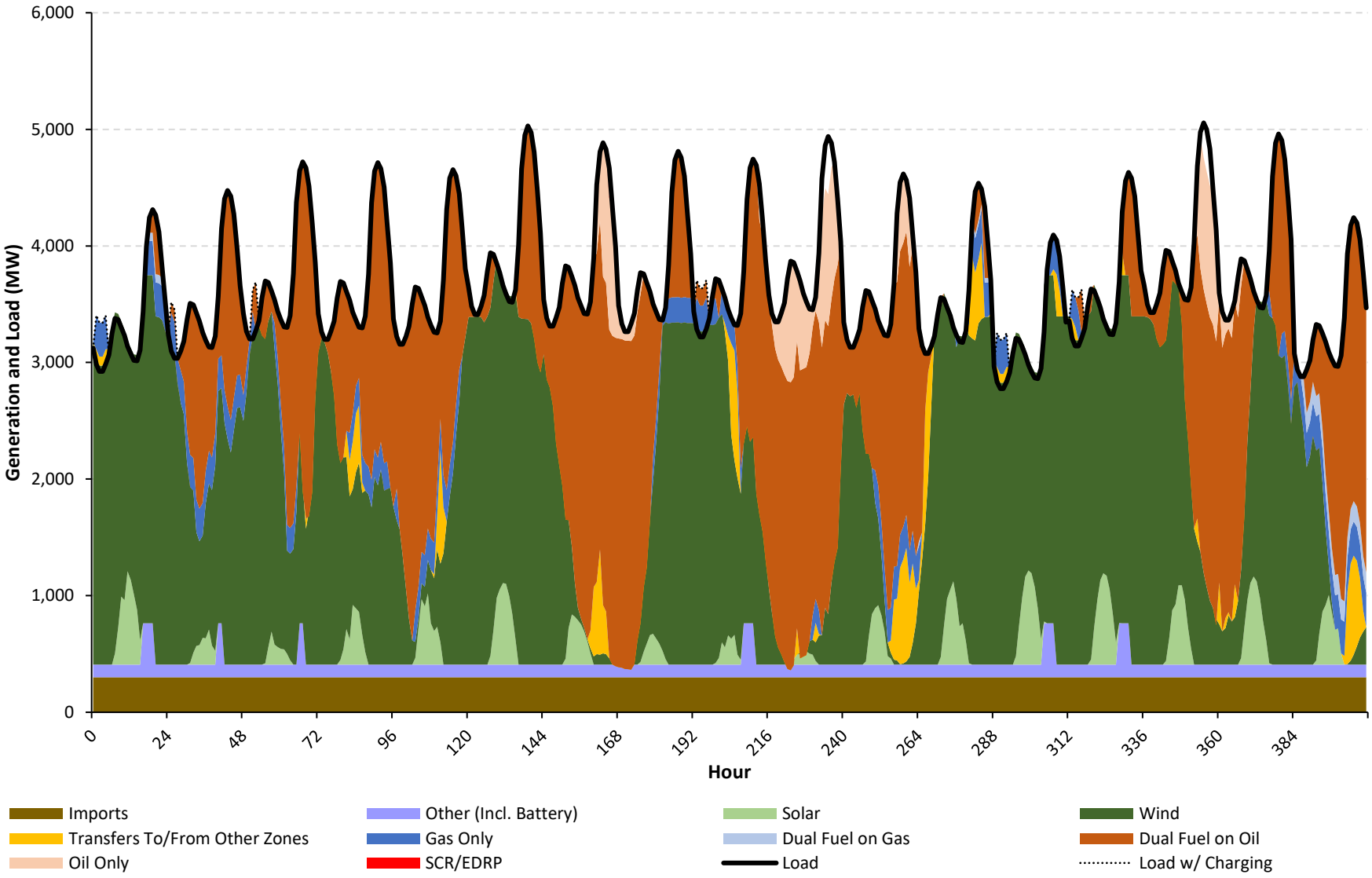
Total MWh of Lost Load

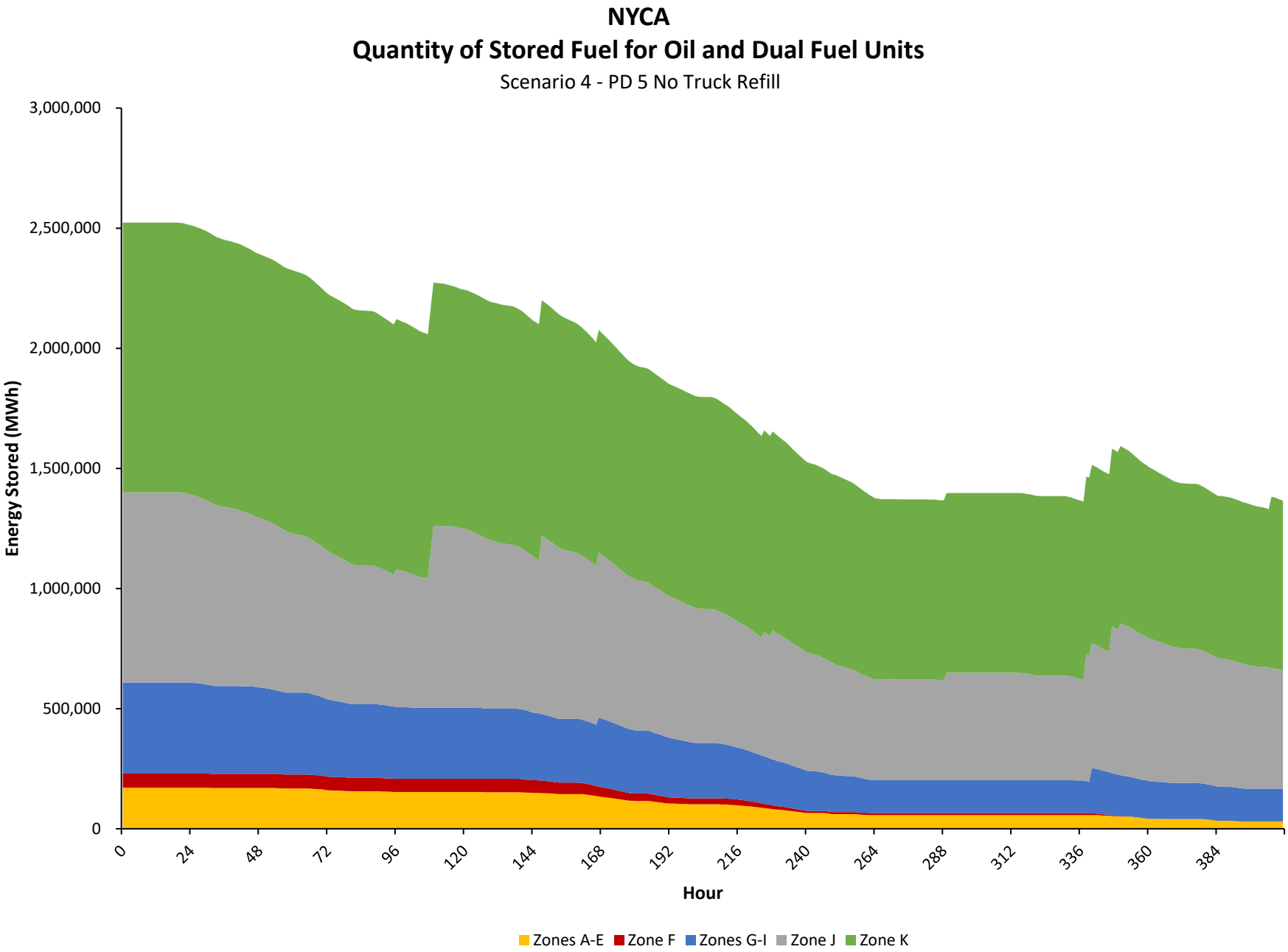


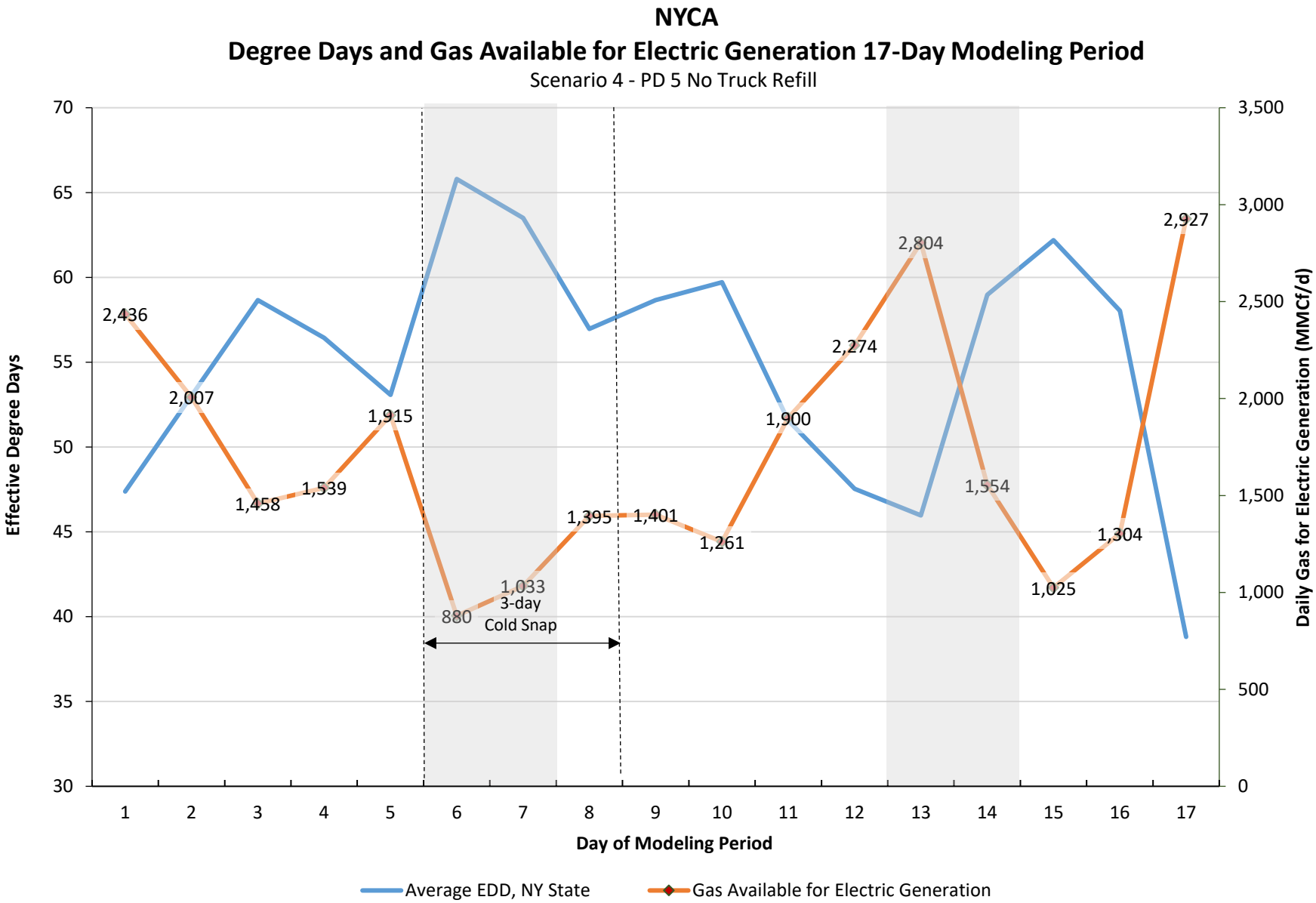

NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 4 - PD 5 No Truck Refill
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 4 - PD 5 No Truck Refill
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

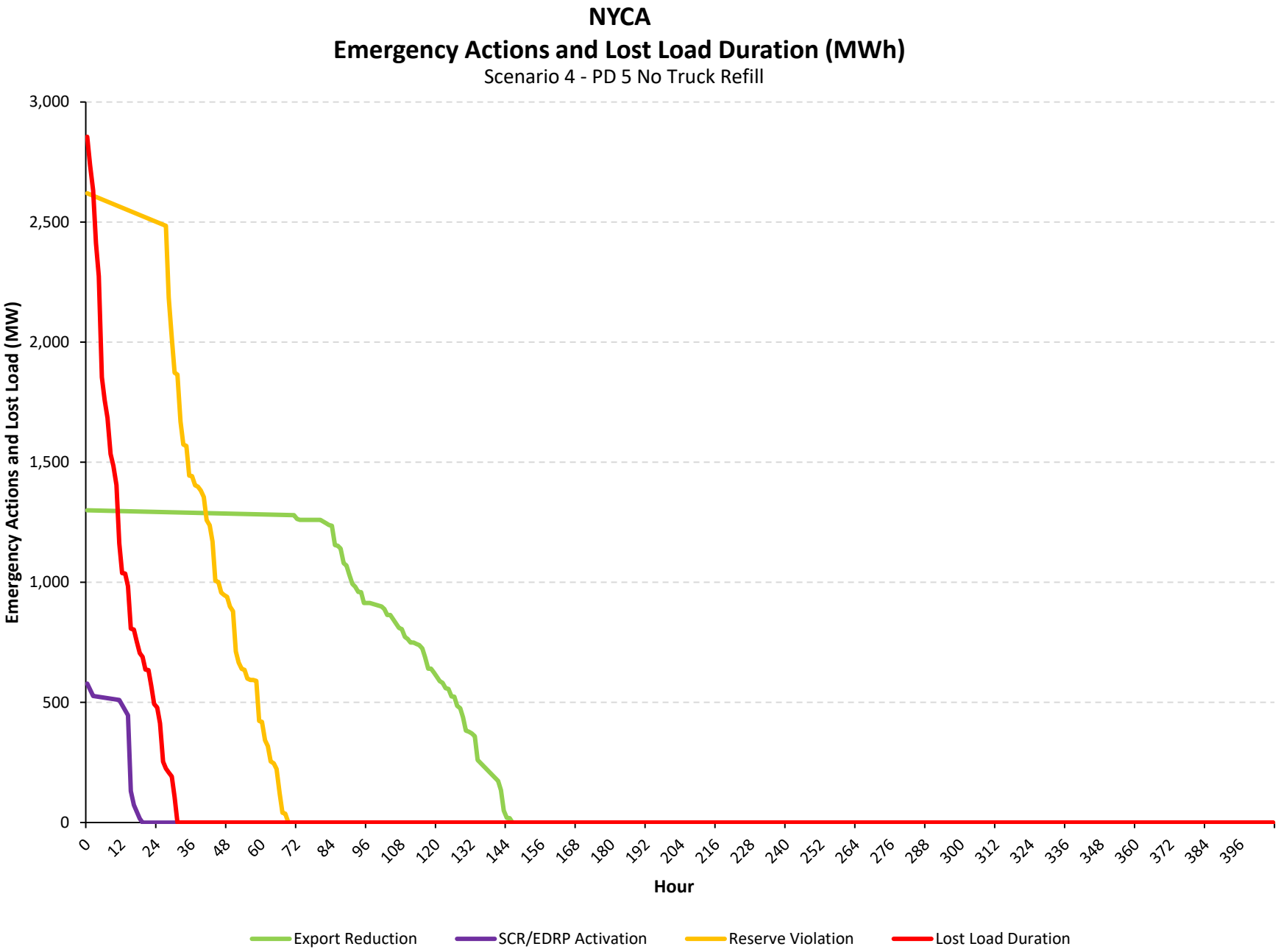
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 4 - PD 5 No Truck Refill

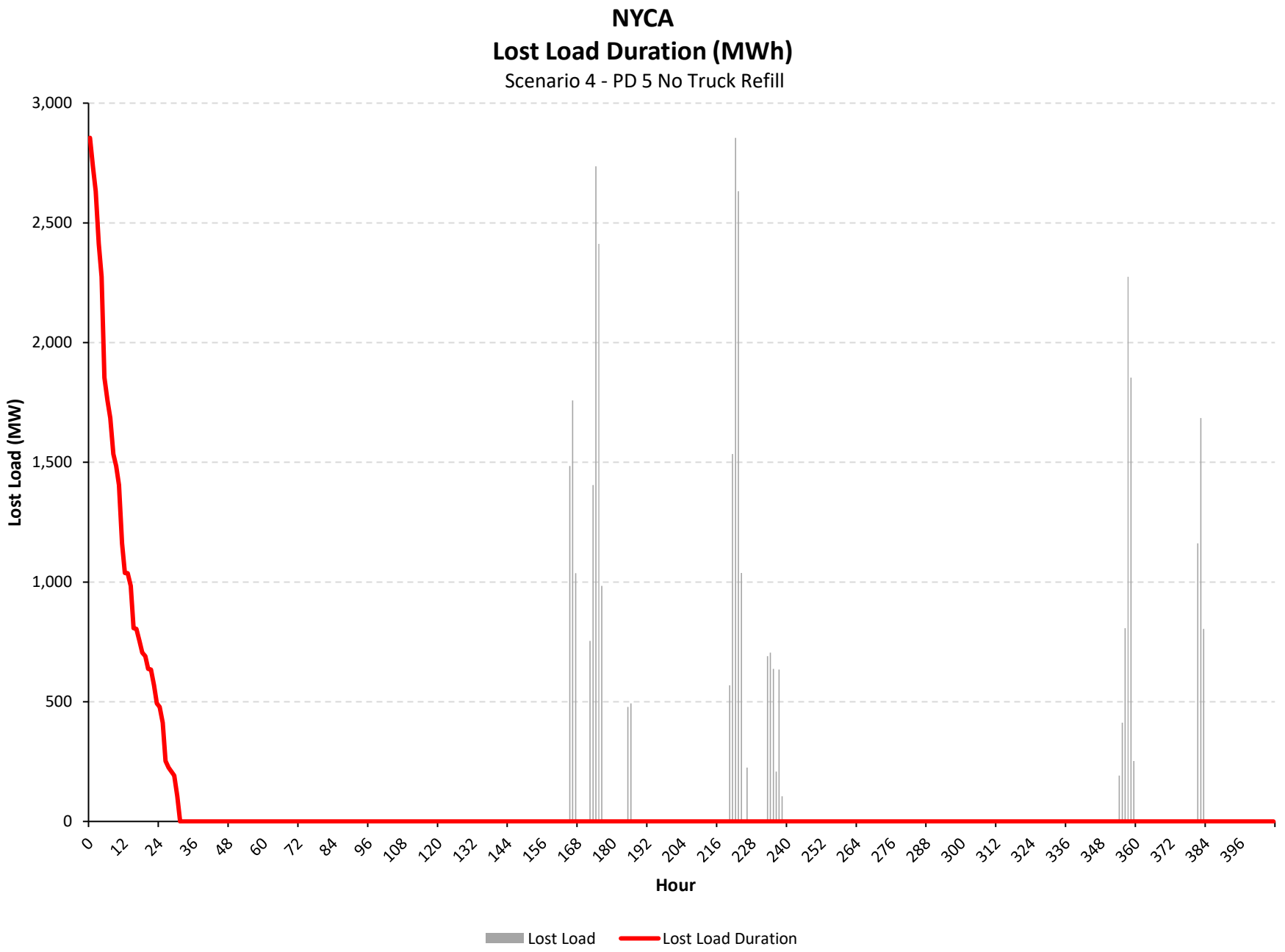



NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 4 - PD 5 No Truck Refill
Energy Stored (MWh)
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Zones A-E
Zone F
Zones G-I
Zone J
Zone K



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 4 - PD 5 No Truck Refill
Emergency Actions and Lost Load (MW)
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 4 - PD 5 No Truck Refill
Lost Load (MW)
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

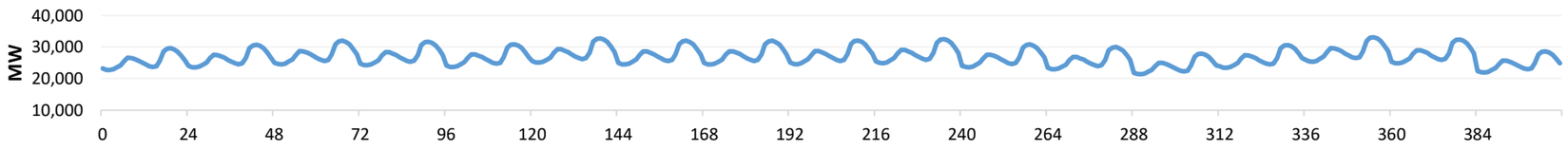
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 4 - PD 6 No Barge Refill (Winter 2030/2031)

Hourly Results Summary

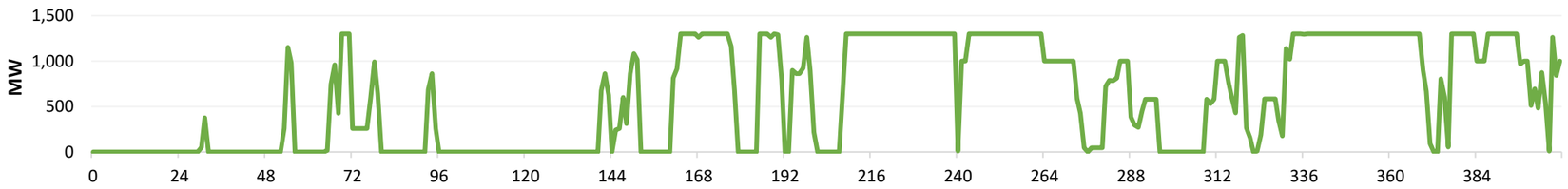
Case Name: Scenario 4 - PD 6 No Barge Refill

Load During Modeling Period



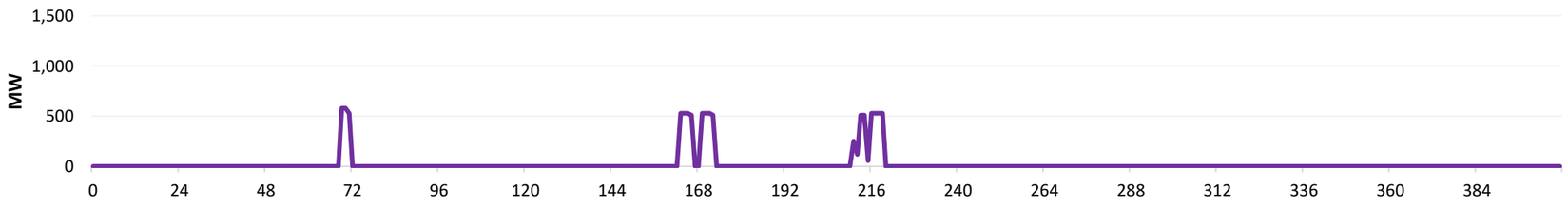
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	No Barge
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

Export to ISO-NE Reduction During Modeling Period



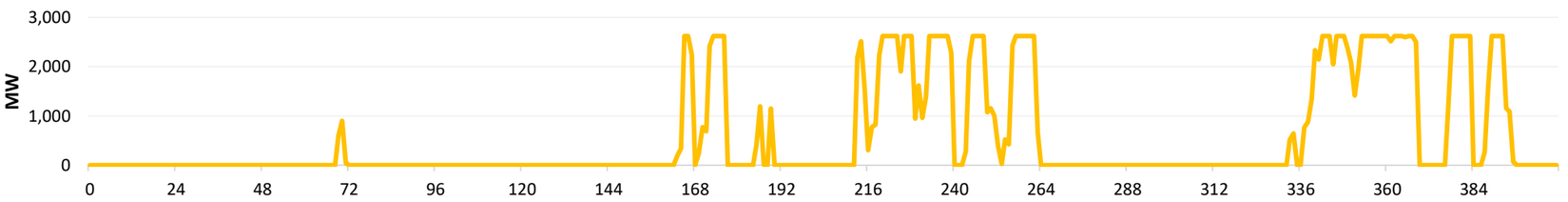
Export Reductions	
Total Hrs.	248
Total MWh	244,902
Avg. MW	600.2

SCR/EDRP Deployed During Modeling Period



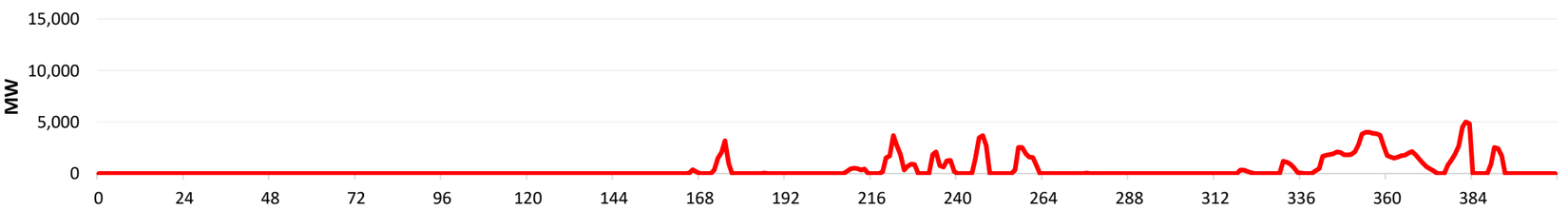
SCR Deployment	
Total Hrs.	20
Total MWh	9,418
Avg. MW	23.1

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	118
Total MWh	226,680
Avg. MW	555.6
First Hour with Viol.	69

Loss of Load During Modeling Period



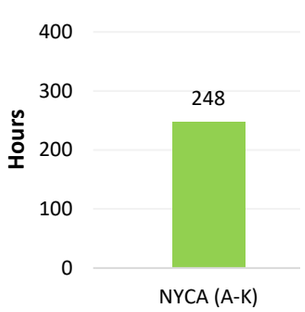
Loss of Load	
Total Hrs.	101
Total MWh	158,006
Avg. MW	387.3
First Hour with Losses	165

Full Period Results Summary

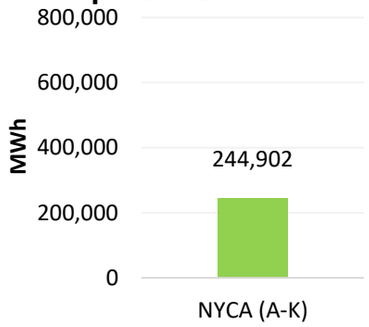
Case Name: Scenario 4 - PD 6 No Barge Refill

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	No Barge
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

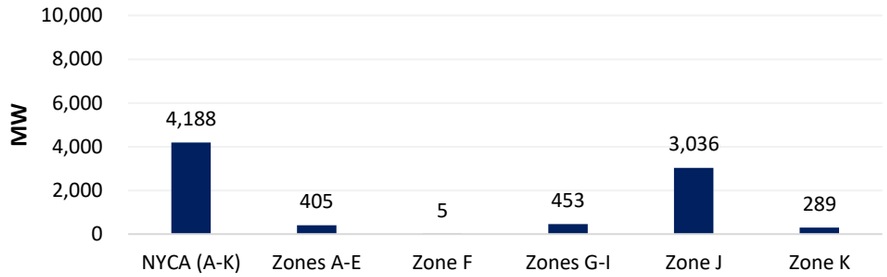
Hours Exports Reduced



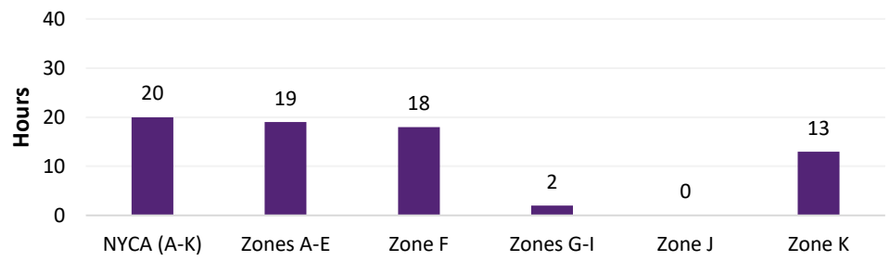
Total MWh of Exports Reduced



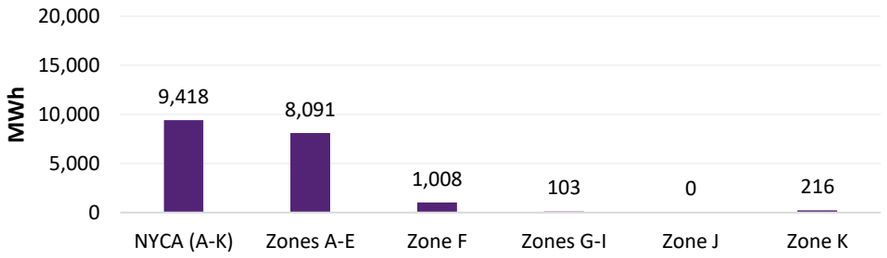
Average Capacity Not Available Due to Exhausted Fuel Inventory



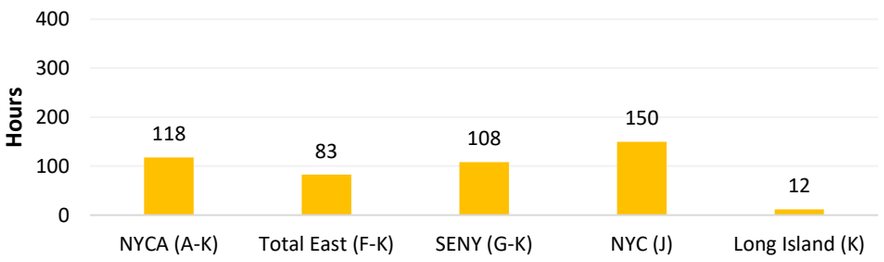
Hours SCR/EDRP Deployed



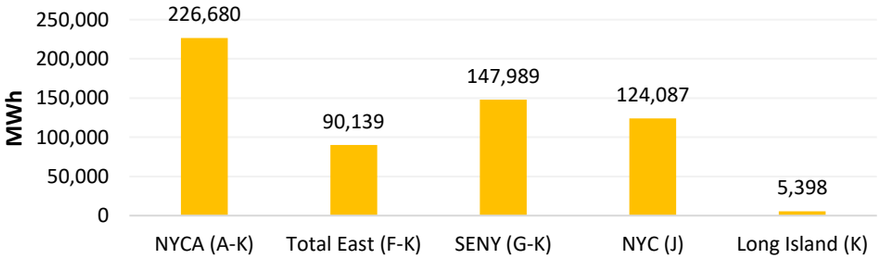
Total MWh SCR/EDRP Deployed



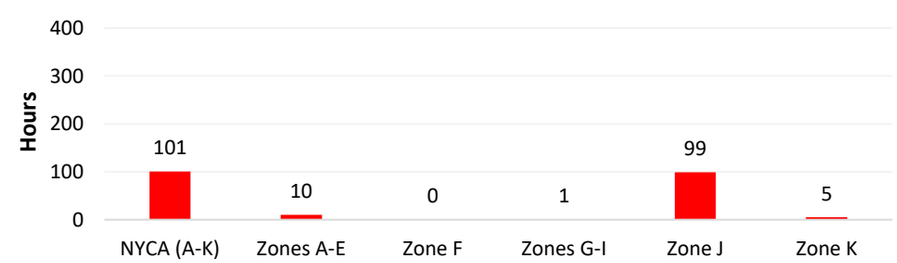
Hours with Reserve Violations



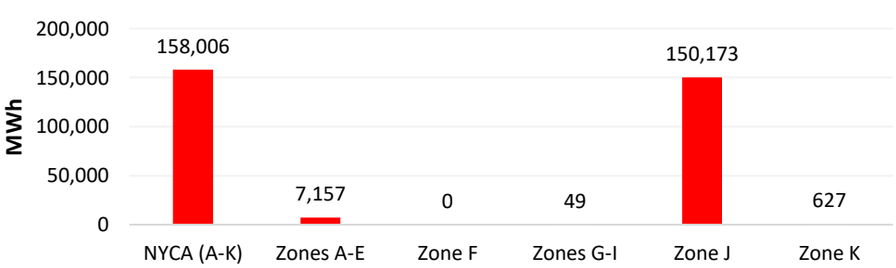
Total MWh of Reserve Violations

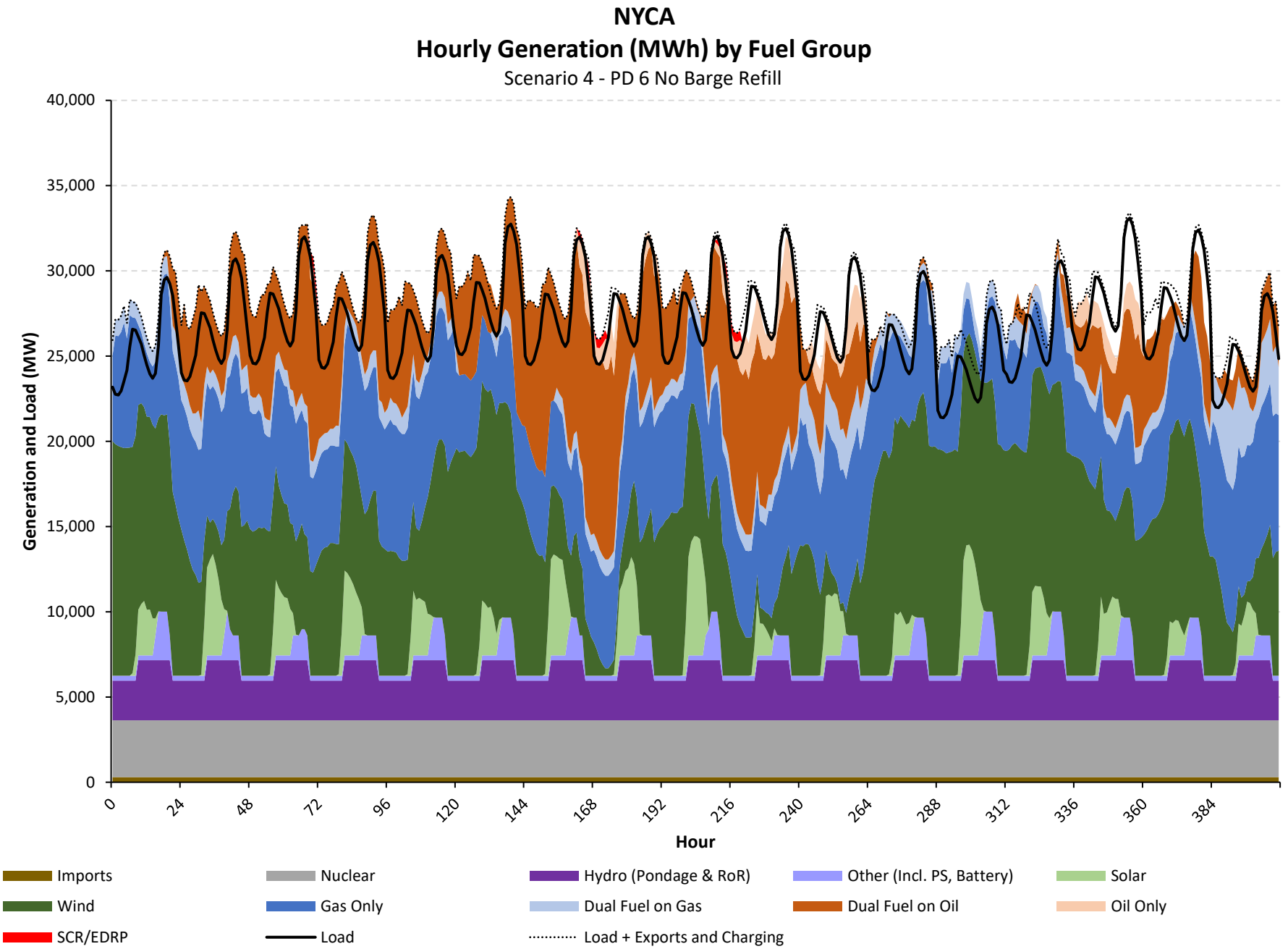


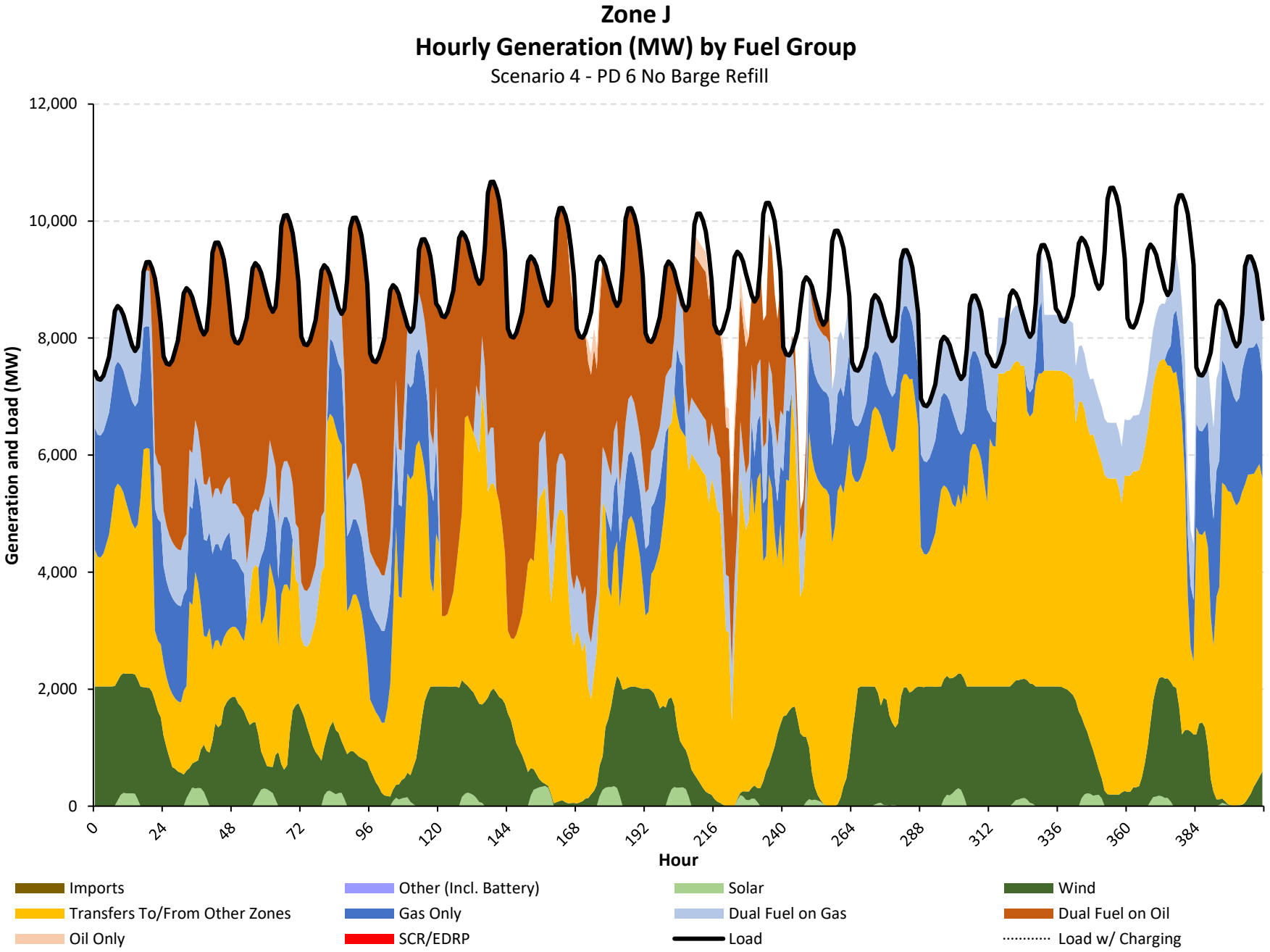
Hours with Loss of Load



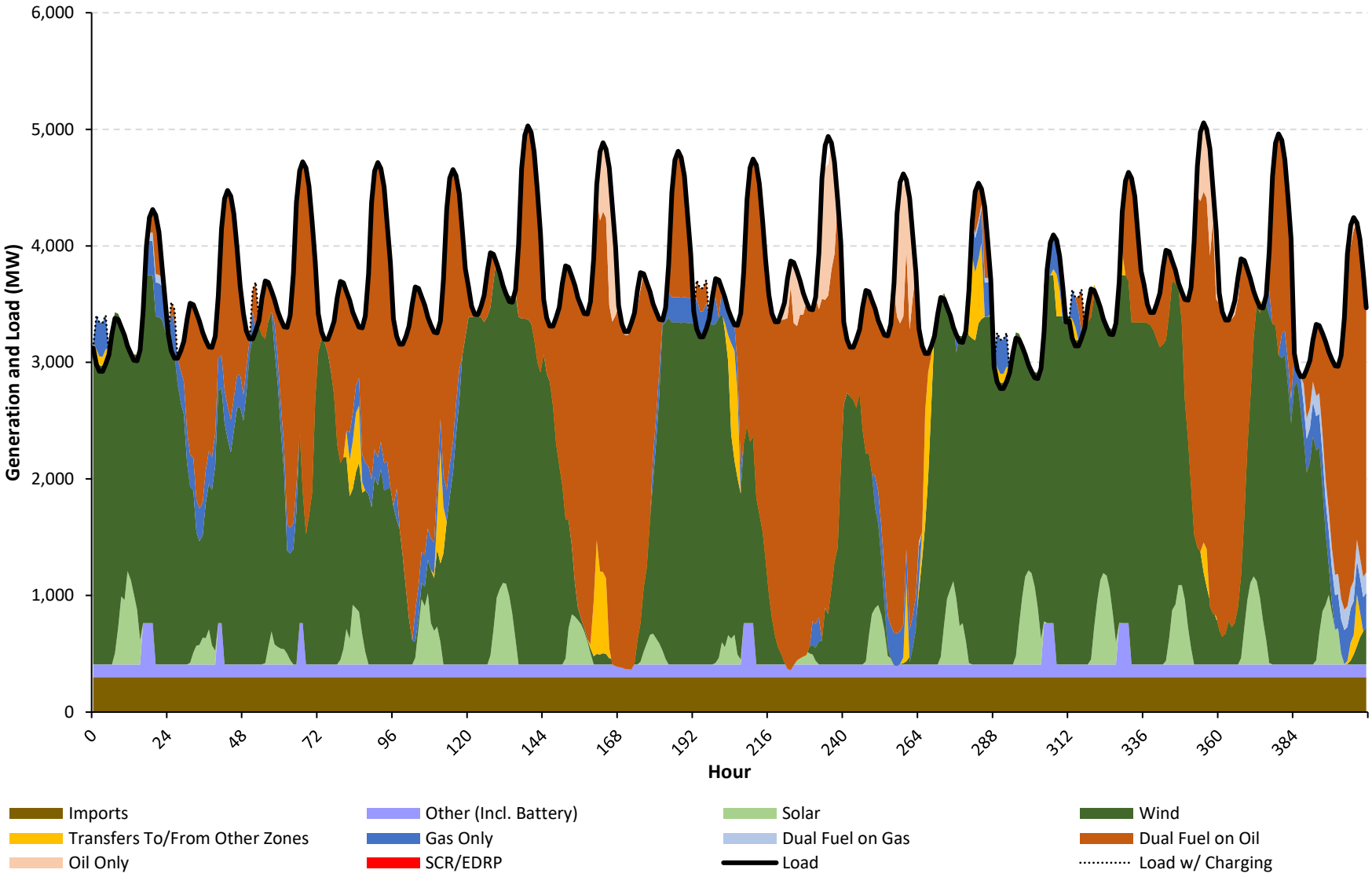
Total MWh of Lost Load

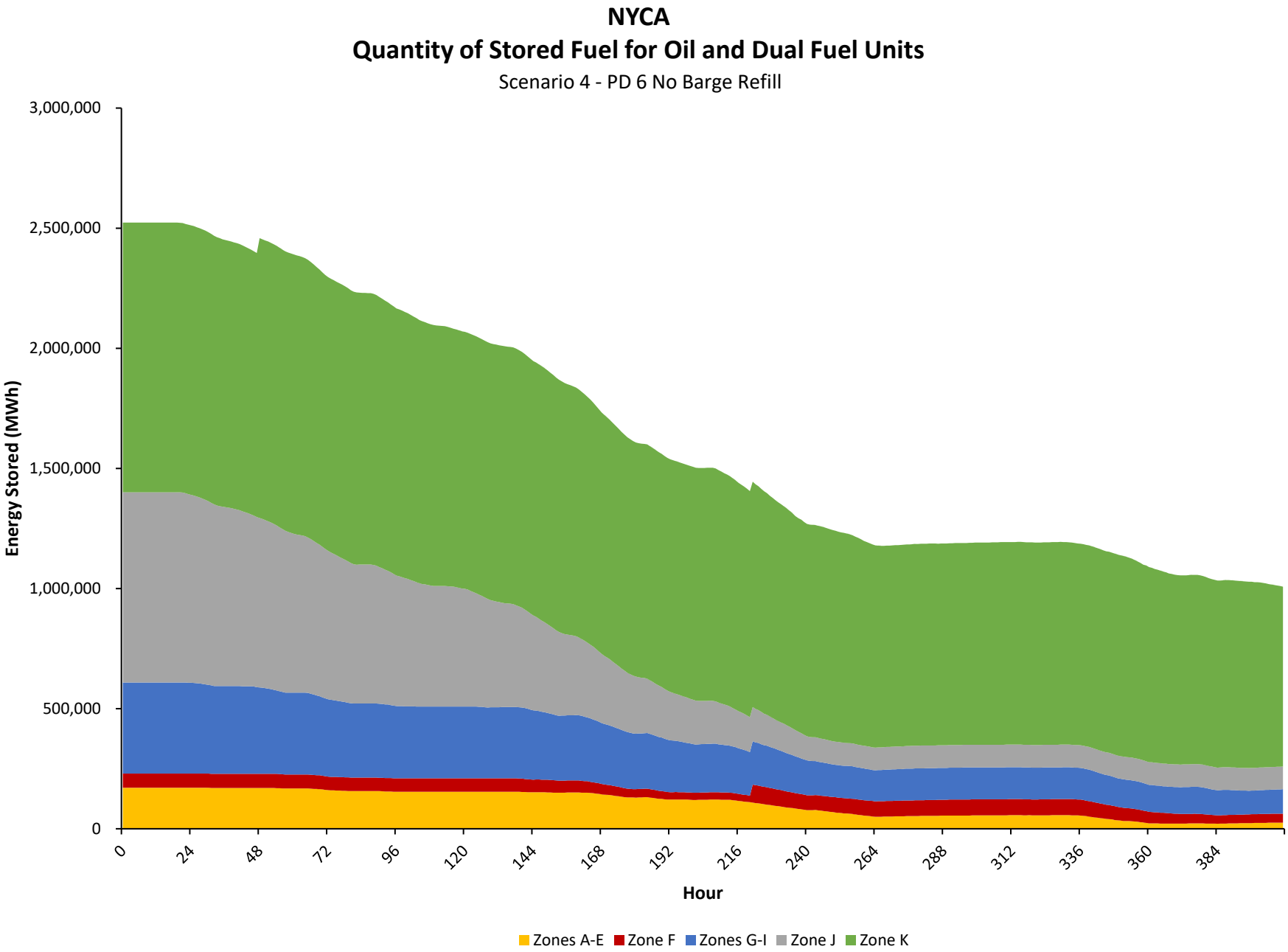



NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 4 - PD 6 No Barge Refill
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

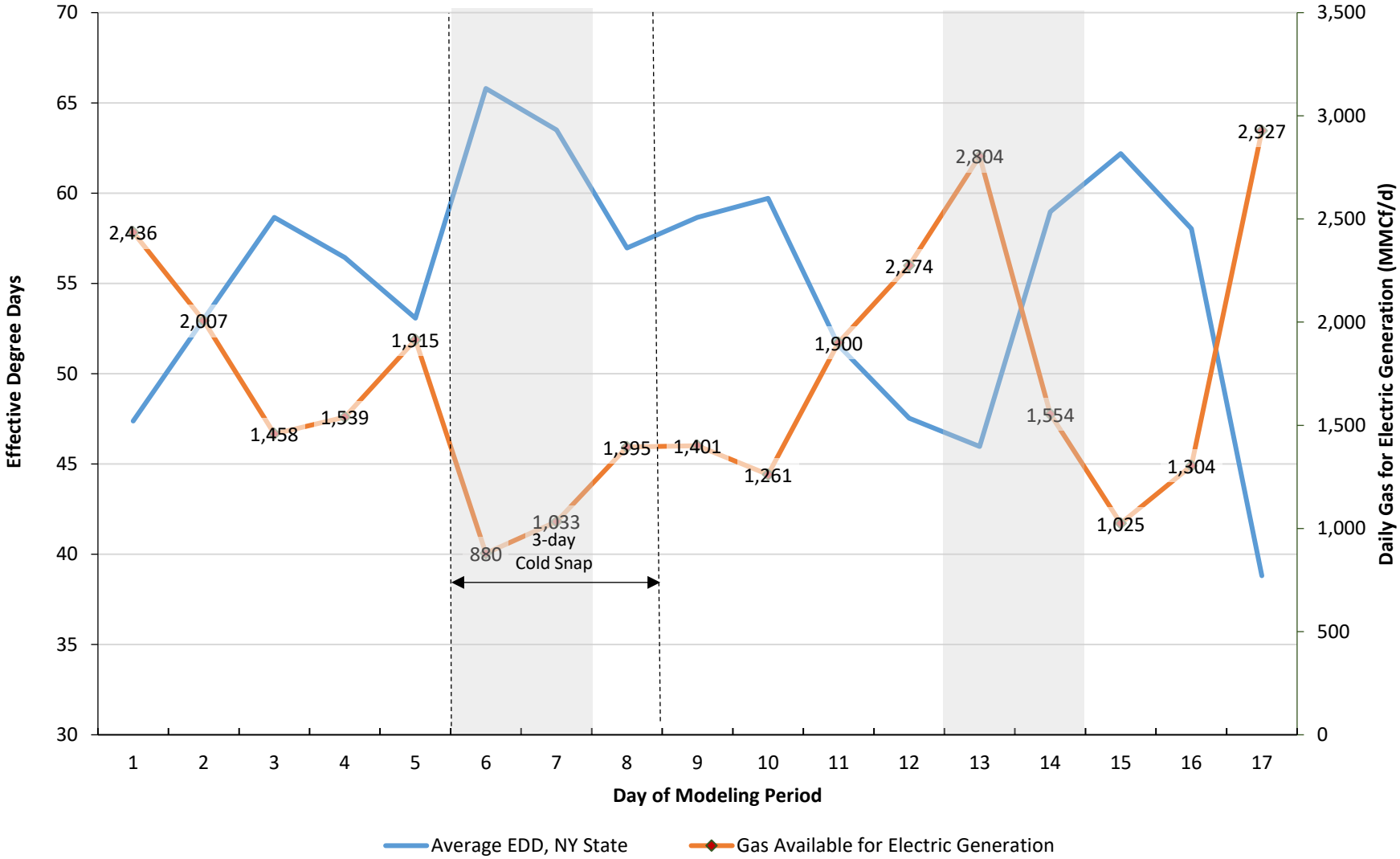

Zone J
Hourly Generation (MW) by Fuel Group
Scenario 4 - PD 6 No Barge Refill
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

Zone K
Hourly Generation (MW) by Fuel Group
Scenario 4 - PD 6 No Barge Refill

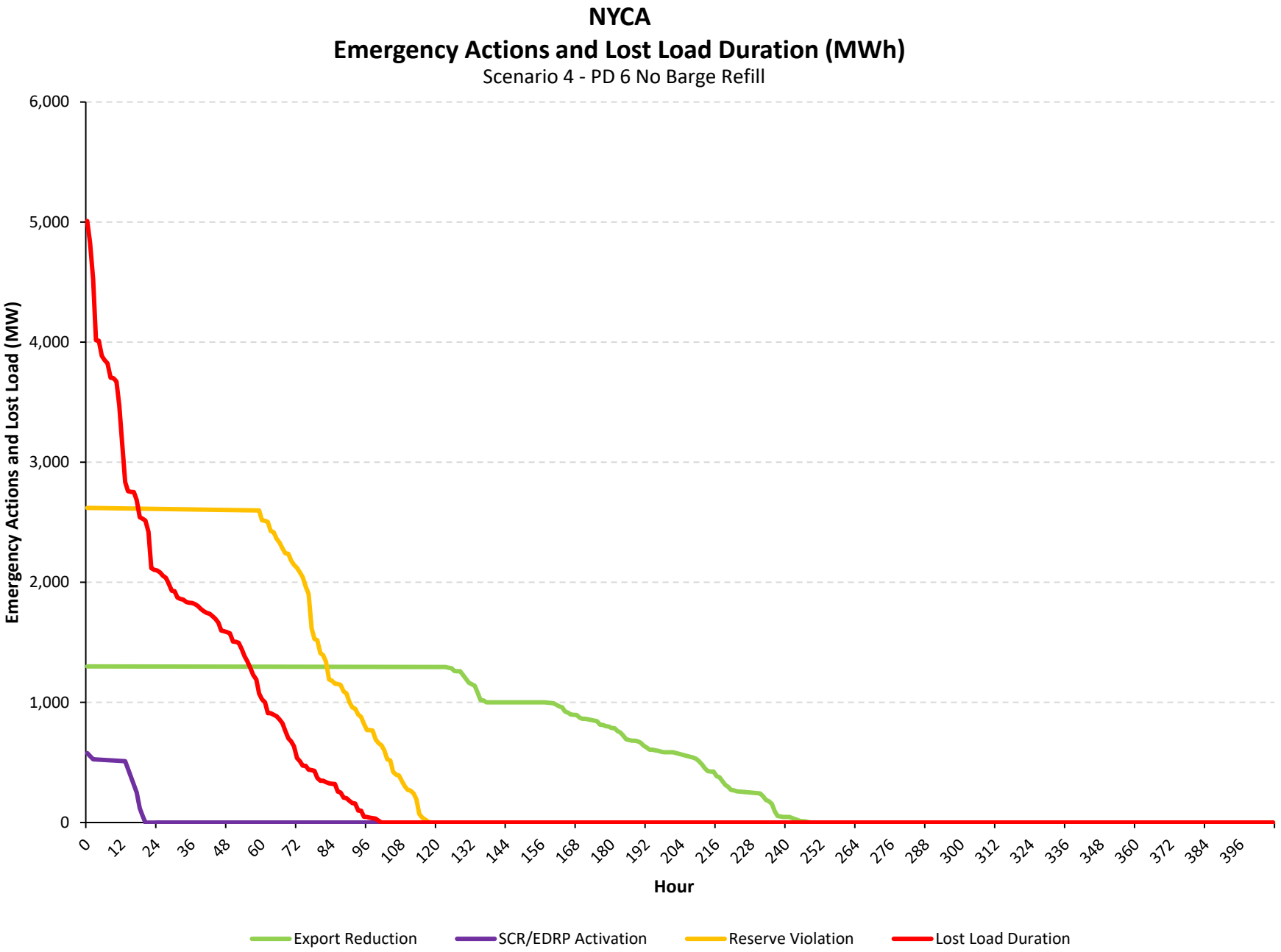


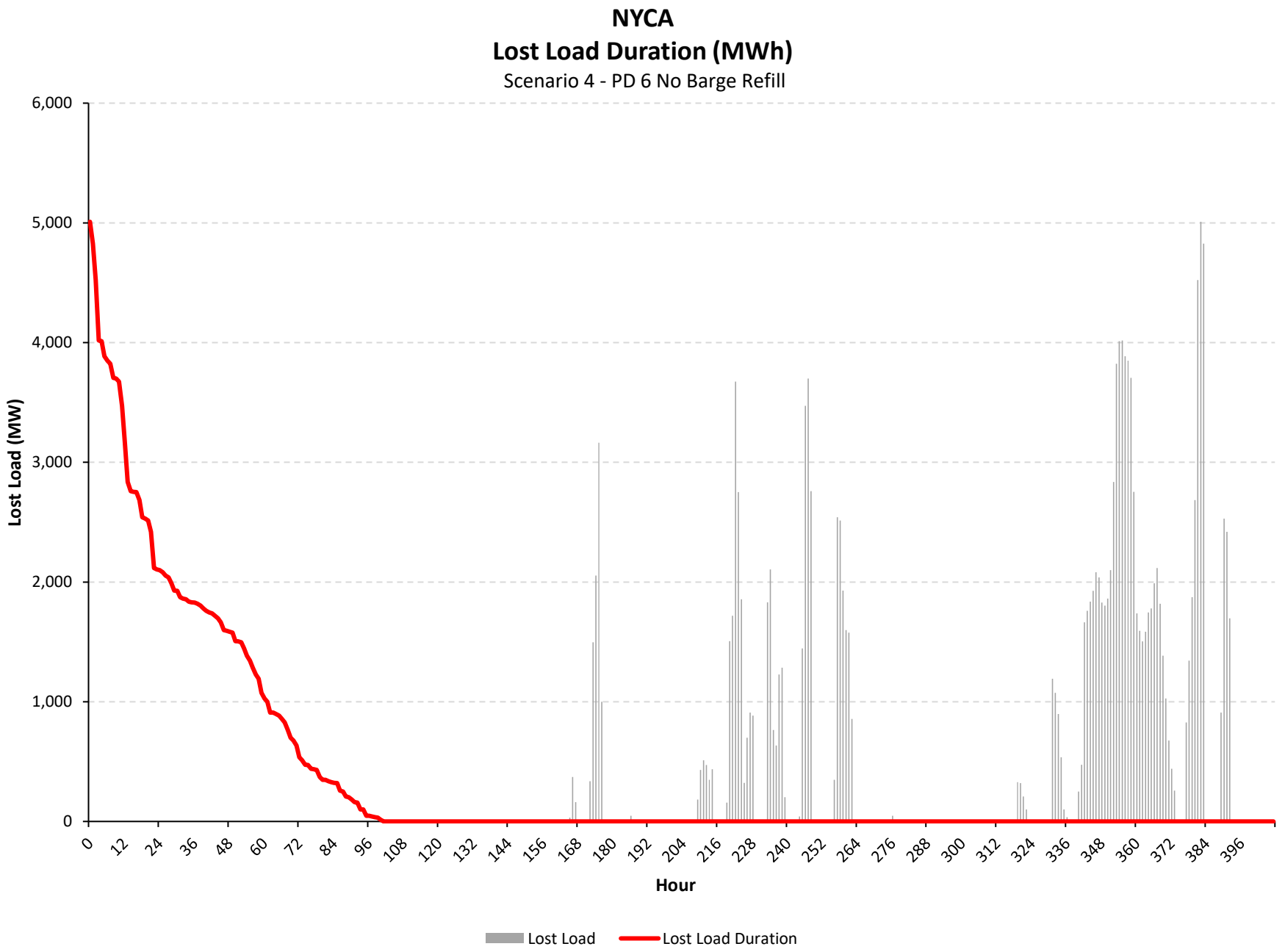

NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 4 - PD 6 No Barge Refill
Energy Stored (MWh)
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Zones A-E
Zone F
Zones G-I
Zone J
Zone K

NYCA
Degree Days and Gas Available for Electric Generation 17-Day Modeling Period
Scenario 4 - PD 6 No Barge Refill



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 4 - PD 6 No Barge Refill
Emergency Actions and Lost Load (MW)
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 4 - PD 6 No Barge Refill
Lost Load (MW)
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

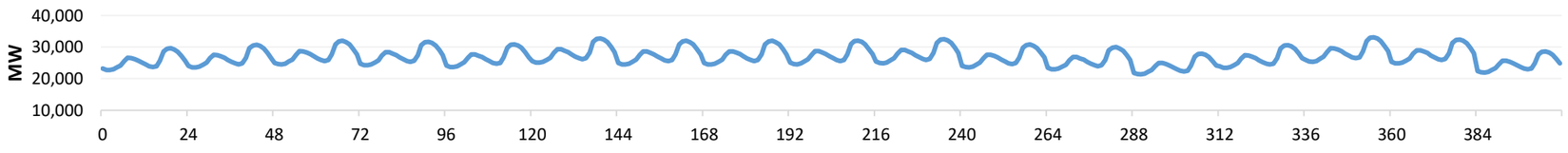
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 4 - PD 7 No Refill (Winter 2030/2031)

Hourly Results Summary

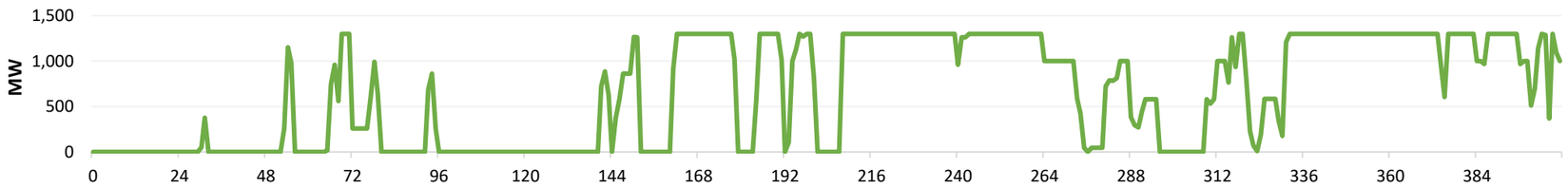
Case Name: Scenario 4 - PD 7 No Refill

Load During Modeling Period



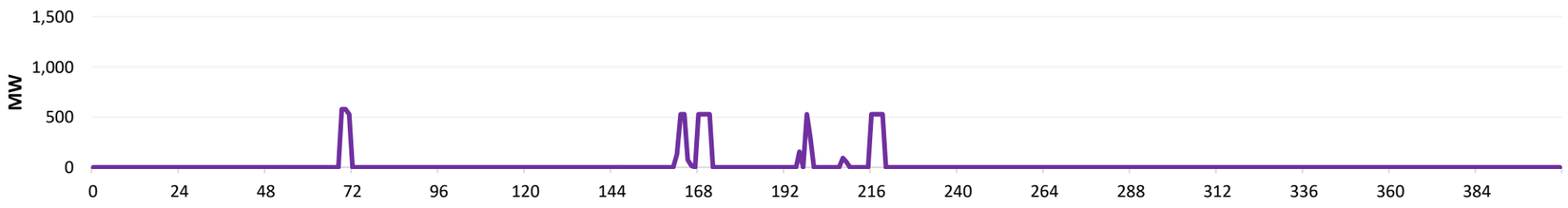
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	No Refill
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

Export to ISO-NE Reduction During Modeling Period



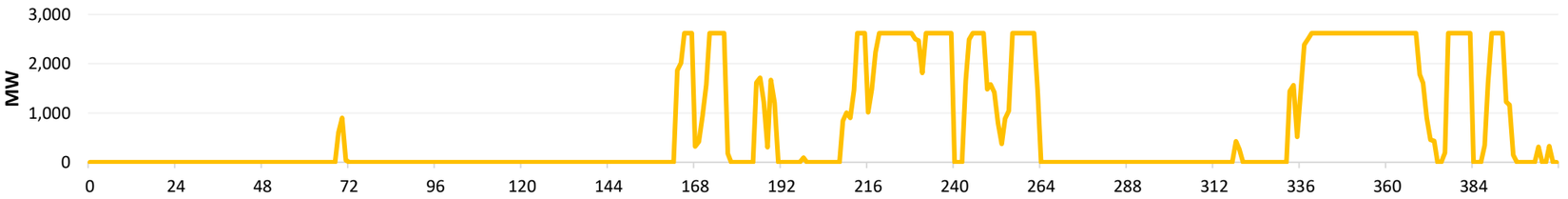
Export Reductions	
Total Hrs.	253
Total MWh	264,001
Avg. MW	647.1

SCR/EDRP Deployed During Modeling Period



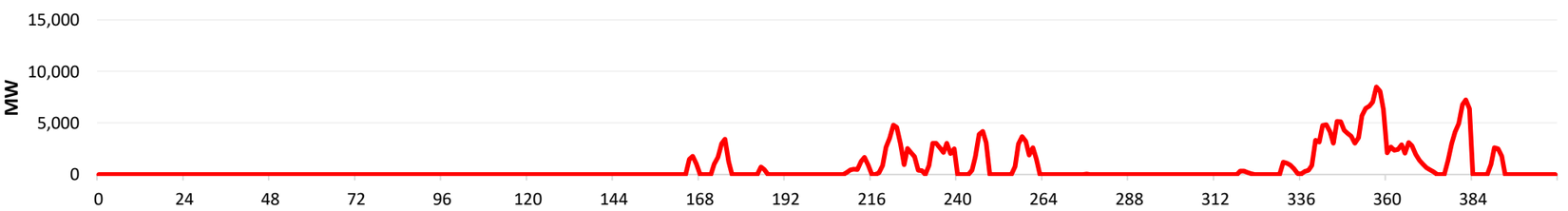
SCR Deployment	
Total Hrs.	21
Total MWh	8,309
Avg. MW	20.4

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	139
Total MWh	278,737
Avg. MW	683.2
First Hour with Viol.	69

Loss of Load During Modeling Period



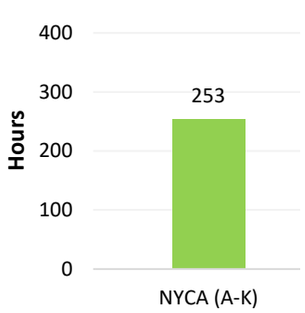
Loss of Load	
Total Hrs.	109
Total MWh	273,290
Avg. MW	669.8
First Hour with Losses	165

Full Period Results Summary

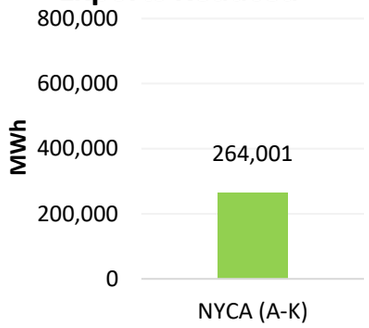
Case Name: Scenario 4 - PD 7 No Refill

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	No Refill
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

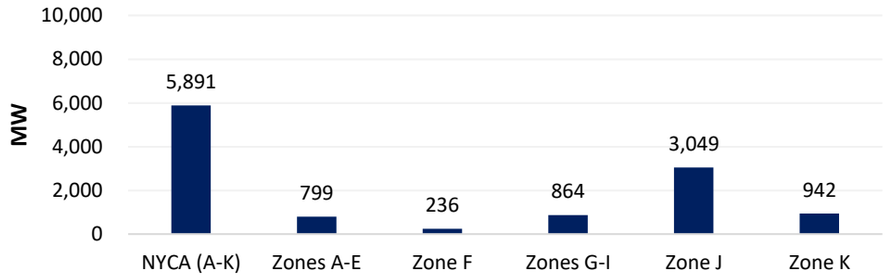
Hours Exports Reduced



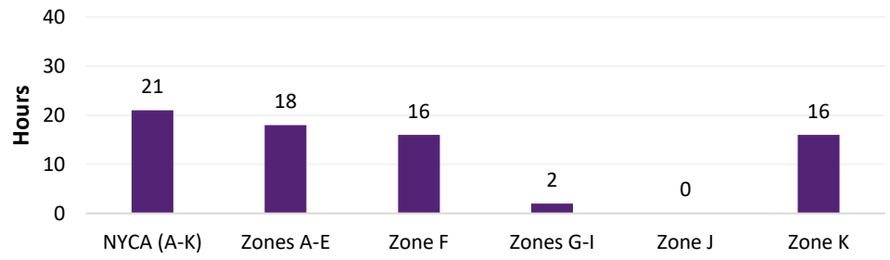
Total MWh of Exports Reduced



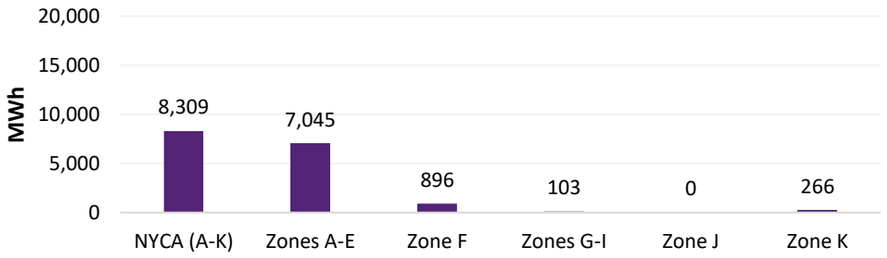
Average Capacity Not Available Due to Exhausted Fuel Inventory



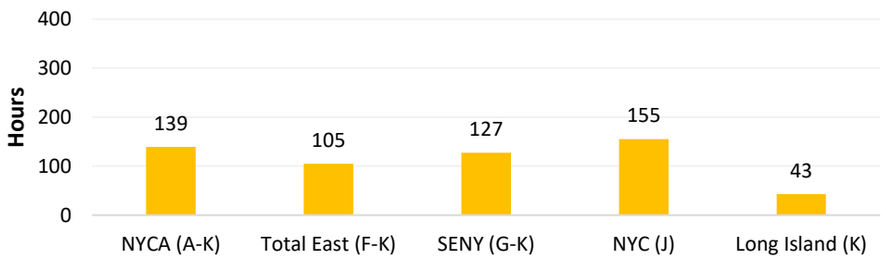
Hours SCR/EDRP Deployed



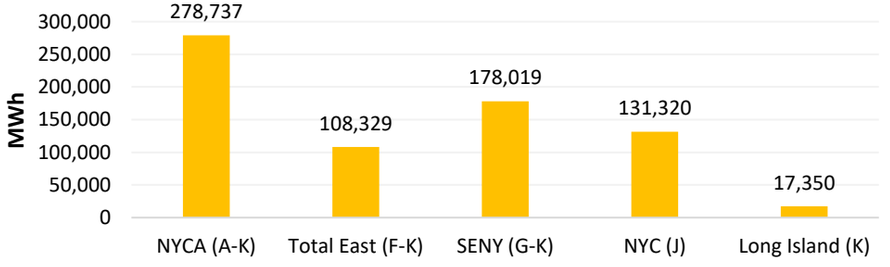
Total MWh SCR/EDRP Deployed



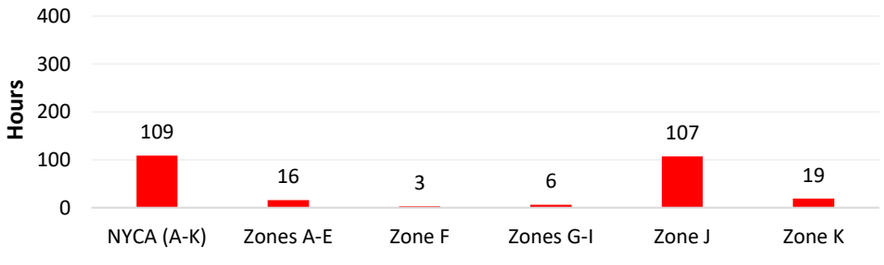
Hours with Reserve Violations



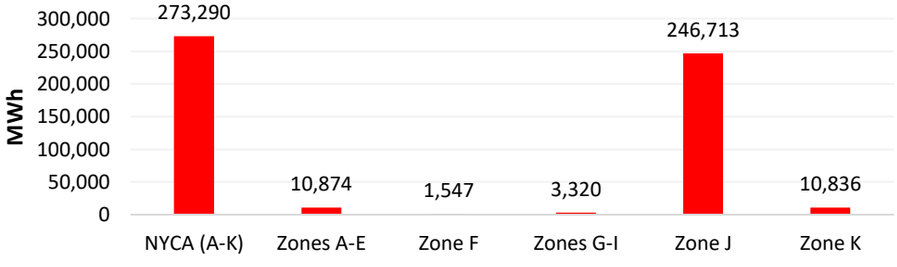
Total MWh of Reserve Violations

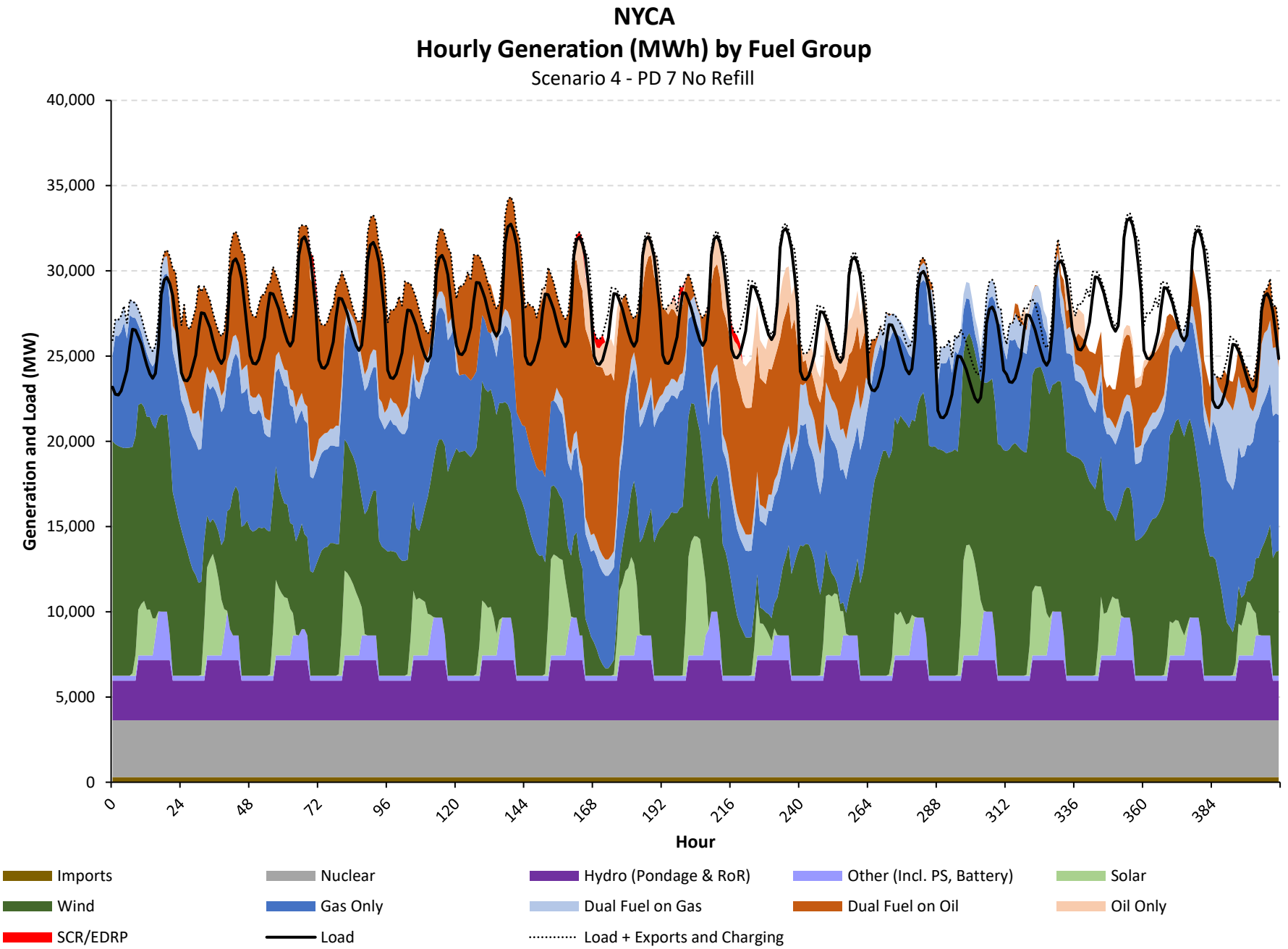


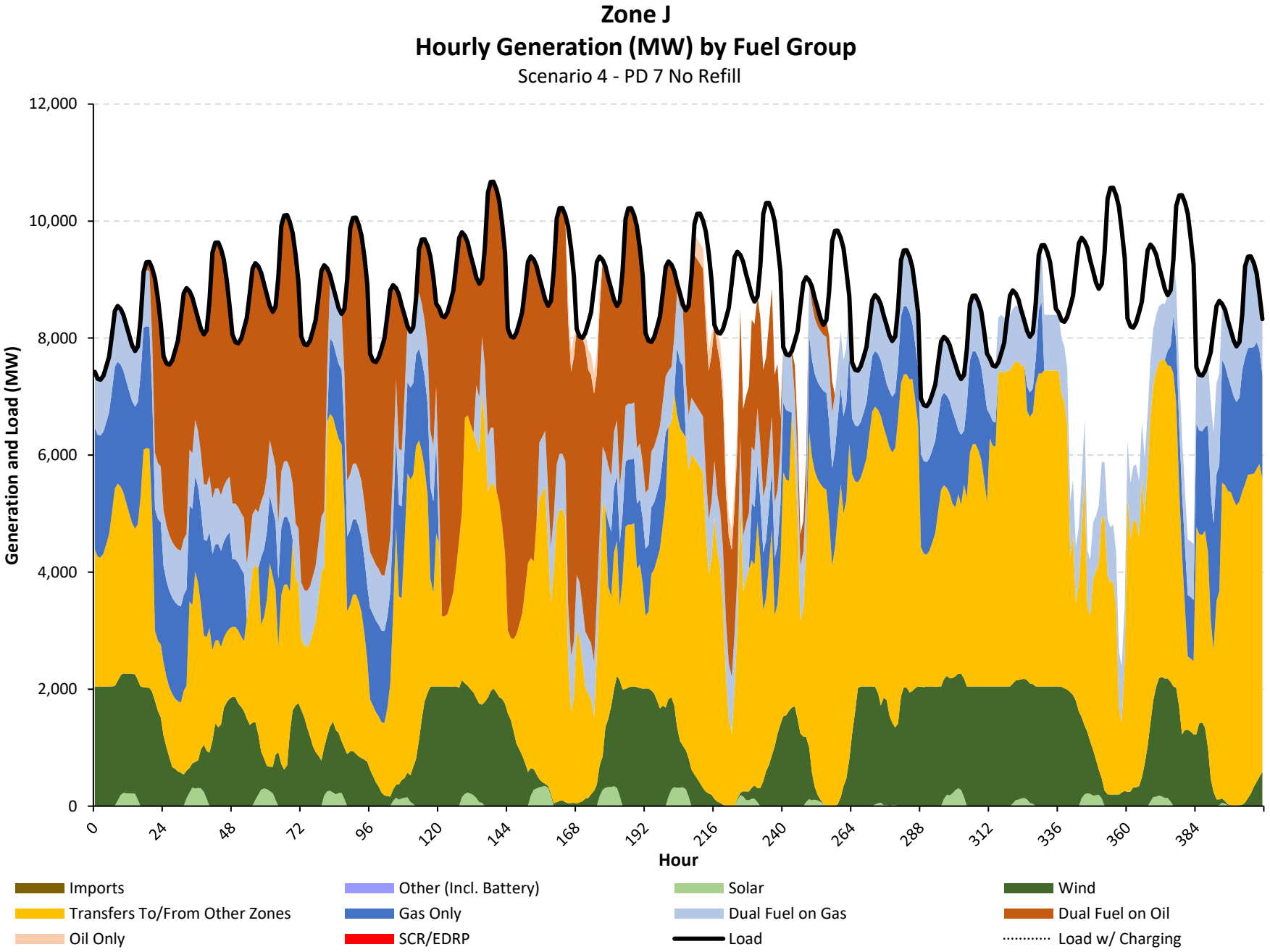
Hours with Loss of Load



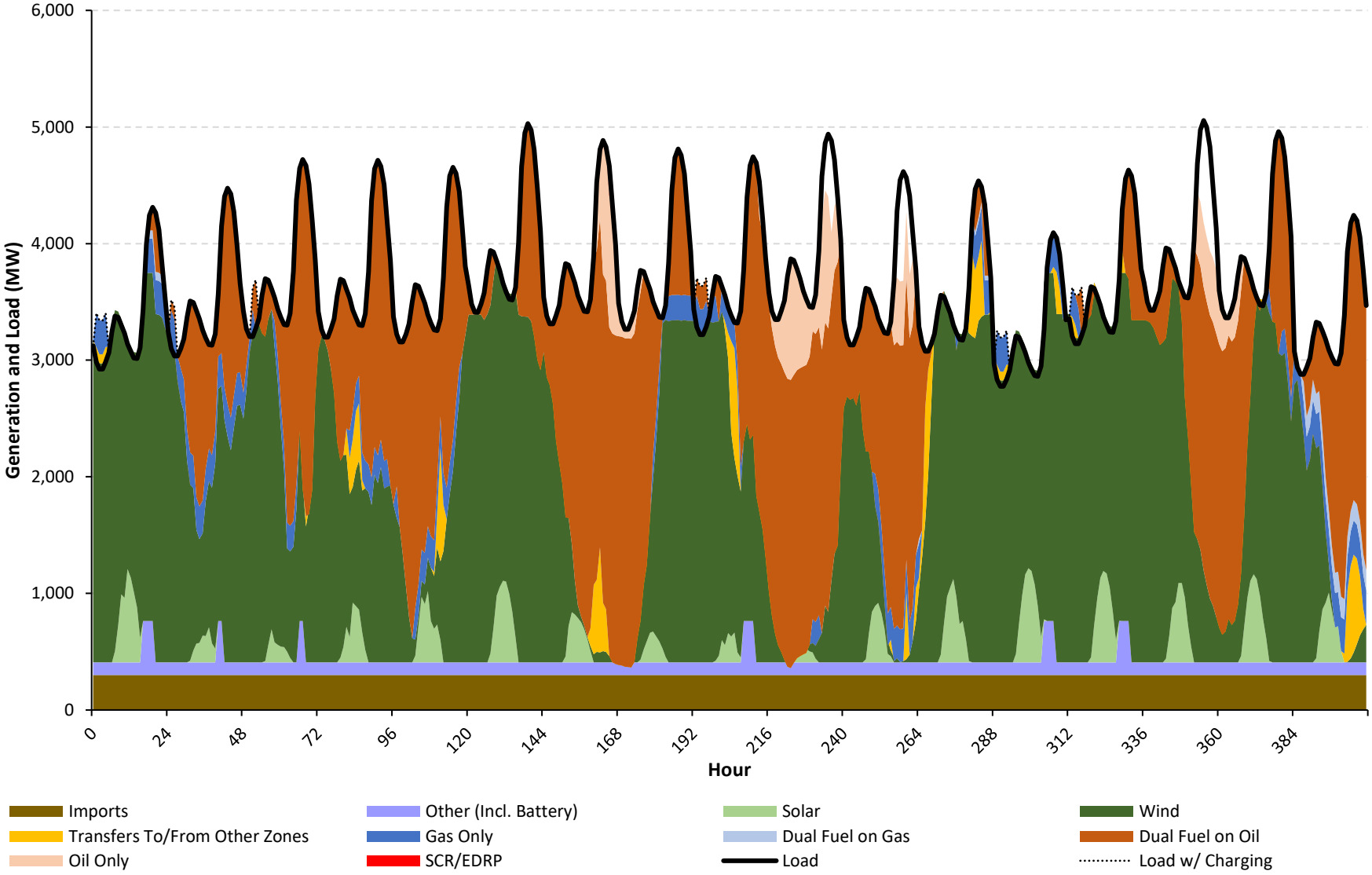
Total MWh of Lost Load




NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 4 - PD 7 No Refill
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 4 - PD 7 No Refill
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

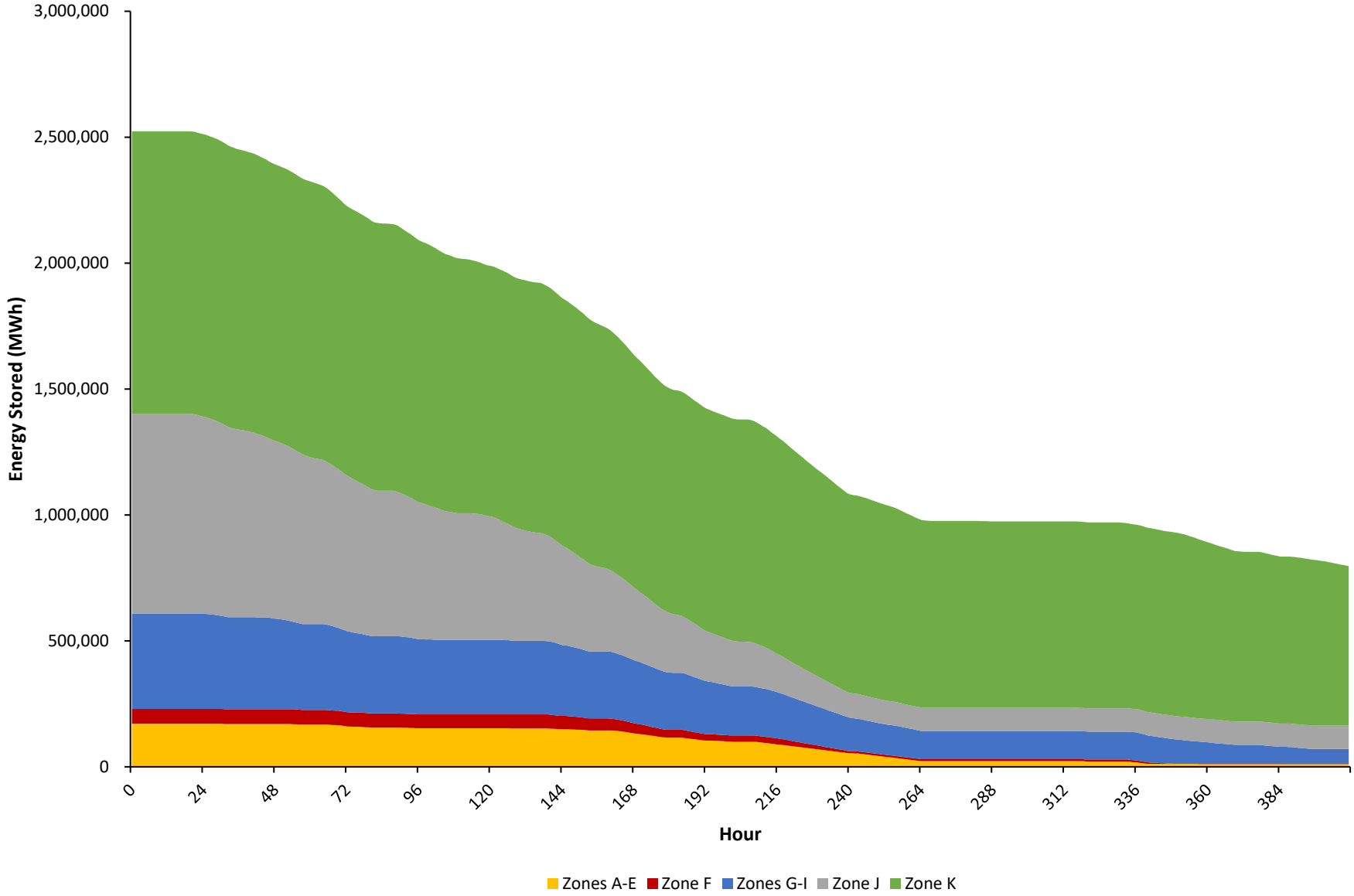
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 4 - PD 7 No Refill

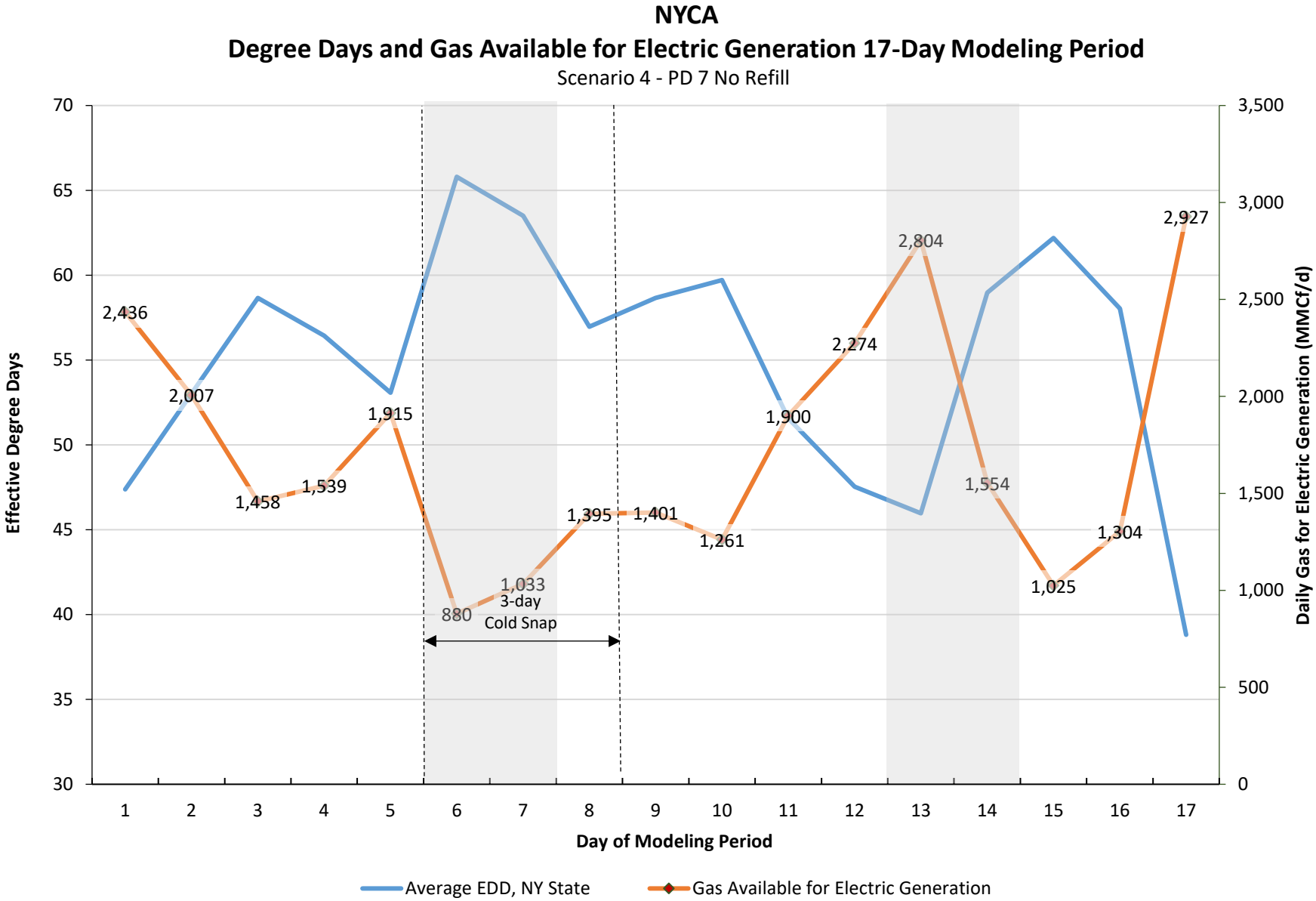


NYCA

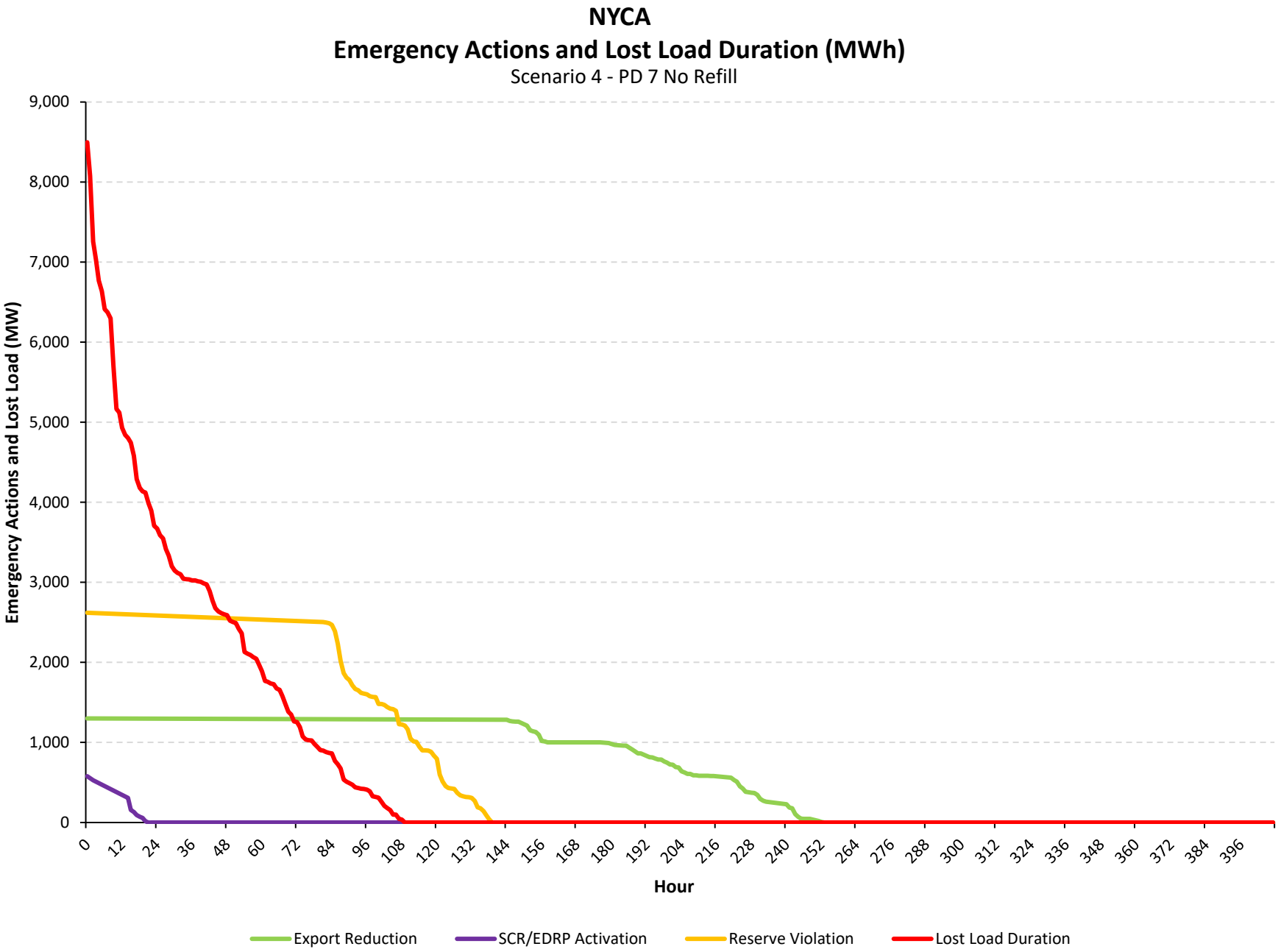
Quantity of Stored Fuel for Oil and Dual Fuel Units

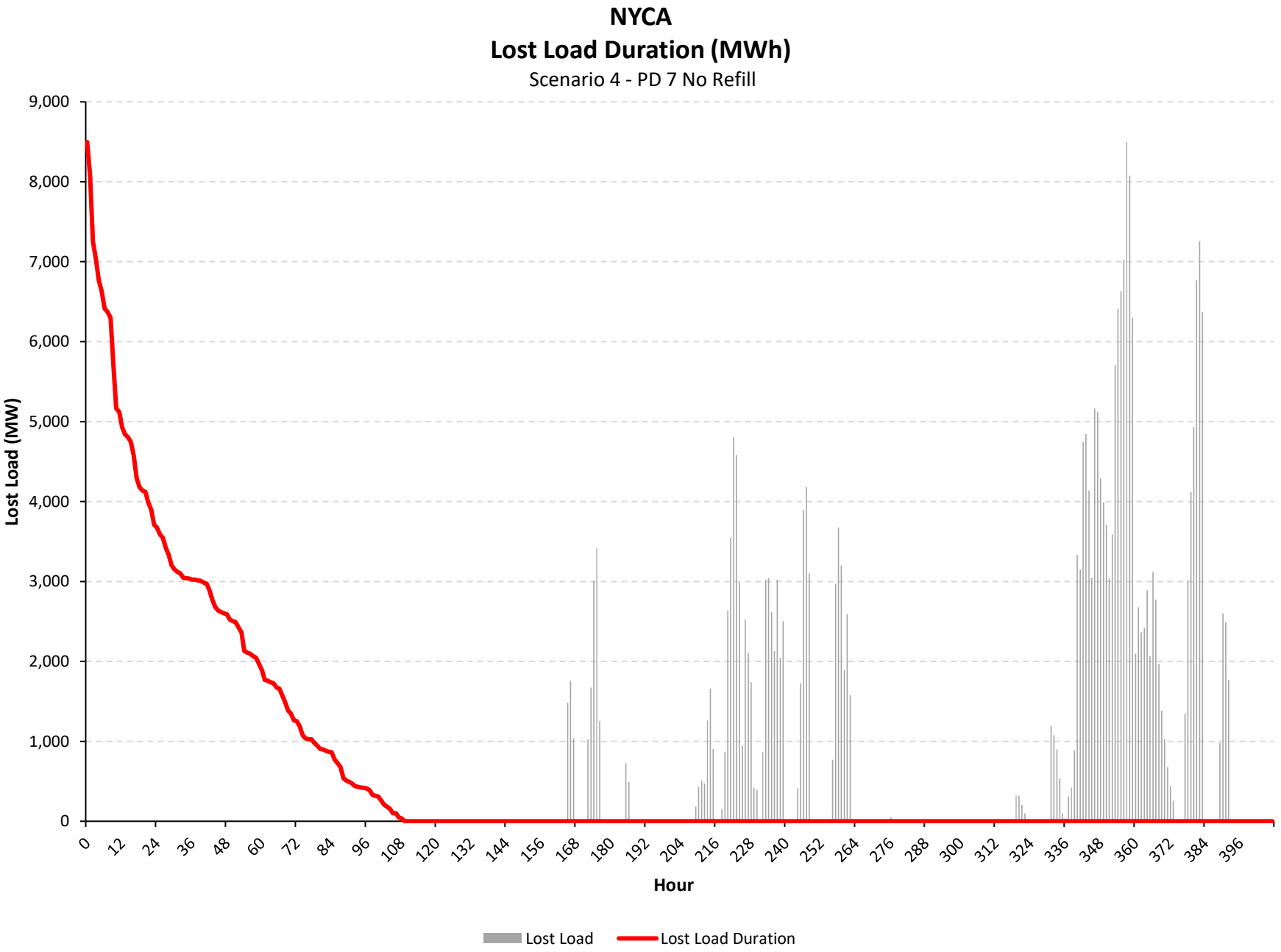
Scenario 4 - PD 7 No Refill





Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 4 - PD 7 No Refill
Emergency Actions and Lost Load (MW)
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 4 - PD 7 No Refill
Lost Load (MW)
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

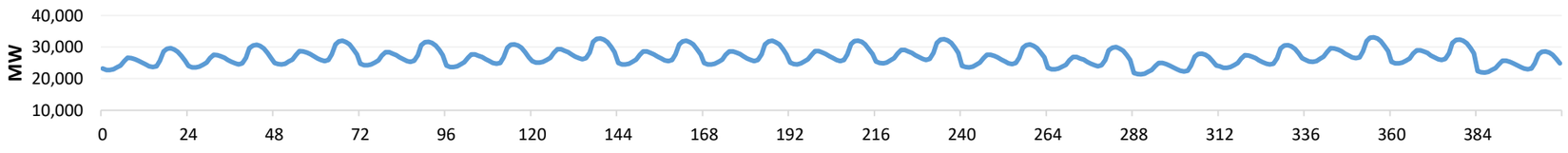
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 4 - PD 8 Non-Firm Gas Unavailable (F-K) (Winter 2030/2031)

Hourly Results Summary

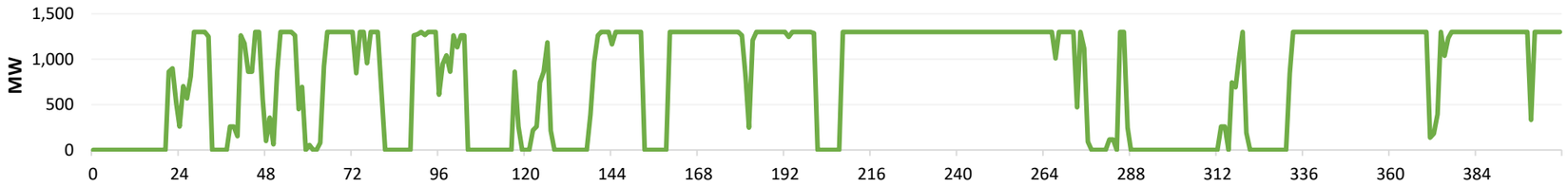
Case Name: Scenario 4 - PD 8 Non-Firm Gas Unavailable (F-K)

Load During Modeling Period



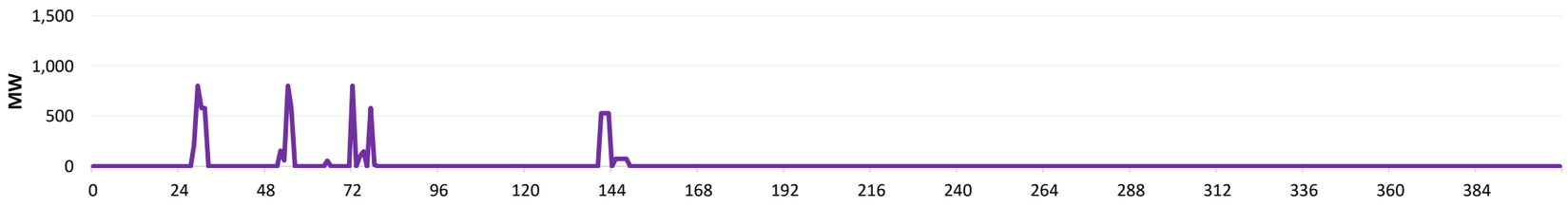
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	F-K
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

Export to ISO-NE Reduction During Modeling Period



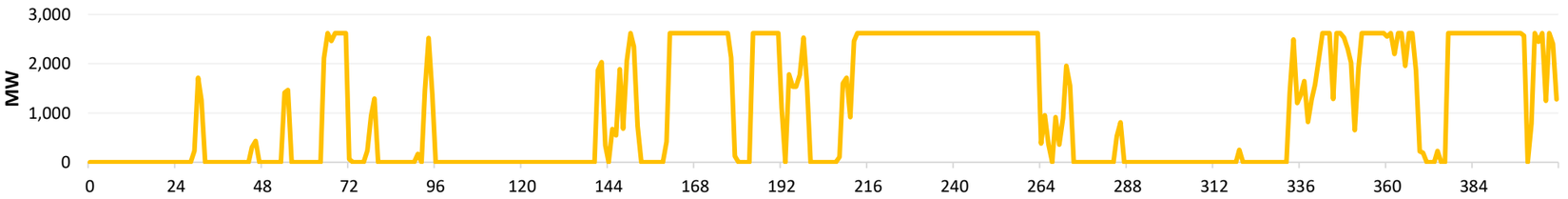
Export Reductions	
Total Hrs.	288
Total MWh	328,658
Avg. MW	805.5

SCR/EDRP Deployed During Modeling Period



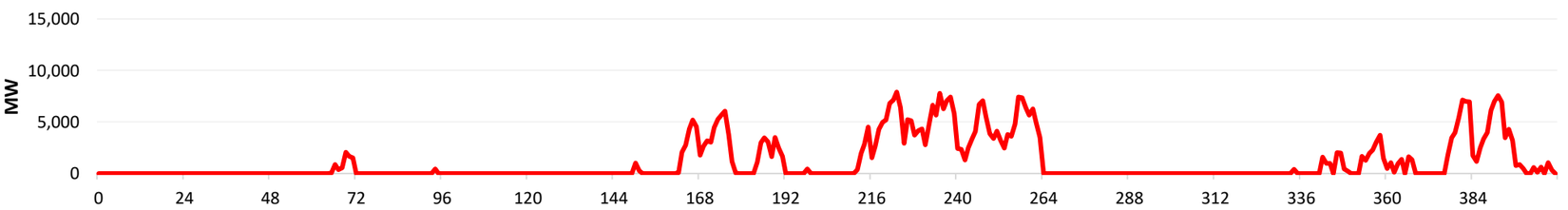
SCR Deployment	
Total Hrs.	21
Total MWh	7,335
Avg. MW	18.0

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	204
Total MWh	429,651
Avg. MW	1,053.1
First Hour with Viol.	29

Loss of Load During Modeling Period



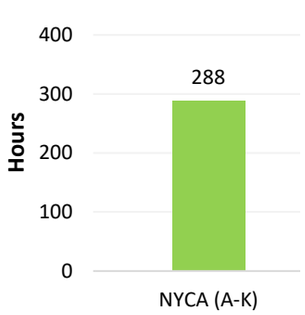
Loss of Load	
Total Hrs.	138
Total MWh	450,457
Avg. MW	1,104.1
First Hour with Losses	65

Full Period Results Summary

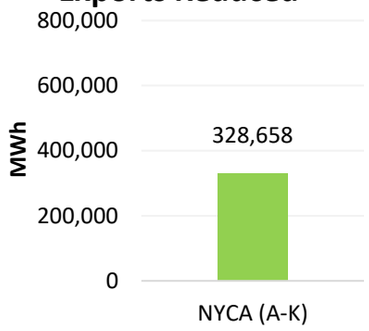
Case Name: Scenario 4 - PD 8 Non-Firm Gas Unavailable (F-K)

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	F-K
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

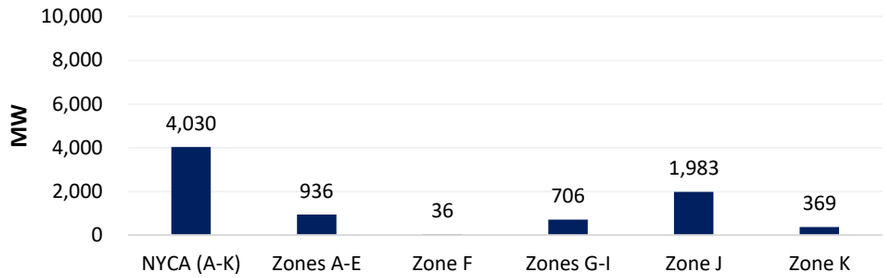
Hours Exports Reduced



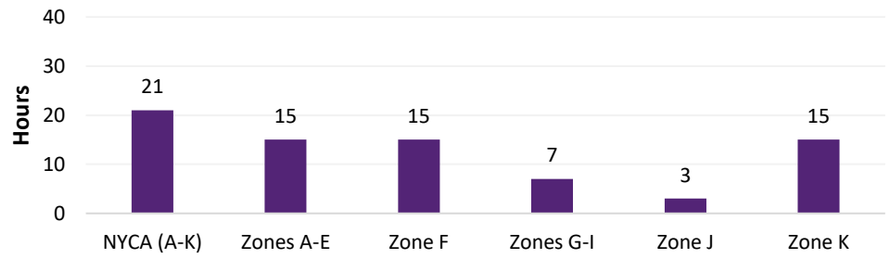
Total MWh of Exports Reduced



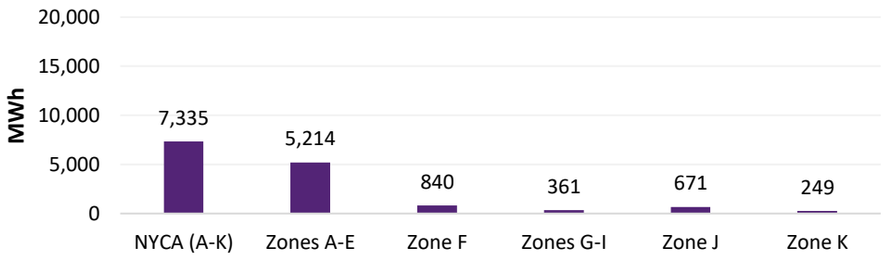
Average Capacity Not Available Due to Exhausted Fuel Inventory



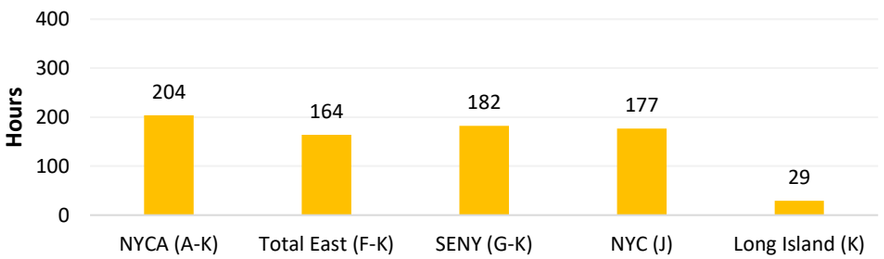
Hours SCR/EDRP Deployed



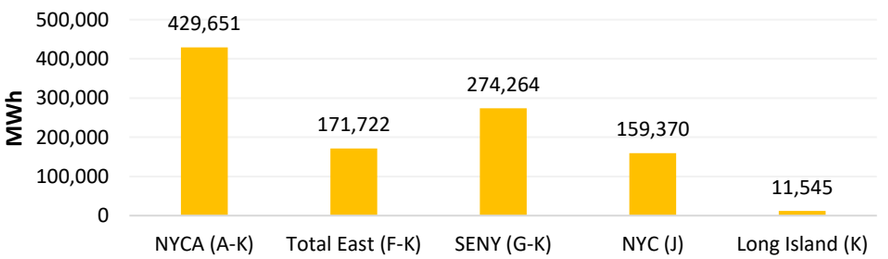
Total MWh SCR/EDRP Deployed



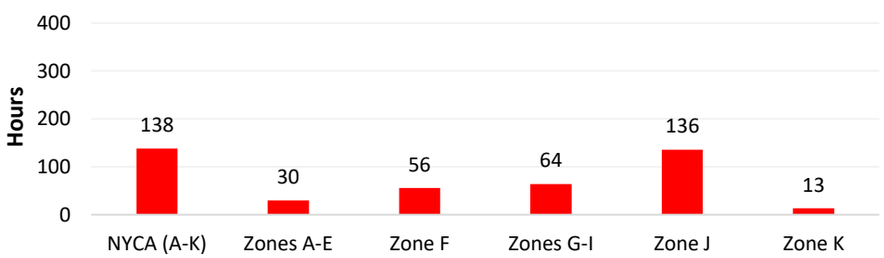
Hours with Reserve Violations



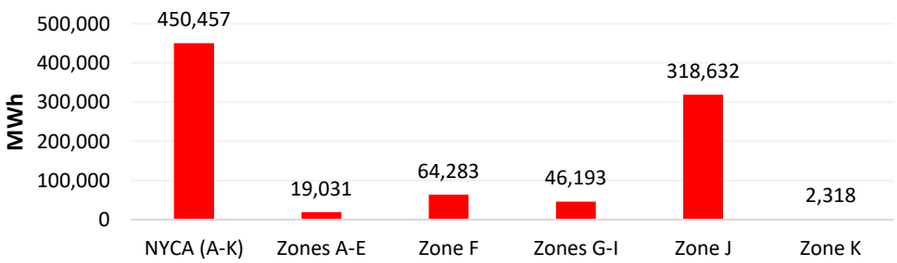
Total MWh of Reserve Violations

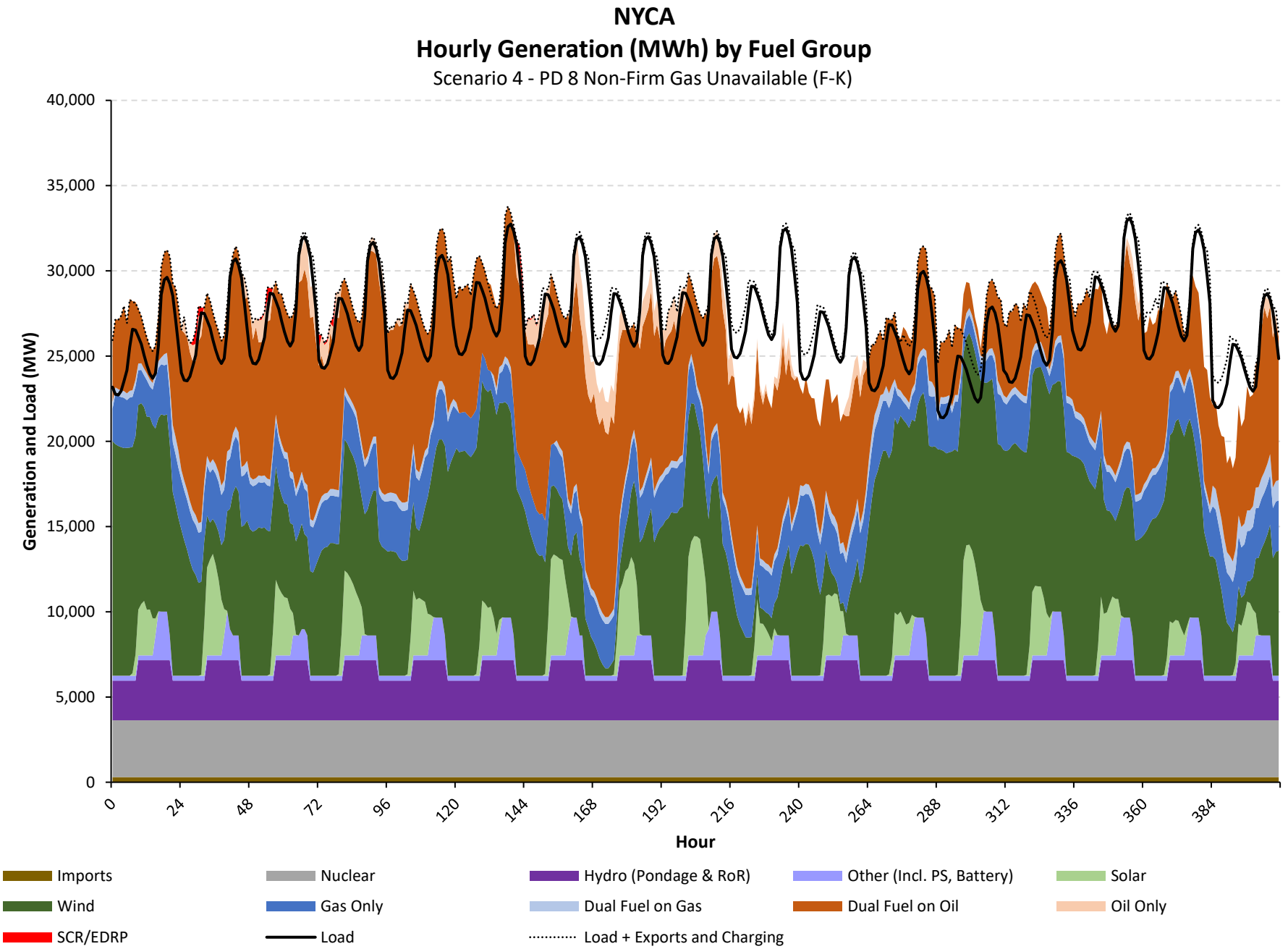


Hours with Loss of Load

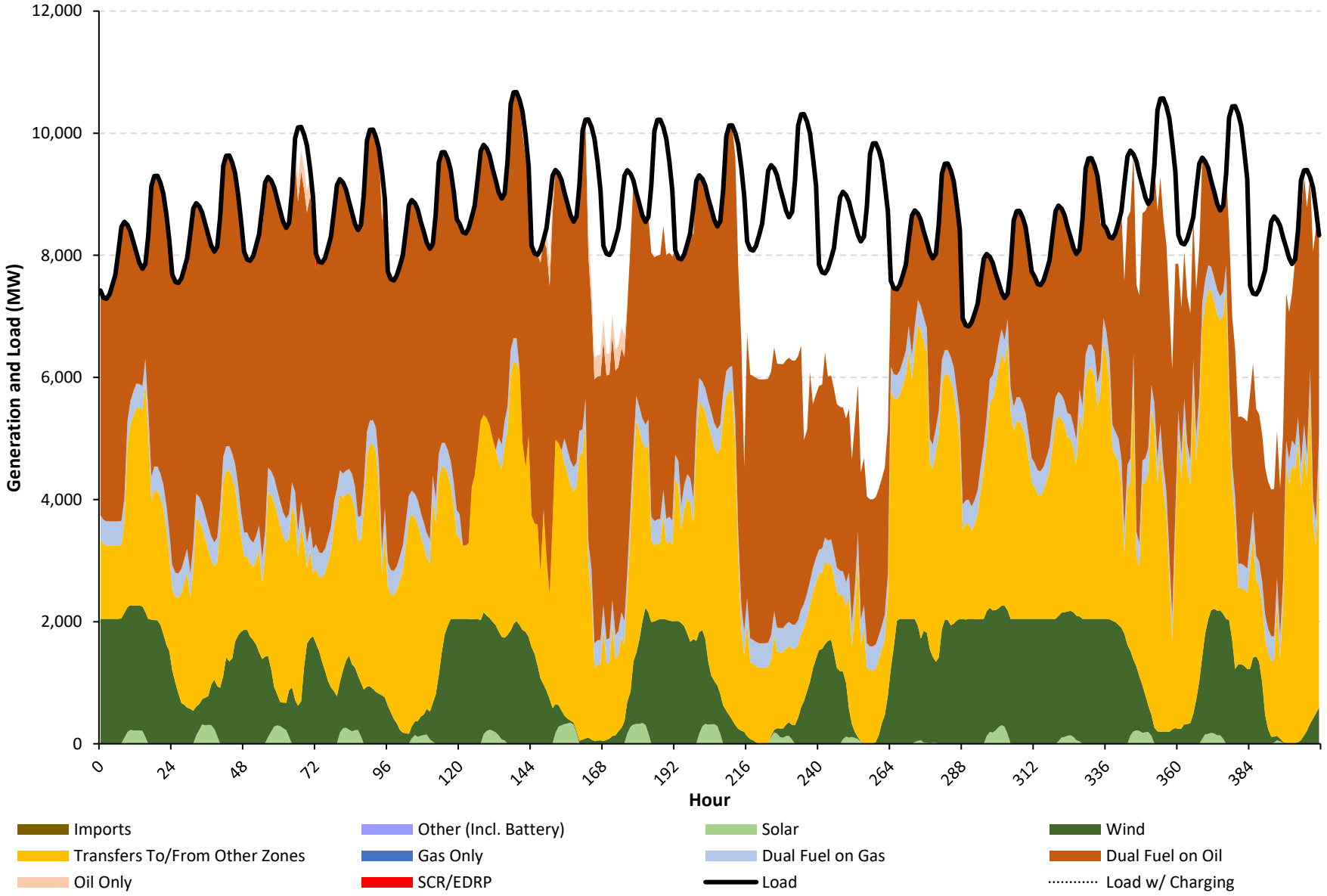


Total MWh of Lost Load

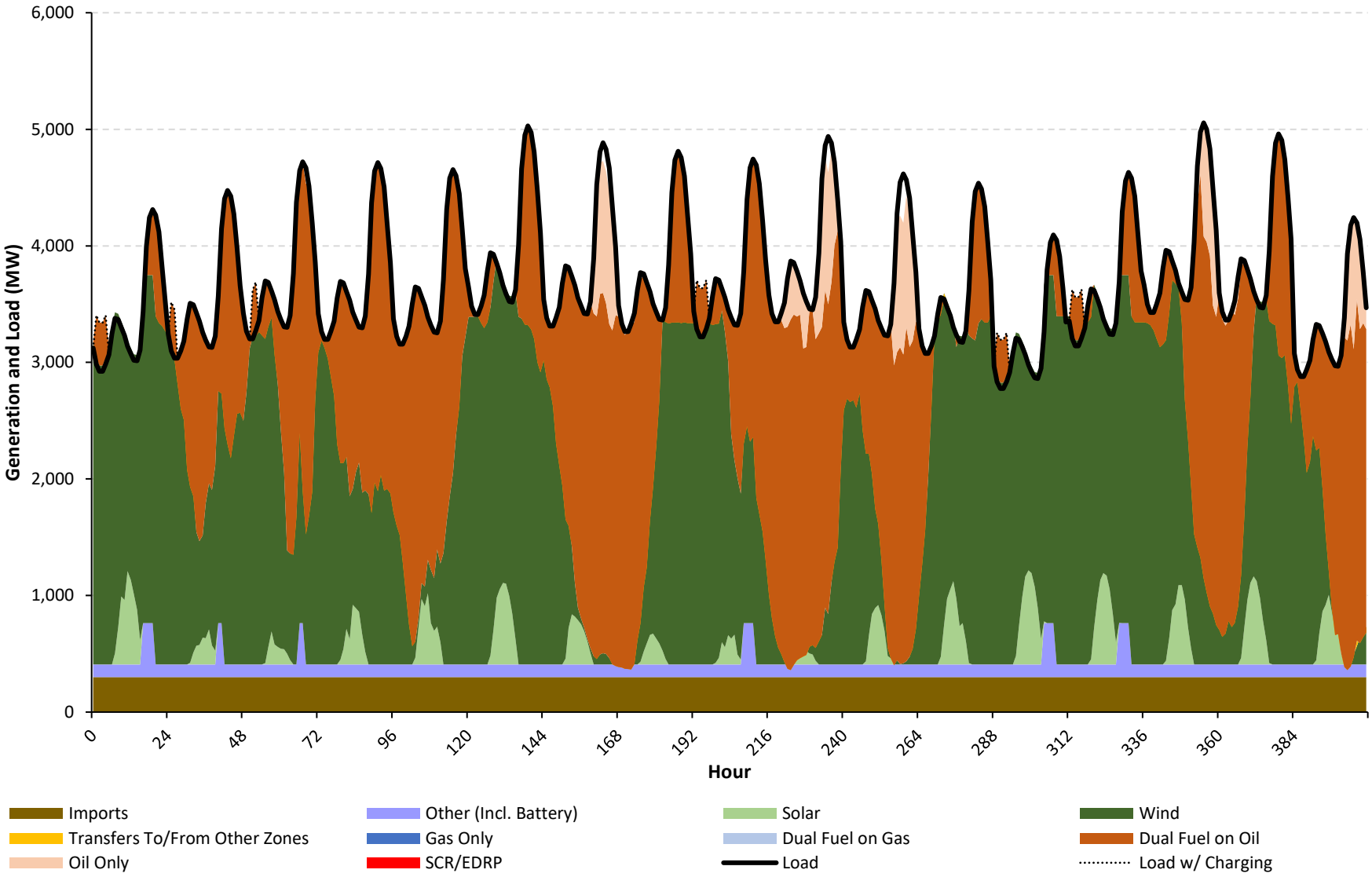



NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 4 - PD 8 Non-Firm Gas Unavailable (F-K)
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

Zone J
Hourly Generation (MW) by Fuel Group
Scenario 4 - PD 8 Non-Firm Gas Unavailable (F-K)



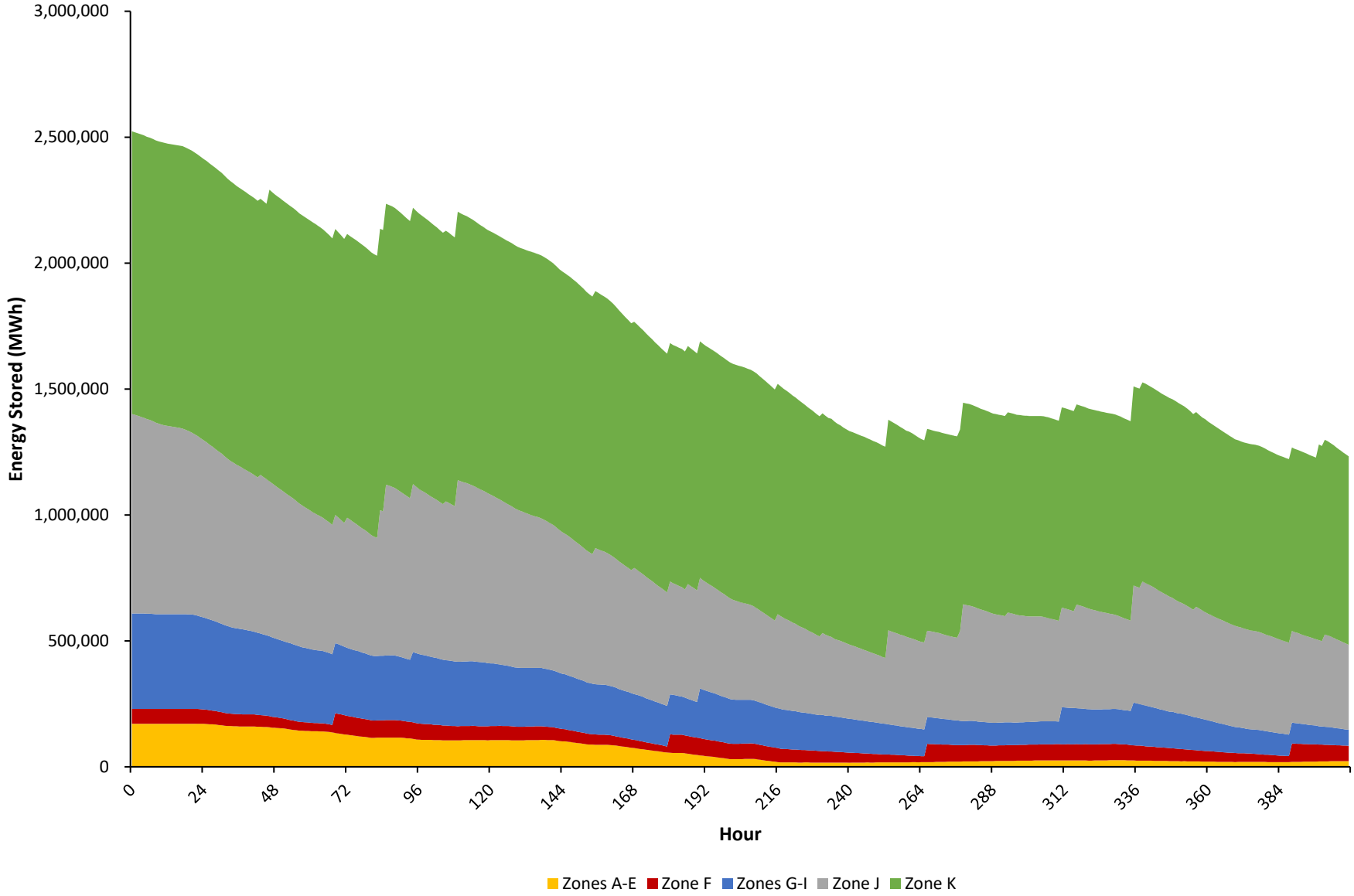
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 4 - PD 8 Non-Firm Gas Unavailable (F-K)



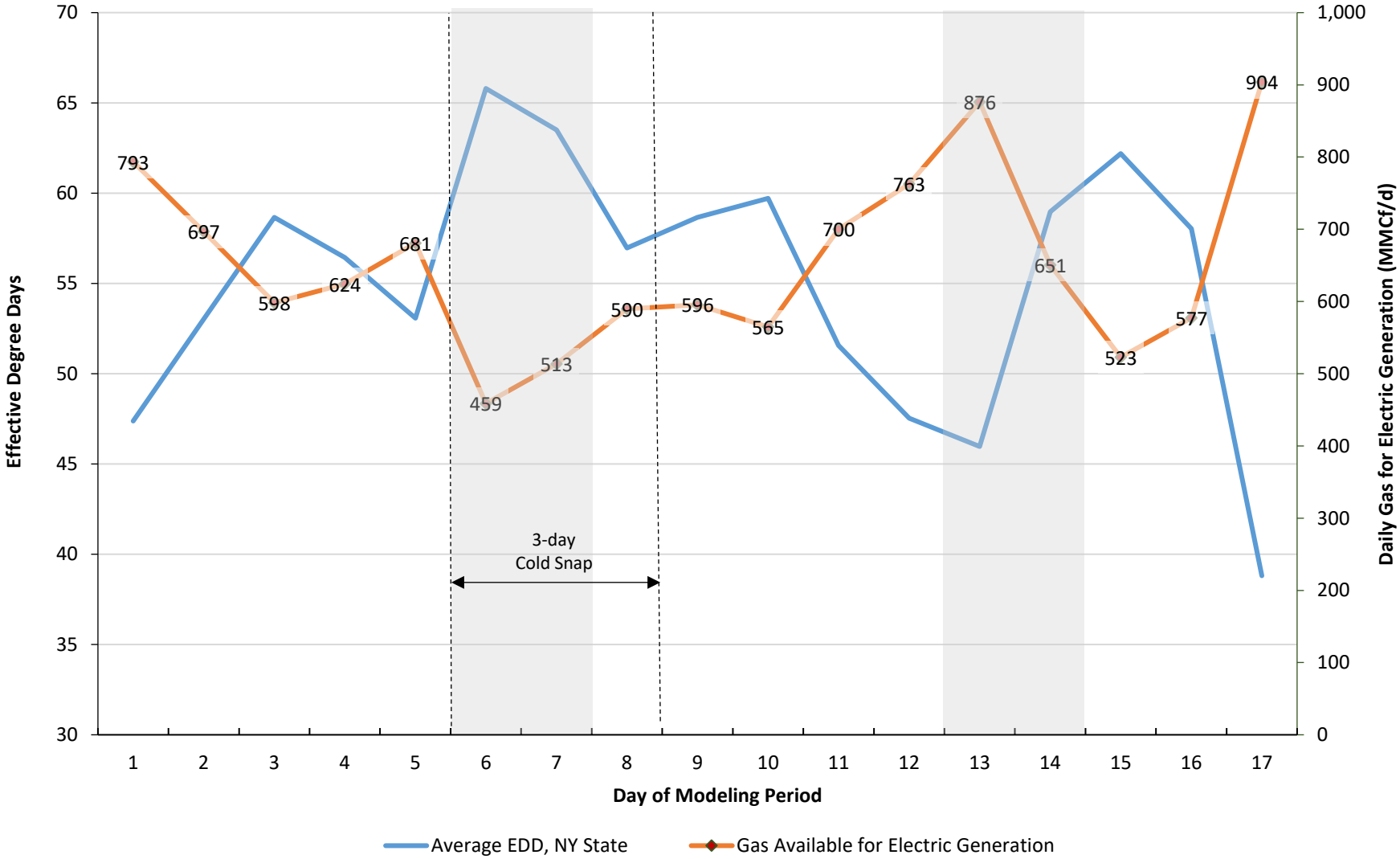
NYCA

Quantity of Stored Fuel for Oil and Dual Fuel Units

Scenario 4 - PD 8 Non-Firm Gas Unavailable (F-K)



NYCA
Degree Days and Gas Available for Electric Generation 17-Day Modeling Period
Scenario 4 - PD 8 Non-Firm Gas Unavailable (F-K)

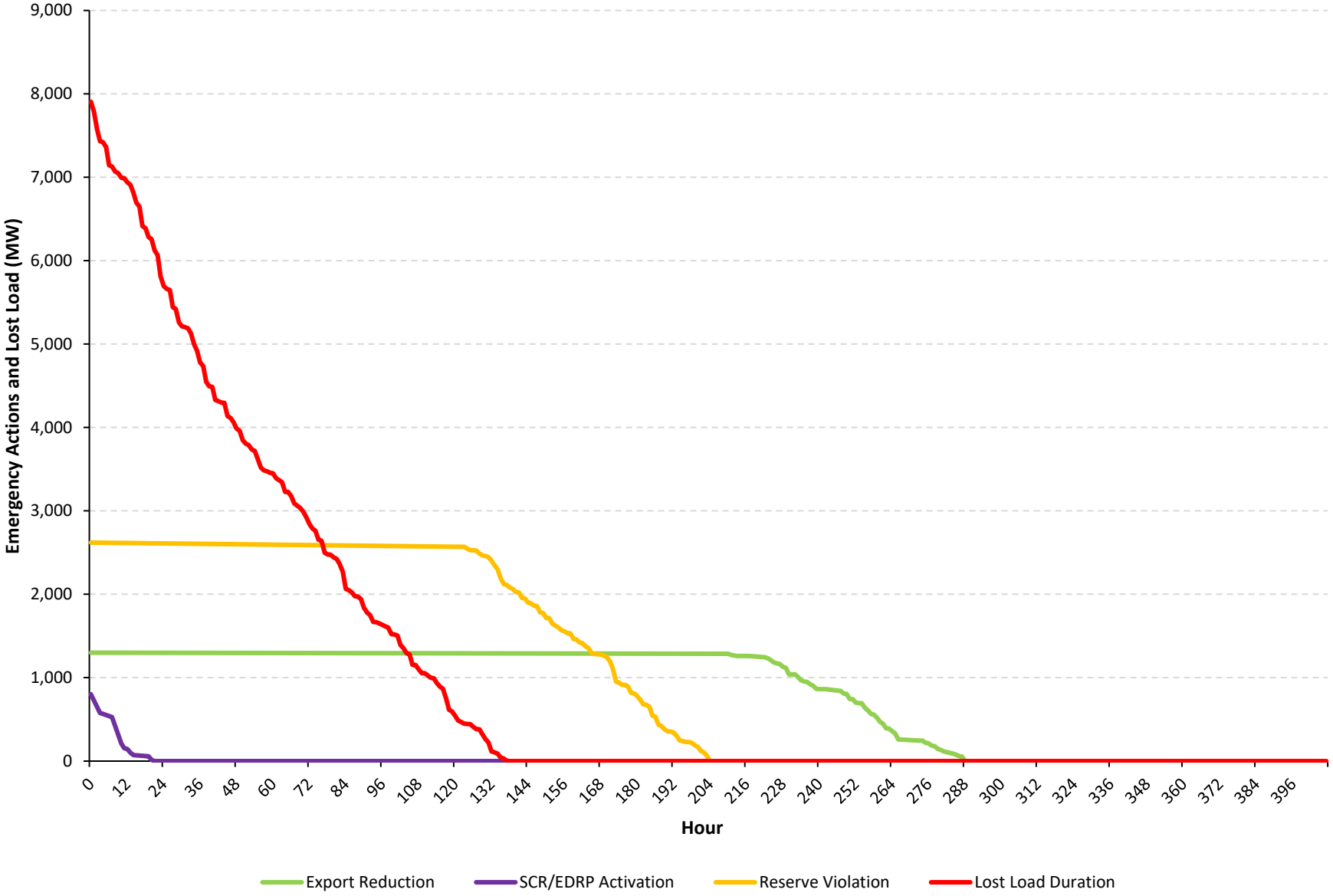


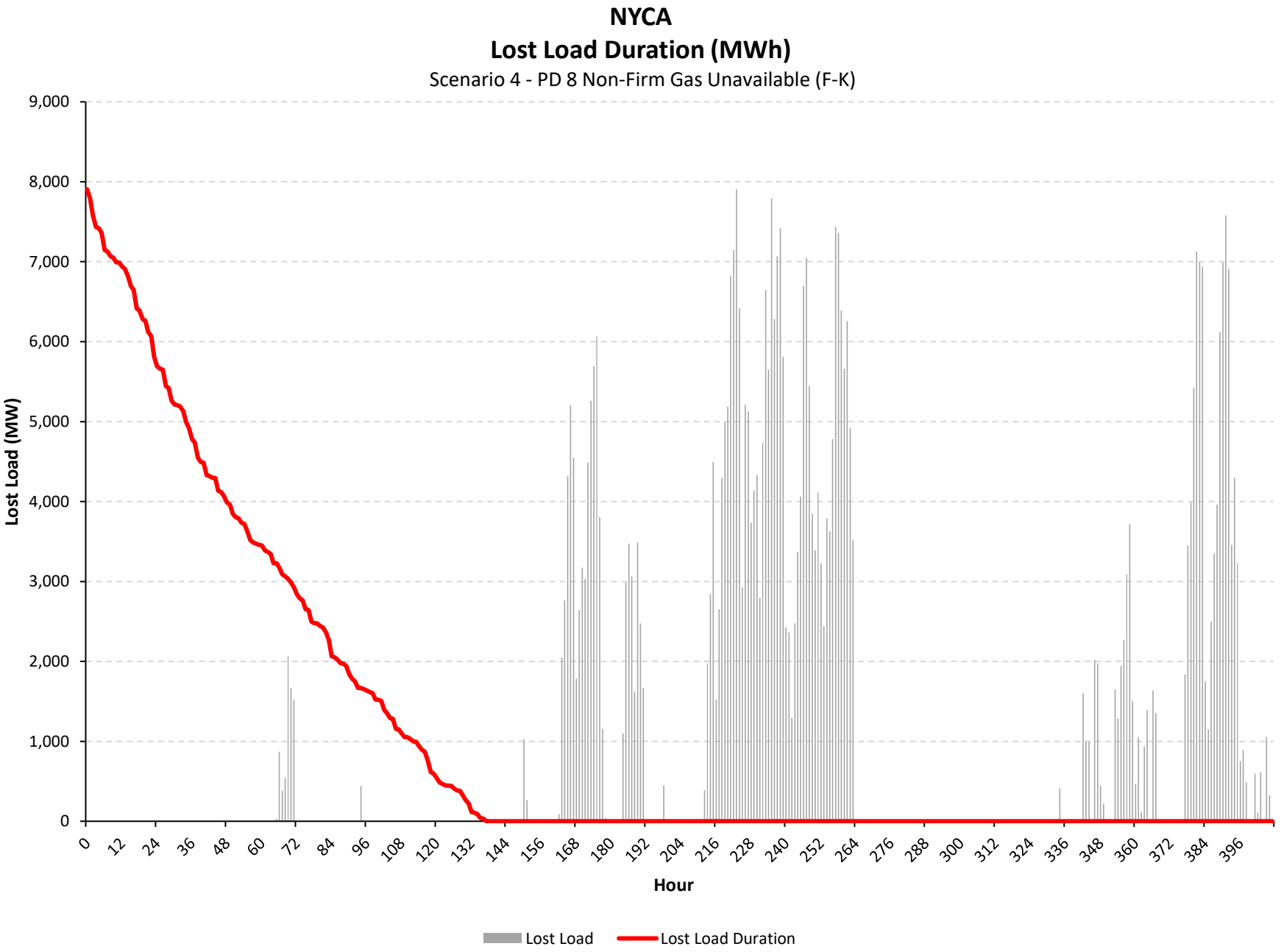
Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.

NYCA

Emergency Actions and Lost Load Duration (MWh)

Scenario 4 - PD 8 Non-Firm Gas Unavailable (F-K)




NYCA
Lost Load Duration (MWh)
Scenario 4 - PD 8 Non-Firm Gas Unavailable (F-K)
Lost Load (MW)
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

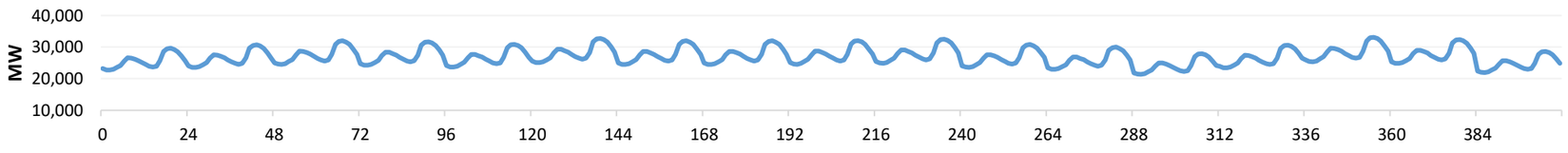
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 4 - PD 9 Non-Firm Gas Unavailable (NYCA) (Winter 2030/2031)

Hourly Results Summary

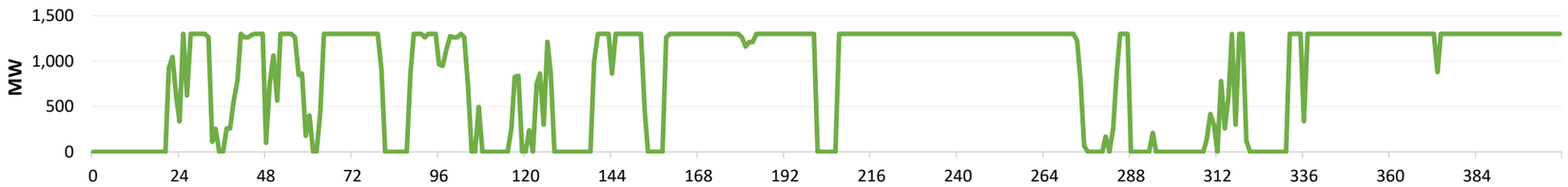
Case Name: Scenario 4 - PD 9 Non-Firm Gas Unavailable (NYCA)

Load During Modeling Period



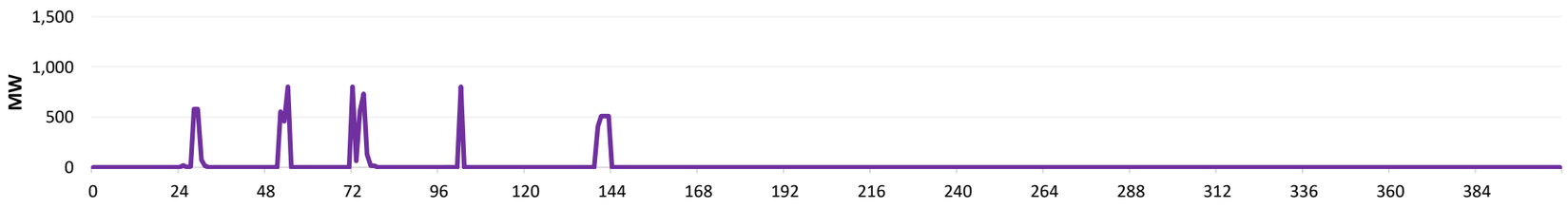
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	NYISO
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

Export to ISO-NE Reduction During Modeling Period



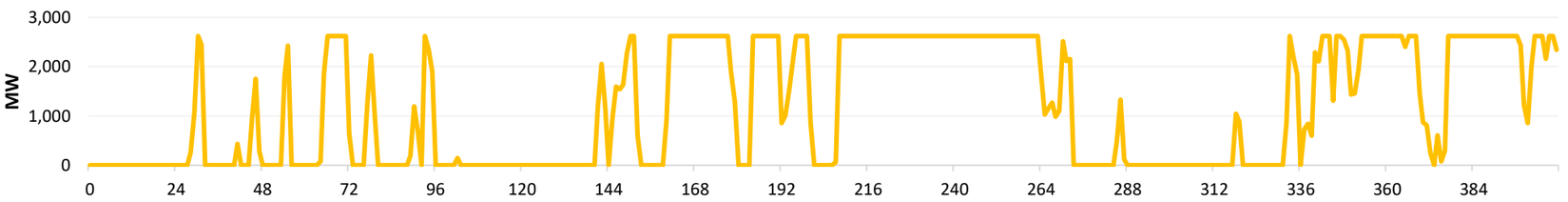
Export Reductions	
Total Hrs.	303
Total MWh	353,550
Avg. MW	866.5

SCR/EDRP Deployed During Modeling Period



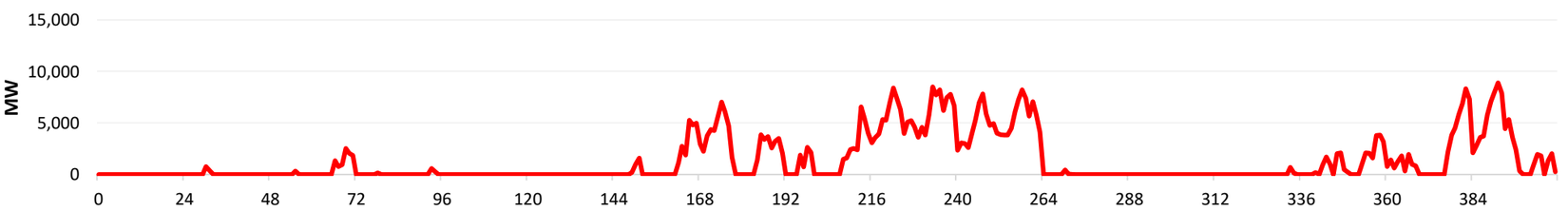
SCR Deployment	
Total Hrs.	21
Total MWh	8,141
Avg. MW	20.0

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	222
Total MWh	476,081
Avg. MW	1,166.9
First Hour with Viol.	28

Loss of Load During Modeling Period



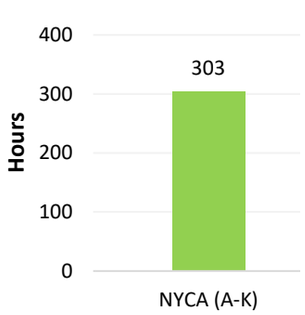
Loss of Load	
Total Hrs.	157
Total MWh	548,450
Avg. MW	1,344.2
First Hour with Losses	30

Full Period Results Summary

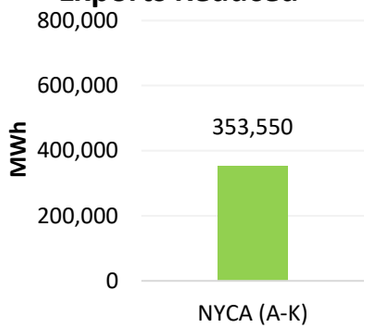
Case Name: Scenario 4 - PD 9 Non-Firm Gas Unavailable (NYCA)

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	NYISO
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

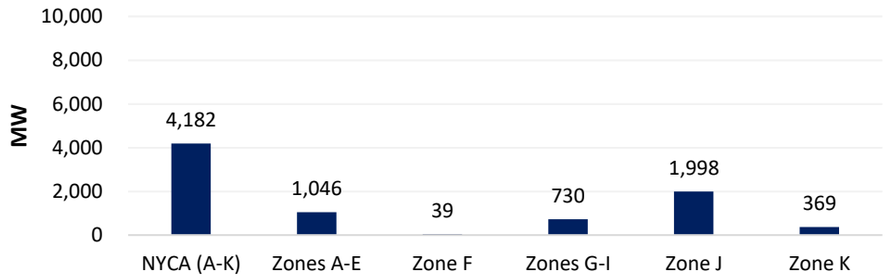
Hours Exports Reduced



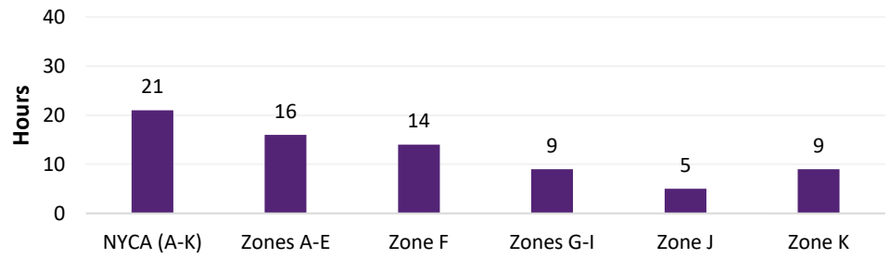
Total MWh of Exports Reduced



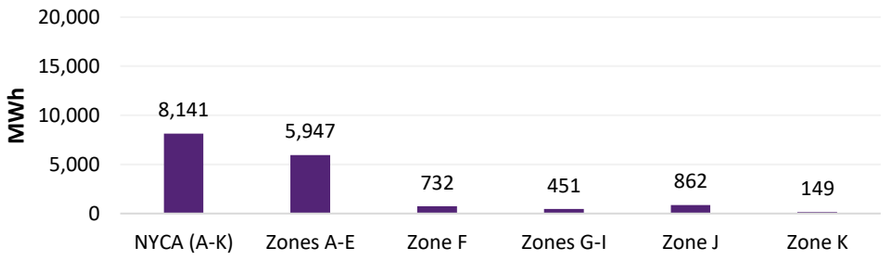
Average Capacity Not Available Due to Exhausted Fuel Inventory



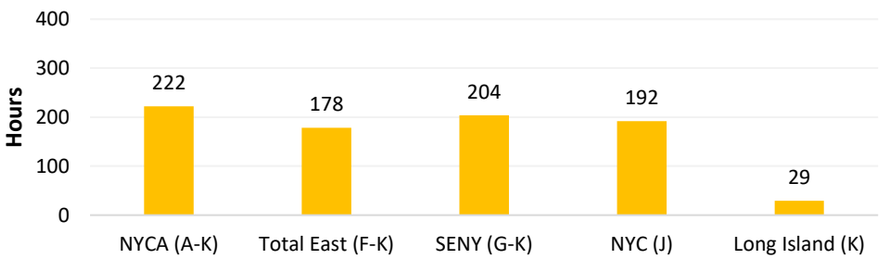
Hours SCR/EDRP Deployed



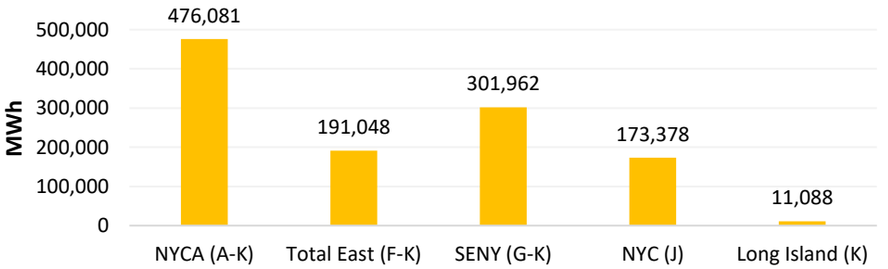
Total MWh SCR/EDRP Deployed



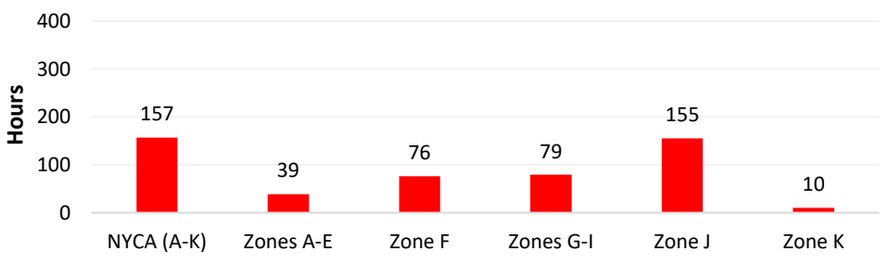
Hours with Reserve Violations



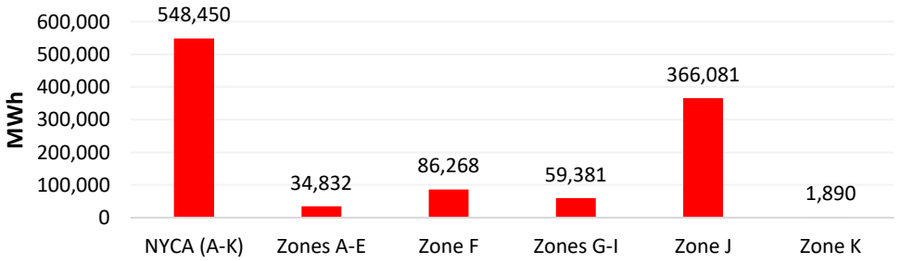
Total MWh of Reserve Violations

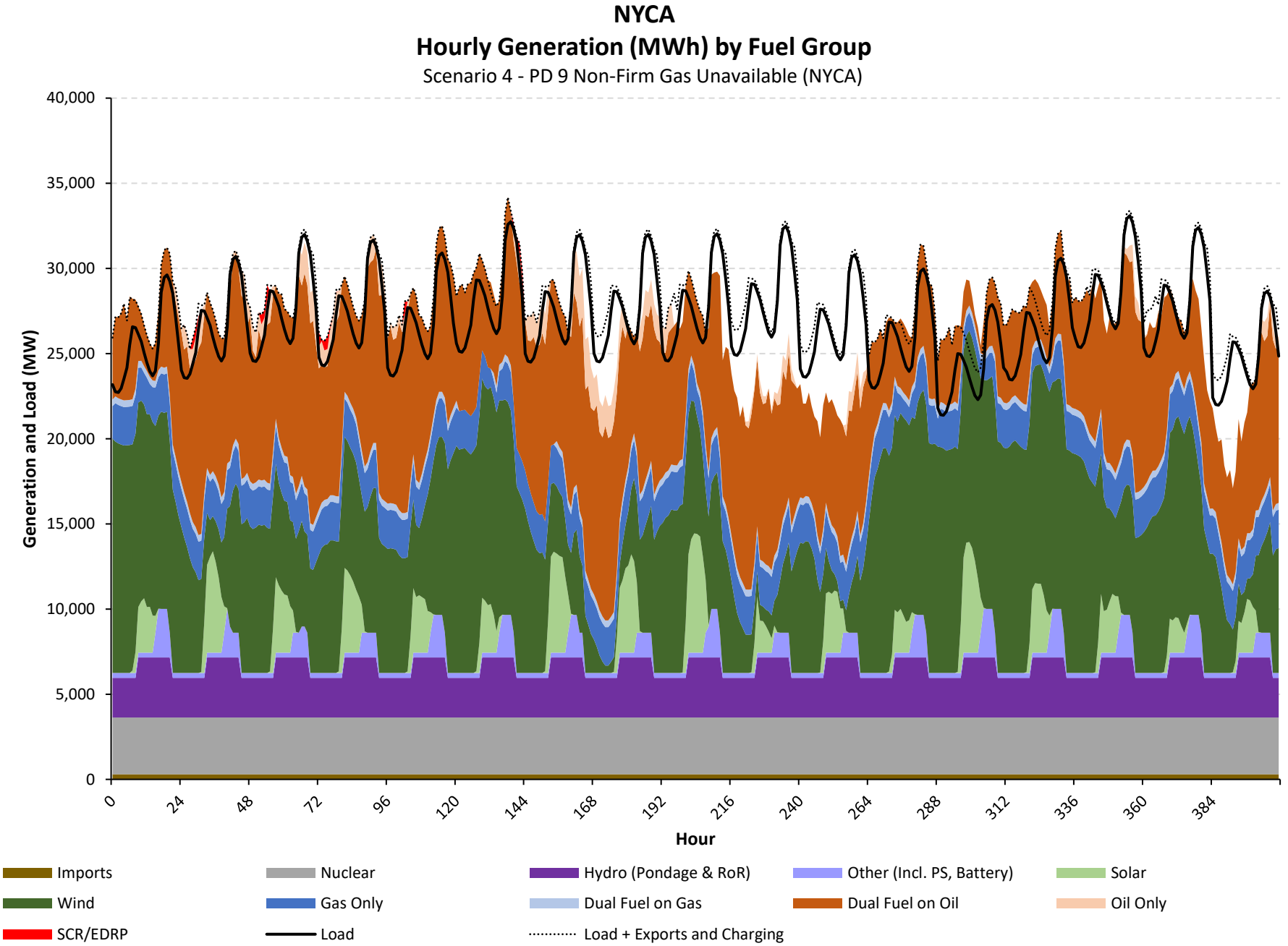


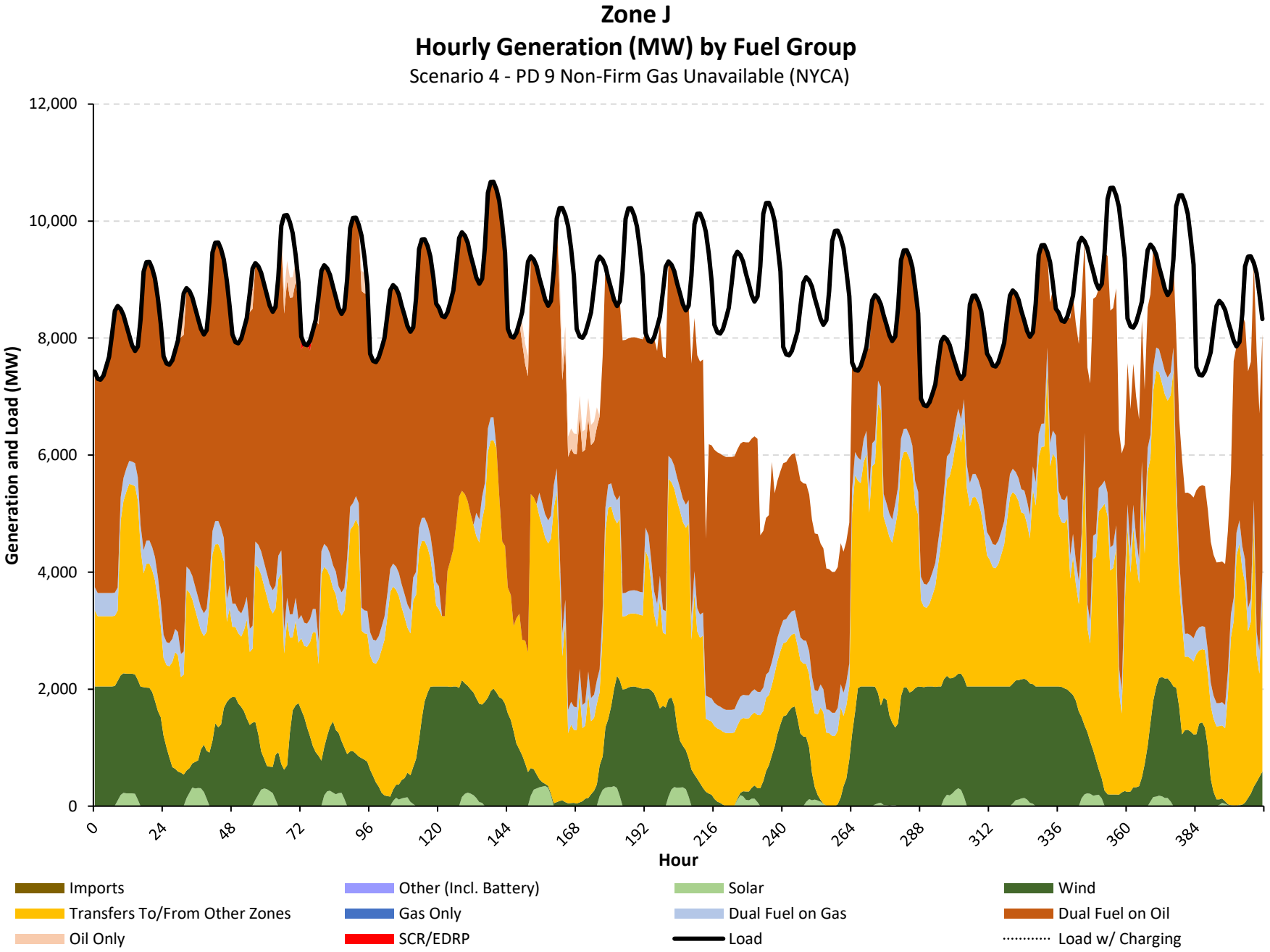
Hours with Loss of Load



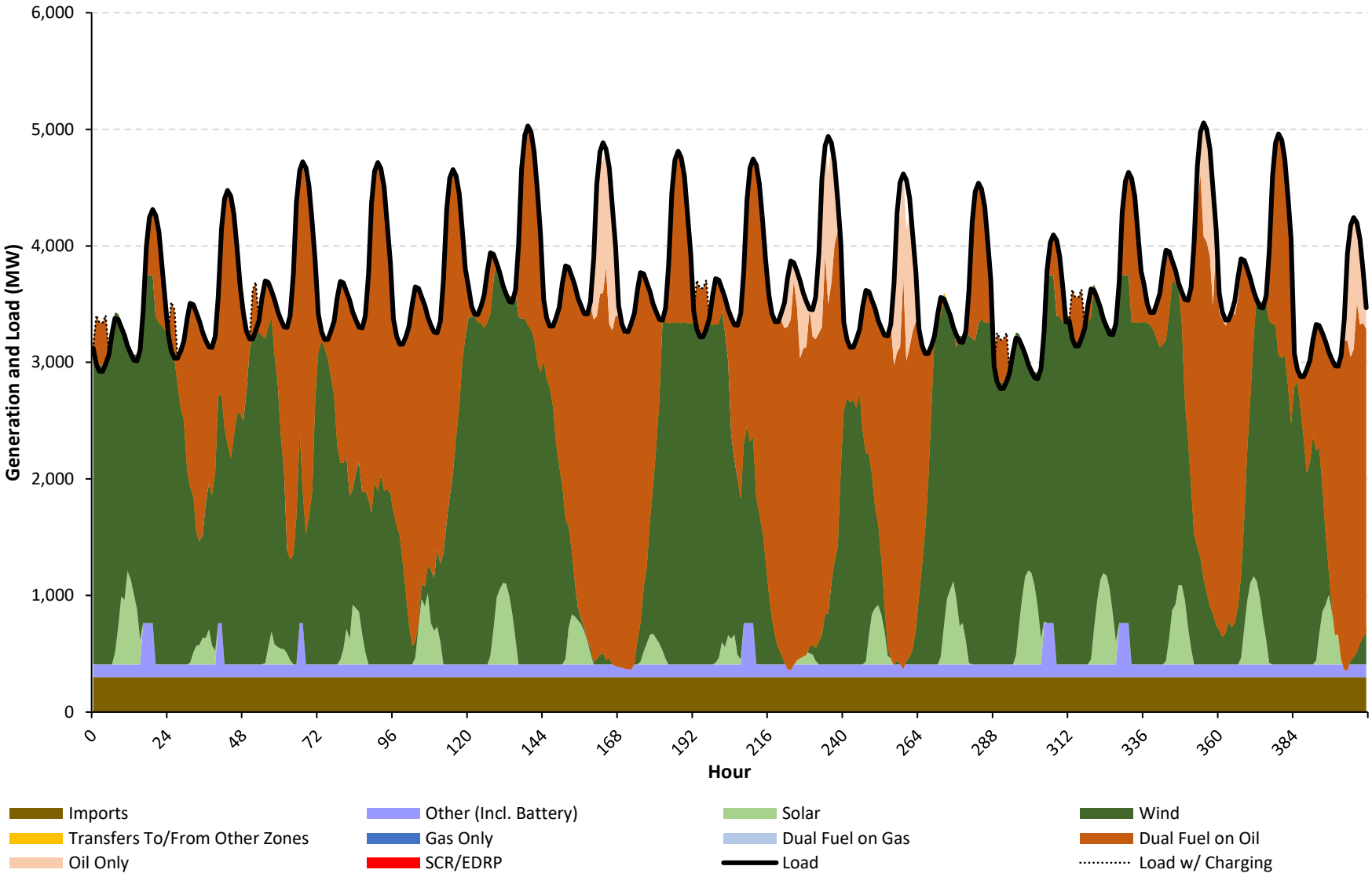
Total MWh of Lost Load




NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 4 - PD 9 Non-Firm Gas Unavailable (NYCA)
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 4 - PD 9 Non-Firm Gas Unavailable (NYCA)
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

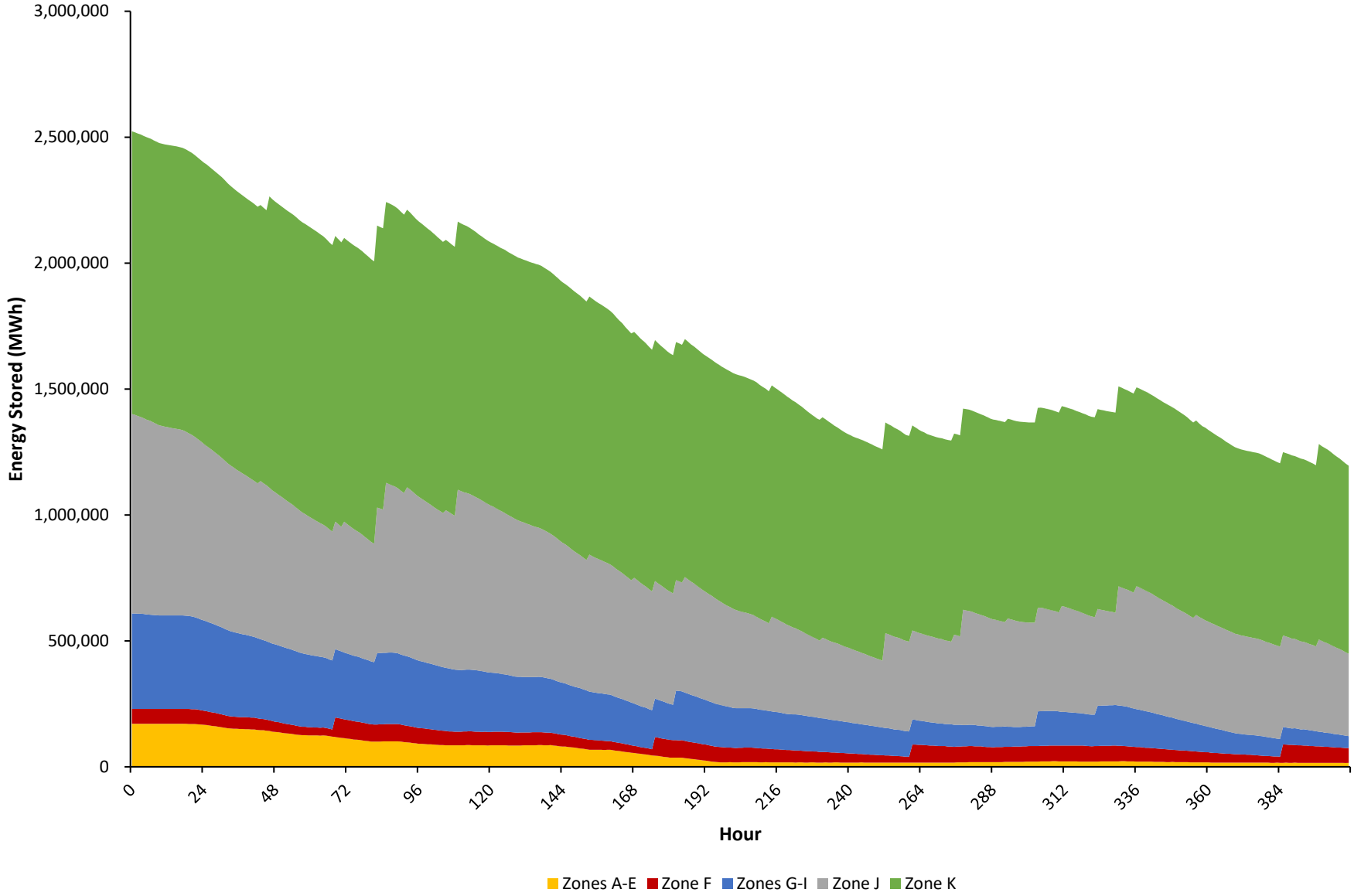
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 4 - PD 9 Non-Firm Gas Unavailable (NYCA)

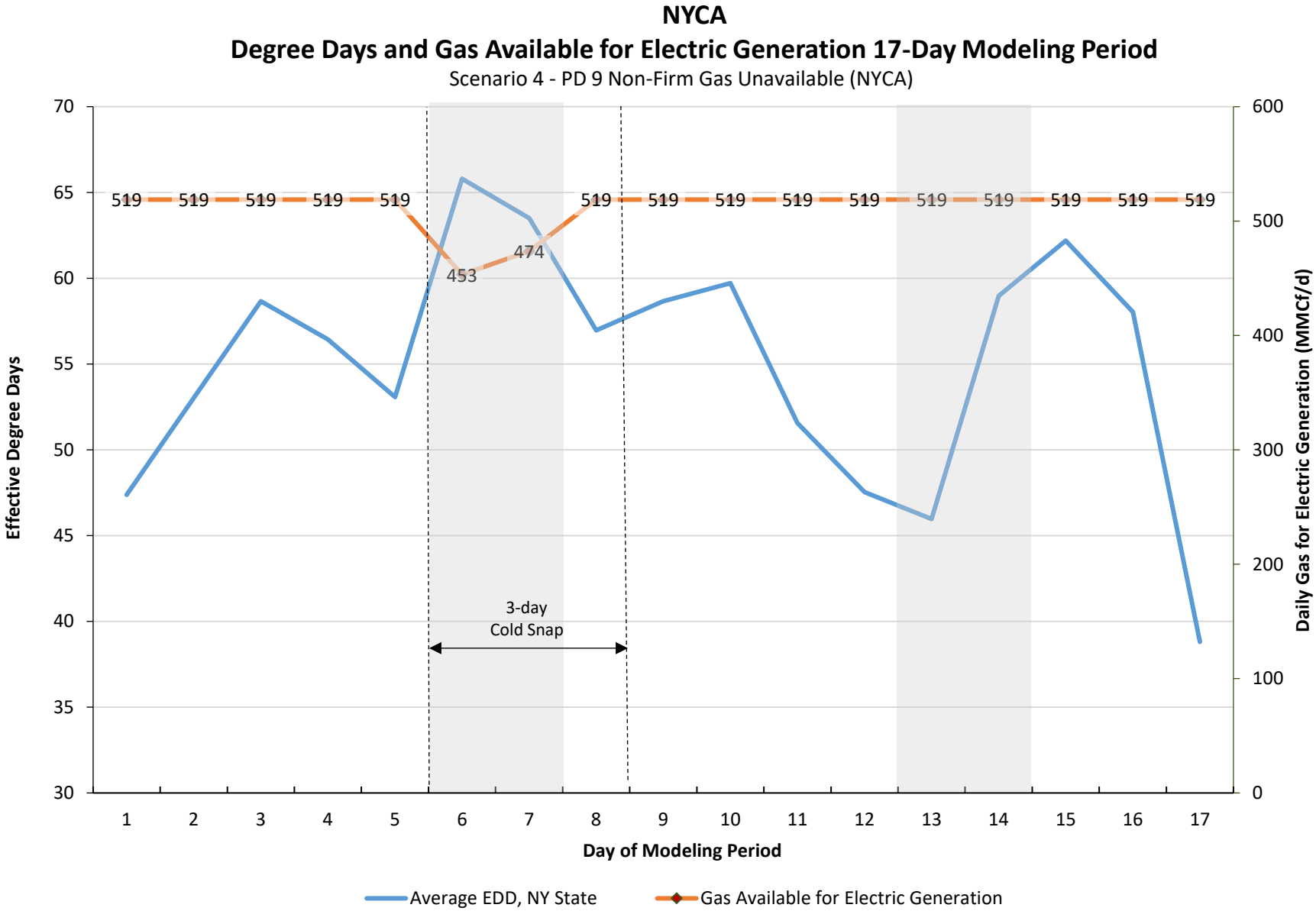


NYCA

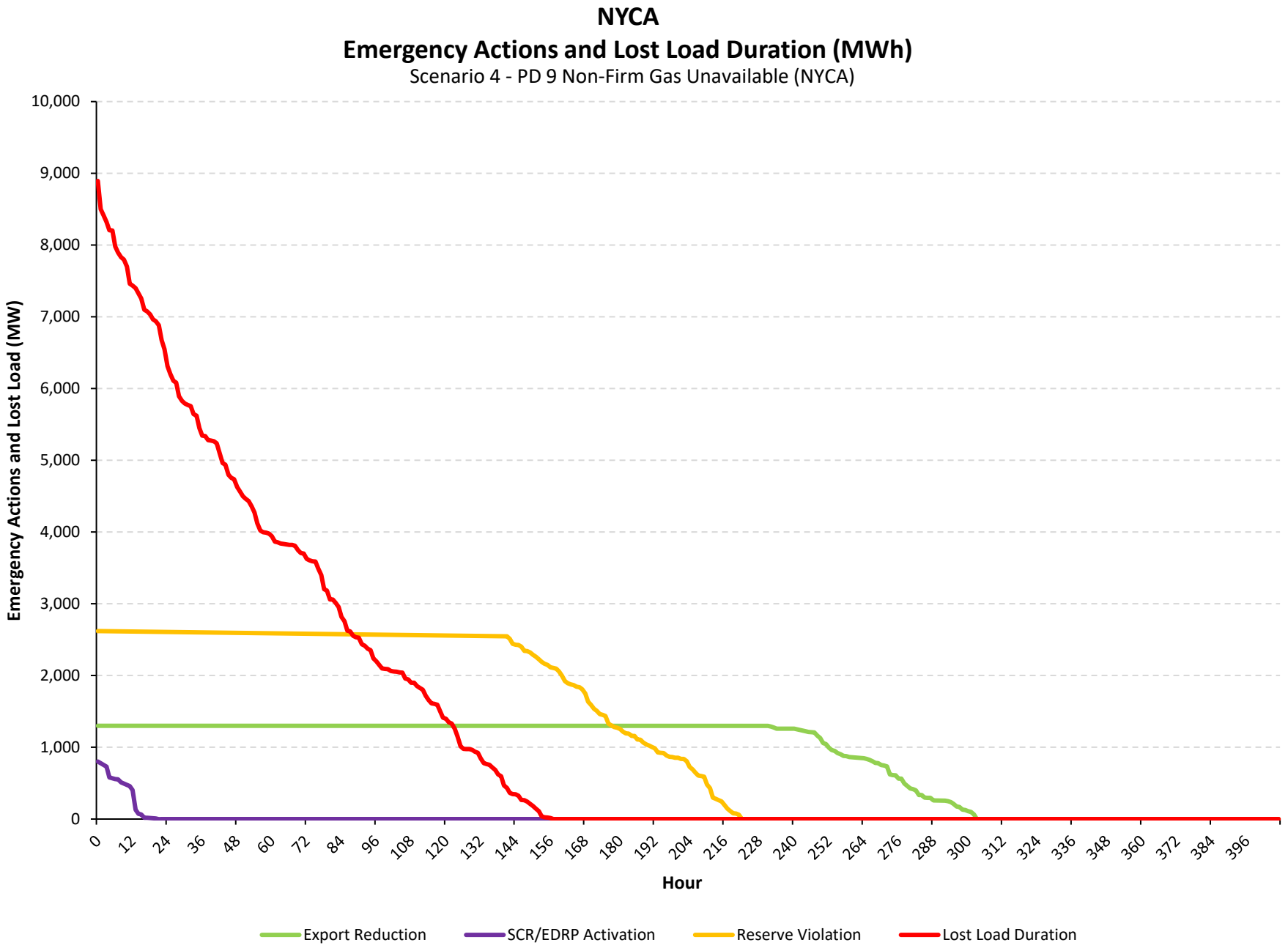
Quantity of Stored Fuel for Oil and Dual Fuel Units

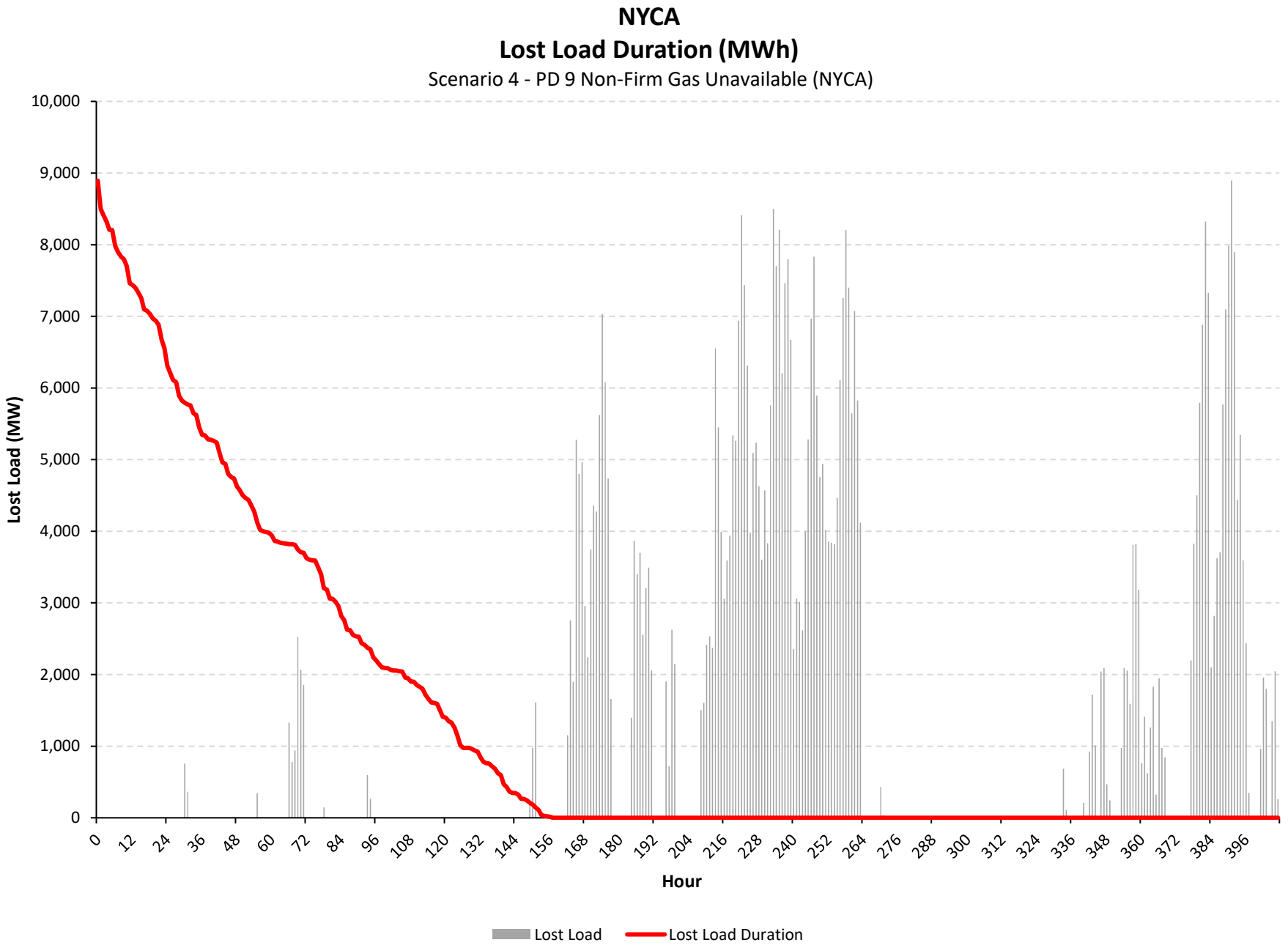
Scenario 4 - PD 9 Non-Firm Gas Unavailable (NYCA)





Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 4 - PD 9 Non-Firm Gas Unavailable (NYCA)
Emergency Actions and Lost Load (MW)
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 4 - PD 9 Non-Firm Gas Unavailable (NYCA)
Lost Load (MW)
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

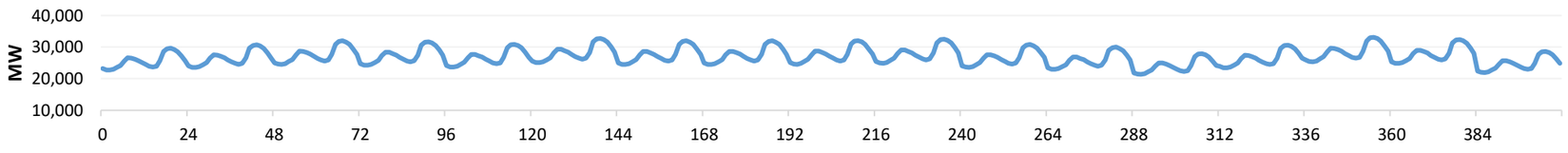
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 4 - PD 10 Non-Firm Gas Unavailable (4 days) (Winter 2030/2031)

Hourly Results Summary

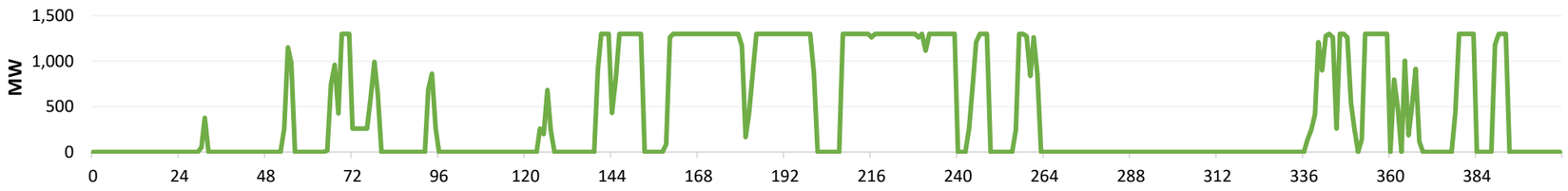
Case Name: Scenario 4 - PD 10 Non-Firm Gas Unavailable (4 days)

Load During Modeling Period



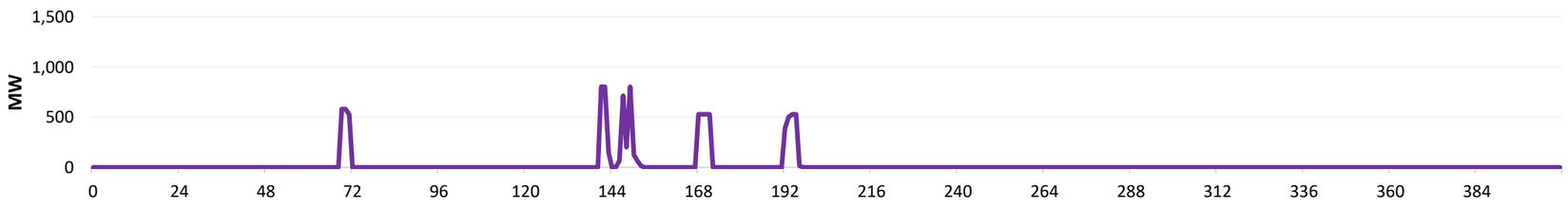
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	3-4 days
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

Export to ISO-NE Reduction During Modeling Period



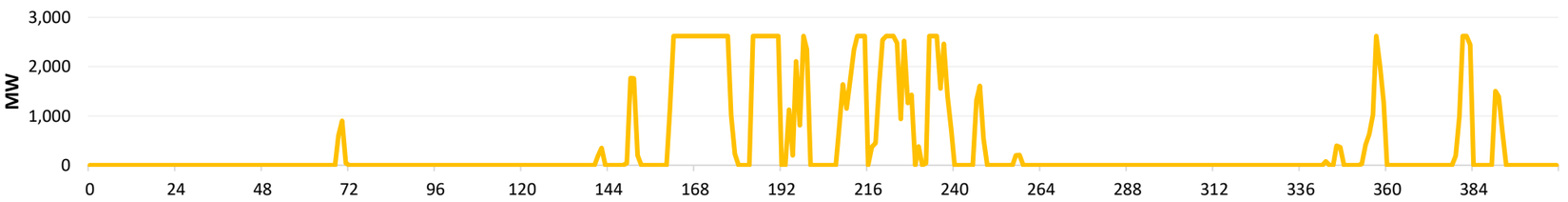
Export Reductions	
Total Hrs.	166
Total MWh	172,497
Avg. MW	422.8

SCR/EDRP Deployed During Modeling Period



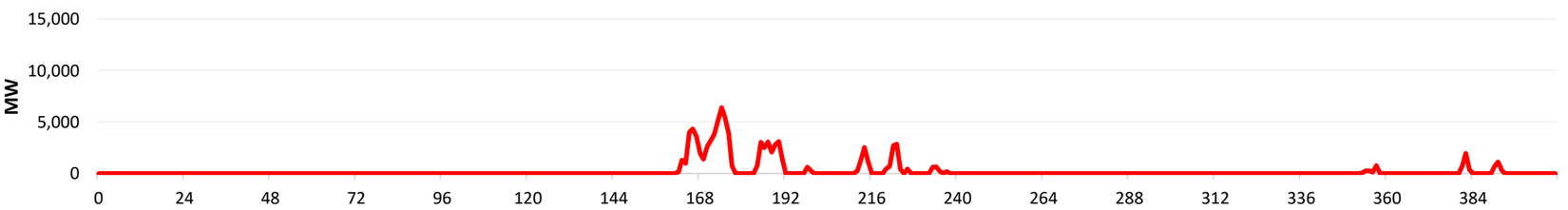
SCR Deployment	
Total Hrs.	22
Total MWh	9,491
Avg. MW	23.3

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	94
Total MWh	156,931
Avg. MW	384.6
First Hour with Viol.	69

Loss of Load During Modeling Period

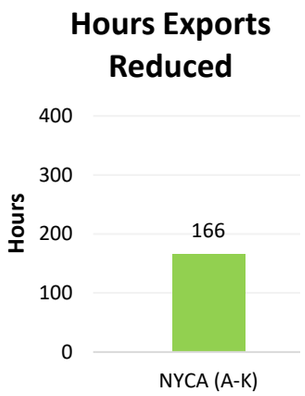


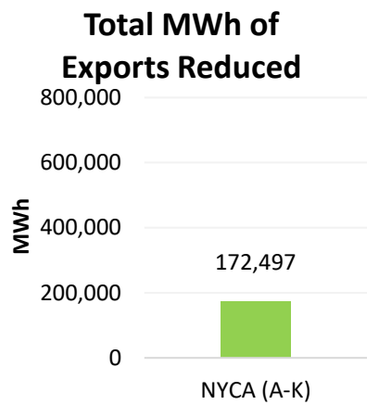
Loss of Load	
Total Hrs.	52
Total MWh	89,720
Avg. MW	219.9
First Hour with Losses	162

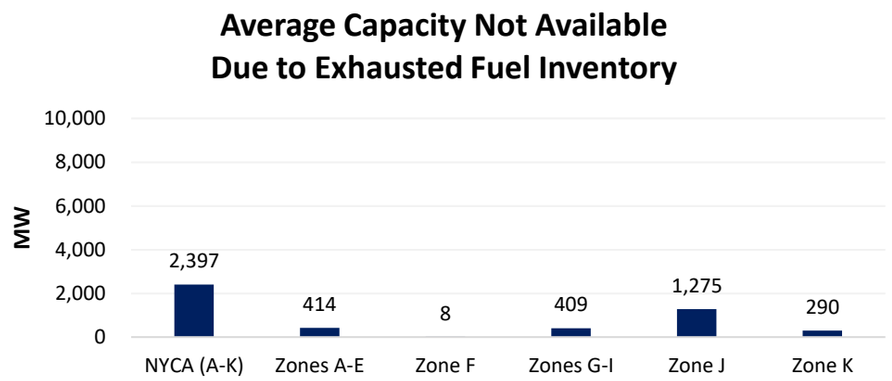
Full Period Results Summary

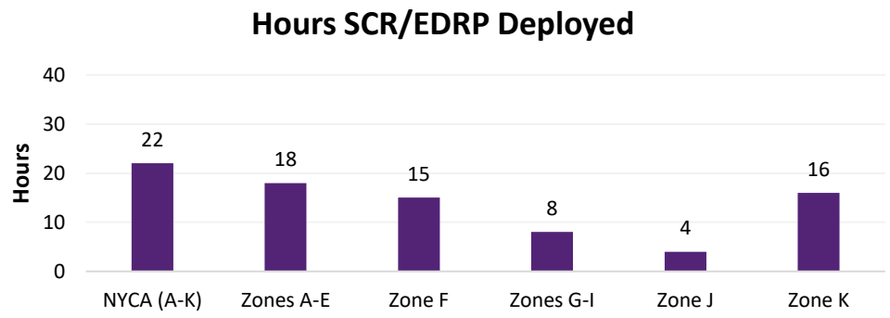
Case Name: Scenario 4 - PD 10 Non-Firm Gas Unavailable (4 days)

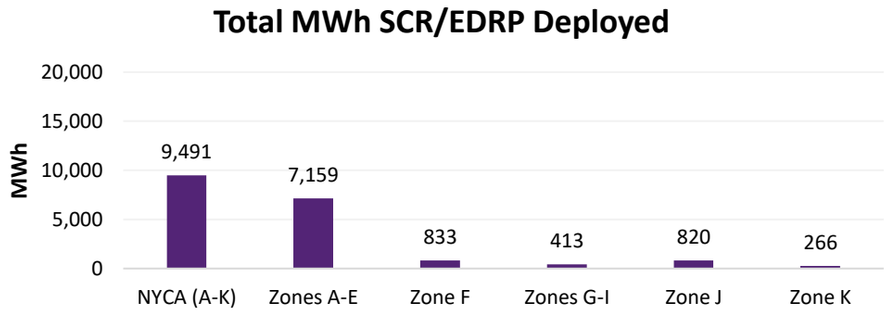
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	Off
Loss of Gas Fired Gen.	3-4 days
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

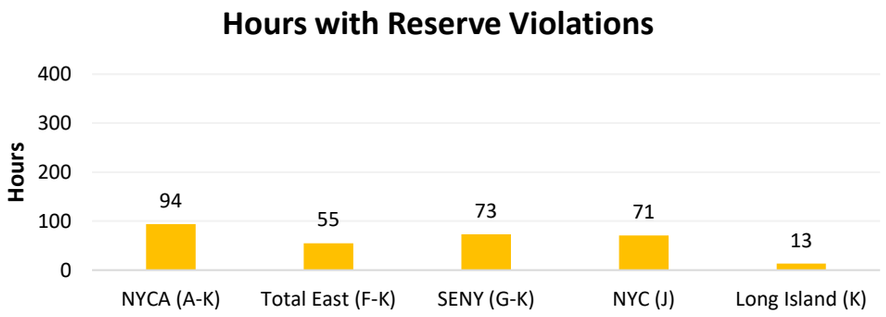


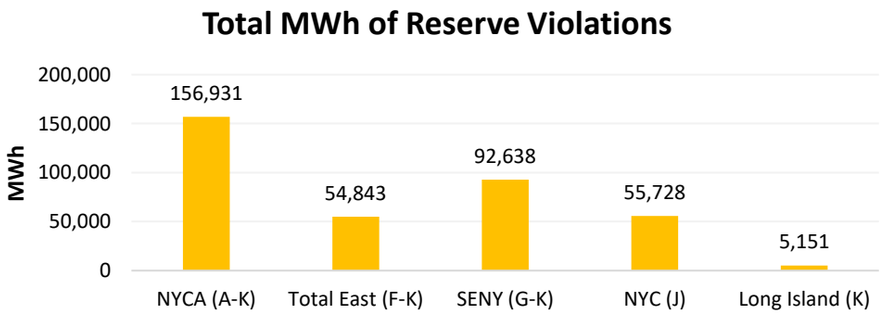


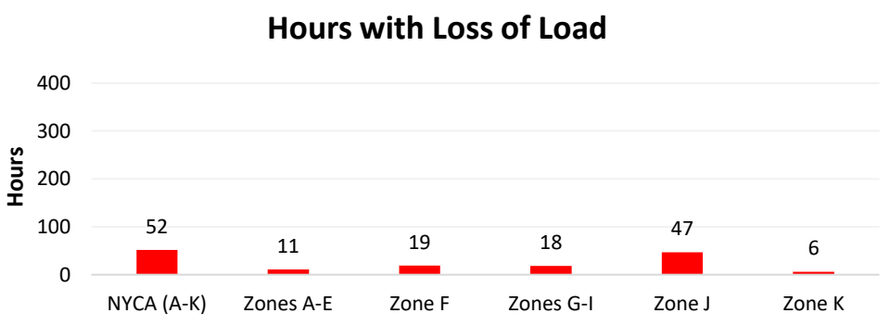


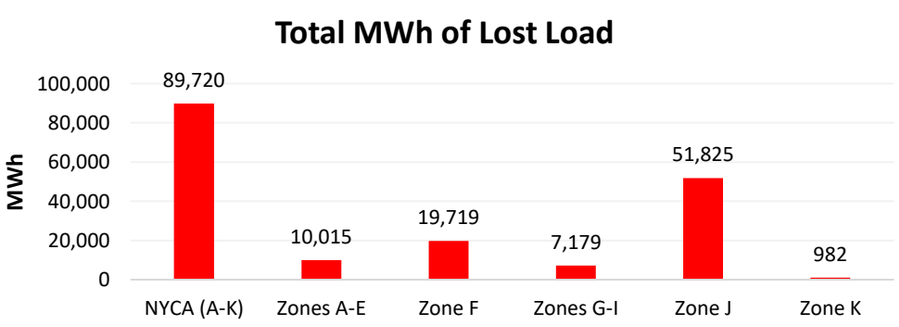


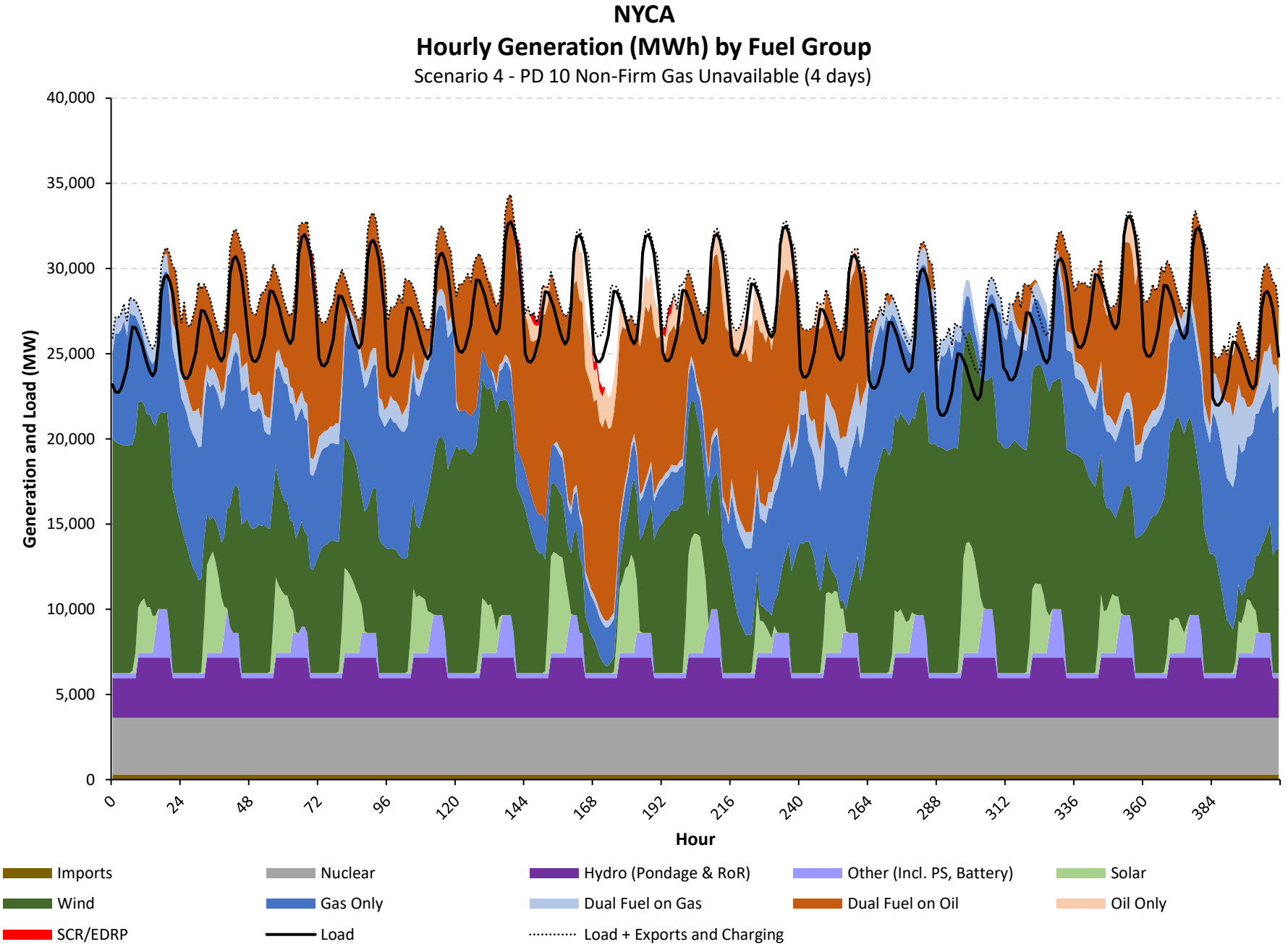


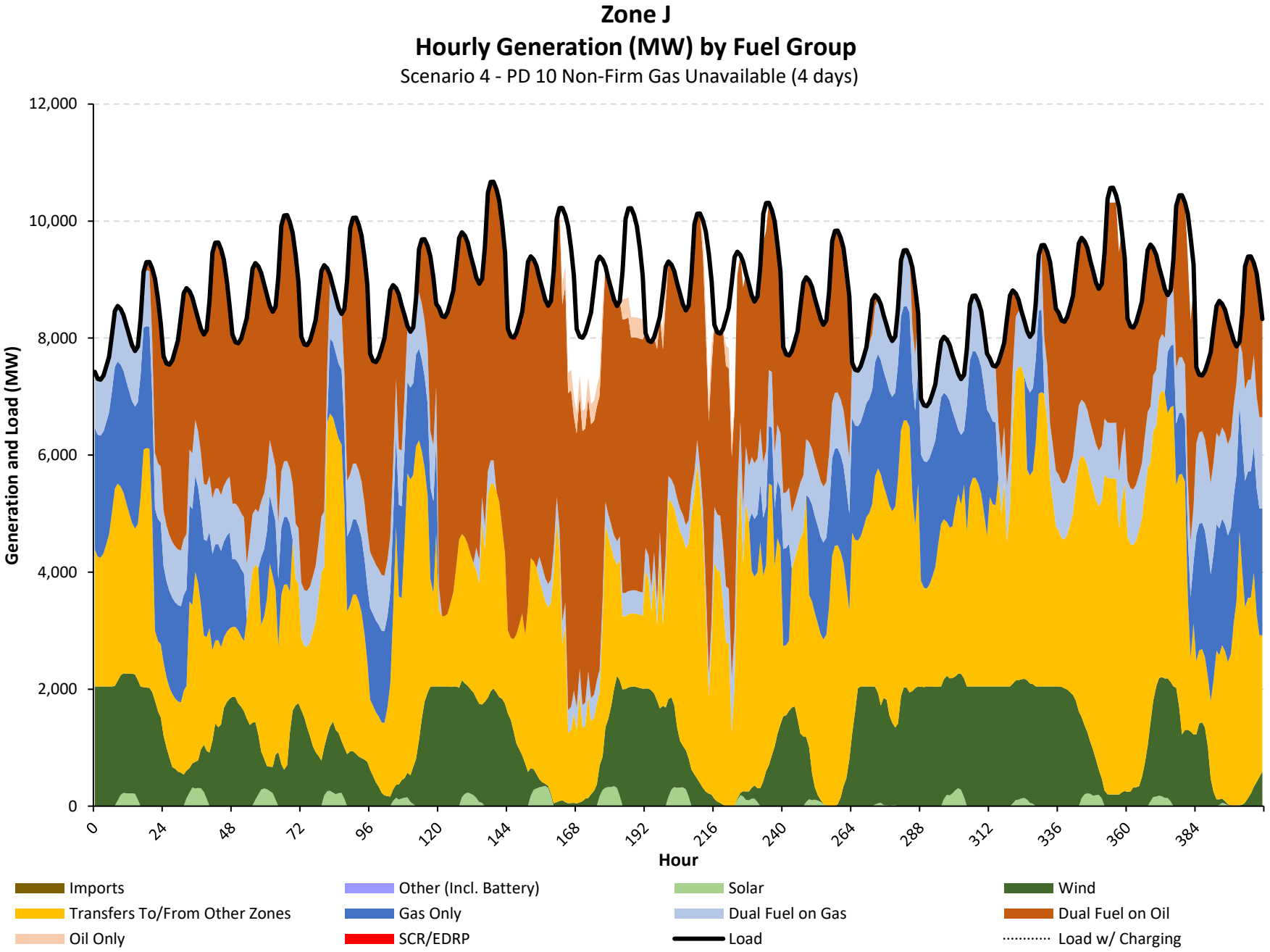




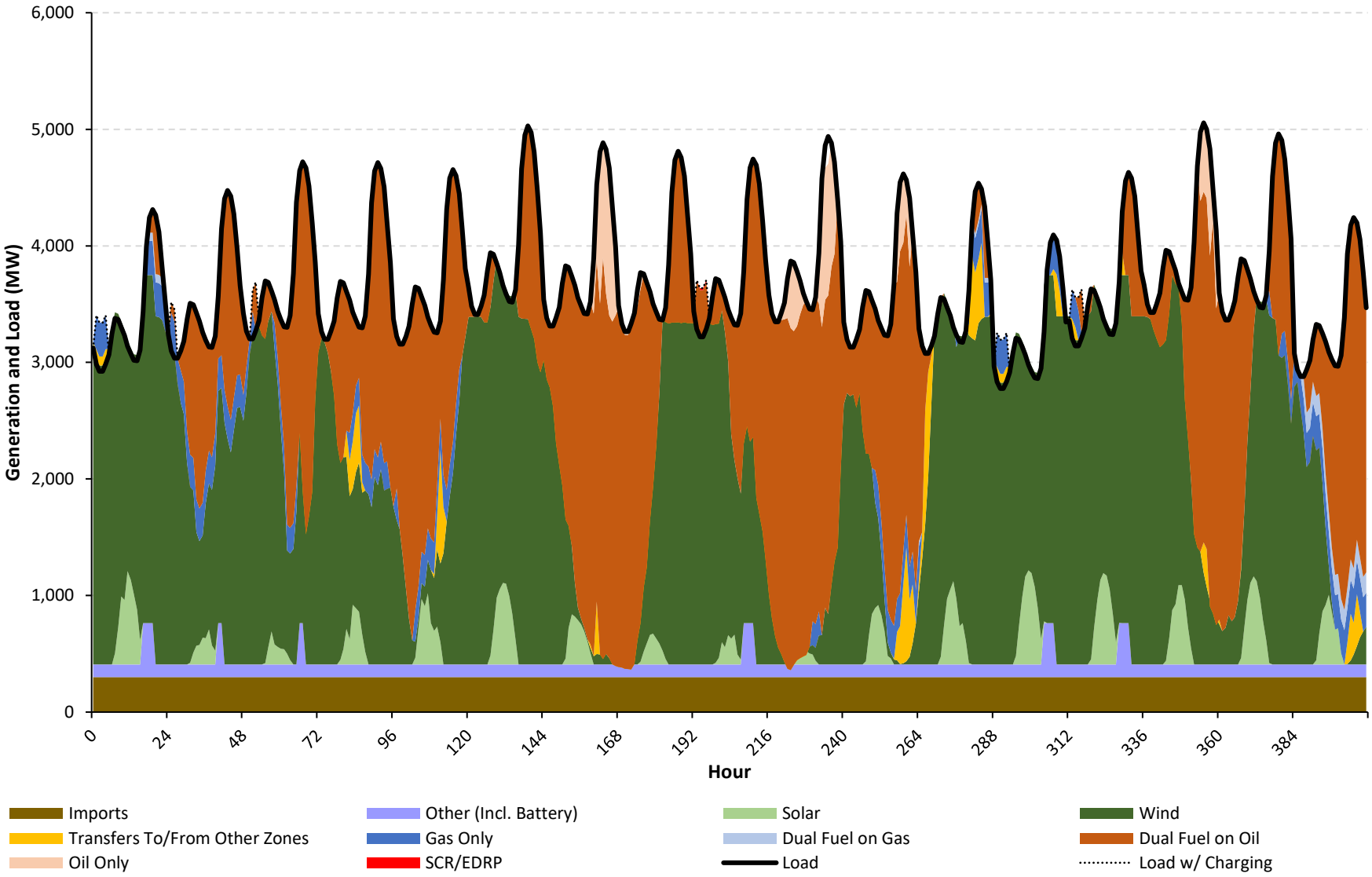





NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 4 - PD 10 Non-Firm Gas Unavailable (4 days)
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 4 - PD 10 Non-Firm Gas Unavailable (4 days)
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

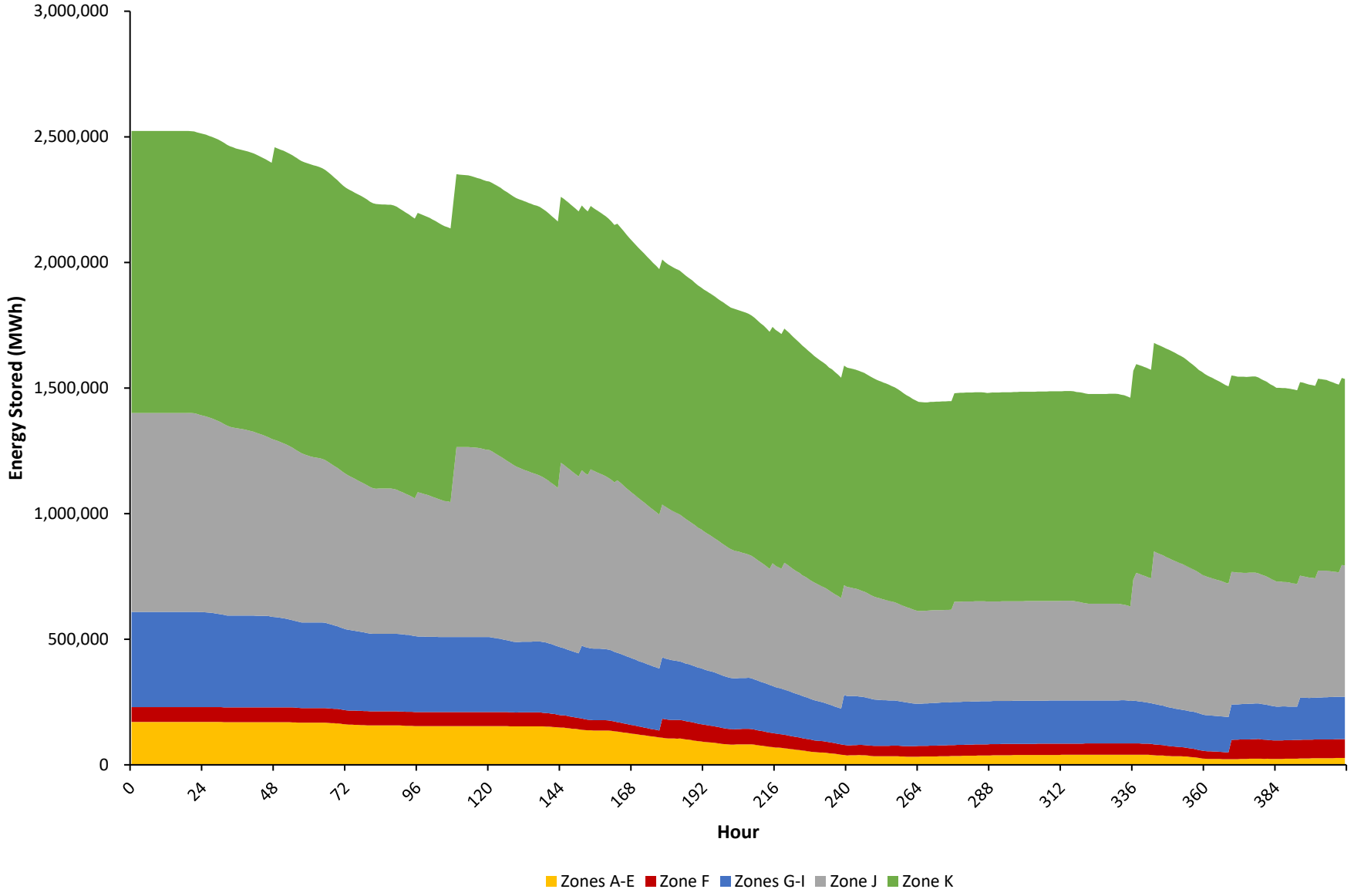
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 4 - PD 10 Non-Firm Gas Unavailable (4 days)



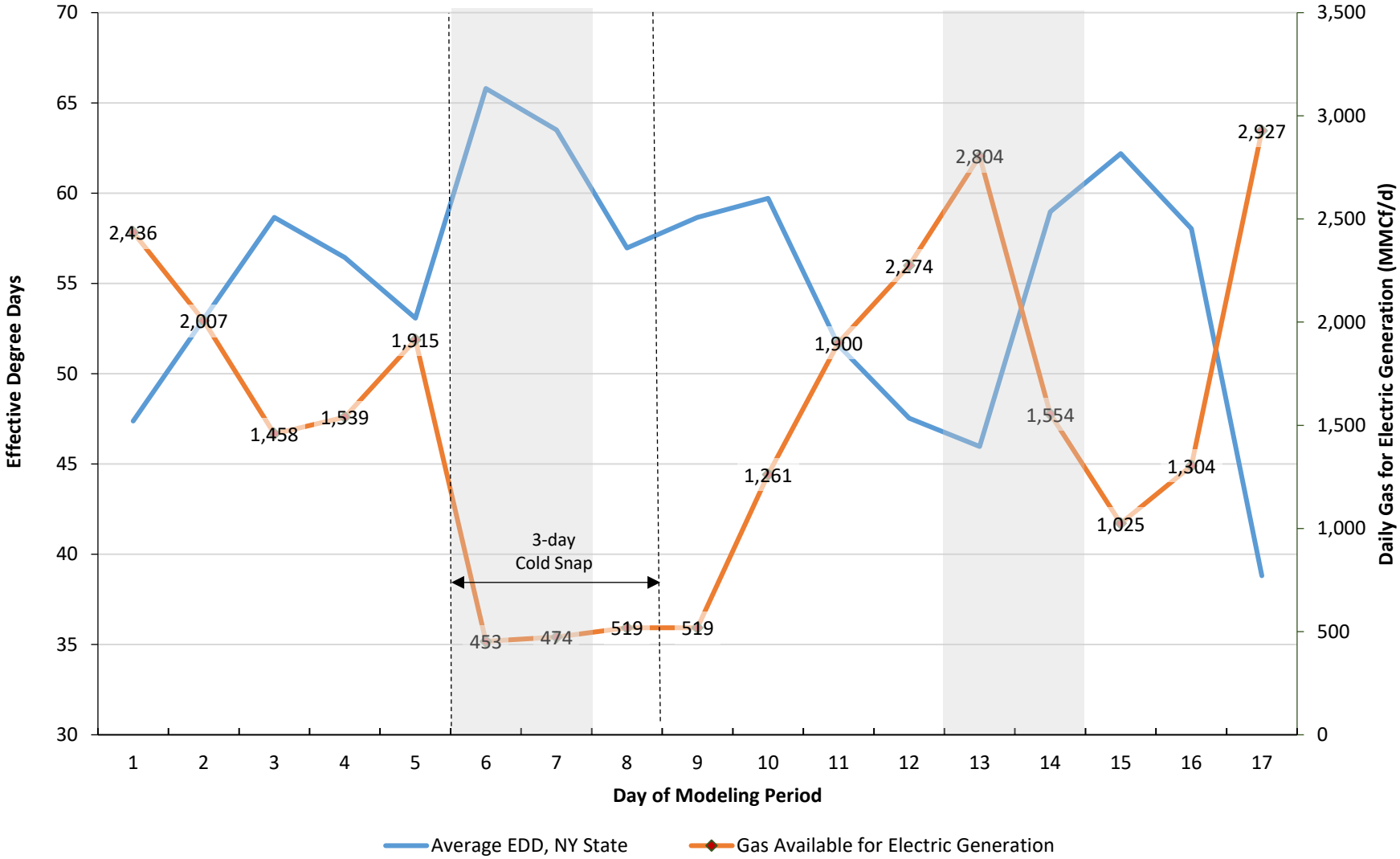
NYCA

Quantity of Stored Fuel for Oil and Dual Fuel Units

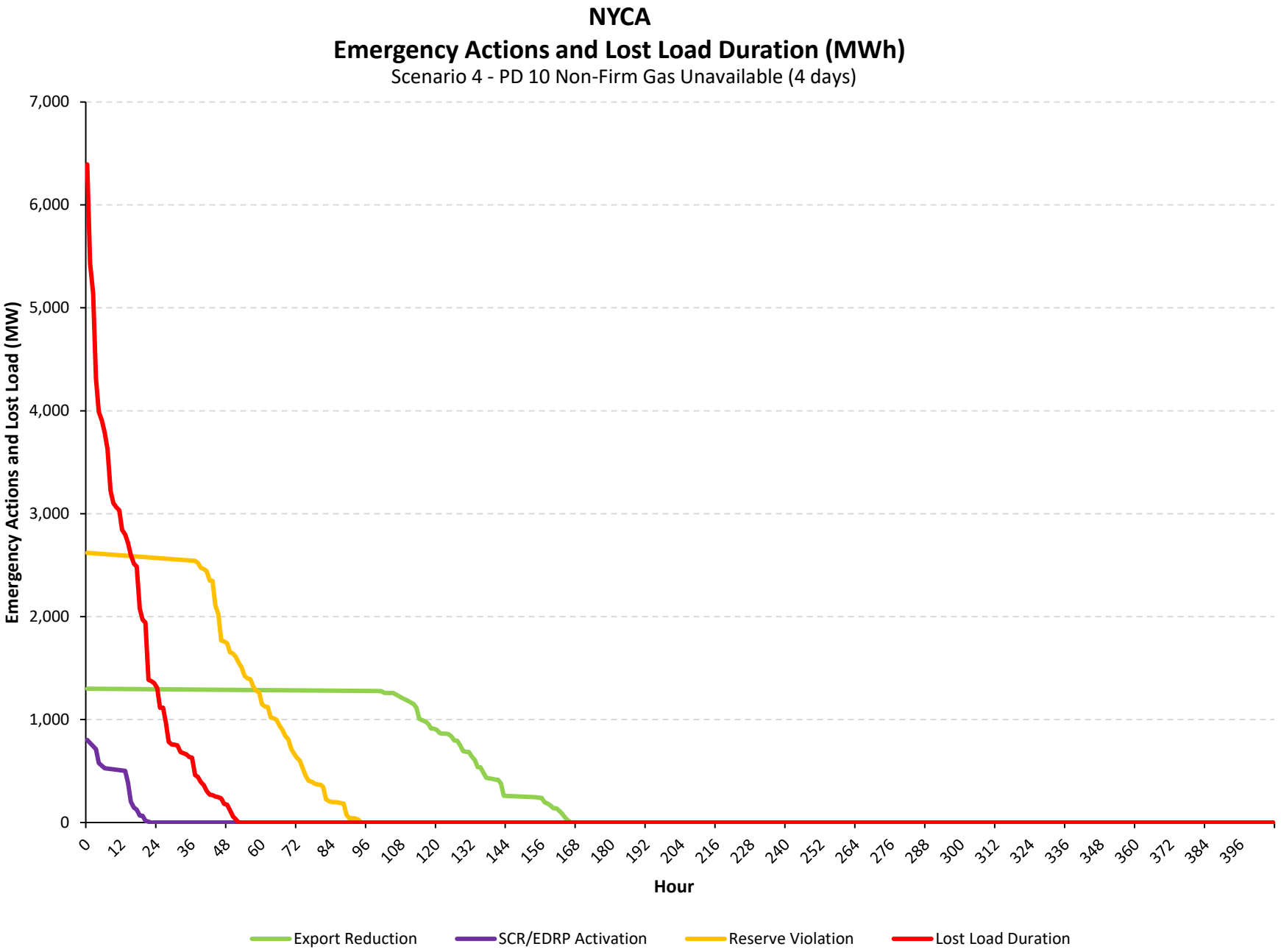
Scenario 4 - PD 10 Non-Firm Gas Unavailable (4 days)

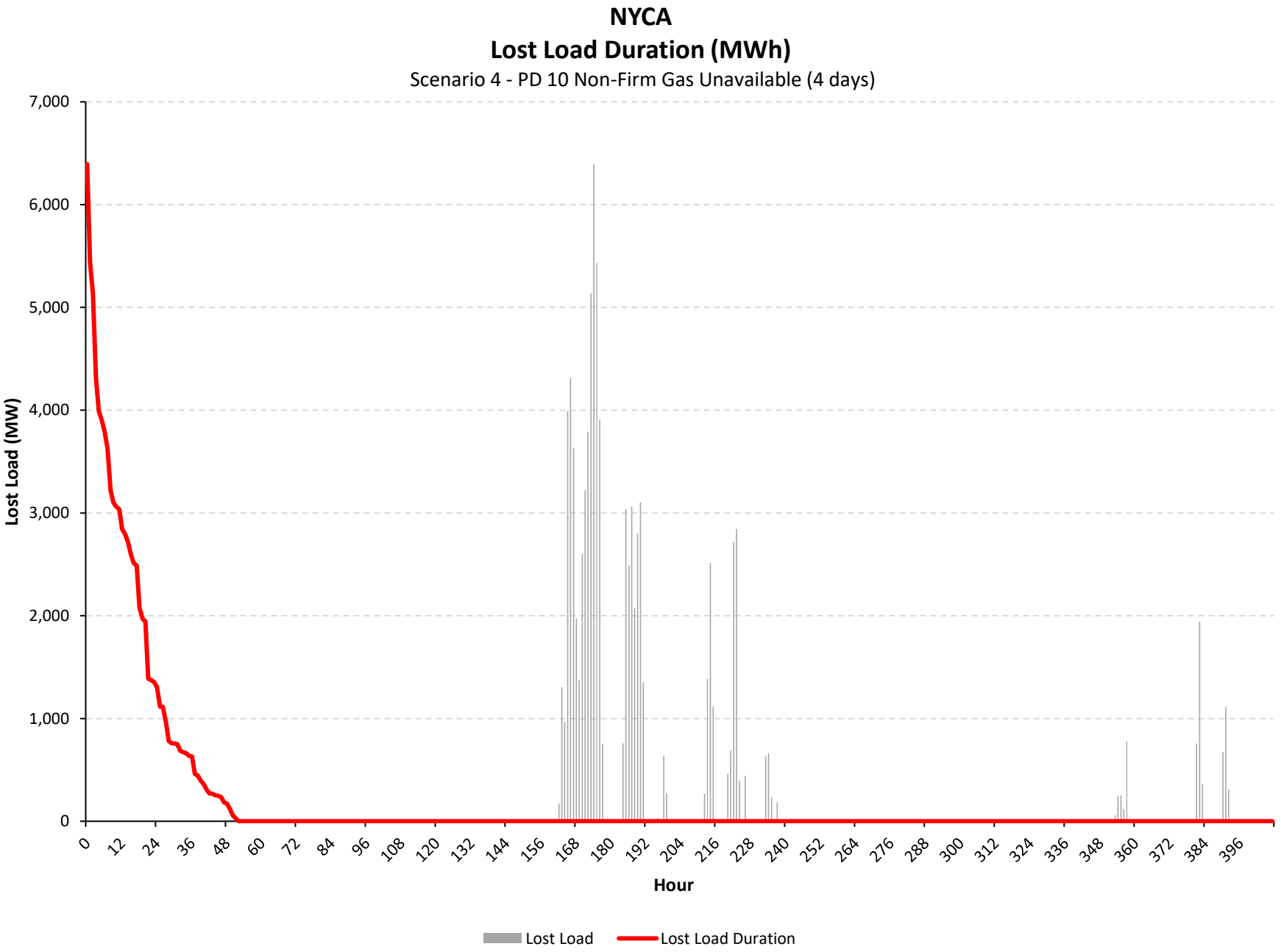


NYCA
Degree Days and Gas Available for Electric Generation 17-Day Modeling Period
Scenario 4 - PD 10 Non-Firm Gas Unavailable (4 days)



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 4 - PD 10 Non-Firm Gas Unavailable (4 days)
Emergency Actions and Lost Load (MW)
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 4 - PD 10 Non-Firm Gas Unavailable (4 days)
Lost Load (MW)
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

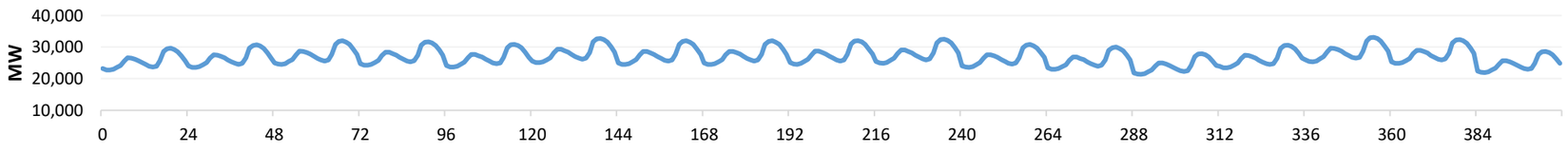
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 4 - PD 11 Combination Disruption (Winter 2030/2031)

Hourly Results Summary

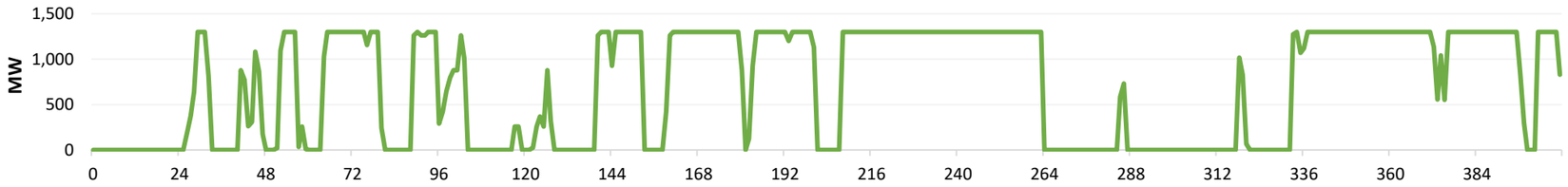
Case Name: Scenario 4 - PD 11 Combination Disruption

Load During Modeling Period



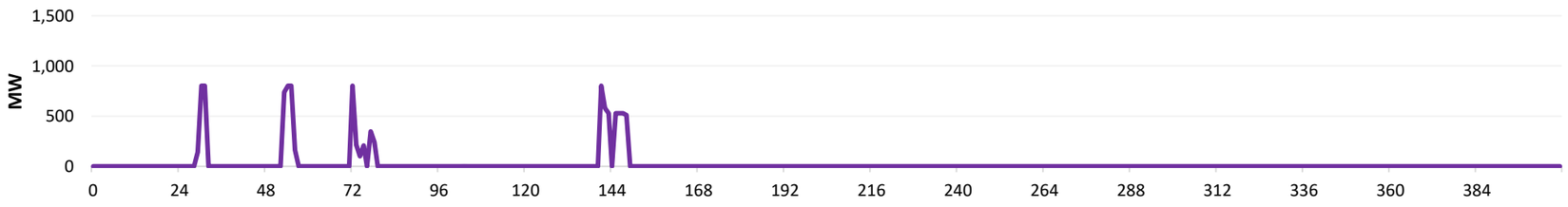
Case Summary	
Derate (EFORd) Increase:	High
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	Reduced
Loss of Gas Fired Gen.	Reduced
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

Export to ISO-NE Reduction During Modeling Period



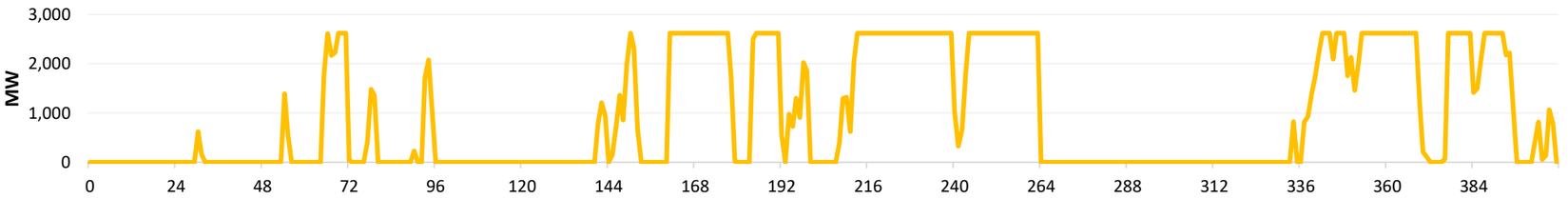
Export Reductions	
Total Hrs.	250
Total MWh	287,279
Avg. MW	704.1

SCR/EDRP Deployed During Modeling Period



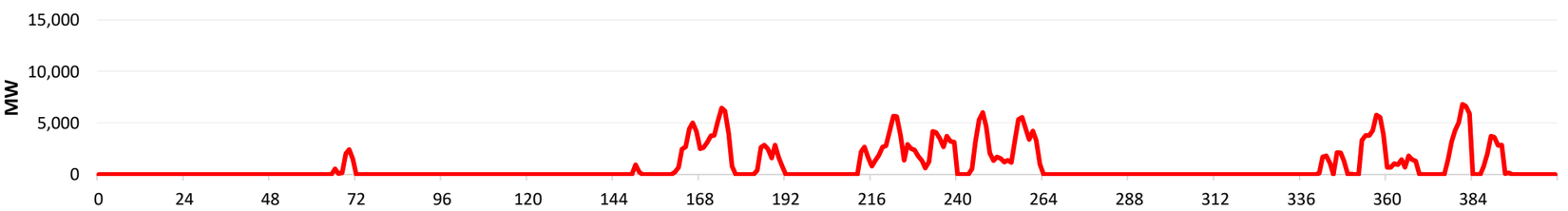
SCR Deployment	
Total Hrs.	20
Total MWh	10,158
Avg. MW	24.9

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	182
Total MWh	373,663
Avg. MW	915.8
First Hour with Viol.	30

Loss of Load During Modeling Period



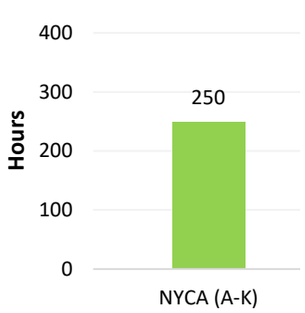
Loss of Load	
Total Hrs.	121
Total MWh	315,874
Avg. MW	774.2
First Hour with Losses	66

Full Period Results Summary

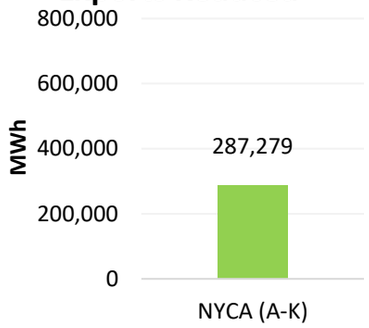
Case Name: Scenario 4 - PD 11 Combination Disruption

Case Summary	
Derate (EFORd) Increase:	High
Starting Storage:	High
Renewables:	Base Case
Refill Contingency:	Reduced
Loss of Gas Fired Gen.	Reduced
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

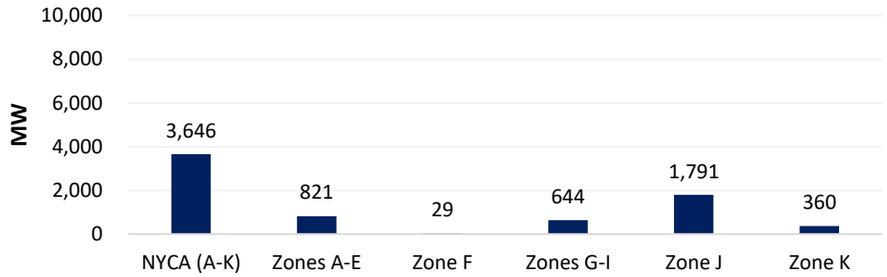
Hours Exports Reduced



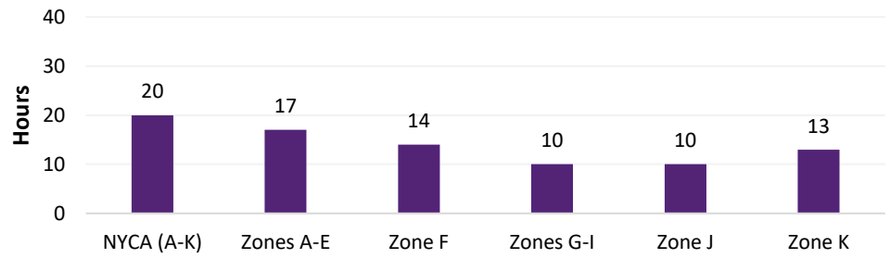
Total MWh of Exports Reduced



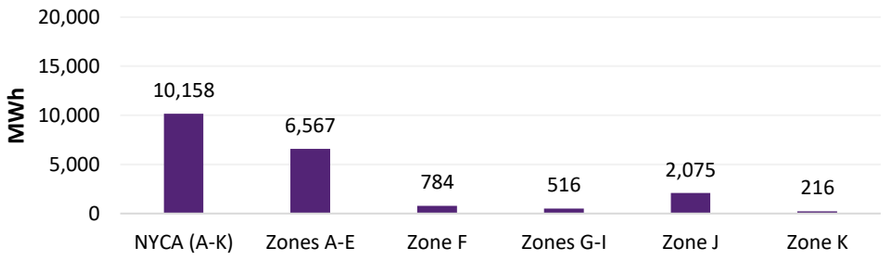
Average Capacity Not Available Due to Exhausted Fuel Inventory



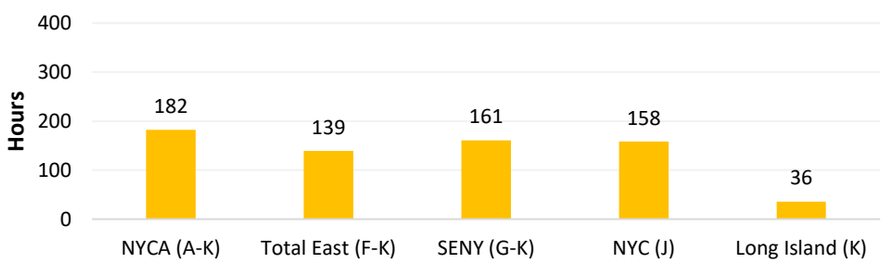
Hours SCR/EDRP Deployed



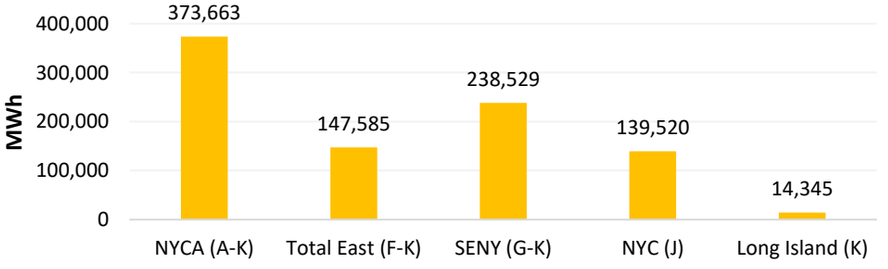
Total MWh SCR/EDRP Deployed



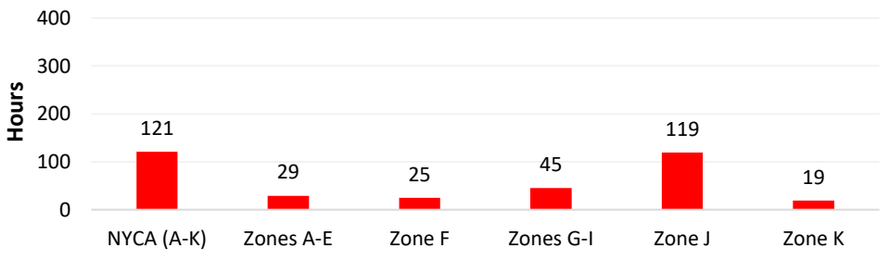
Hours with Reserve Violations



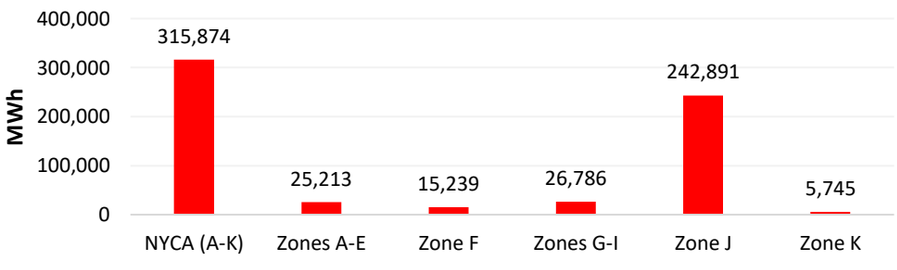
Total MWh of Reserve Violations

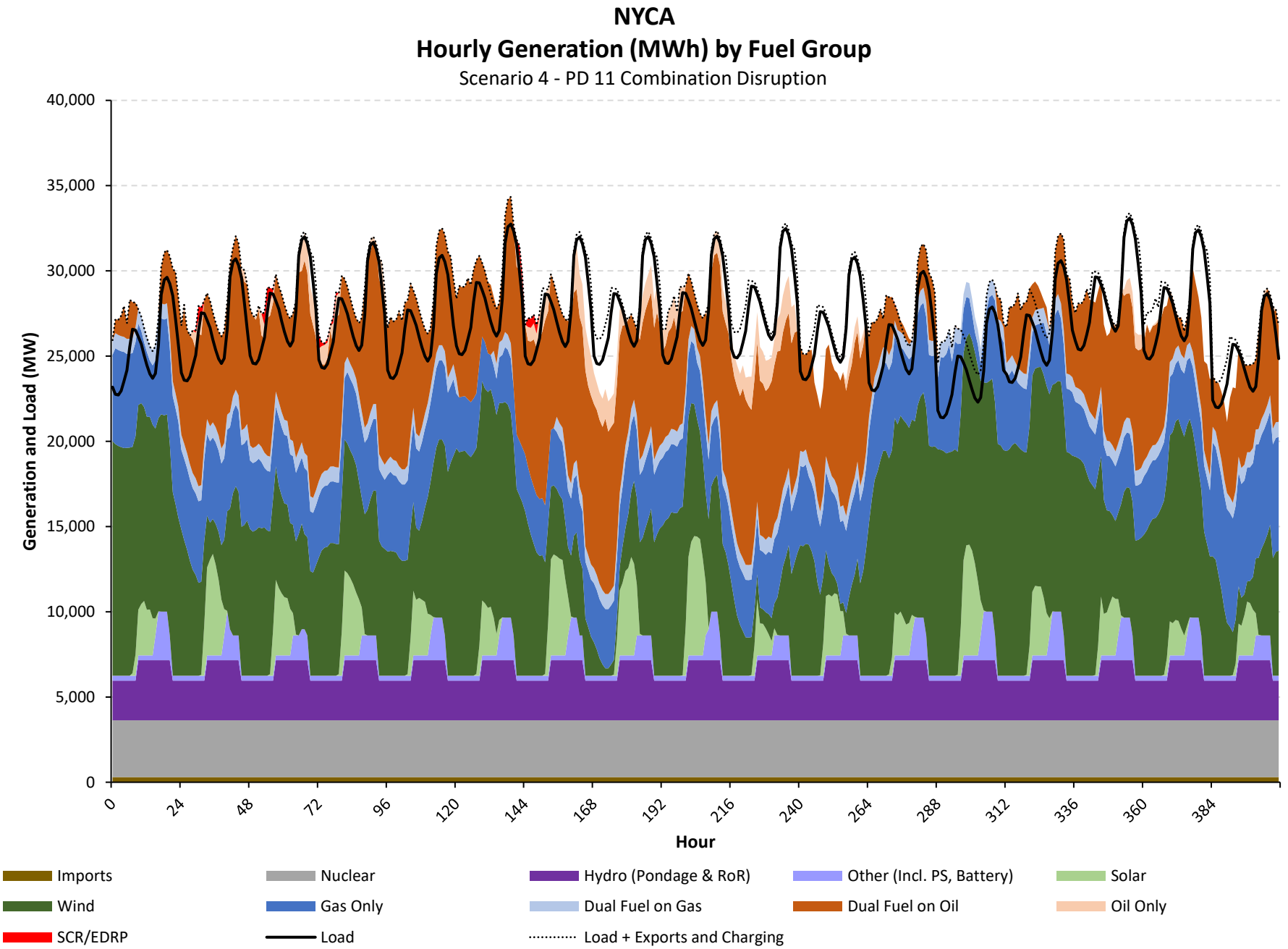


Hours with Loss of Load

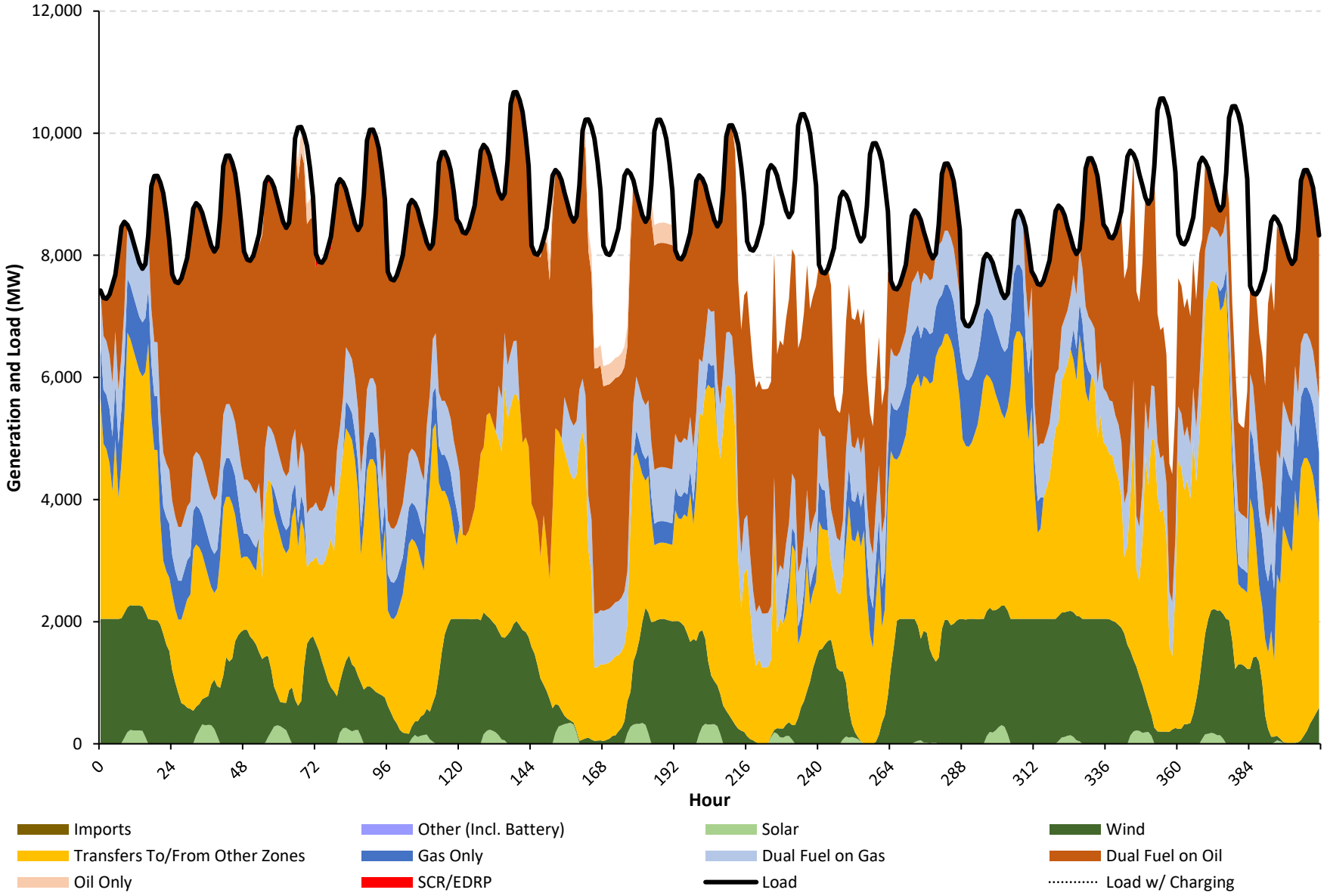


Total MWh of Lost Load

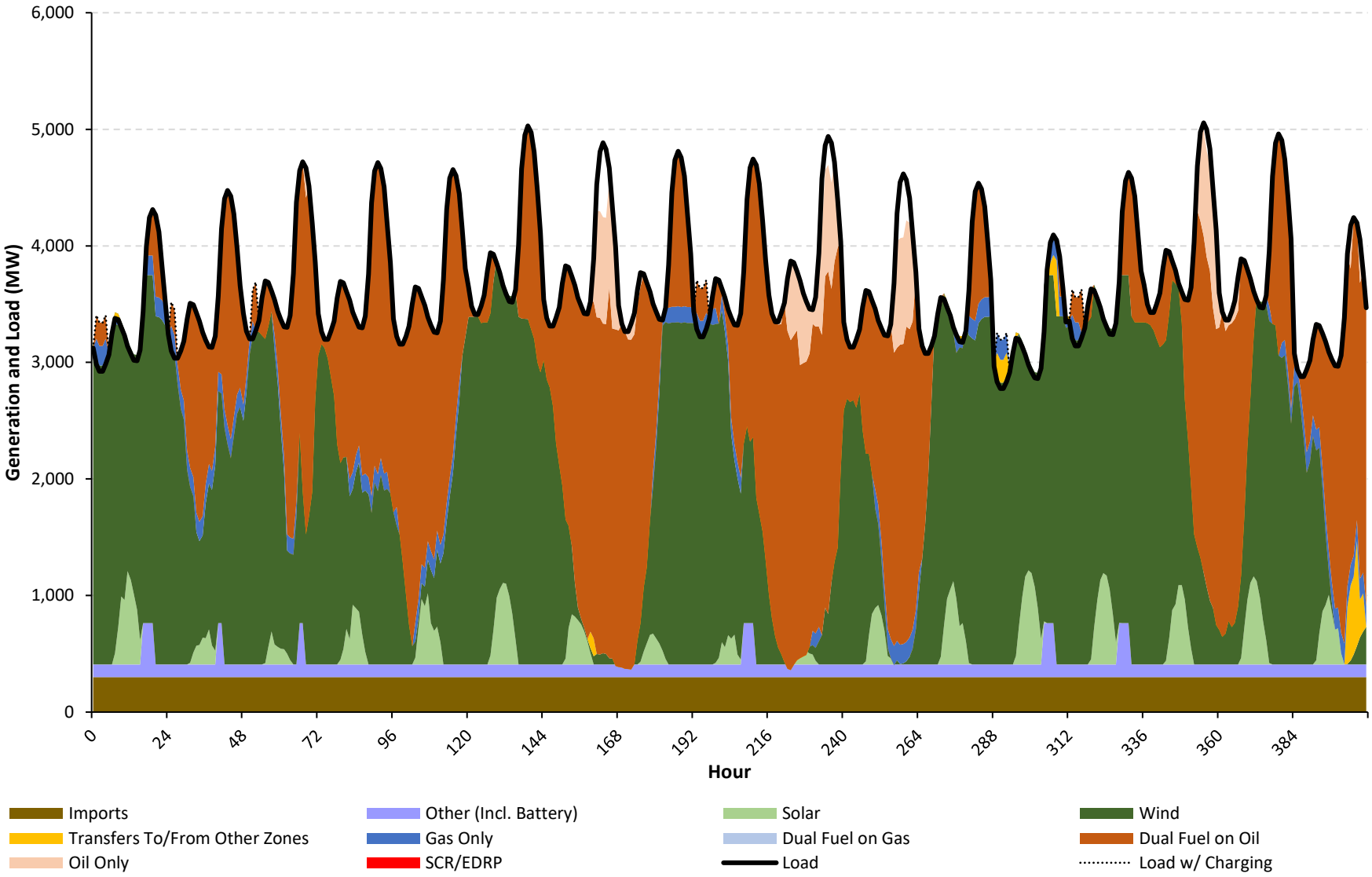



NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 4 - PD 11 Combination Disruption
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

Zone J
Hourly Generation (MW) by Fuel Group
Scenario 4 - PD 11 Combination Disruption



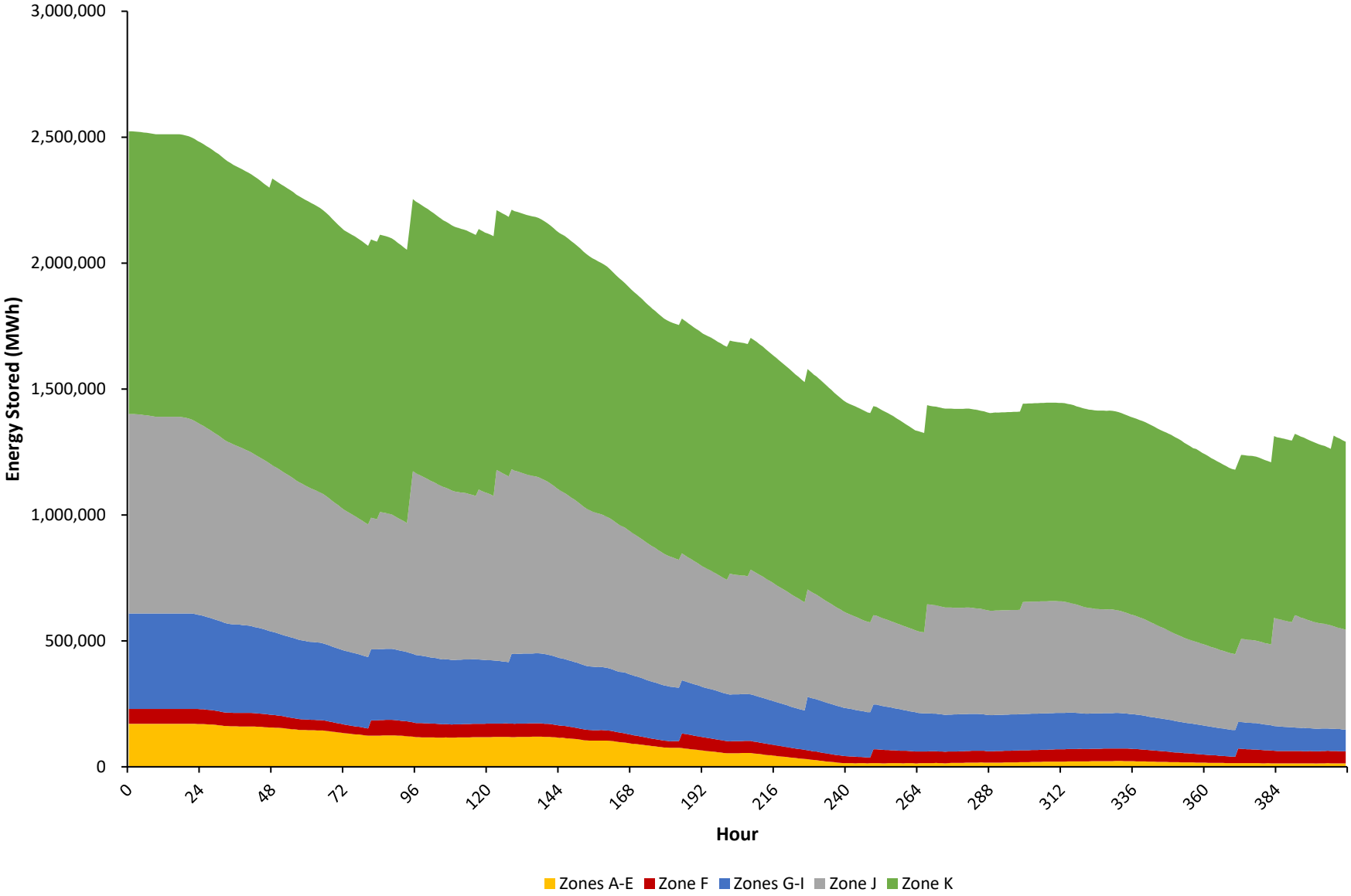
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 4 - PD 11 Combination Disruption

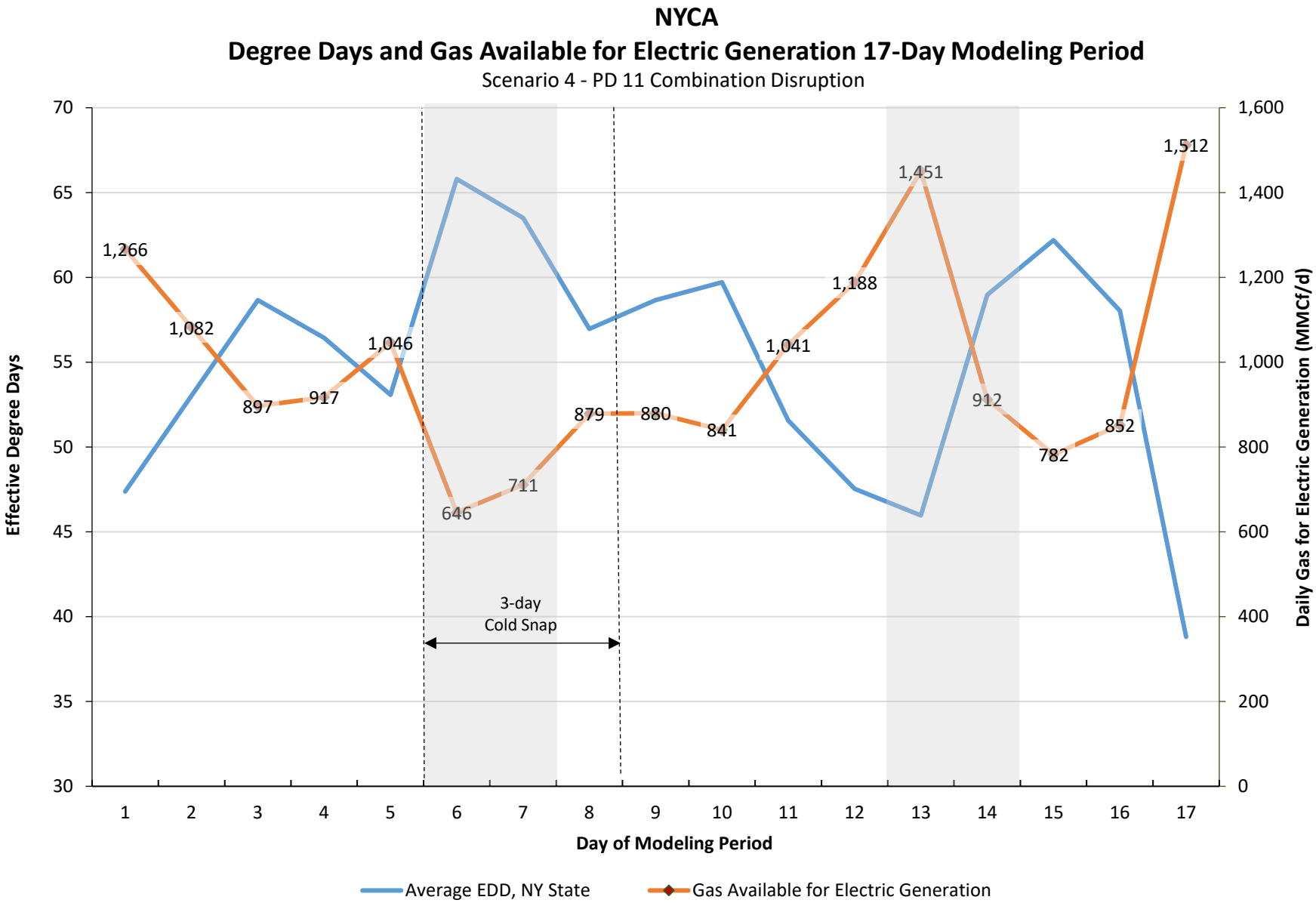


NYCA

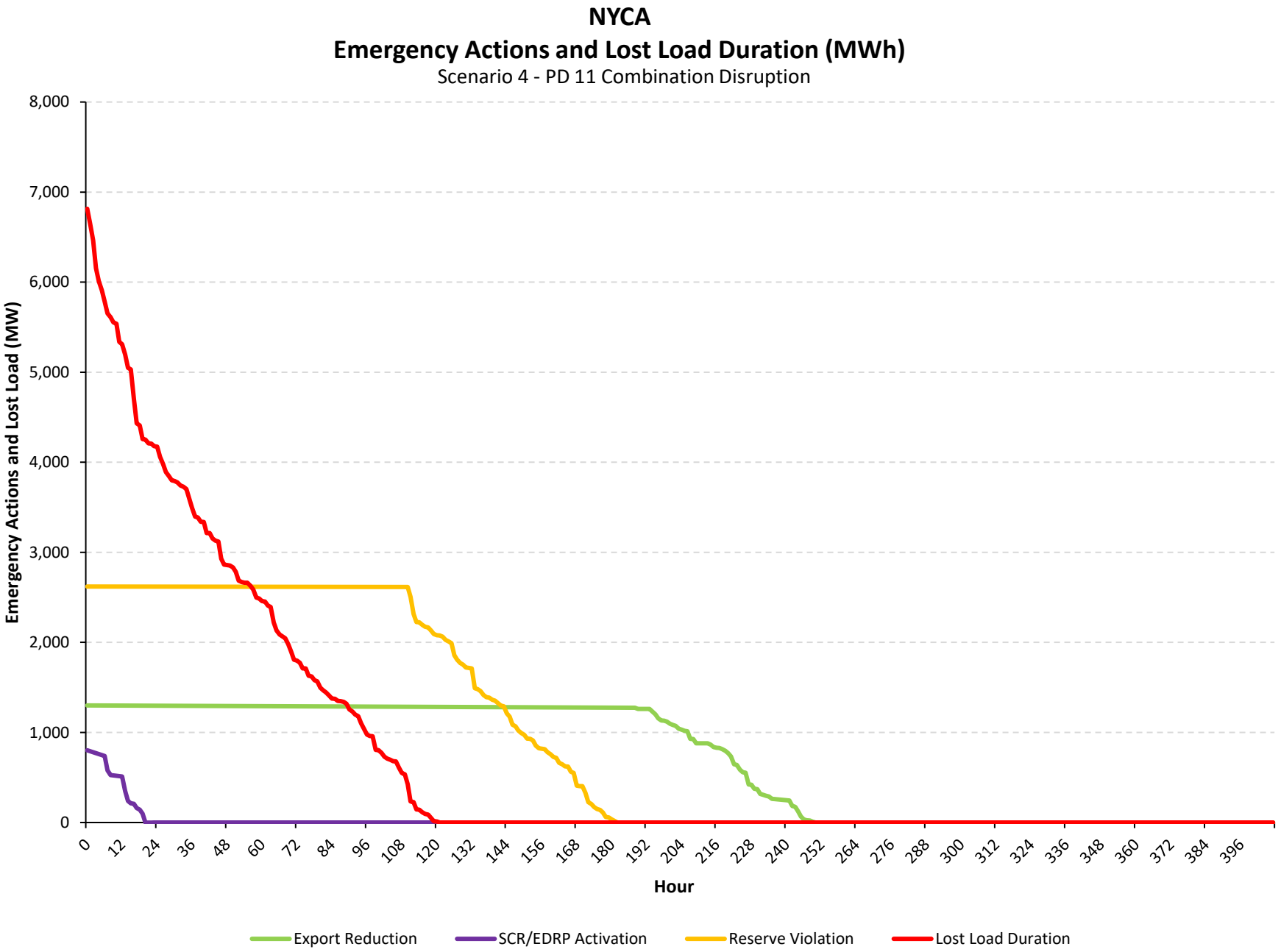
Quantity of Stored Fuel for Oil and Dual Fuel Units

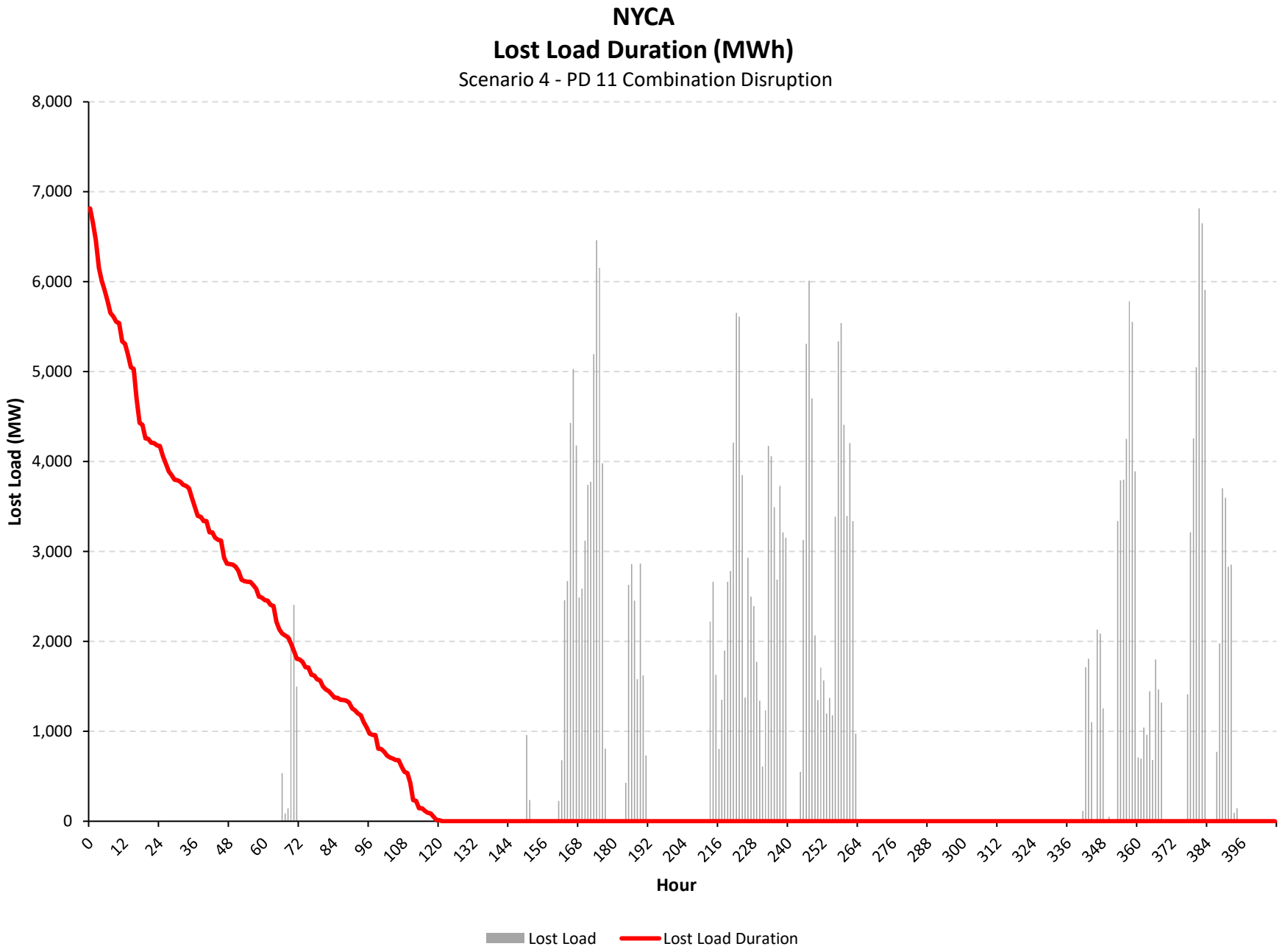
Scenario 4 - PD 11 Combination Disruption





Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 4 - PD 11 Combination Disruption
Emergency Actions and Lost Load (MW)
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 4 - PD 11 Combination Disruption
Lost Load (MW)
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

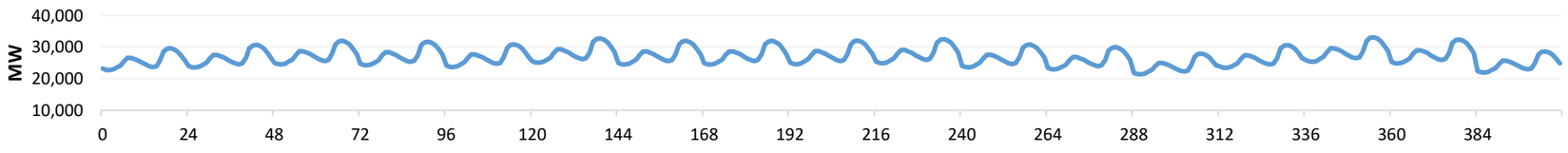
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 5 - PD 1 No Disruptions (Winter 2030/2031)

Hourly Results Summary

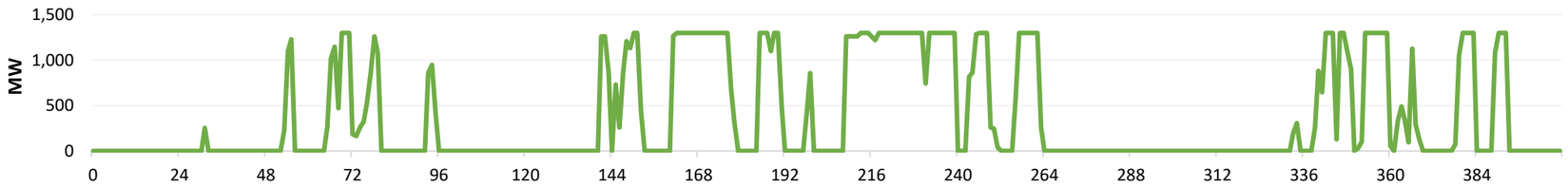
Case Name: Scenario 5 - PD 1 No Disruptions

Load During Modeling Period



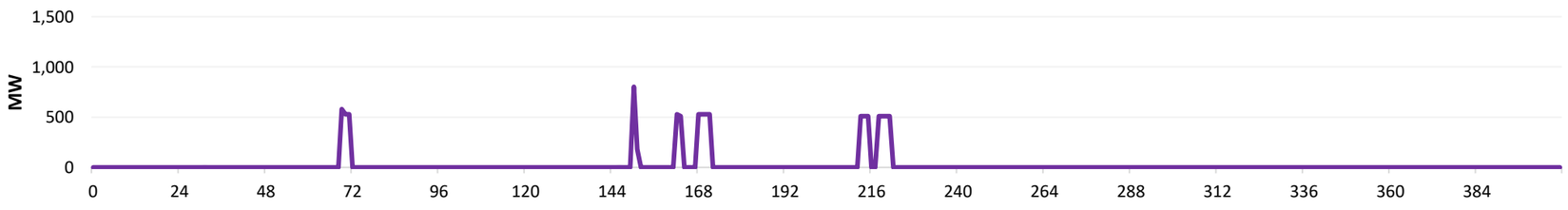
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



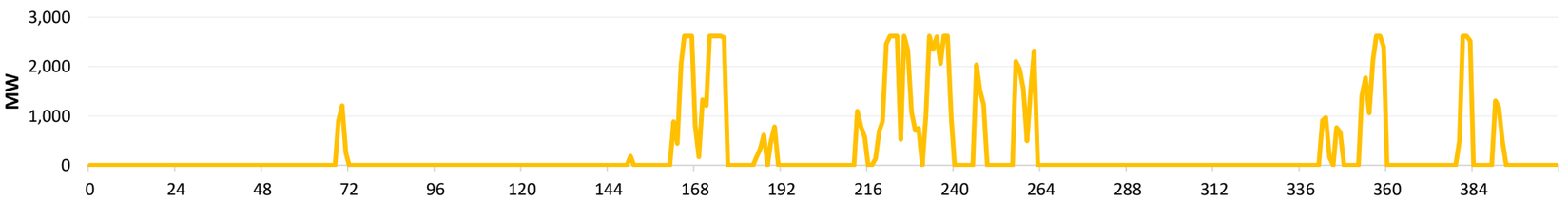
Export Reductions	
Total Hrs.	148
Total MWh	148,122
Avg. MW	363.0

SCR/EDRP Deployed During Modeling Period



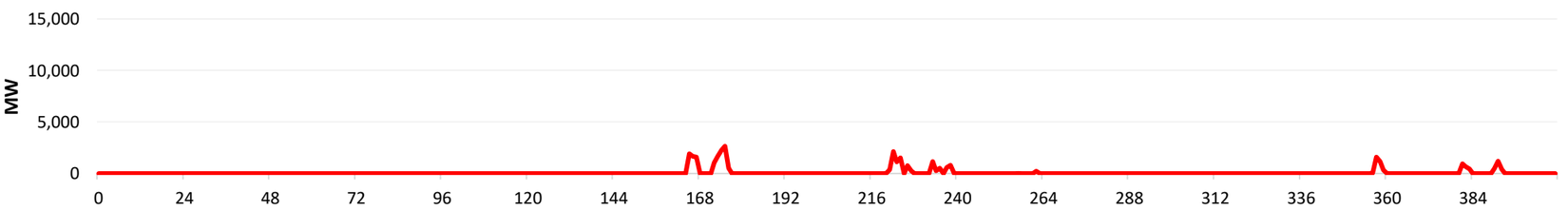
SCR Deployment	
Total Hrs.	18
Total MWh	9,330
Avg. MW	22.9

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	76
Total MWh	115,444
Avg. MW	283.0
First Hour with Viol.	69

Loss of Load During Modeling Period



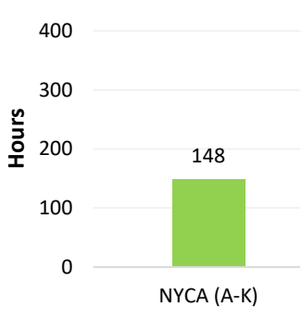
Loss of Load	
Total Hrs.	31
Total MWh	30,507
Avg. MW	74.8
First Hour with Losses	165

Full Period Results Summary

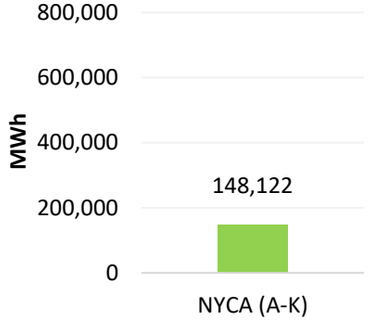
Case Name: Scenario 5 - PD 1 No Disruptions

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

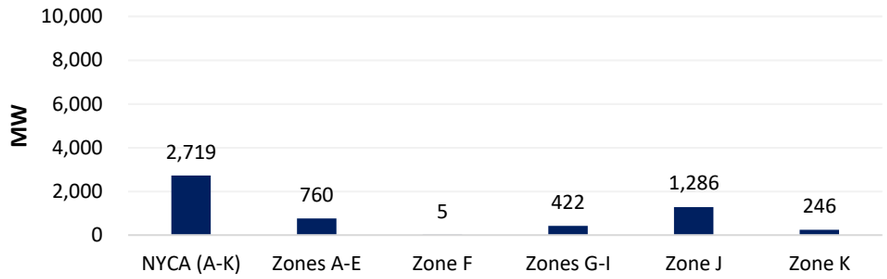
Hours Exports Reduced



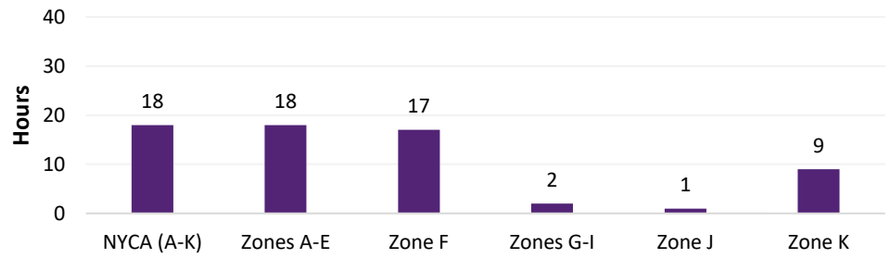
Total MWh of Exports Reduced



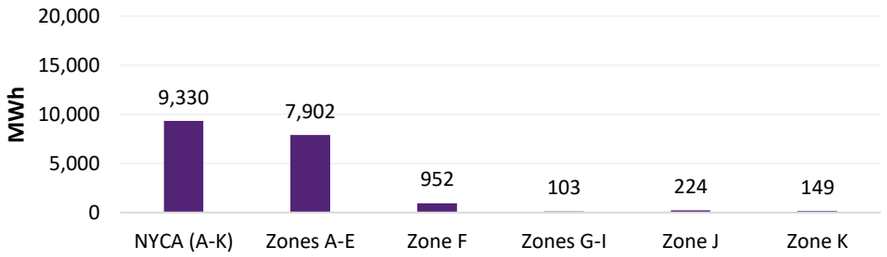
Average Capacity Not Available Due to Exhausted Fuel Inventory



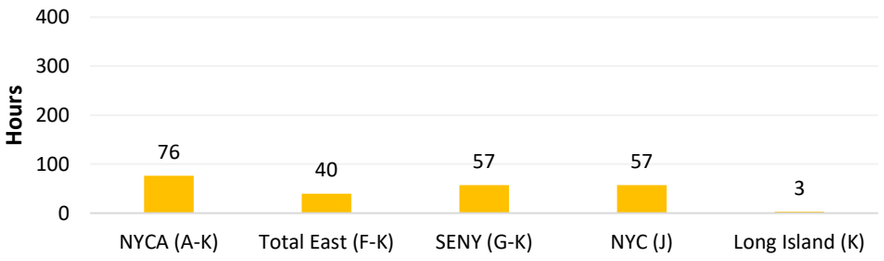
Hours SCR/EDRP Deployed



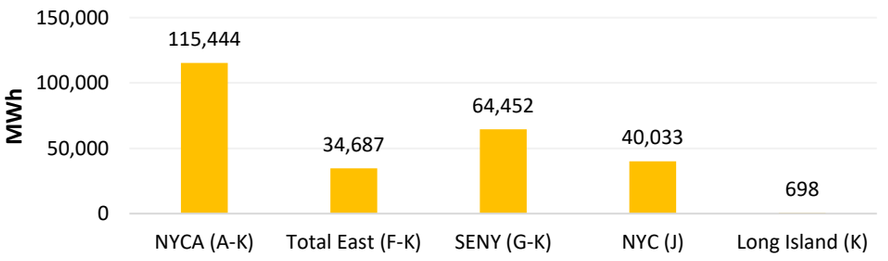
Total MWh SCR/EDRP Deployed



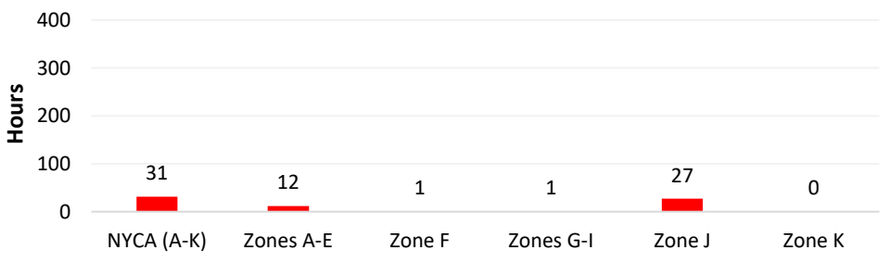
Hours with Reserve Violations



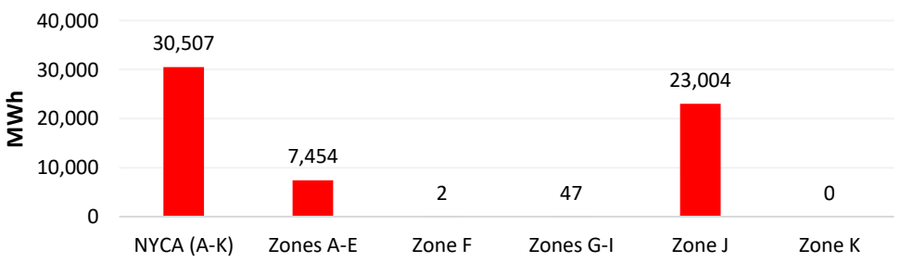
Total MWh of Reserve Violations

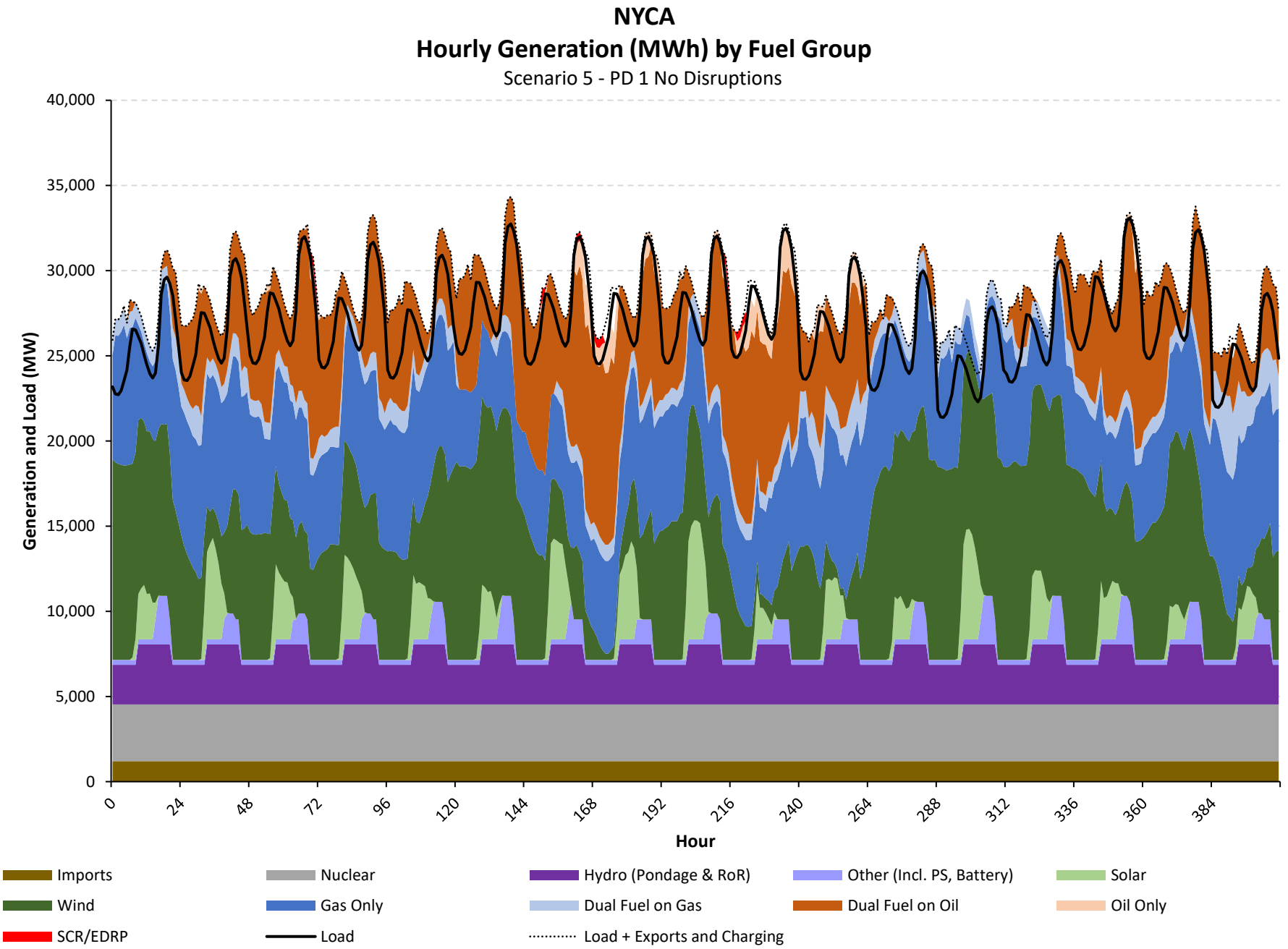


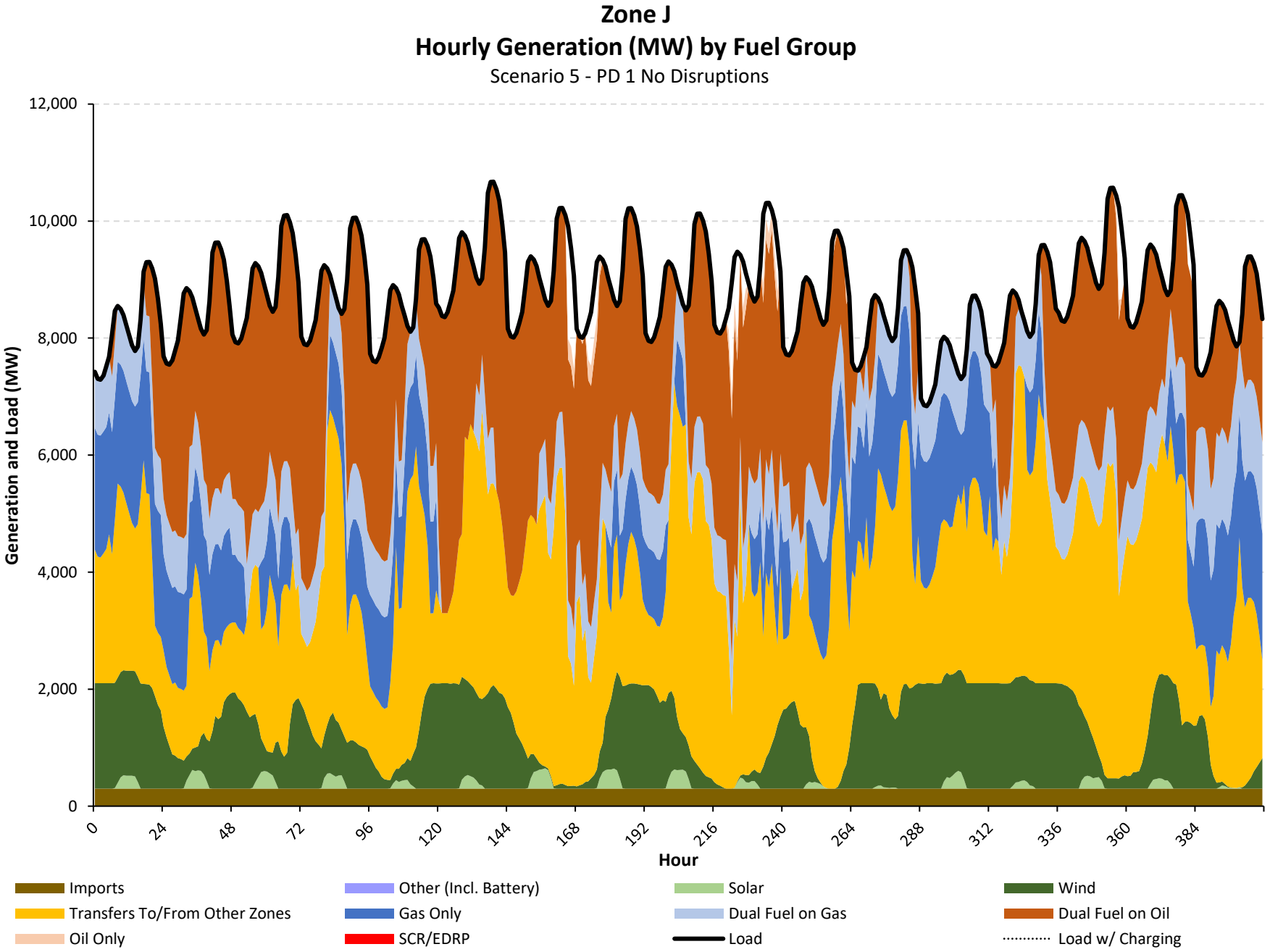
Hours with Loss of Load



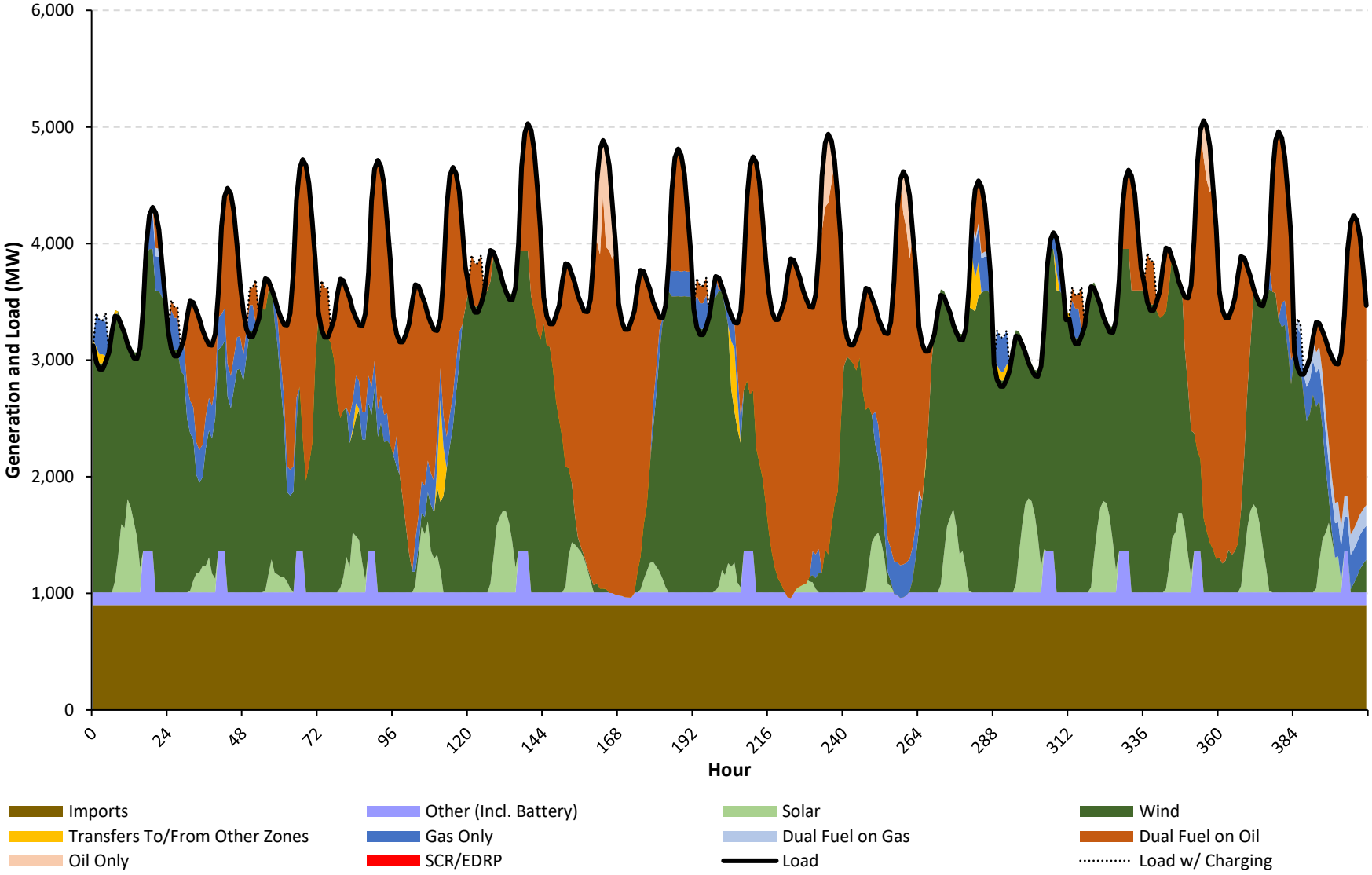
Total MWh of Lost Load

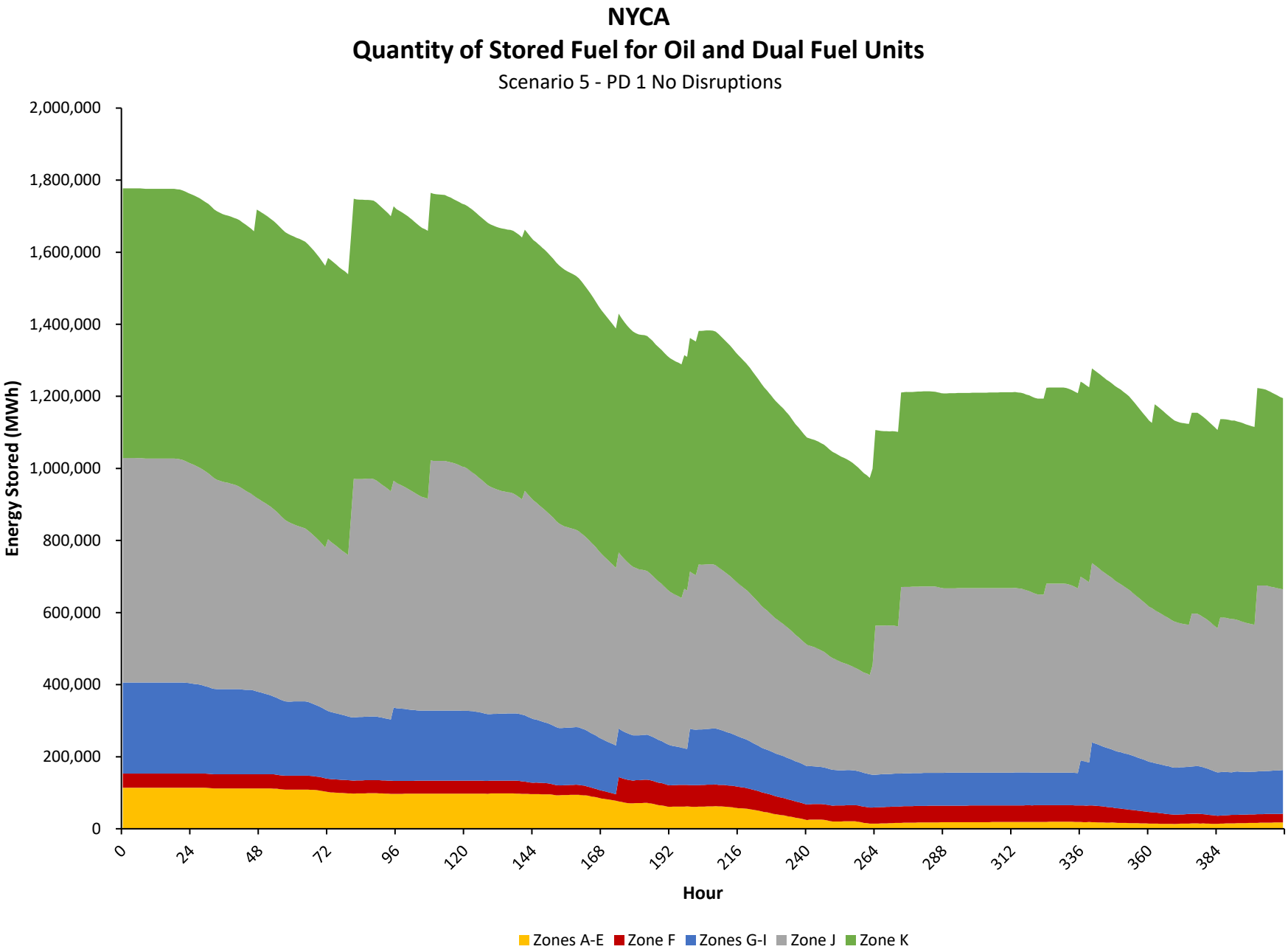


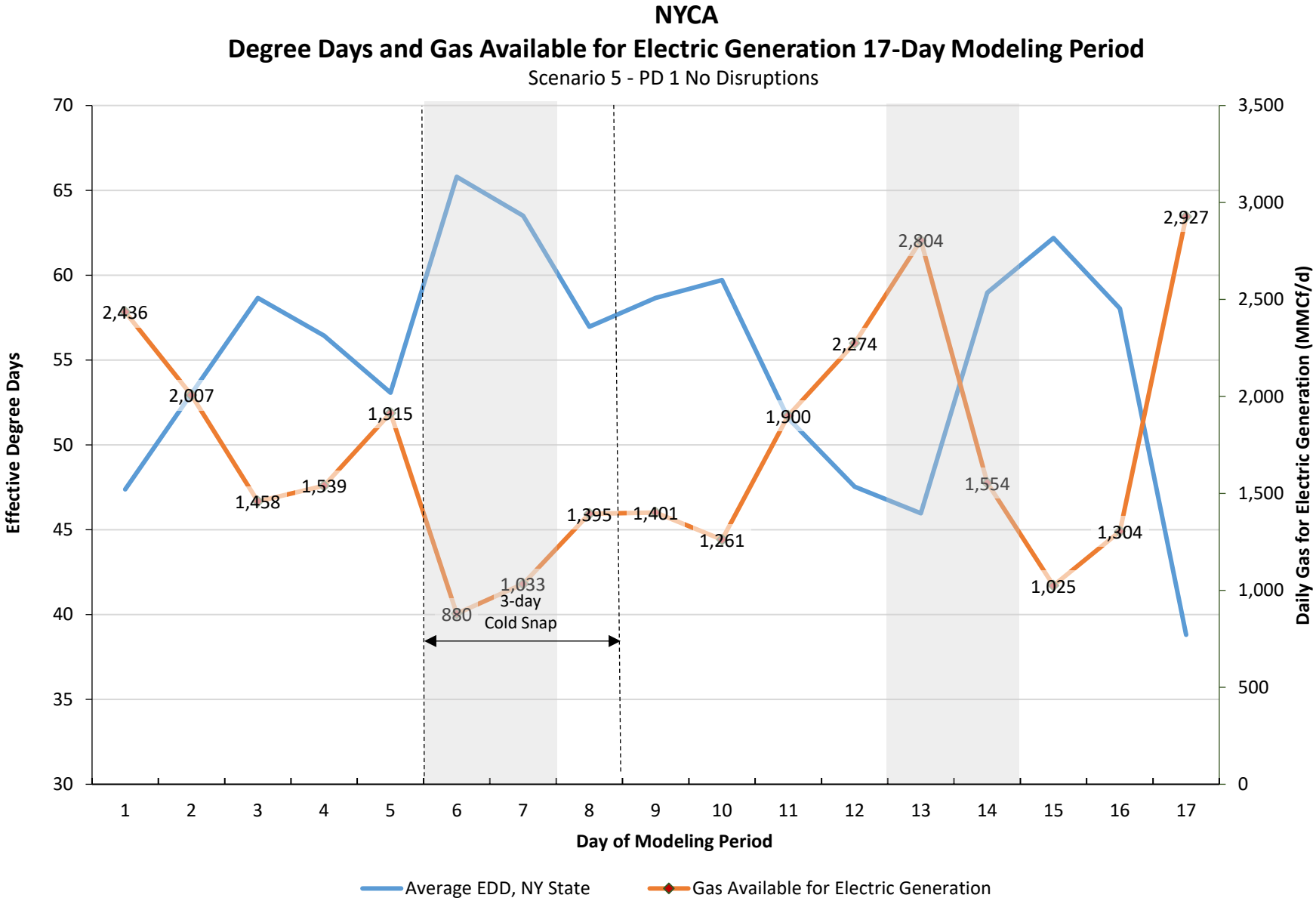

NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 5 - PD 1 No Disruptions
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 5 - PD 1 No Disruptions
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

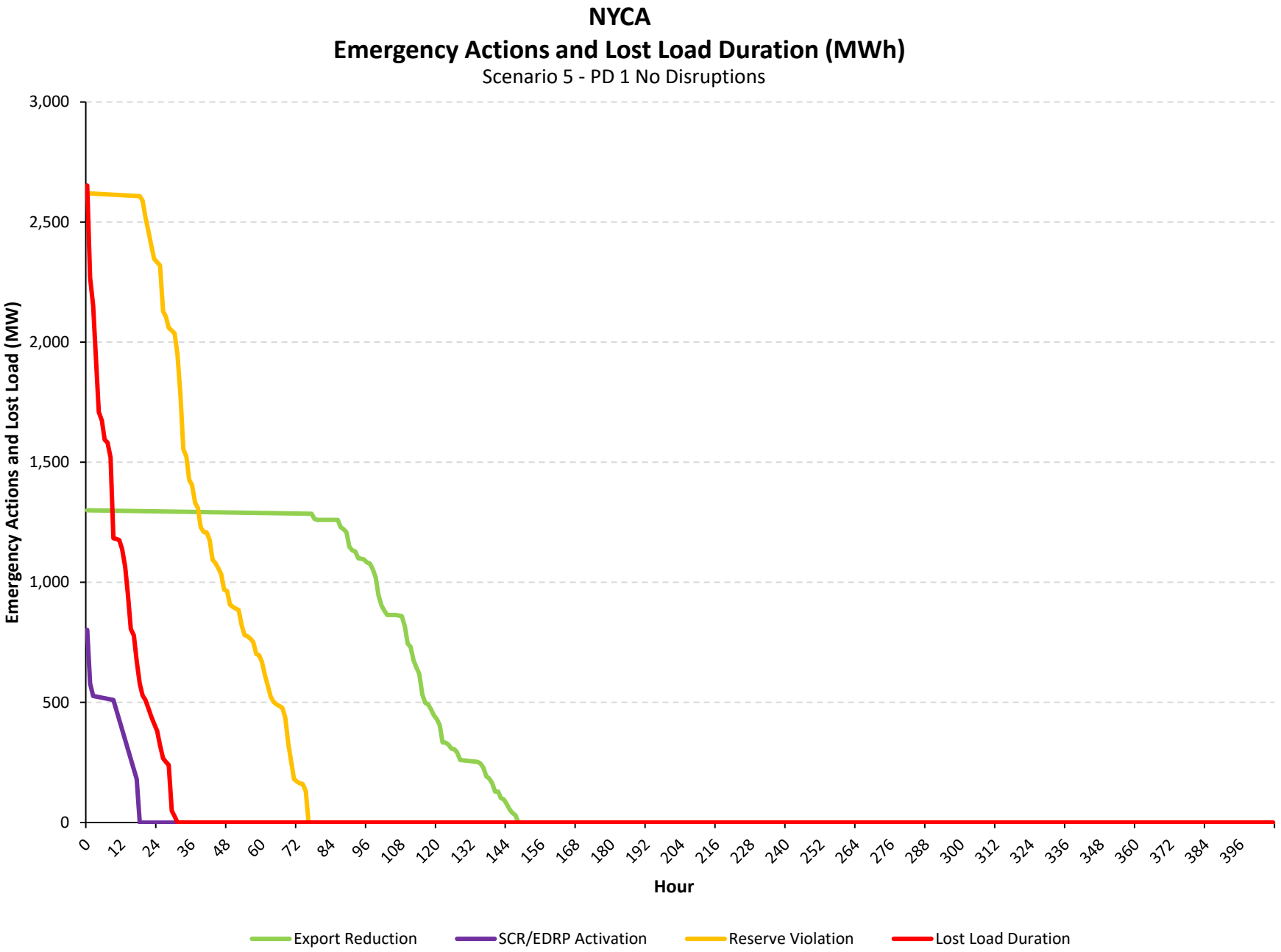
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 5 - PD 1 No Disruptions

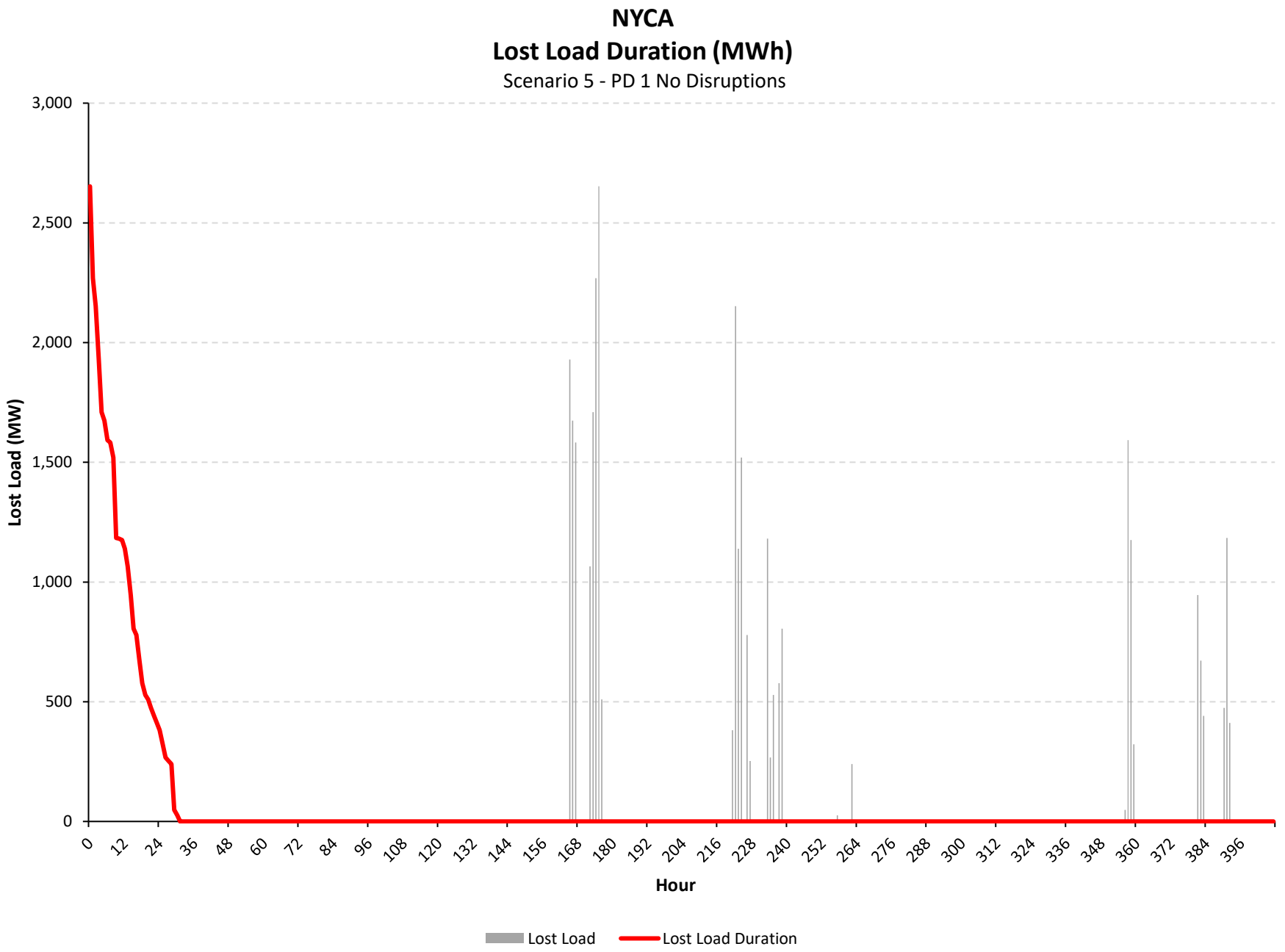



NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 5 - PD 1 No Disruptions
Energy Stored (MWh)
2,000,000
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Zones A-E
Zone F
Zones G-I
Zone J
Zone K



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 5 - PD 1 No Disruptions
Emergency Actions and Lost Load (MW)
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 5 - PD 1 No Disruptions
Lost Load (MW)
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

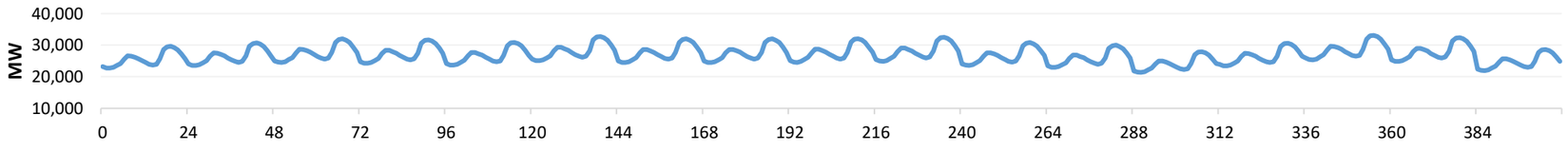
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 5 - PD 2 High Outage (Winter 2030/2031)

Hourly Results Summary

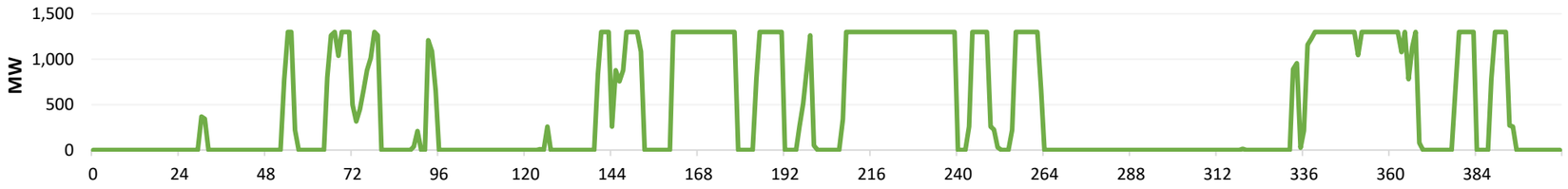
Case Name: Scenario 5 - PD 2 High Outage

Load During Modeling Period



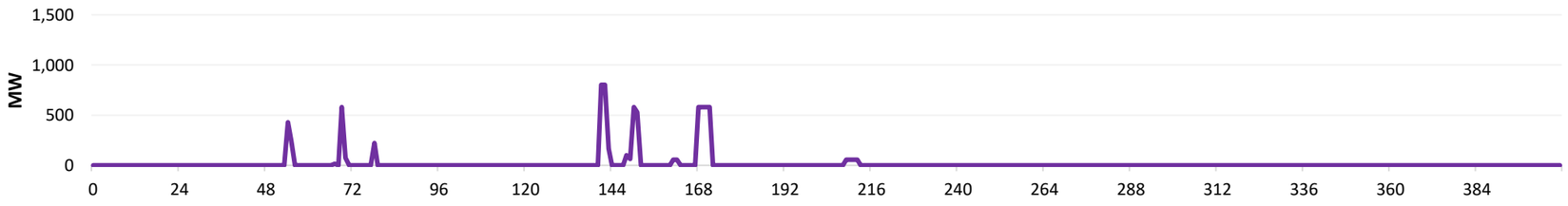
Case Summary	
Derate (EFORd) Increase:	High
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



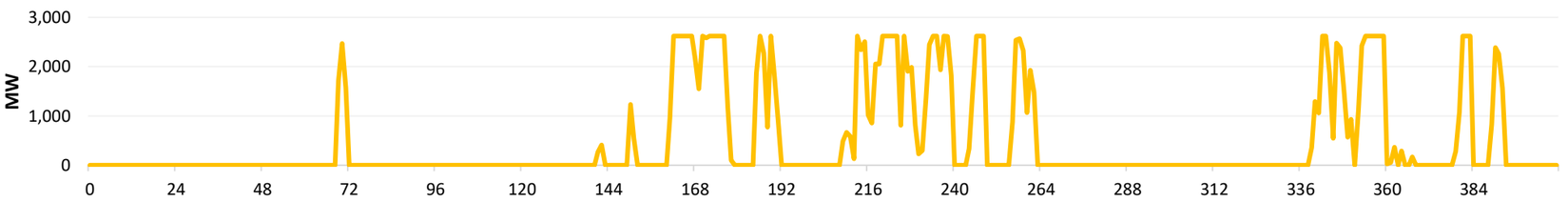
Export Reductions	
Total Hrs.	172
Total MWh	185,170
Avg. MW	453.8

SCR/EDRP Deployed During Modeling Period



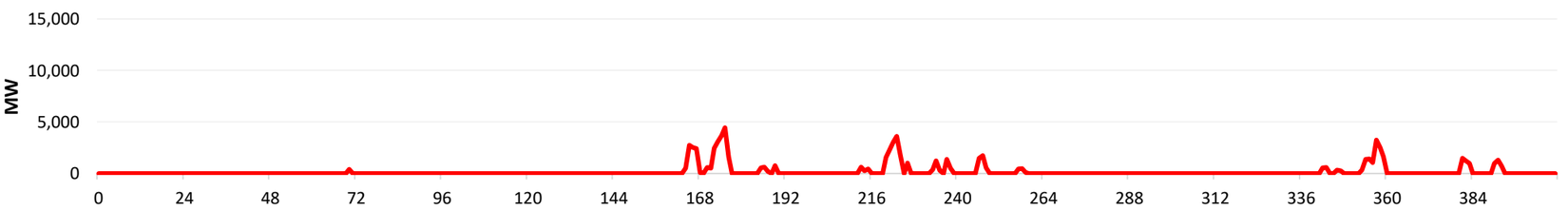
SCR Deployment	
Total Hrs.	23
Total MWh	7,246
Avg. MW	17.8

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	109
Total MWh	193,212
Avg. MW	473.6
First Hour with Viol.	69

Loss of Load During Modeling Period



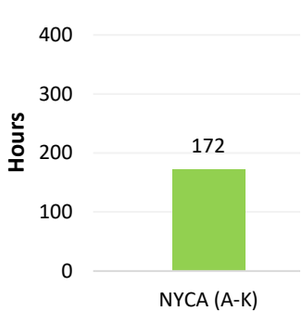
Loss of Load	
Total Hrs.	54
Total MWh	70,505
Avg. MW	172.8
First Hour with Losses	70

Full Period Results Summary

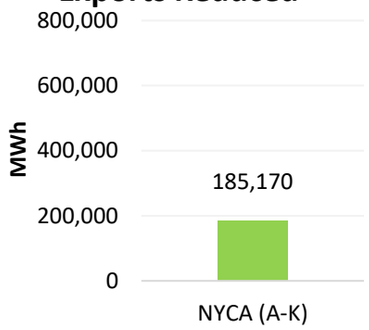
Case Name: Scenario 5 - PD 2 High Outage

Case Summary	
Derate (EFORd) Increase:	High
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

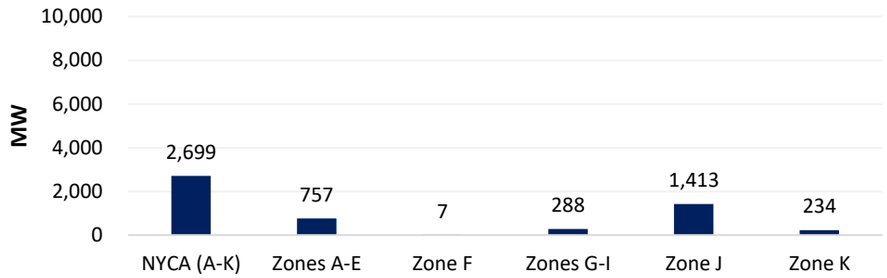
Hours Exports Reduced



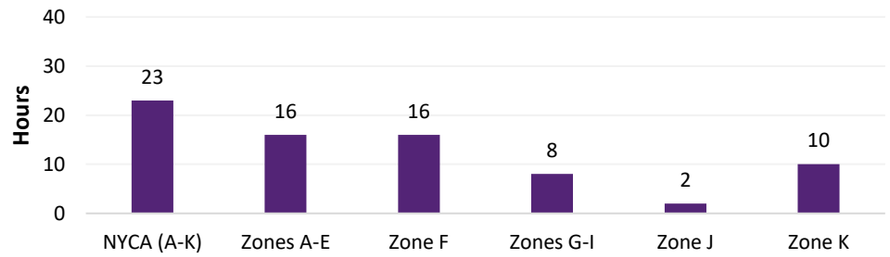
Total MWh of Exports Reduced



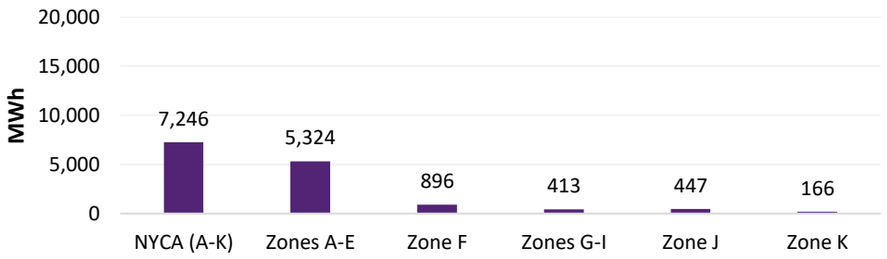
Average Capacity Not Available Due to Exhausted Fuel Inventory



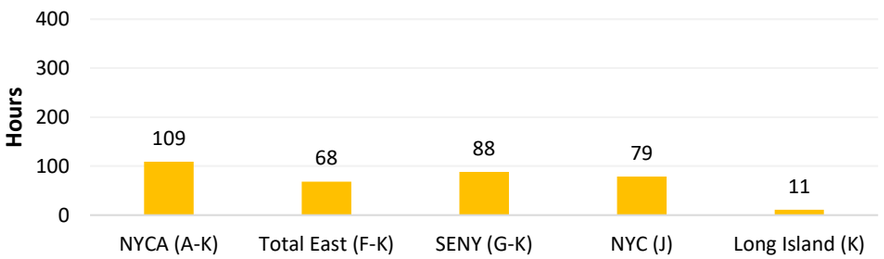
Hours SCR/EDRP Deployed



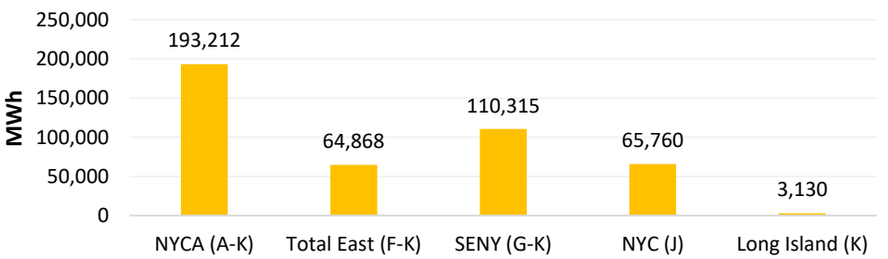
Total MWh SCR/EDRP Deployed



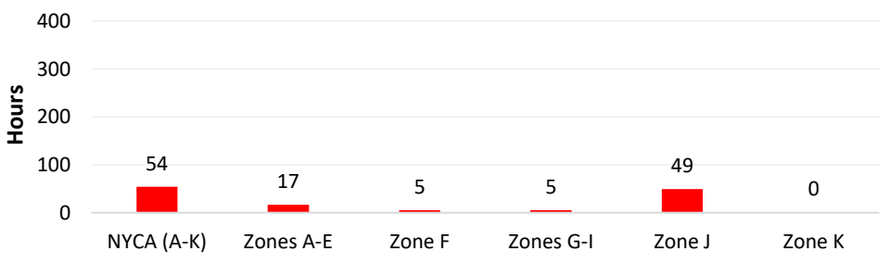
Hours with Reserve Violations



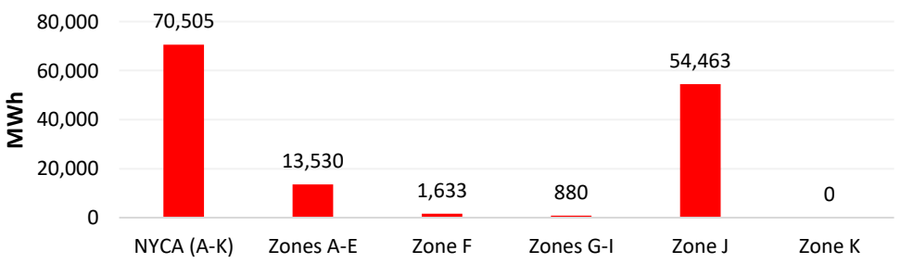
Total MWh of Reserve Violations

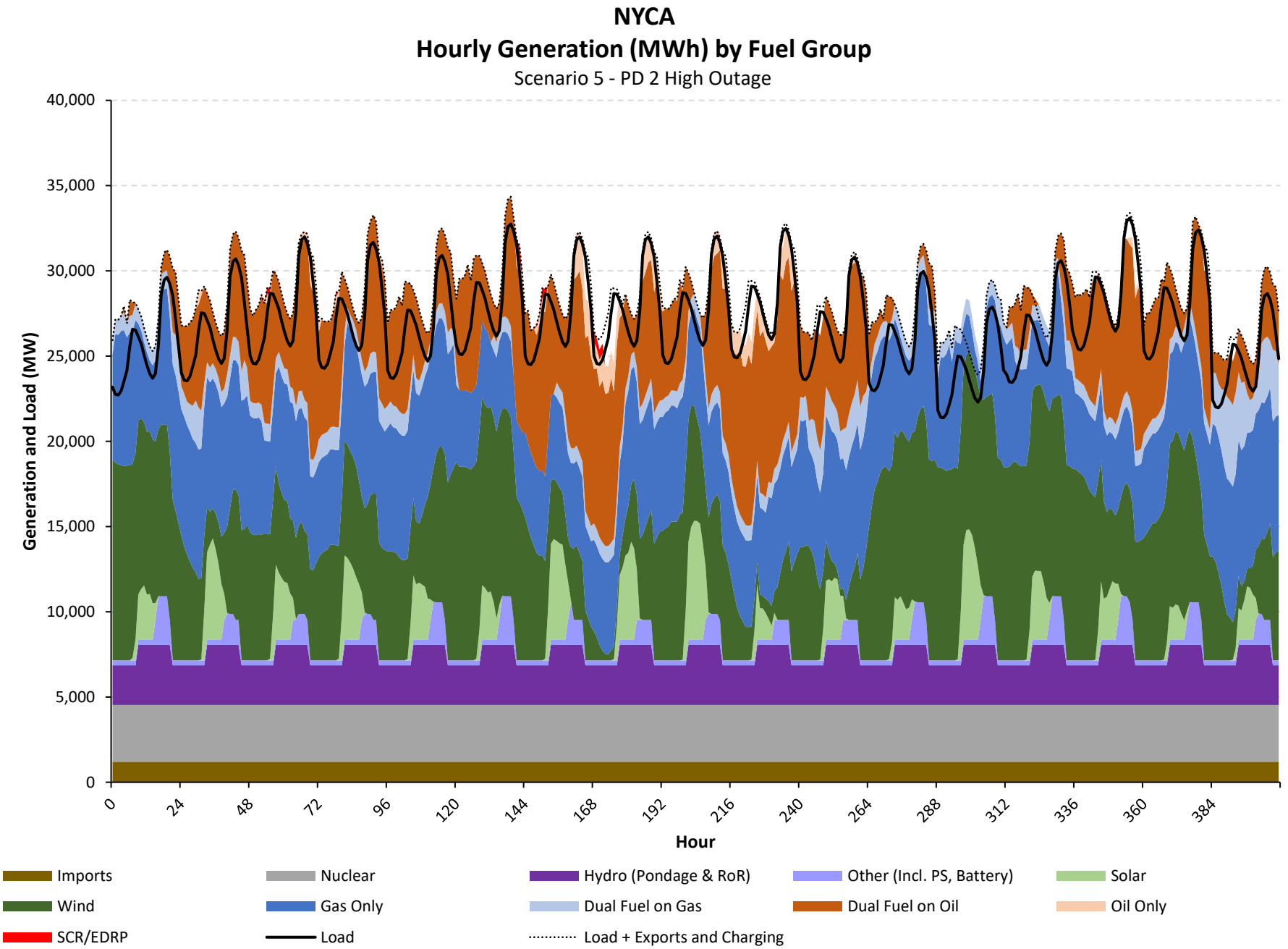


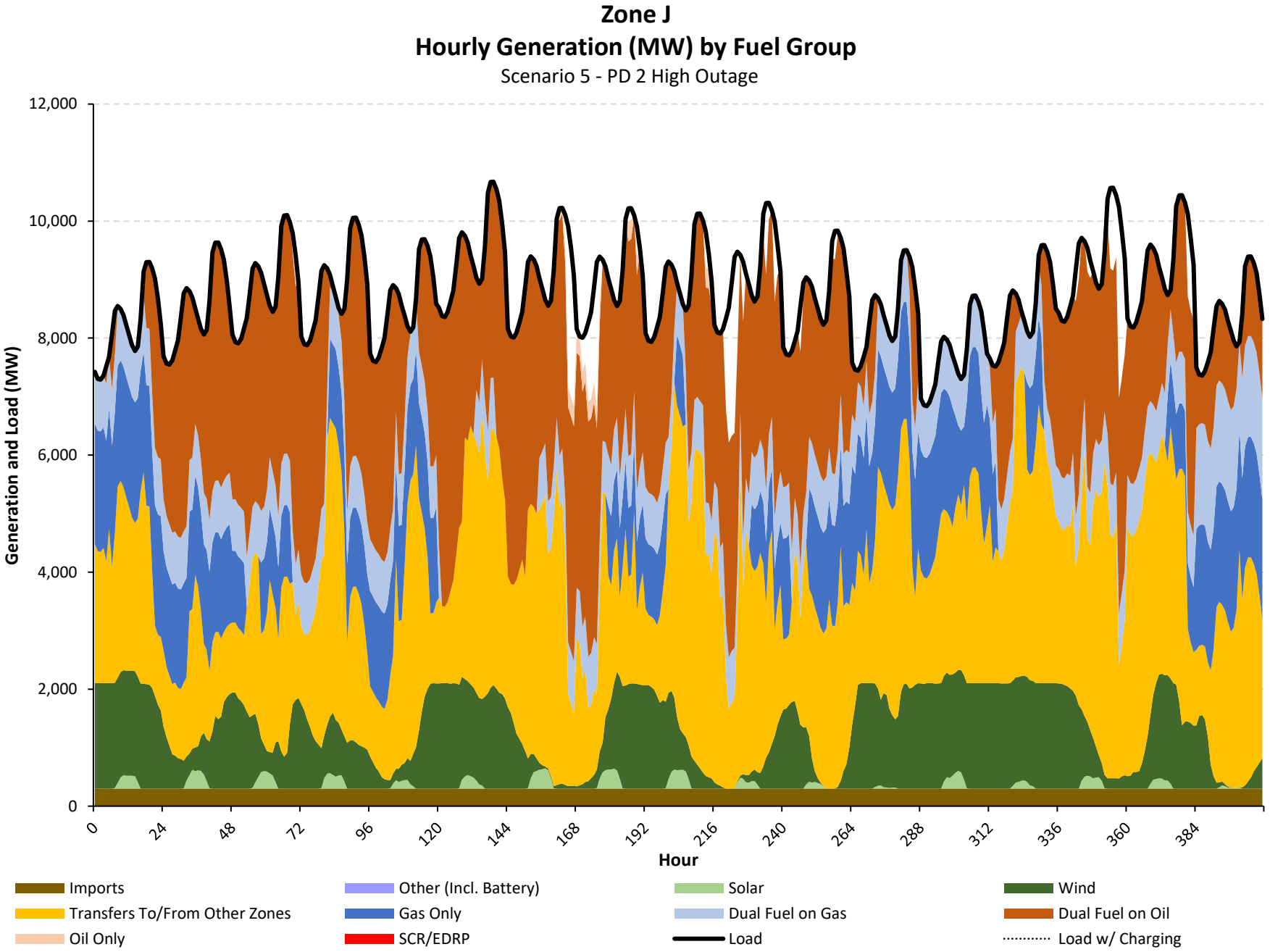
Hours with Loss of Load



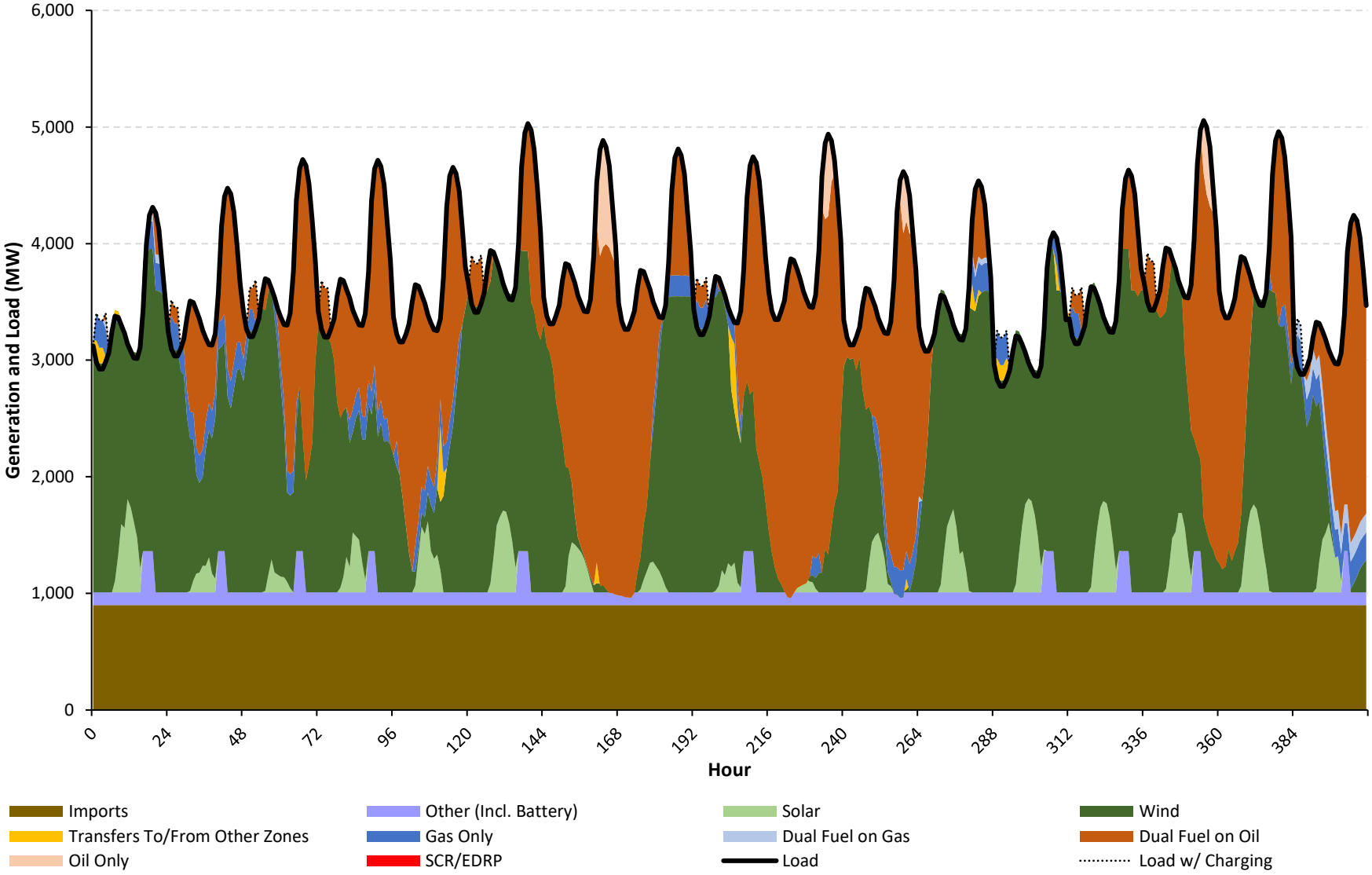
Total MWh of Lost Load

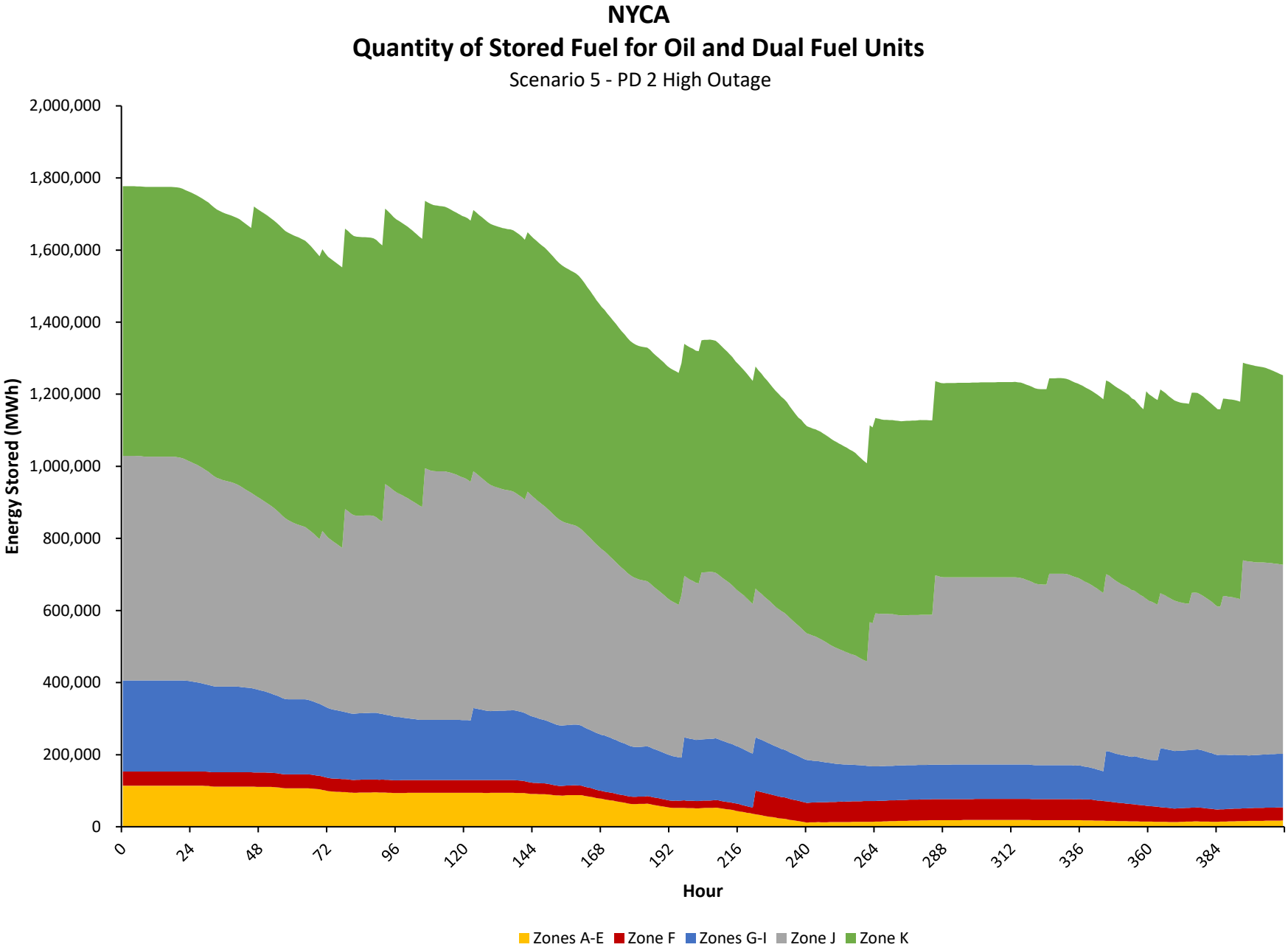


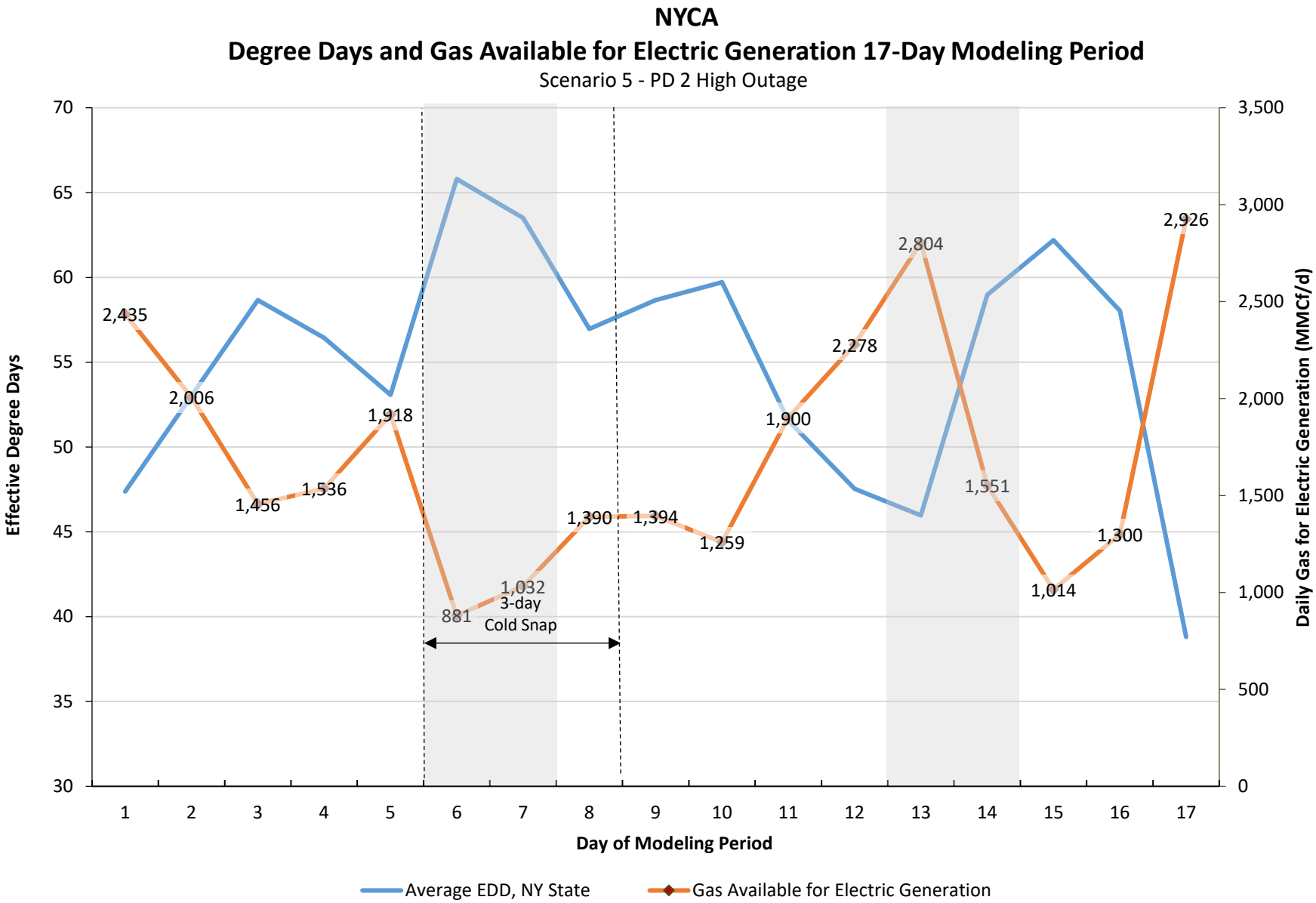

NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 5 - PD 2 High Outage
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 5 - PD 2 High Outage
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

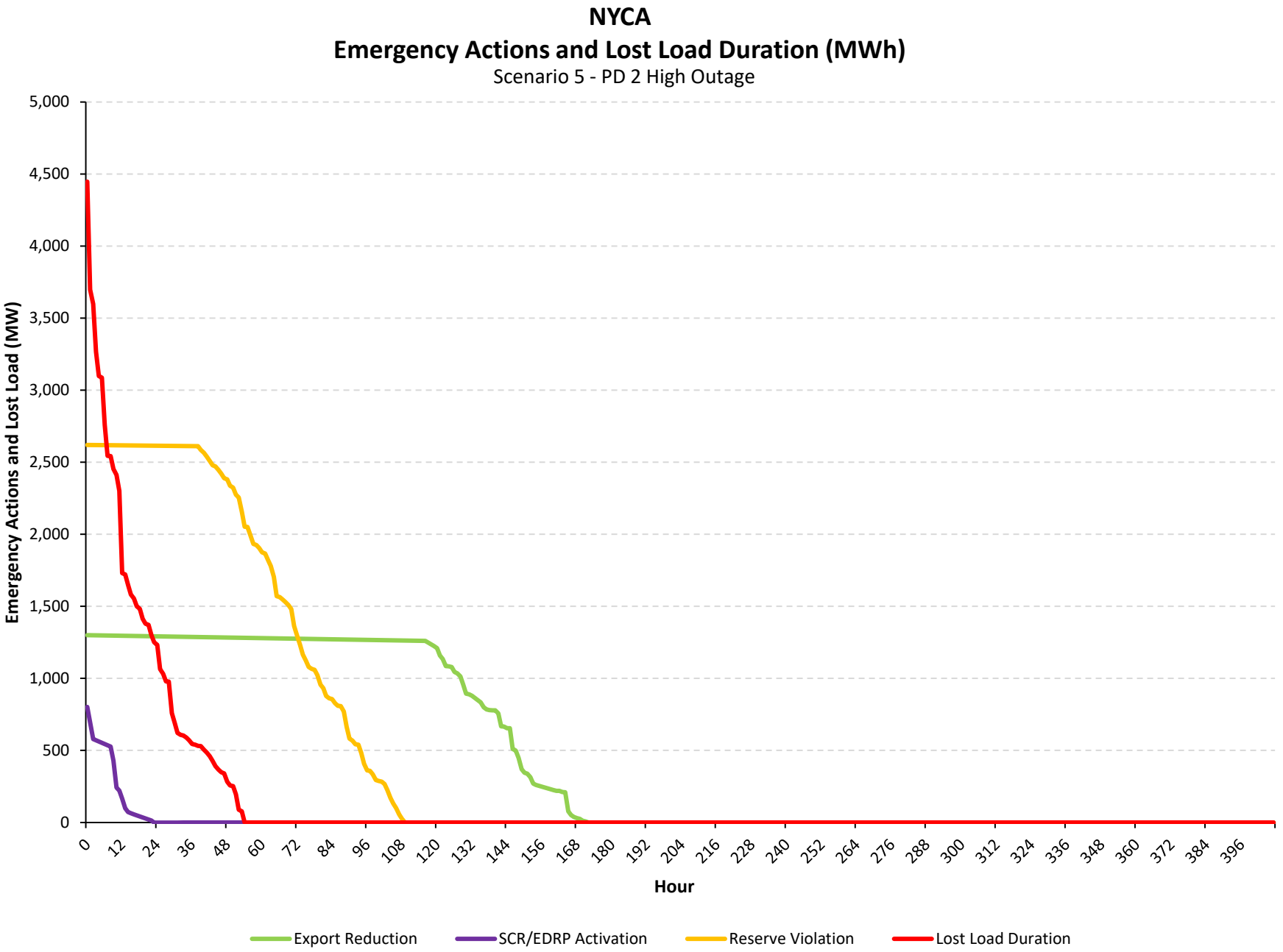
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 5 - PD 2 High Outage

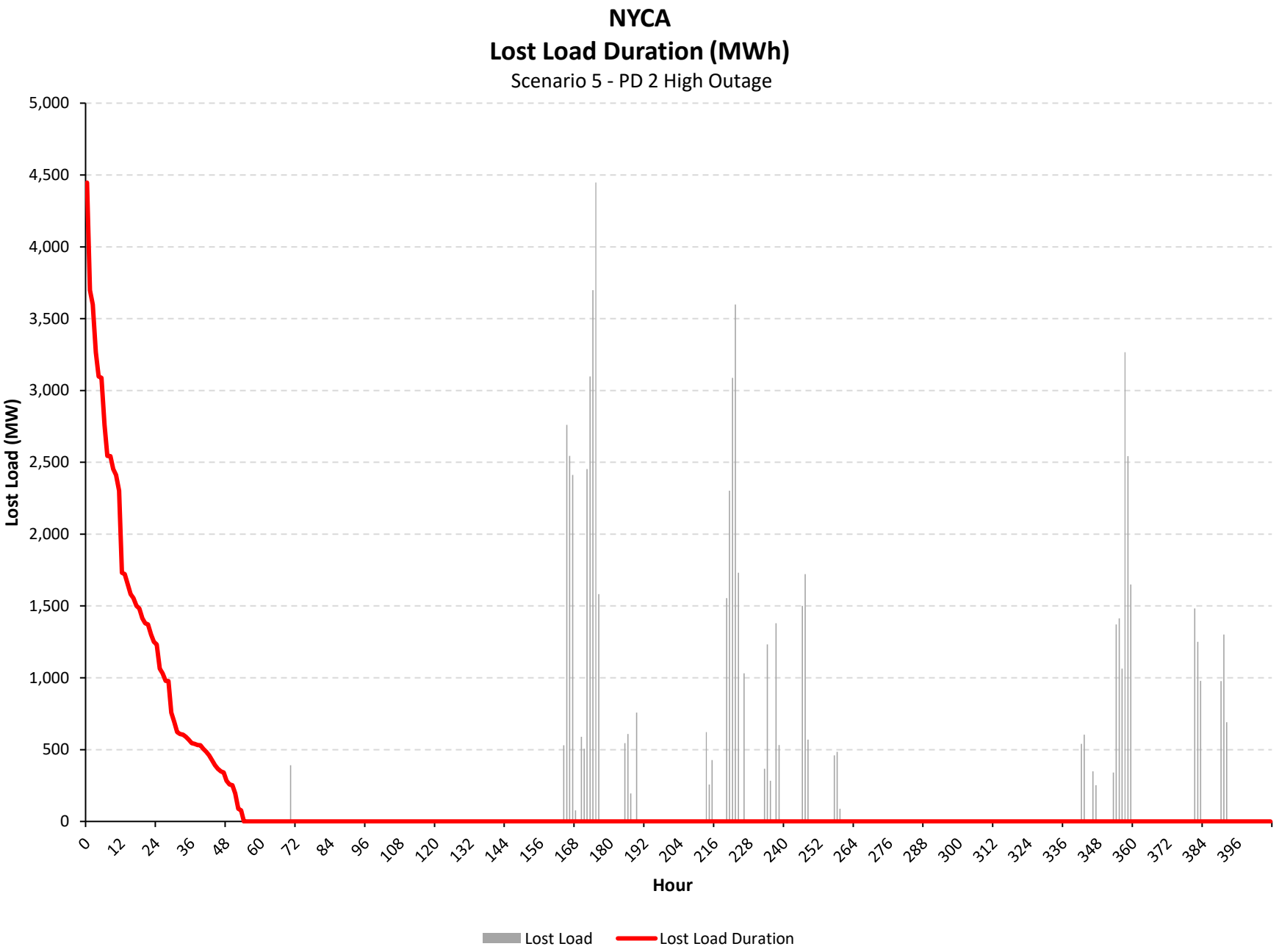



NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 5 - PD 2 High Outage
Energy Stored (MWh)
2,000,000
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Zones A-E
Zone F
Zones G-I
Zone J
Zone K



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 5 - PD 2 High Outage
Emergency Actions and Lost Load (MW)
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 5 - PD 2 High Outage
Lost Load (MW)
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

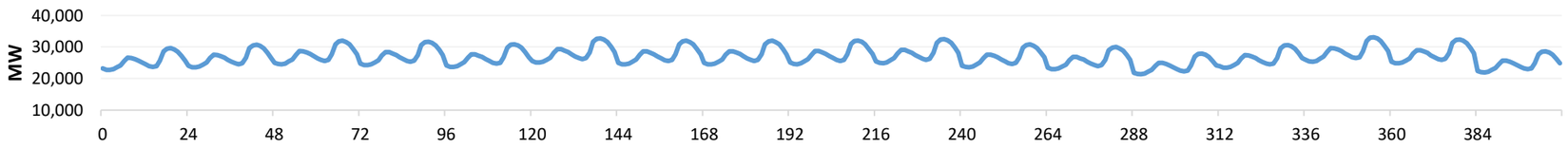
Case: Scenario 5 - PD 3 SENY Deactivation (Winter 2030/2031)

Hourly Results Summary

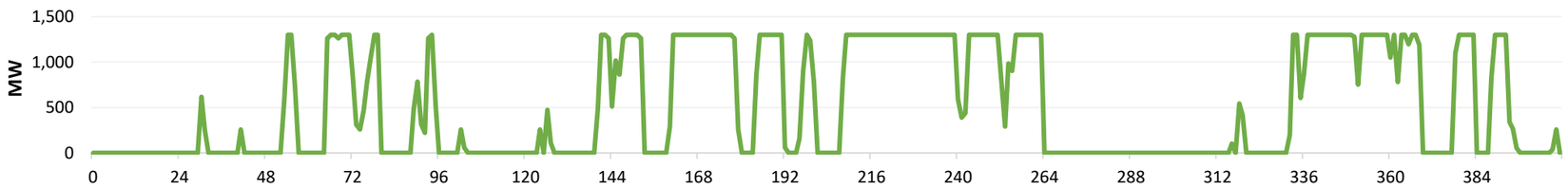
Case Name: Scenario 5 - PD 3 SENY Deactivation

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	Roseton
Import Scenario:	All

Load During Modeling Period

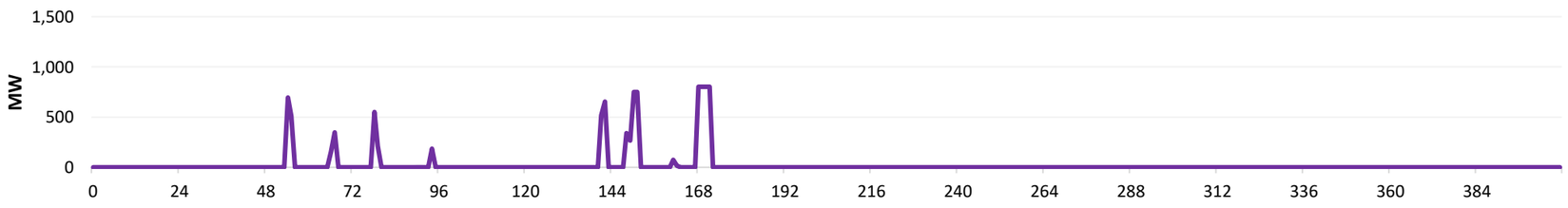


Export to ISO-NE Reduction During Modeling Period



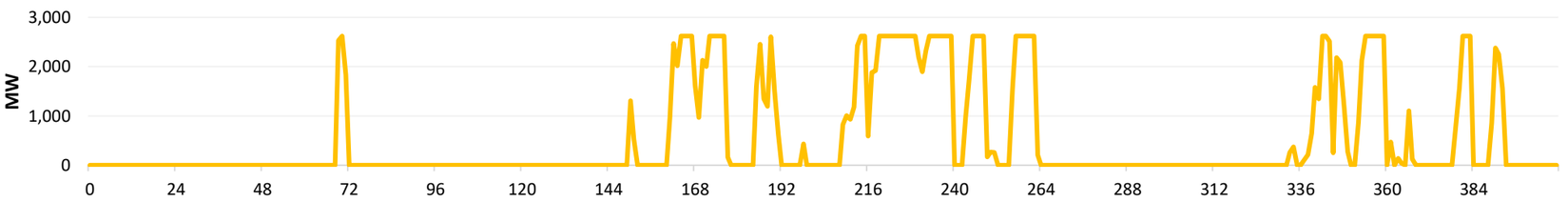
Export Reductions	
Total Hrs.	193
Total MWh	206,786
Avg. MW	506.8

SCR/EDRP Deployed During Modeling Period



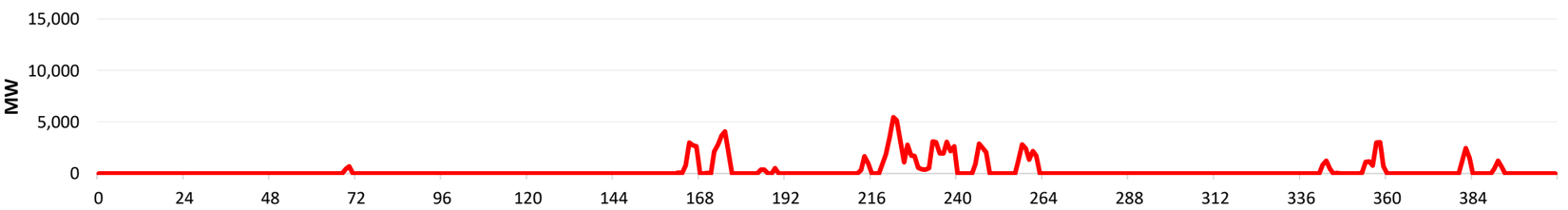
SCR Deployment	
Total Hrs.	19
Total MWh	9,230
Avg. MW	22.6

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	115
Total MWh	213,572
Avg. MW	523.5
First Hour with Viol.	69

Loss of Load During Modeling Period



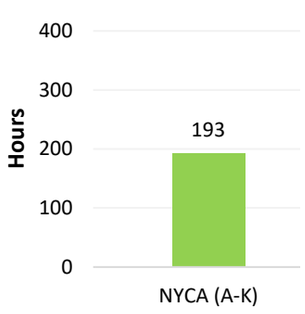
Loss of Load	
Total Hrs.	67
Total MWh	116,765
Avg. MW	286.2
First Hour with Losses	69

Full Period Results Summary

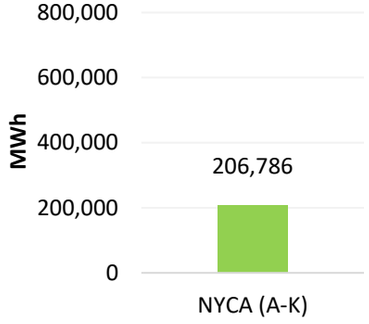
Case Name: Scenario 5 - PD 3 SENY Deactivation

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	Roseton
Import Scenario:	All

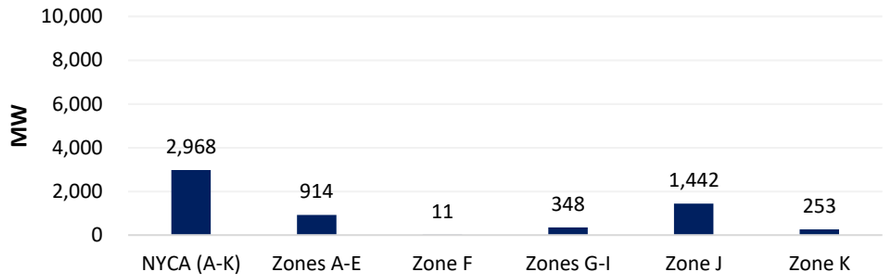
Hours Exports Reduced



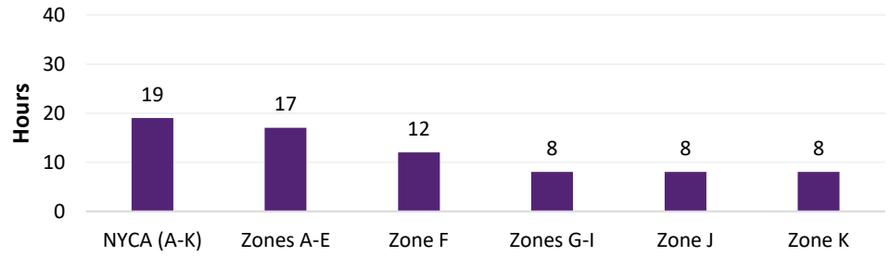
Total MWh of Exports Reduced



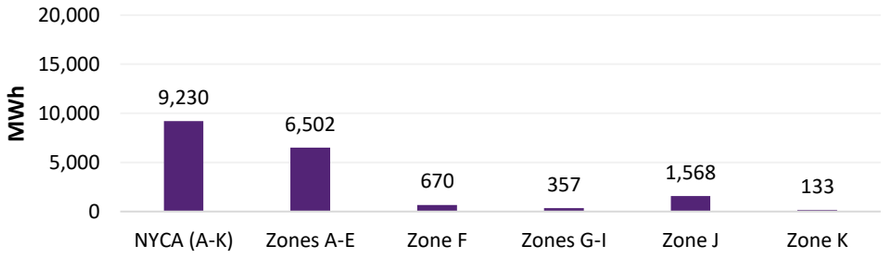
Average Capacity Not Available Due to Exhausted Fuel Inventory



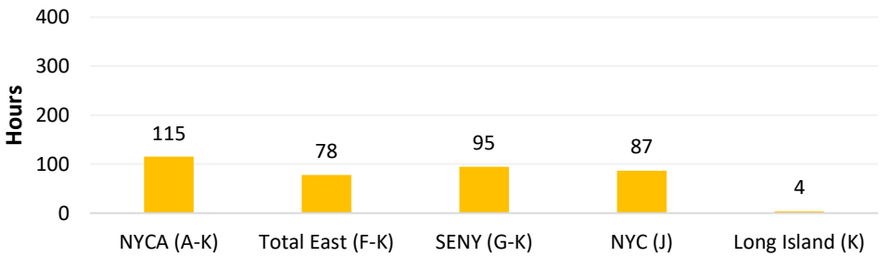
Hours SCR/EDRP Deployed



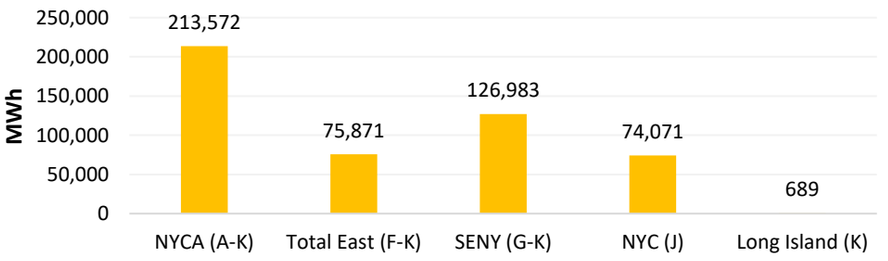
Total MWh SCR/EDRP Deployed



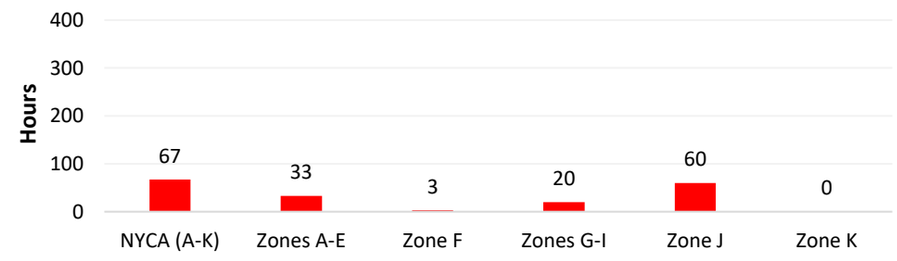
Hours with Reserve Violations



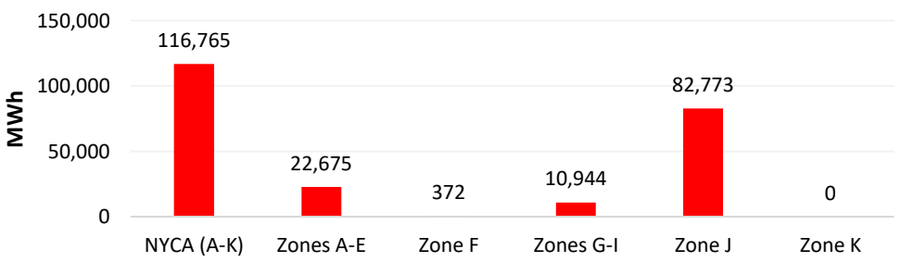
Total MWh of Reserve Violations

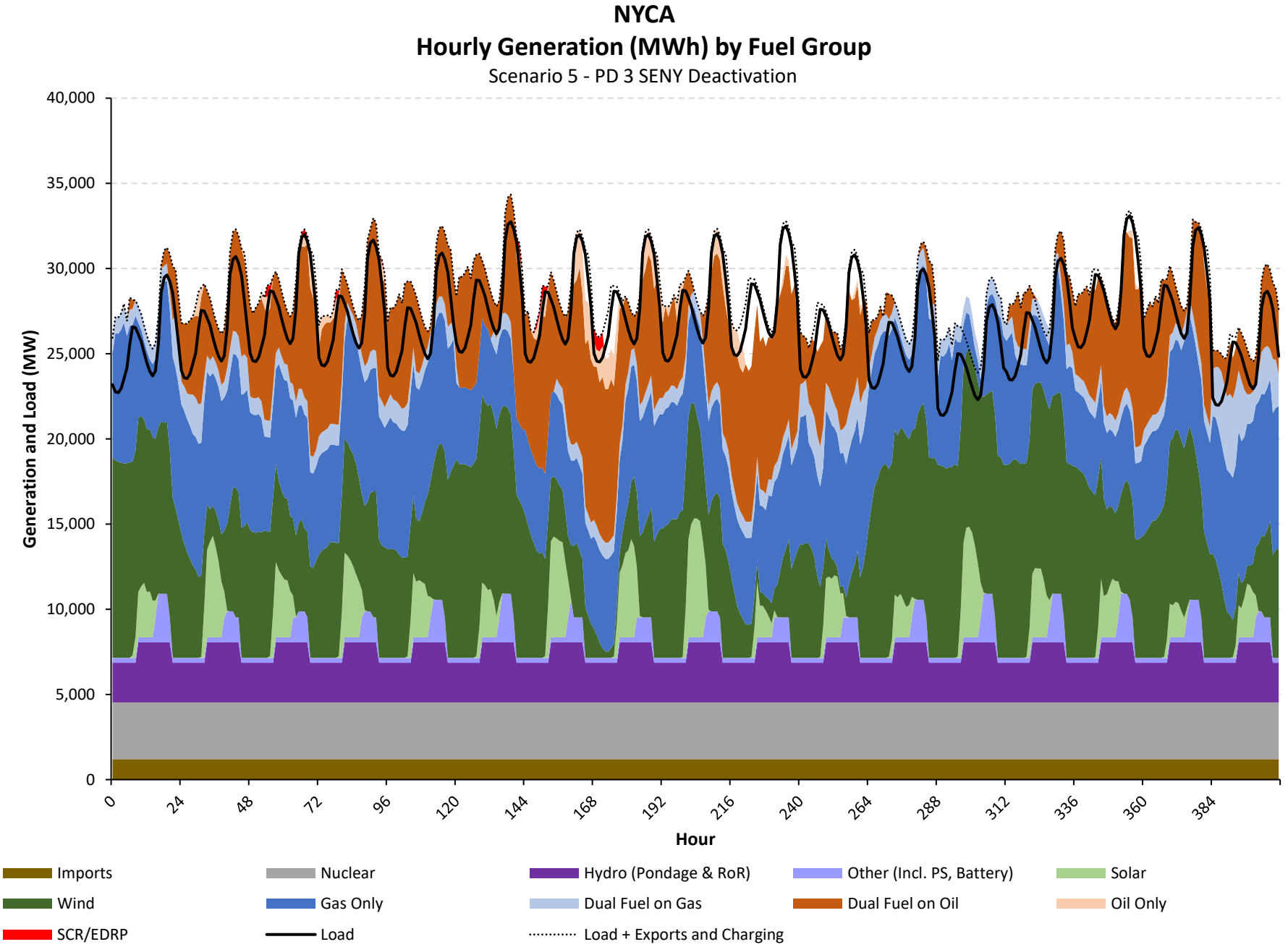


Hours with Loss of Load

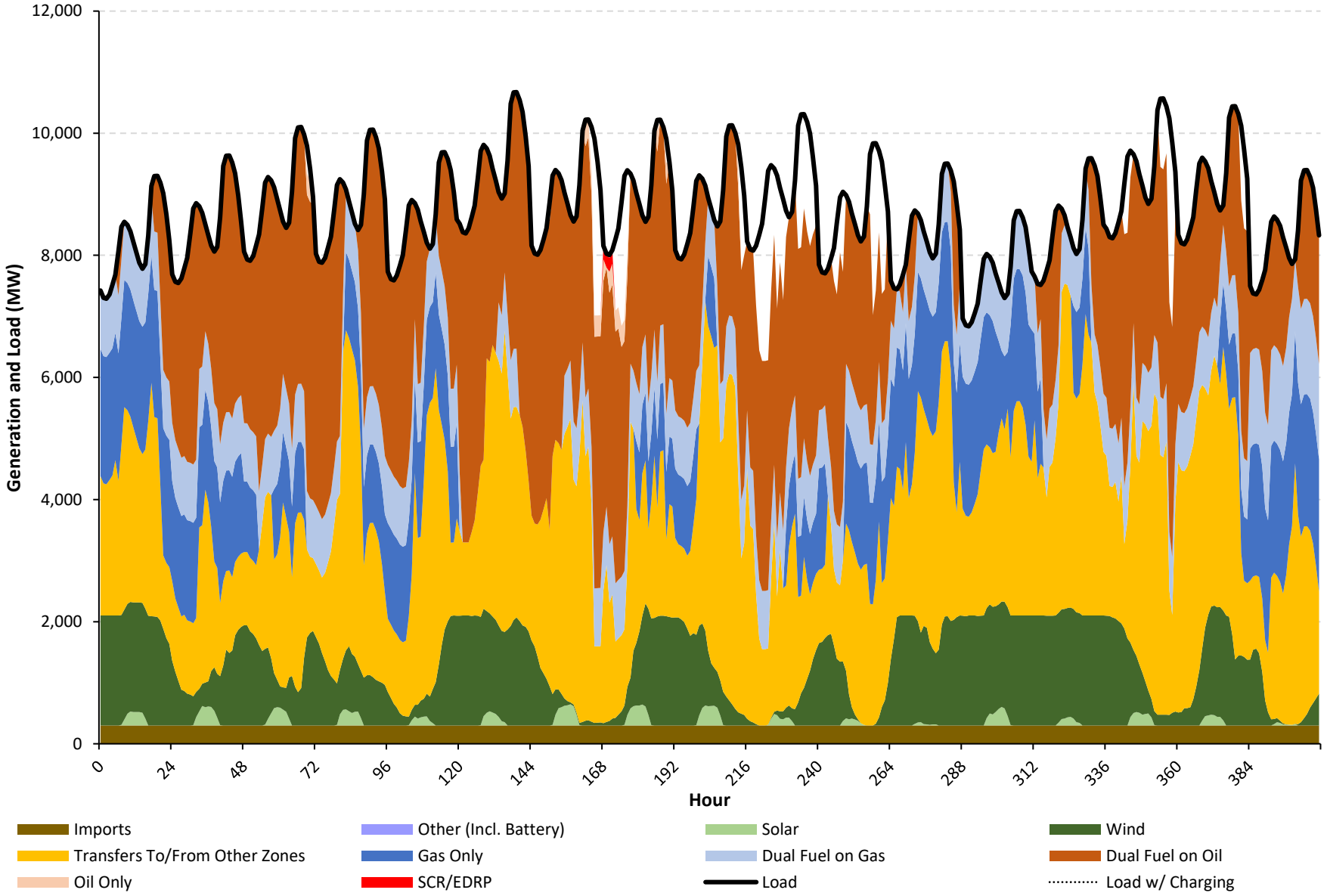


Total MWh of Lost Load

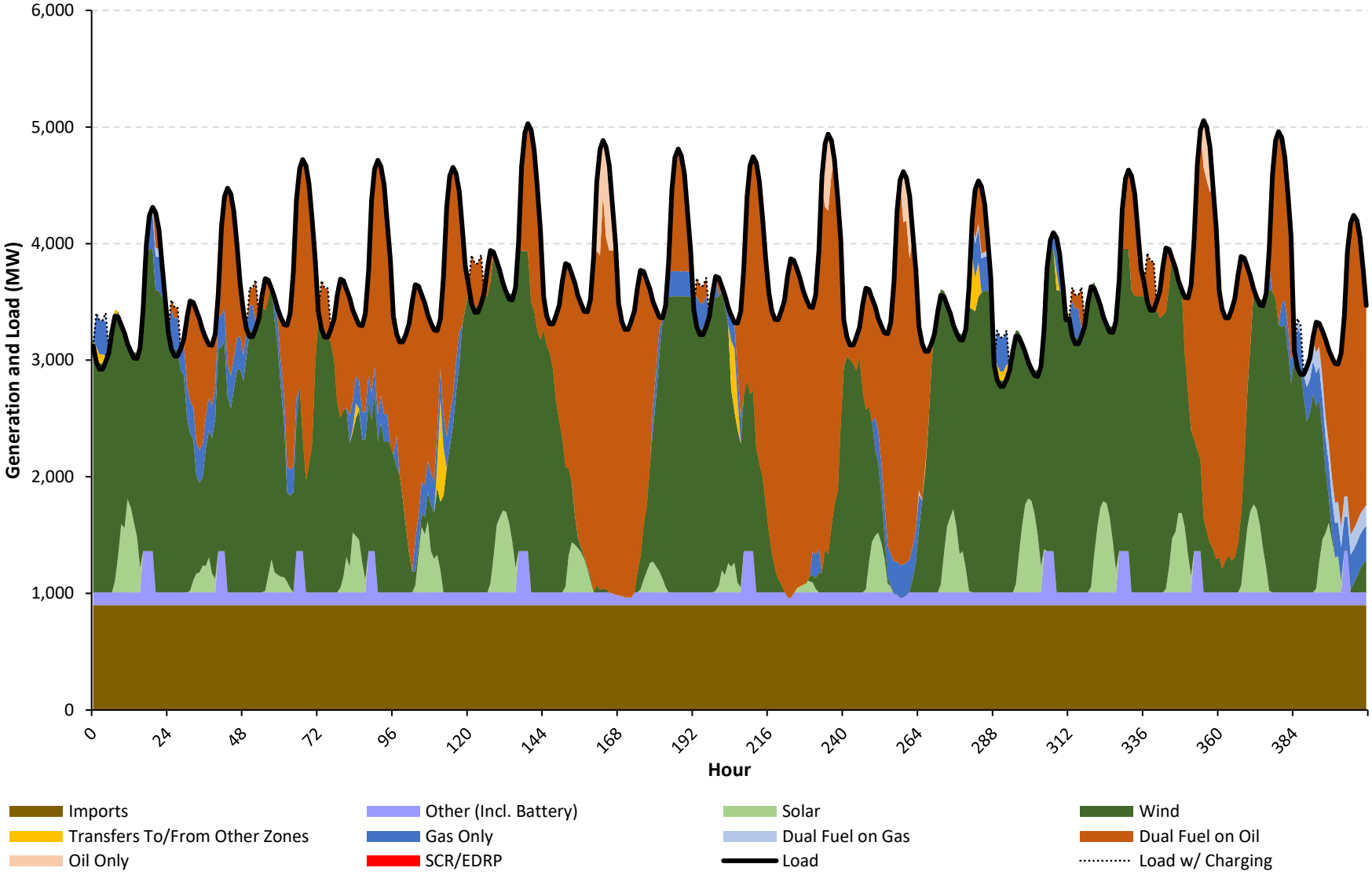



NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 5 - PD 3 SENY Deactivation
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

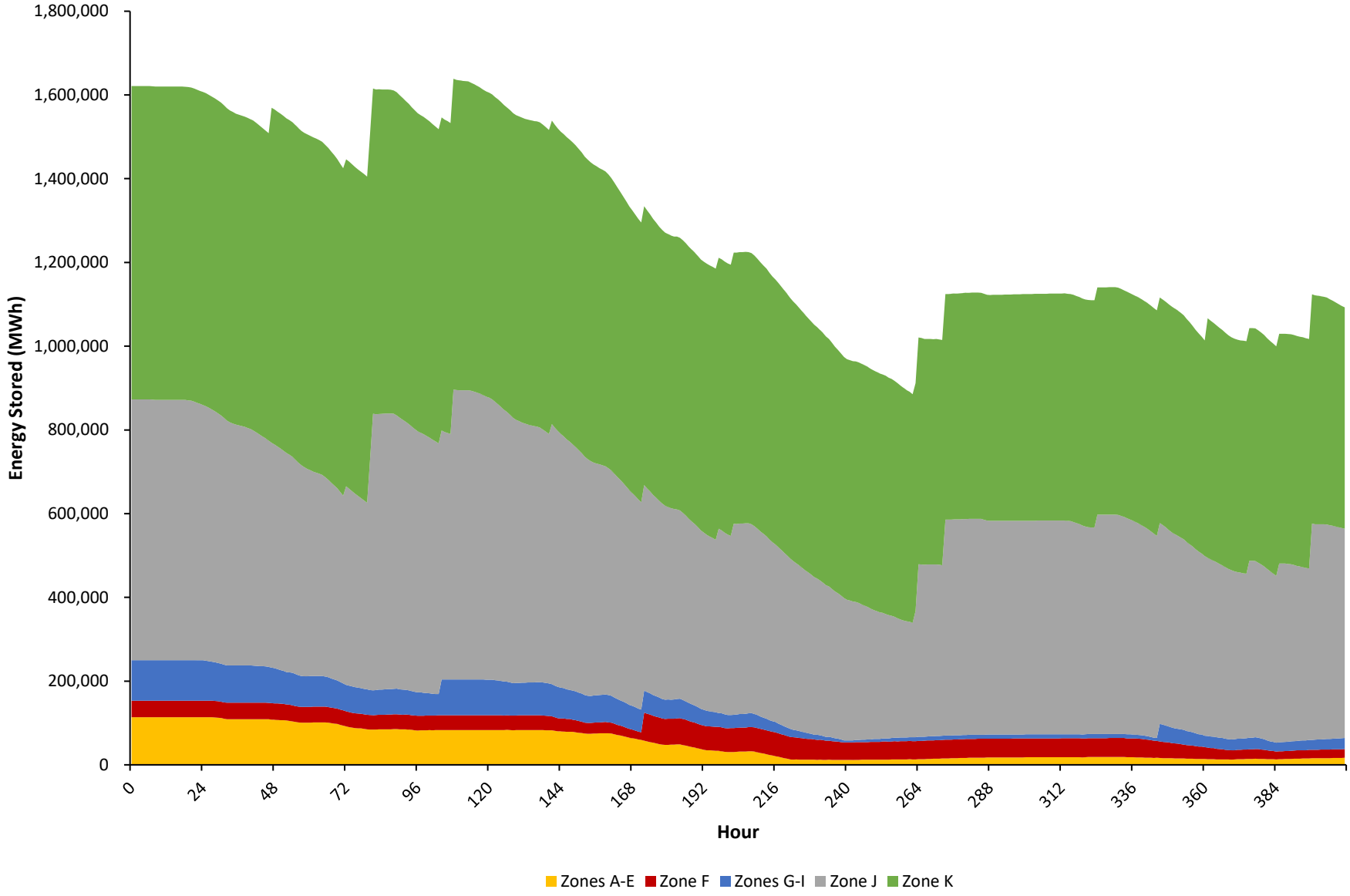
Zone J
Hourly Generation (MW) by Fuel Group
Scenario 5 - PD 3 SENY Deactivation

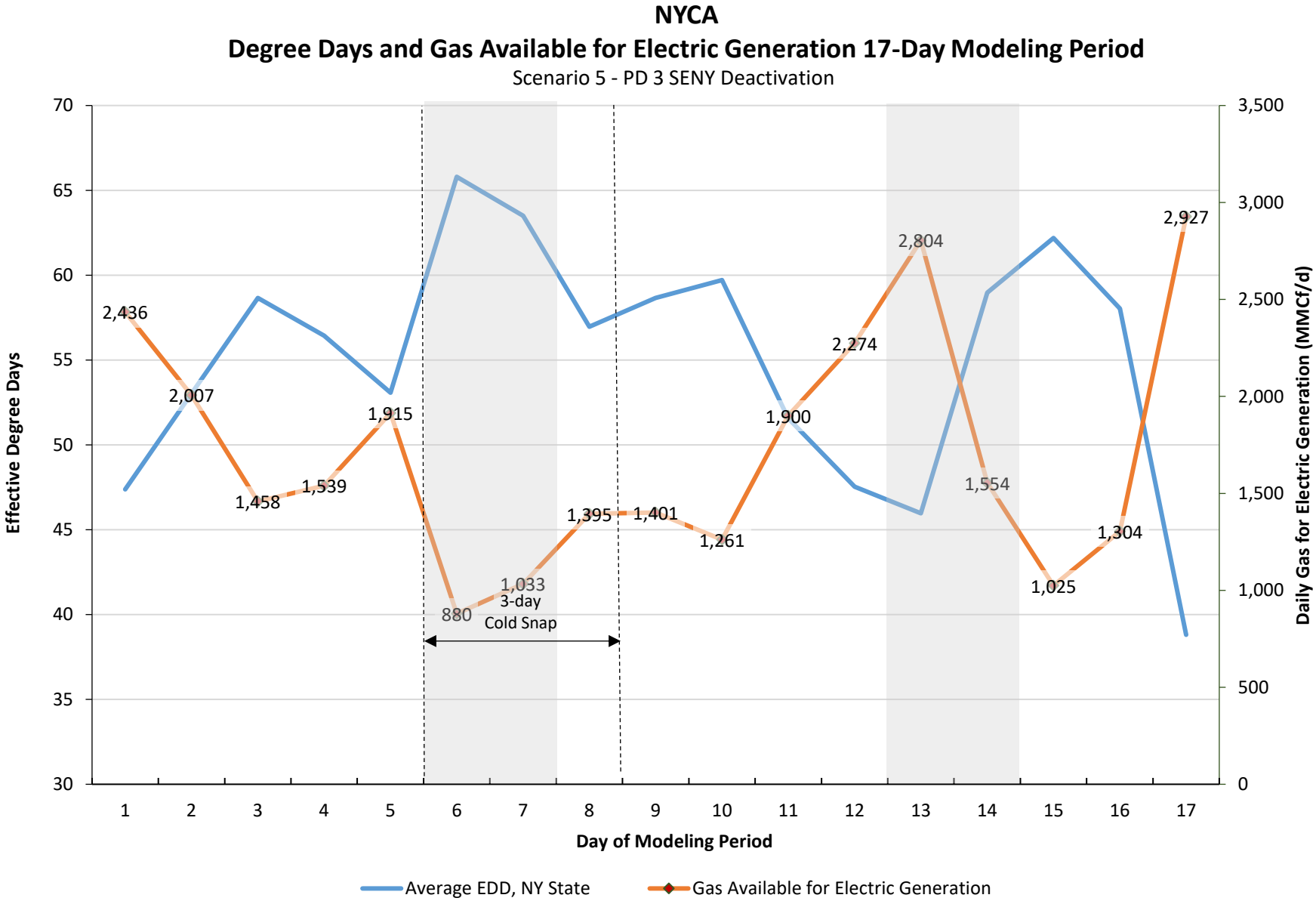


Zone K
Hourly Generation (MW) by Fuel Group
Scenario 5 - PD 3 SENY Deactivation

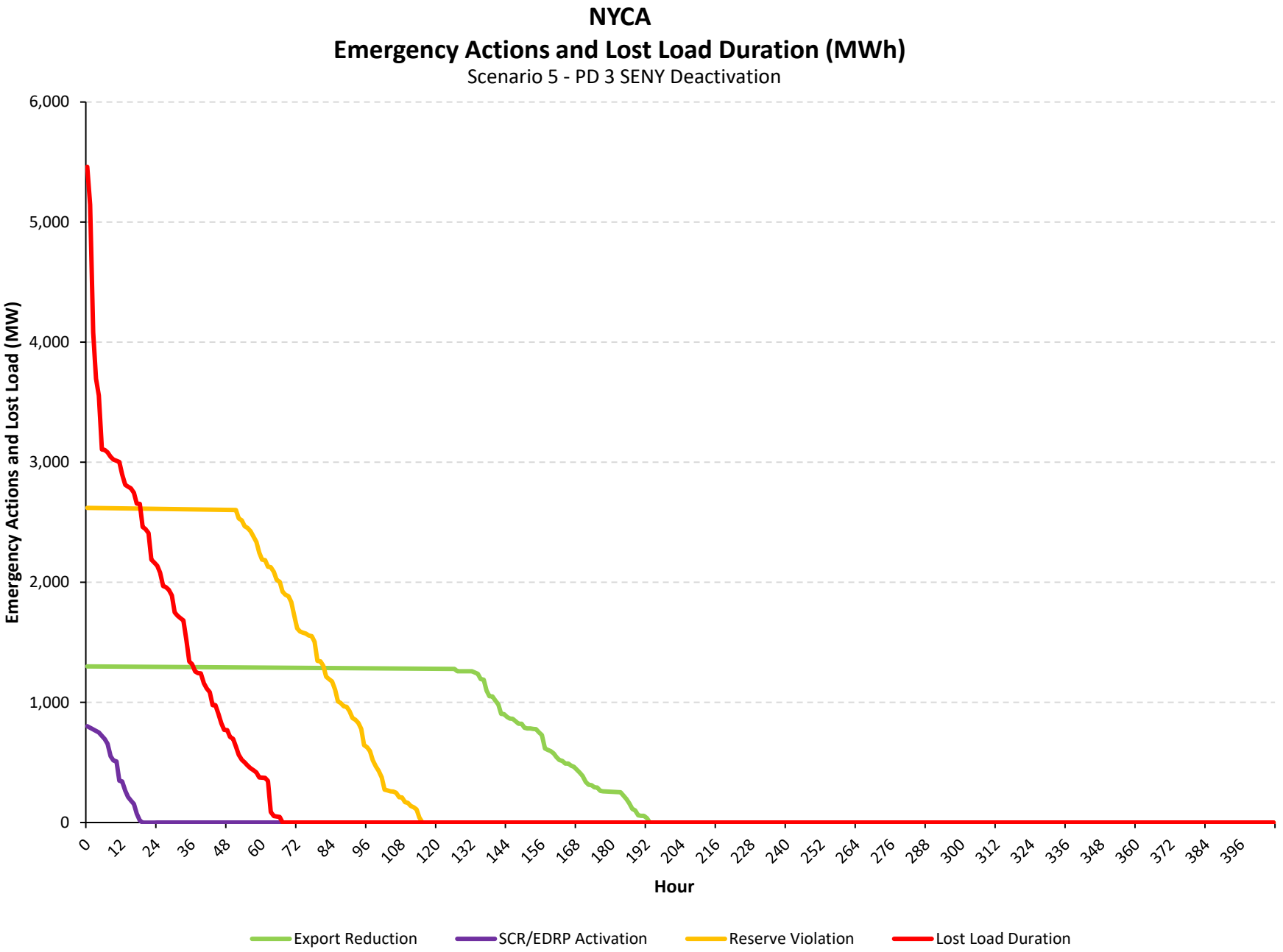


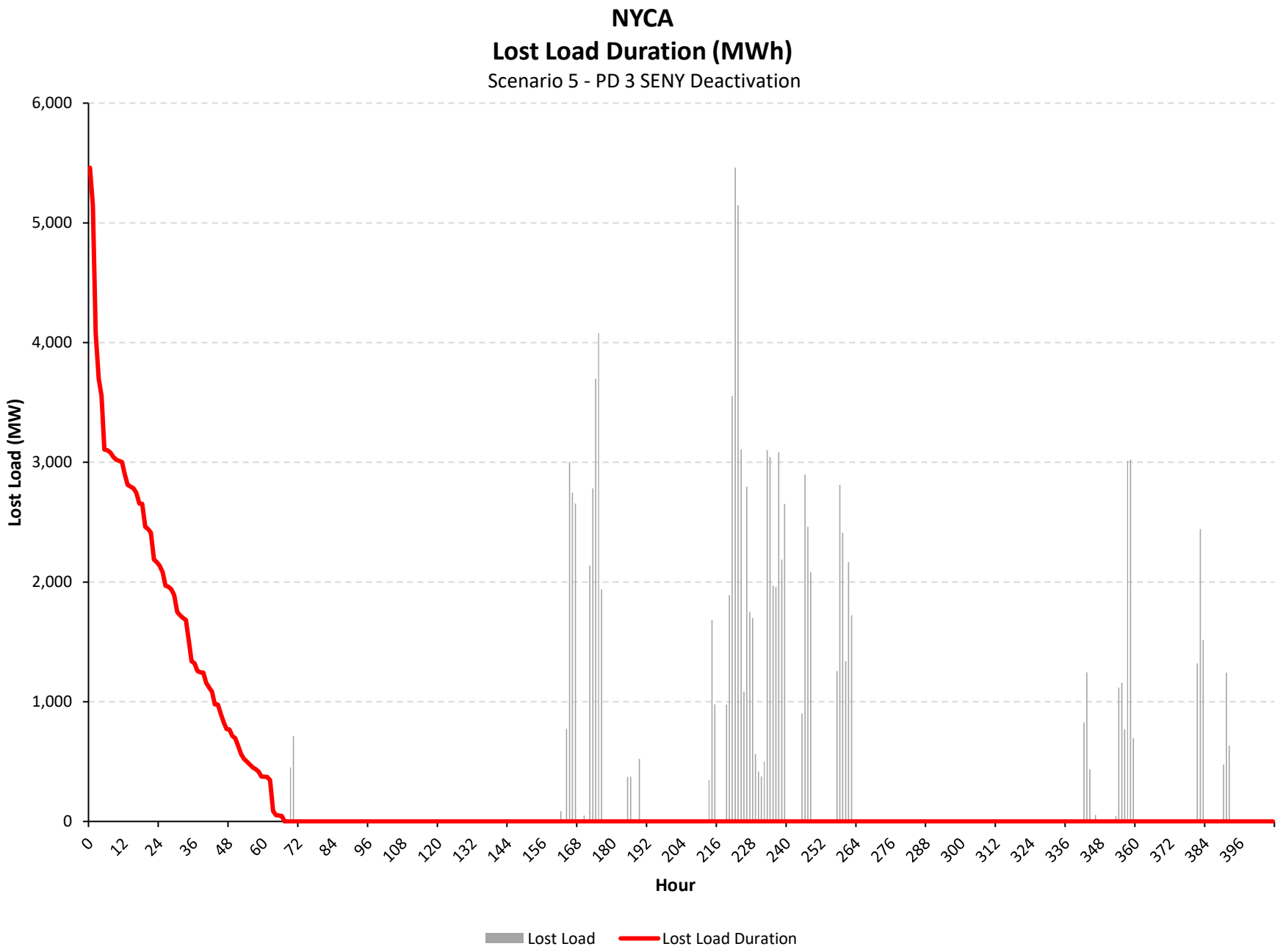
NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 5 - PD 3 SENY Deactivation





Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 5 - PD 3 SENY Deactivation
Emergency Actions and Lost Load (MW)
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 5 - PD 3 SENY Deactivation
Lost Load (MW)
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

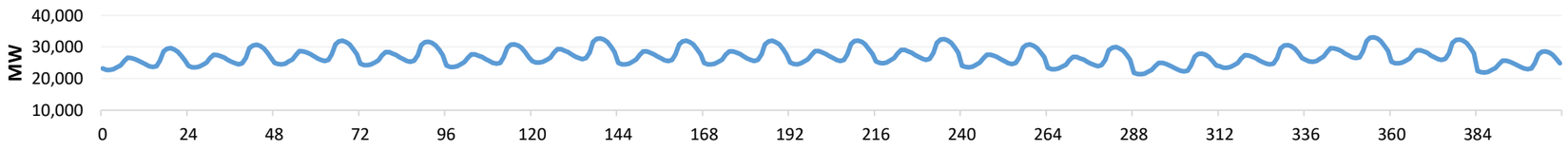
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 5 - PD 4 Nuclear Station Outage (Winter 2030/2031)

Hourly Results Summary

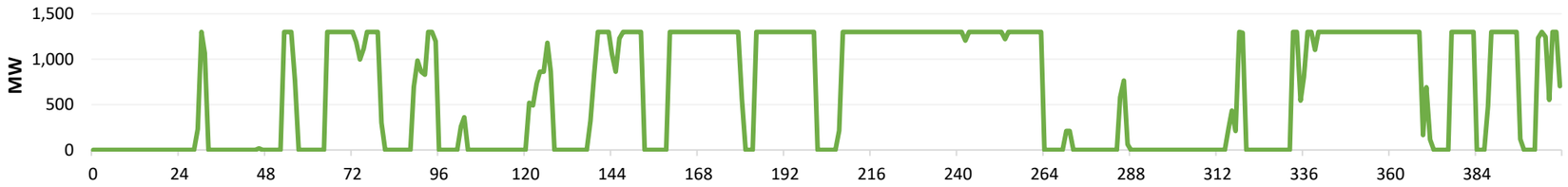
Case Name: Scenario 5 - PD 4 Nuclear Station Outage

Load During Modeling Period



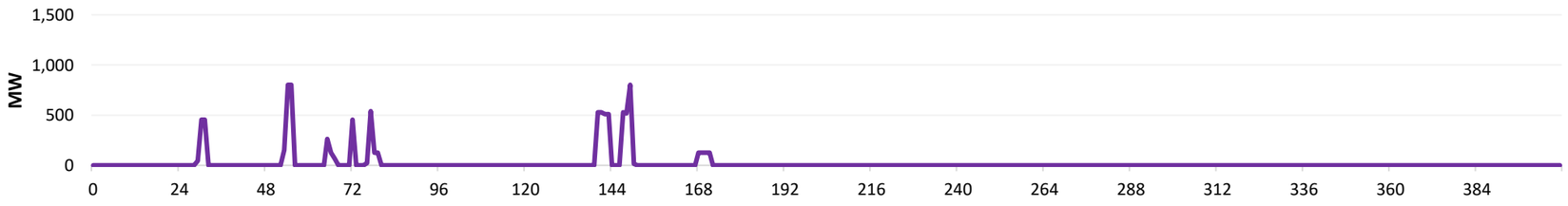
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	On
Plant Outage:	None
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



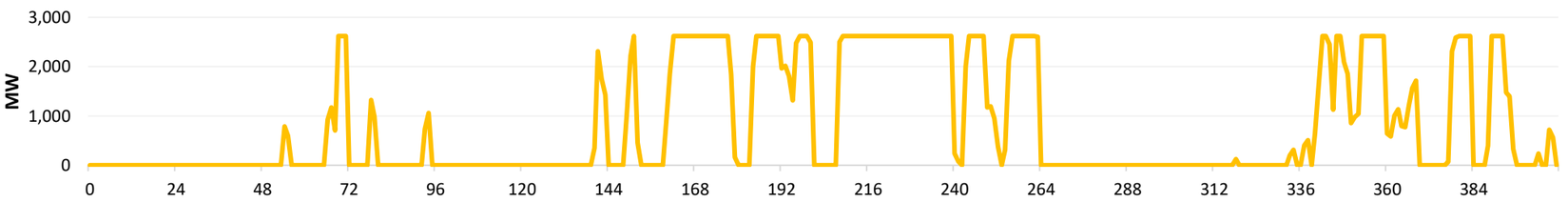
Export Reductions	
Total Hrs.	223
Total MWh	257,930
Avg. MW	632.2

SCR/EDRP Deployed During Modeling Period



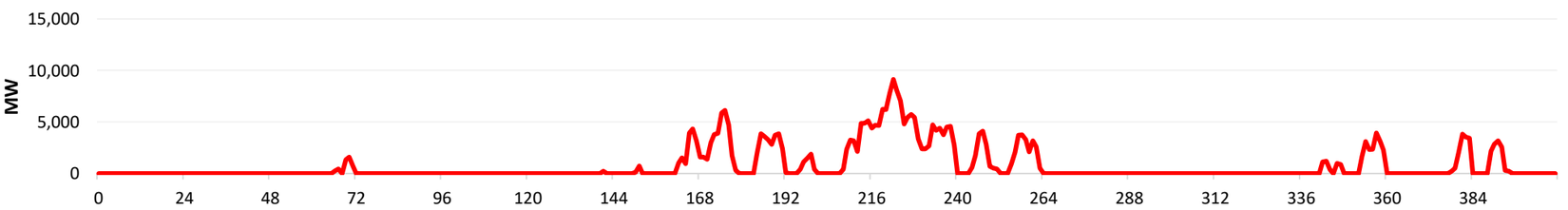
SCR Deployment	
Total Hrs.	26
Total MWh	8,865
Avg. MW	21.7

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	163
Total MWh	325,058
Avg. MW	796.7
First Hour with Viol.	31

Loss of Load During Modeling Period

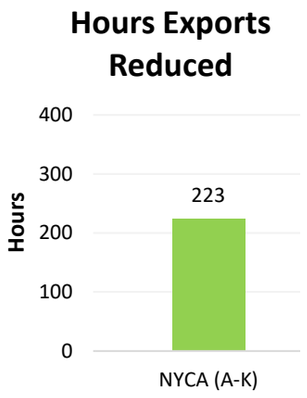


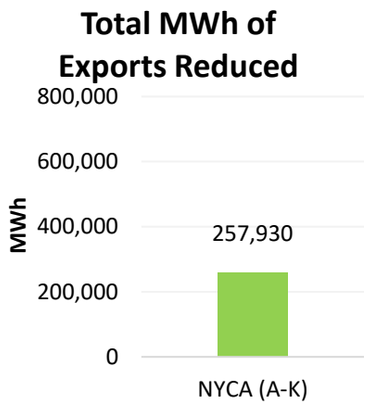
Loss of Load	
Total Hrs.	114
Total MWh	316,211
Avg. MW	775.0
First Hour with Losses	66

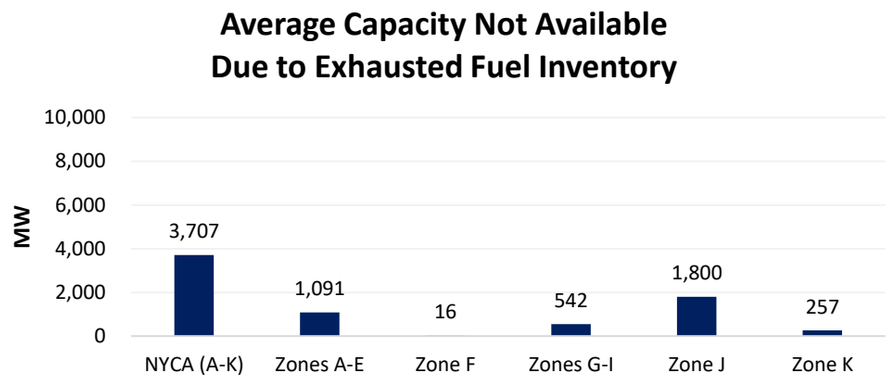
Full Period Results Summary

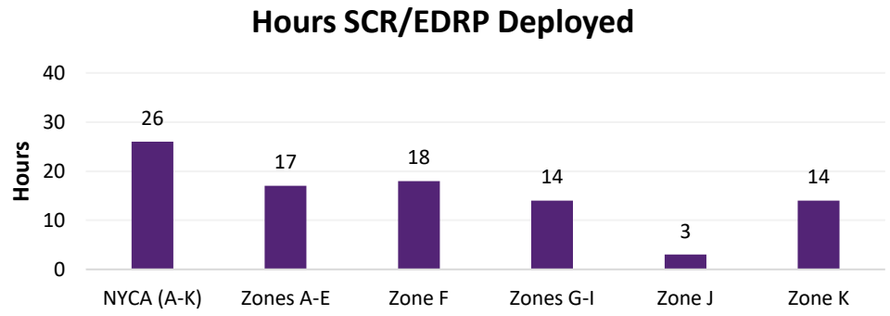
Case Name: Scenario 5 - PD 4 Nuclear Station Outage

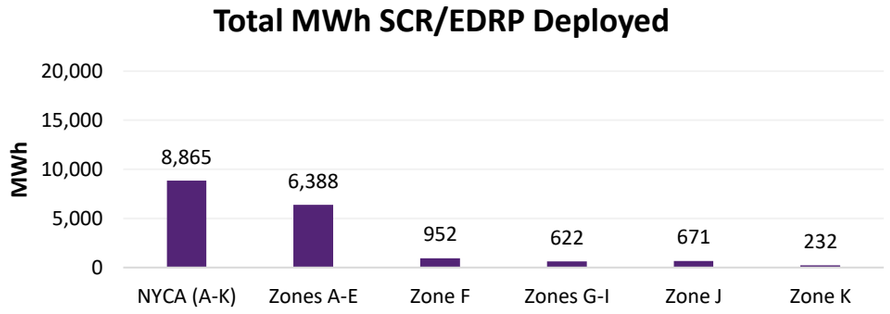
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	On
Plant Outage:	None
Import Scenario:	All

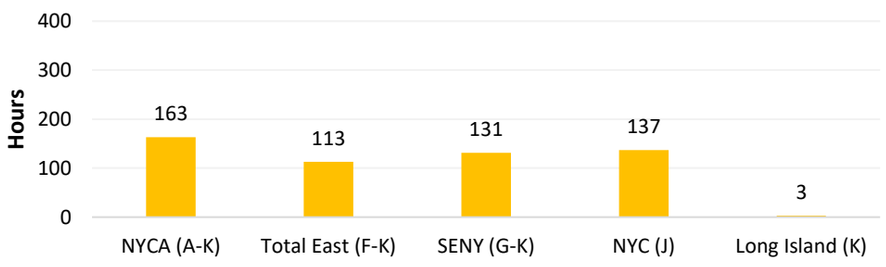


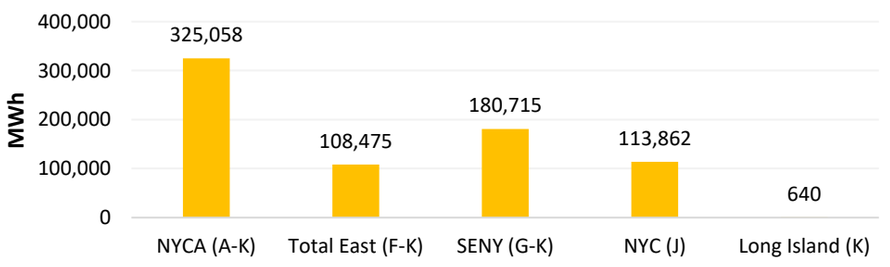


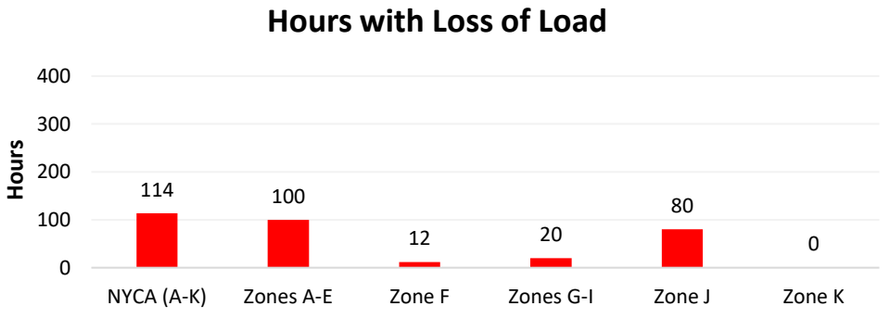


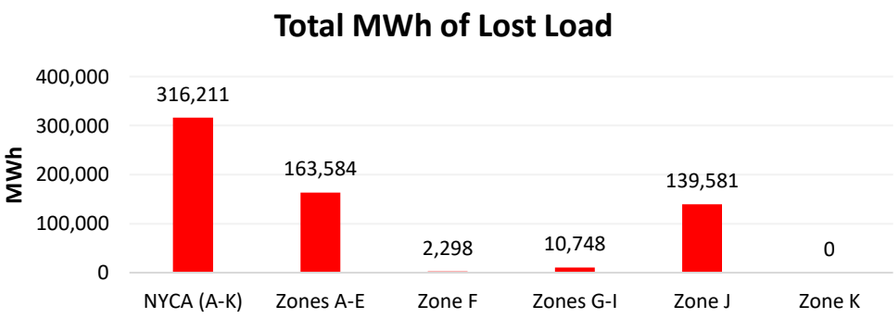


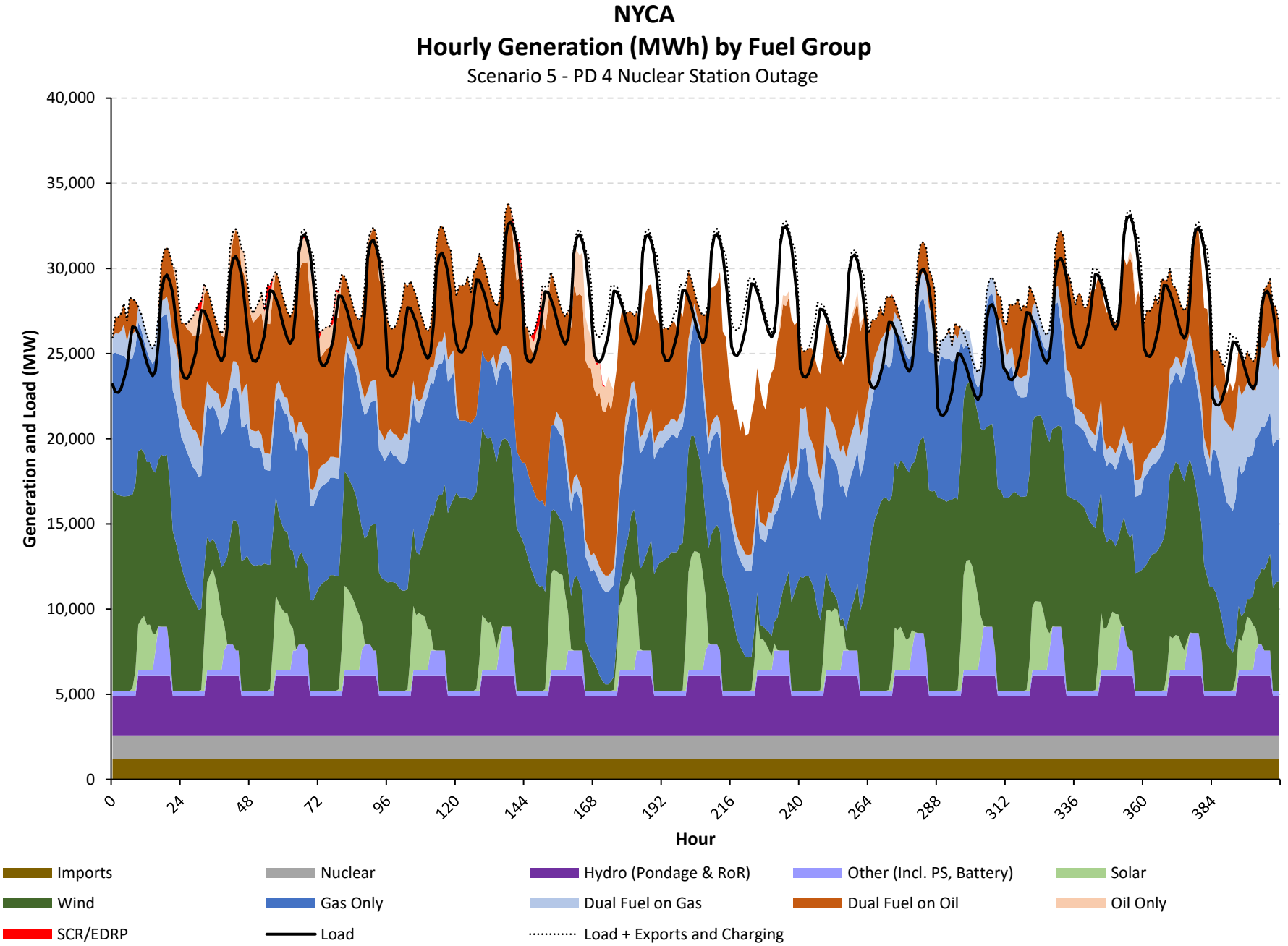


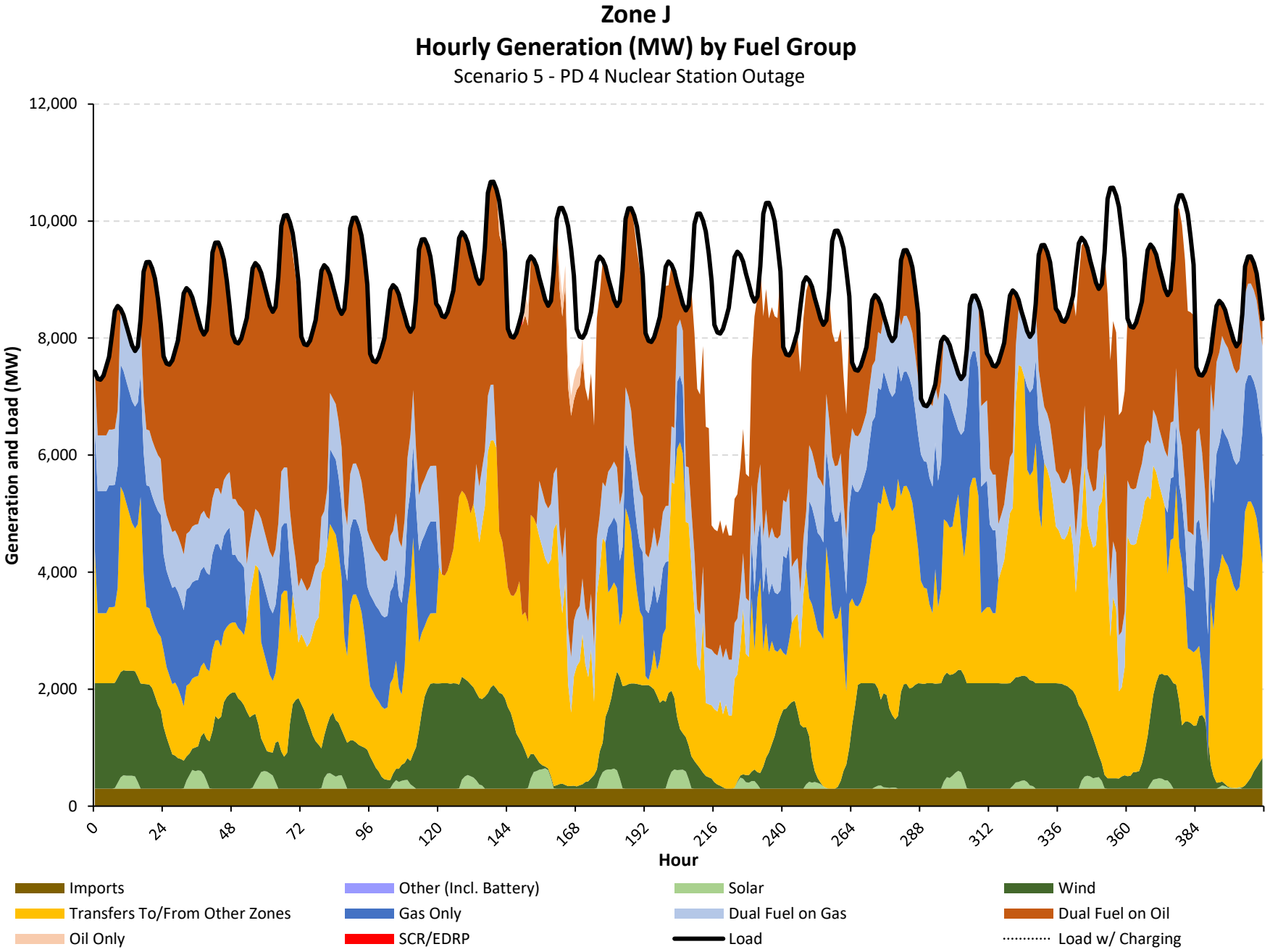




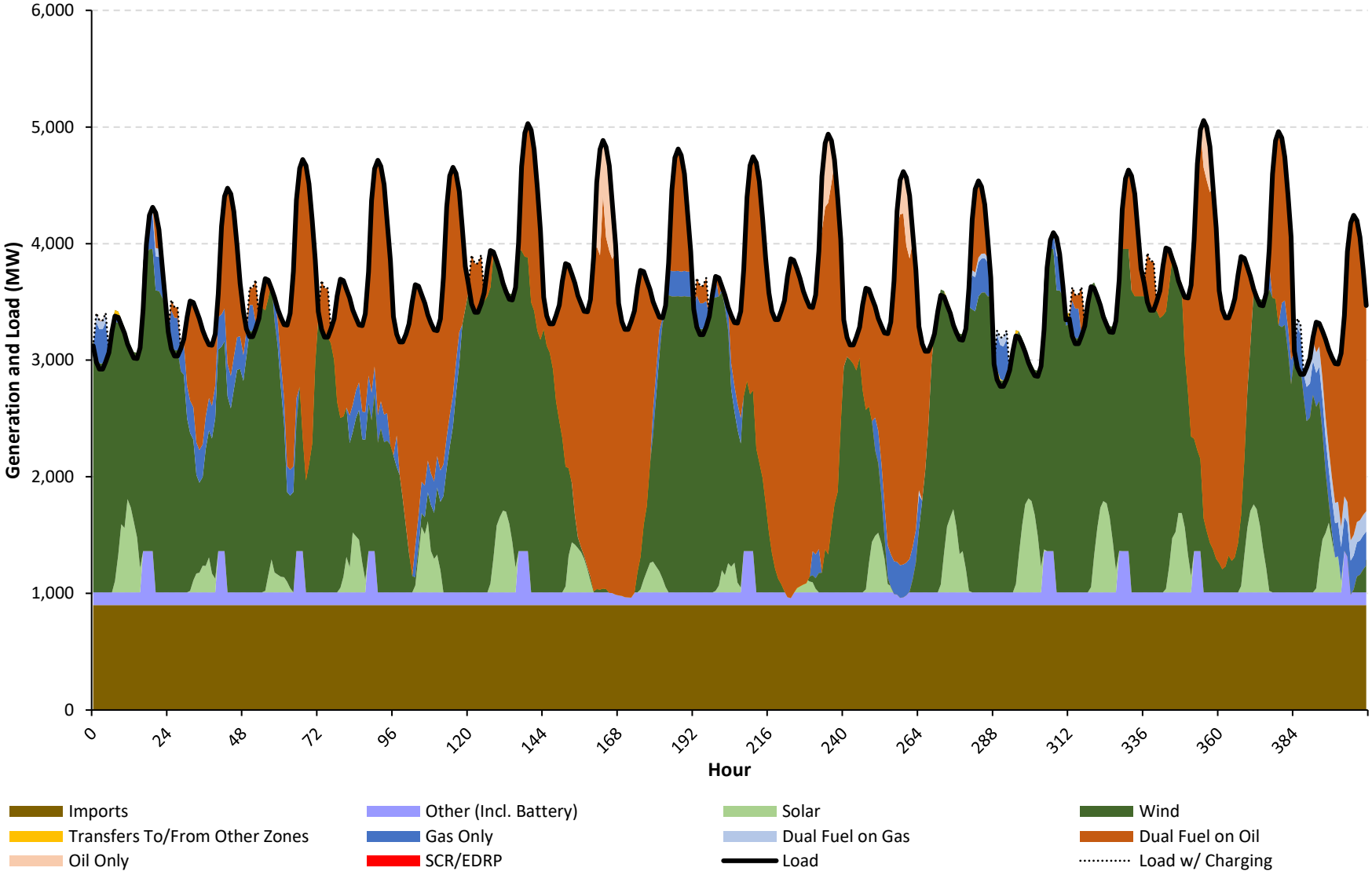





NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 5 - PD 4 Nuclear Station Outage
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 5 - PD 4 Nuclear Station Outage
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

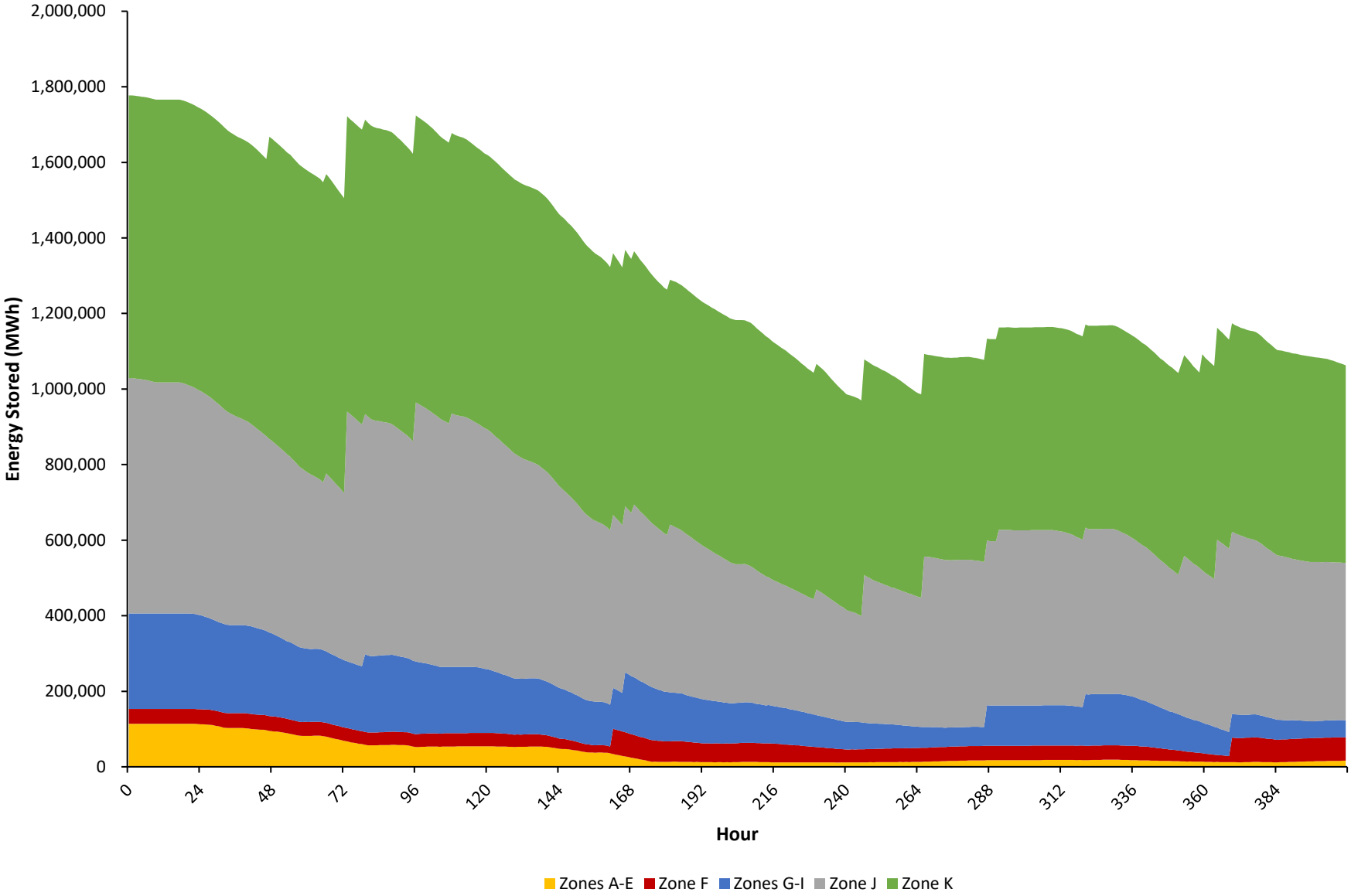
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 5 - PD 4 Nuclear Station Outage



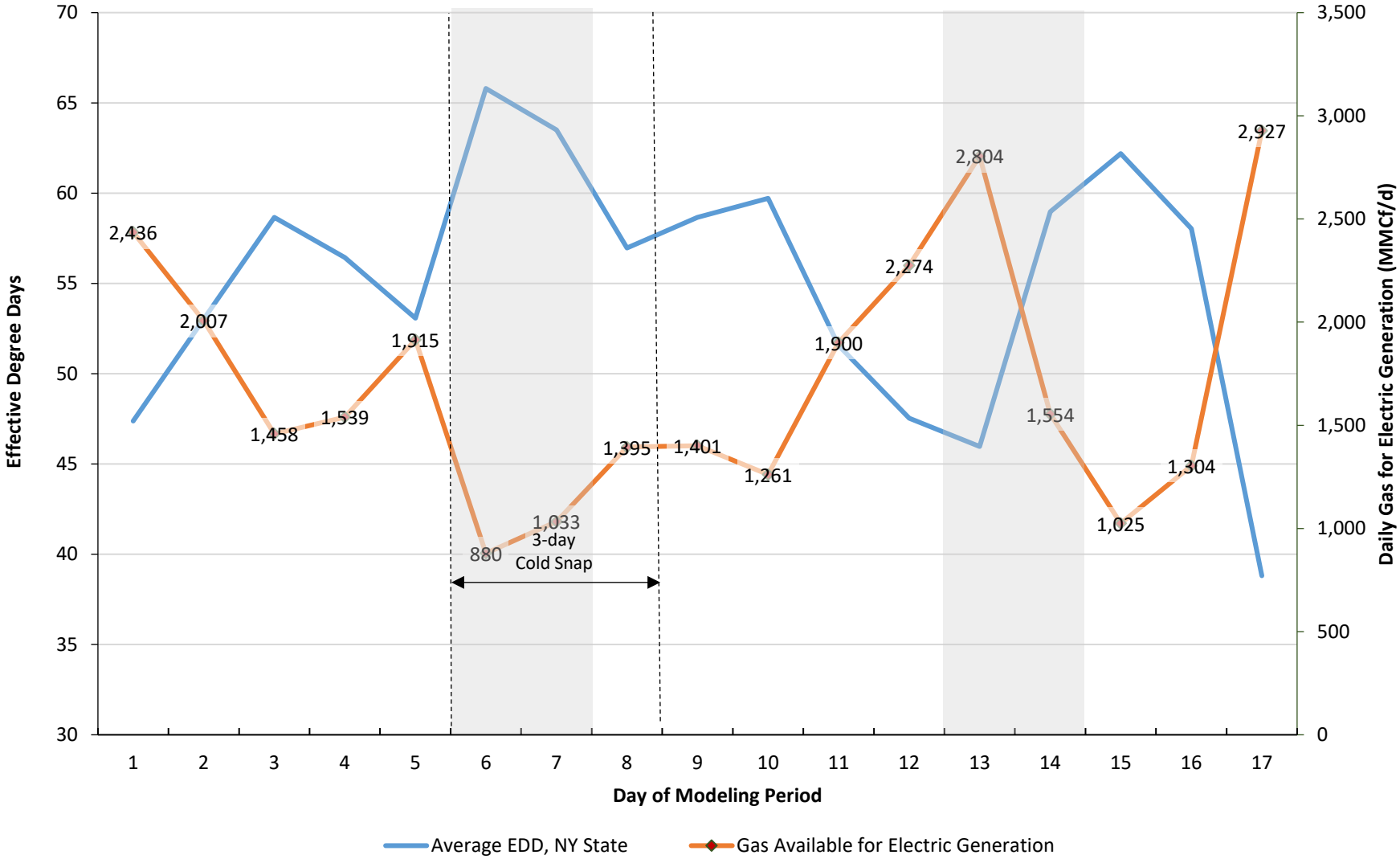
NYCA

Quantity of Stored Fuel for Oil and Dual Fuel Units

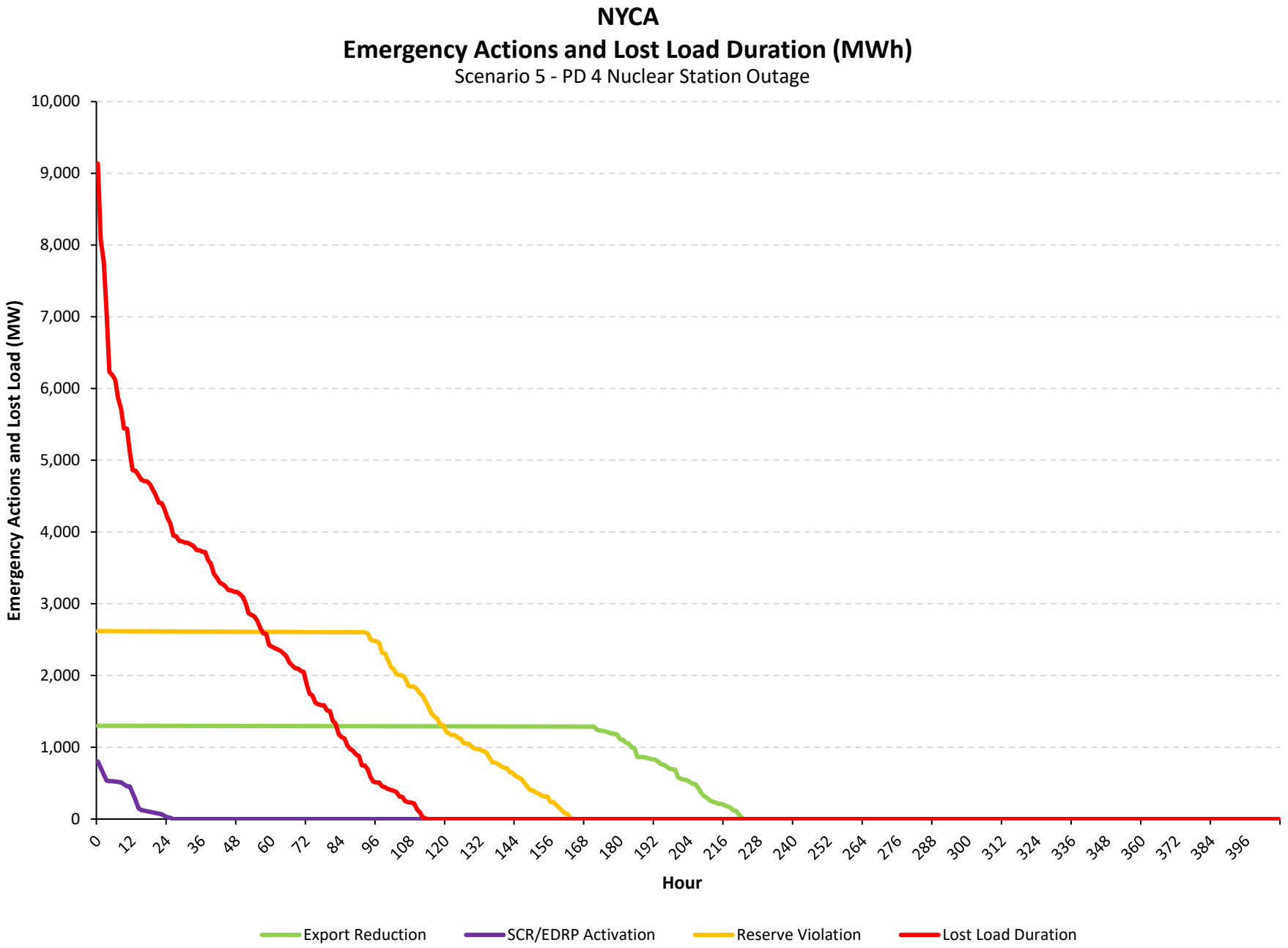
Scenario 5 - PD 4 Nuclear Station Outage

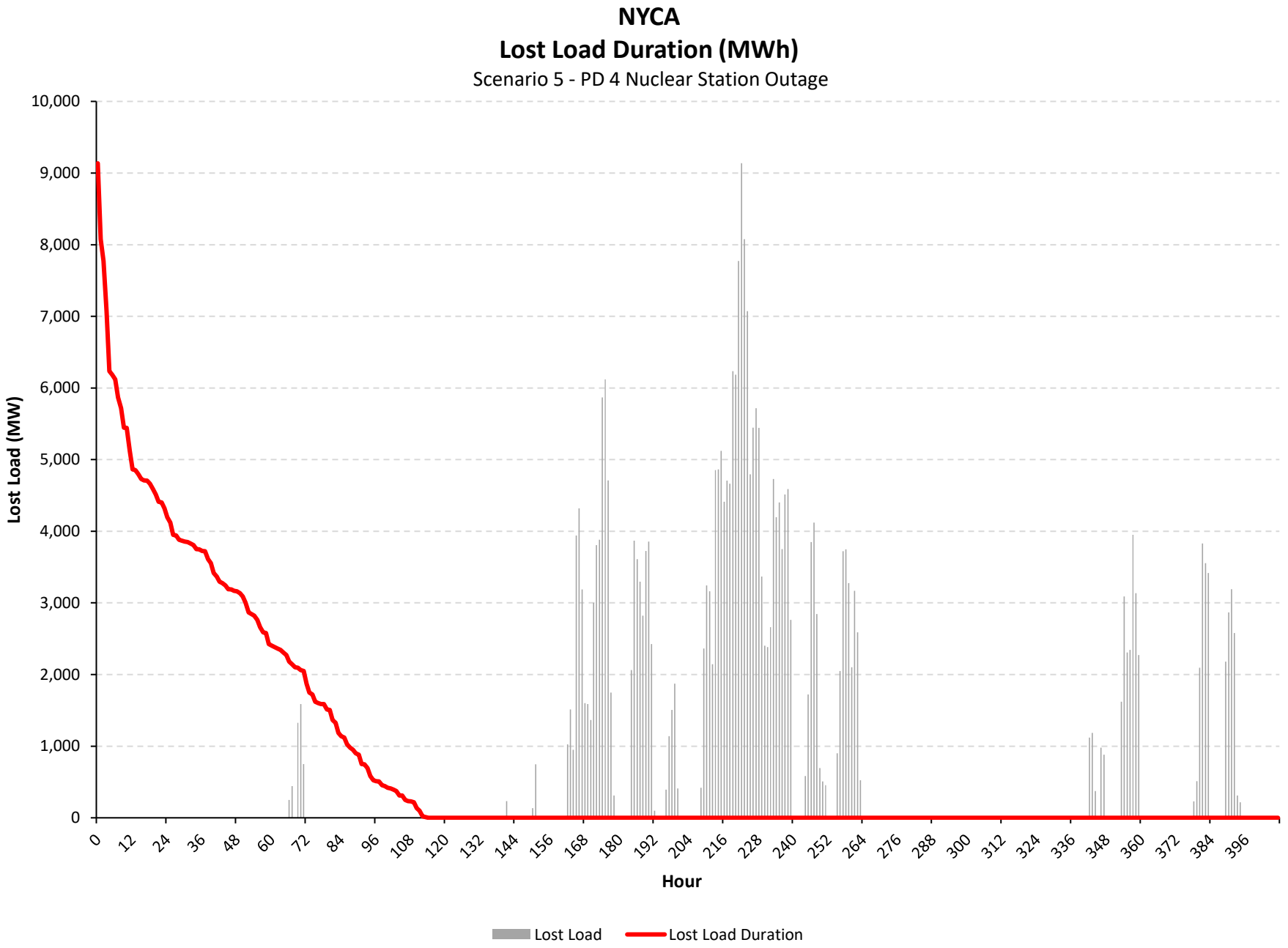


NYCA
Degree Days and Gas Available for Electric Generation 17-Day Modeling Period
Scenario 5 - PD 4 Nuclear Station Outage



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 5 - PD 4 Nuclear Station Outage
Emergency Actions and Lost Load (MW)
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 5 - PD 4 Nuclear Station Outage
Lost Load (MW)
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

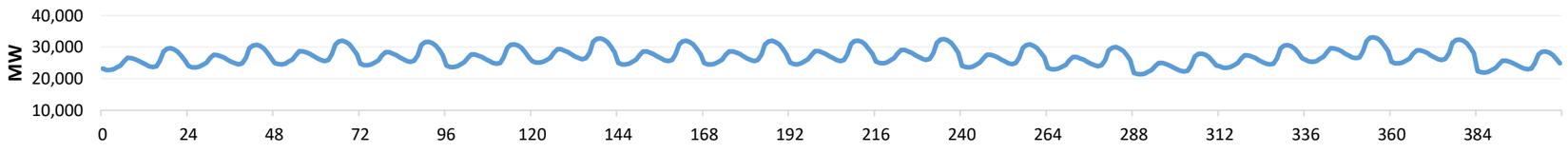
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 5 - PD 5 No Truck Refill (Winter 2030/2031)

Hourly Results Summary

Case Name: Scenario 5 - PD 5 No Truck Refill

Load During Modeling Period



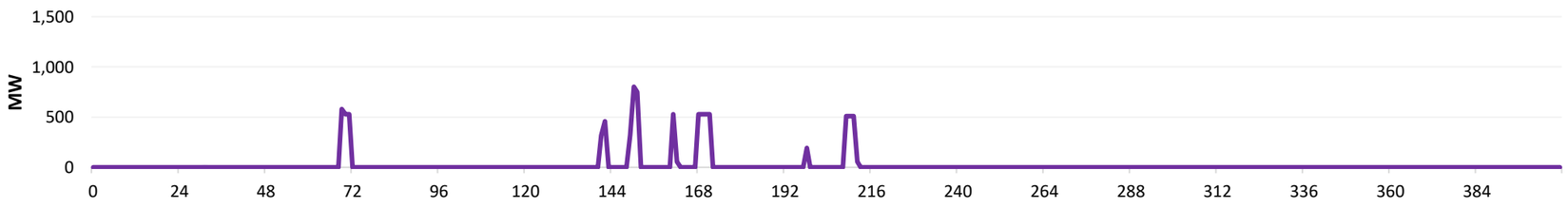
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	No Trucks
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



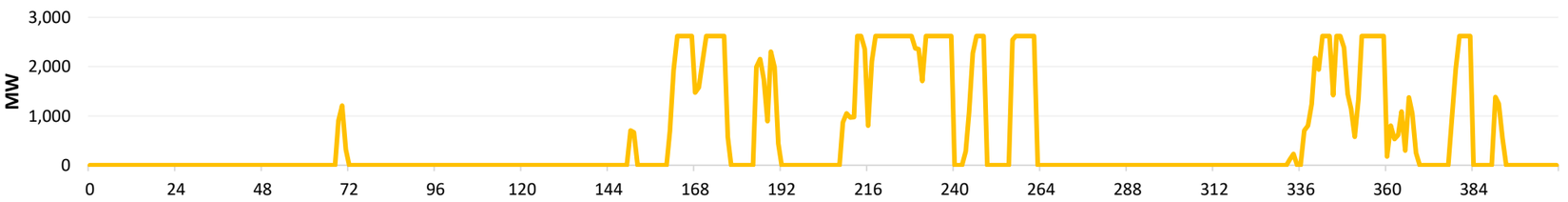
Export Reductions	
Total Hrs.	172
Total MWh	190,550
Avg. MW	467.0

SCR/EDRP Deployed During Modeling Period



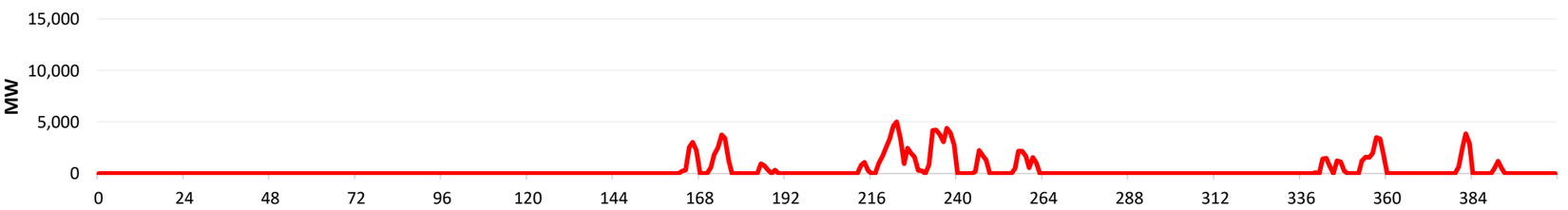
SCR Deployment	
Total Hrs.	19
Total MWh	8,753
Avg. MW	21.5

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	116
Total MWh	222,535
Avg. MW	545.4
First Hour with Viol.	69

Loss of Load During Modeling Period



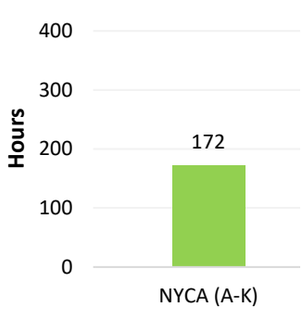
Loss of Load	
Total Hrs.	73
Total MWh	131,338
Avg. MW	321.9
First Hour with Losses	163

Full Period Results Summary

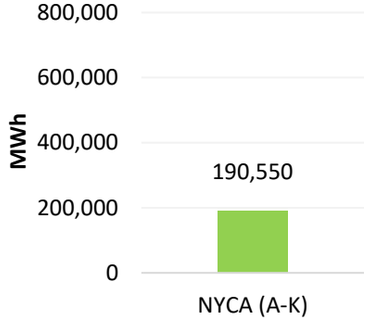
Case Name: Scenario 5 - PD 5 No Truck Refill

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	No Trucks
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

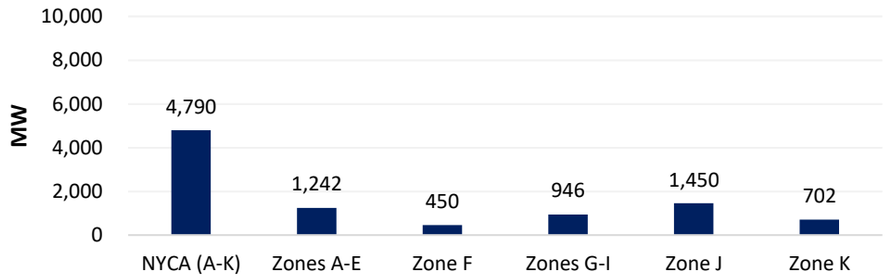
Hours Exports Reduced



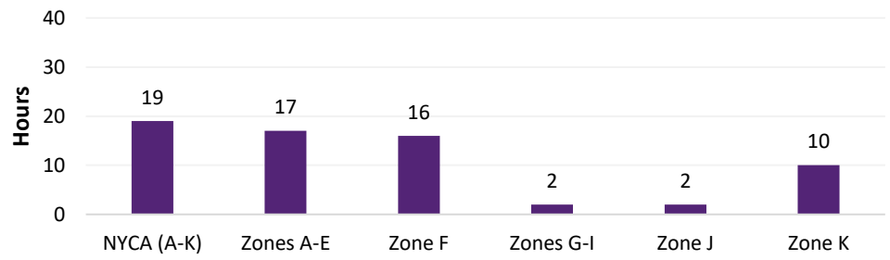
Total MWh of Exports Reduced



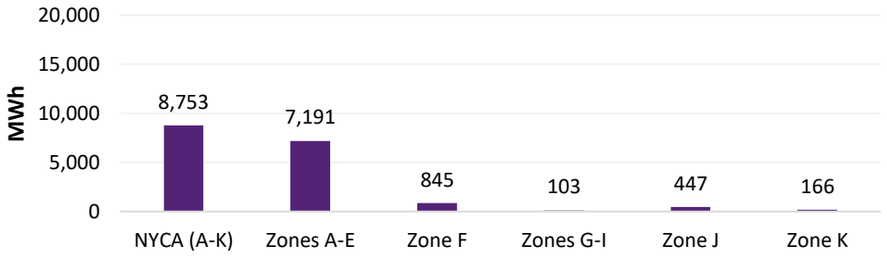
Average Capacity Not Available Due to Exhausted Fuel Inventory



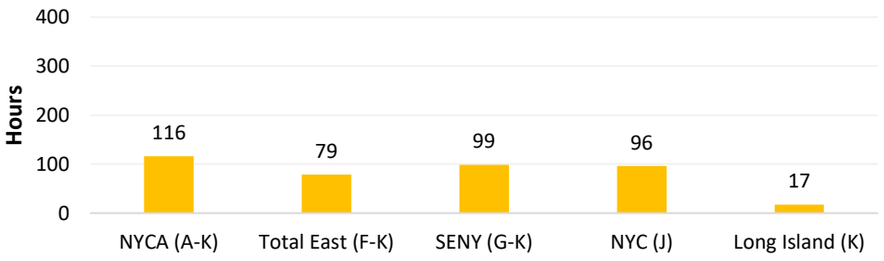
Hours SCR/EDRP Deployed



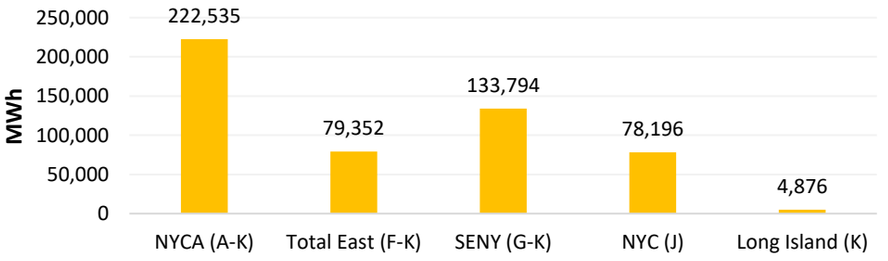
Total MWh SCR/EDRP Deployed



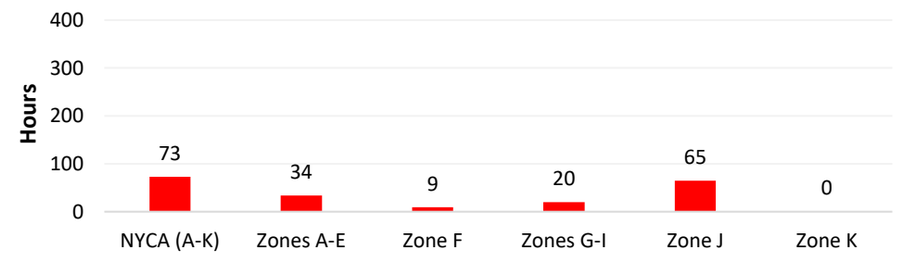
Hours with Reserve Violations



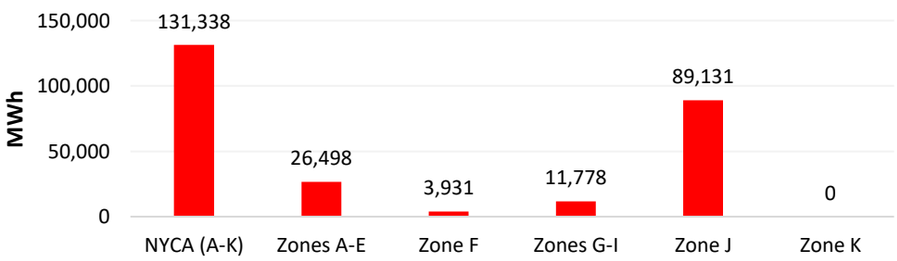
Total MWh of Reserve Violations

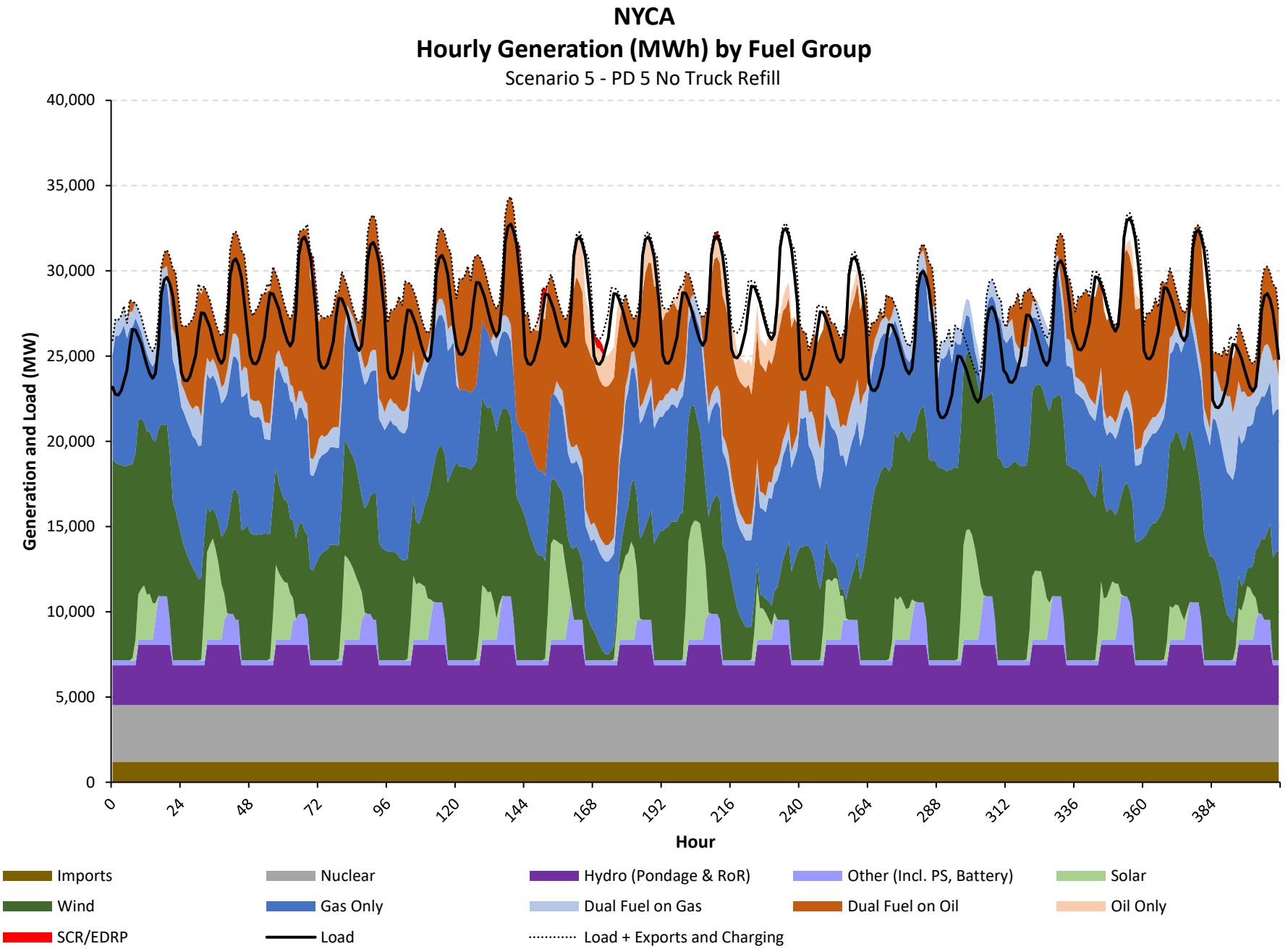


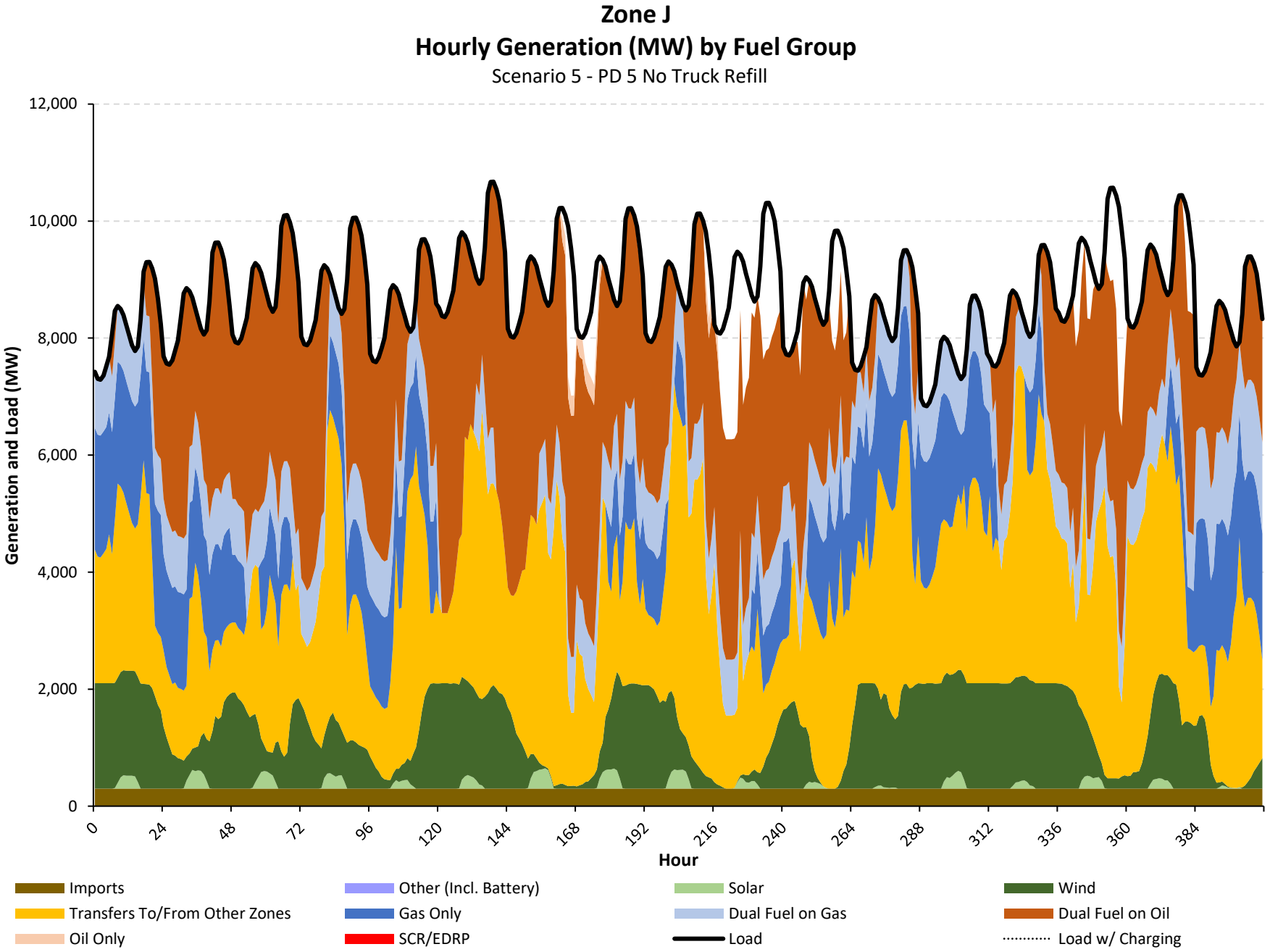
Hours with Loss of Load



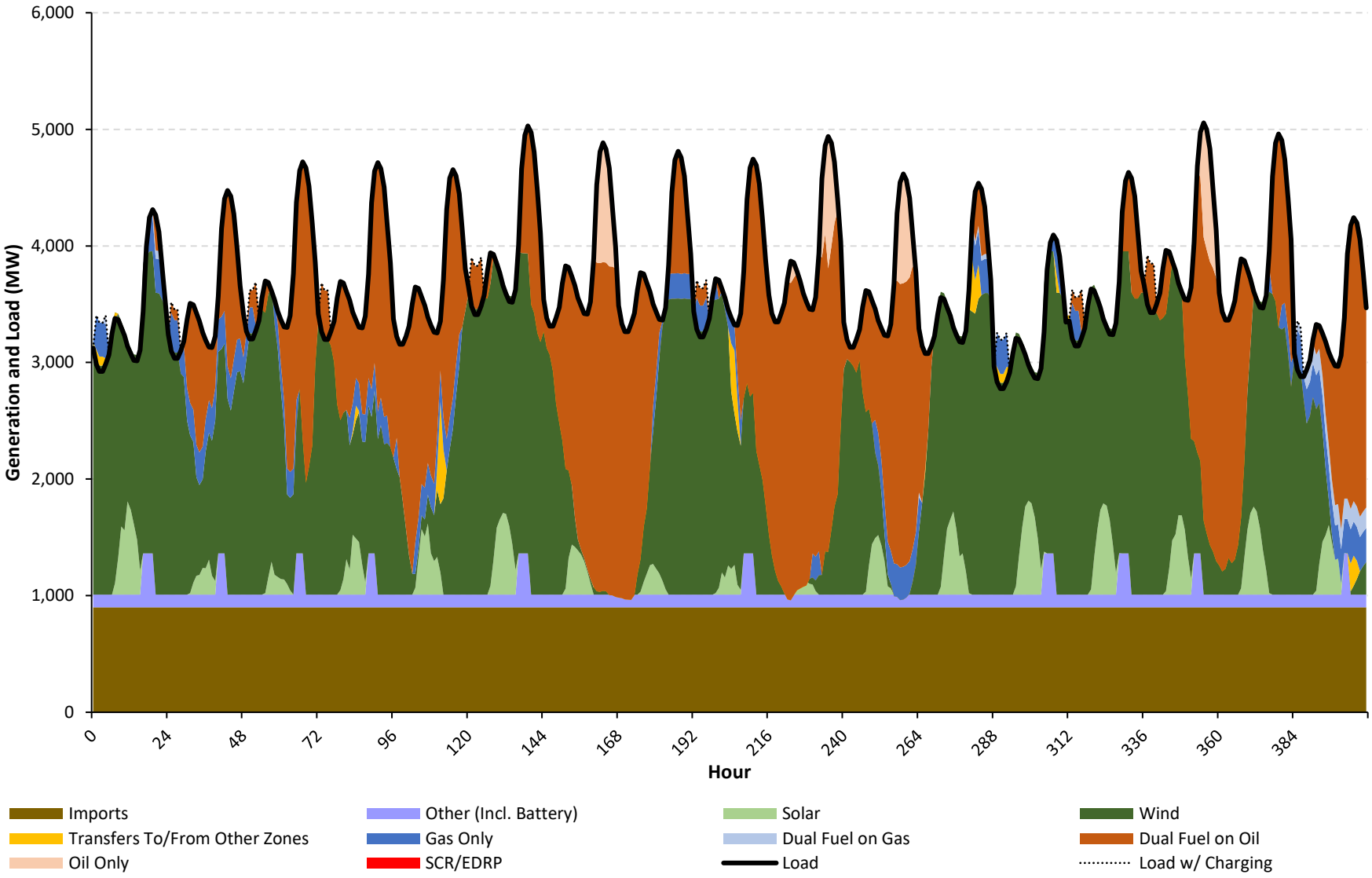
Total MWh of Lost Load

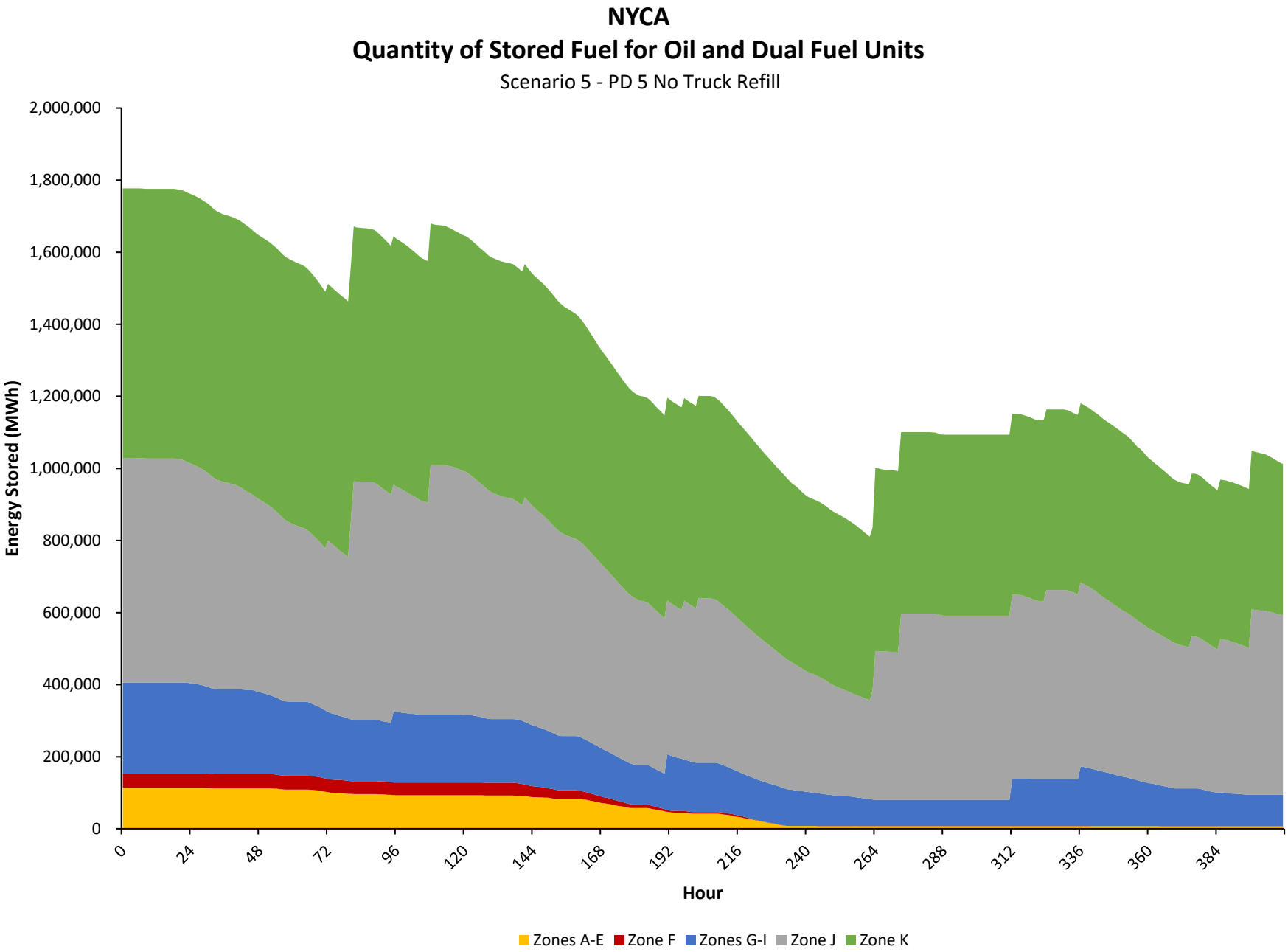


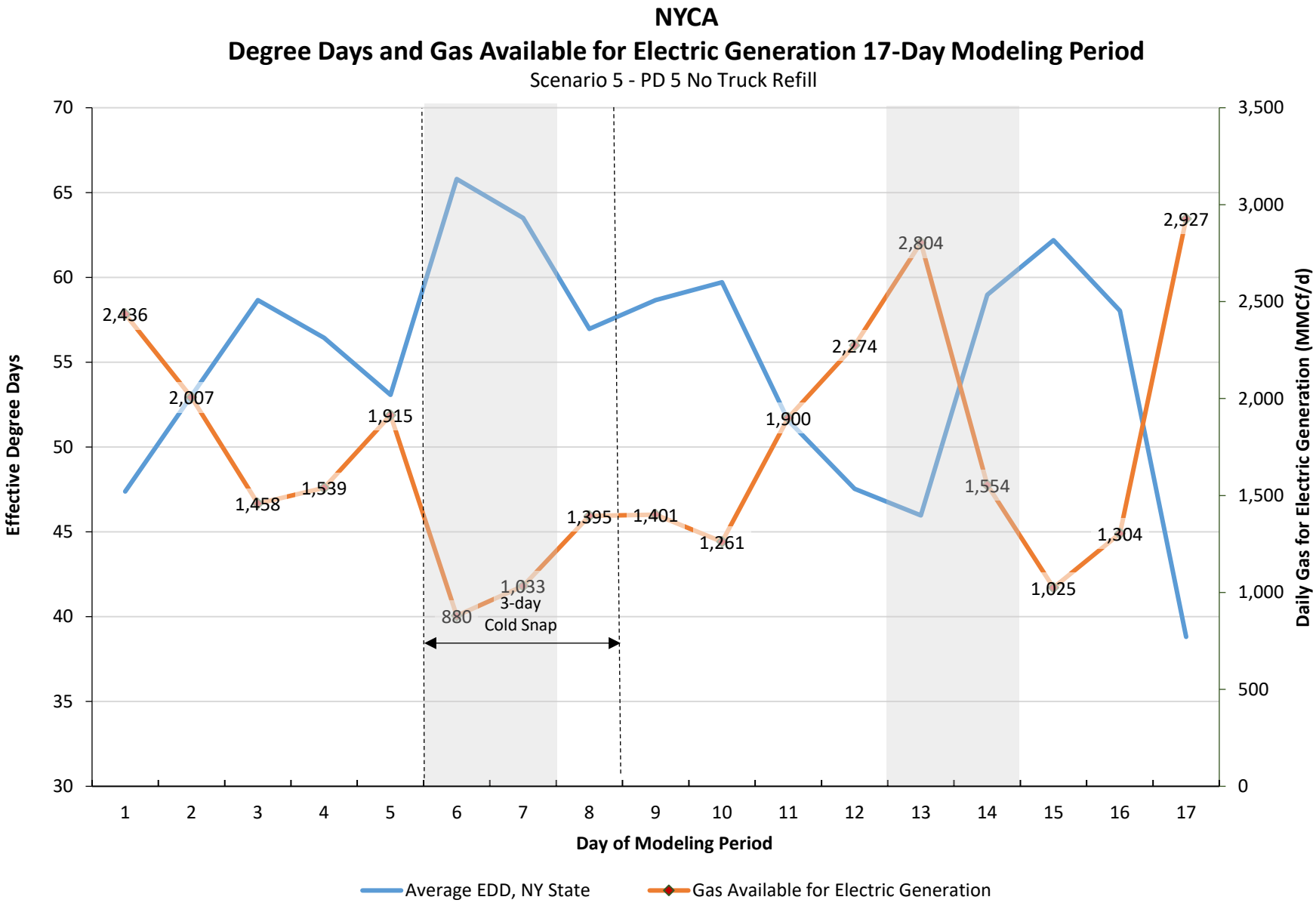

NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 5 - PD 5 No Truck Refill
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 5 - PD 5 No Truck Refill
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

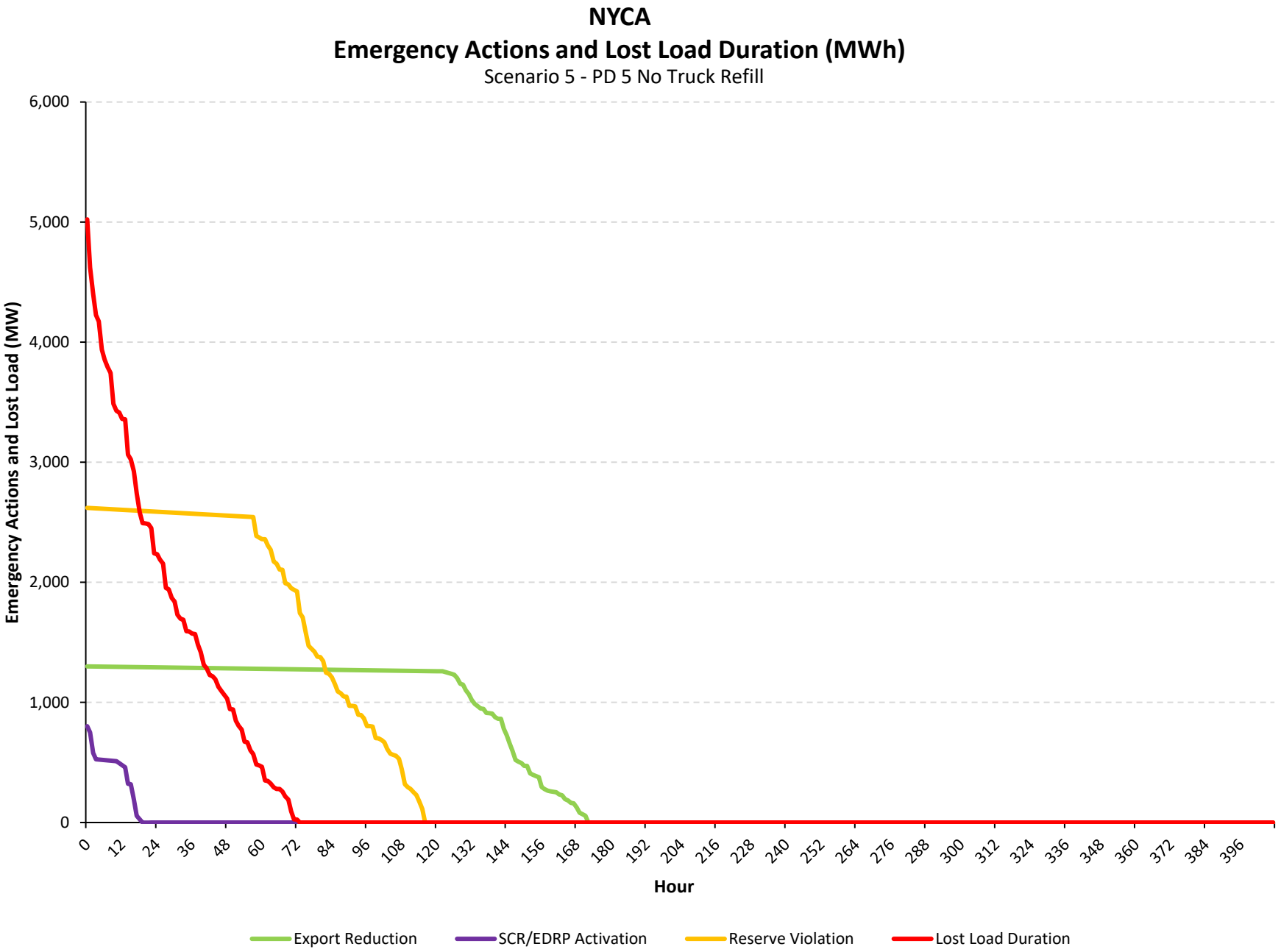
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 5 - PD 5 No Truck Refill

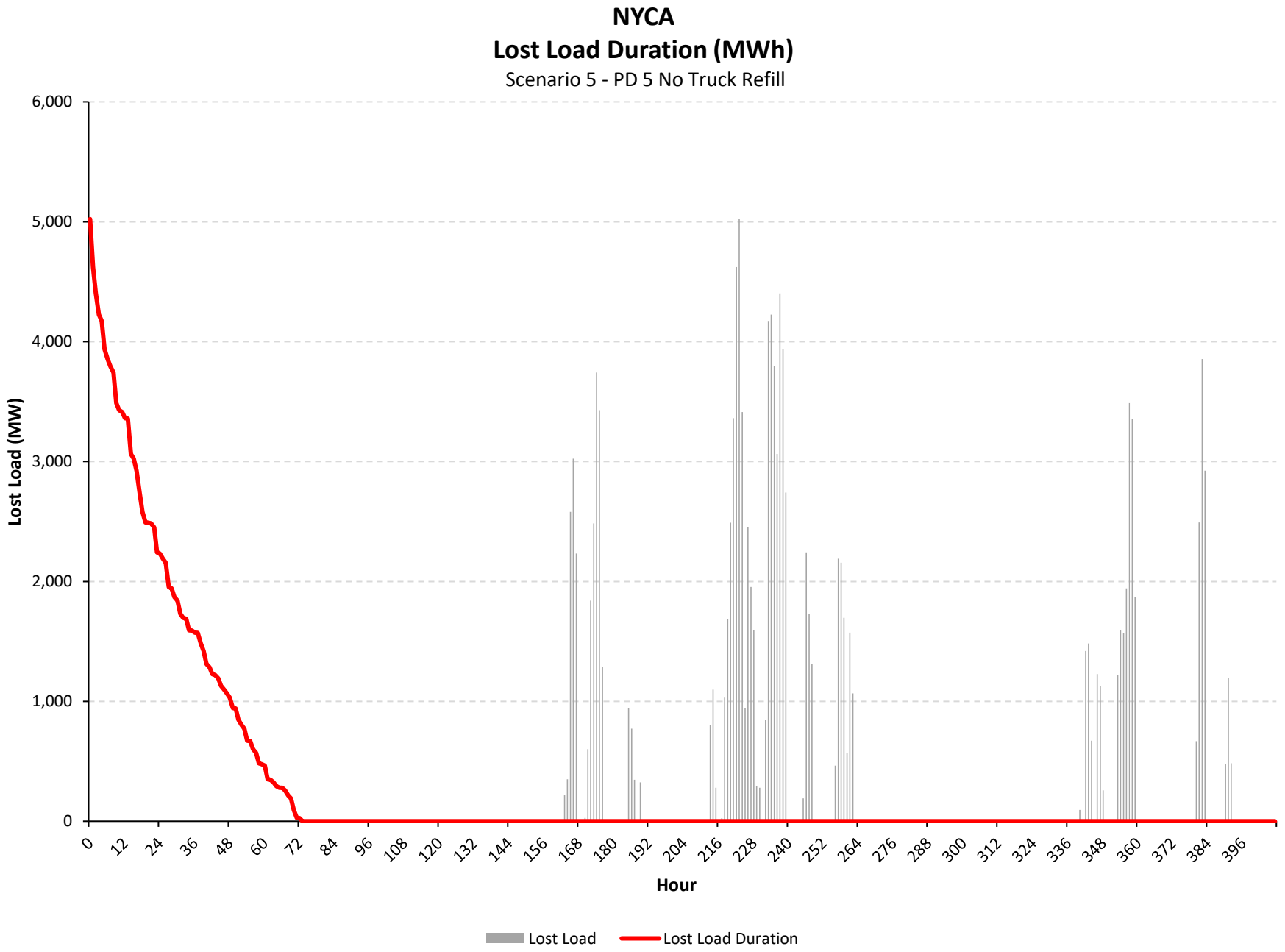



NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 5 - PD 5 No Truck Refill
Energy Stored (MWh)
2,000,000
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Zones A-E
Zone F
Zones G-I
Zone J
Zone K



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 5 - PD 5 No Truck Refill
Emergency Actions and Lost Load (MW)
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 5 - PD 5 No Truck Refill
Lost Load (MW)
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

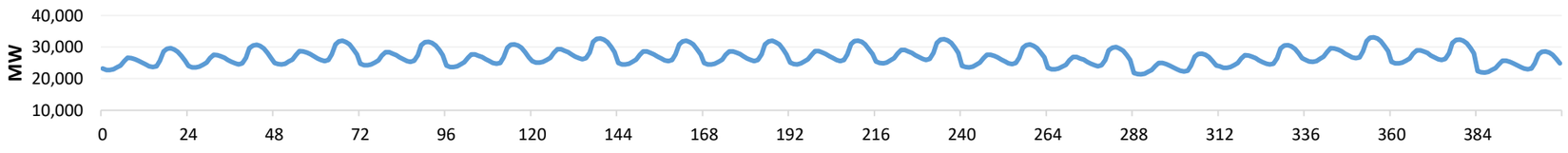
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 5 - PD 6 No Barge Refill (Winter 2030/2031)

Hourly Results Summary

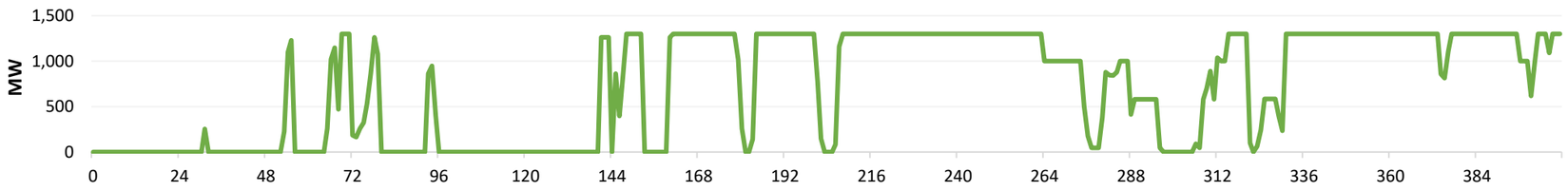
Case Name: Scenario 5 - PD 6 No Barge Refill

Load During Modeling Period



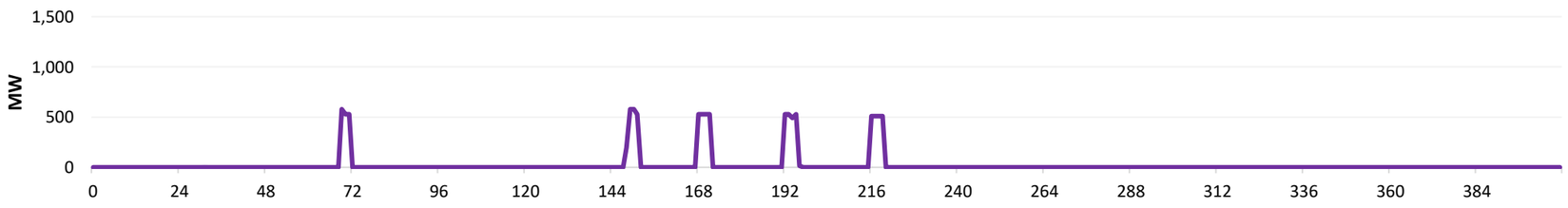
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	No Barge
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



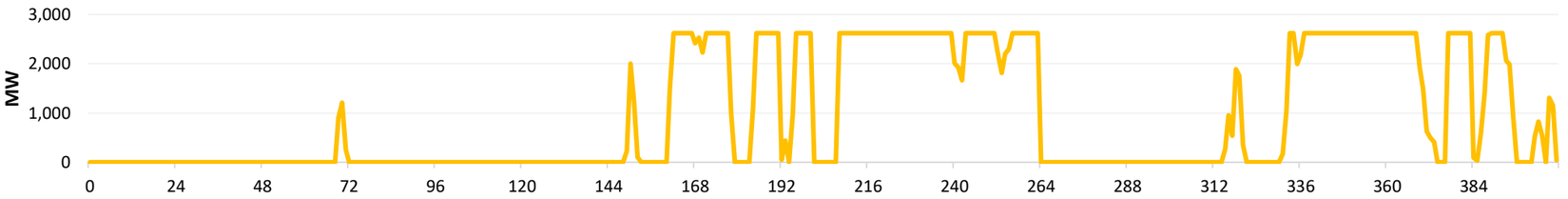
Export Reductions	
Total Hrs.	266
Total MWh	289,166
Avg. MW	708.7

SCR/EDRP Deployed During Modeling Period



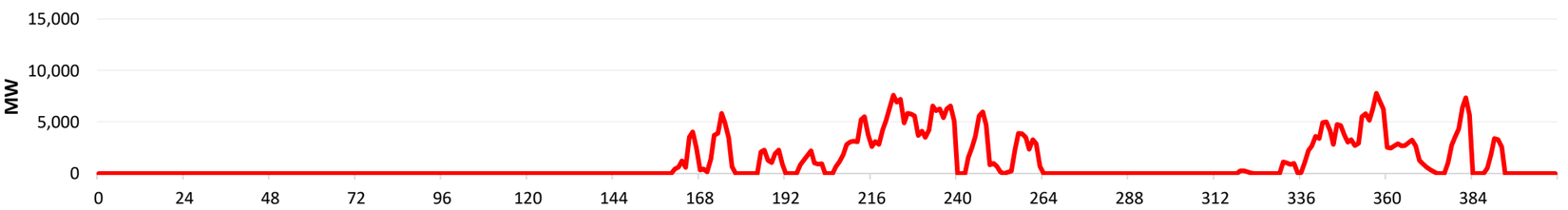
SCR Deployment	
Total Hrs.	20
Total MWh	9,748
Avg. MW	23.9

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	171
Total MWh	374,197
Avg. MW	917.1
First Hour with Viol.	69

Loss of Load During Modeling Period



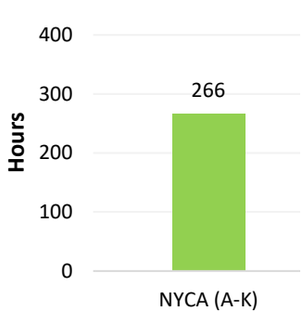
Loss of Load	
Total Hrs.	144
Total MWh	439,176
Avg. MW	1,076.4
First Hour with Losses	161

Full Period Results Summary

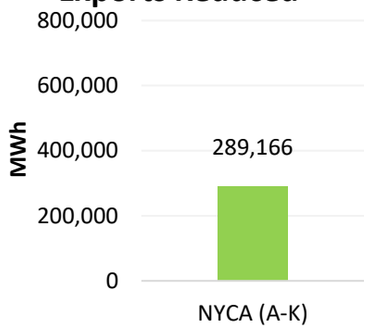
Case Name: Scenario 5 - PD 6 No Barge Refill

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	No Barge
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

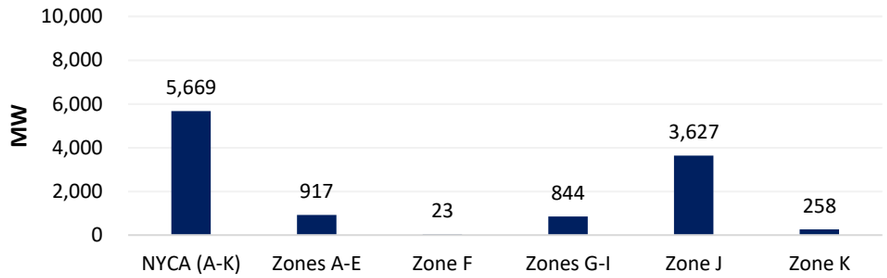
Hours Exports Reduced



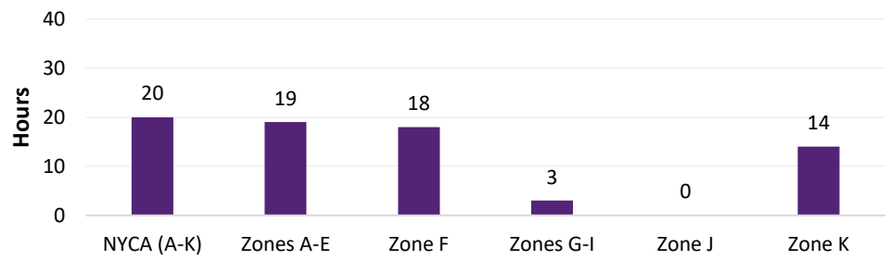
Total MWh of Exports Reduced



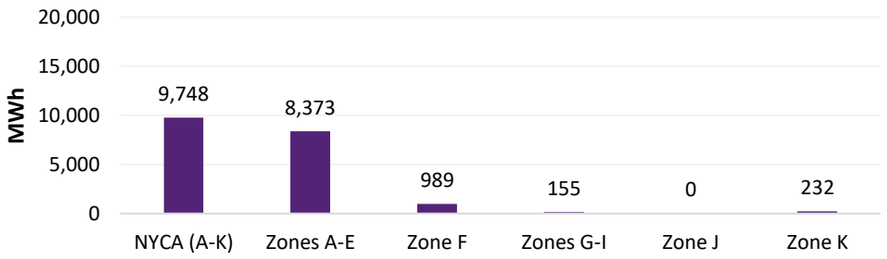
Average Capacity Not Available Due to Exhausted Fuel Inventory



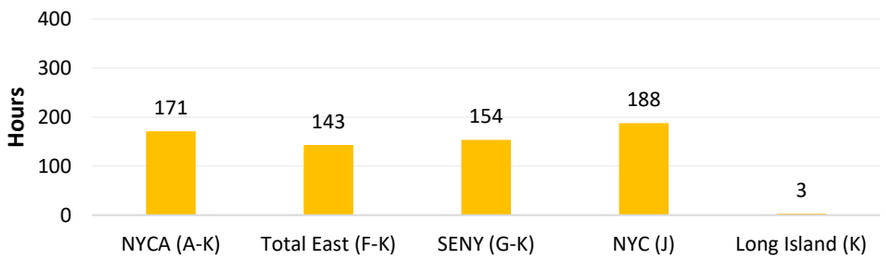
Hours SCR/EDRP Deployed



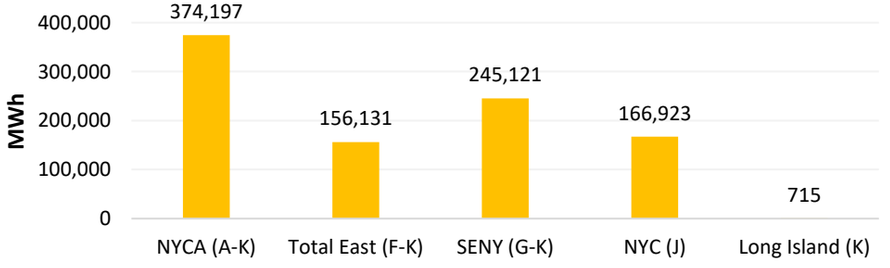
Total MWh SCR/EDRP Deployed



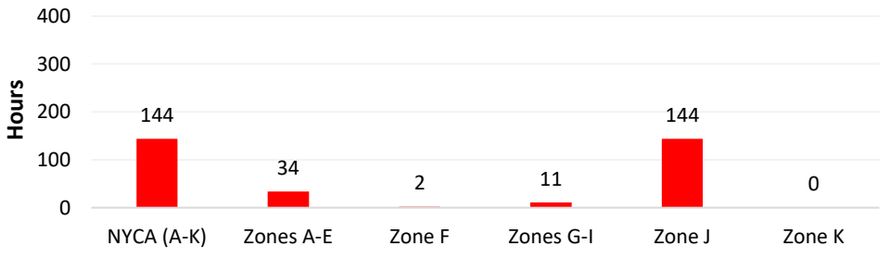
Hours with Reserve Violations



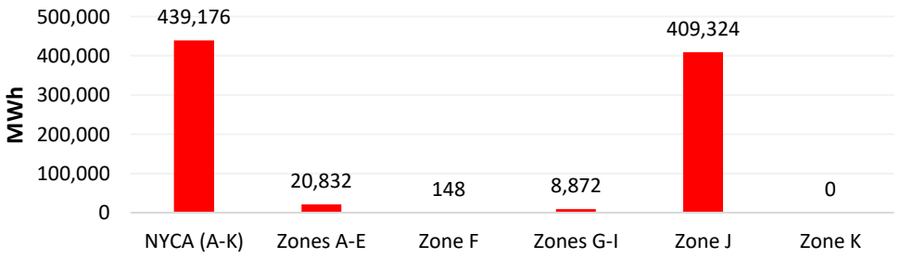
Total MWh of Reserve Violations

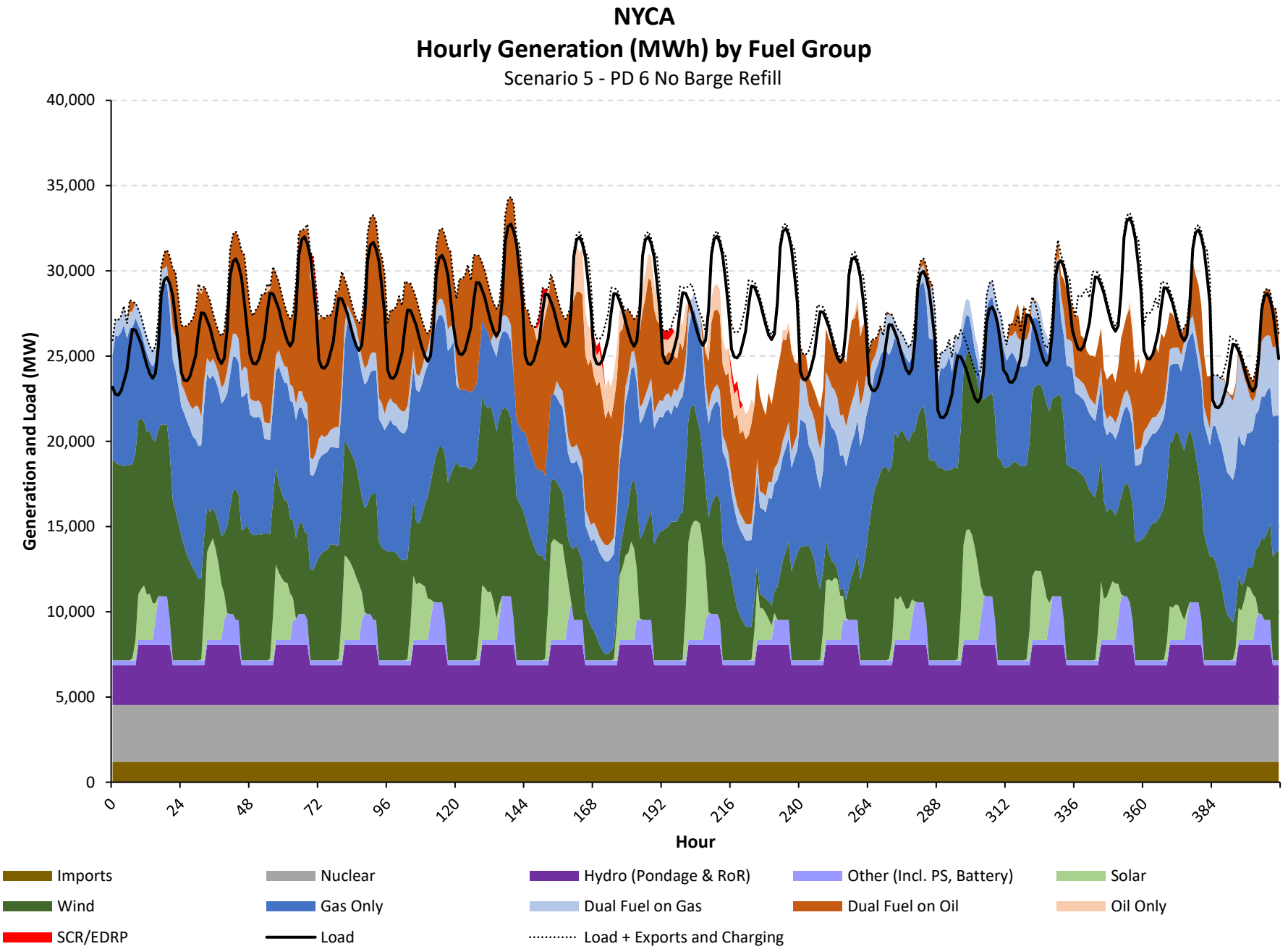


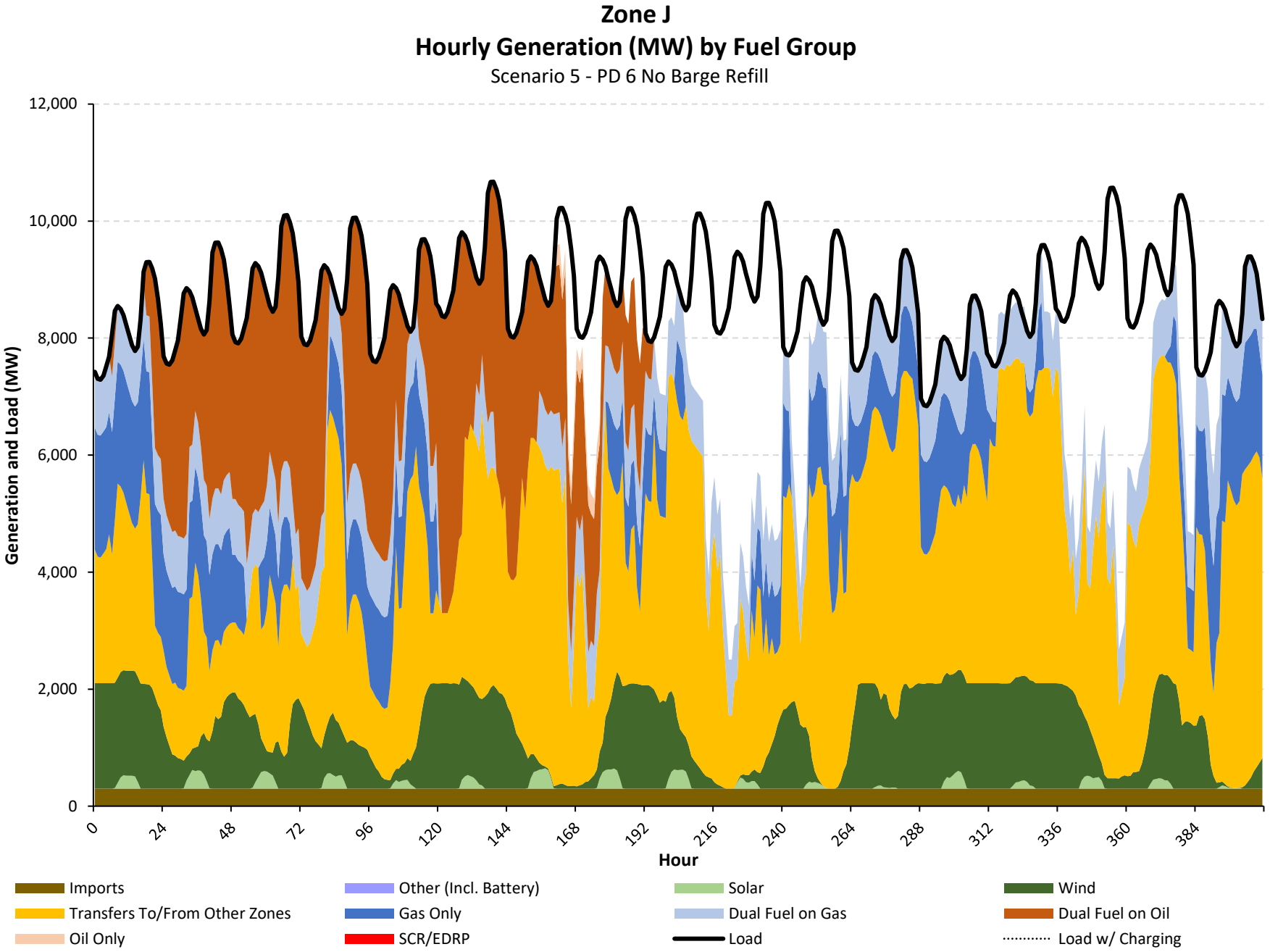
Hours with Loss of Load



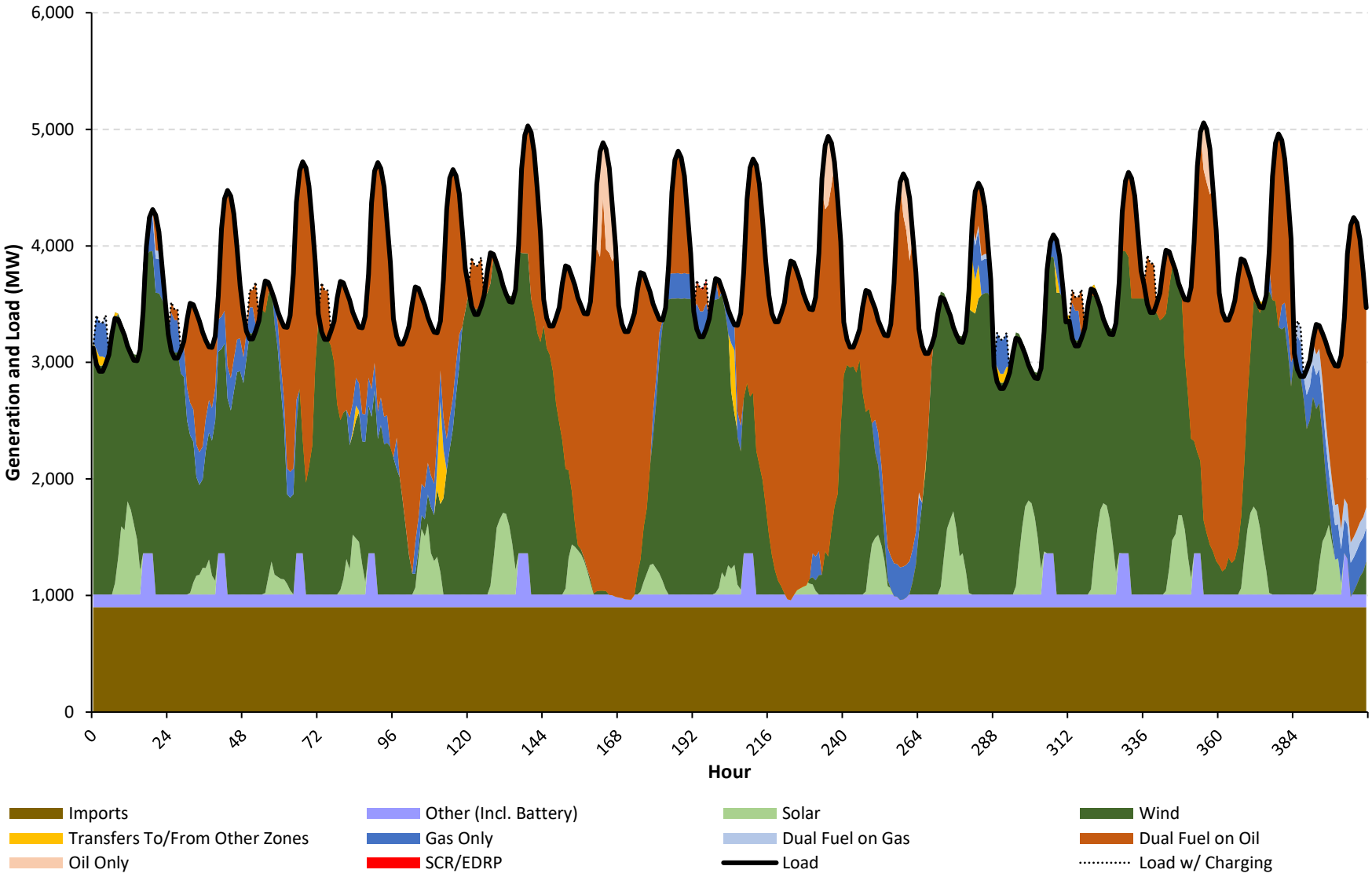
Total MWh of Lost Load

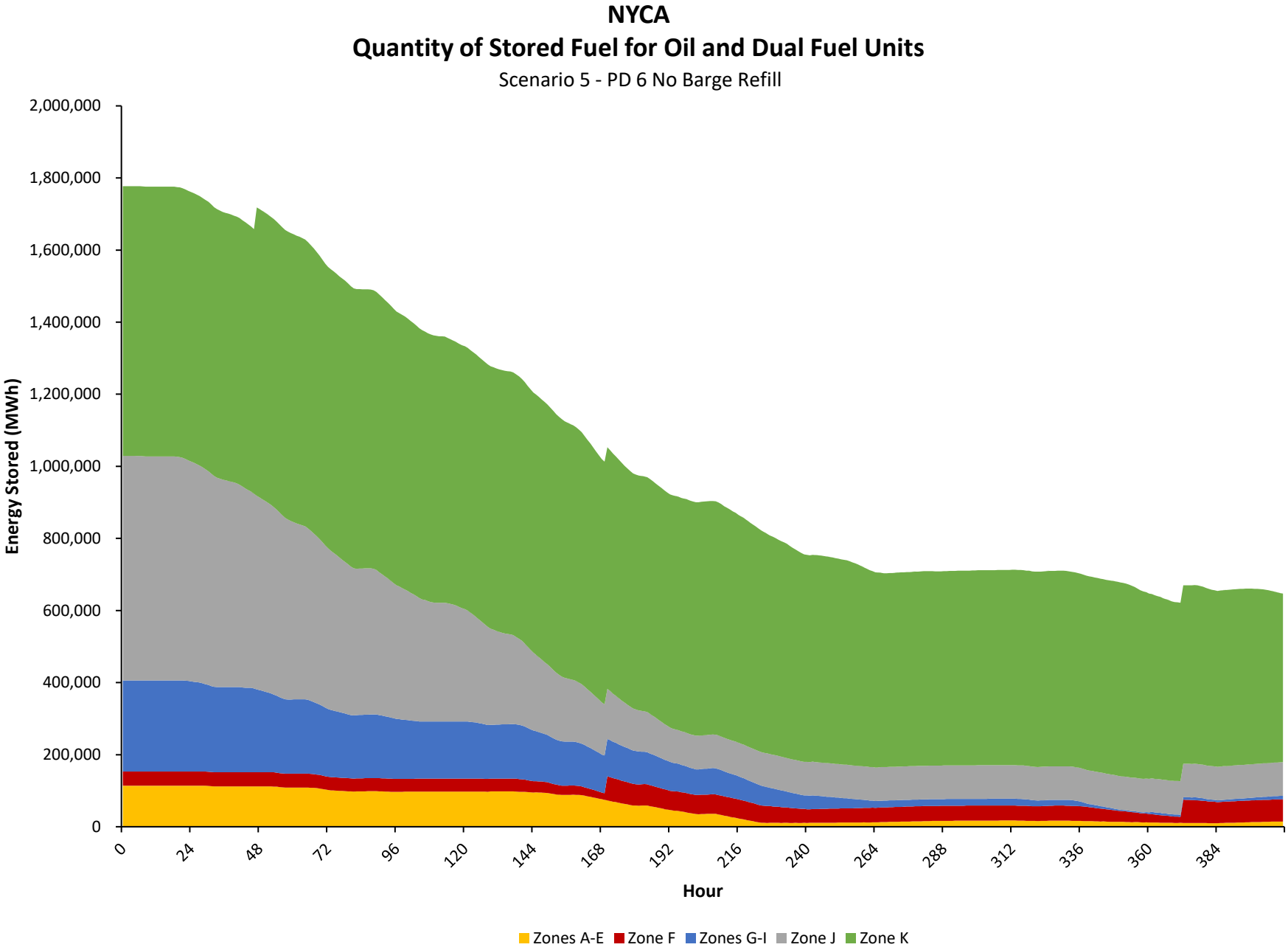


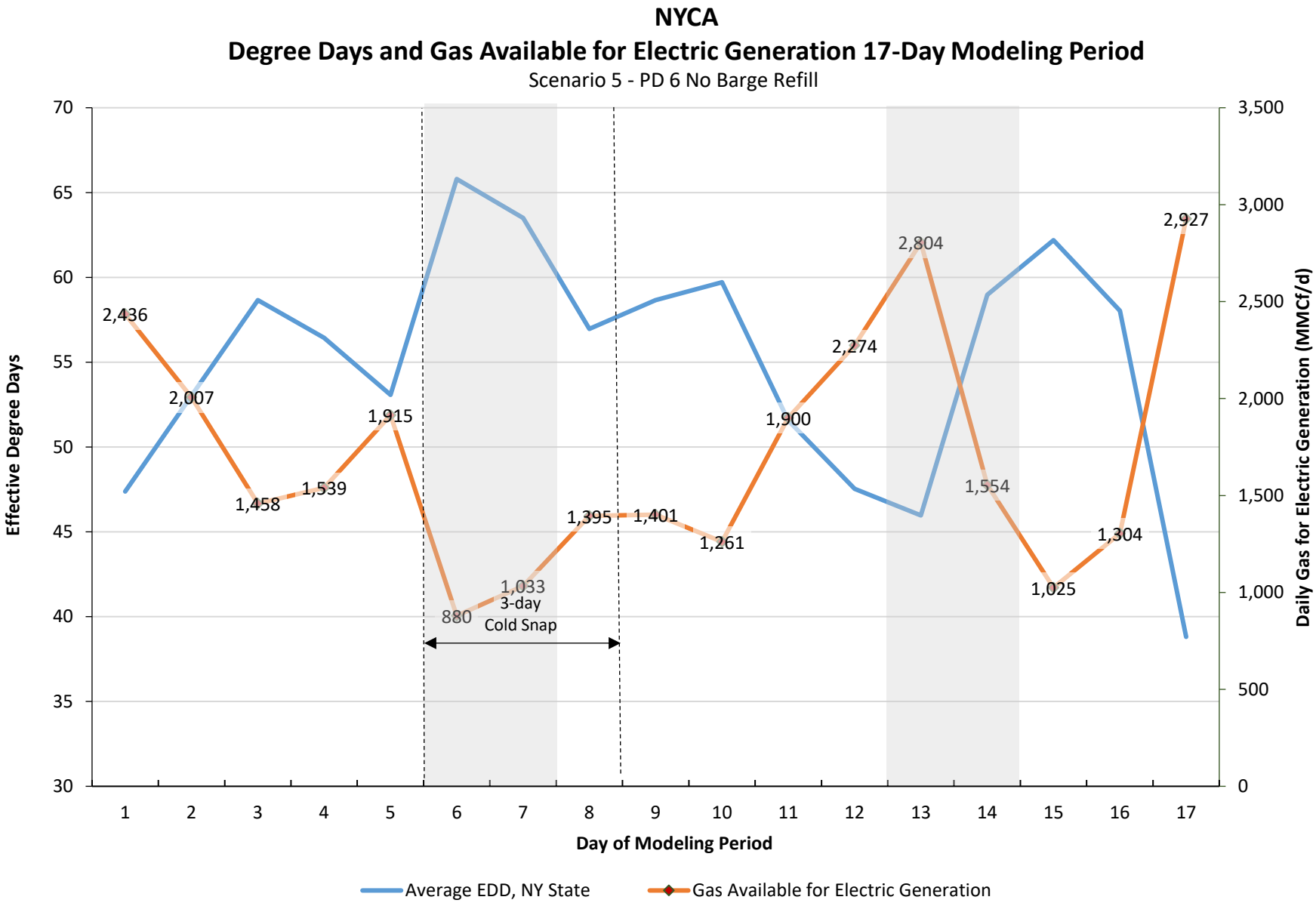

NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 5 - PD 6 No Barge Refill
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 5 - PD 6 No Barge Refill
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

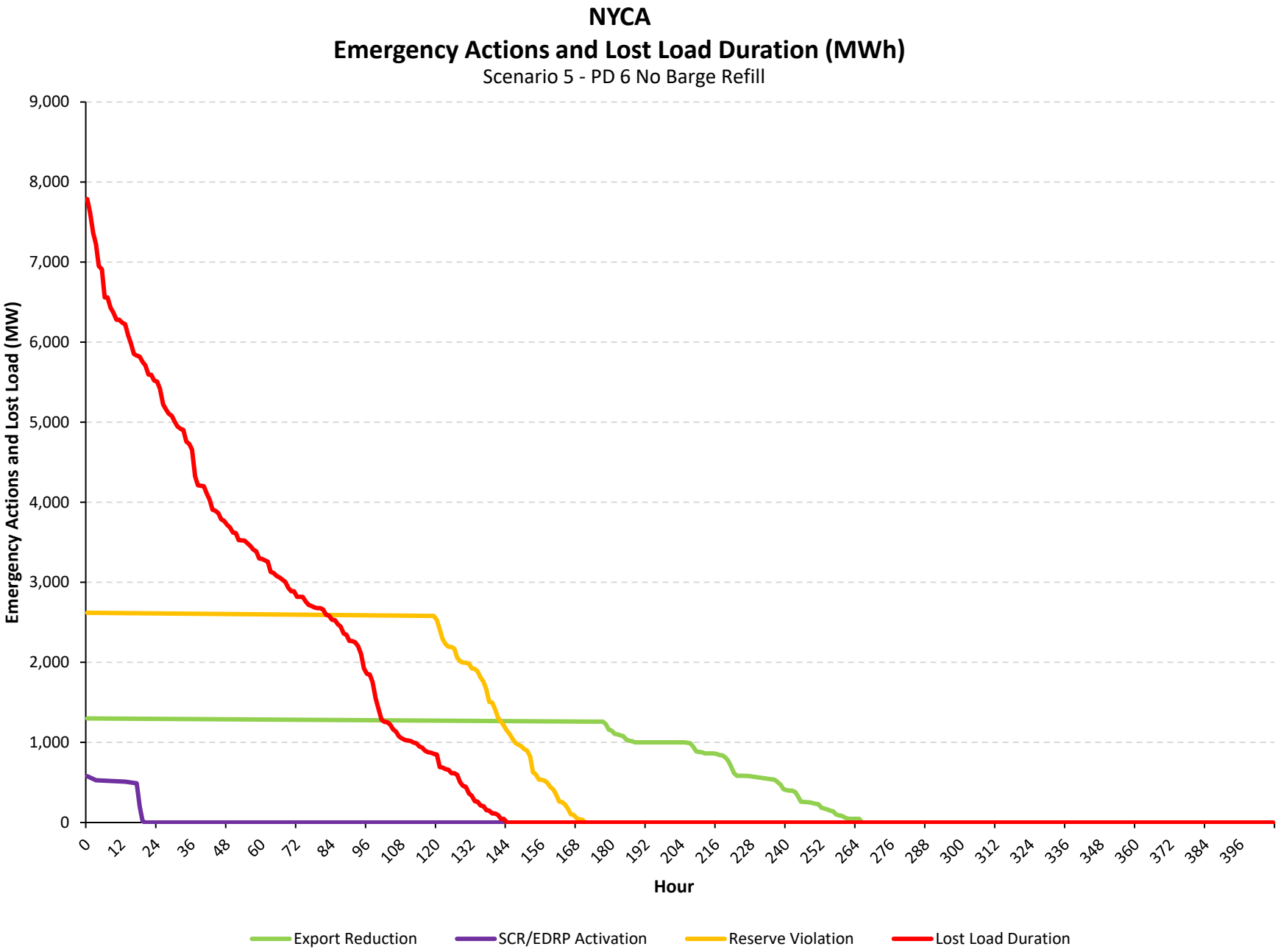
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 5 - PD 6 No Barge Refill

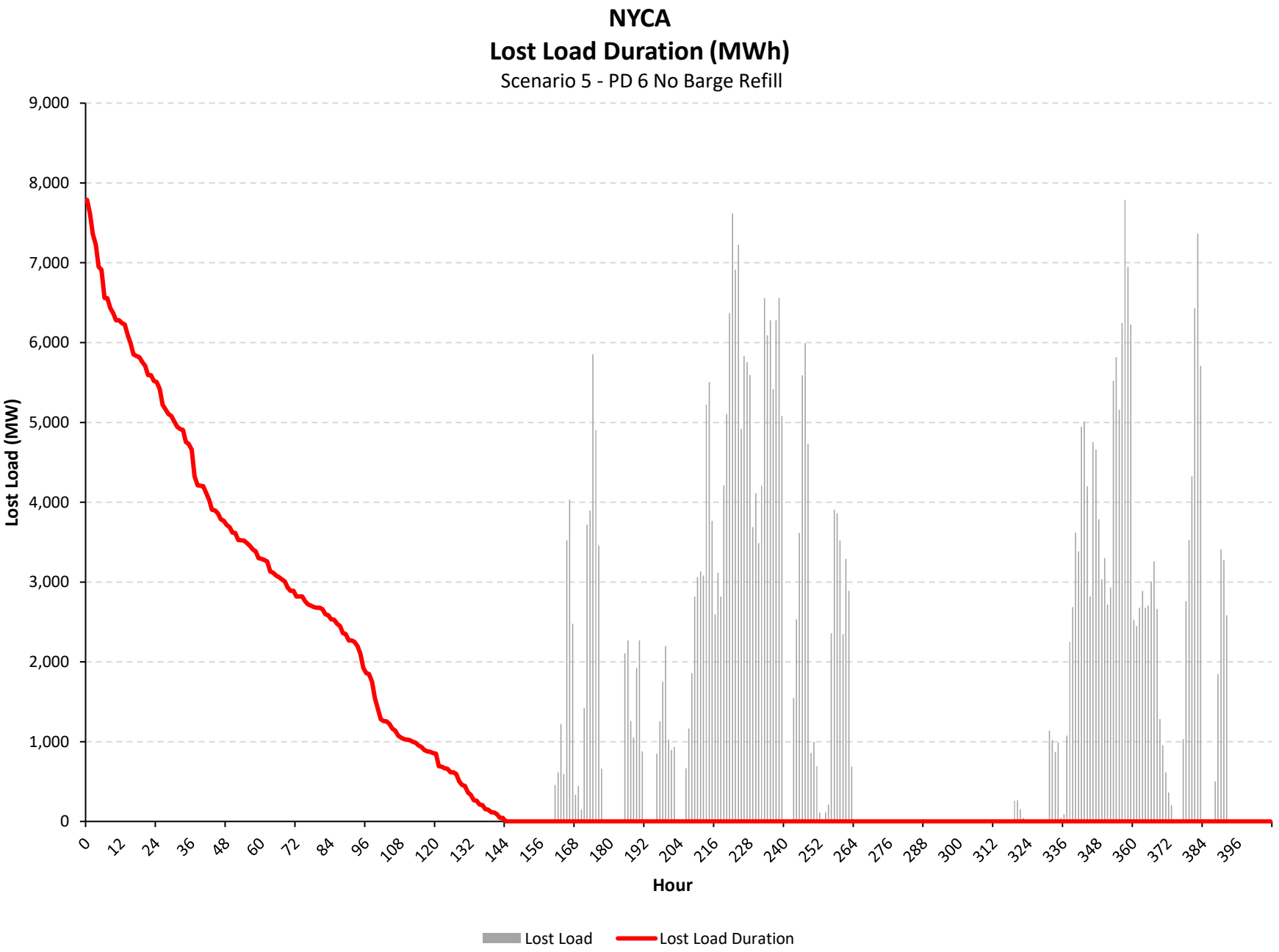



NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 5 - PD 6 No Barge Refill
Energy Stored (MWh)
2,000,000
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Zones A-E
Zone F
Zones G-I
Zone J
Zone K



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 5 - PD 6 No Barge Refill
Emergency Actions and Lost Load (MW)
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 5 - PD 6 No Barge Refill
Lost Load (MW)
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

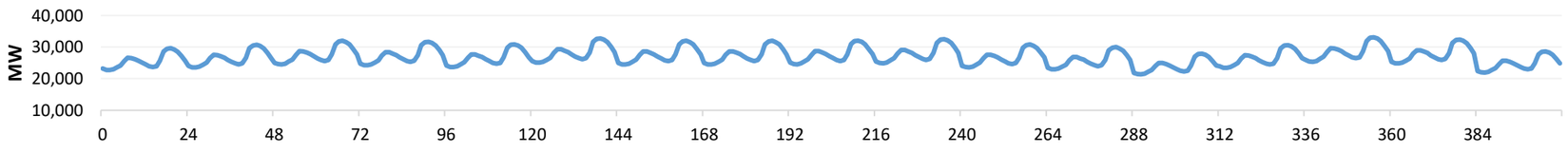
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 5 - PD 7 No Refill (Winter 2030/2031)

Hourly Results Summary

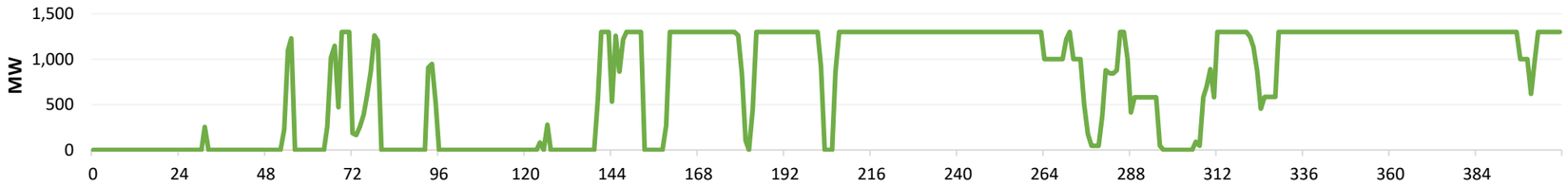
Case Name: Scenario 5 - PD 7 No Refill

Load During Modeling Period



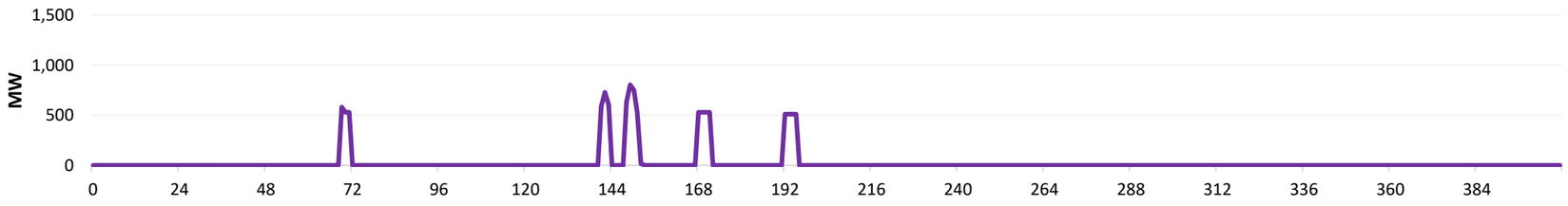
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	No Refill
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



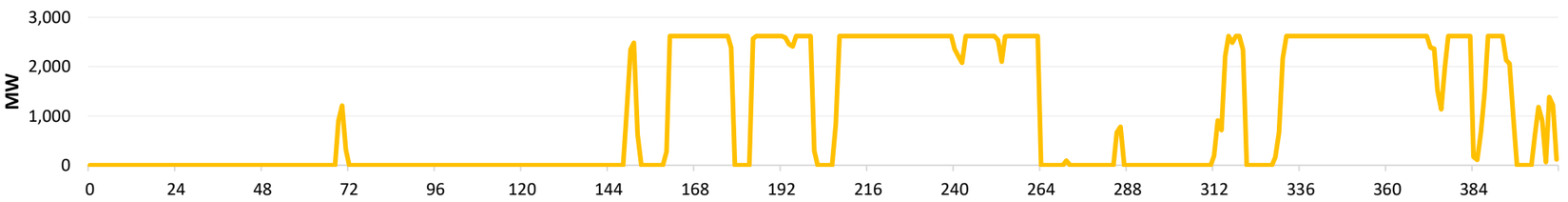
Export Reductions	
Total Hrs.	273
Total MWh	304,699
Avg. MW	746.8

SCR/EDRP Deployed During Modeling Period



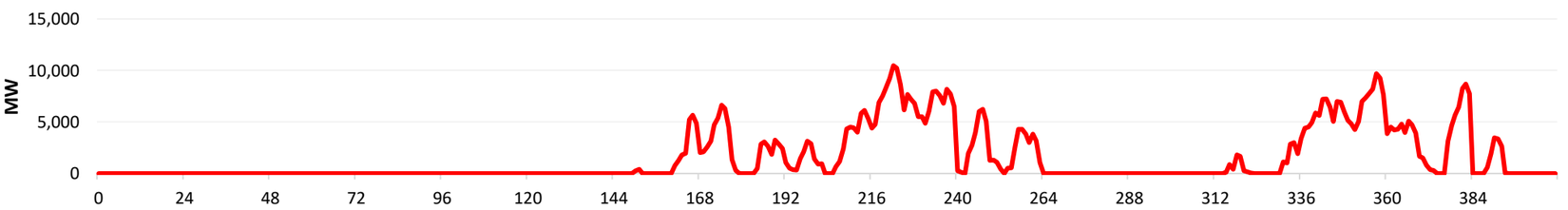
SCR Deployment	
Total Hrs.	19
Total MWh	10,426
Avg. MW	25.6

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	187
Total MWh	426,272
Avg. MW	1,044.8
First Hour with Viol.	69

Loss of Load During Modeling Period



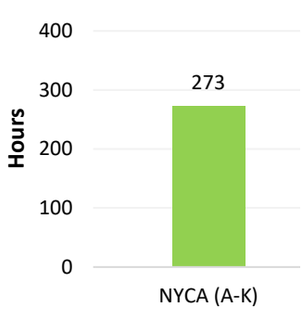
Loss of Load	
Total Hrs.	160
Total MWh	632,154
Avg. MW	1,549.4
First Hour with Losses	150

Full Period Results Summary

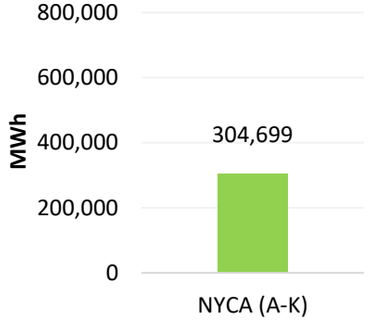
Case Name: Scenario 5 - PD 7 No Refill

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	No Refill
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

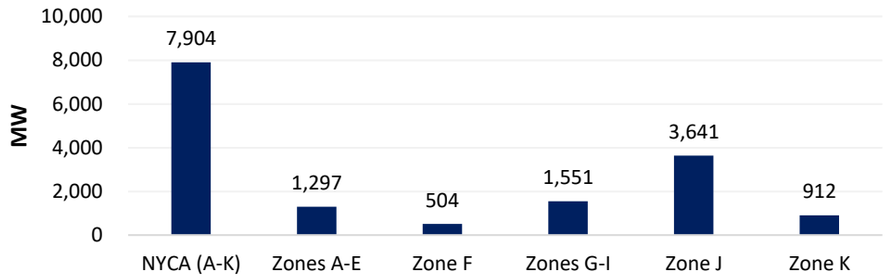
Hours Exports Reduced



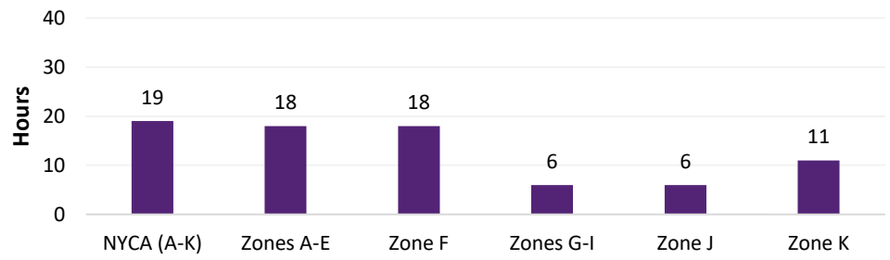
Total MWh of Exports Reduced



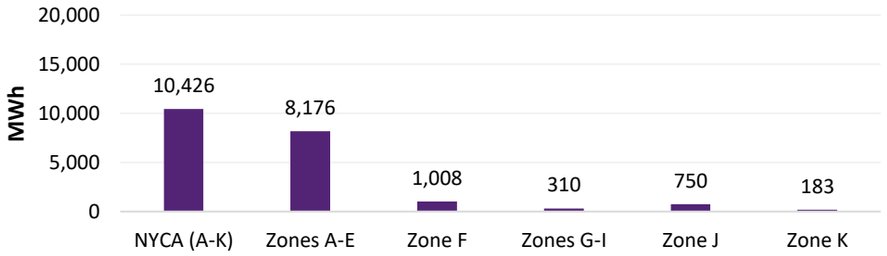
Average Capacity Not Available Due to Exhausted Fuel Inventory



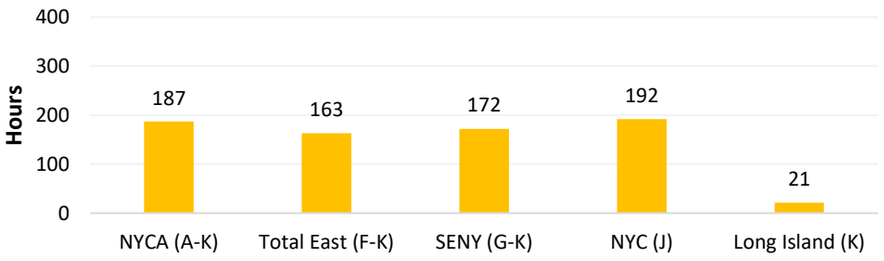
Hours SCR/EDRP Deployed



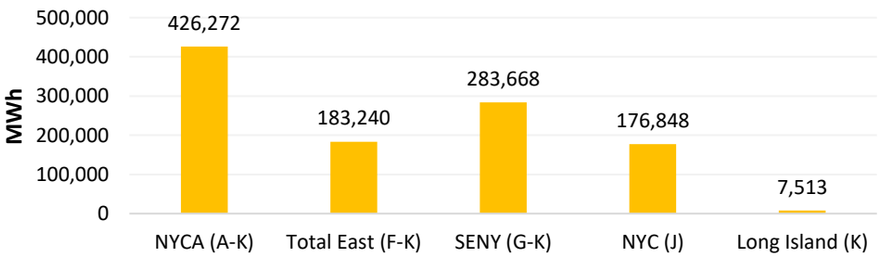
Total MWh SCR/EDRP Deployed



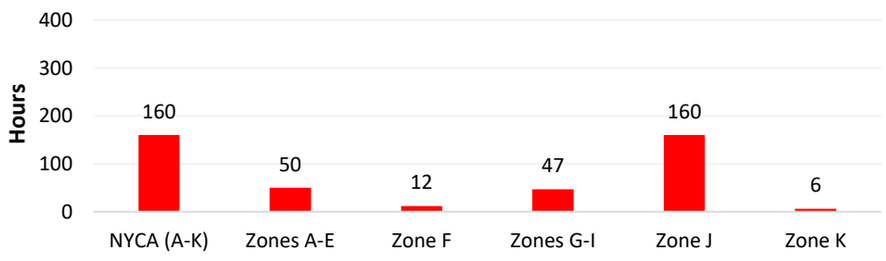
Hours with Reserve Violations



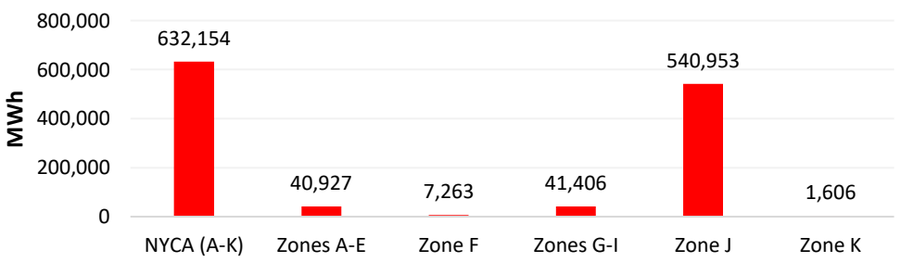
Total MWh of Reserve Violations

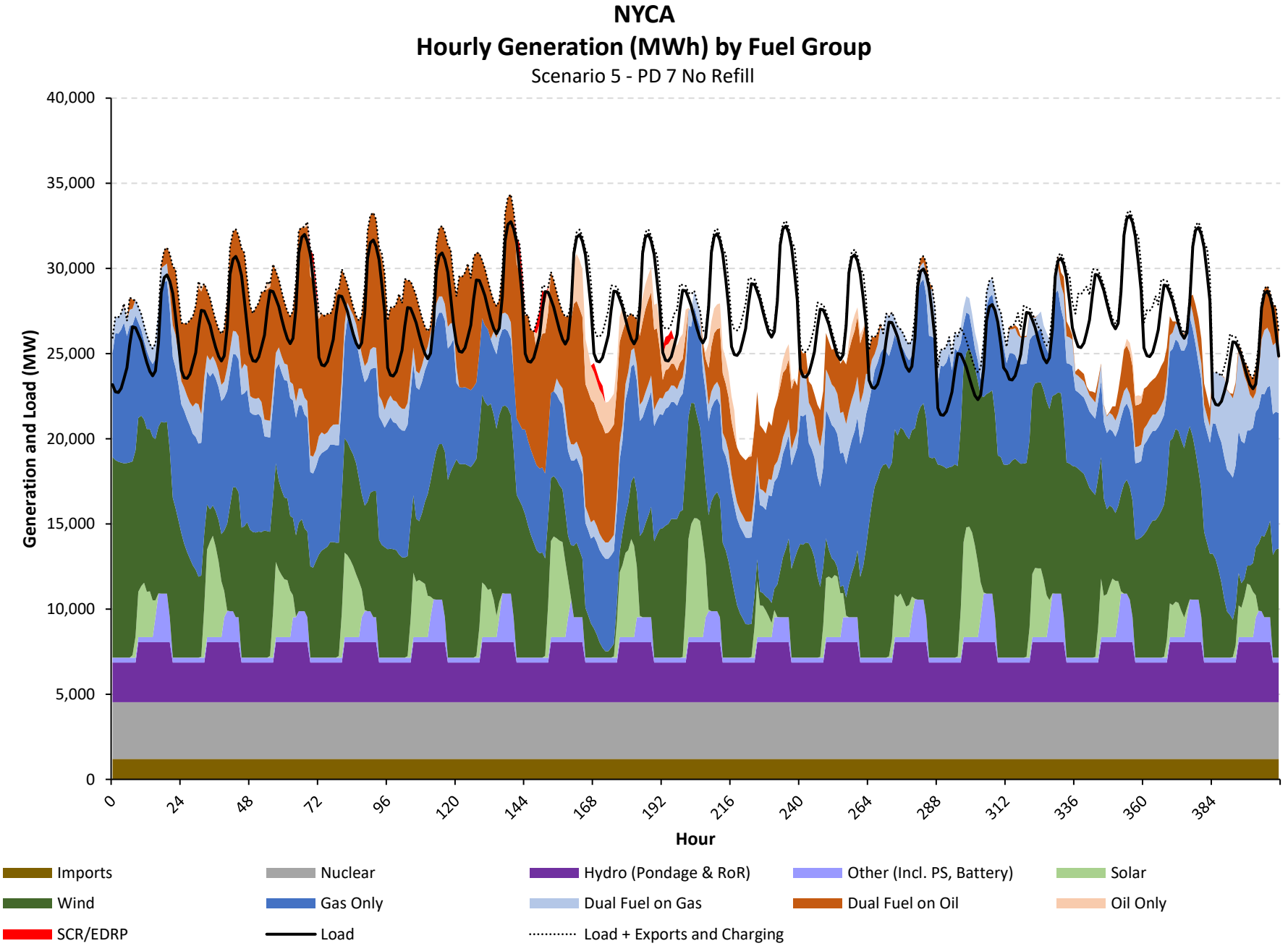


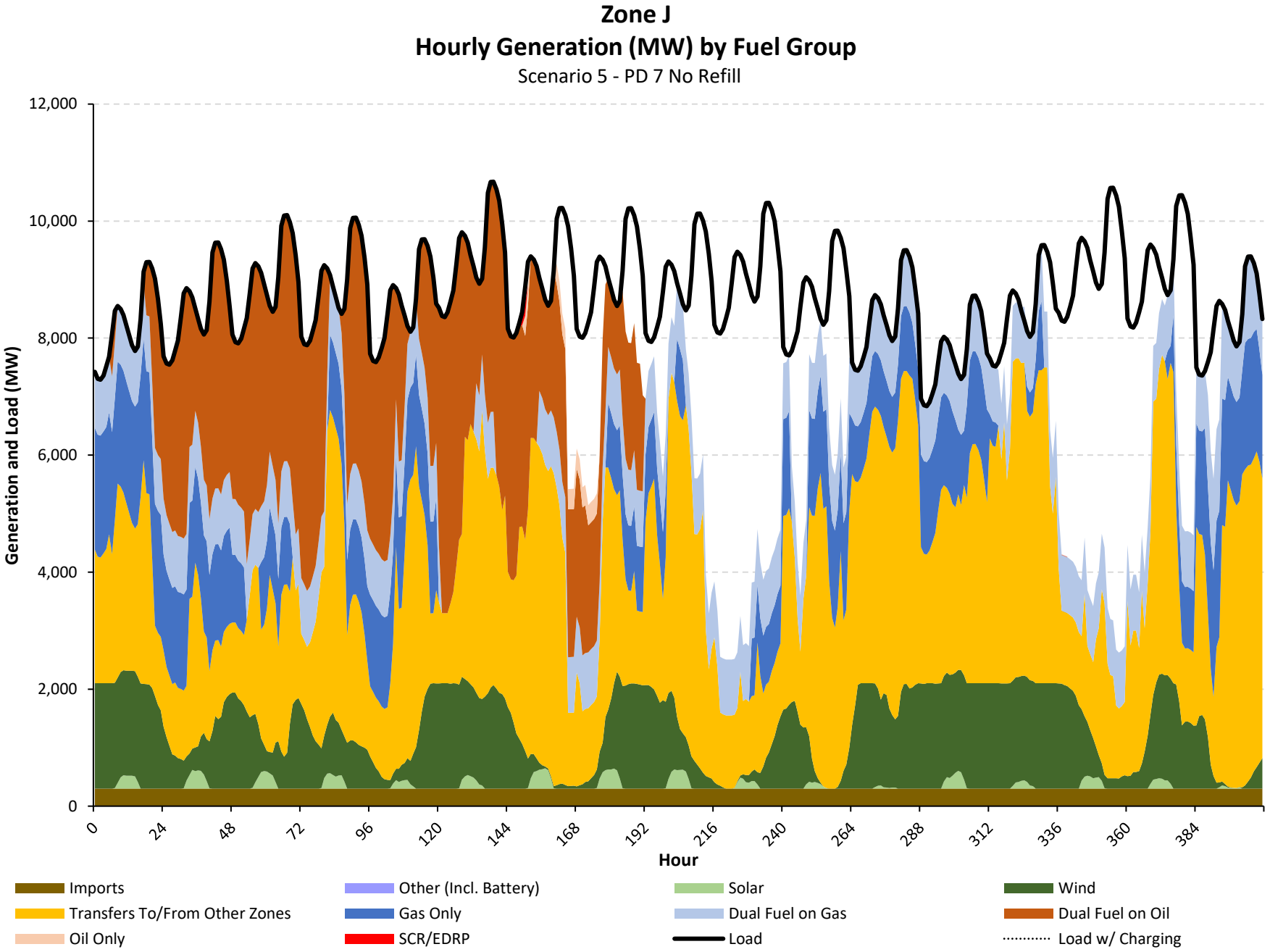
Hours with Loss of Load



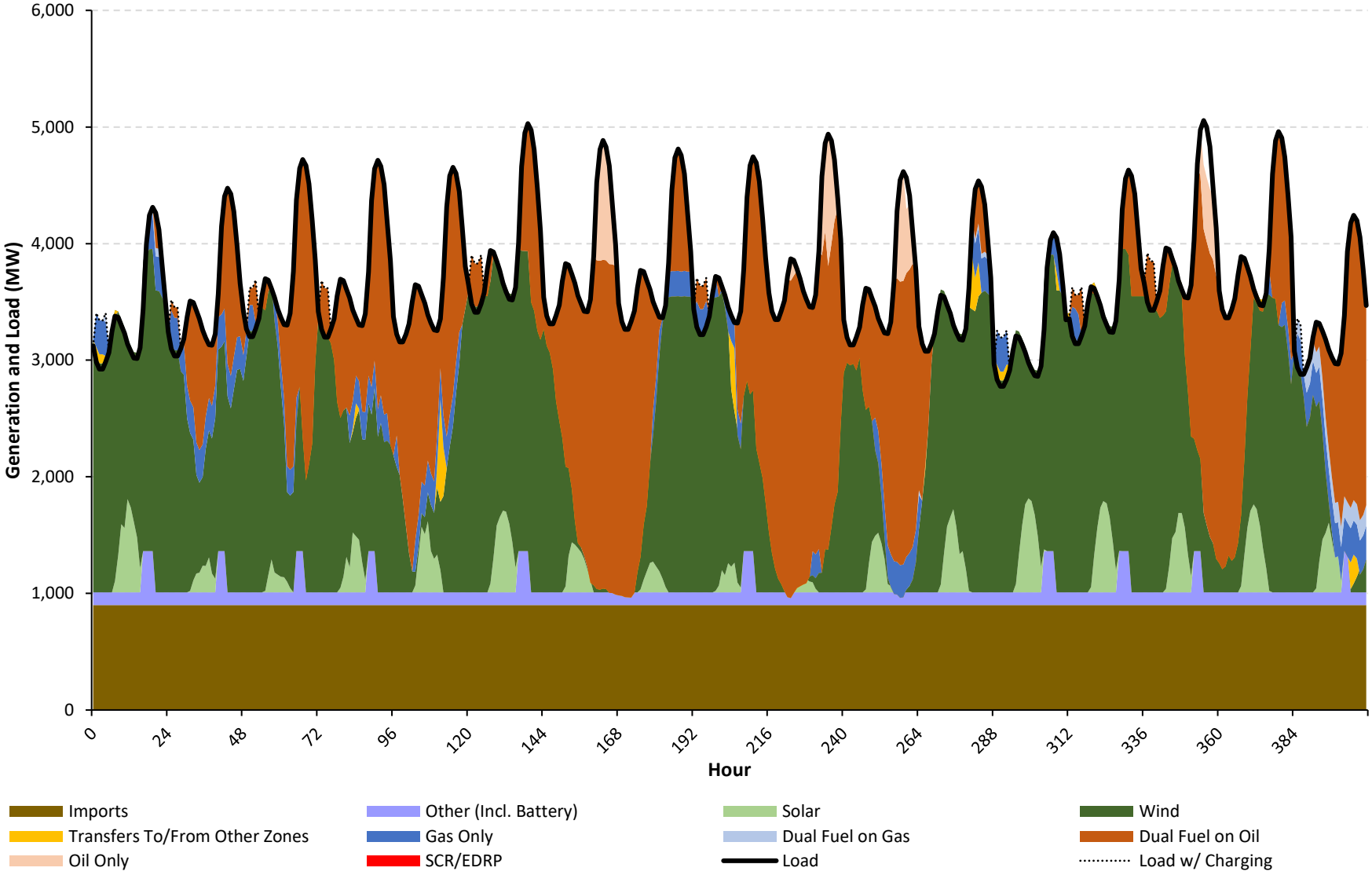
Total MWh of Lost Load




NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 5 - PD 7 No Refill
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 5 - PD 7 No Refill
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

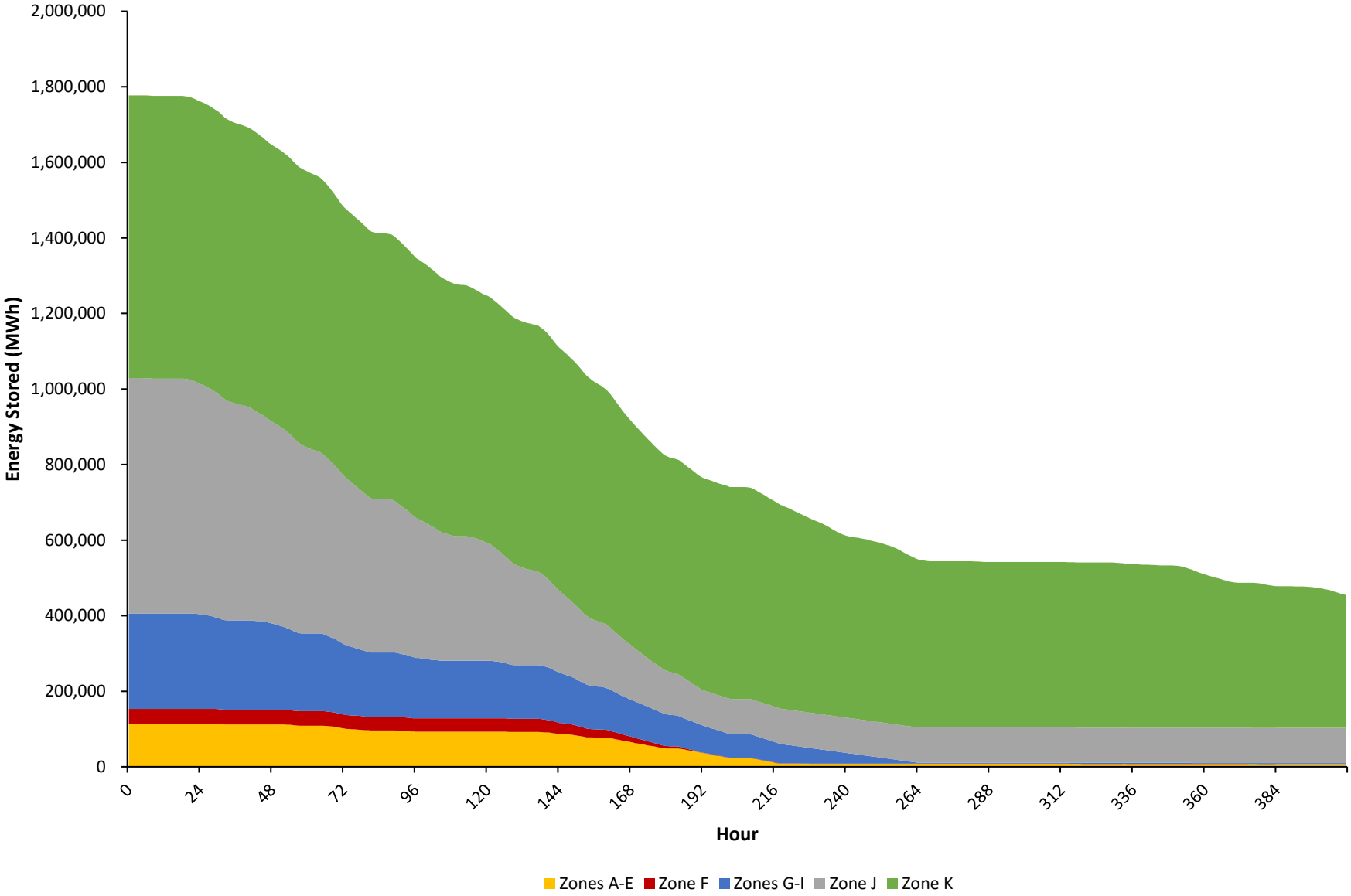
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 5 - PD 7 No Refill

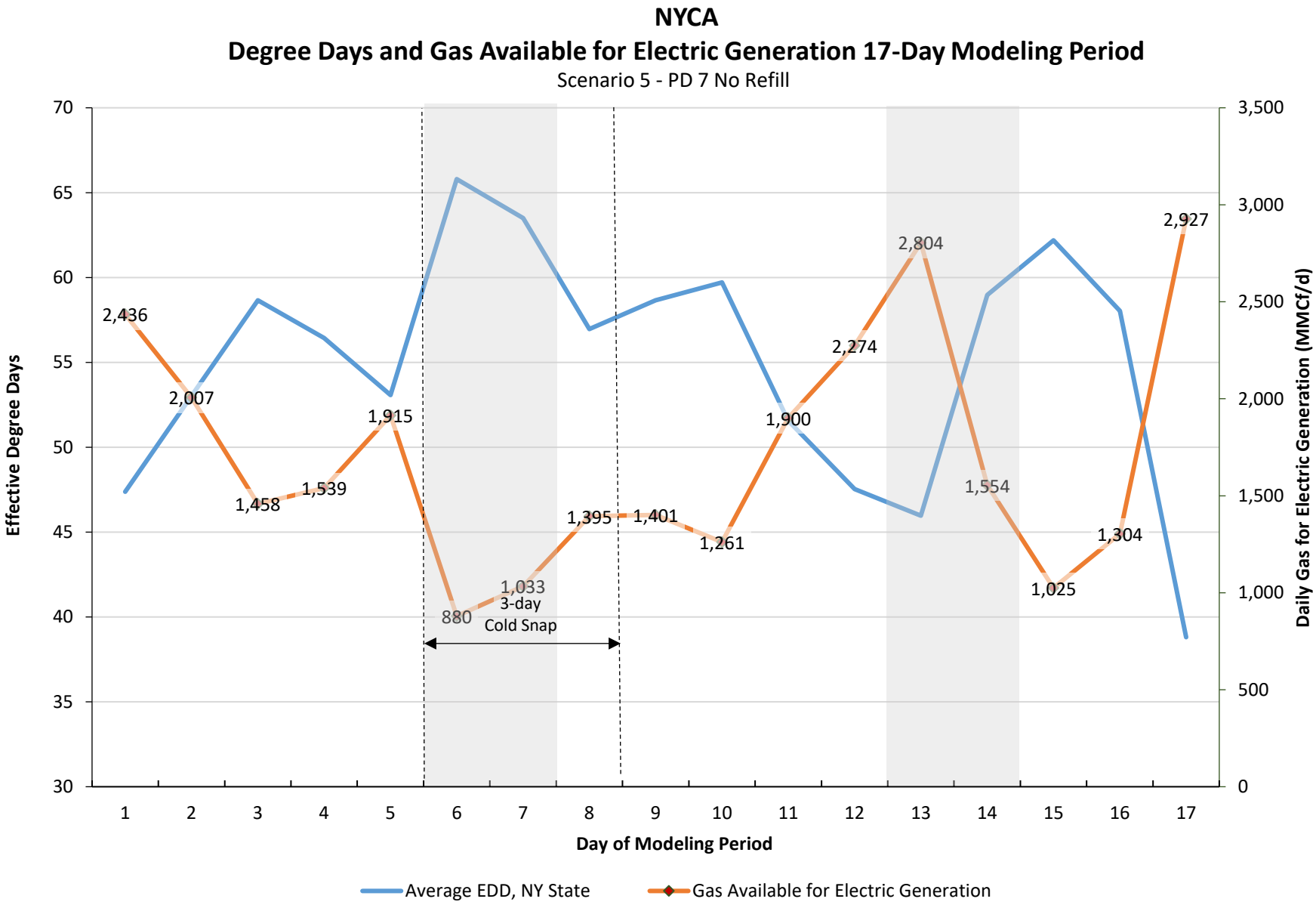


NYCA

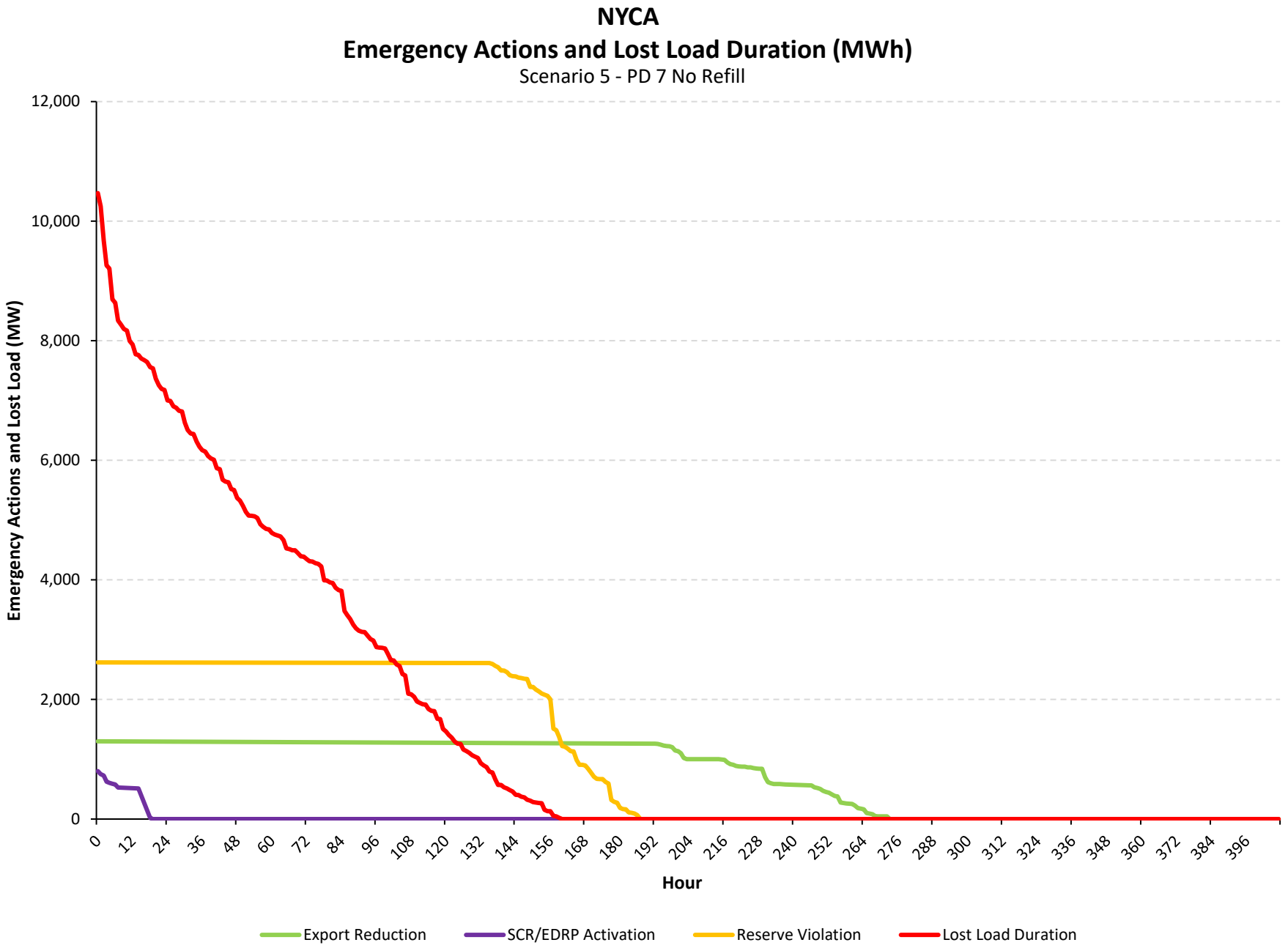
Quantity of Stored Fuel for Oil and Dual Fuel Units

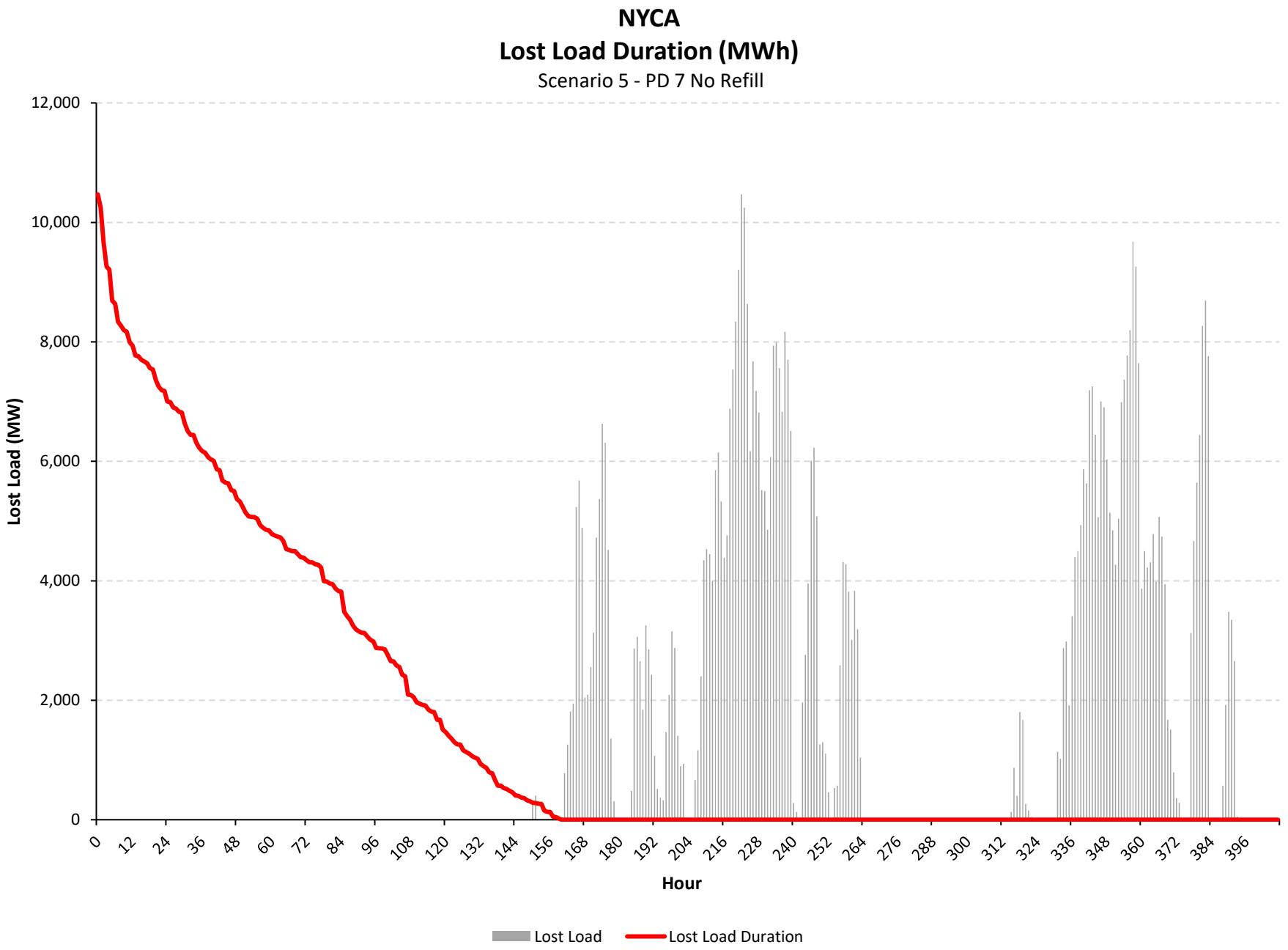
Scenario 5 - PD 7 No Refill





Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 5 - PD 7 No Refill
Emergency Actions and Lost Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 5 - PD 7 No Refill
Lost Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

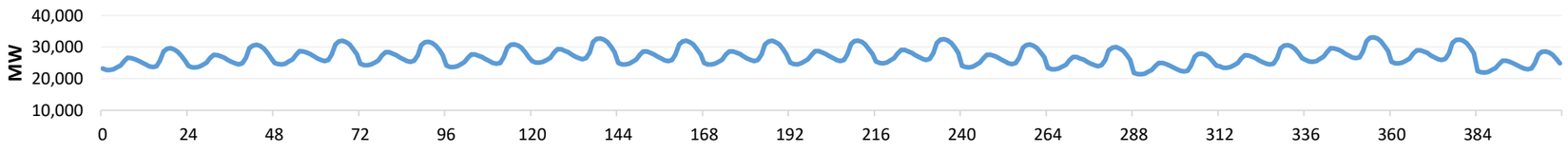
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 5 - PD 8 Non-Firm Gas Unavailable (F-K) (Winter 2030/2031)

Hourly Results Summary

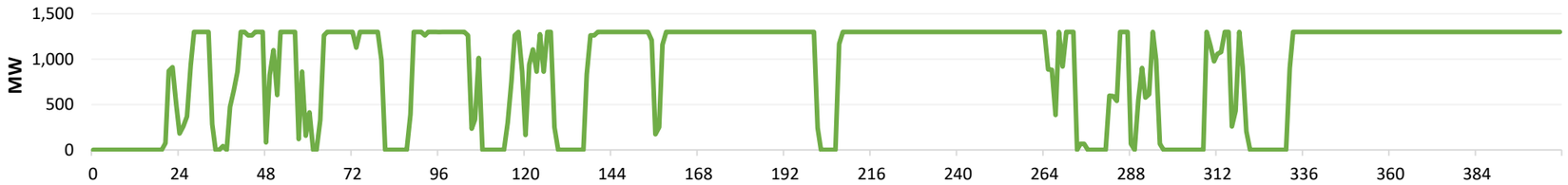
Case Name: Scenario 5 - PD 8 Non-Firm Gas Unavailable (F-K)

Load During Modeling Period



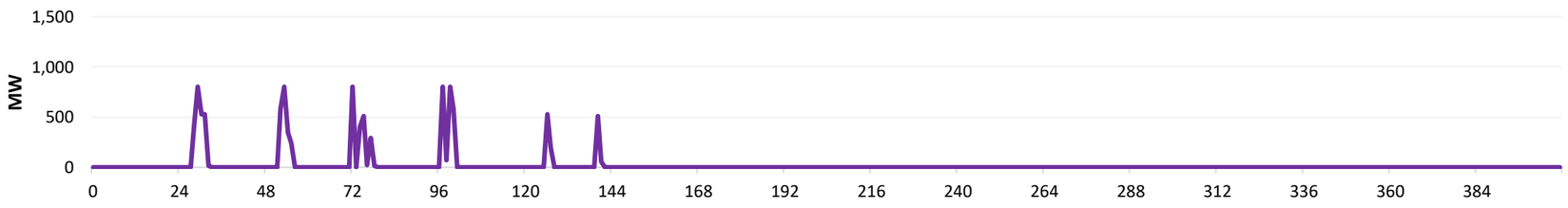
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	F-K
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



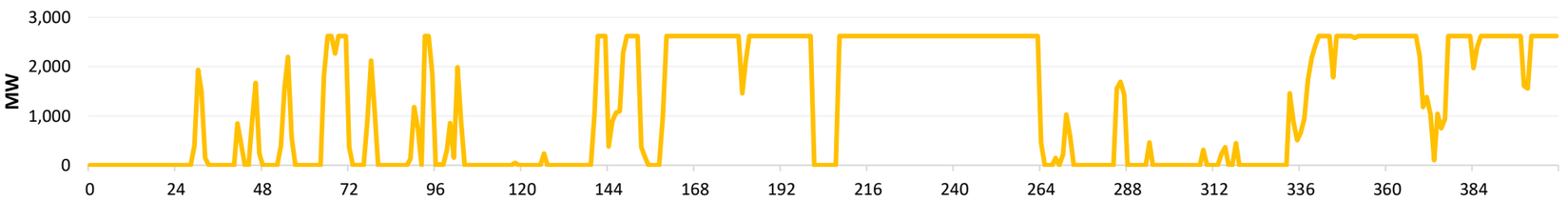
Export Reductions	
Total Hrs.	325
Total MWh	374,247
Avg. MW	917.3

SCR/EDRP Deployed During Modeling Period



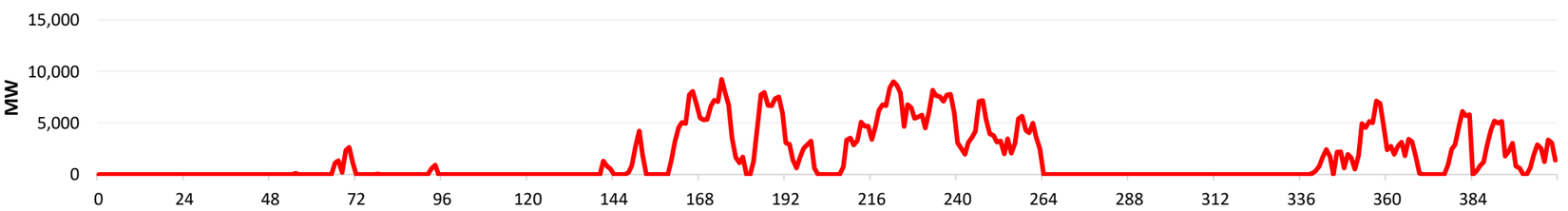
SCR Deployment	
Total Hrs.	23
Total MWh	9,838
Avg. MW	24.1

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	239
Total MWh	506,300
Avg. MW	1,240.9
First Hour with Viol.	29

Loss of Load During Modeling Period



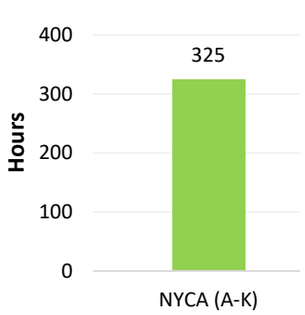
Loss of Load	
Total Hrs.	171
Total MWh	647,713
Avg. MW	1,587.5
First Hour with Losses	55

Full Period Results Summary

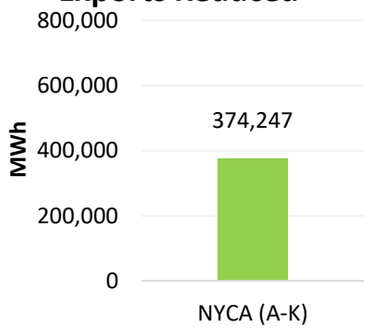
Case Name: Scenario 5 - PD 8 Non-Firm Gas Unavailable (F-K)

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	F-K
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

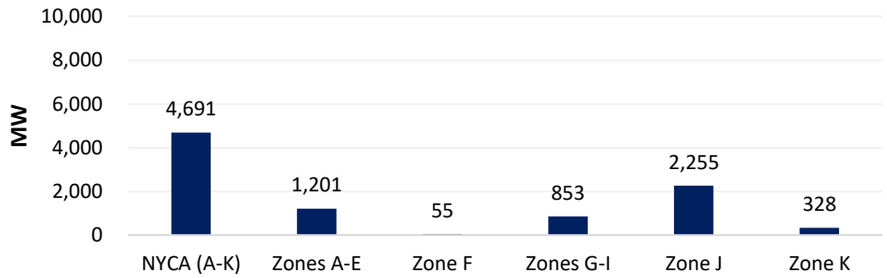
Hours Exports Reduced



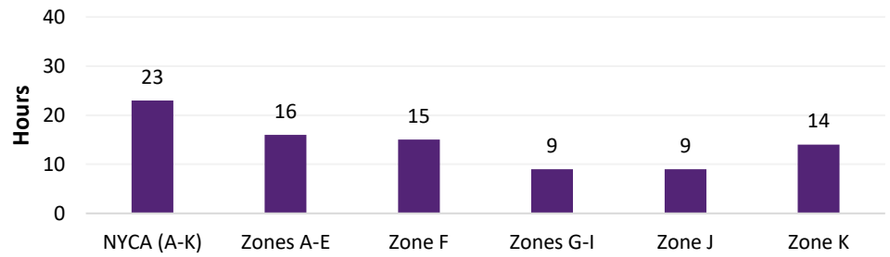
Total MWh of Exports Reduced



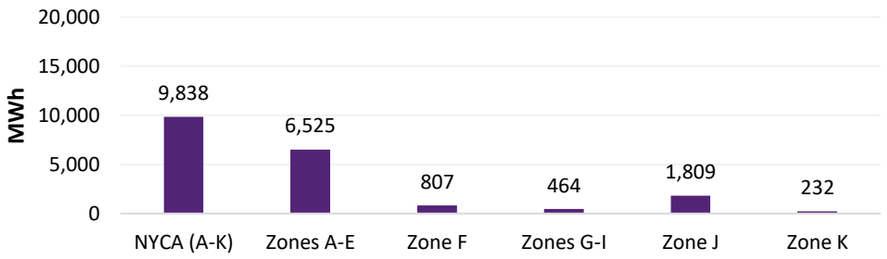
Average Capacity Not Available Due to Exhausted Fuel Inventory



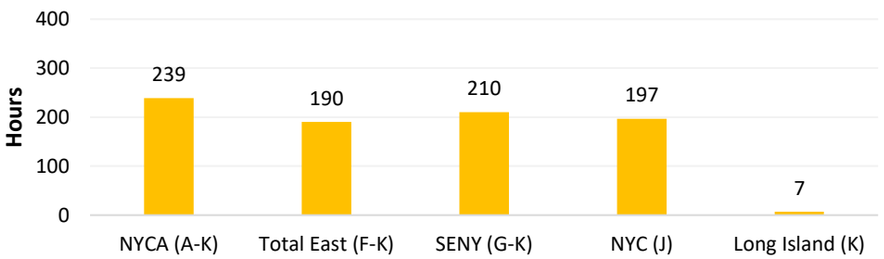
Hours SCR/EDRP Deployed



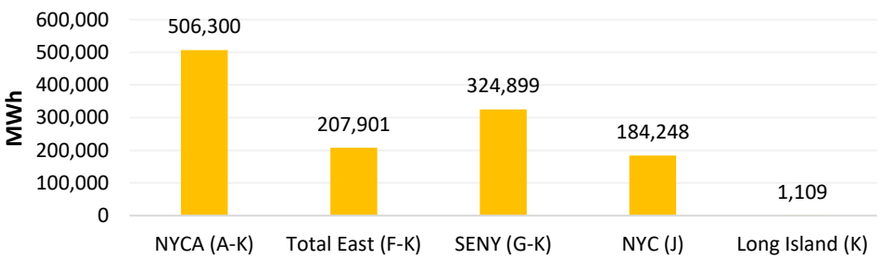
Total MWh SCR/EDRP Deployed



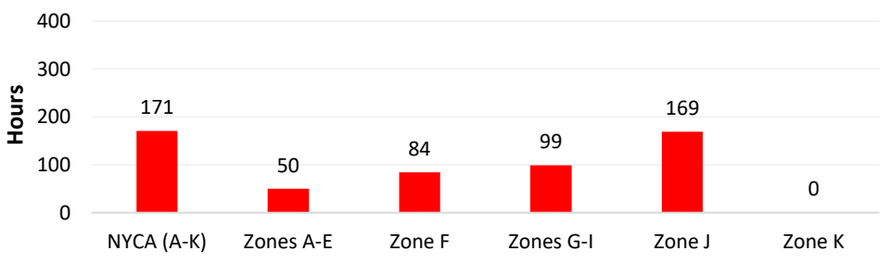
Hours with Reserve Violations



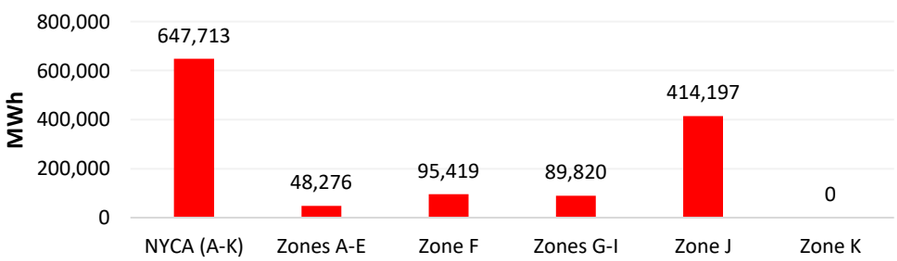
Total MWh of Reserve Violations

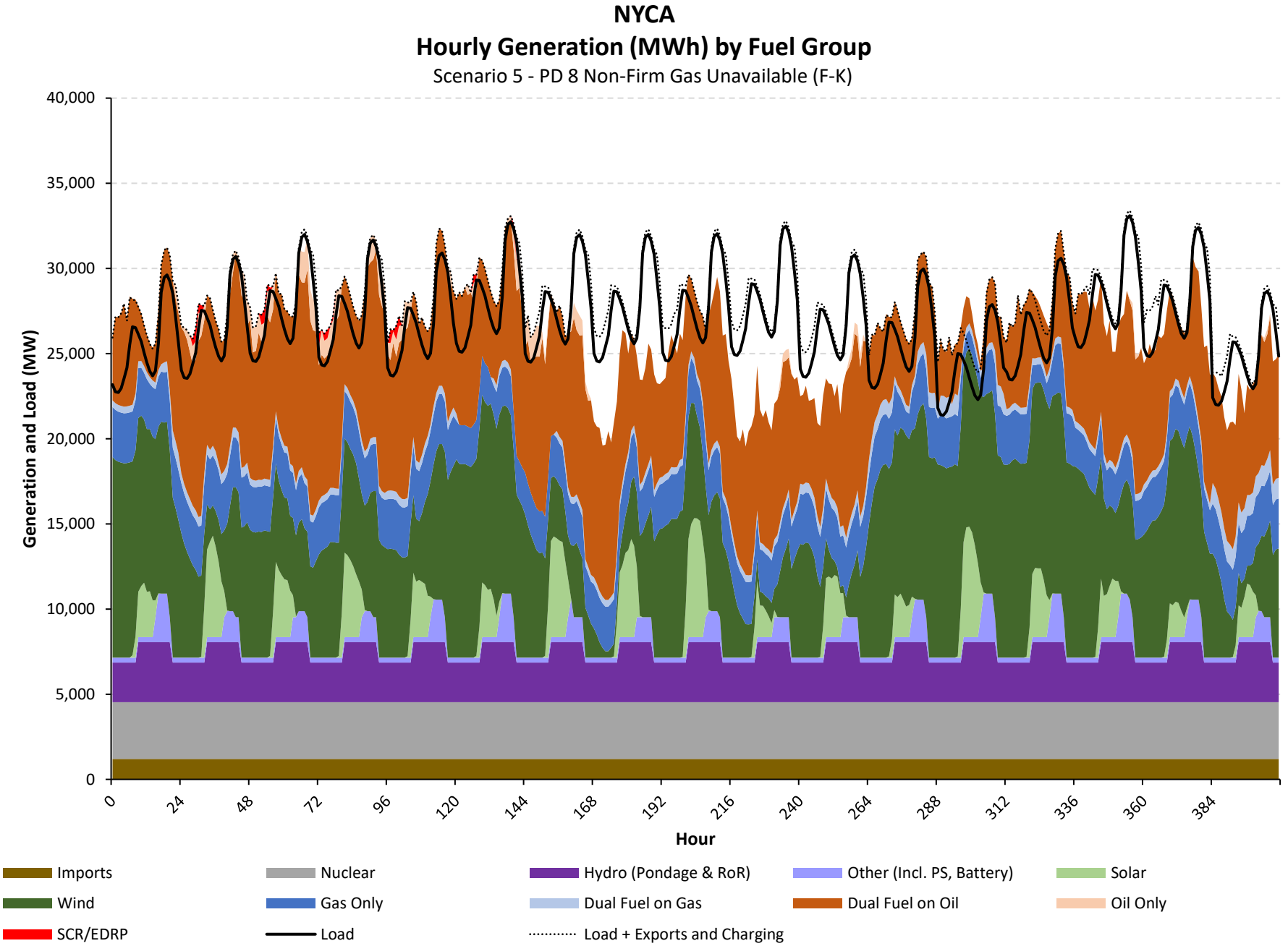


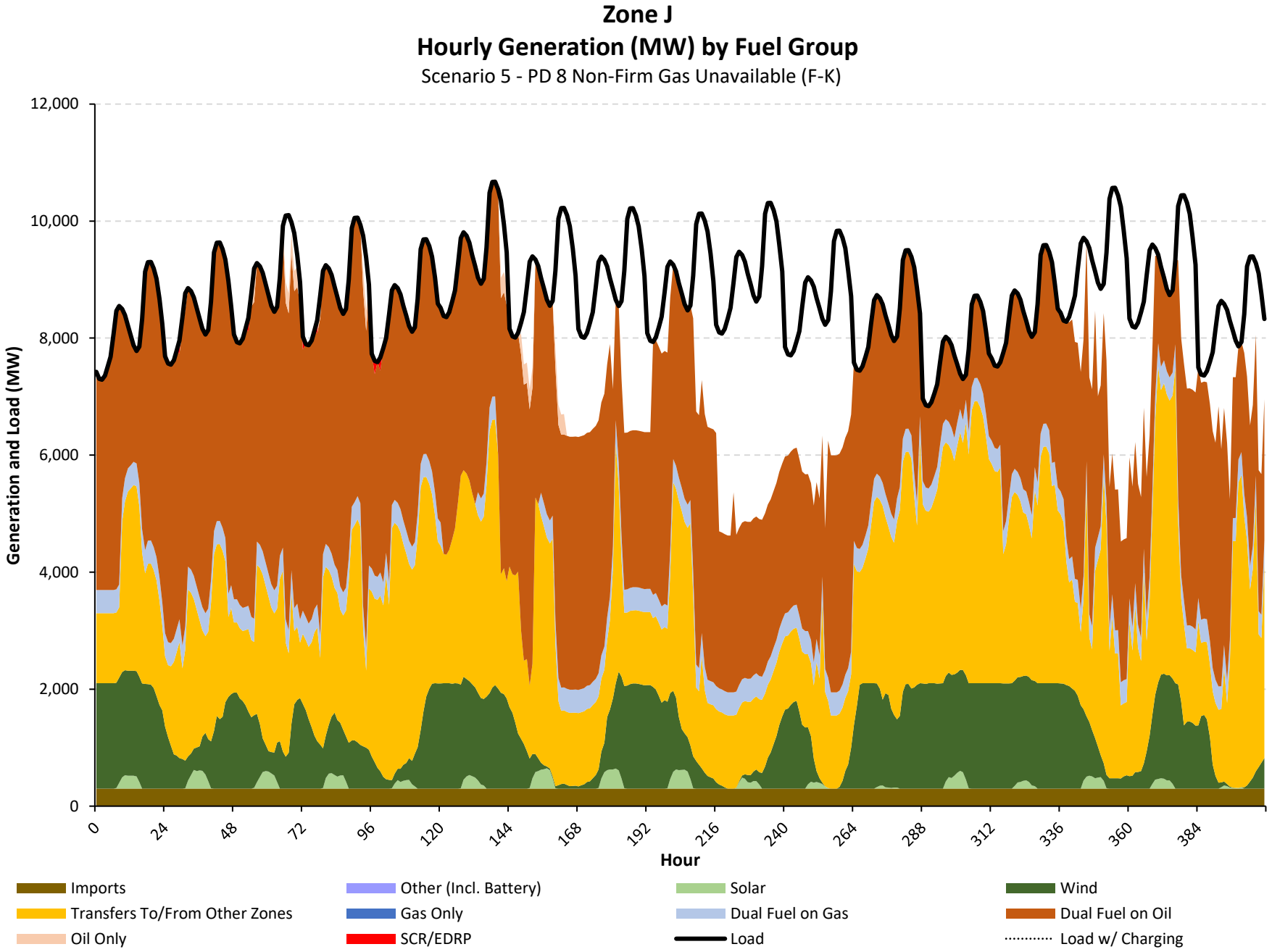
Hours with Loss of Load



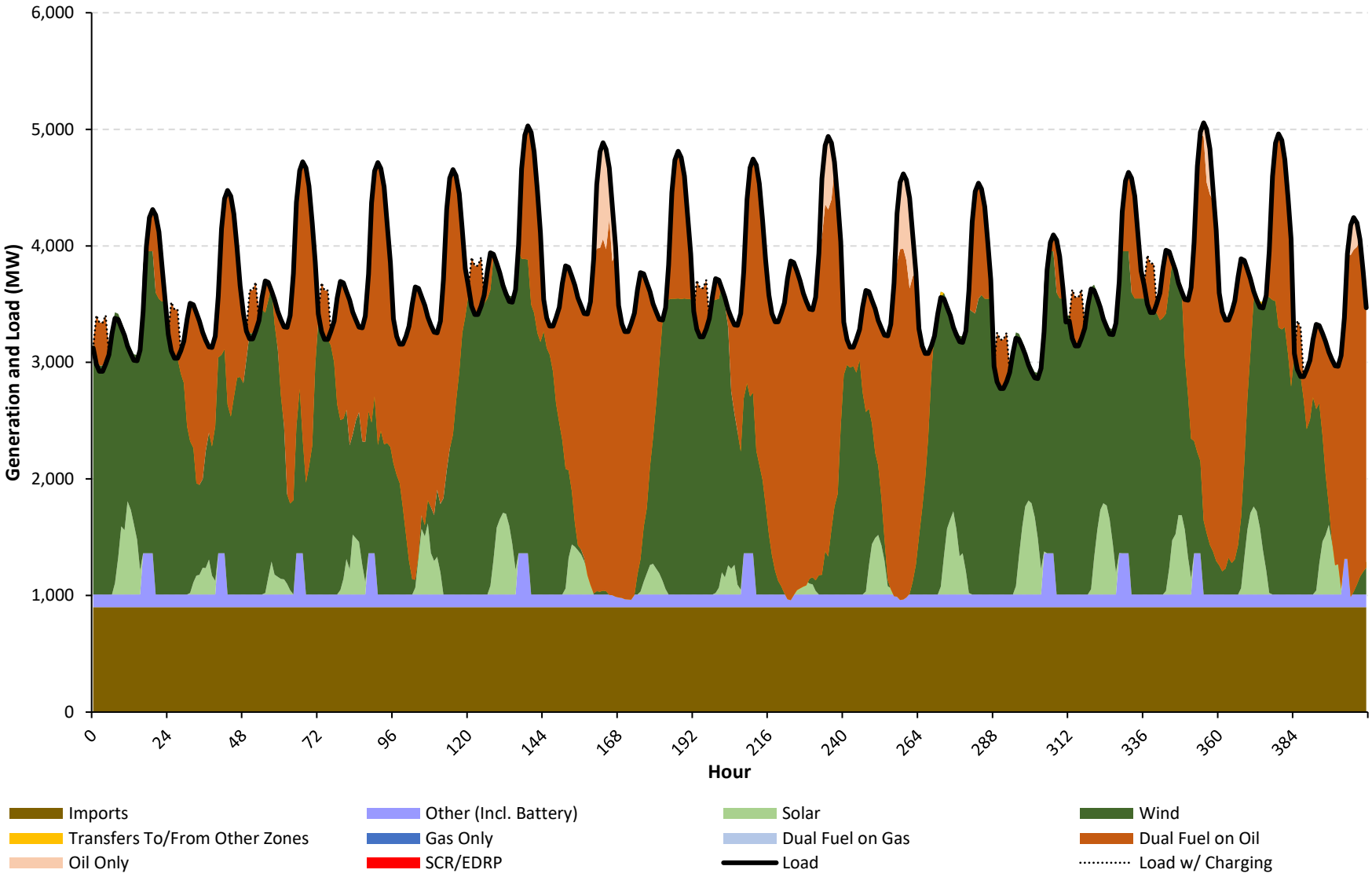
Total MWh of Lost Load




NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 5 - PD 8 Non-Firm Gas Unavailable (F-K)
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 5 - PD 8 Non-Firm Gas Unavailable (F-K)
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

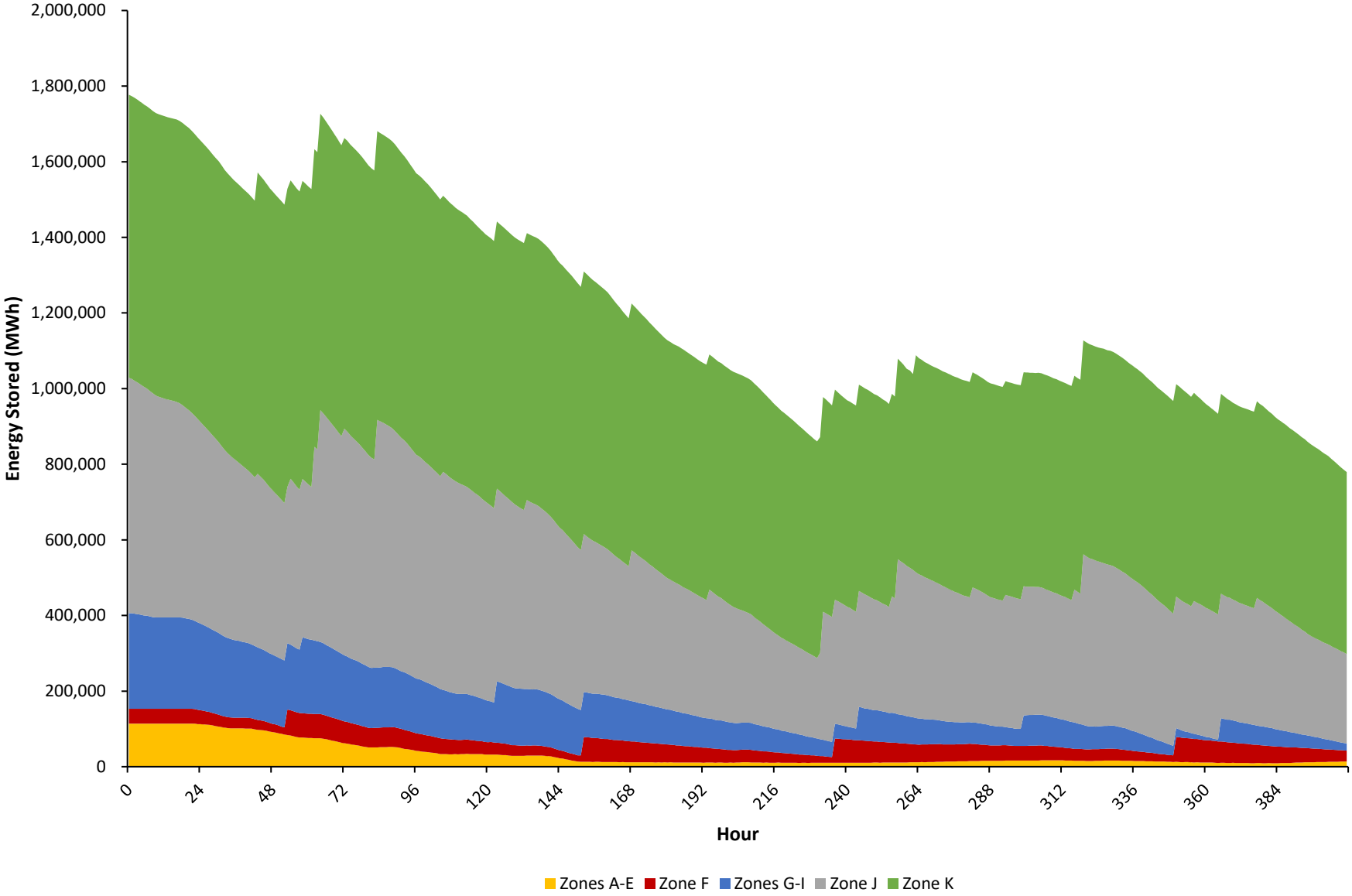
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 5 - PD 8 Non-Firm Gas Unavailable (F-K)



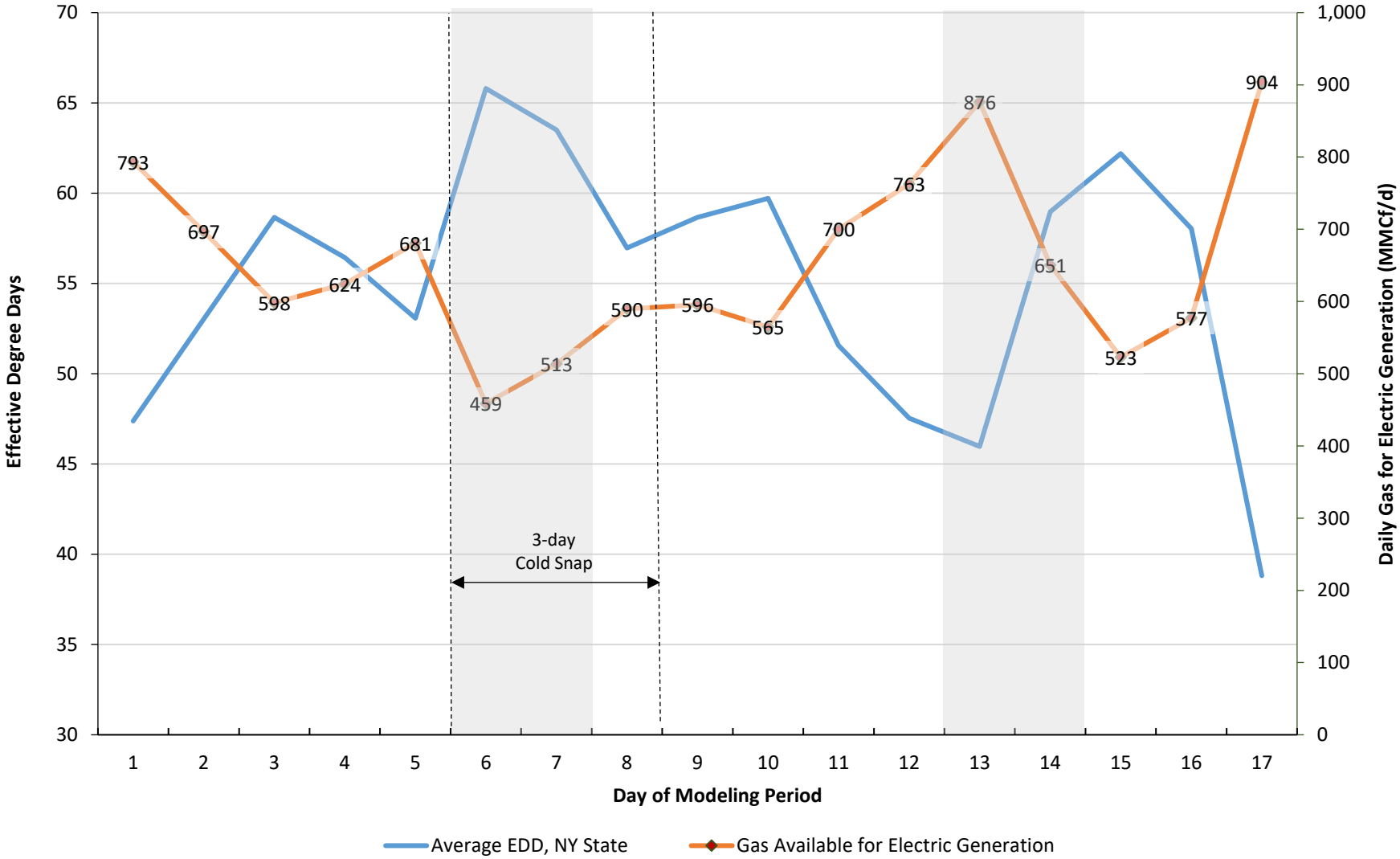
NYCA

Quantity of Stored Fuel for Oil and Dual Fuel Units

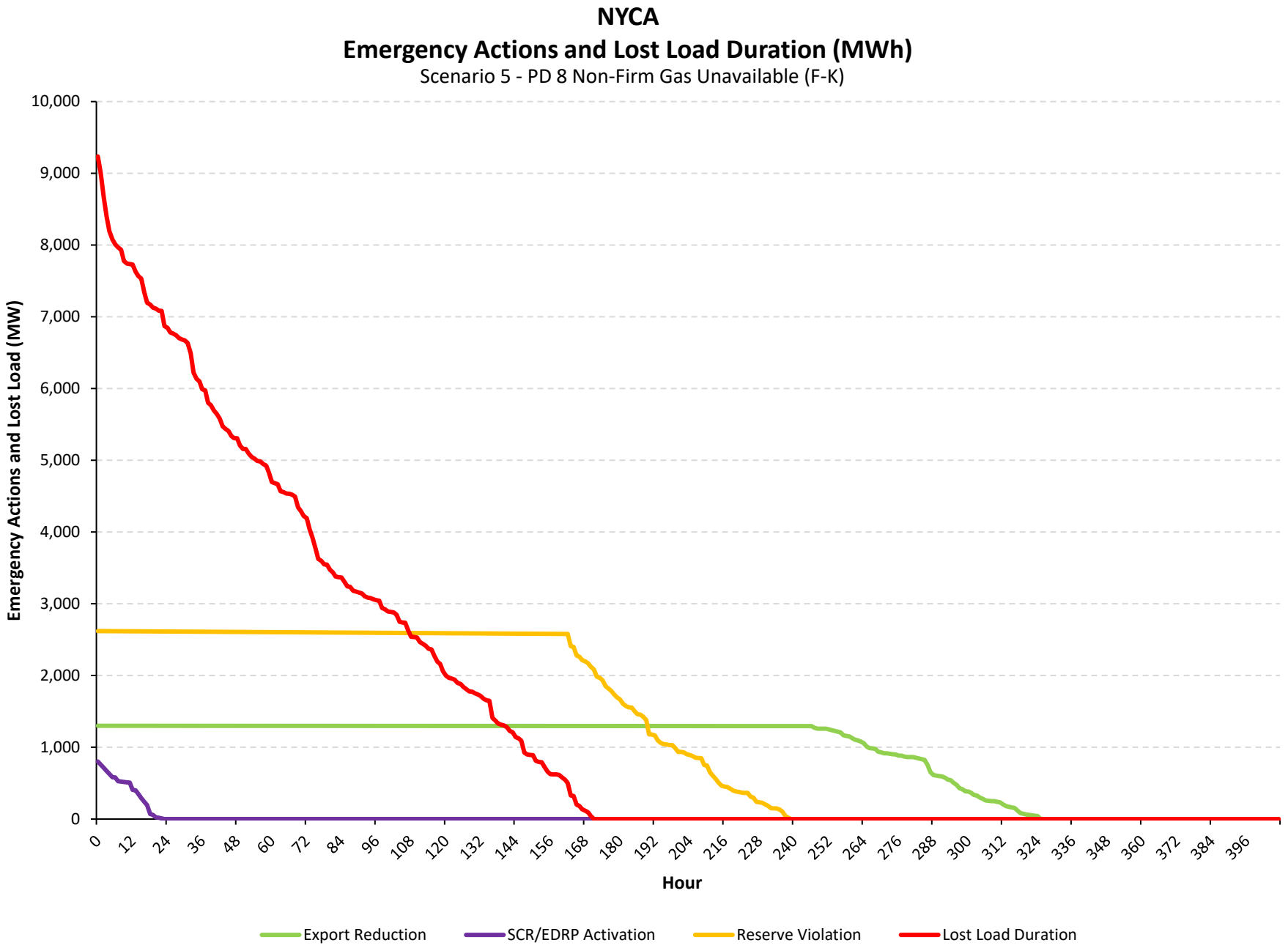
Scenario 5 - PD 8 Non-Firm Gas Unavailable (F-K)

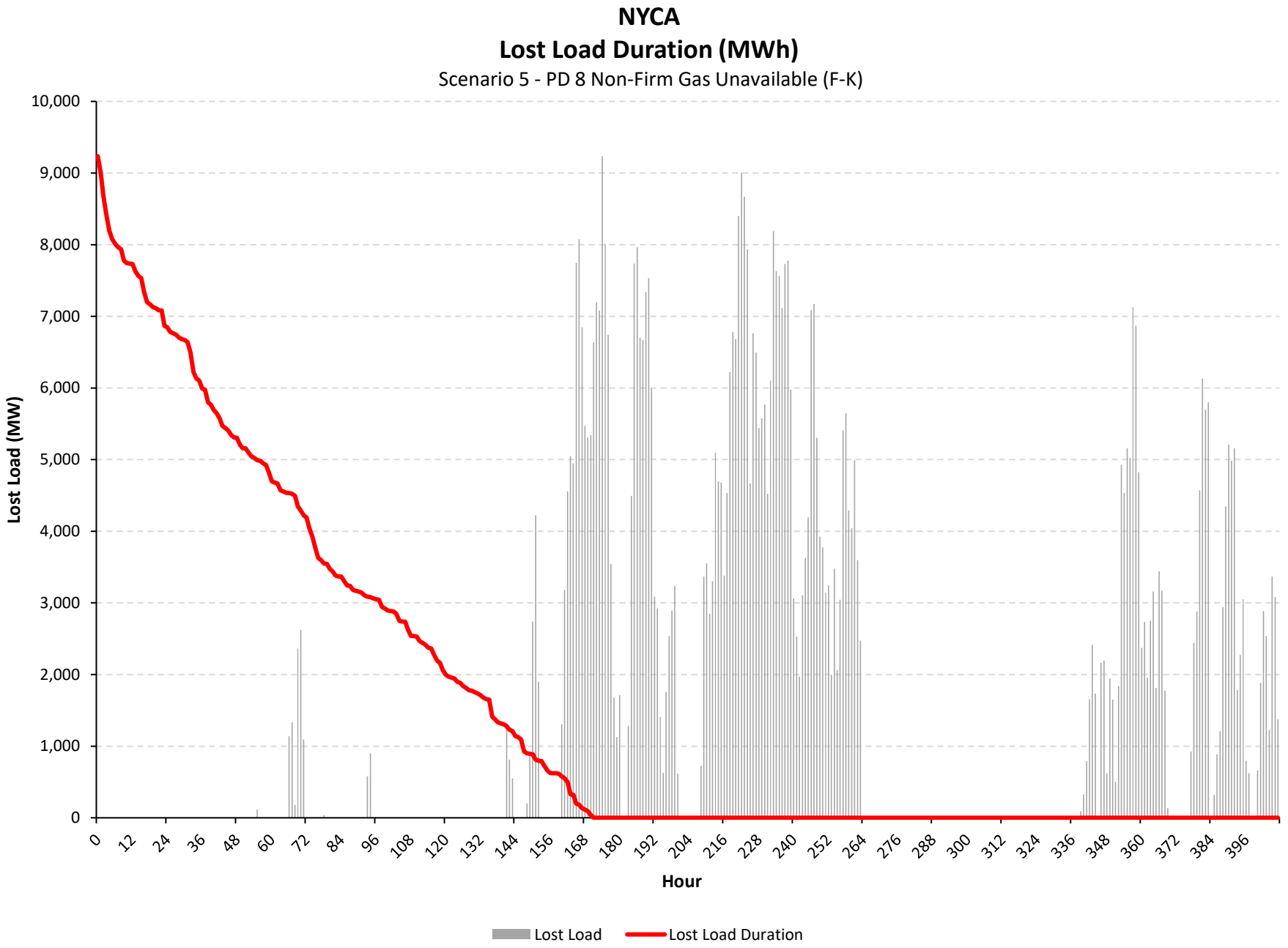


NYCA
Degree Days and Gas Available for Electric Generation 17-Day Modeling Period
Scenario 5 - PD 8 Non-Firm Gas Unavailable (F-K)



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 5 - PD 8 Non-Firm Gas Unavailable (F-K)
Emergency Actions and Lost Load (MW)
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 5 - PD 8 Non-Firm Gas Unavailable (F-K)
Lost Load (MW)
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

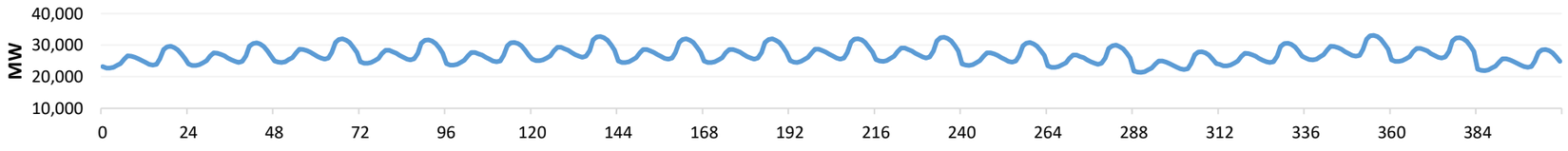
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 5 - PD 9 Non-Firm Gas Unavailable (NYCA) (Winter 2030/2031)

Hourly Results Summary

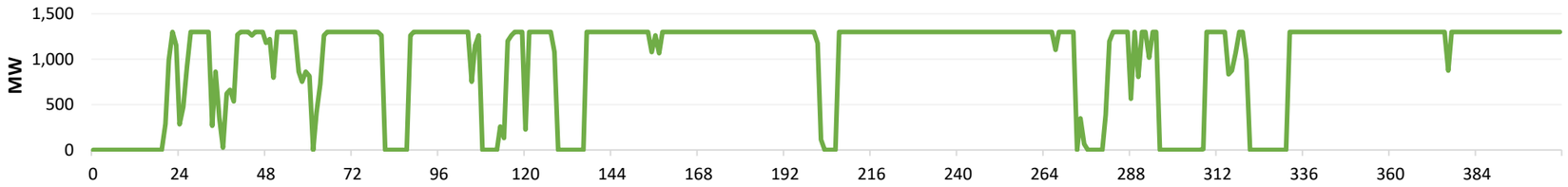
Case Name: Scenario 5 - PD 9 Non-Firm Gas Unavailable (NYCA)

Load During Modeling Period



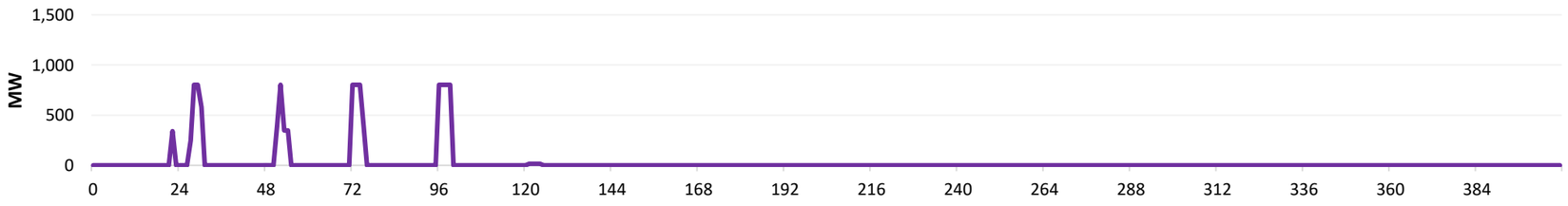
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	NYISO
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



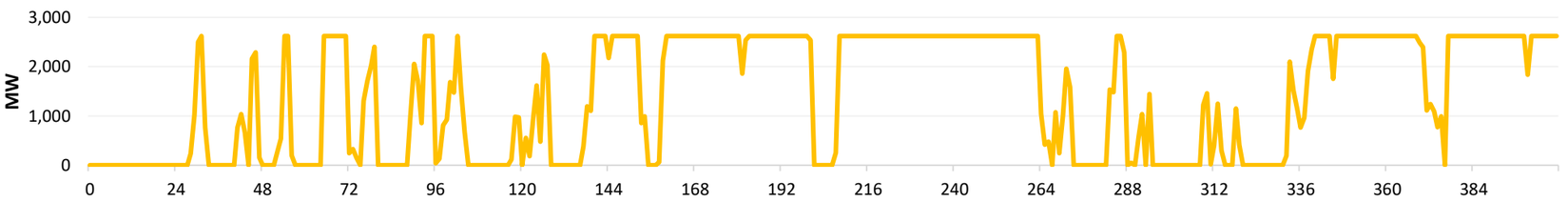
Export Reductions	
Total Hrs.	334
Total MWh	406,223
Avg. MW	995.6

SCR/EDRP Deployed During Modeling Period



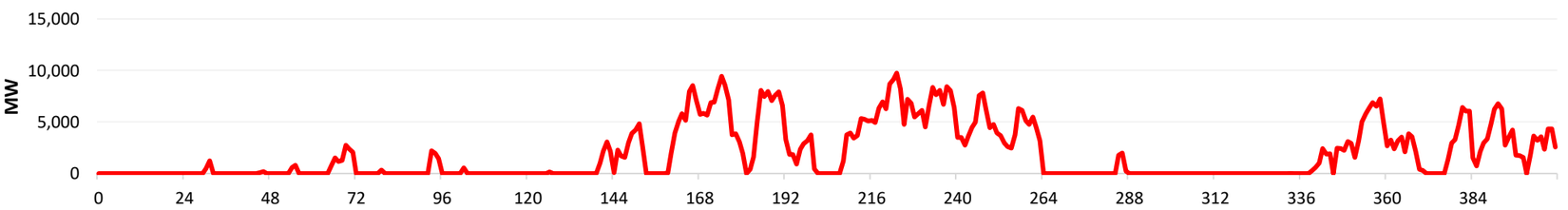
SCR Deployment	
Total Hrs.	21
Total MWh	10,738
Avg. MW	26.3

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	275
Total MWh	578,494
Avg. MW	1,417.9
First Hour with Viol.	28

Loss of Load During Modeling Period



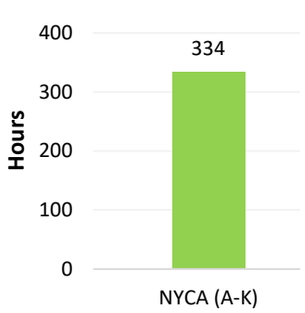
Loss of Load	
Total Hrs.	194
Total MWh	771,157
Avg. MW	1,890.1
First Hour with Losses	30

Full Period Results Summary

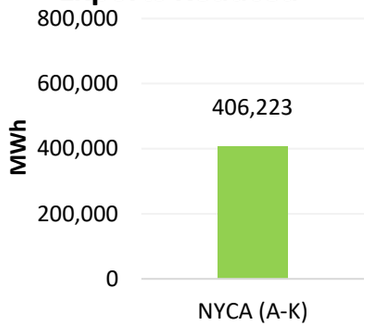
Case Name: Scenario 5 - PD 9 Non-Firm Gas Unavailable (NYCA)

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	NYISO
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

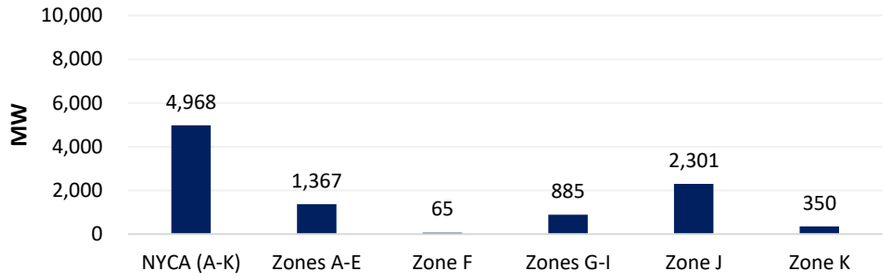
Hours Exports Reduced



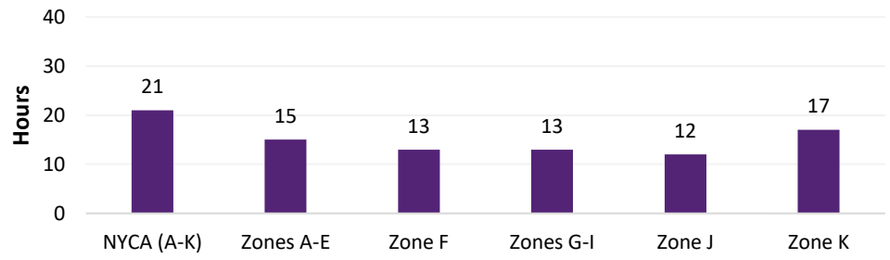
Total MWh of Exports Reduced



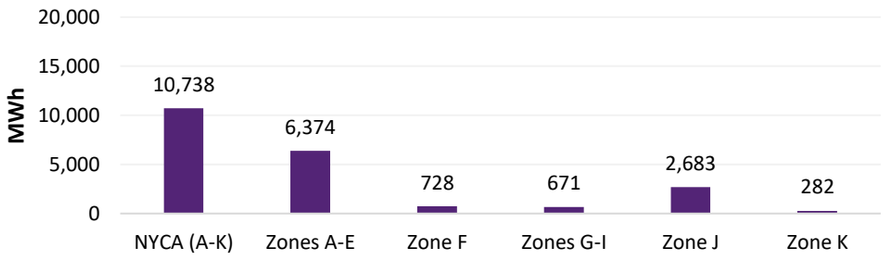
Average Capacity Not Available Due to Exhausted Fuel Inventory



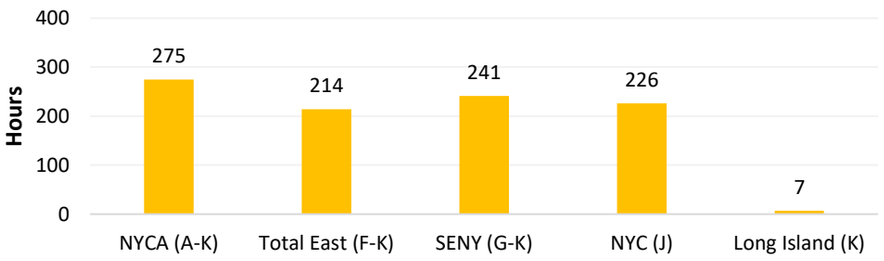
Hours SCR/EDRP Deployed



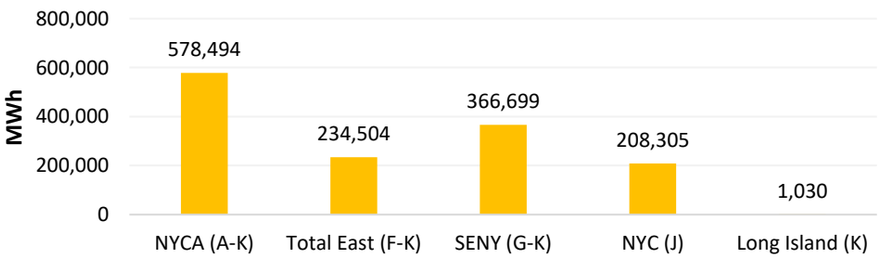
Total MWh SCR/EDRP Deployed



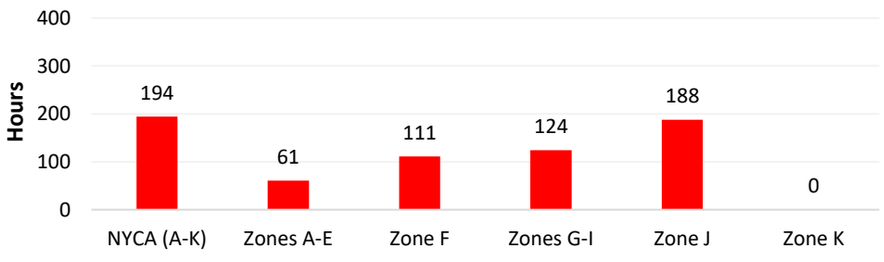
Hours with Reserve Violations



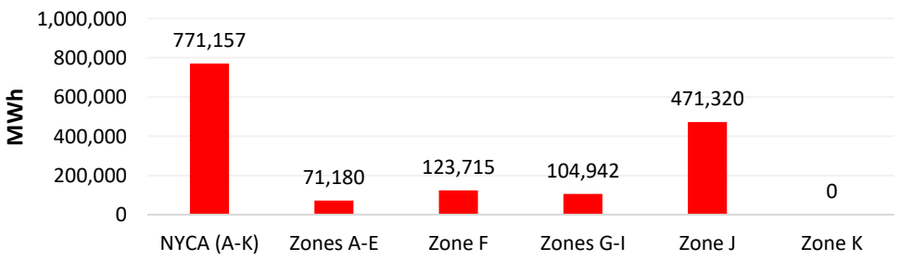
Total MWh of Reserve Violations

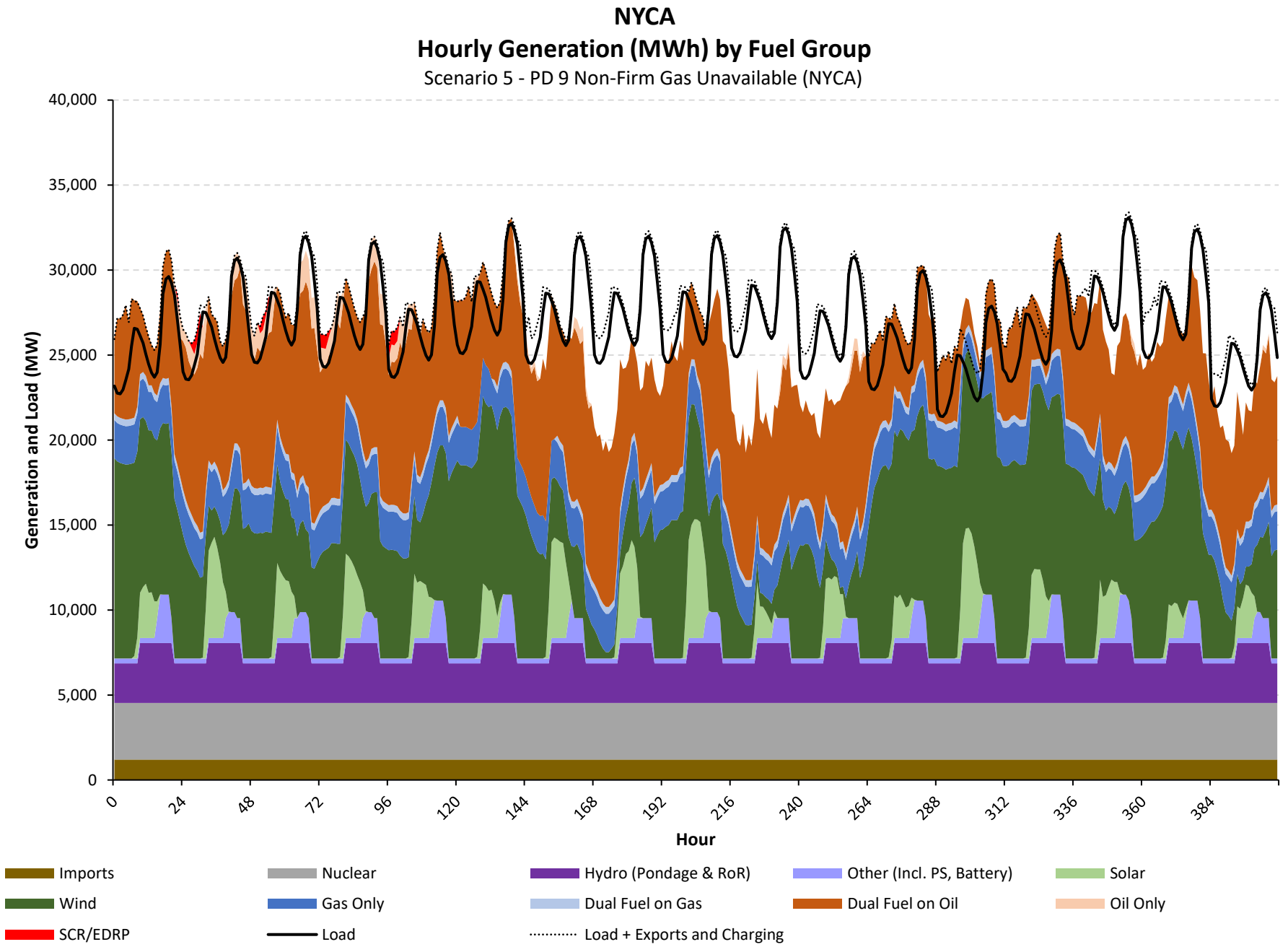


Hours with Loss of Load

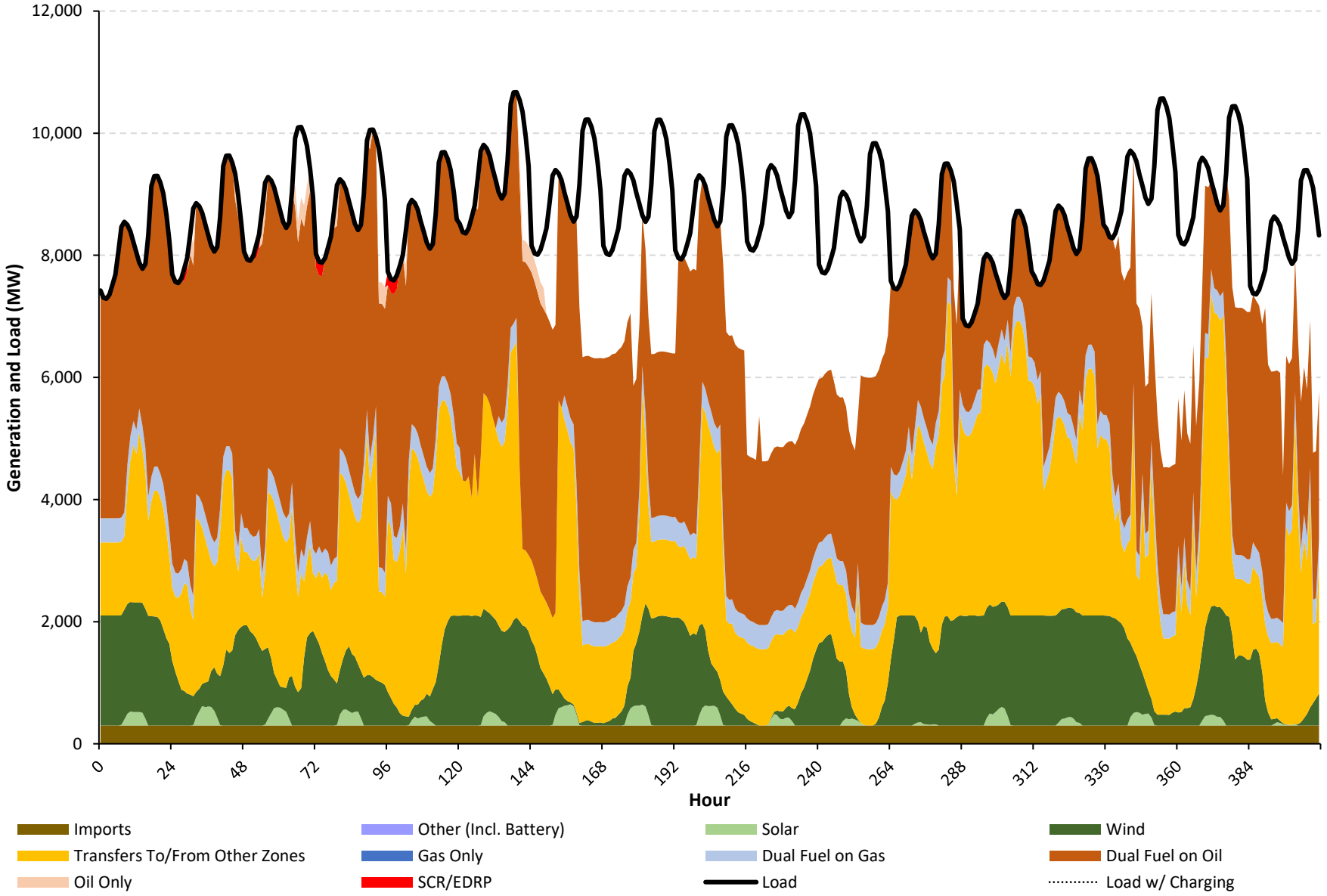


Total MWh of Lost Load

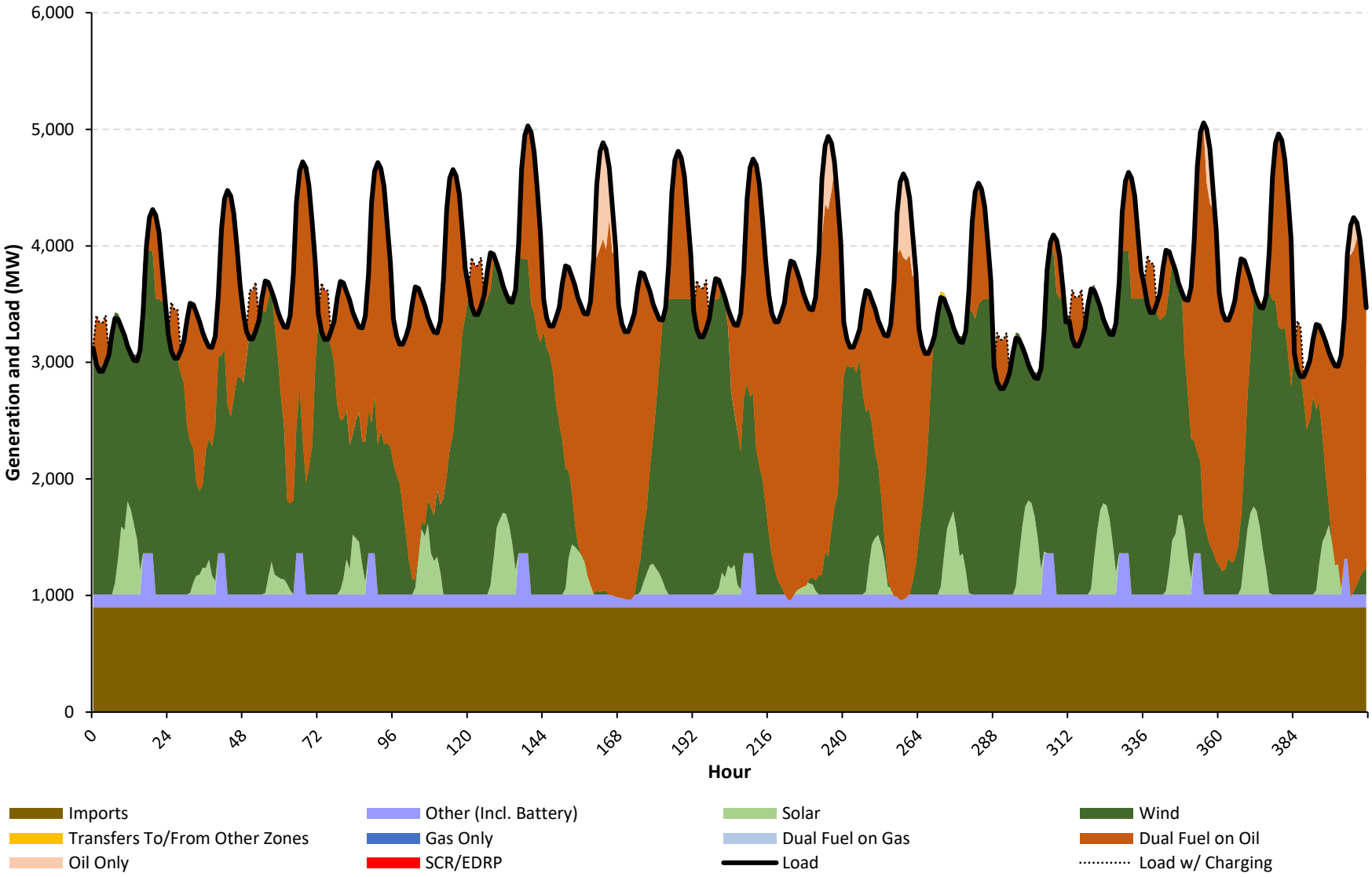



NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 5 - PD 9 Non-Firm Gas Unavailable (NYCA)
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

Zone J
Hourly Generation (MW) by Fuel Group
Scenario 5 - PD 9 Non-Firm Gas Unavailable (NYCA)



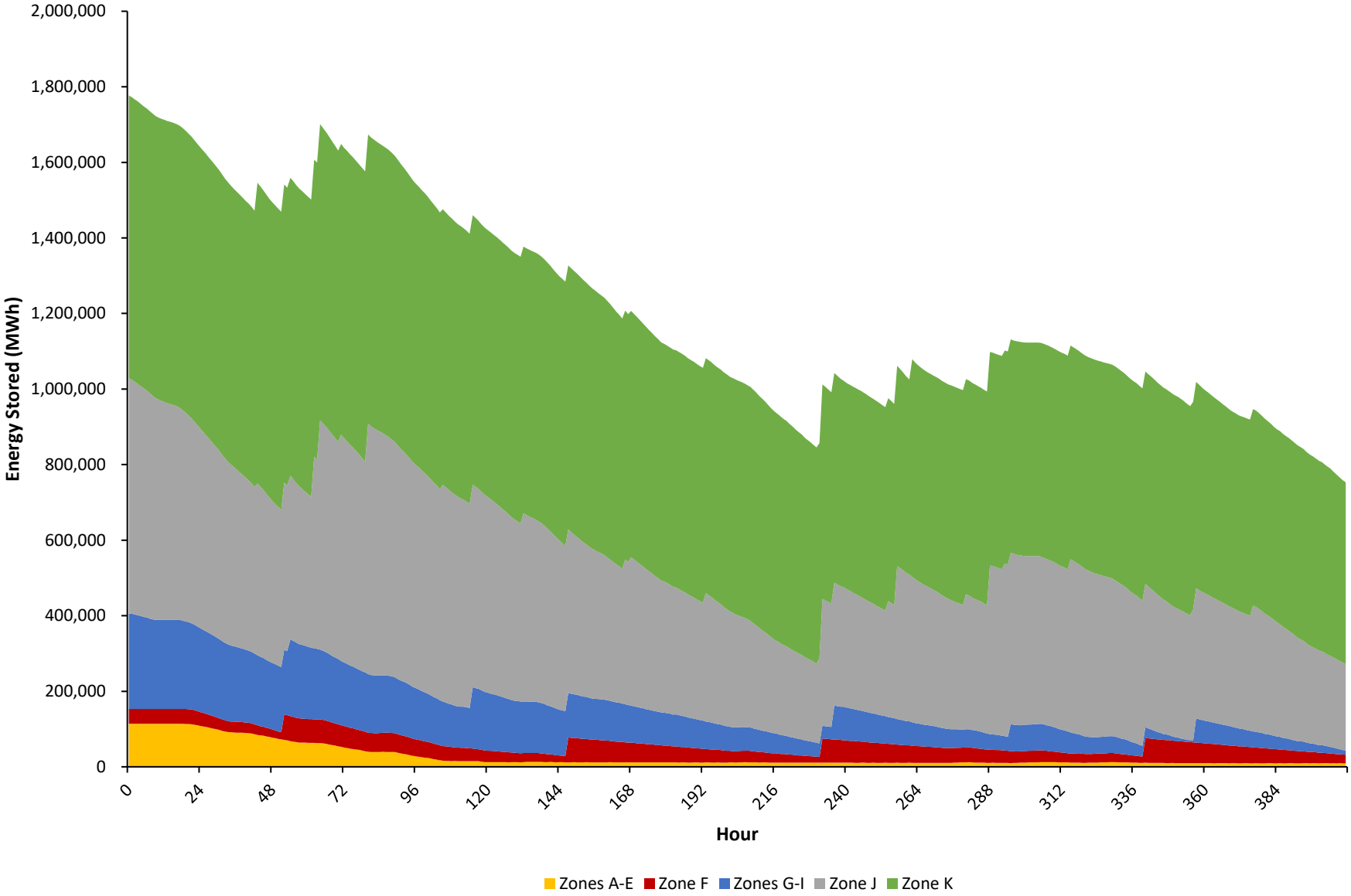
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 5 - PD 9 Non-Firm Gas Unavailable (NYCA)



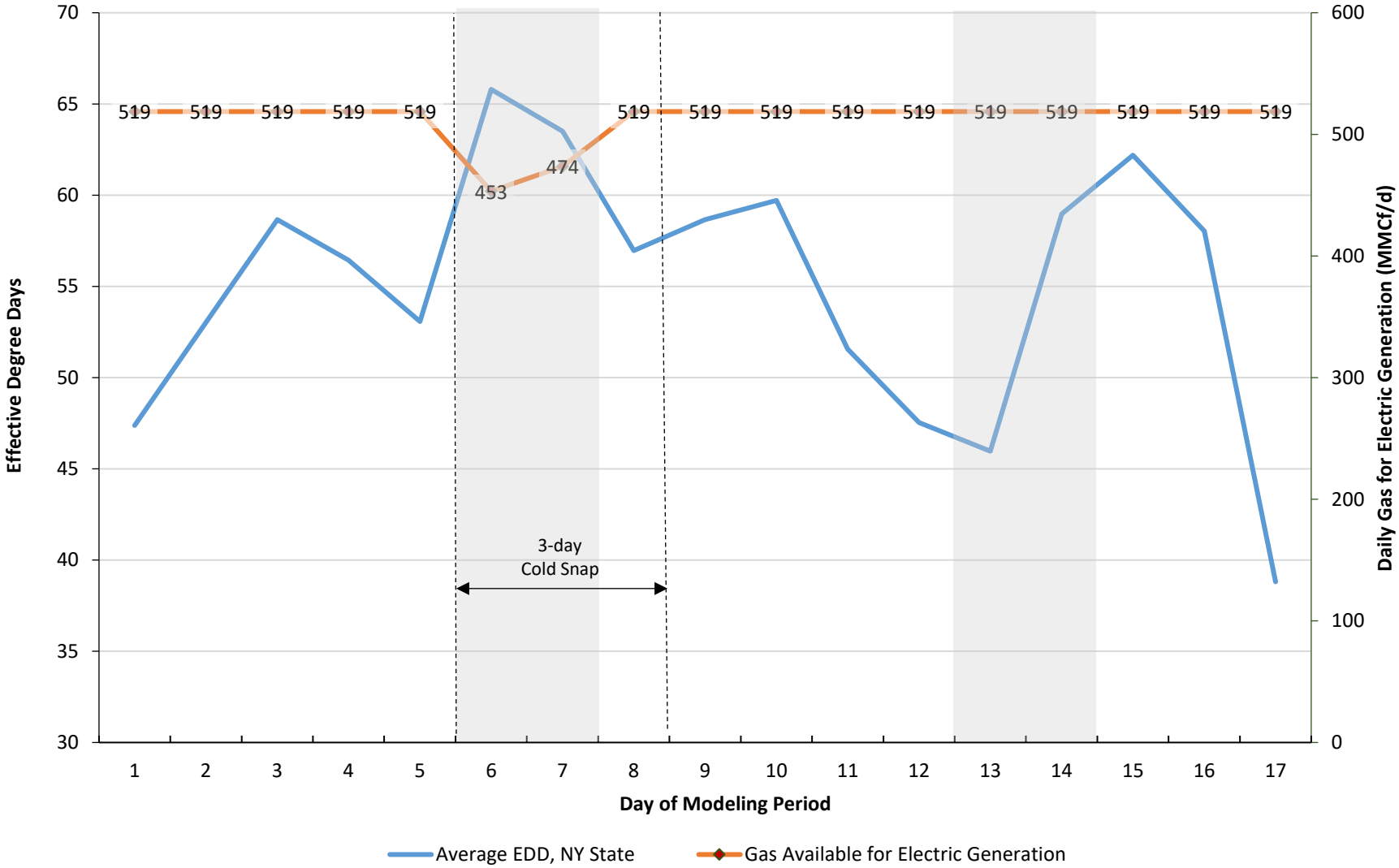
NYCA

Quantity of Stored Fuel for Oil and Dual Fuel Units

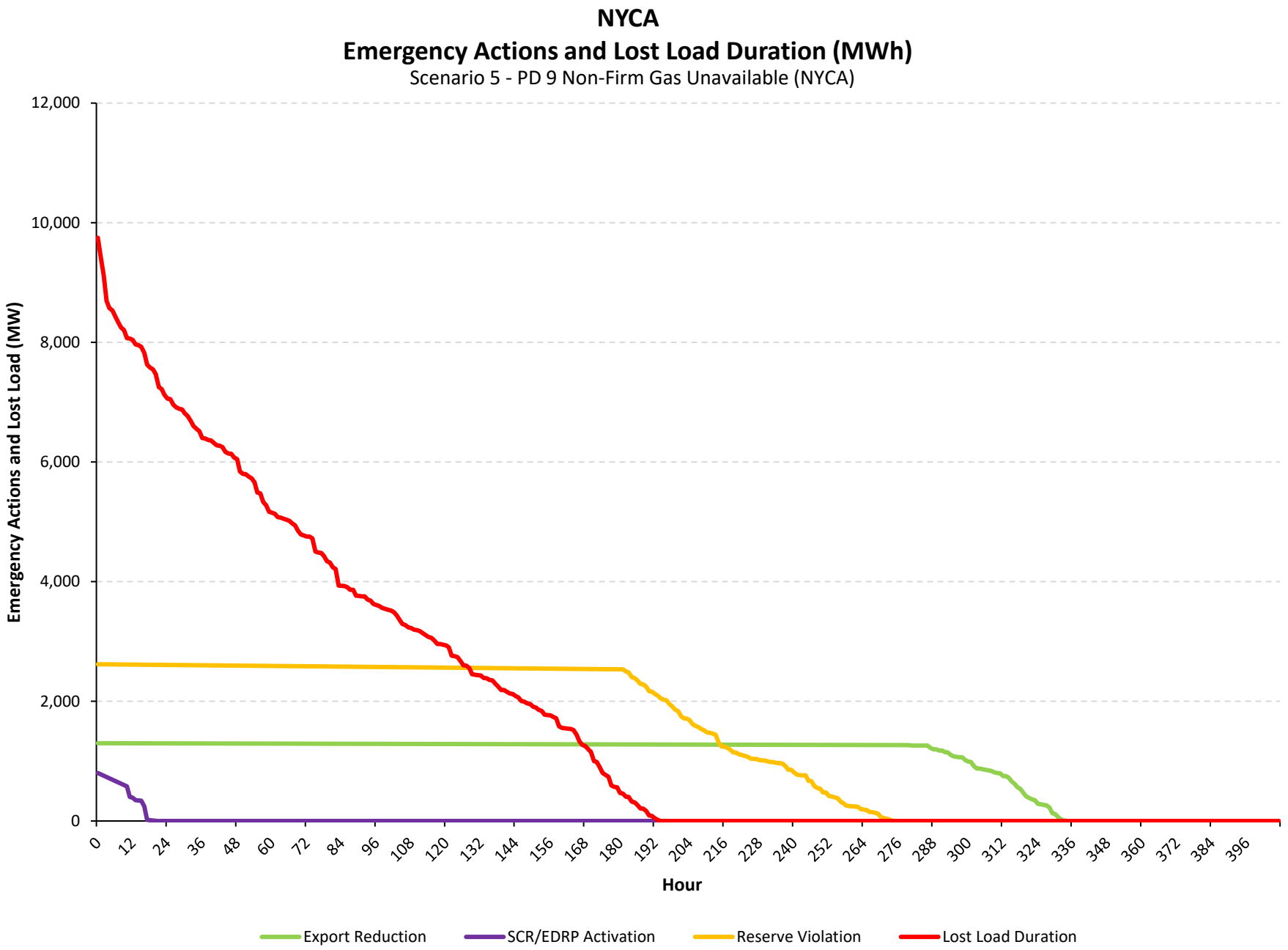
Scenario 5 - PD 9 Non-Firm Gas Unavailable (NYCA)

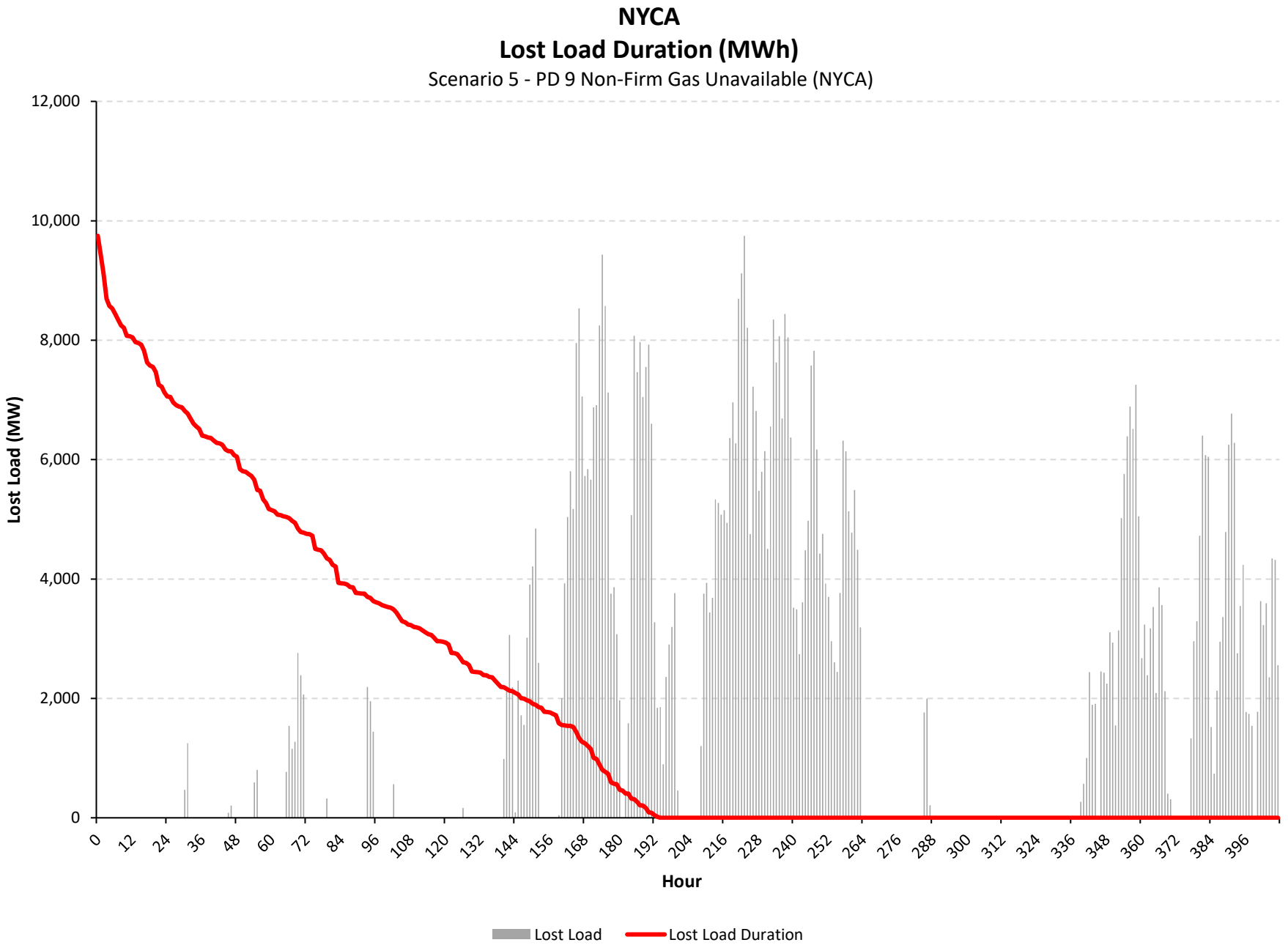


NYCA
Degree Days and Gas Available for Electric Generation 17-Day Modeling Period
Scenario 5 - PD 9 Non-Firm Gas Unavailable (NYCA)



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 5 - PD 9 Non-Firm Gas Unavailable (NYCA)
Emergency Actions and Lost Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 5 - PD 9 Non-Firm Gas Unavailable (NYCA)
Lost Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

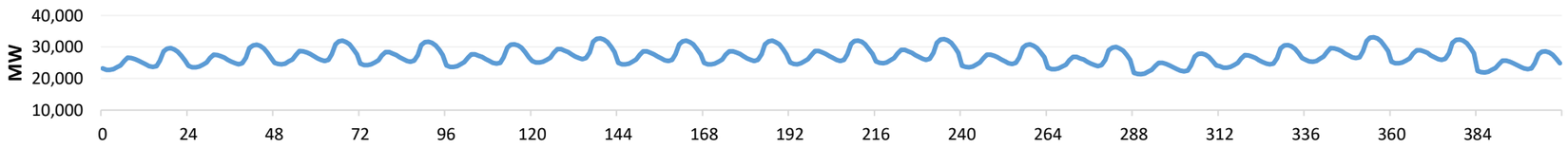
Case: Scenario 5 - PD 10 Non-Firm Gas Unavailable (4 days) (Winter 2030/2031)

Hourly Results Summary

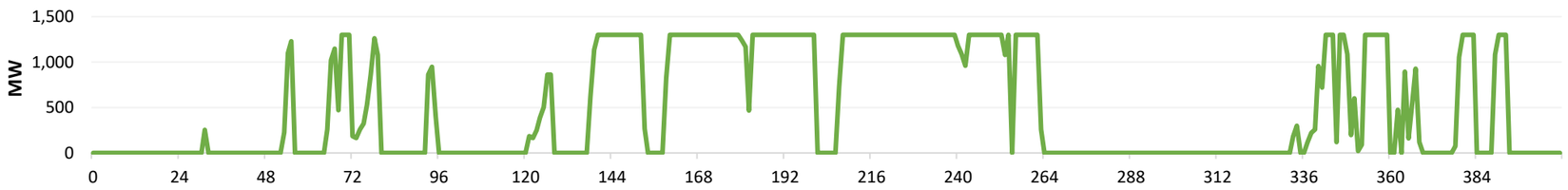
Case Name: Scenario 5 - PD 10 Non-Firm Gas Unavailable (4 days)

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	3-4 days
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

Load During Modeling Period

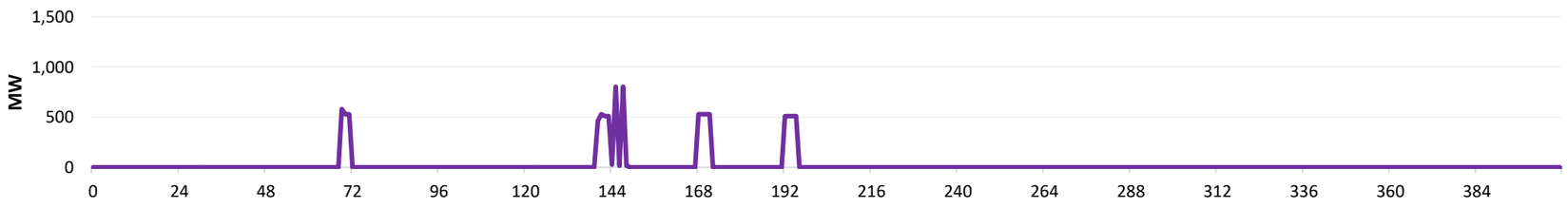


Export to ISO-NE Reduction During Modeling Period



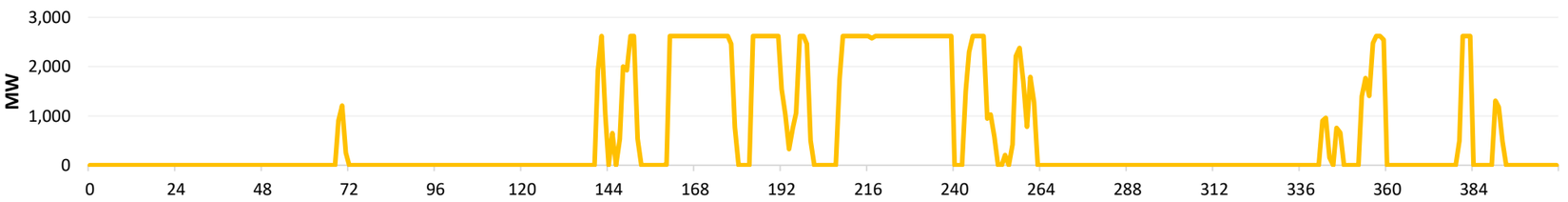
Export Reductions	
Total Hrs.	184
Total MWh	196,936
Avg. MW	482.7

SCR/EDRP Deployed During Modeling Period



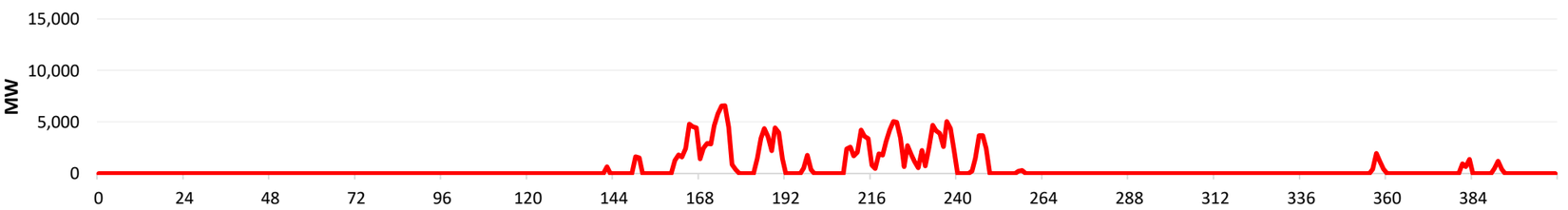
SCR Deployment	
Total Hrs.	20
Total MWh	9,454
Avg. MW	23.2

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	119
Total MWh	240,568
Avg. MW	589.6
First Hour with Viol.	69

Loss of Load During Modeling Period



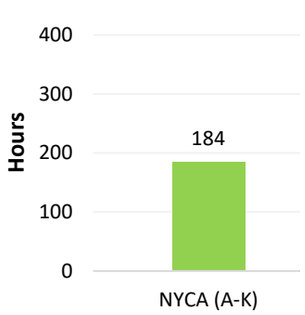
Loss of Load	
Total Hrs.	80
Total MWh	197,322
Avg. MW	483.6
First Hour with Losses	142

Full Period Results Summary

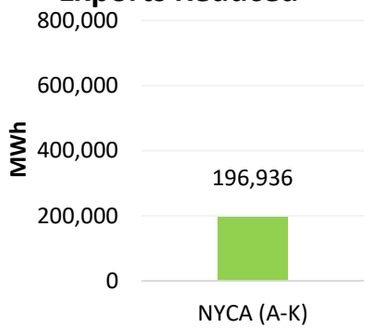
Case Name: Scenario 5 - PD 10 Non-Firm Gas Unavailable (4 days)

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	3-4 days
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

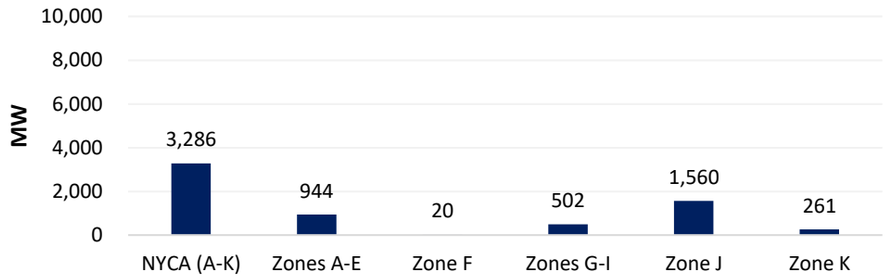
Hours Exports Reduced



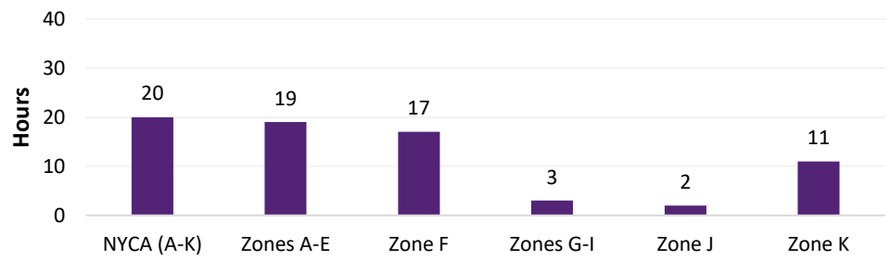
Total MWh of Exports Reduced



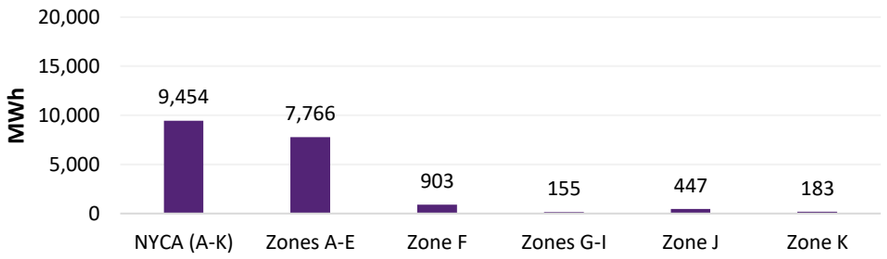
Average Capacity Not Available Due to Exhausted Fuel Inventory



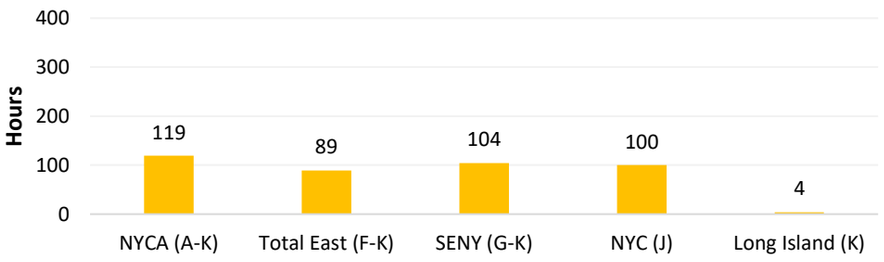
Hours SCR/EDRP Deployed



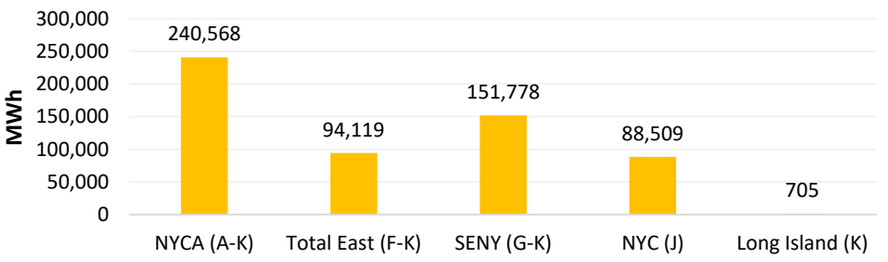
Total MWh SCR/EDRP Deployed



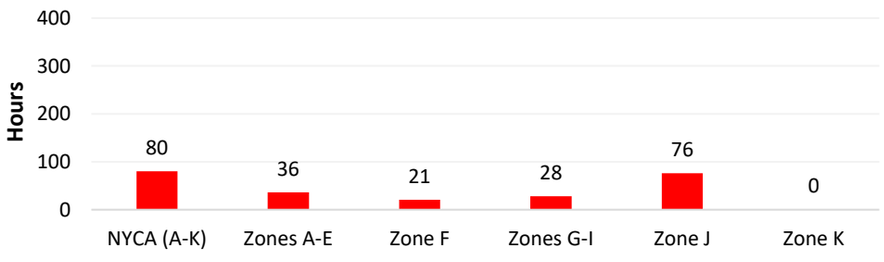
Hours with Reserve Violations



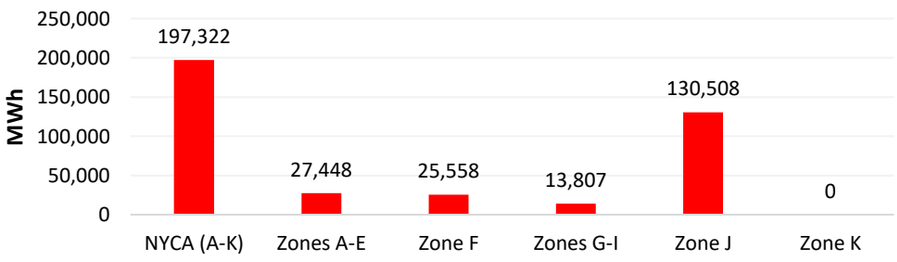
Total MWh of Reserve Violations

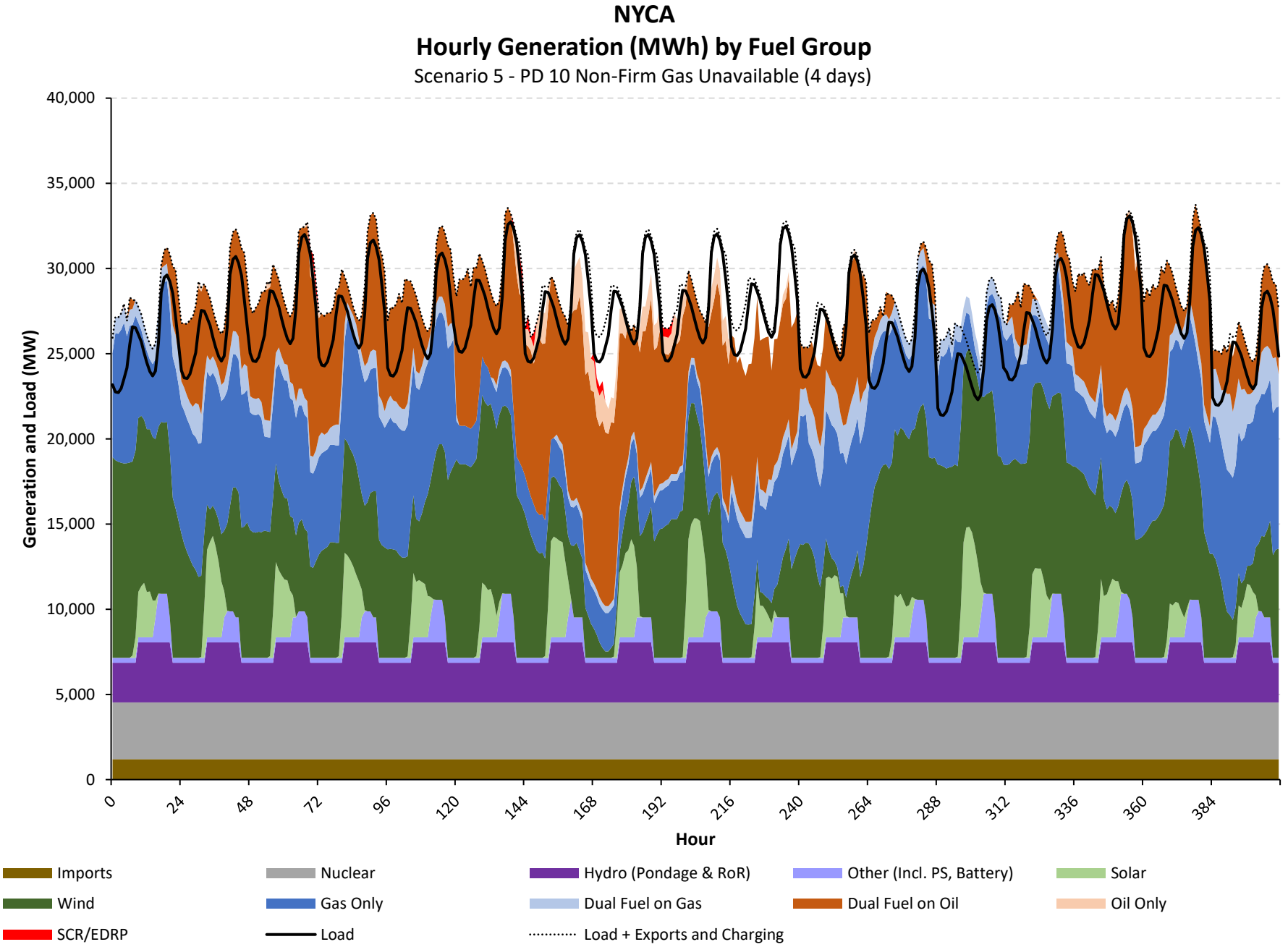


Hours with Loss of Load

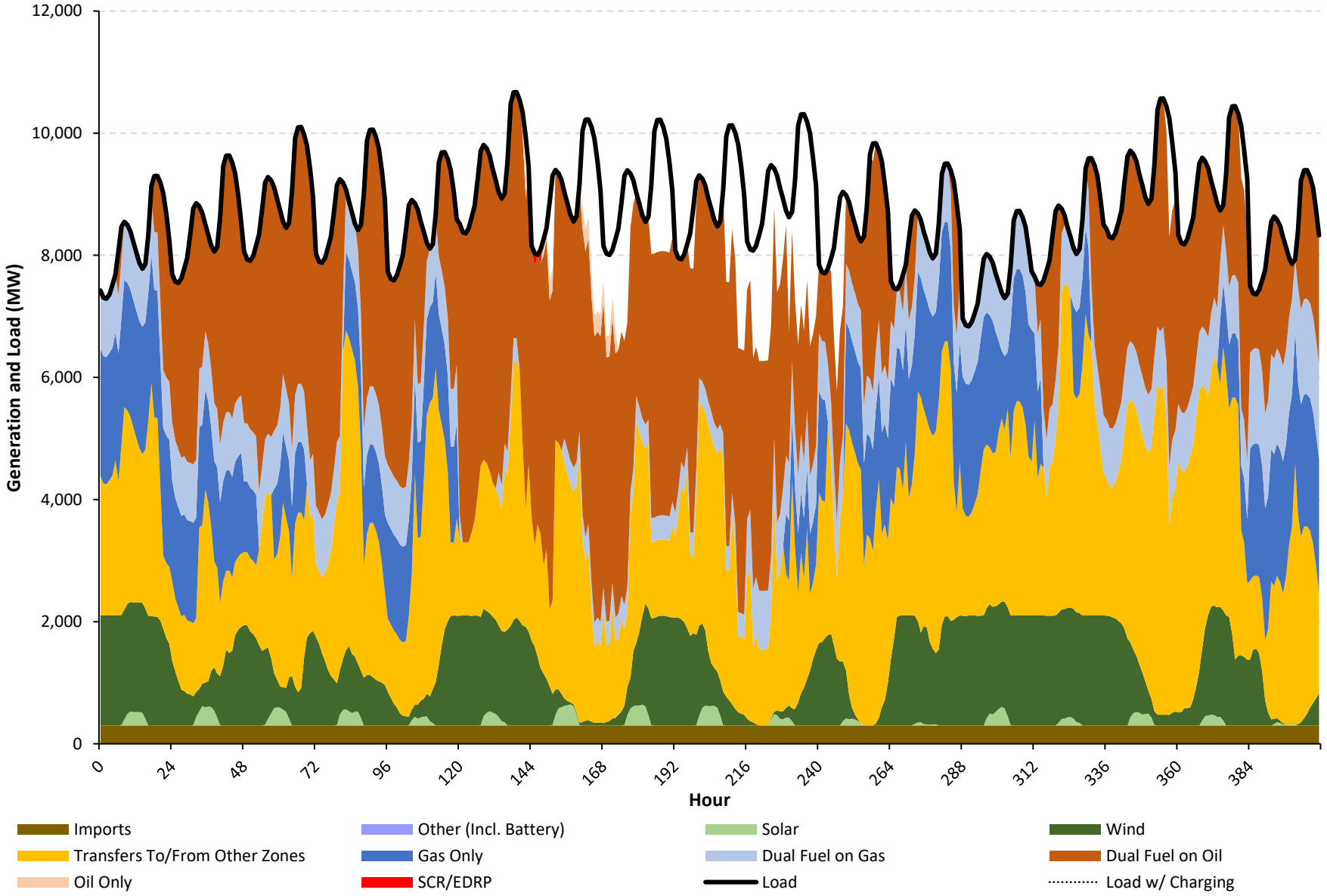


Total MWh of Lost Load

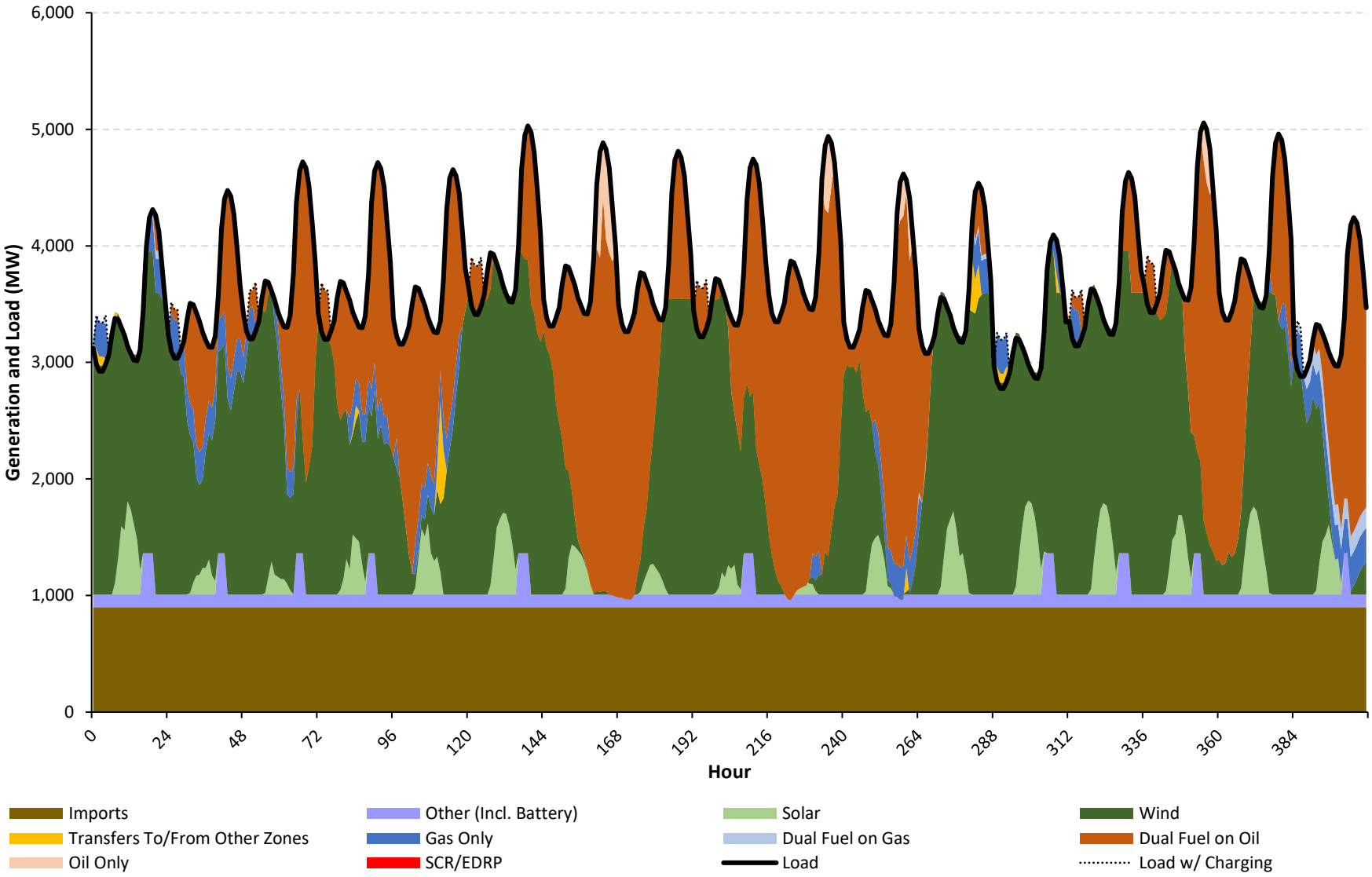



NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 5 - PD 10 Non-Firm Gas Unavailable (4 days)
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

Zone J
Hourly Generation (MW) by Fuel Group
Scenario 5 - PD 10 Non-Firm Gas Unavailable (4 days)



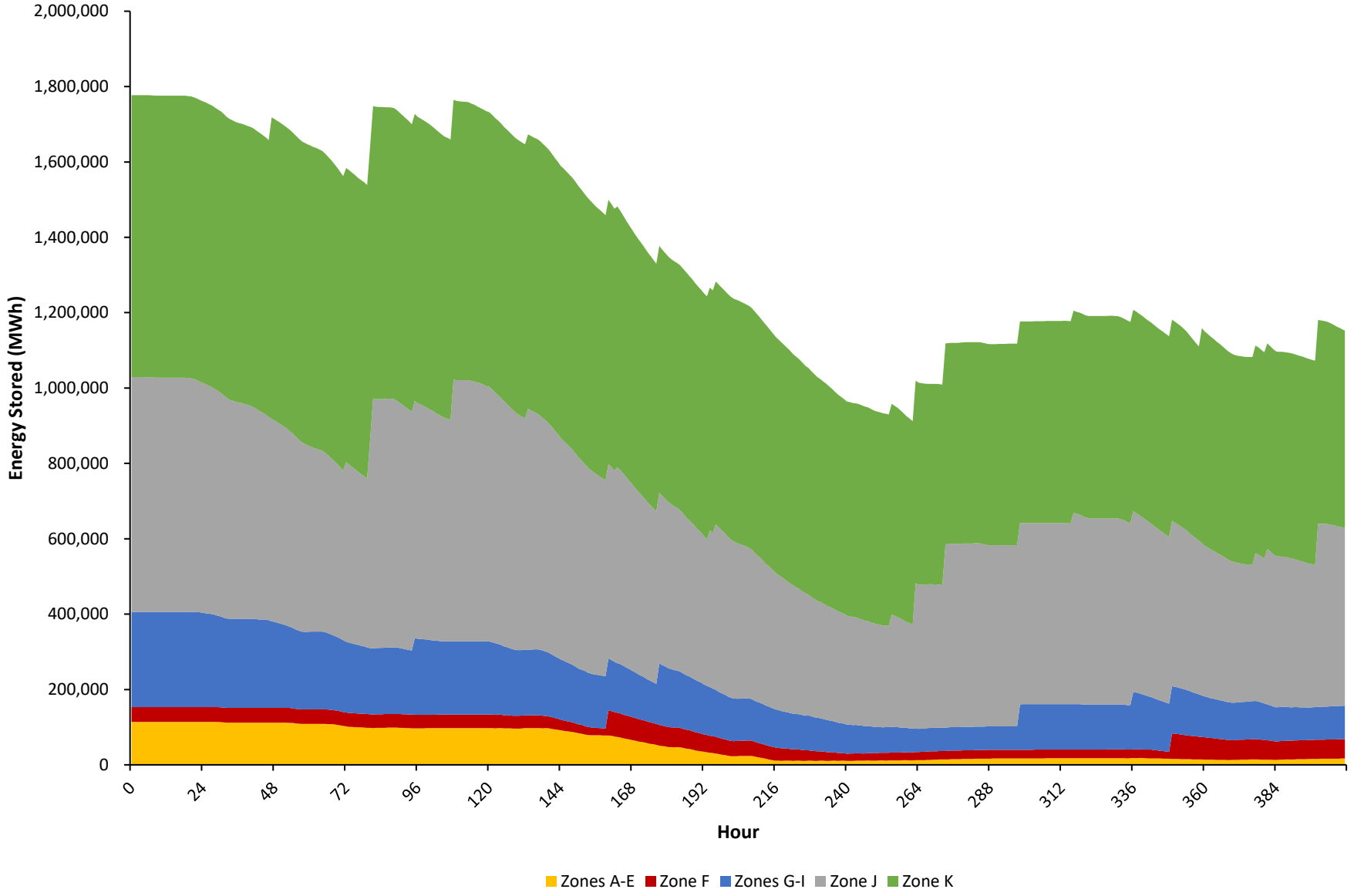
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 5 - PD 10 Non-Firm Gas Unavailable (4 days)



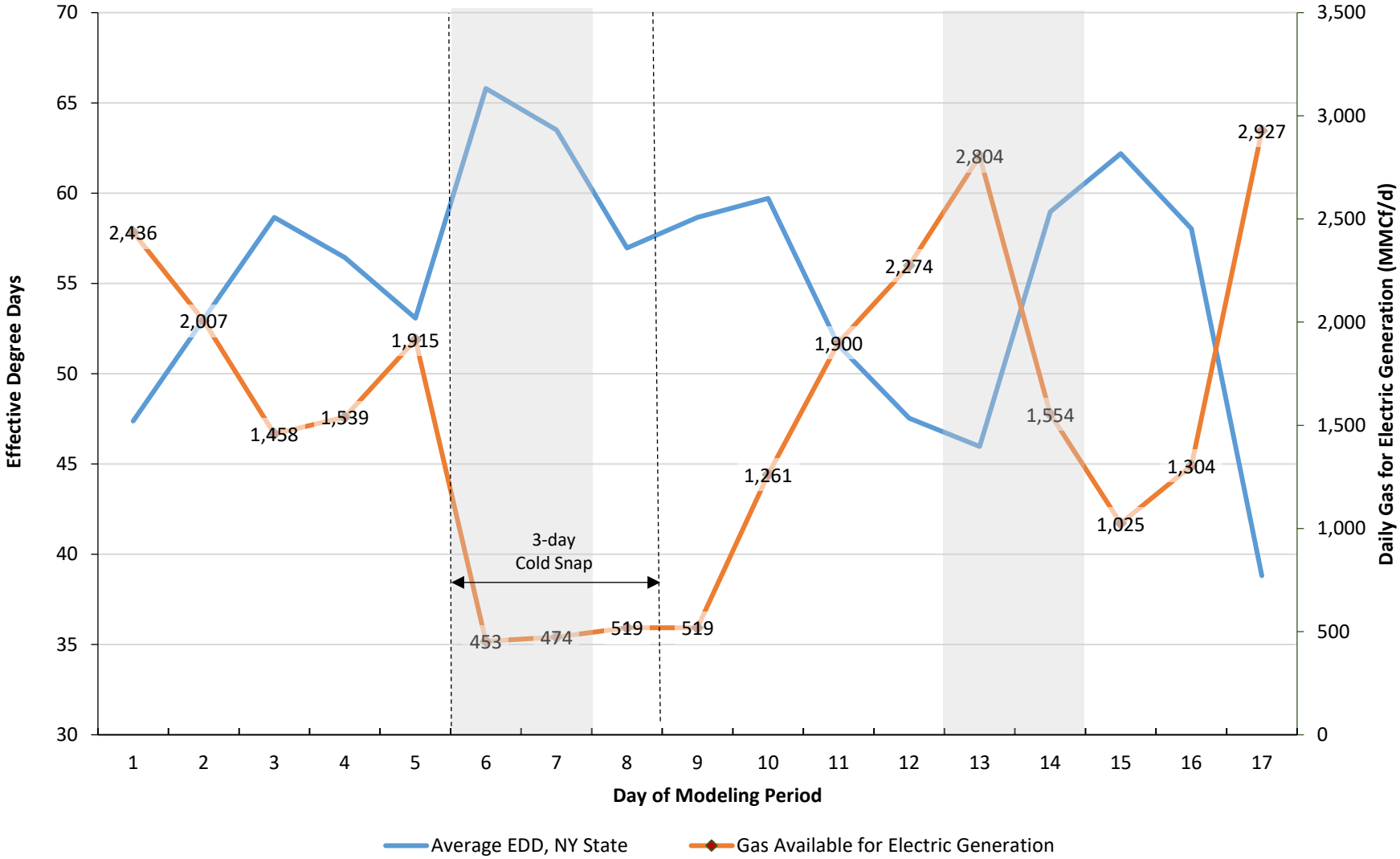
NYCA

Quantity of Stored Fuel for Oil and Dual Fuel Units

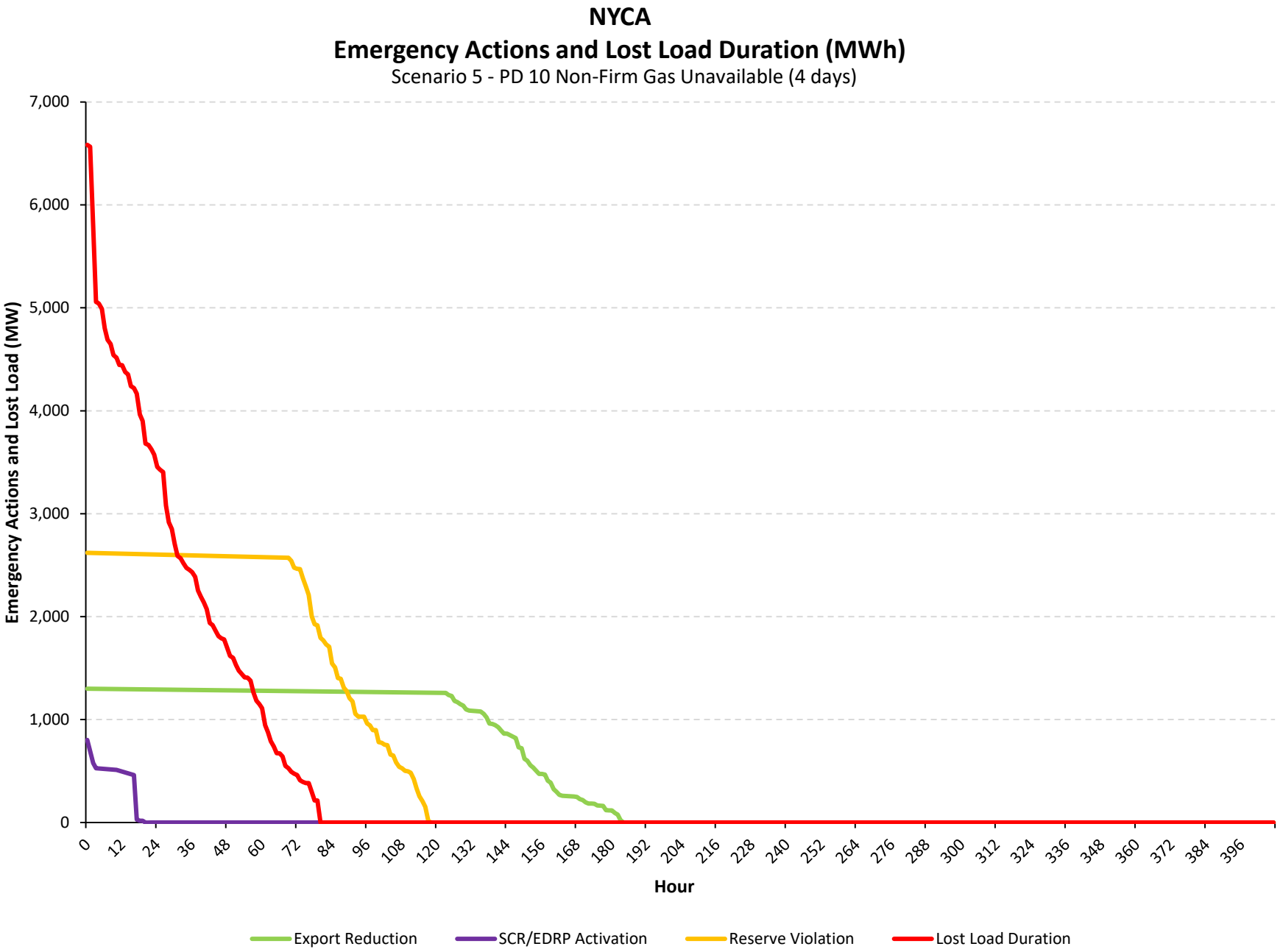
Scenario 5 - PD 10 Non-Firm Gas Unavailable (4 days)

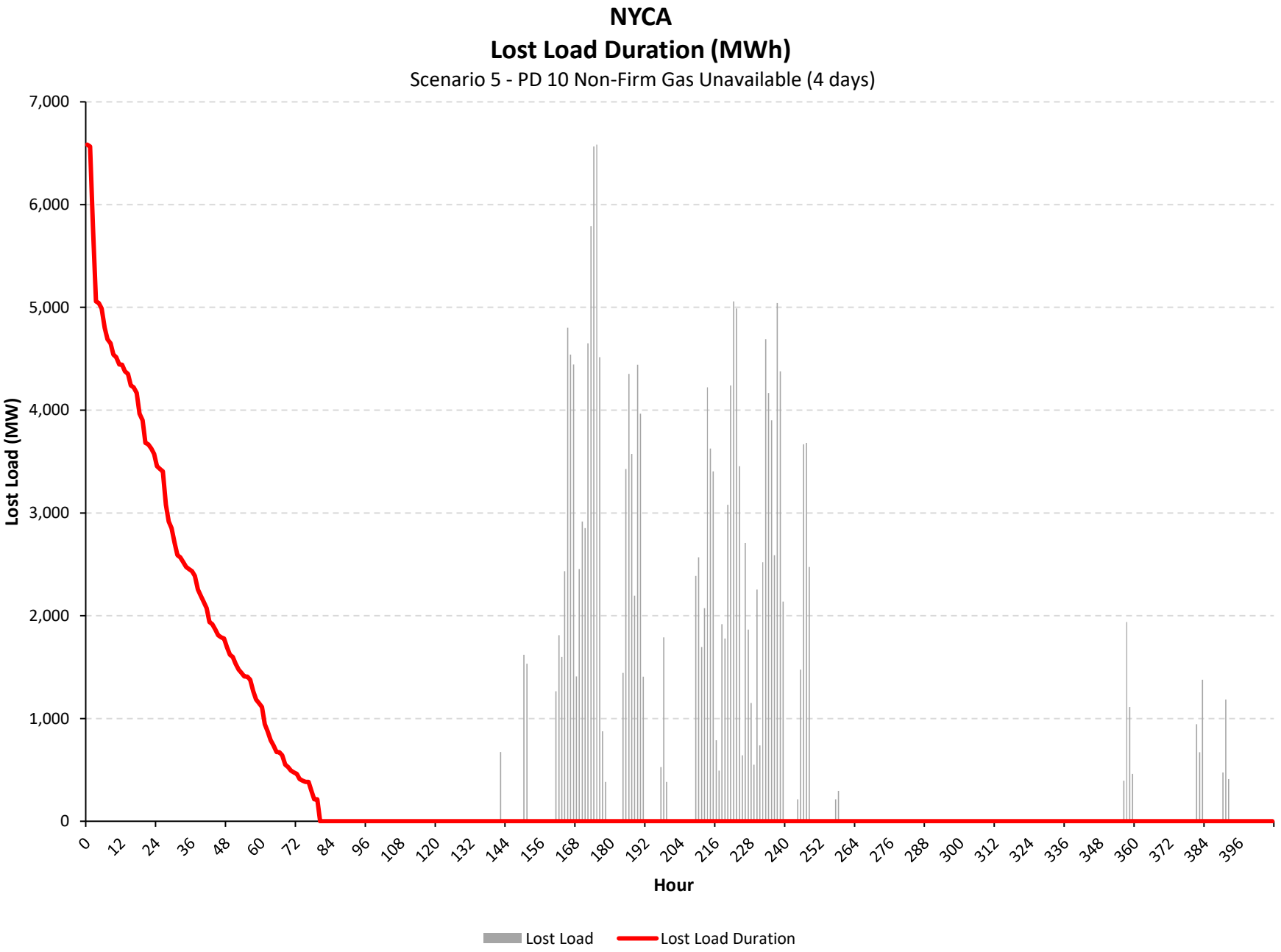


NYCA
Degree Days and Gas Available for Electric Generation 17-Day Modeling Period
Scenario 5 - PD 10 Non-Firm Gas Unavailable (4 days)



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 5 - PD 10 Non-Firm Gas Unavailable (4 days)
Emergency Actions and Lost Load (MW)
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 5 - PD 10 Non-Firm Gas Unavailable (4 days)
Lost Load (MW)
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

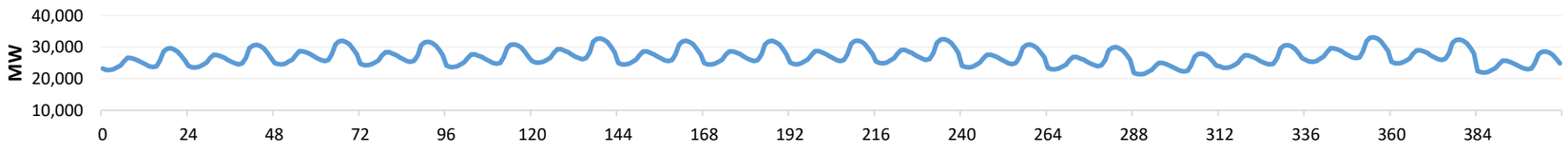
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 5 - PD 11 Combination Disruption (Winter 2030/2031)

Hourly Results Summary

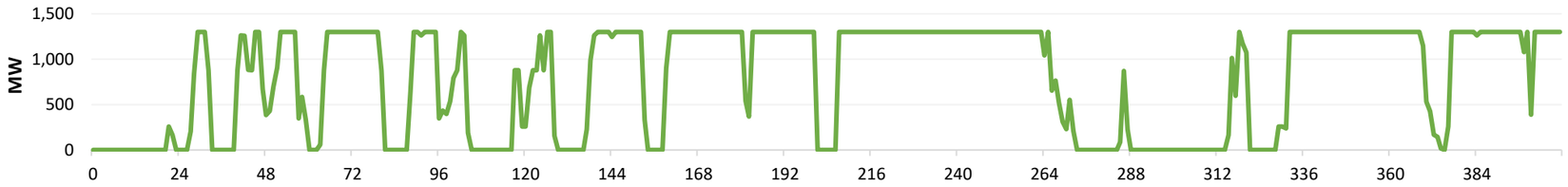
Case Name: Scenario 5 - PD 11 Combination Disruption

Load During Modeling Period



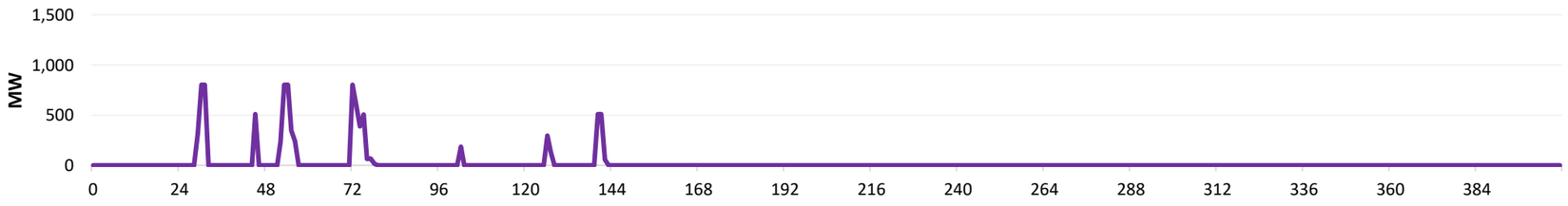
Case Summary	
Derate (EFORd) Increase:	High
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	Reduced
Loss of Gas Fired Gen.	Reduced
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



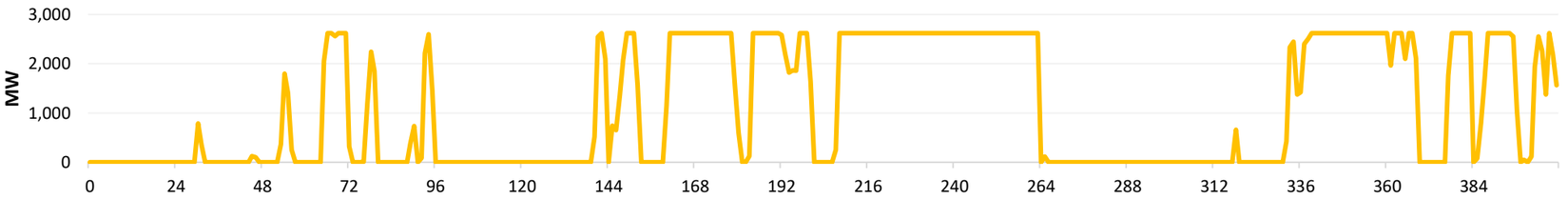
Export Reductions	
Total Hrs.	287
Total MWh	320,663
Avg. MW	785.9

SCR/EDRP Deployed During Modeling Period



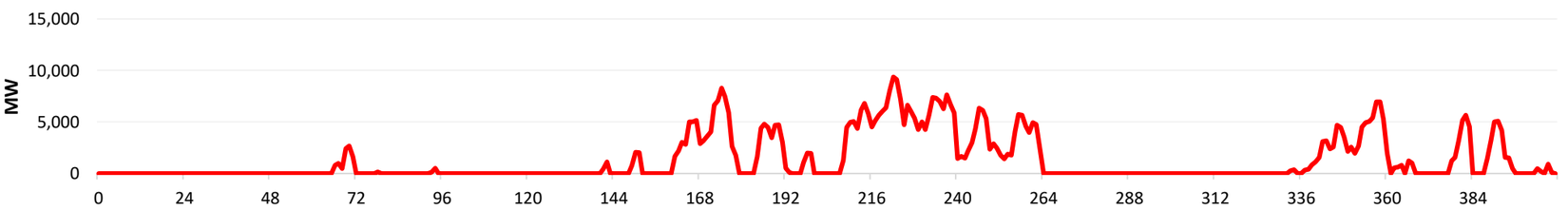
SCR Deployment	
Total Hrs.	22
Total MWh	8,985
Avg. MW	22.0

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	201
Total MWh	443,553
Avg. MW	1,087.1
First Hour with Viol.	30

Loss of Load During Modeling Period



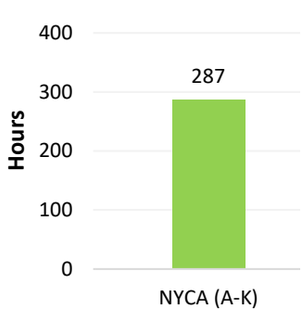
Loss of Load	
Total Hrs.	153
Total MWh	533,582
Avg. MW	1,307.8
First Hour with Losses	66

Full Period Results Summary

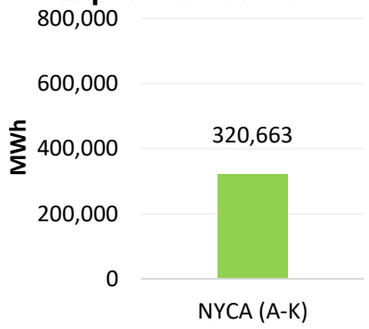
Case Name: Scenario 5 - PD 11 Combination Disruption

Case Summary	
Derate (EFORd) Increase:	High
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	Reduced
Loss of Gas Fired Gen.	Reduced
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

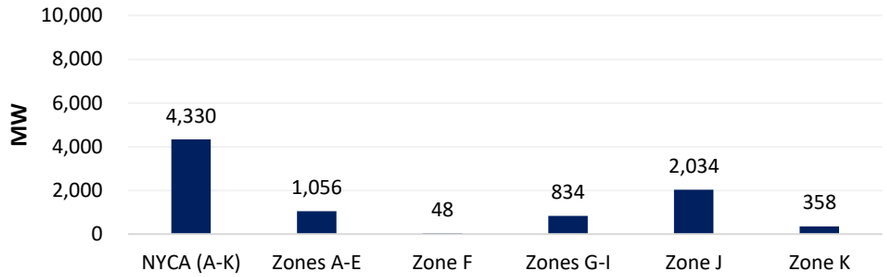
Hours Exports Reduced



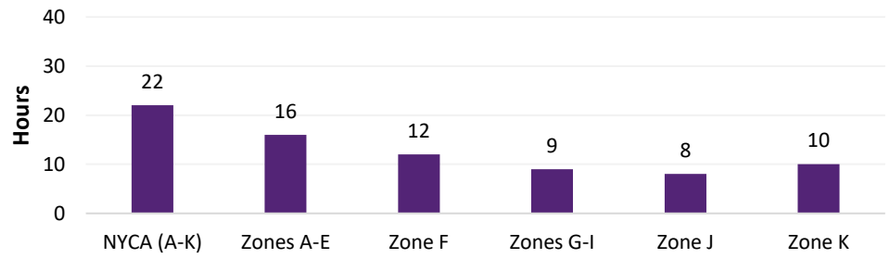
Total MWh of Exports Reduced



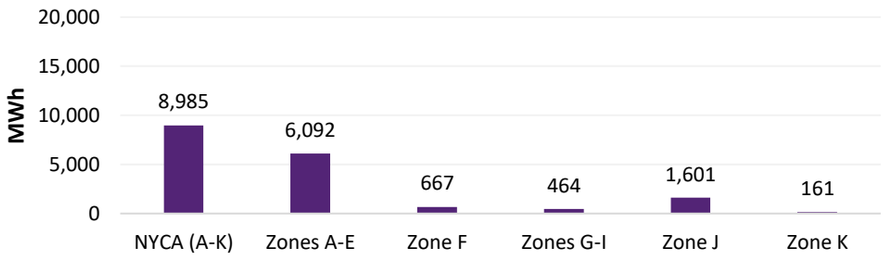
Average Capacity Not Available Due to Exhausted Fuel Inventory



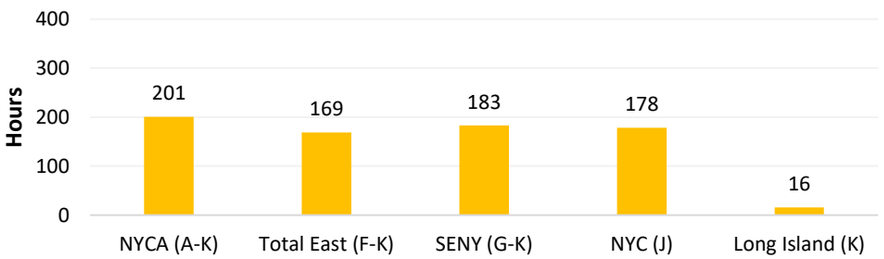
Hours SCR/EDRP Deployed



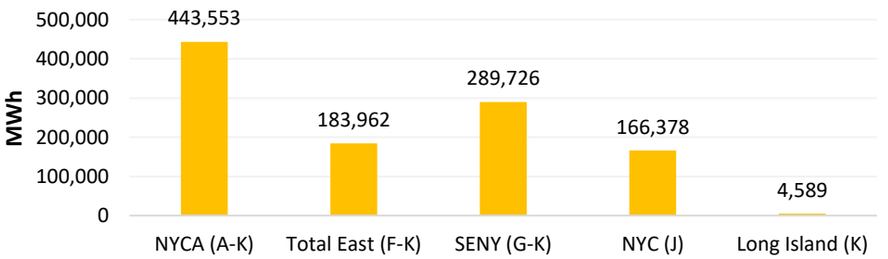
Total MWh SCR/EDRP Deployed



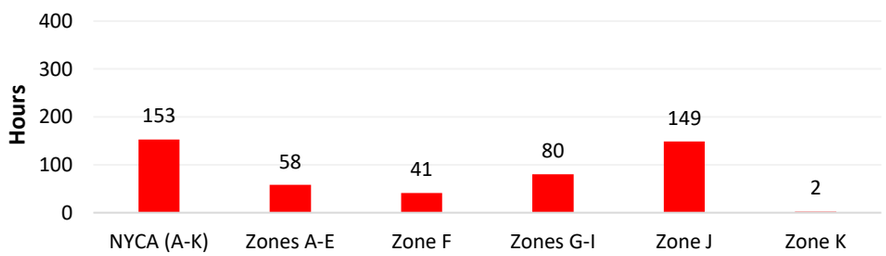
Hours with Reserve Violations



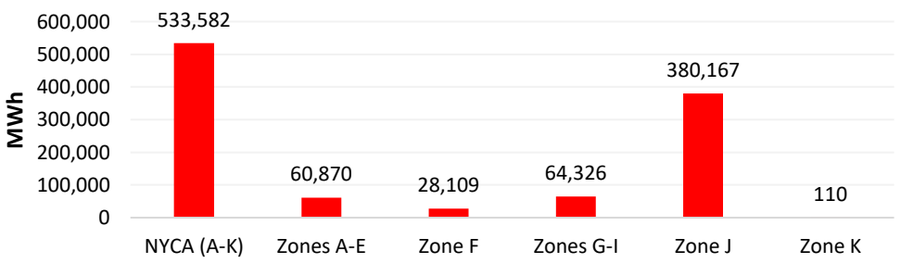
Total MWh of Reserve Violations

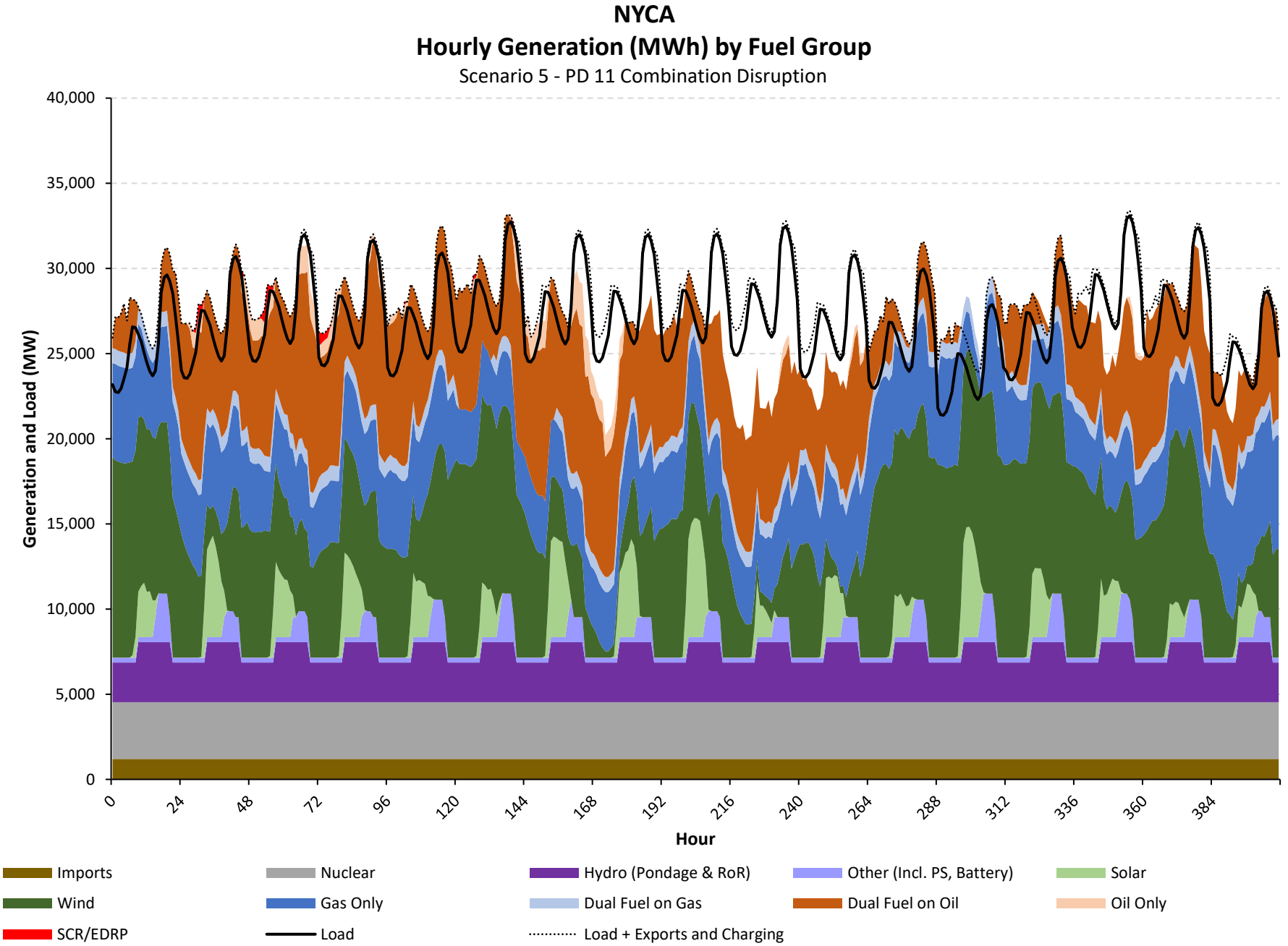


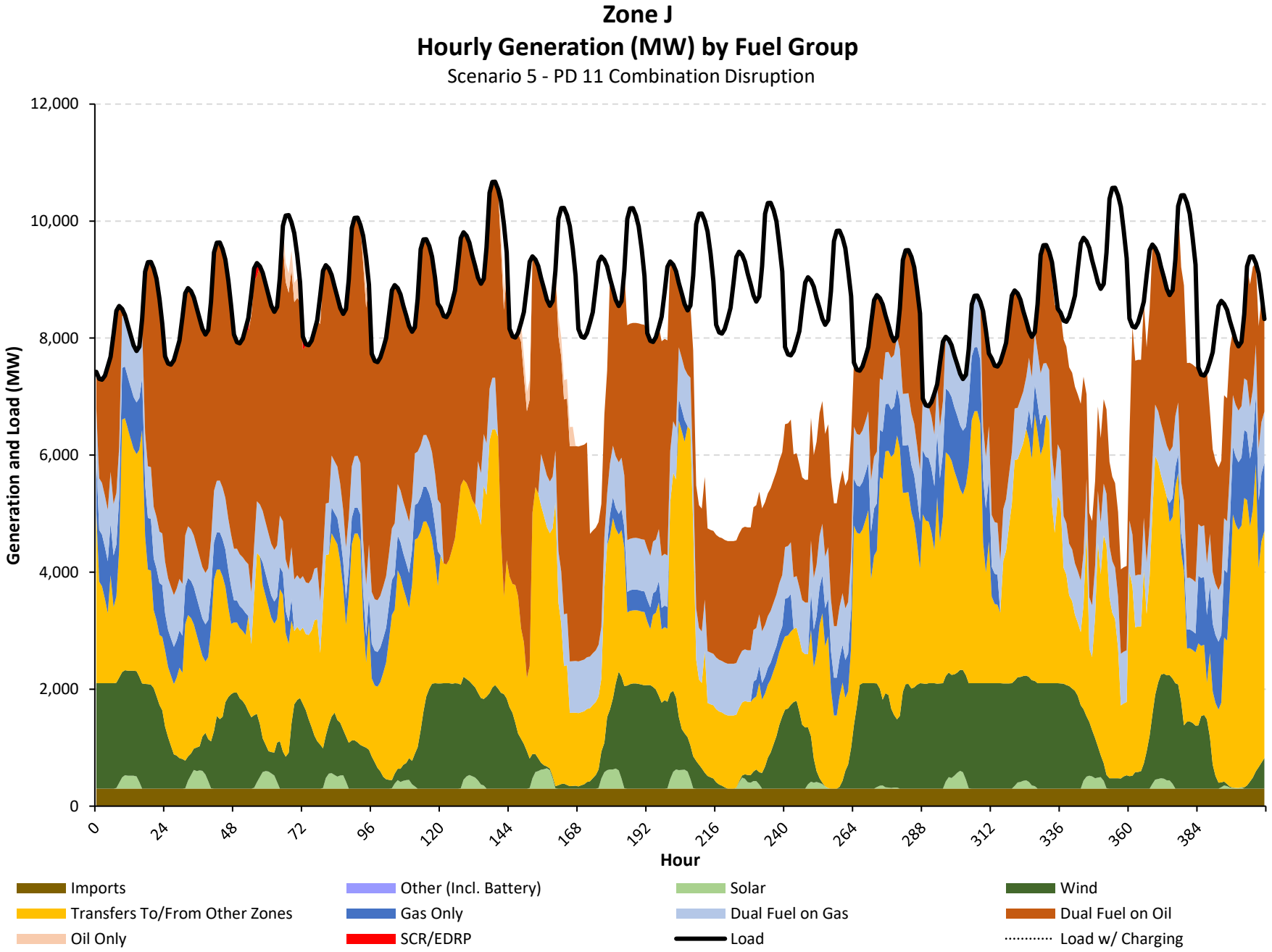
Hours with Loss of Load



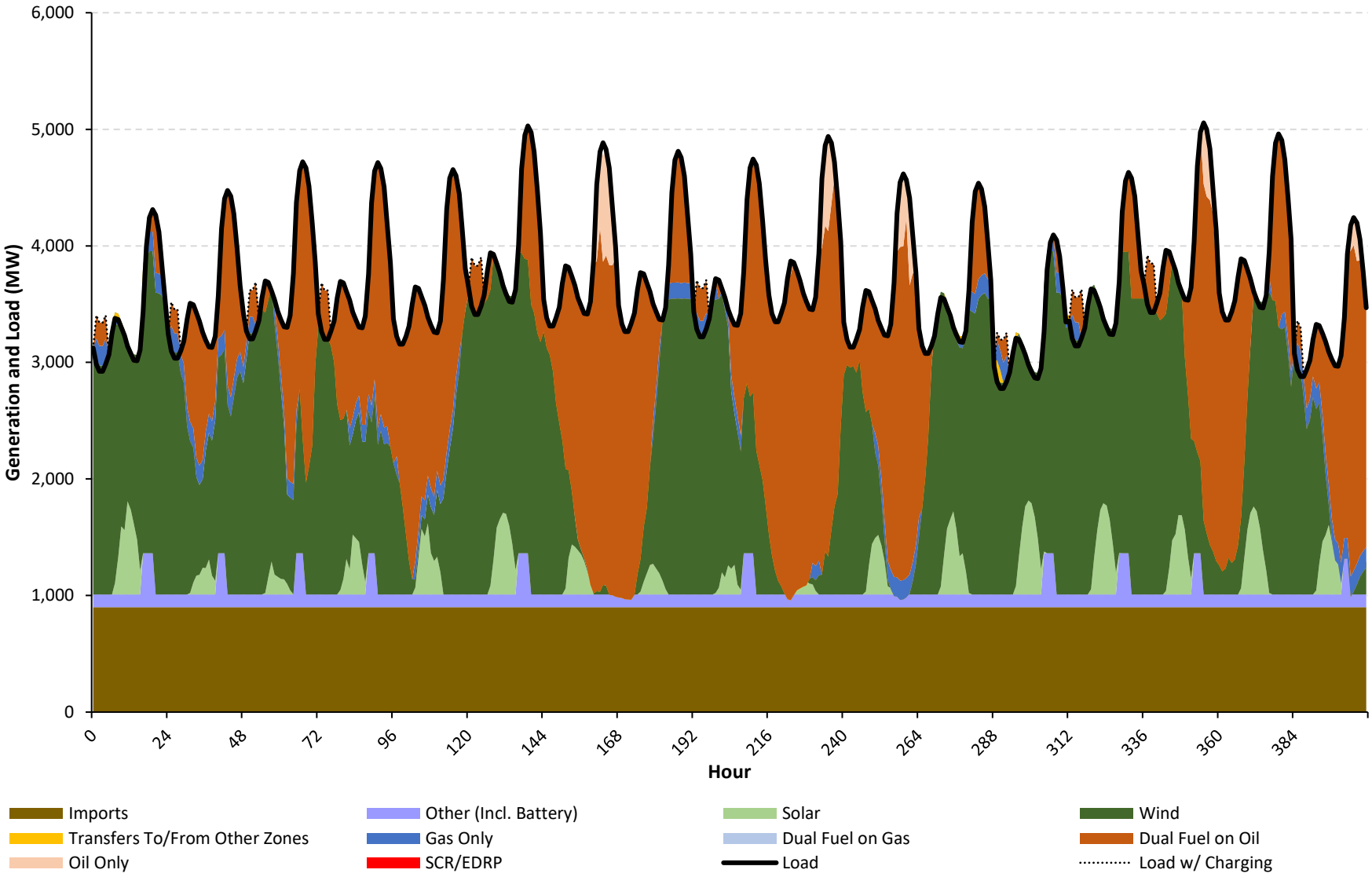
Total MWh of Lost Load




NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 5 - PD 11 Combination Disruption
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 5 - PD 11 Combination Disruption
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

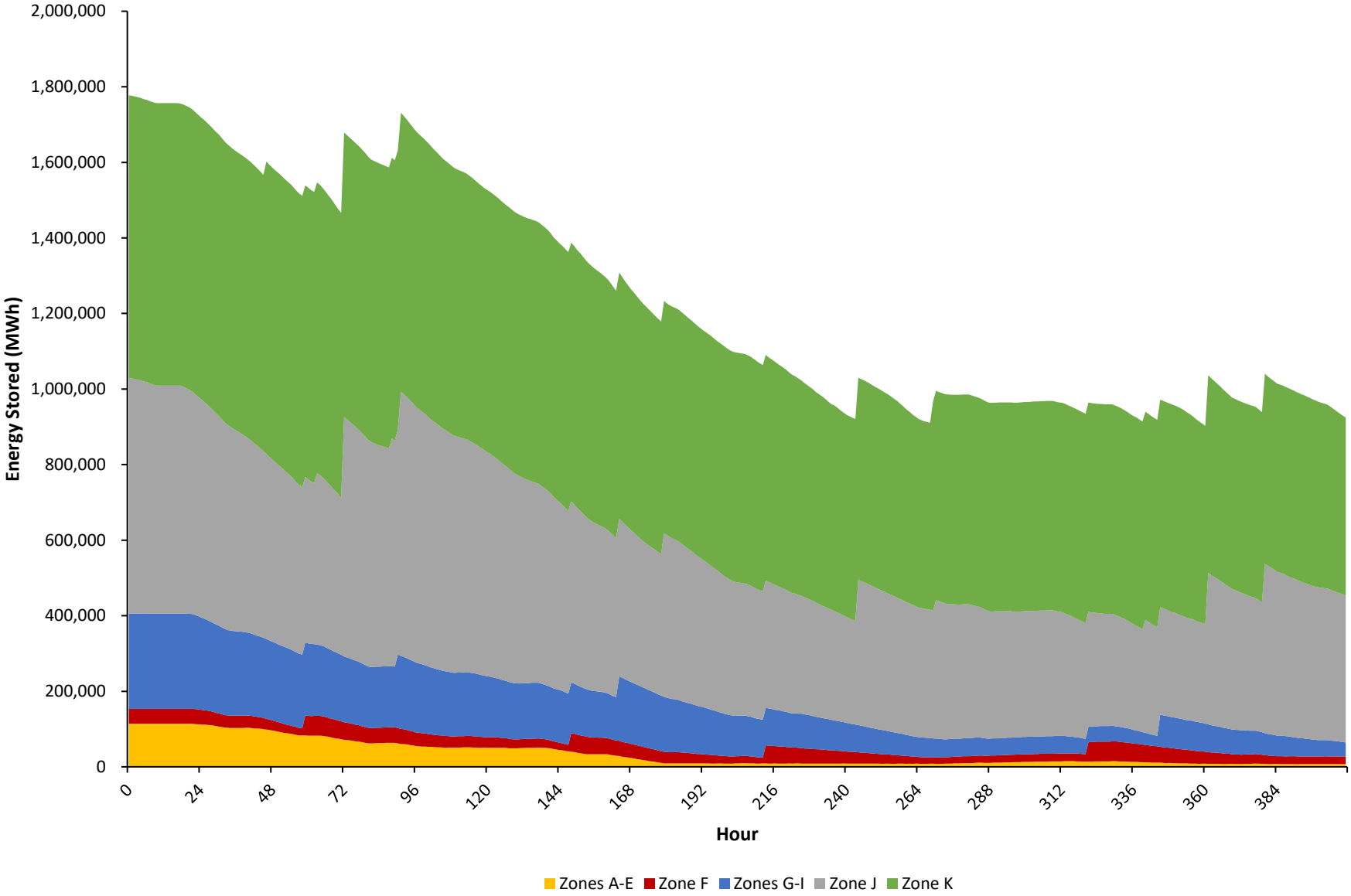
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 5 - PD 11 Combination Disruption

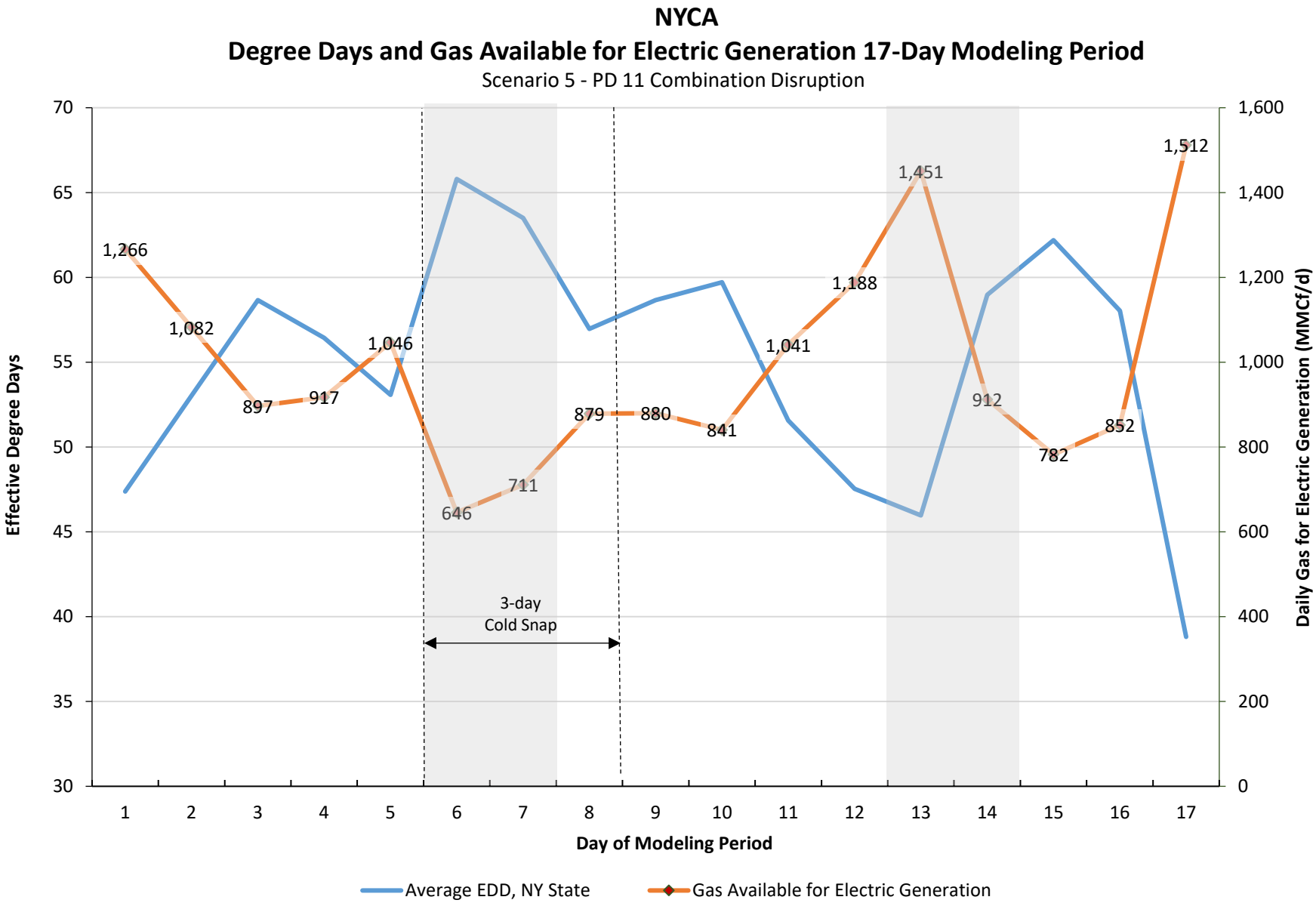


NYCA

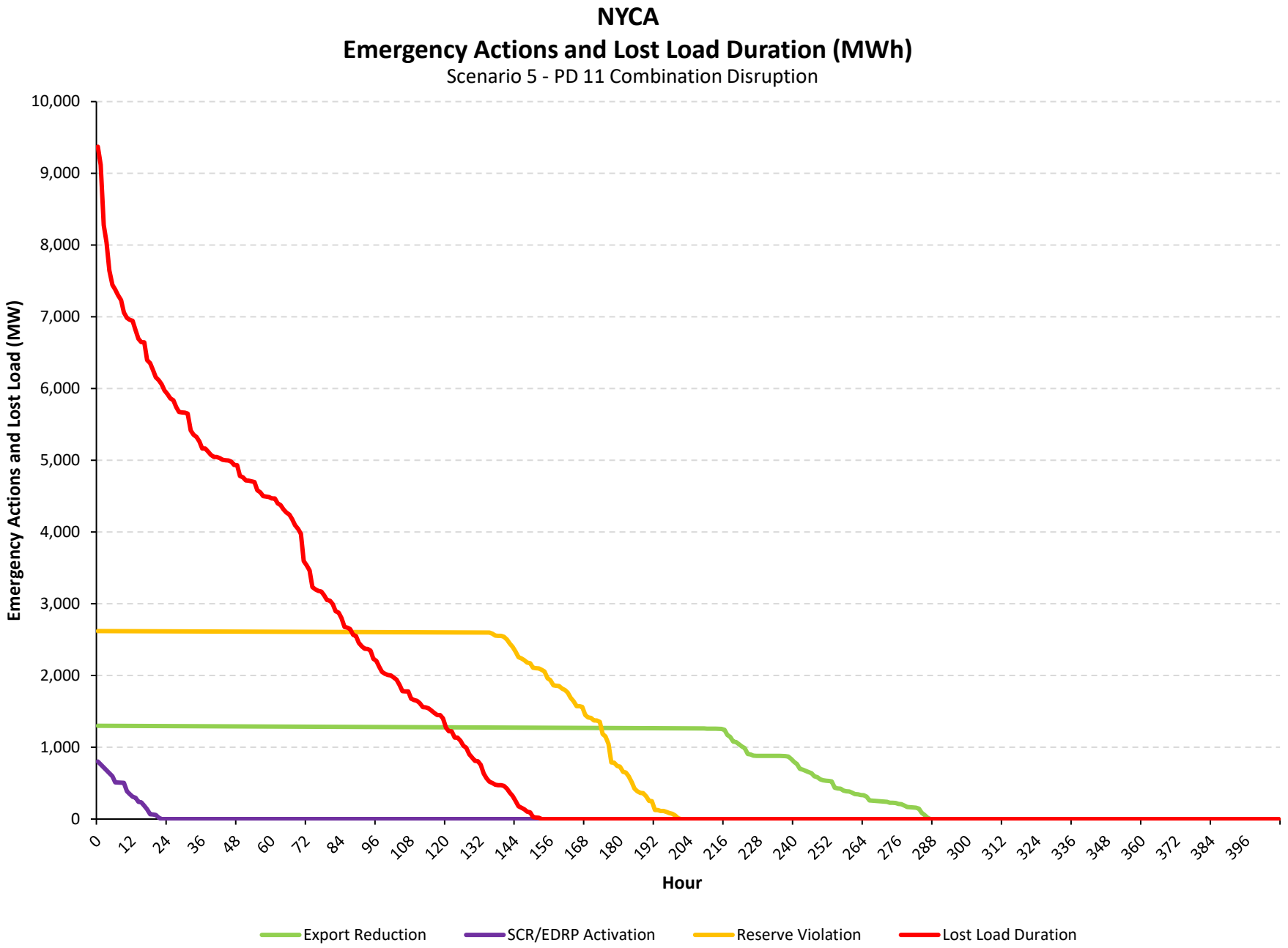
Quantity of Stored Fuel for Oil and Dual Fuel Units

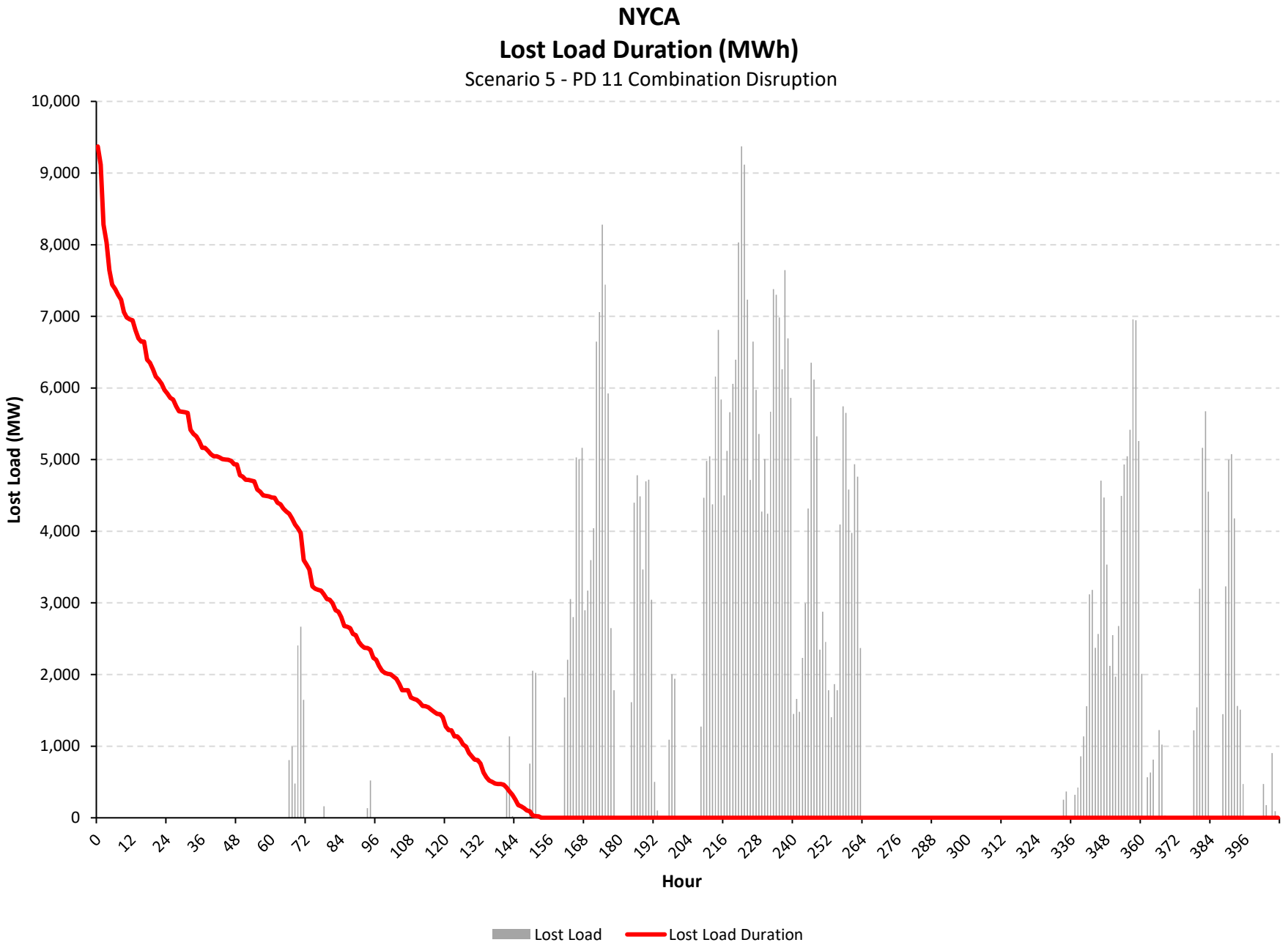
Scenario 5 - PD 11 Combination Disruption





Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 5 - PD 11 Combination Disruption
Emergency Actions and Lost Load (MW)
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 5 - PD 11 Combination Disruption
Lost Load (MW)
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

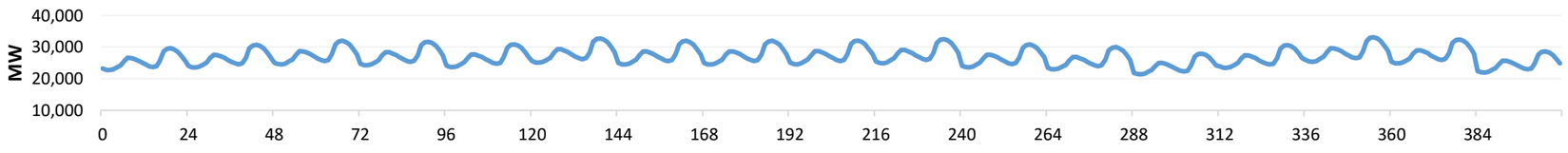
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 6 - PD 1 No Disruptions (Winter 2030/2031)

Hourly Results Summary

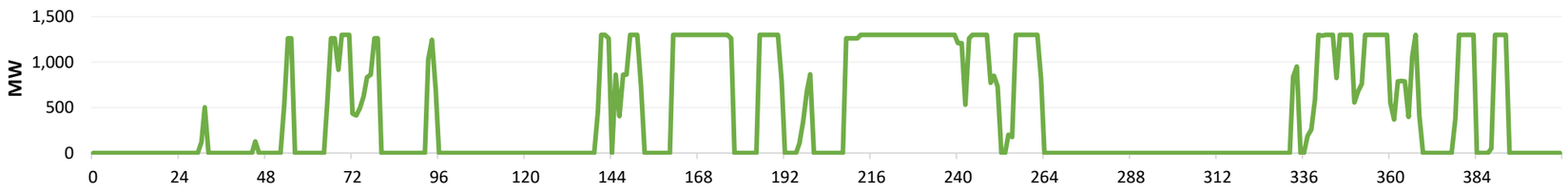
Case Name: Scenario 6 - PD 1 No Disruptions

Load During Modeling Period



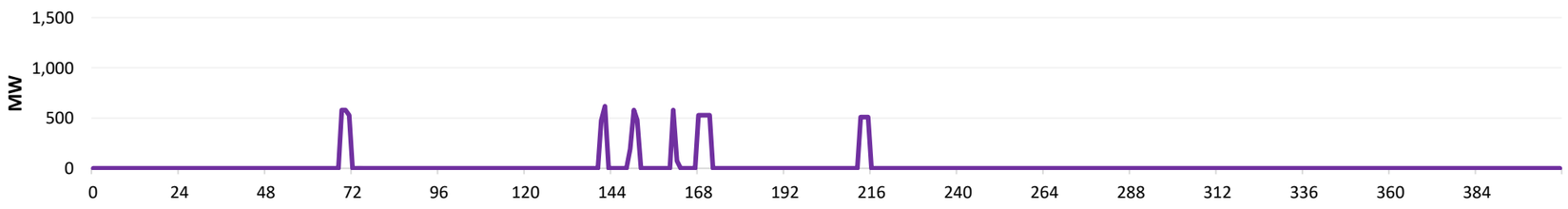
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

Export to ISO-NE Reduction During Modeling Period



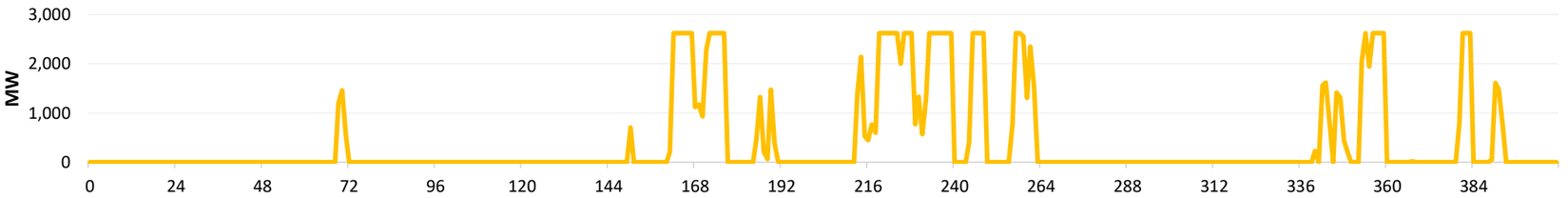
Export Reductions	
Total Hrs.	162
Total MWh	173,981
Avg. MW	426.4

SCR/EDRP Deployed During Modeling Period



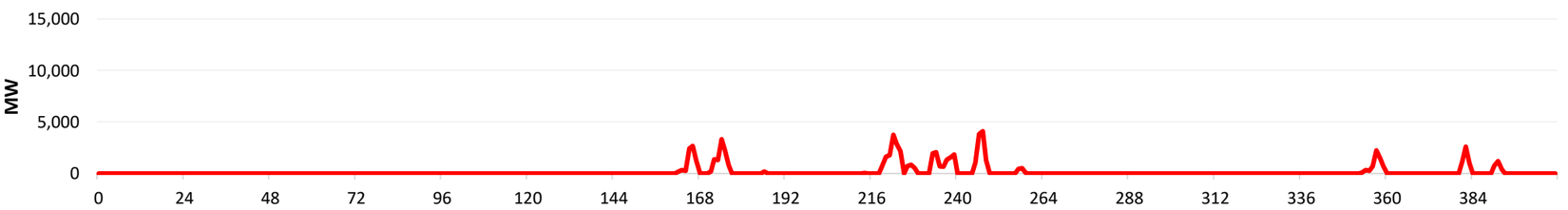
SCR Deployment	
Total Hrs.	17
Total MWh	8,320
Avg. MW	20.4

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	90
Total MWh	158,008
Avg. MW	387.3
First Hour with Viol.	69

Loss of Load During Modeling Period



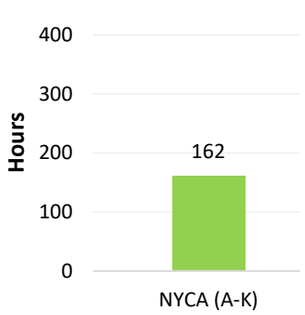
Loss of Load	
Total Hrs.	50
Total MWh	66,206
Avg. MW	162.3
First Hour with Losses	162

Full Period Results Summary

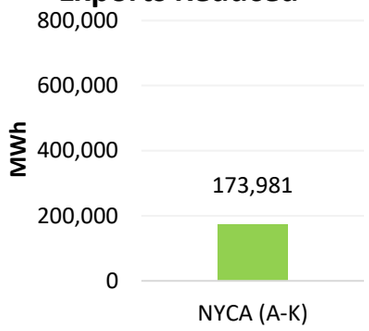
Case Name: Scenario 6 - PD 1 No Disruptions

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

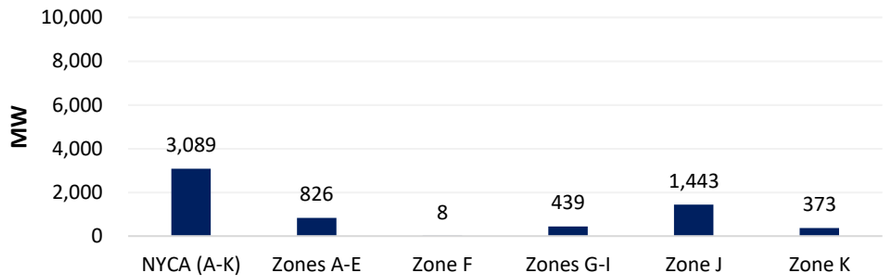
Hours Exports Reduced



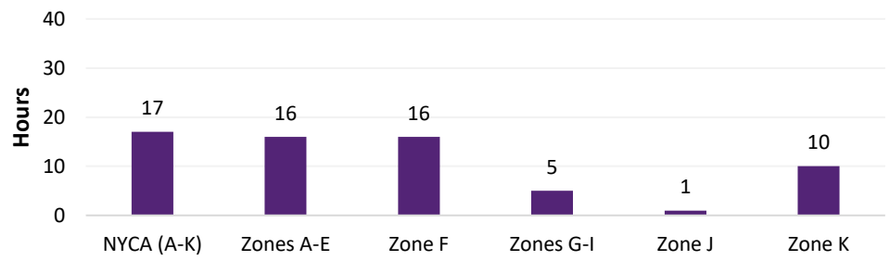
Total MWh of Exports Reduced



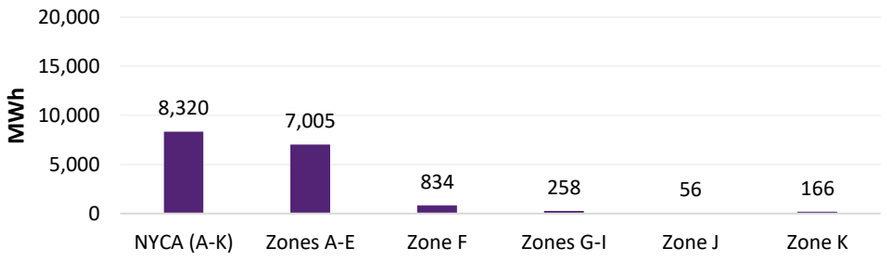
Average Capacity Not Available Due to Exhausted Fuel Inventory



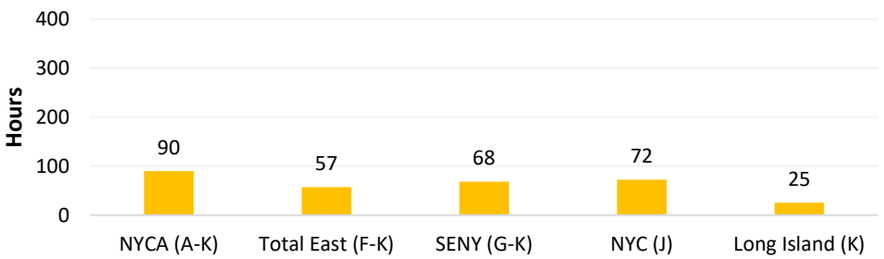
Hours SCR/EDRP Deployed



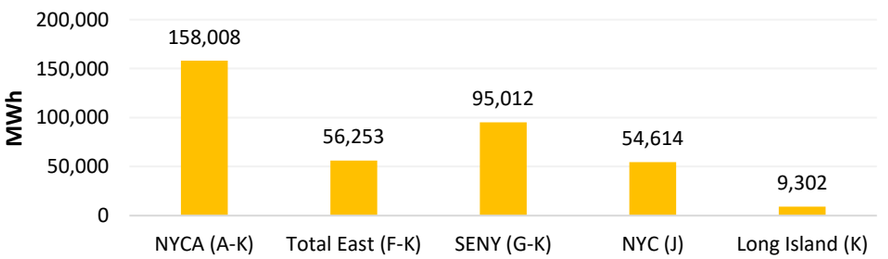
Total MWh SCR/EDRP Deployed



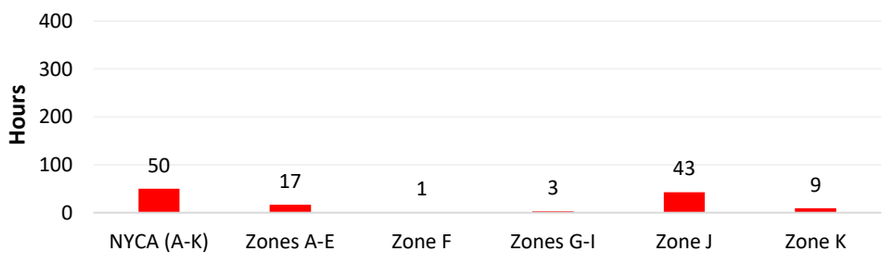
Hours with Reserve Violations



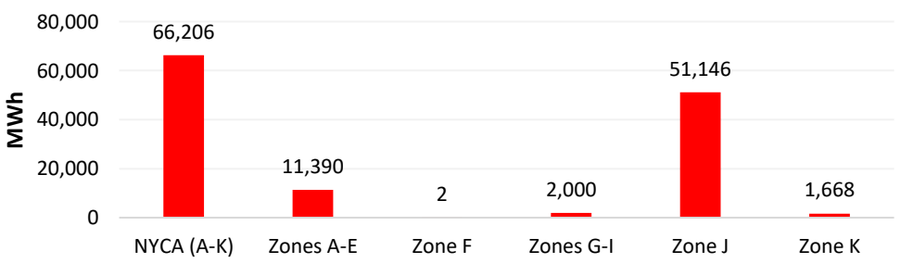
Total MWh of Reserve Violations

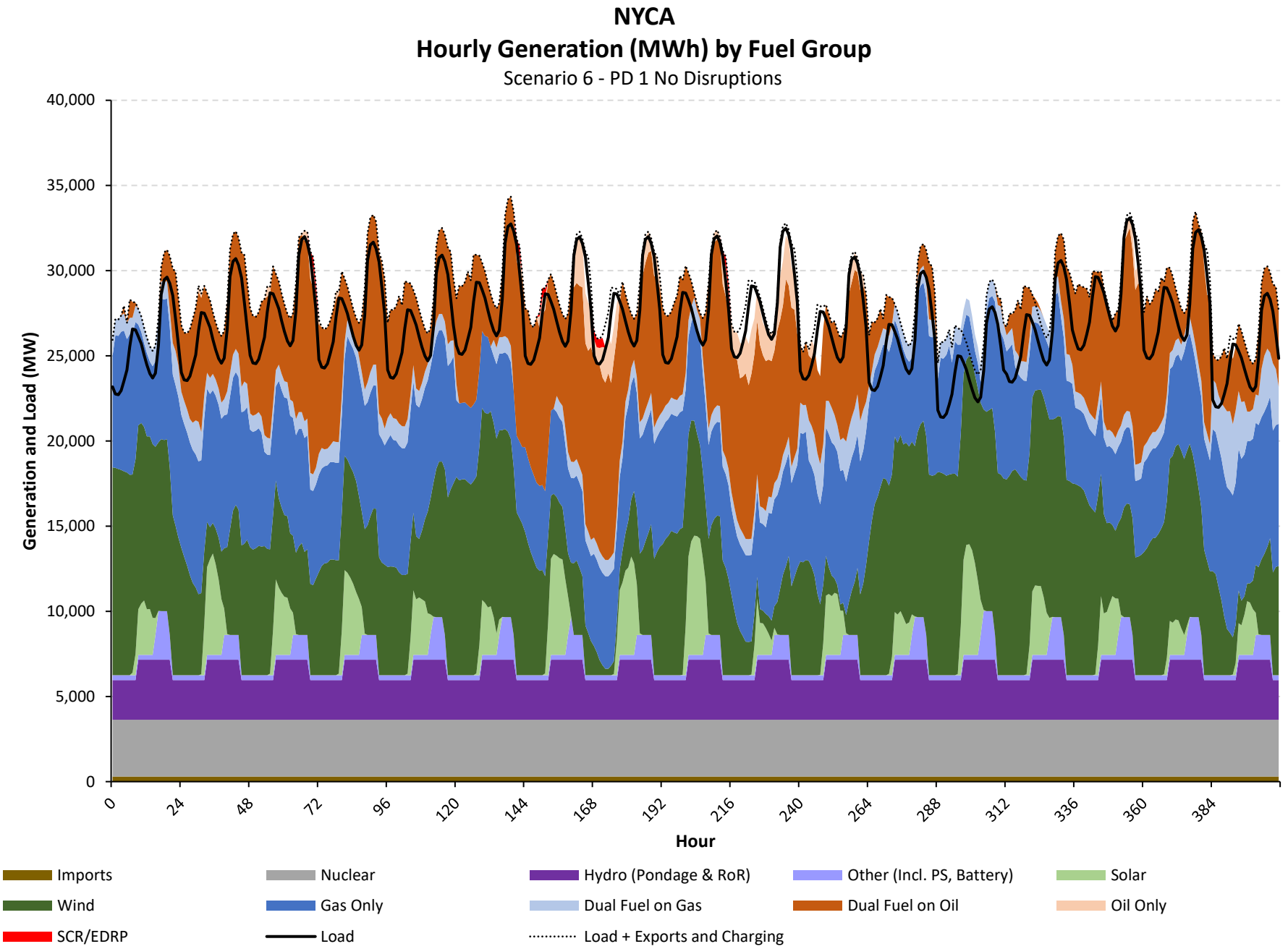


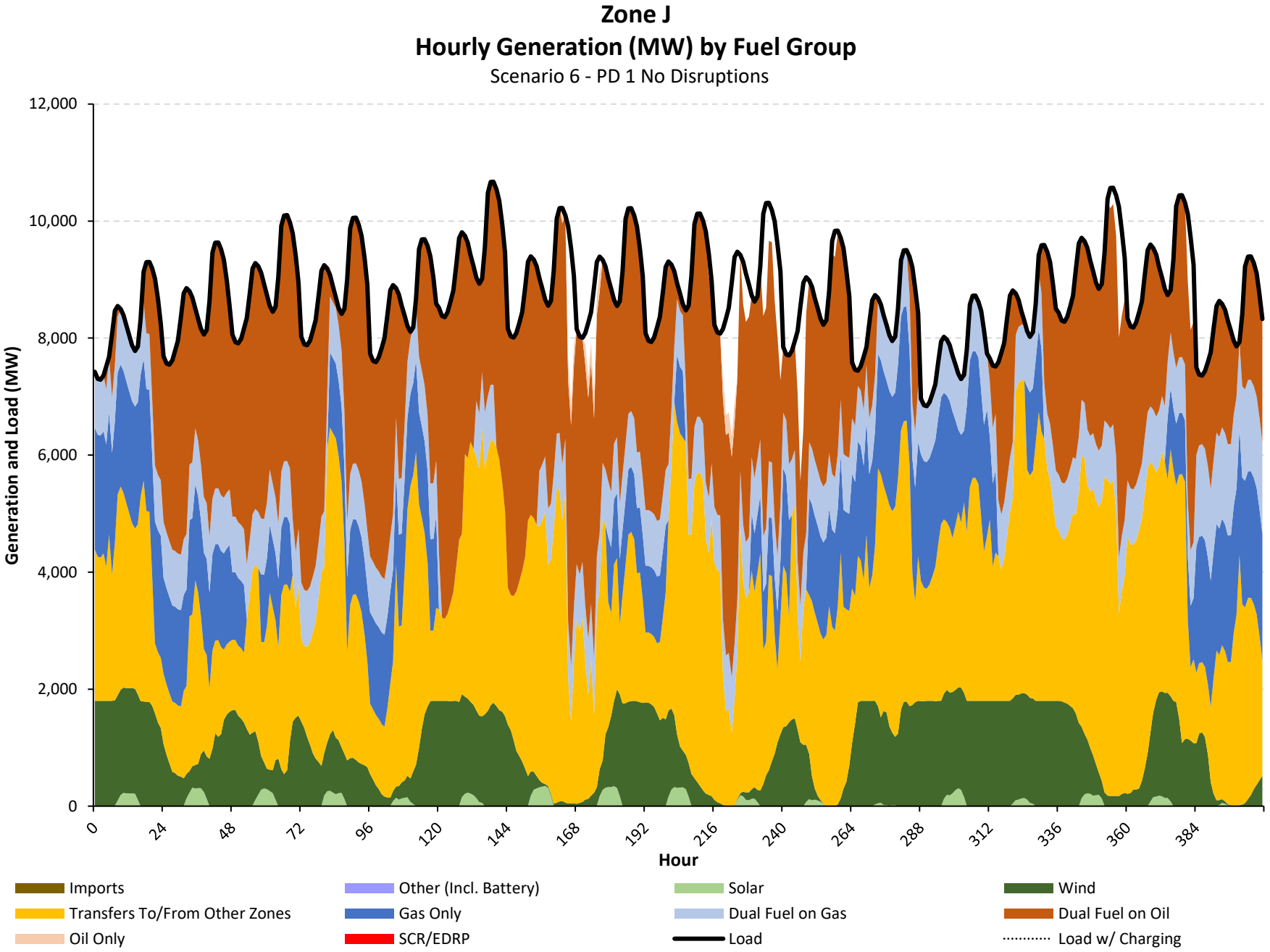
Hours with Loss of Load



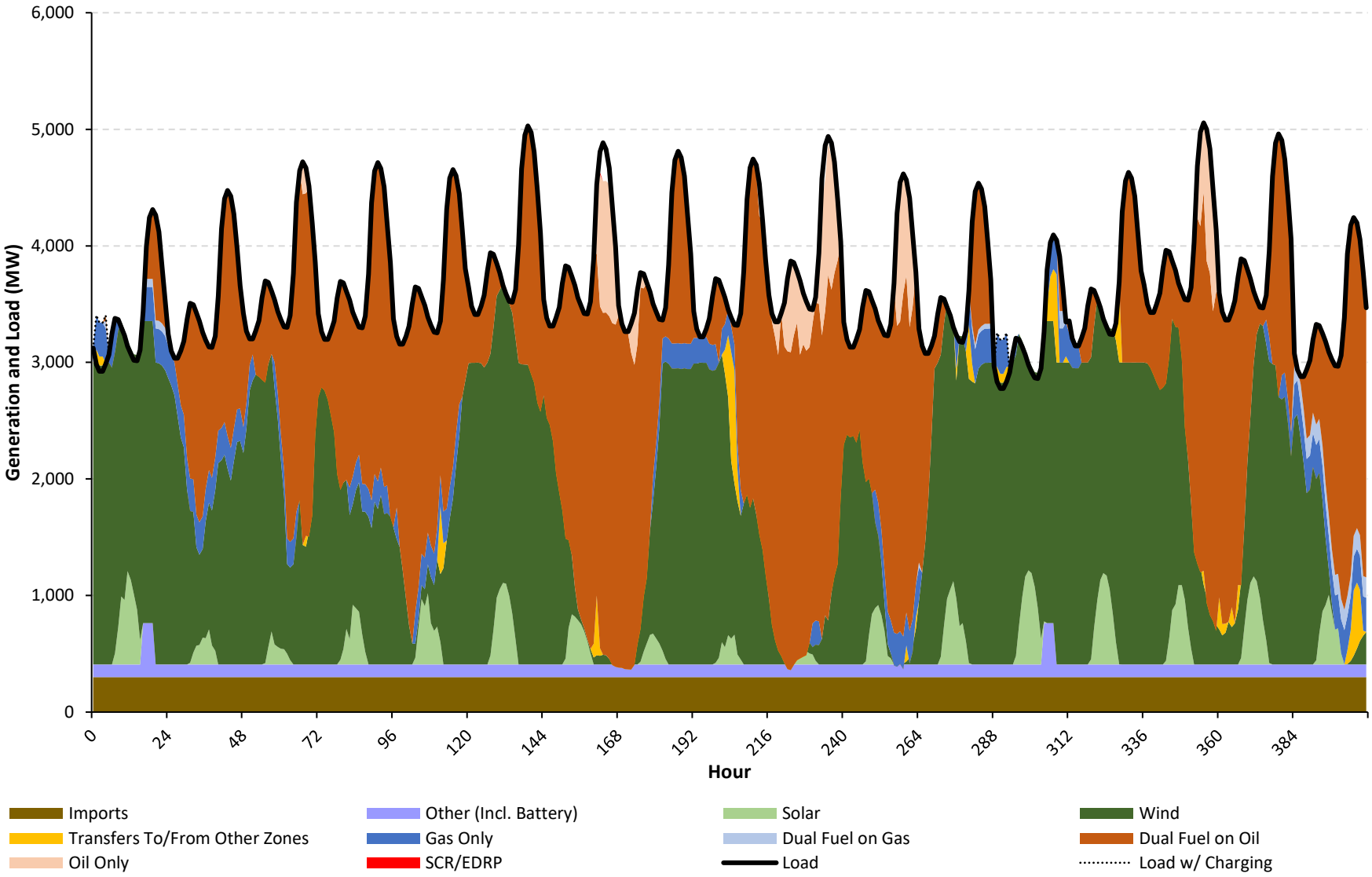
Total MWh of Lost Load

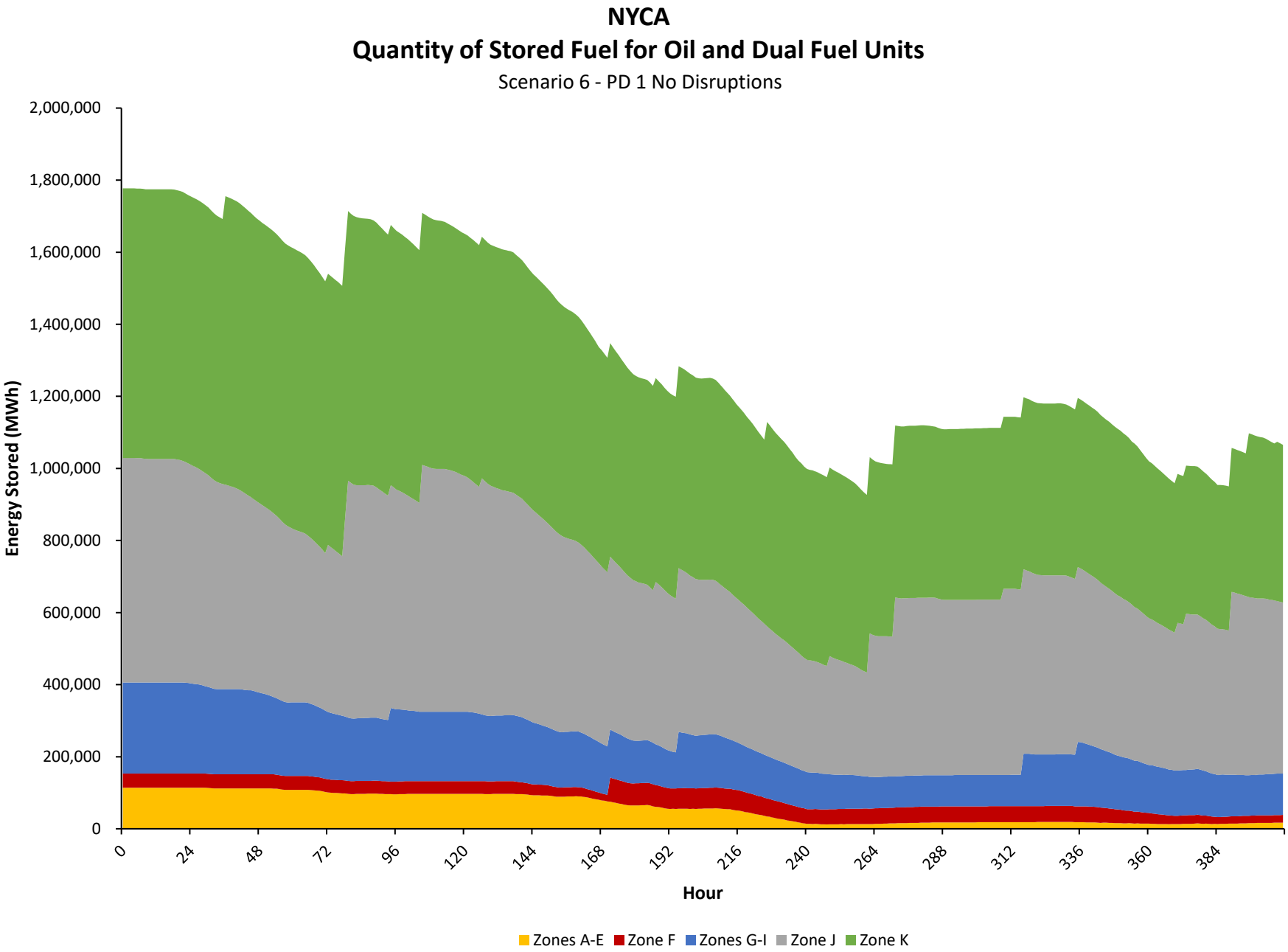


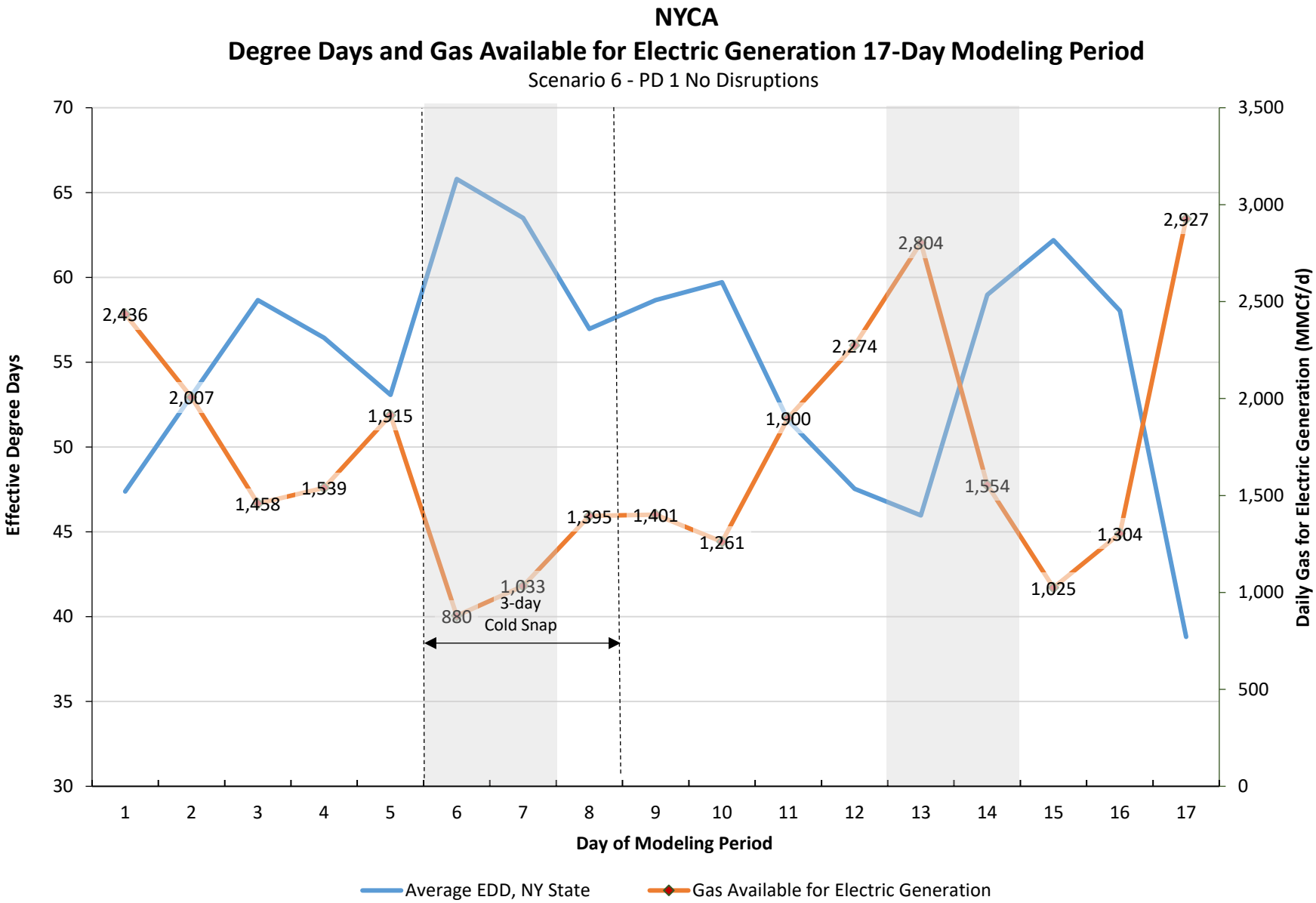

NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 6 - PD 1 No Disruptions
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 6 - PD 1 No Disruptions
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

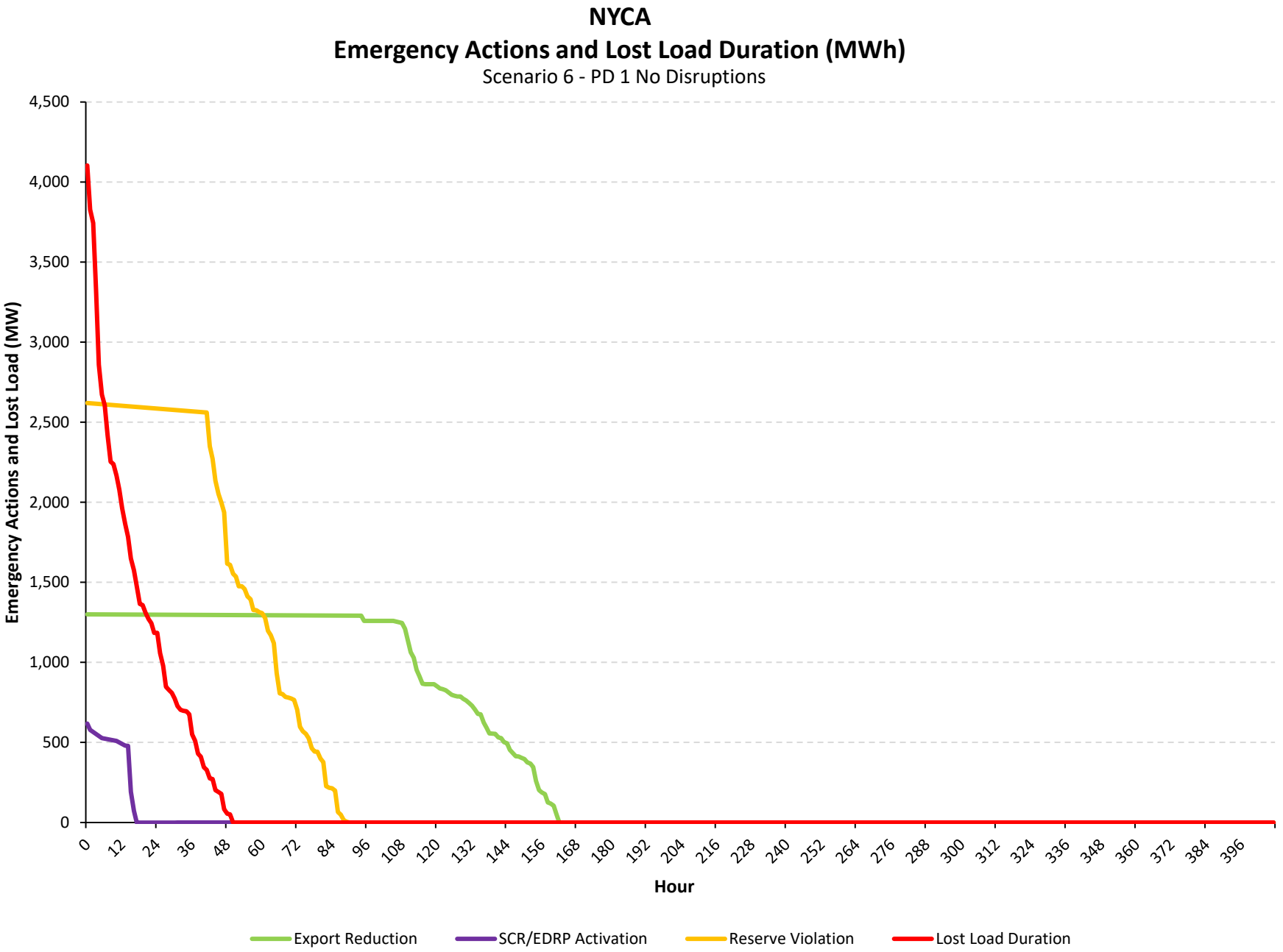
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 6 - PD 1 No Disruptions

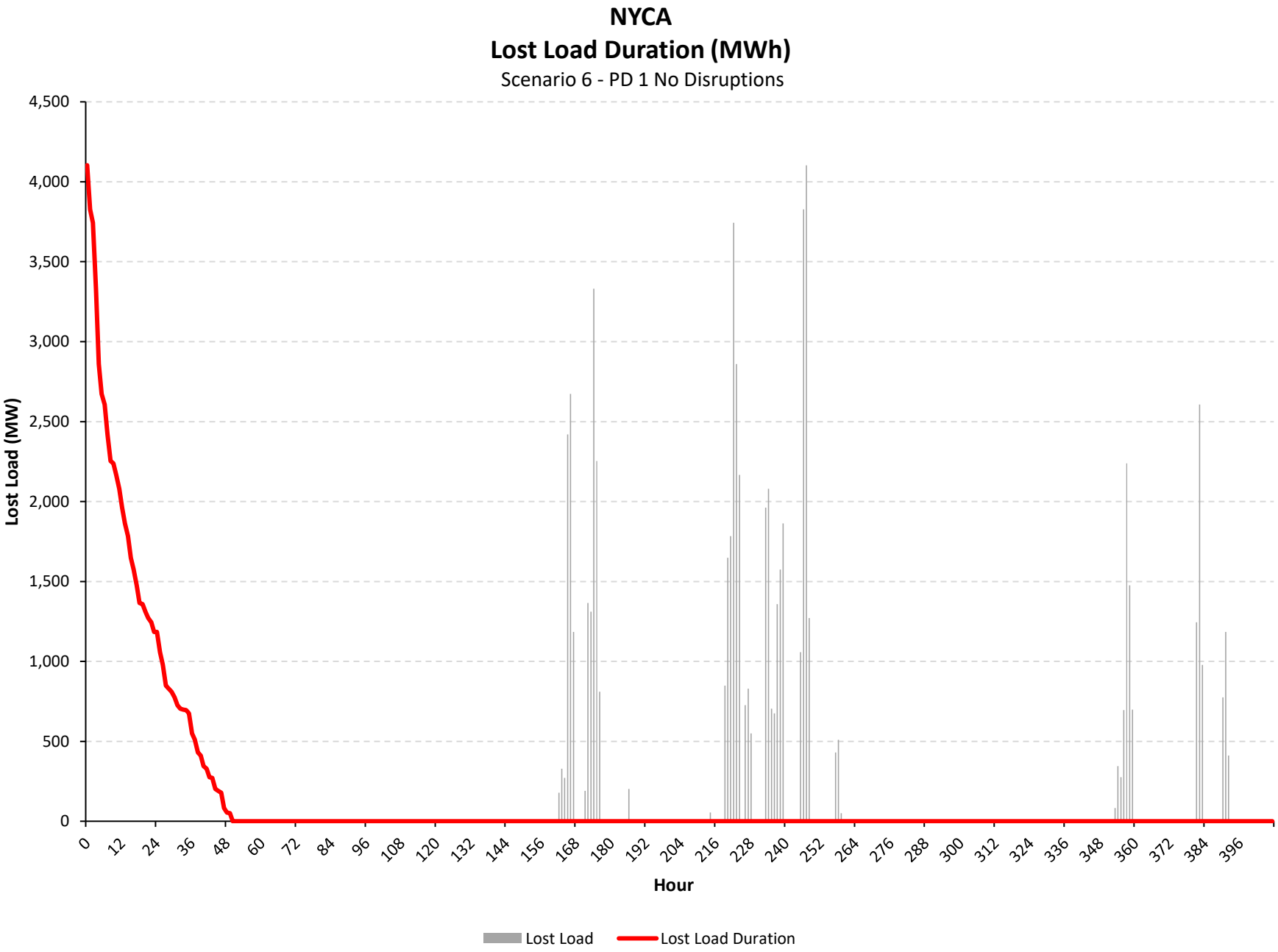



NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 6 - PD 1 No Disruptions
Energy Stored (MWh)
2,000,000
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Zones A-E
Zone F
Zones G-I
Zone J
Zone K



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 6 - PD 1 No Disruptions
Emergency Actions and Lost Load (MW)
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 6 - PD 1 No Disruptions
Lost Load (MW)
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

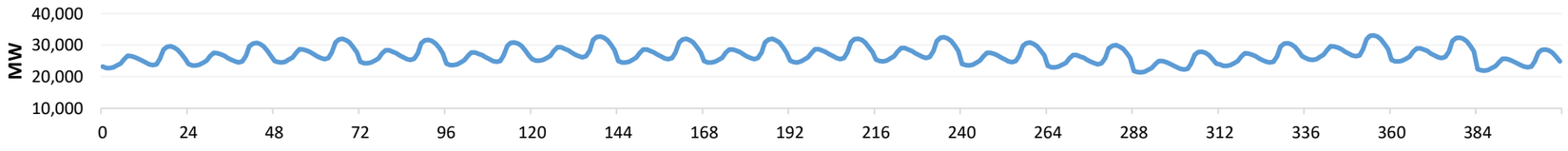
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 6 - PD 2 High Outage (Winter 2030/2031)

Hourly Results Summary

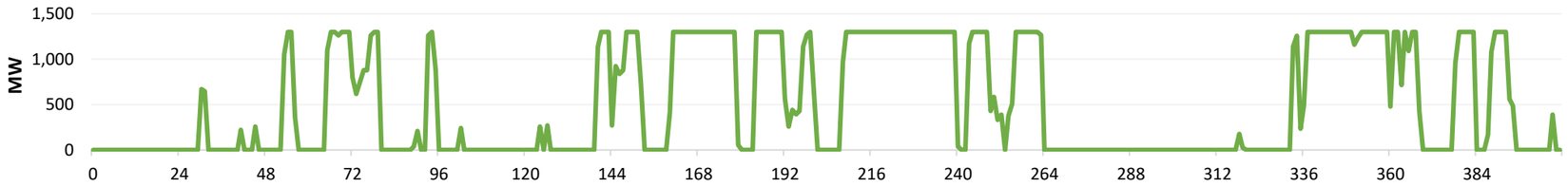
Case Name: Scenario 6 - PD 2 High Outage

Load During Modeling Period



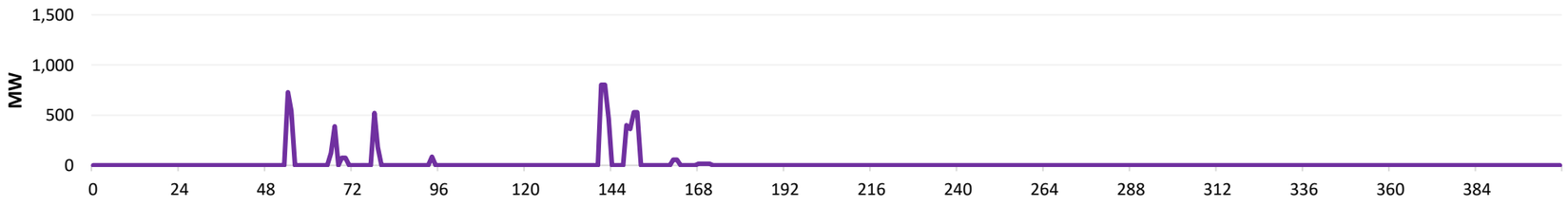
Case Summary	
Derate (EFORd) Increase:	High
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

Export to ISO-NE Reduction During Modeling Period



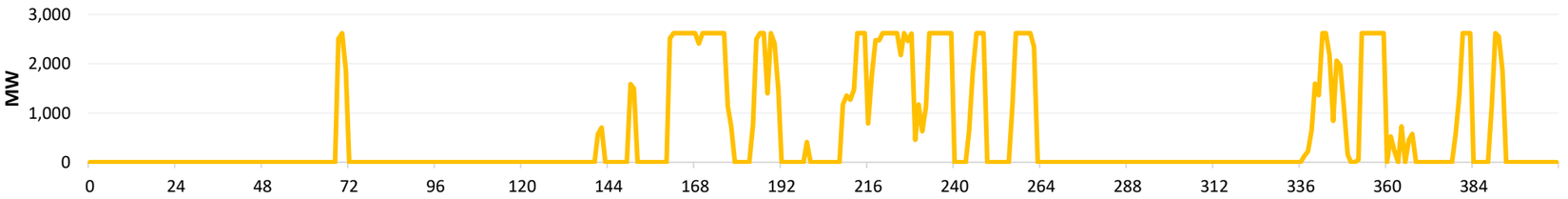
Export Reductions	
Total Hrs.	187
Total MWh	201,008
Avg. MW	492.7

SCR/EDRP Deployed During Modeling Period



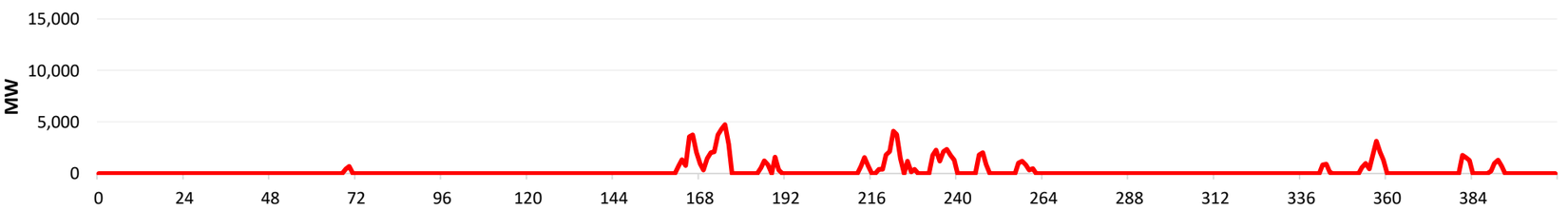
SCR Deployment	
Total Hrs.	22
Total MWh	6,782
Avg. MW	16.6

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	112
Total MWh	220,335
Avg. MW	540.0
First Hour with Viol.	69

Loss of Load During Modeling Period



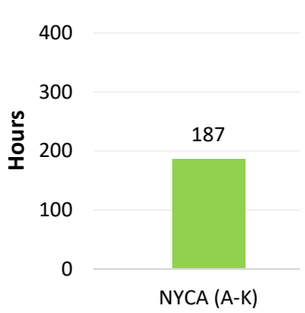
Loss of Load	
Total Hrs.	67
Total MWh	100,597
Avg. MW	246.6
First Hour with Losses	69

Full Period Results Summary

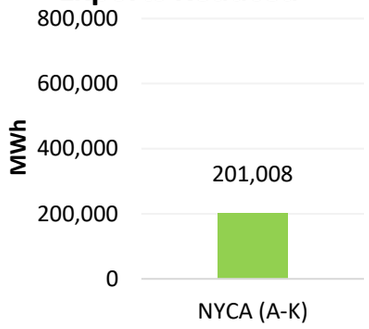
Case Name: Scenario 6 - PD 2 High Outage

Case Summary	
Derate (EFORd) Increase:	High
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

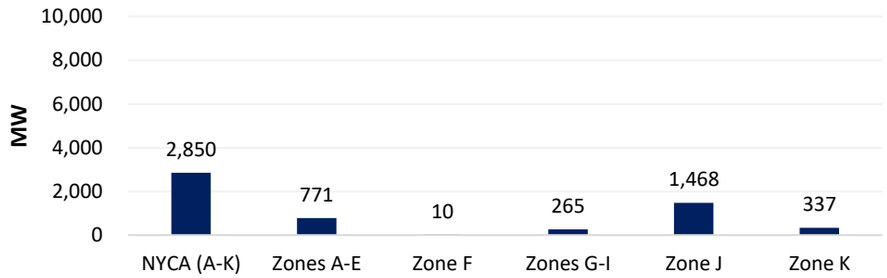
Hours Exports Reduced



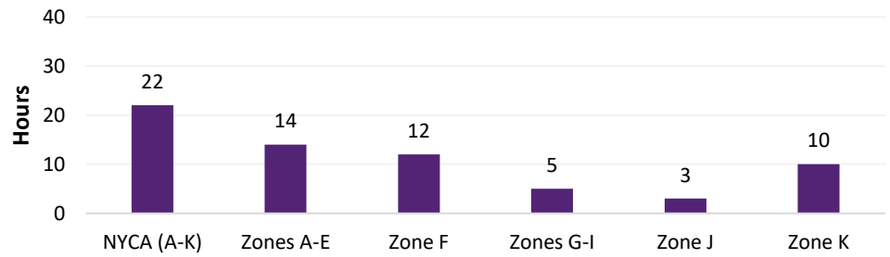
Total MWh of Exports Reduced



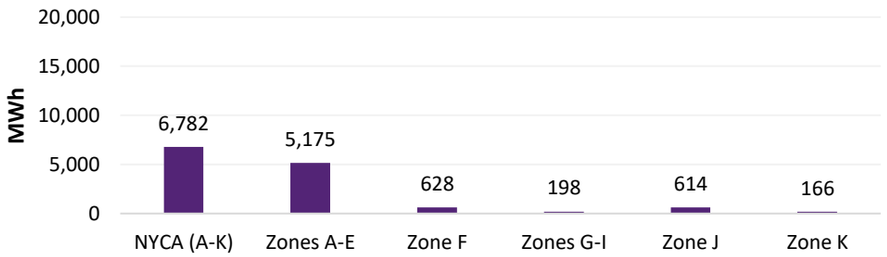
Average Capacity Not Available Due to Exhausted Fuel Inventory



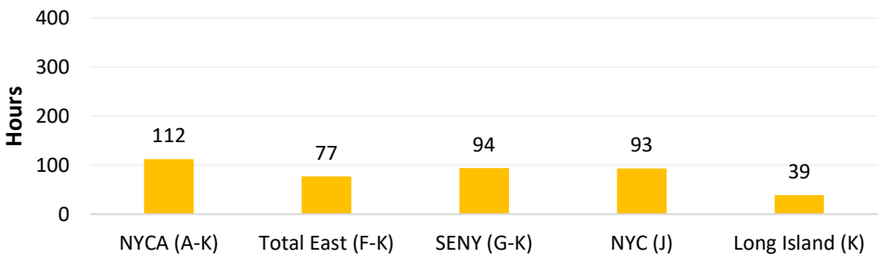
Hours SCR/EDRP Deployed



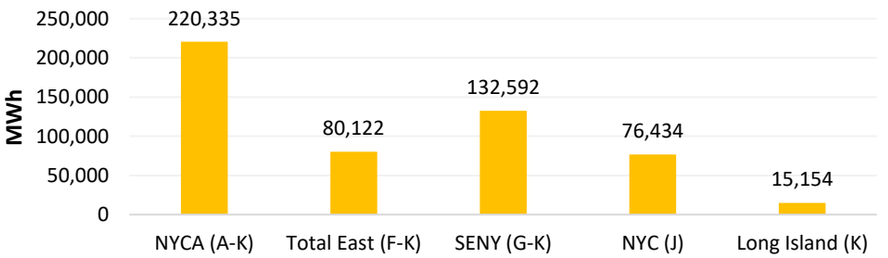
Total MWh SCR/EDRP Deployed



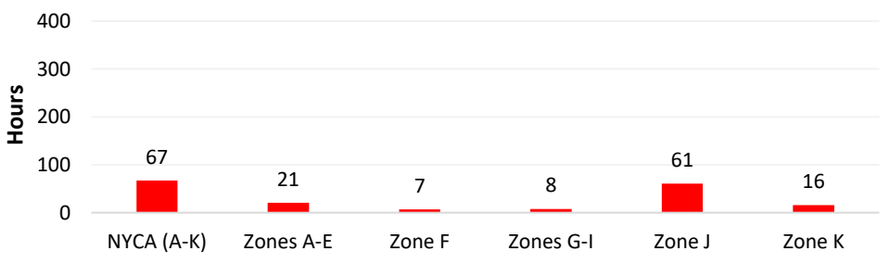
Hours with Reserve Violations



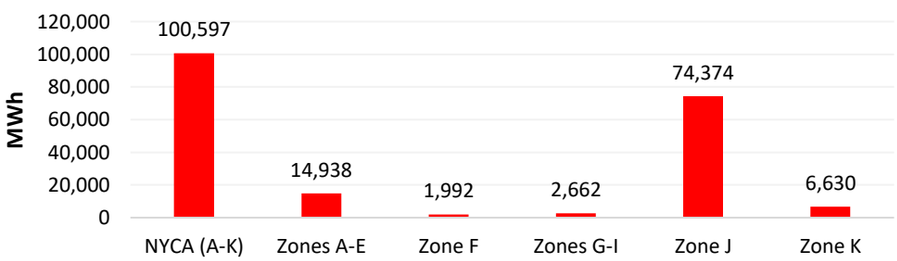
Total MWh of Reserve Violations

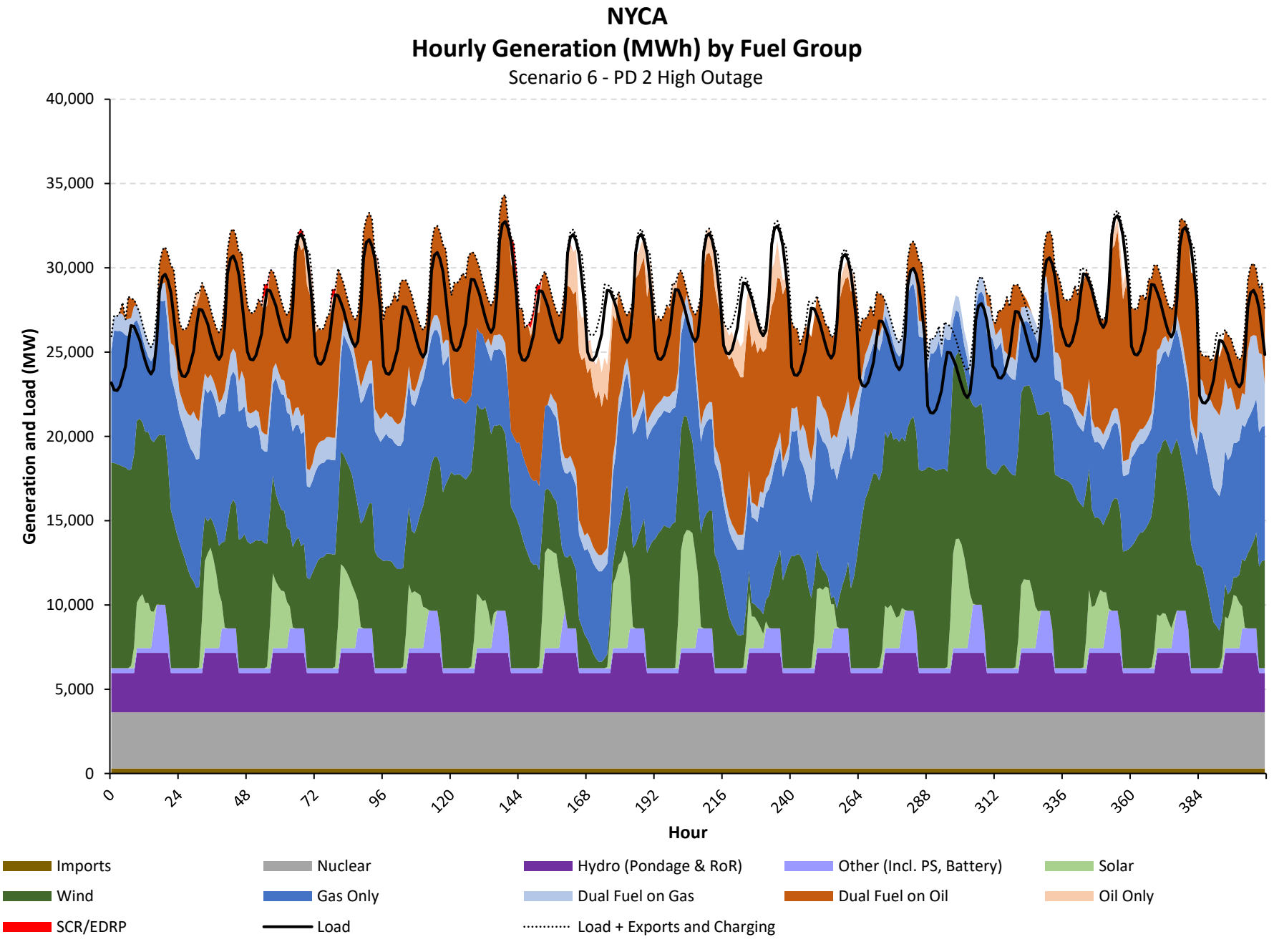


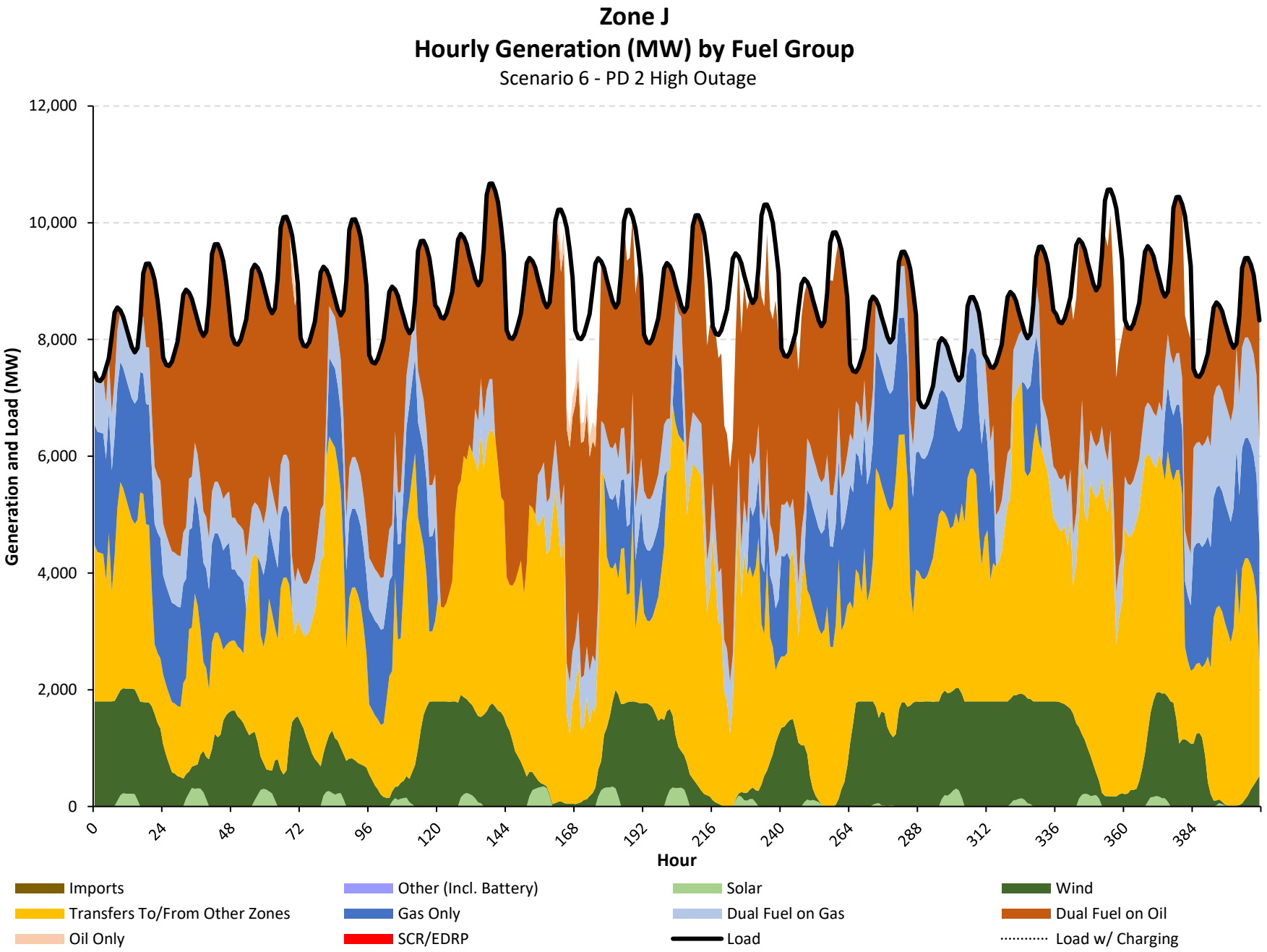
Hours with Loss of Load



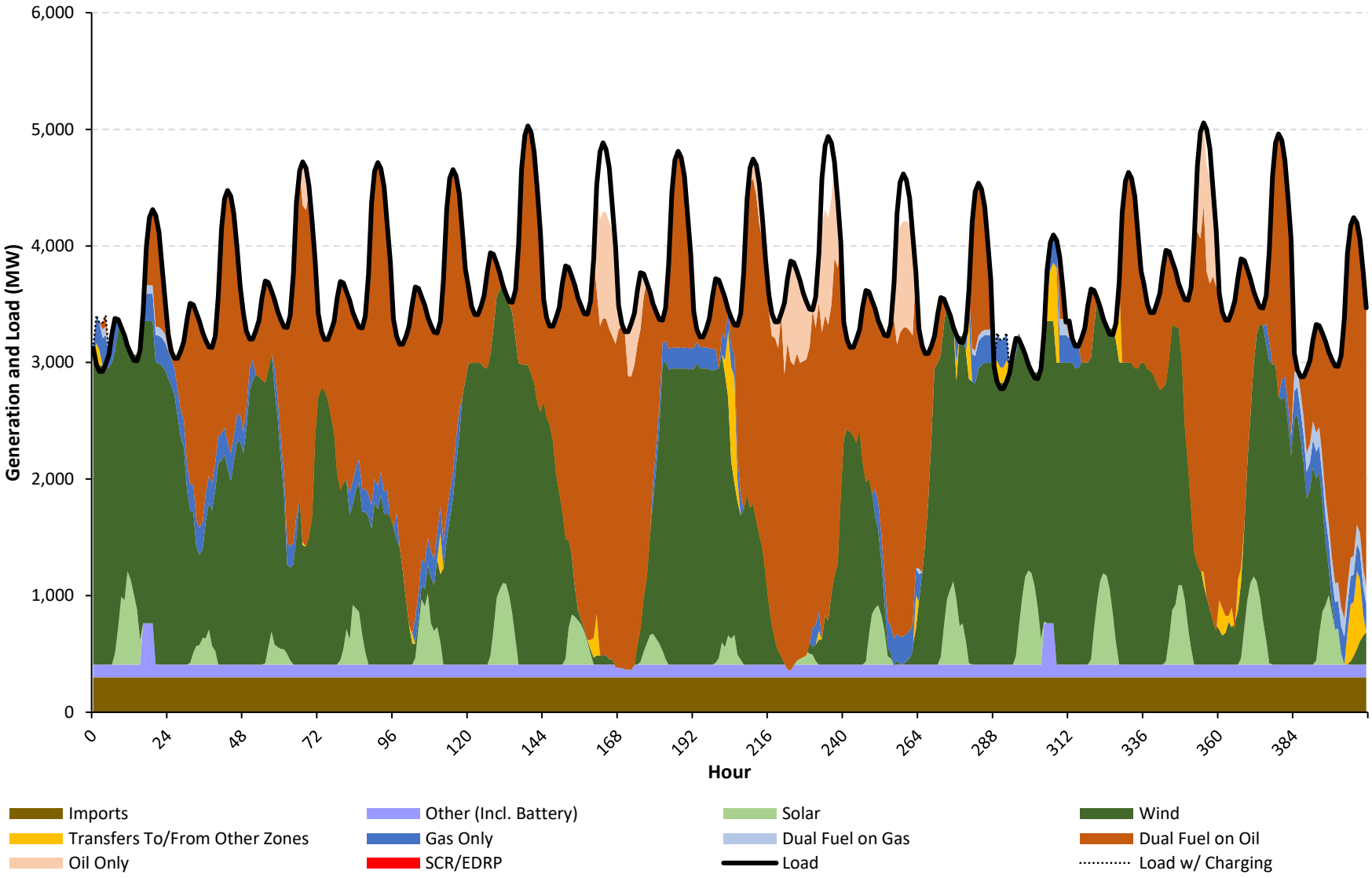
Total MWh of Lost Load

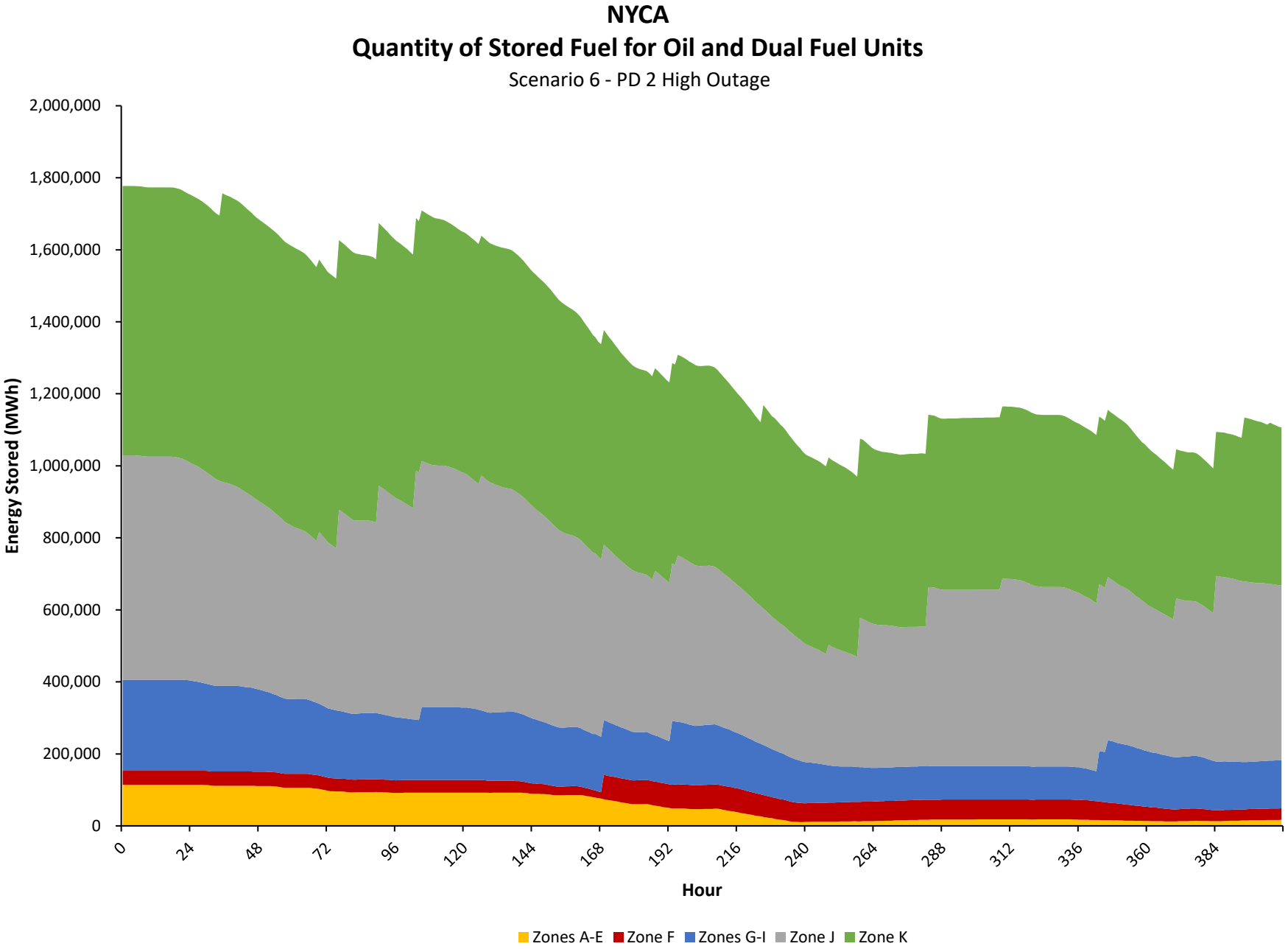


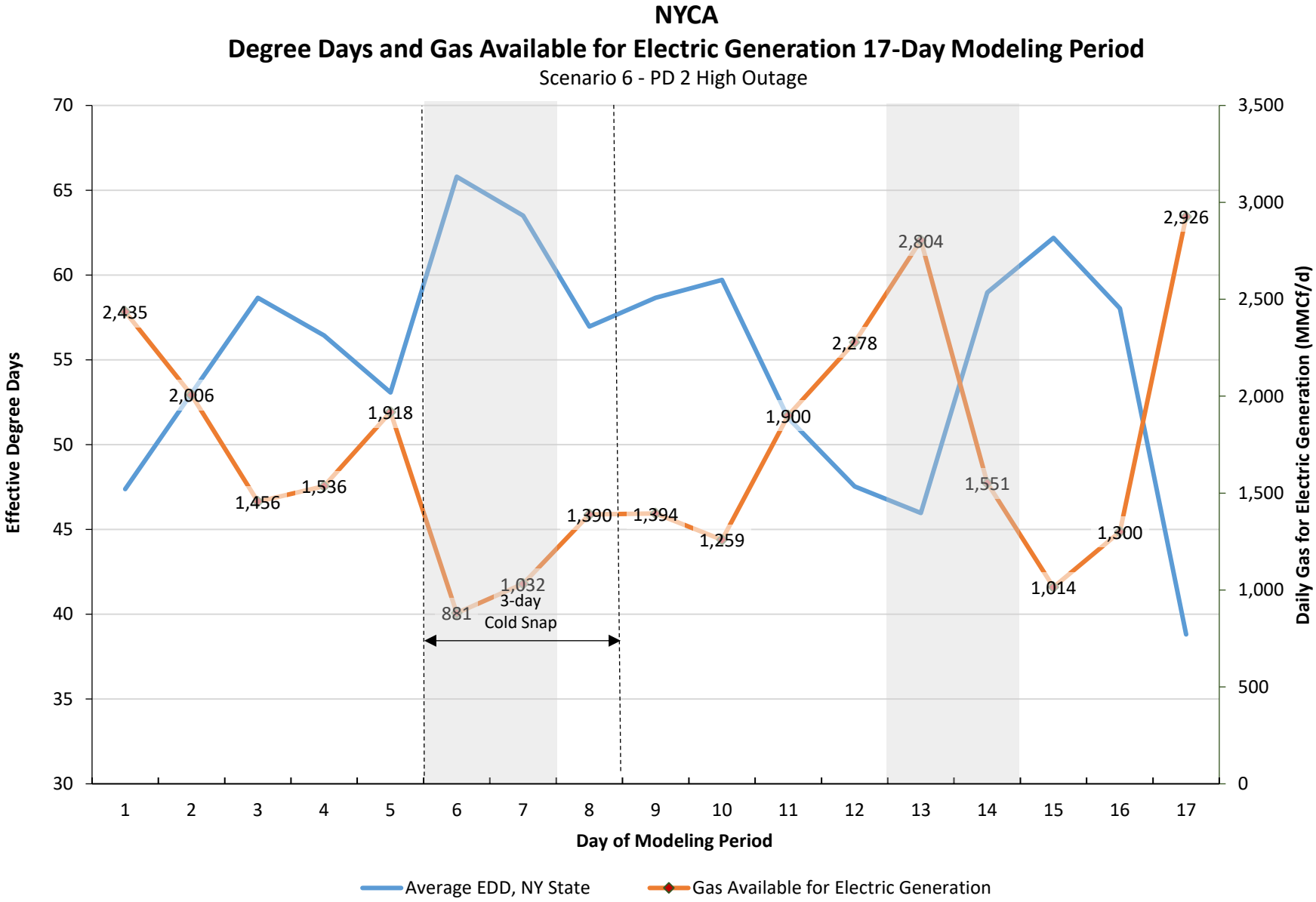

NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 6 - PD 2 High Outage
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 6 - PD 2 High Outage
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

Zone K
Hourly Generation (MW) by Fuel Group
Scenario 6 - PD 2 High Outage




NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 6 - PD 2 High Outage
Energy Stored (MWh)
2,000,000
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Zones A-E
Zone F
Zones G-I
Zone J
Zone K

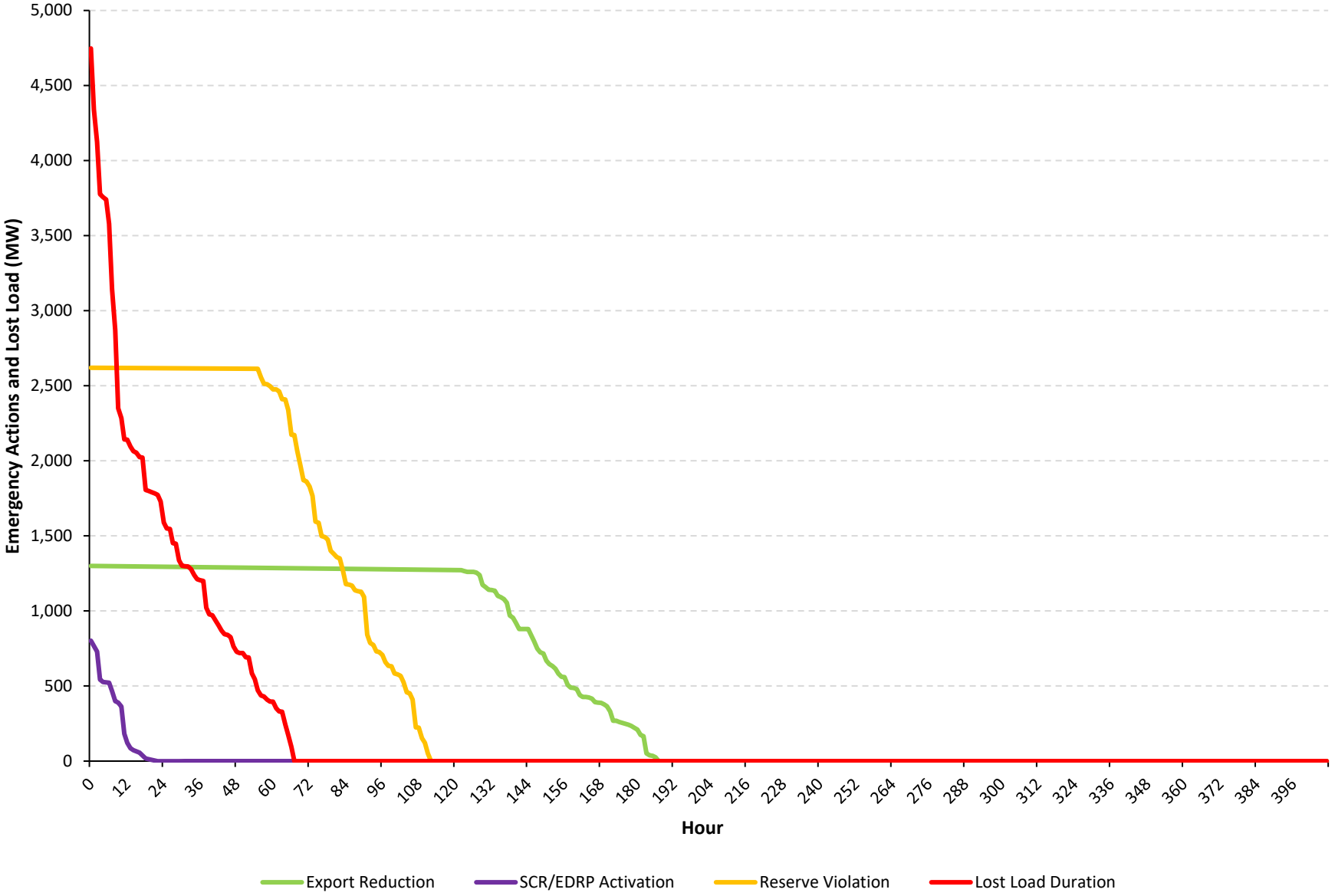


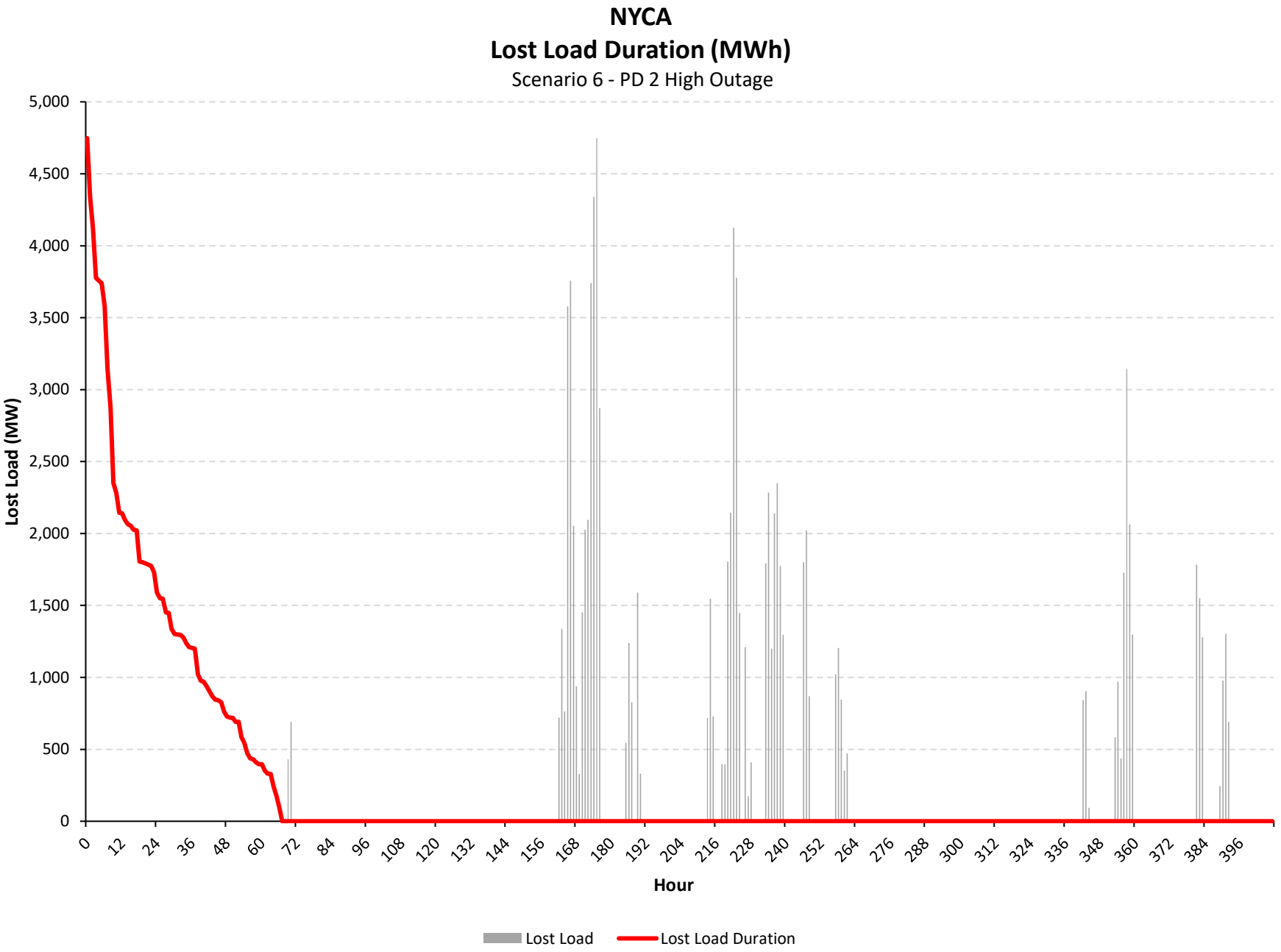
Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.

NYCA

Emergency Actions and Lost Load Duration (MWh)

Scenario 6 - PD 2 High Outage




NYCA
Lost Load Duration (MWh)
Scenario 6 - PD 2 High Outage
Lost Load (MW)
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

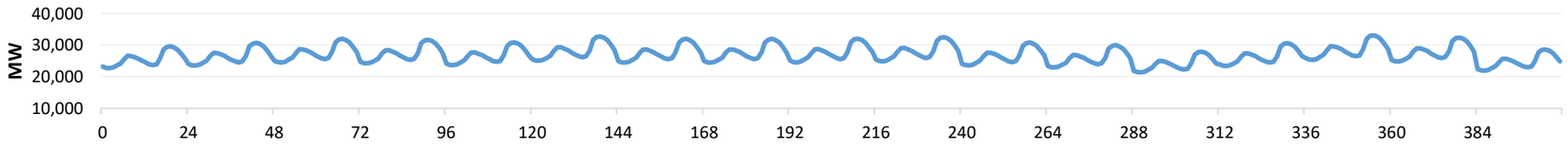
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 6 - PD 3 SENY Deactivation (Winter 2030/2031)

Hourly Results Summary

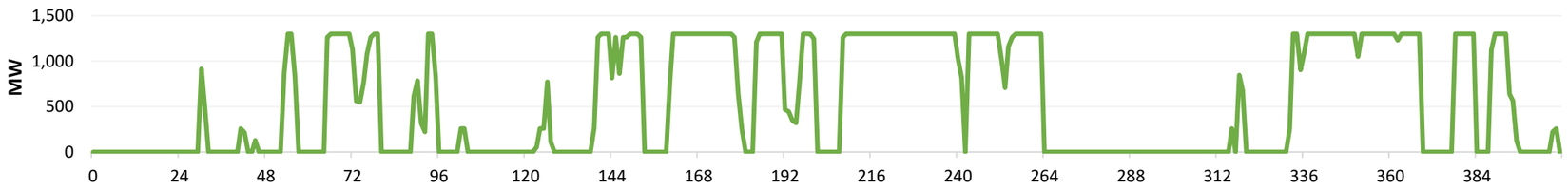
Case Name: Scenario 6 - PD 3 SENY Deactivation

Load During Modeling Period



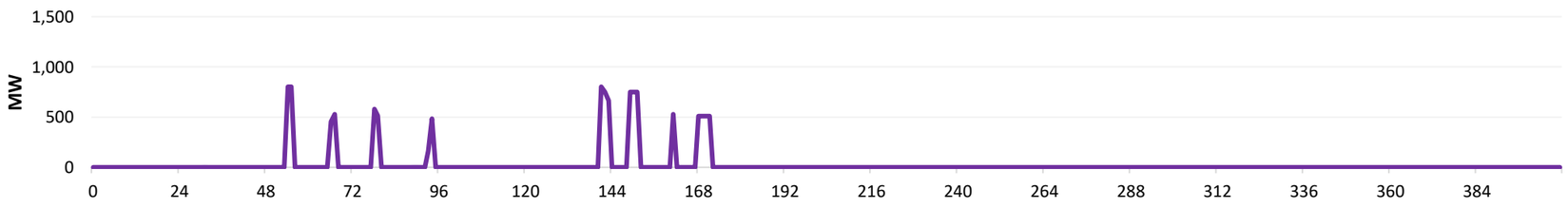
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	Roseton
Import Scenario:	Net Zero

Export to ISO-NE Reduction During Modeling Period



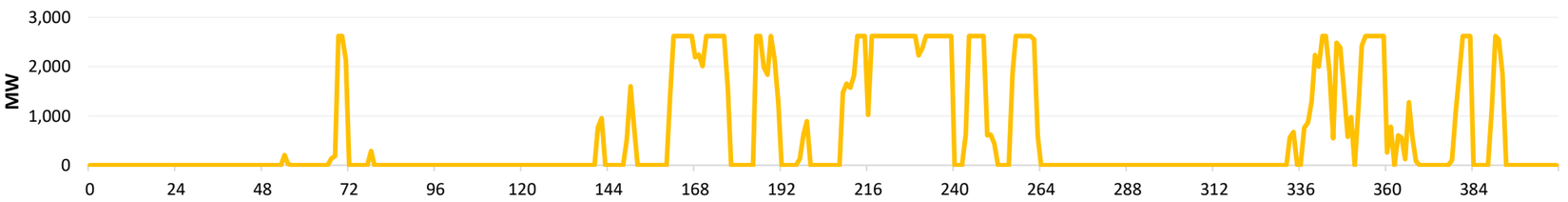
Export Reductions	
Total Hrs.	202
Total MWh	223,004
Avg. MW	546.6

SCR/EDRP Deployed During Modeling Period



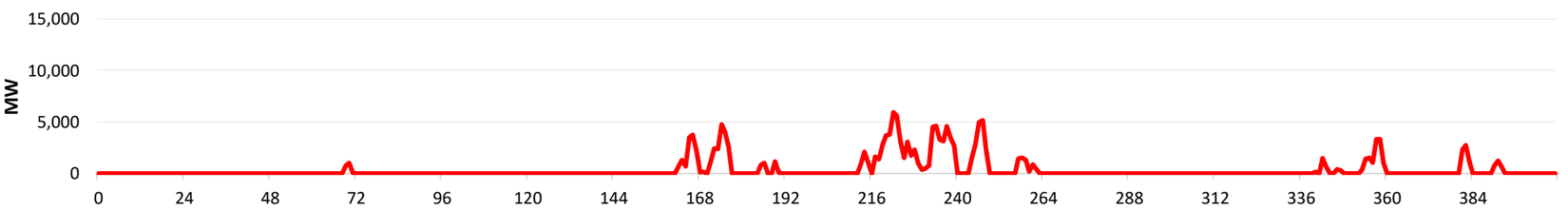
SCR Deployment	
Total Hrs.	19
Total MWh	11,358
Avg. MW	27.8

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	130
Total MWh	245,587
Avg. MW	601.9
First Hour with Viol.	54

Loss of Load During Modeling Period



Loss of Load	
Total Hrs.	76
Total MWh	150,919
Avg. MW	369.9
First Hour with Losses	69

Full Period Results Summary

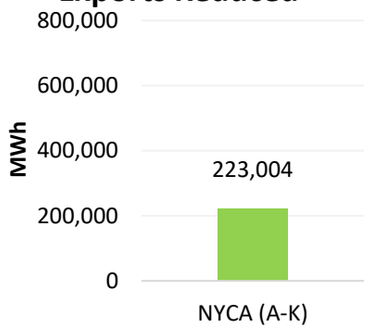
Case Name: Scenario 6 - PD 3 SENY Deactivation

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	Roseton
Import Scenario:	Net Zero

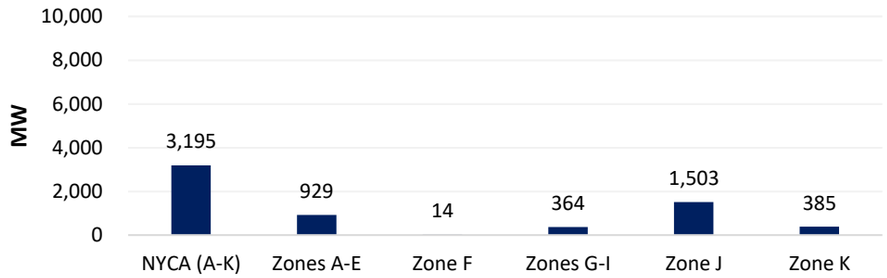
Hours Exports Reduced



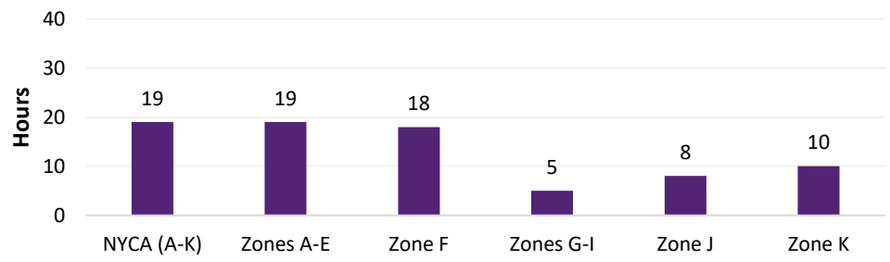
Total MWh of Exports Reduced



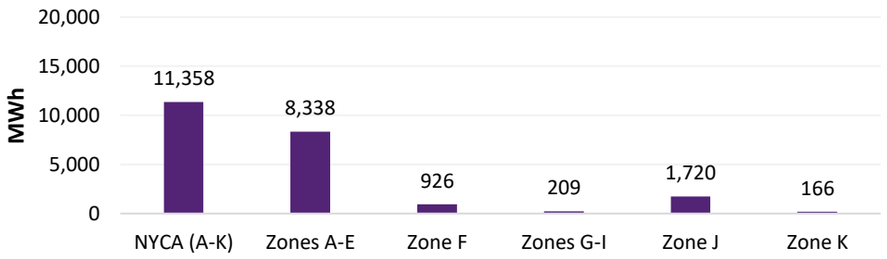
Average Capacity Not Available Due to Exhausted Fuel Inventory



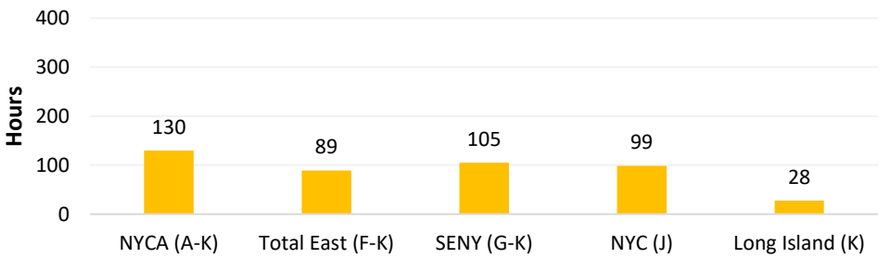
Hours SCR/EDRP Deployed



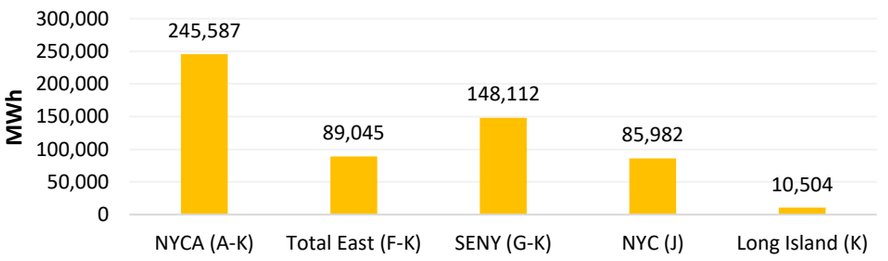
Total MWh SCR/EDRP Deployed



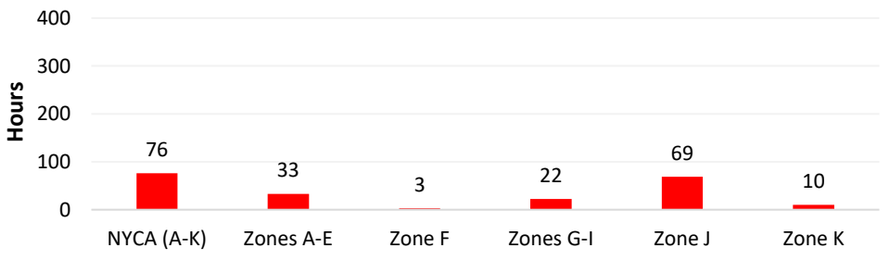
Hours with Reserve Violations



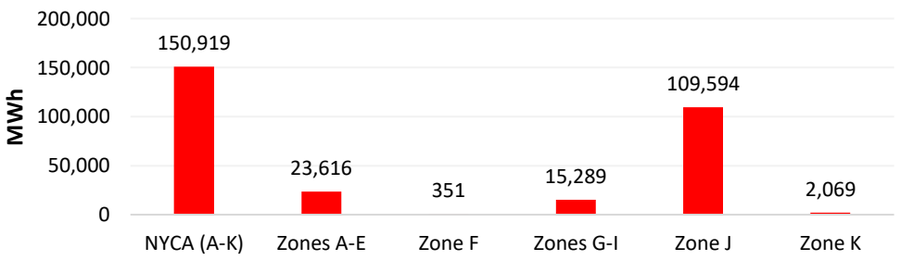
Total MWh of Reserve Violations

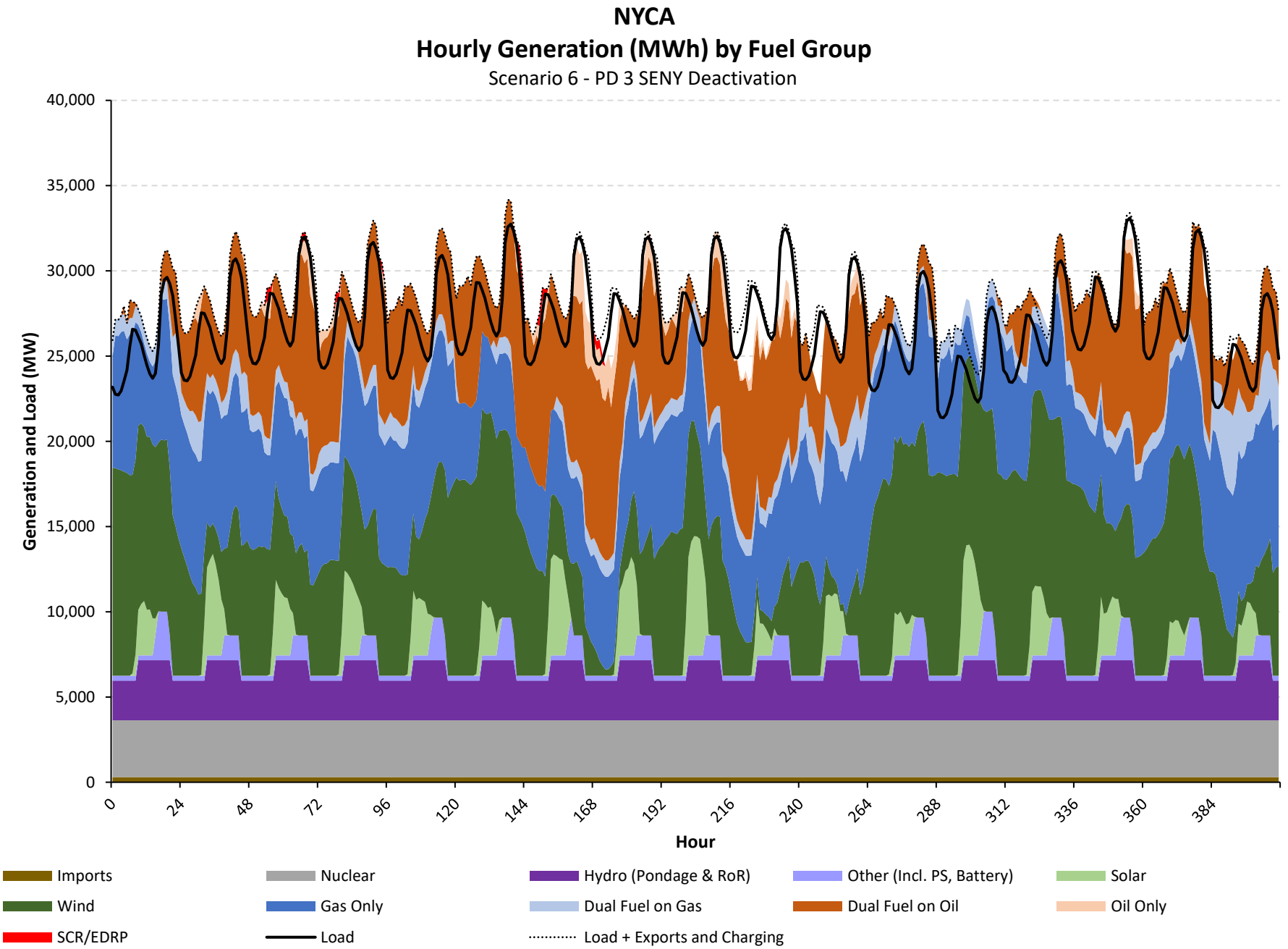


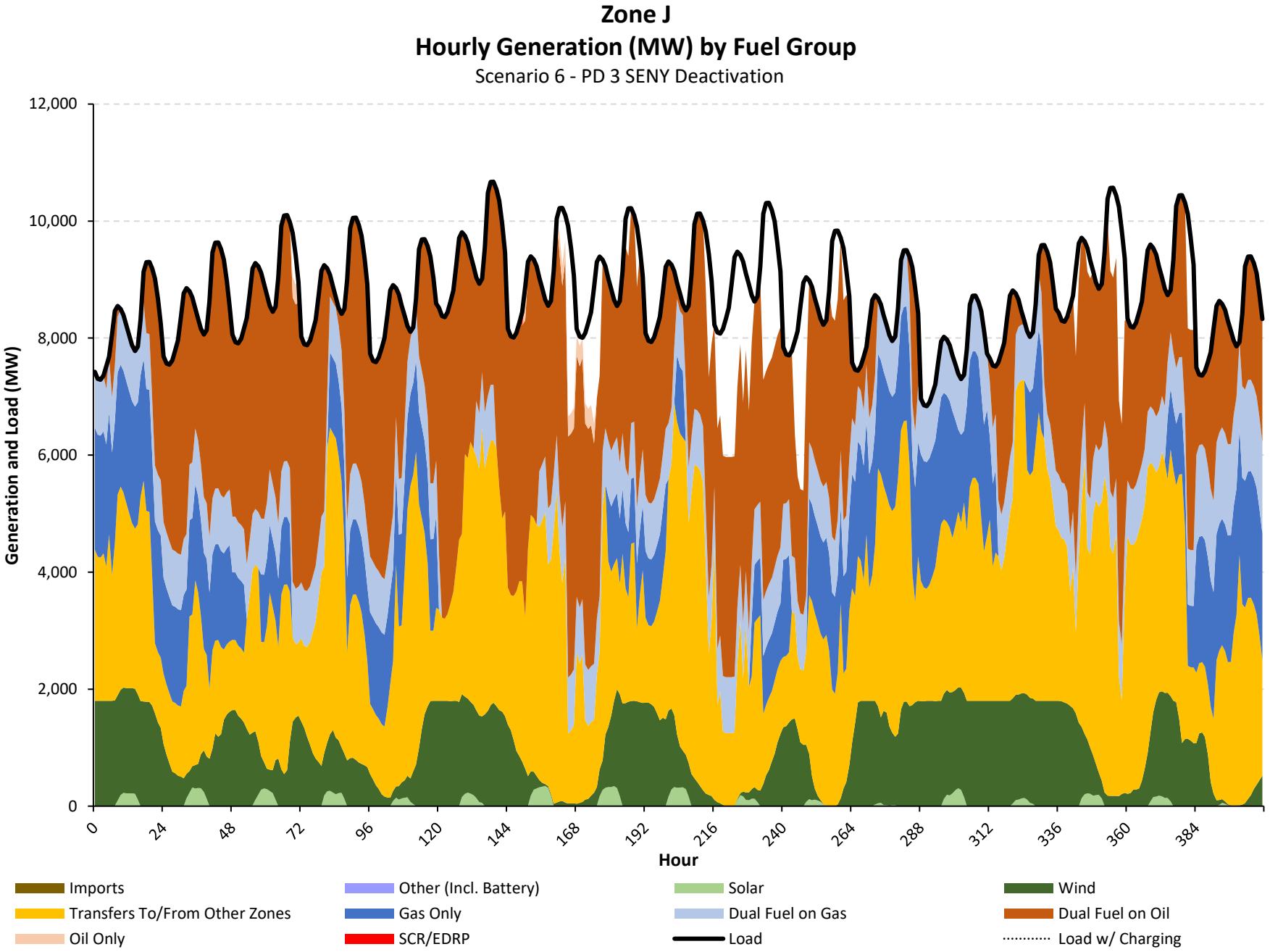
Hours with Loss of Load



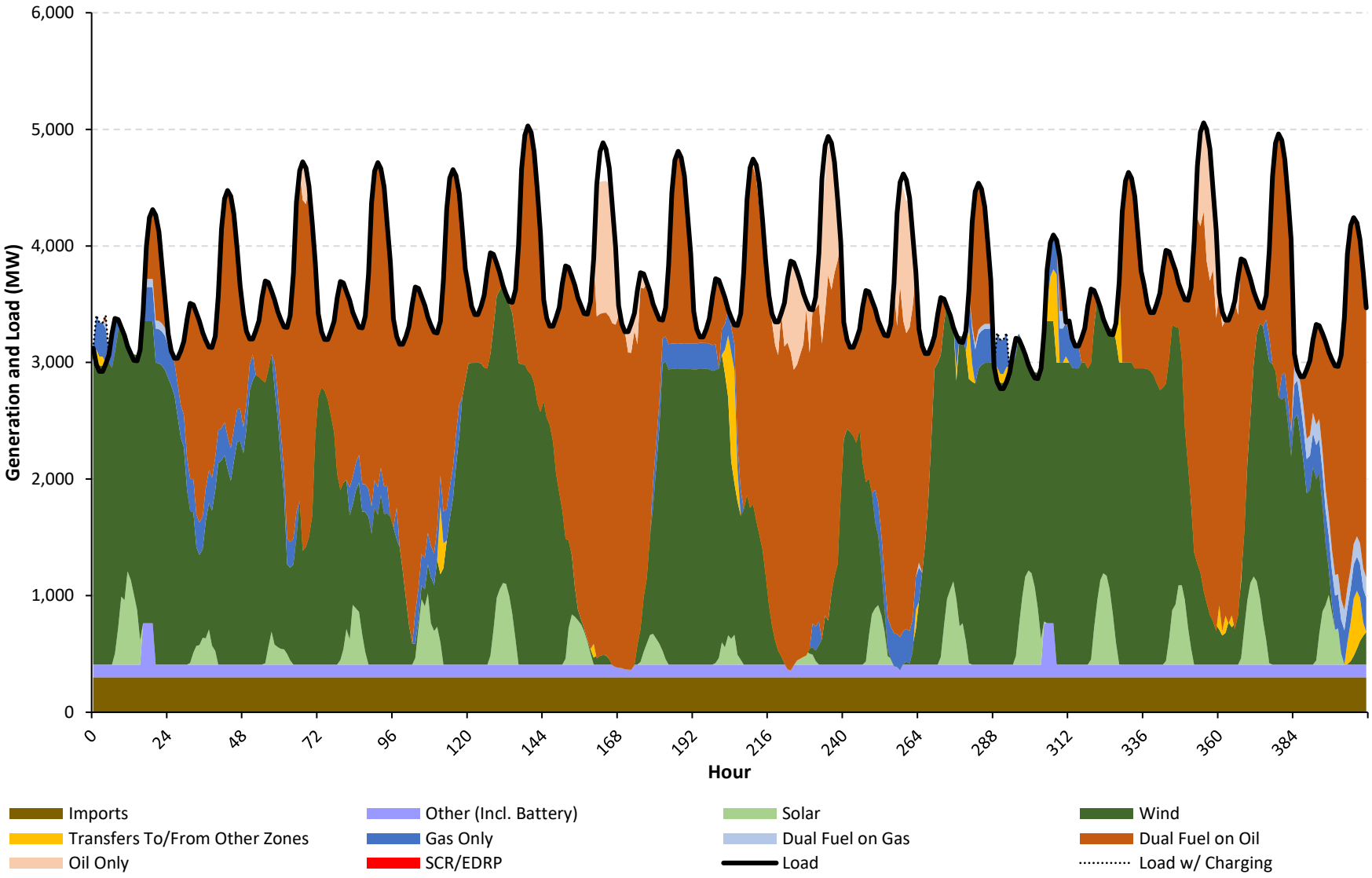
Total MWh of Lost Load



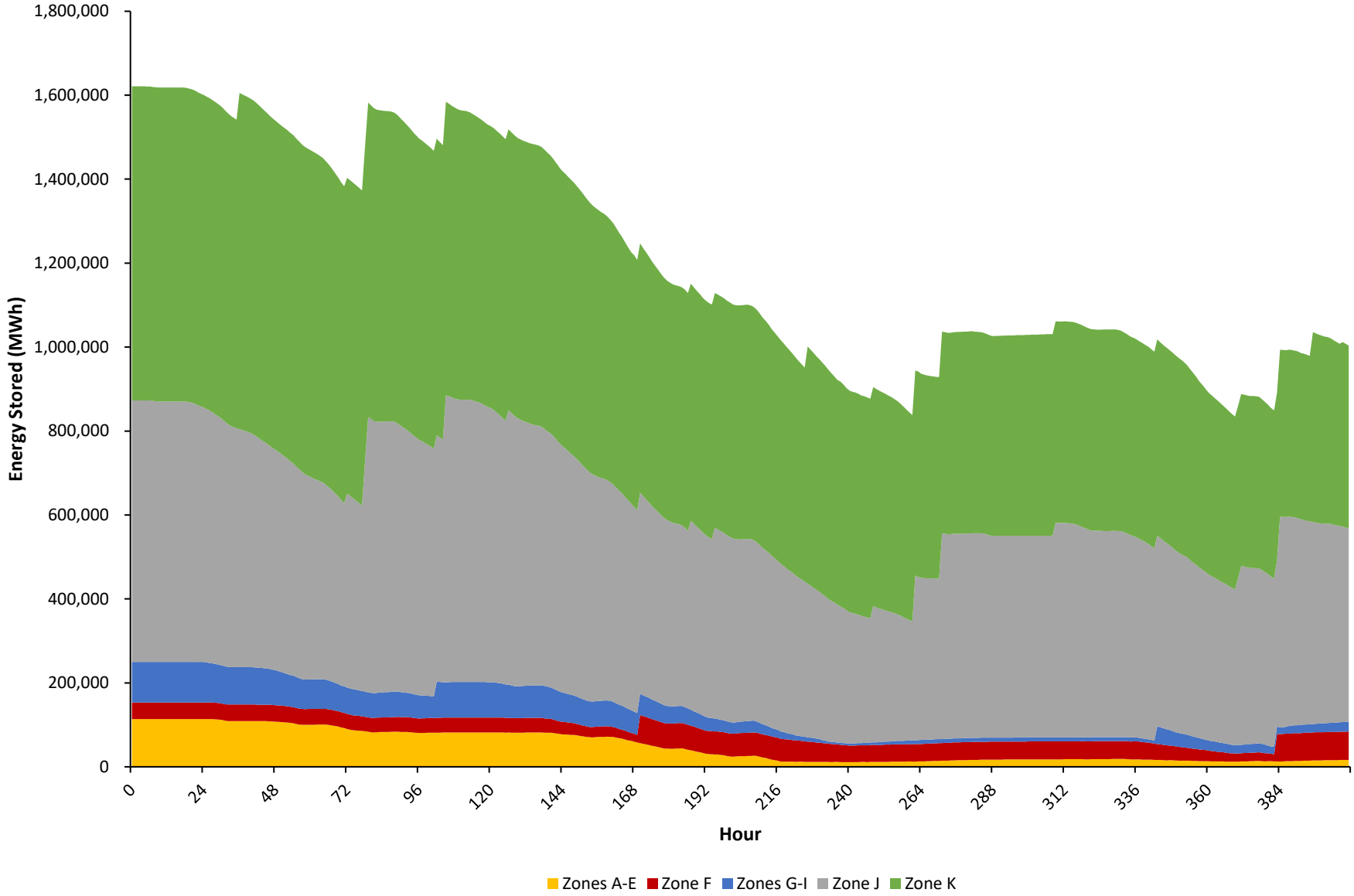

NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 6 - PD 3 SENY Deactivation
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

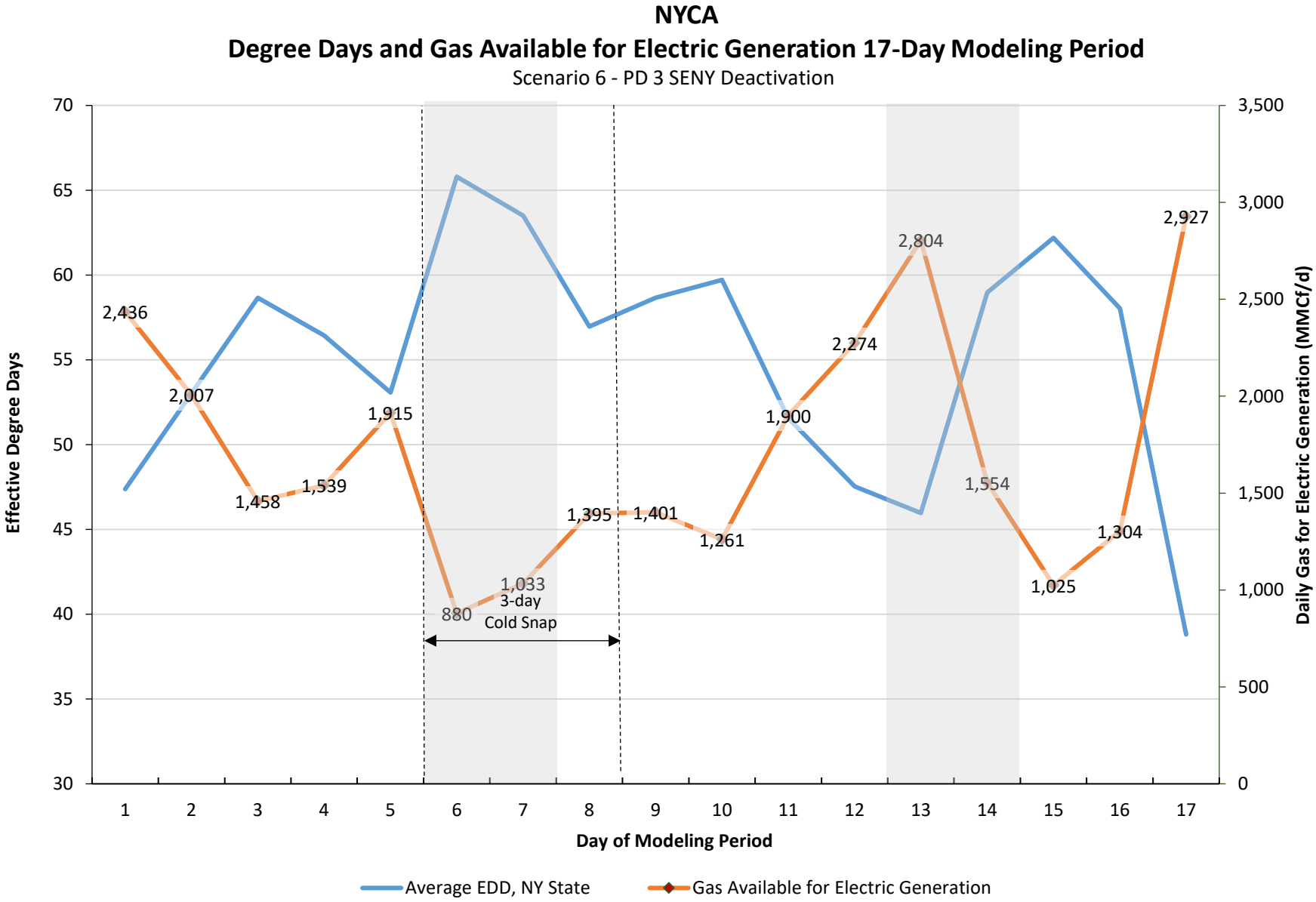

Zone J
Hourly Generation (MW) by Fuel Group
Scenario 6 - PD 3 SENY Deactivation
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

Zone K
Hourly Generation (MW) by Fuel Group
Scenario 6 - PD 3 SENY Deactivation

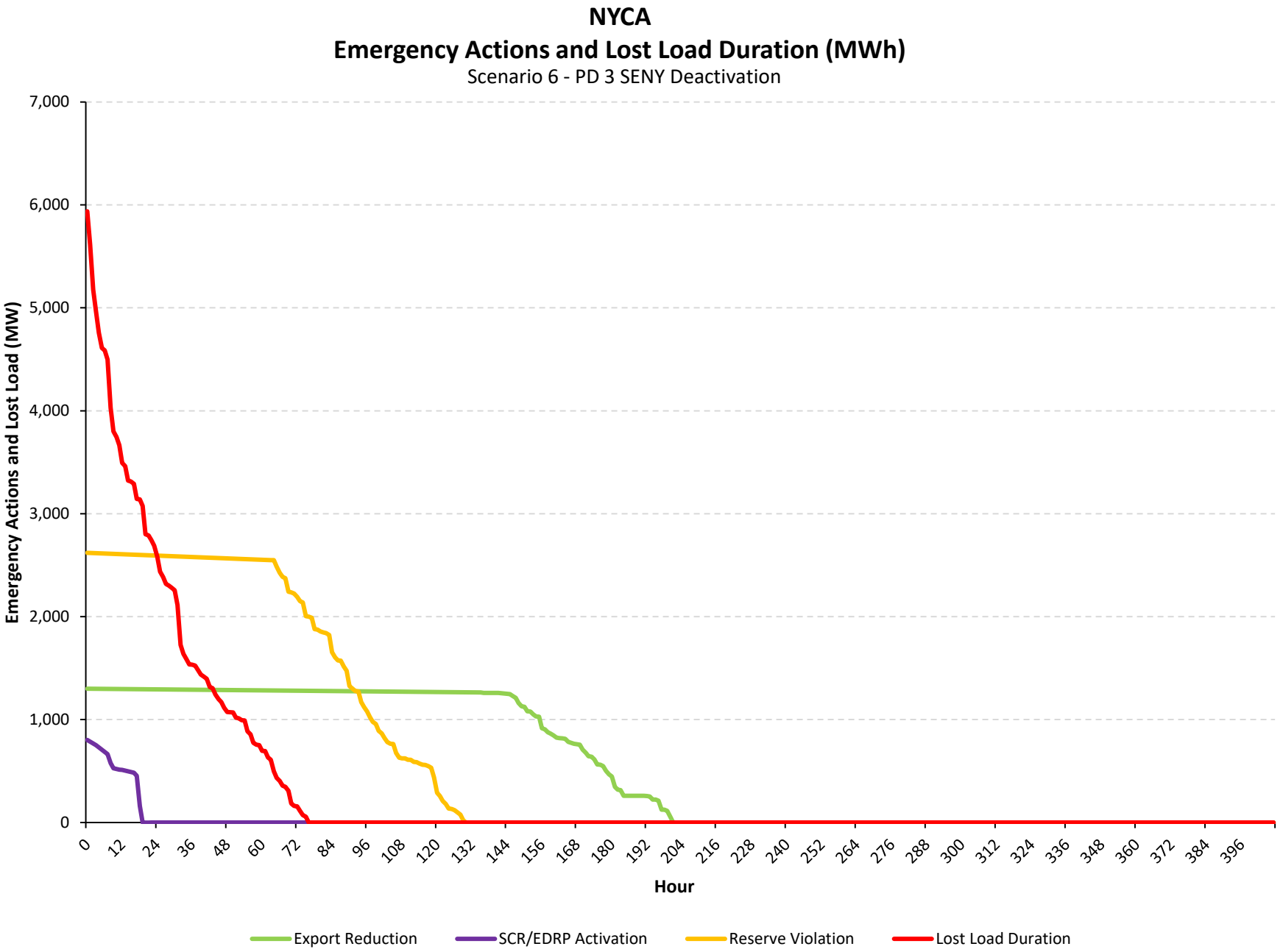


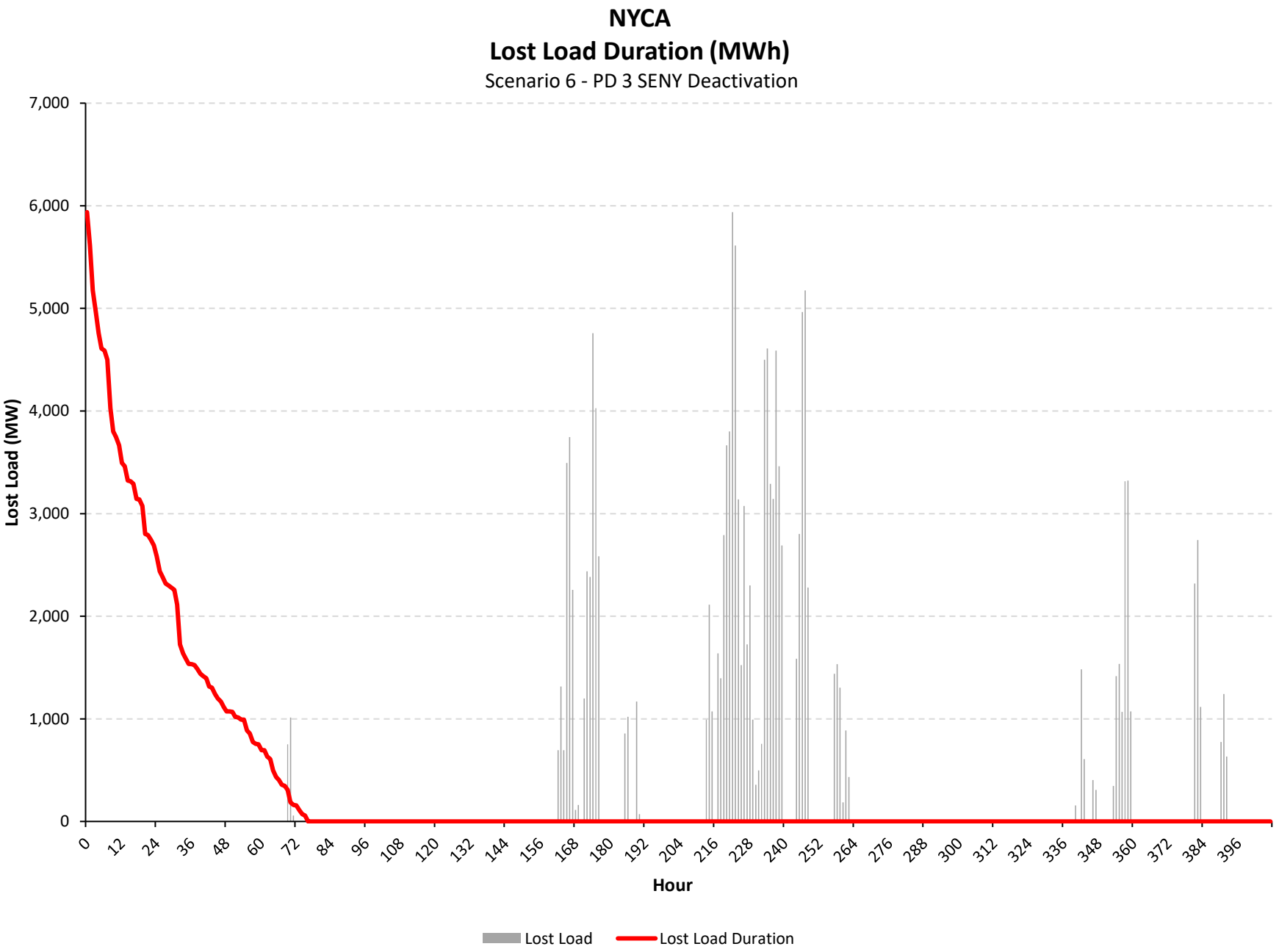
NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 6 - PD 3 SENY Deactivation





Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 6 - PD 3 SENY Deactivation
Emergency Actions and Lost Load (MW)
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 6 - PD 3 SENY Deactivation
Lost Load (MW)
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

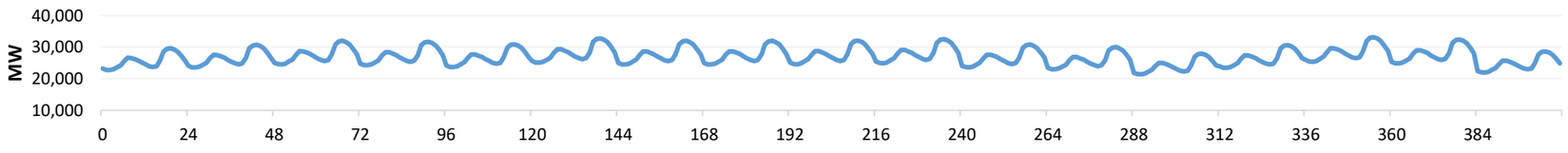
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 6 - PD 4 Nuclear Station Outage (Winter 2030/2031)

Hourly Results Summary

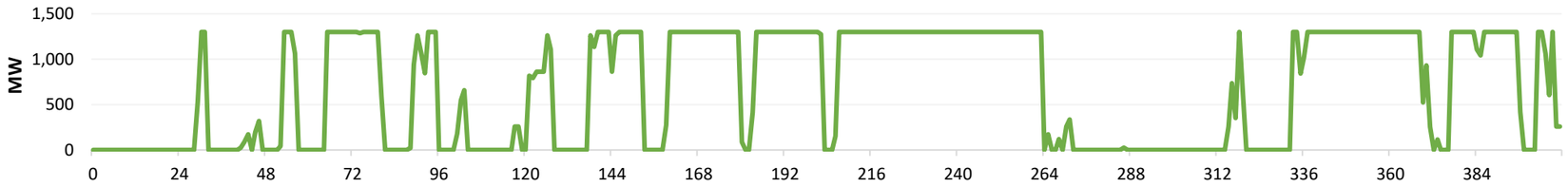
Case Name: Scenario 6 - PD 4 Nuclear Station Outage

Load During Modeling Period



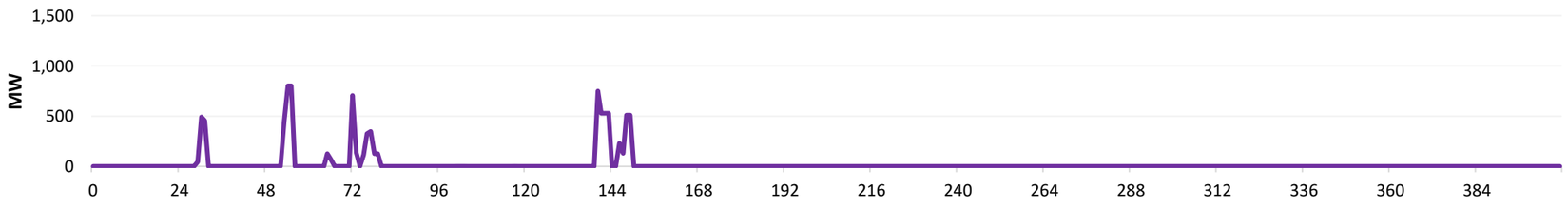
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	On
Plant Outage:	None
Import Scenario:	Net Zero

Export to ISO-NE Reduction During Modeling Period



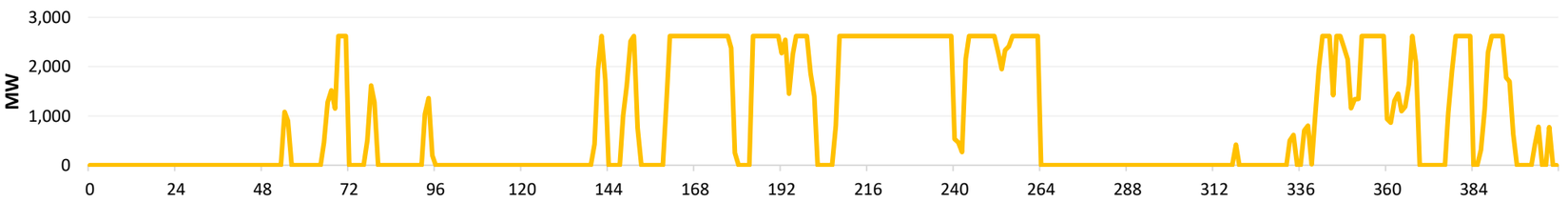
Export Reductions	
Total Hrs.	241
Total MWh	272,903
Avg. MW	668.9

SCR/EDRP Deployed During Modeling Period



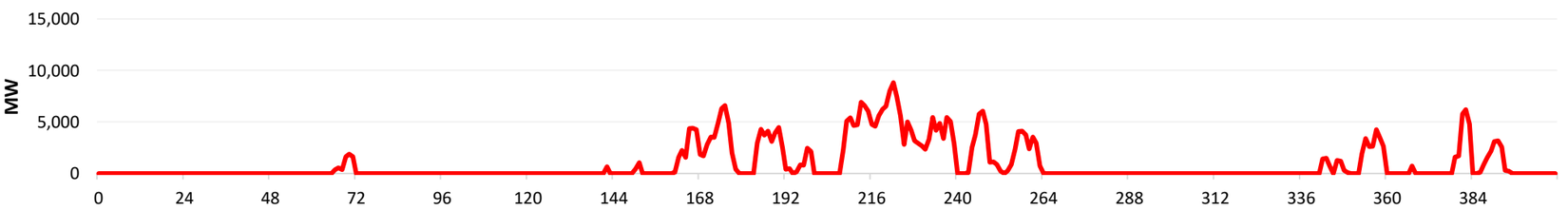
SCR Deployment	
Total Hrs.	23
Total MWh	8,824
Avg. MW	21.6

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	174
Total MWh	362,873
Avg. MW	889.4
First Hour with Viol.	31

Loss of Load During Modeling Period



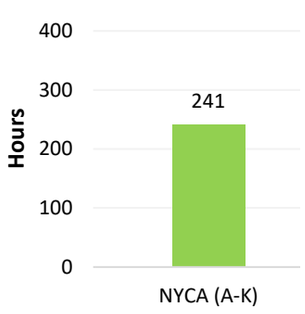
Loss of Load	
Total Hrs.	123
Total MWh	372,771
Avg. MW	913.7
First Hour with Losses	66

Full Period Results Summary

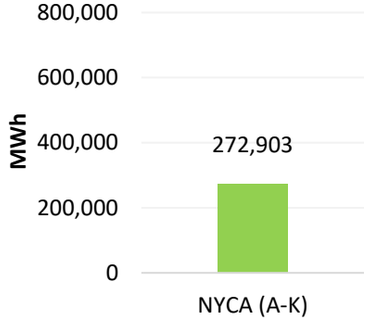
Case Name: Scenario 6 - PD 4 Nuclear Station Outage

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	On
Plant Outage:	None
Import Scenario:	Net Zero

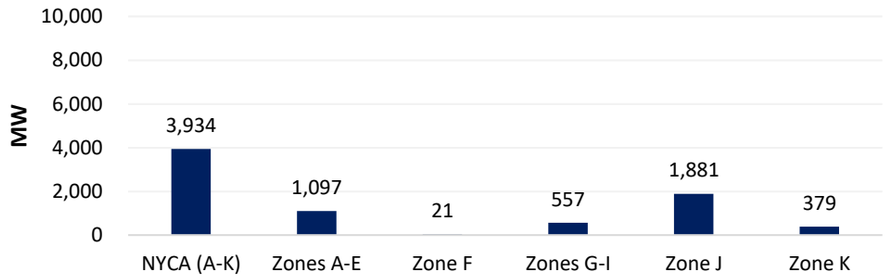
Hours Exports Reduced



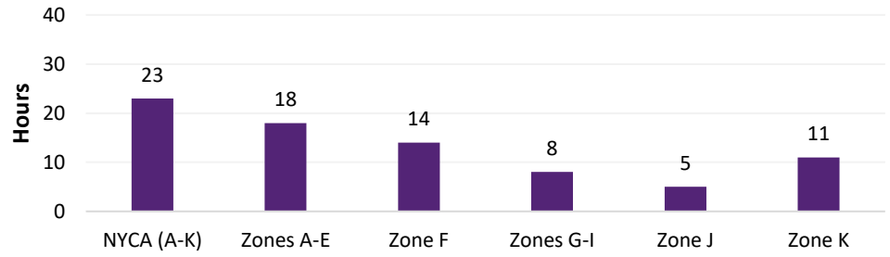
Total MWh of Exports Reduced



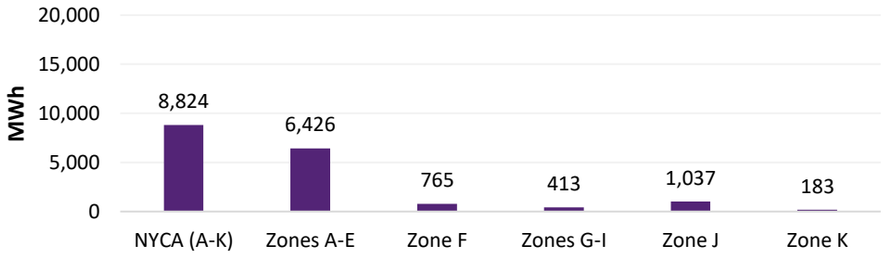
Average Capacity Not Available Due to Exhausted Fuel Inventory



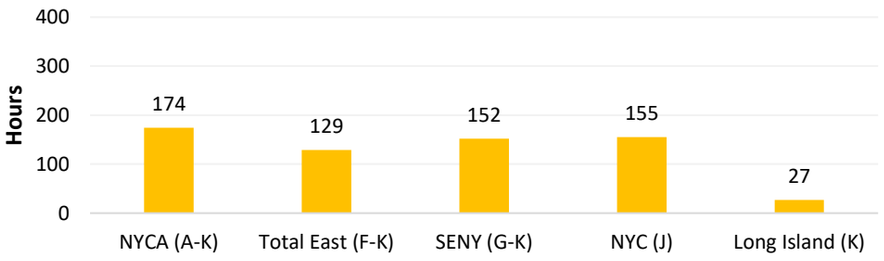
Hours SCR/EDRP Deployed



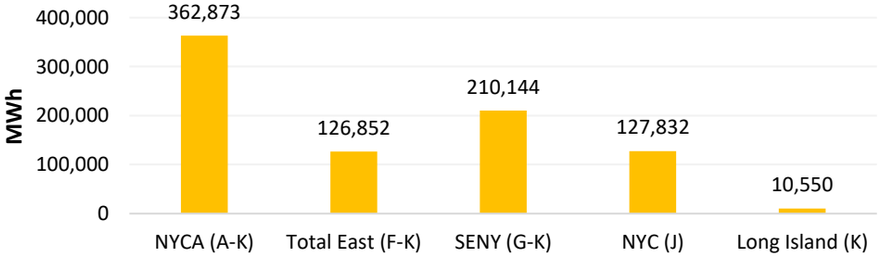
Total MWh SCR/EDRP Deployed



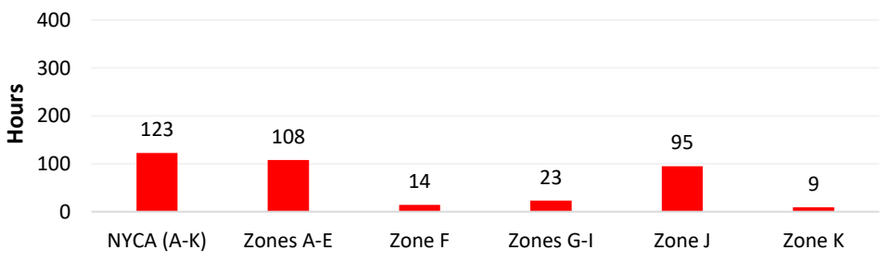
Hours with Reserve Violations



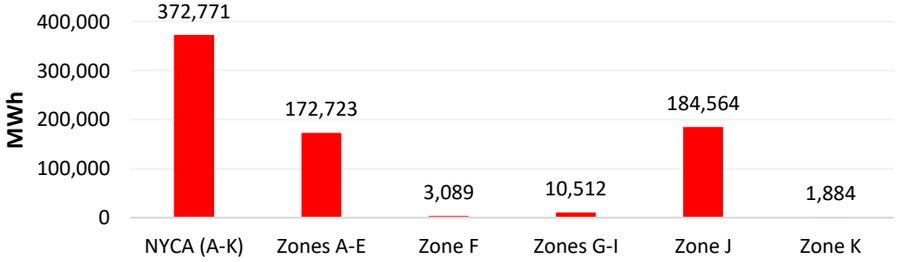
Total MWh of Reserve Violations

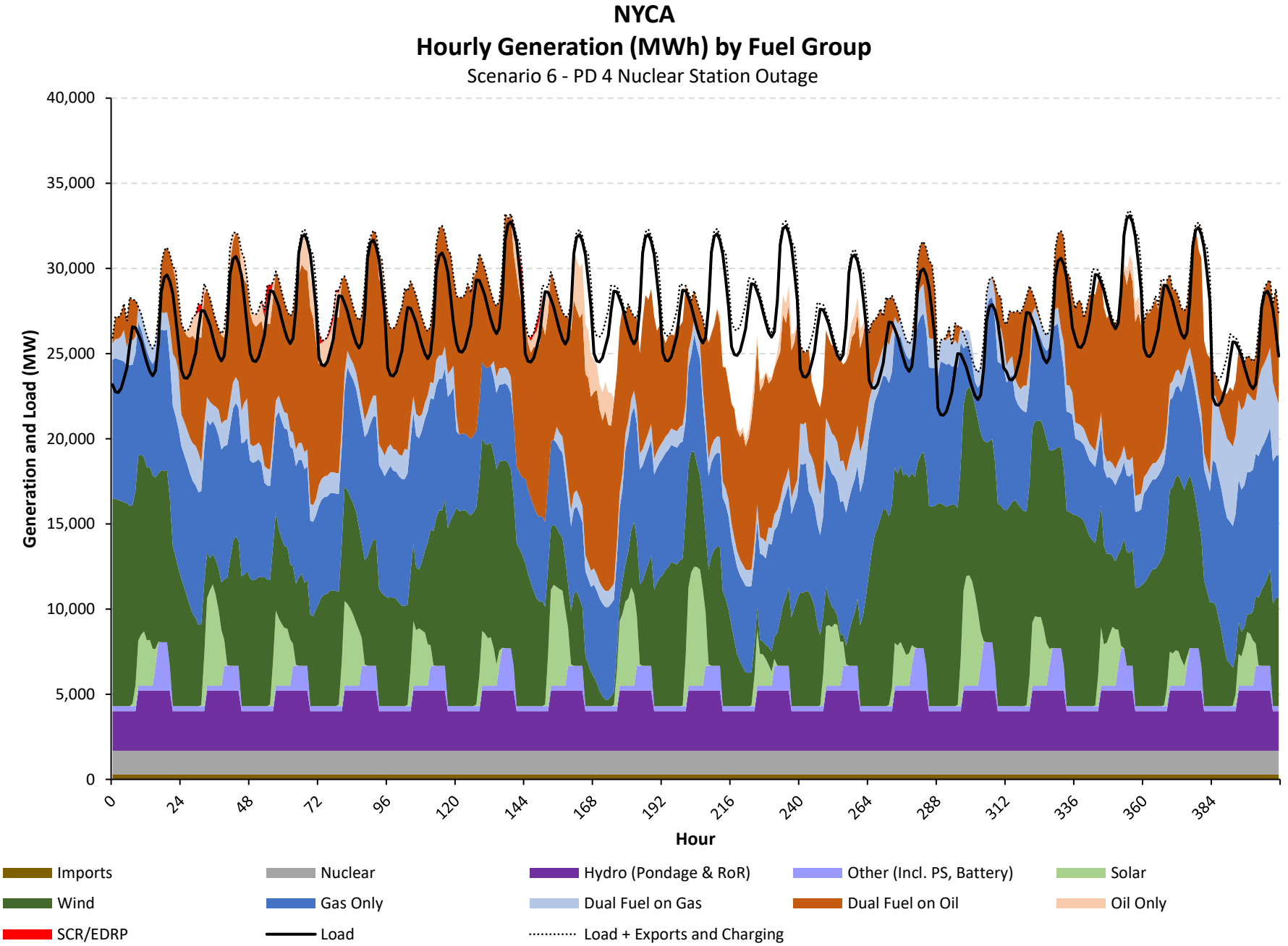


Hours with Loss of Load

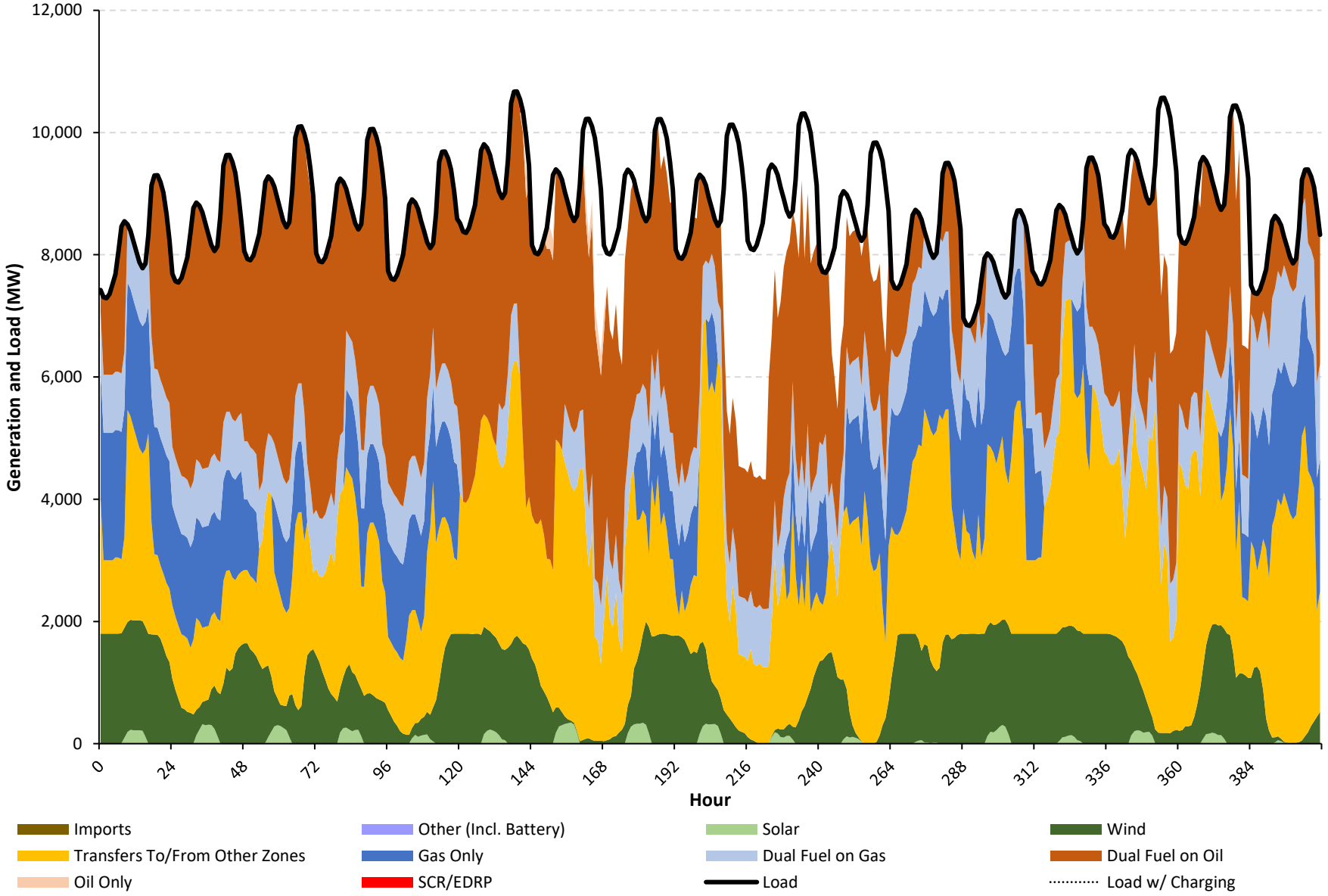


Total MWh of Lost Load

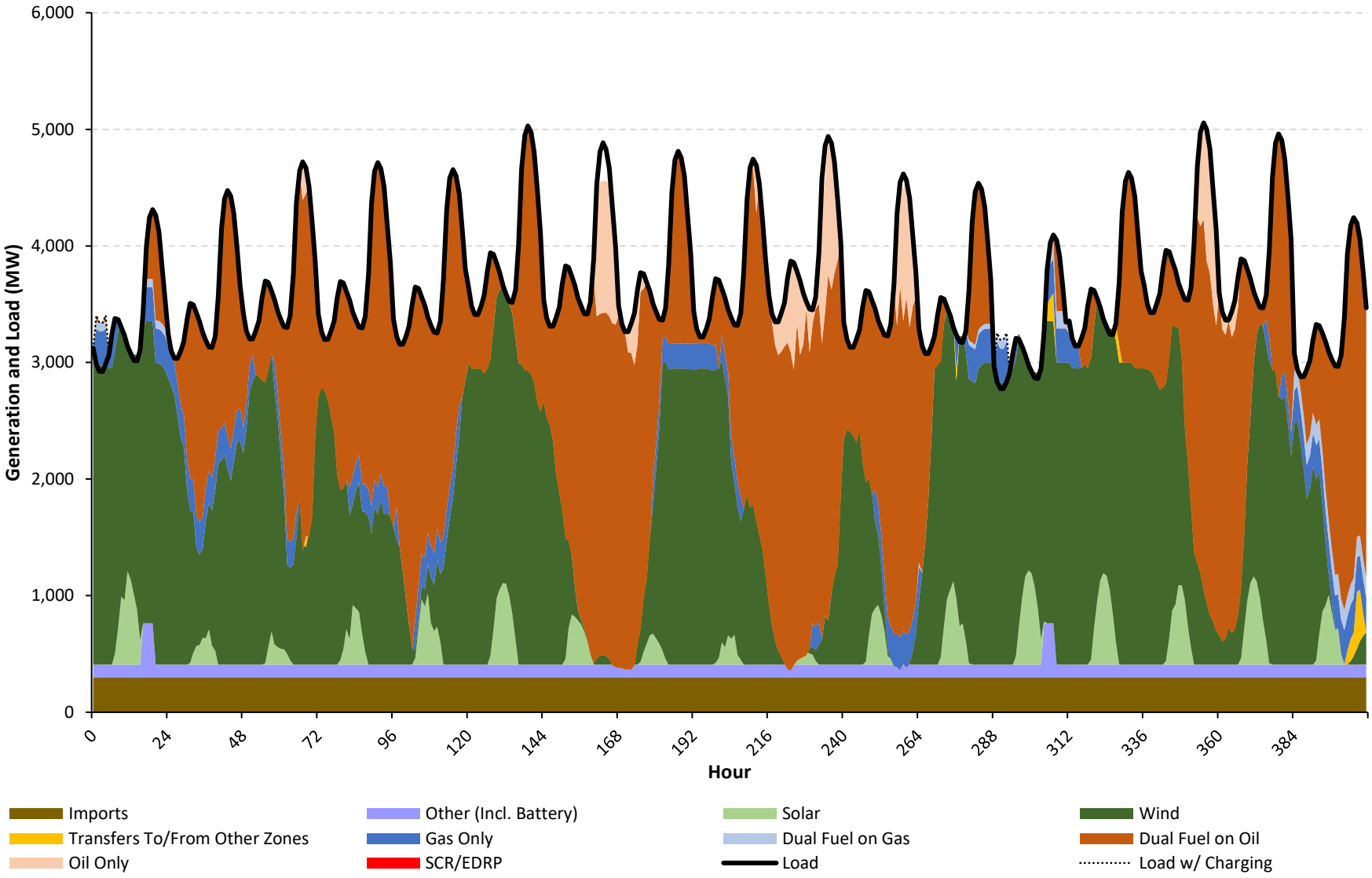



NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 6 - PD 4 Nuclear Station Outage
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

Zone J
Hourly Generation (MW) by Fuel Group
Scenario 6 - PD 4 Nuclear Station Outage



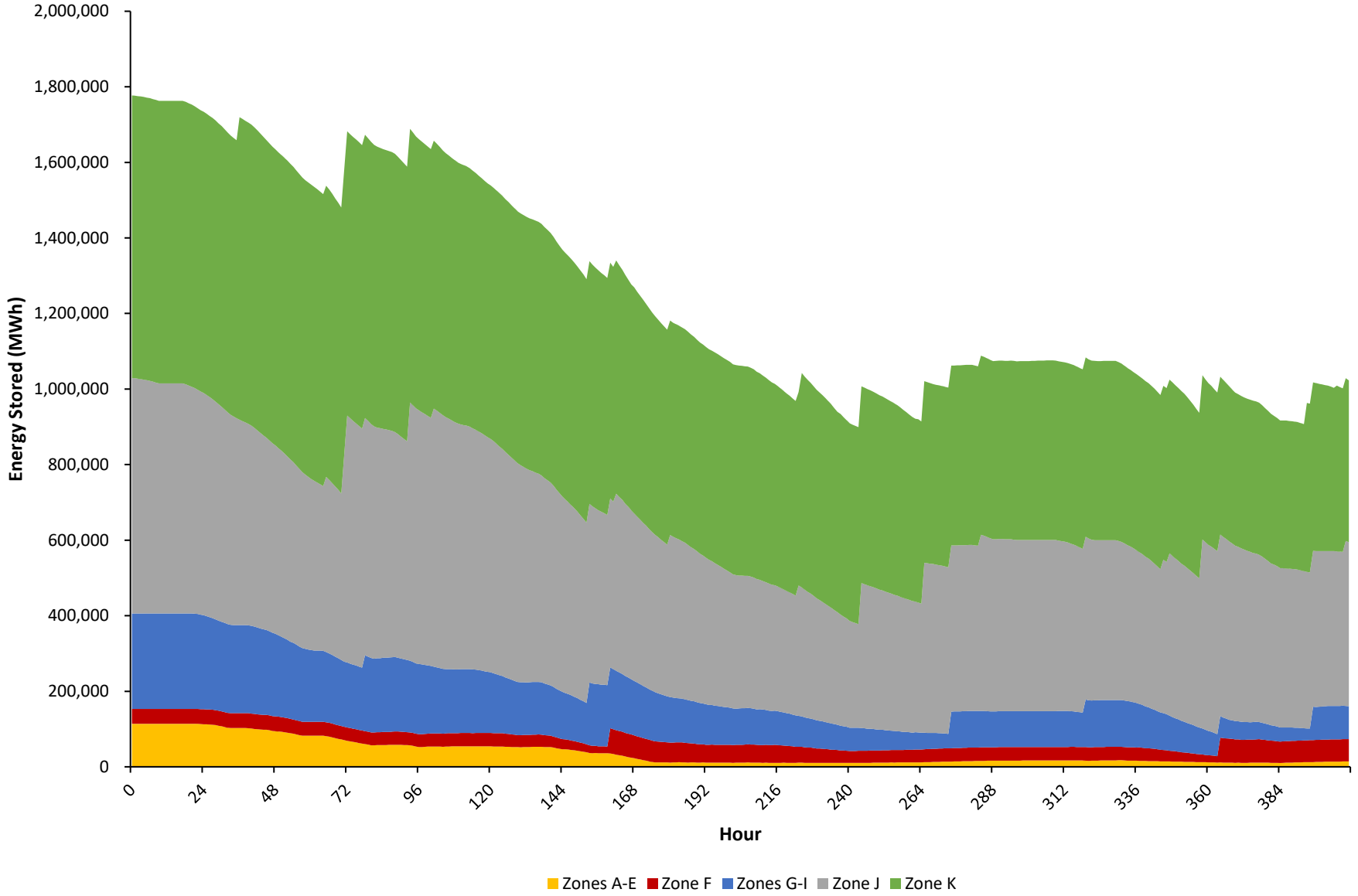
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 6 - PD 4 Nuclear Station Outage



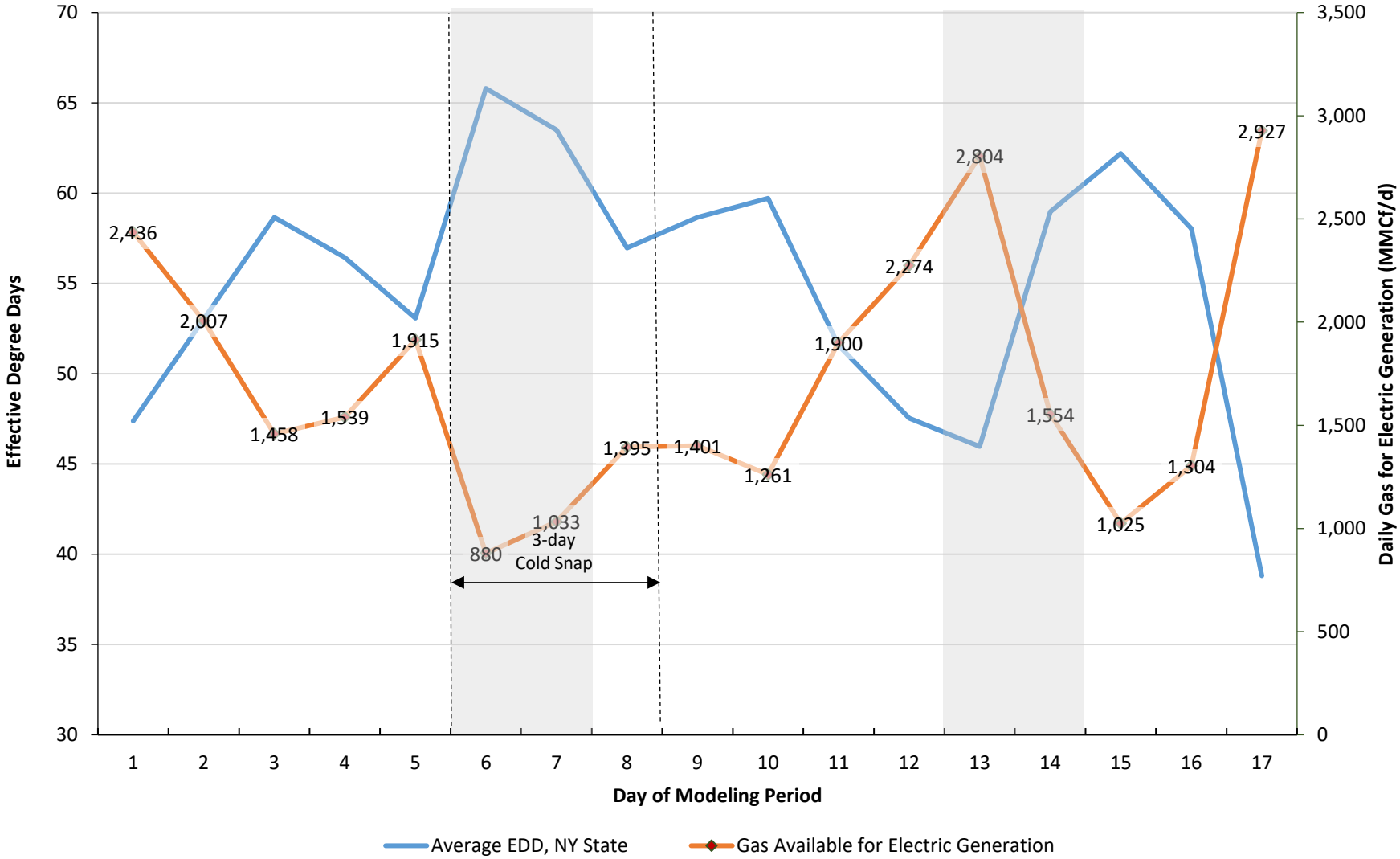
NYCA

Quantity of Stored Fuel for Oil and Dual Fuel Units

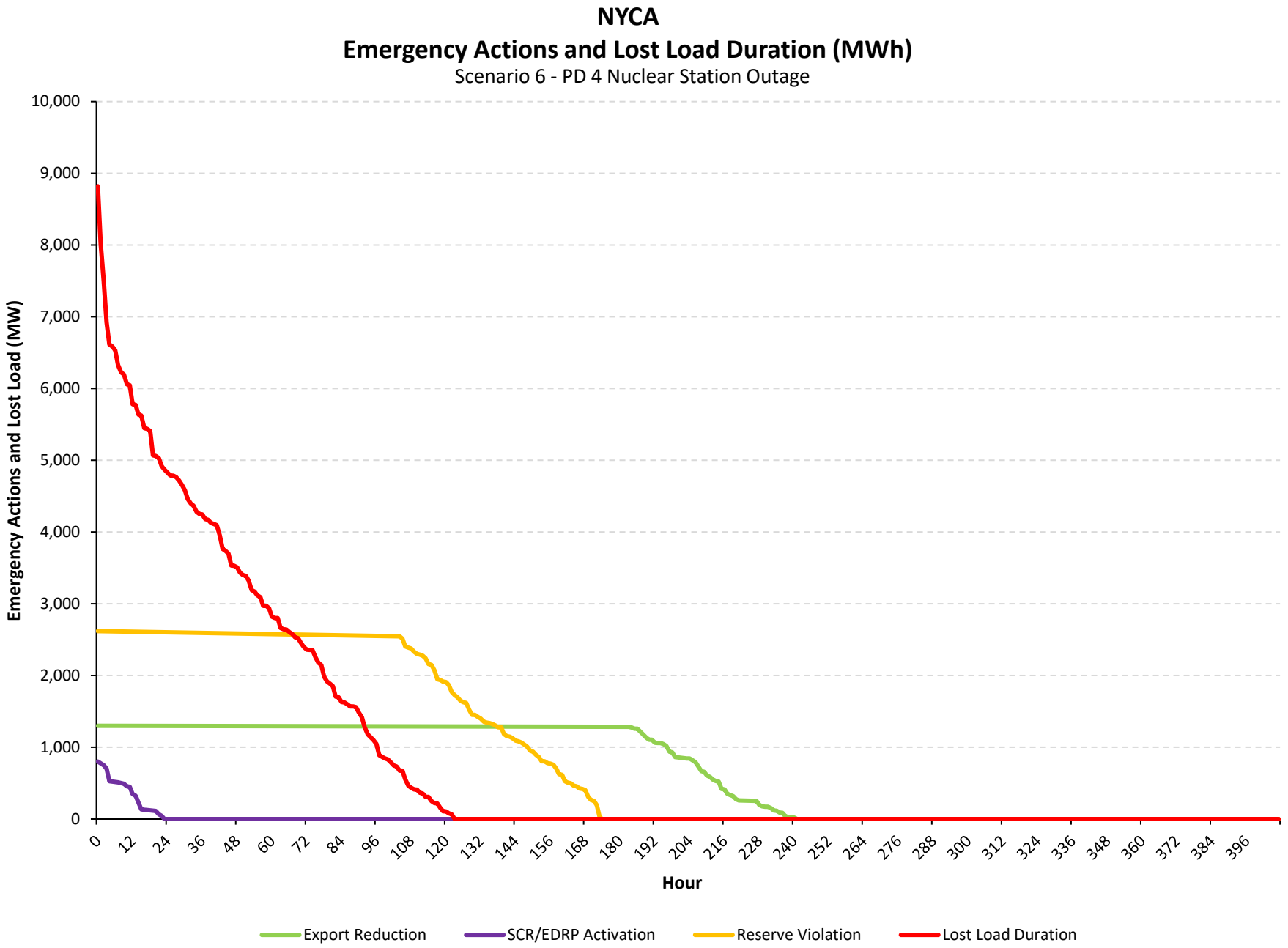
Scenario 6 - PD 4 Nuclear Station Outage

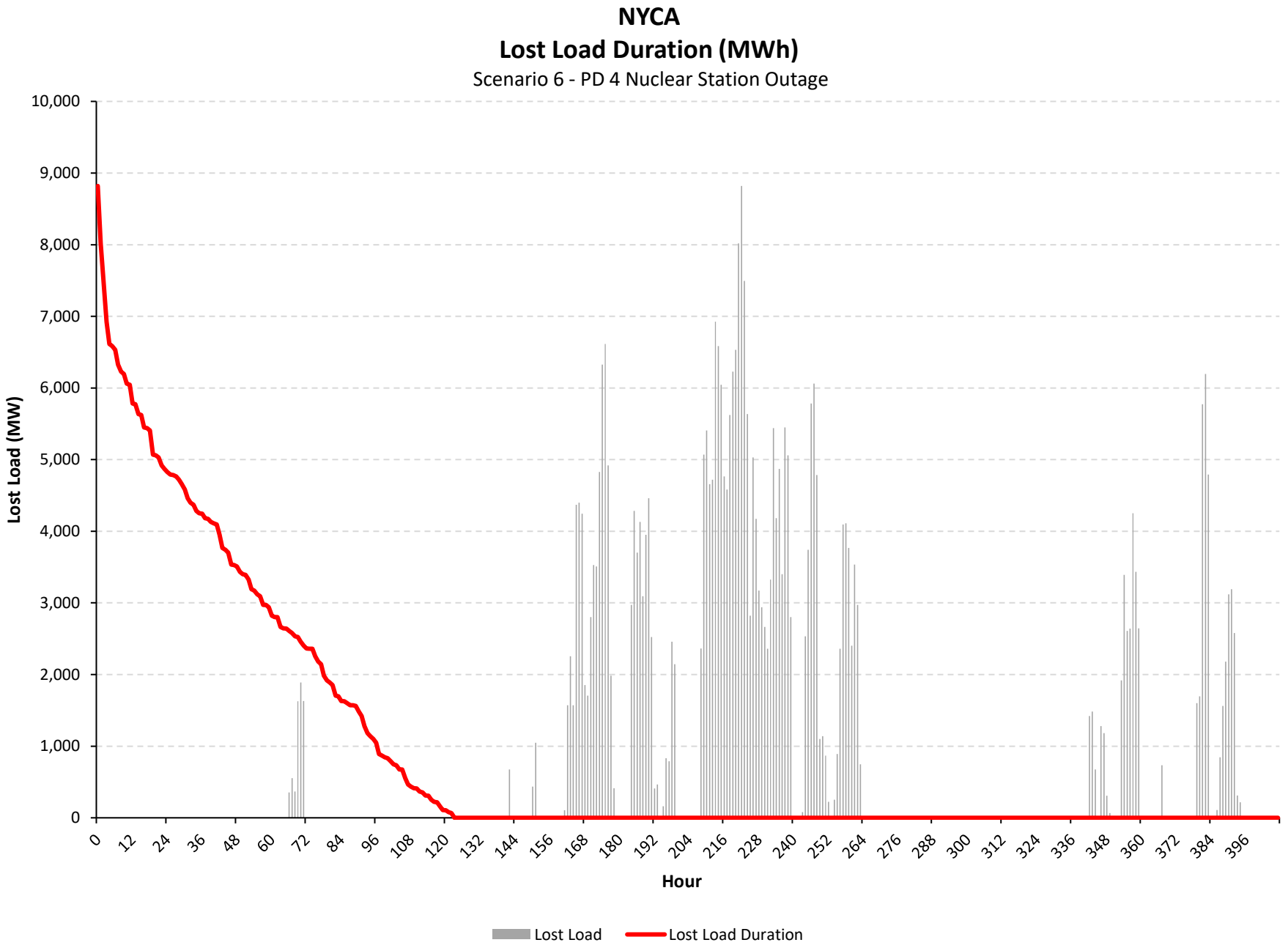


NYCA
Degree Days and Gas Available for Electric Generation 17-Day Modeling Period
Scenario 6 - PD 4 Nuclear Station Outage



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 6 - PD 4 Nuclear Station Outage
Emergency Actions and Lost Load (MW)
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 6 - PD 4 Nuclear Station Outage
Lost Load (MW)
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

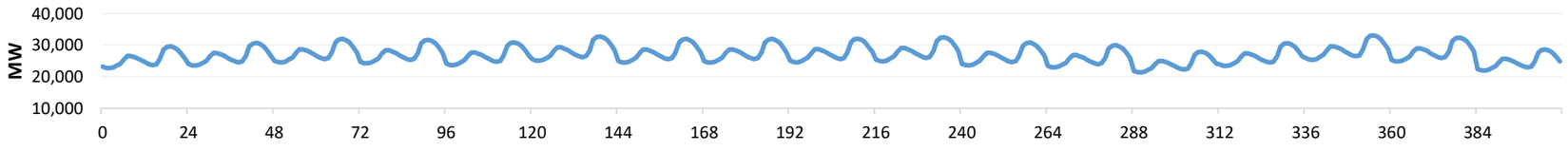
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 6 - PD 5 No Truck Refill (Winter 2030/2031)

Hourly Results Summary

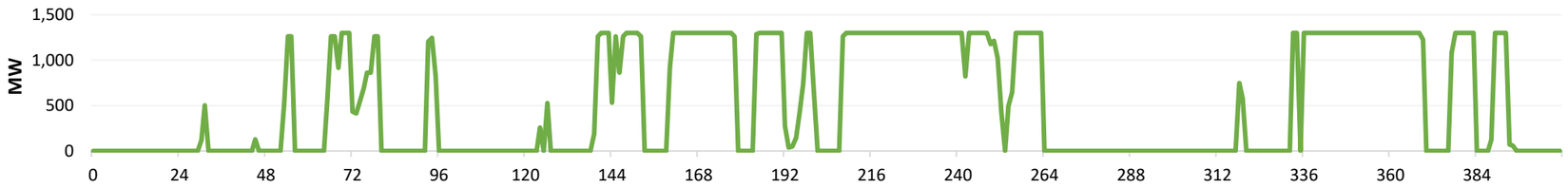
Case Name: Scenario 6 - PD 5 No Truck Refill

Load During Modeling Period



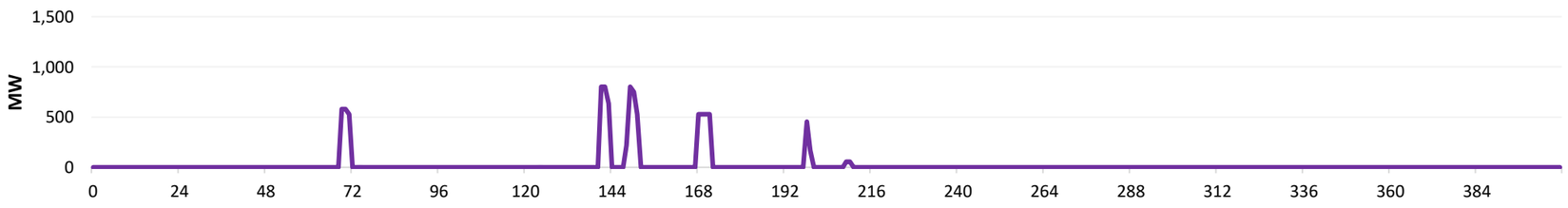
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	No Trucks
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

Export to ISO-NE Reduction During Modeling Period



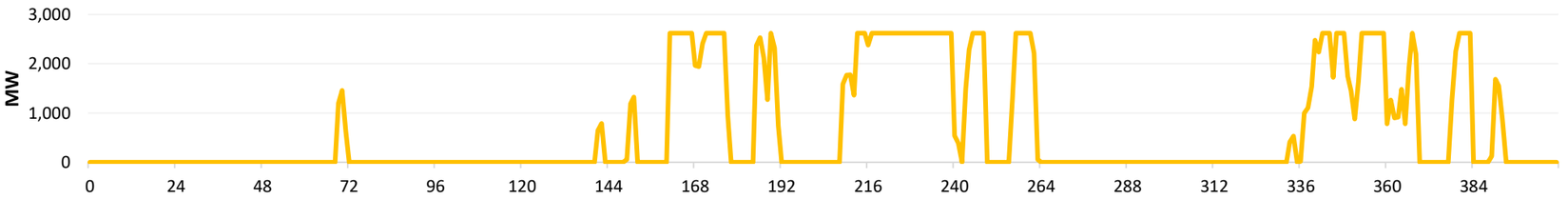
Export Reductions	
Total Hrs.	183
Total MWh	207,899
Avg. MW	509.6

SCR/EDRP Deployed During Modeling Period



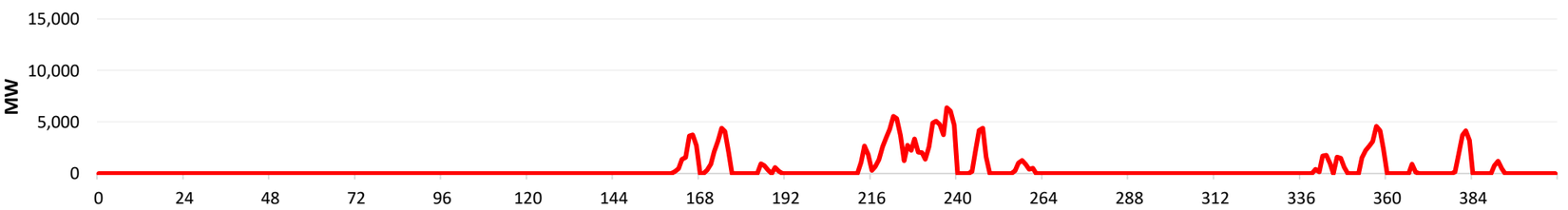
SCR Deployment	
Total Hrs.	18
Total MWh	9,068
Avg. MW	22.2

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	124
Total MWh	253,261
Avg. MW	620.7
First Hour with Viol.	69

Loss of Load During Modeling Period



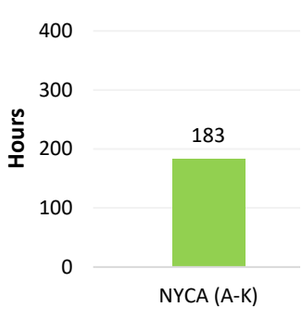
Loss of Load	
Total Hrs.	82
Total MWh	182,734
Avg. MW	447.9
First Hour with Losses	161

Full Period Results Summary

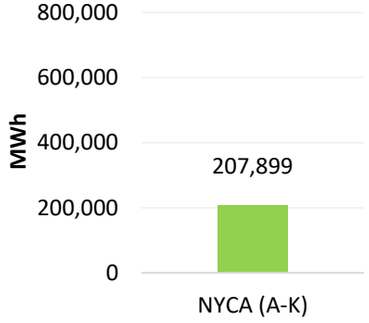
Case Name: Scenario 6 - PD 5 No Truck Refill

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	No Trucks
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

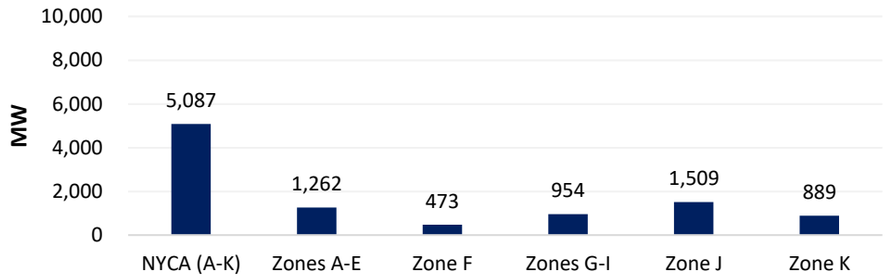
Hours Exports Reduced



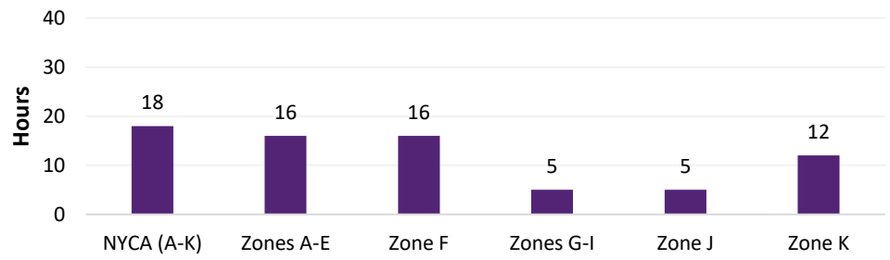
Total MWh of Exports Reduced



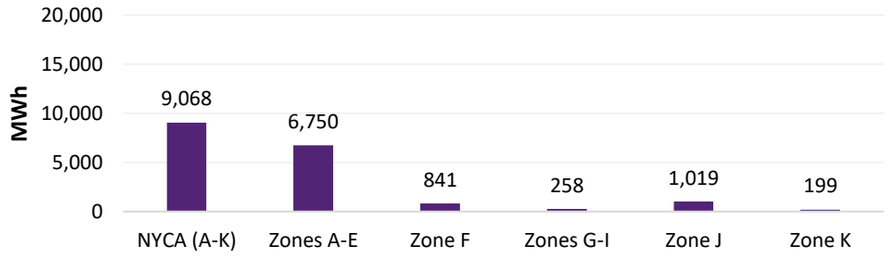
Average Capacity Not Available Due to Exhausted Fuel Inventory



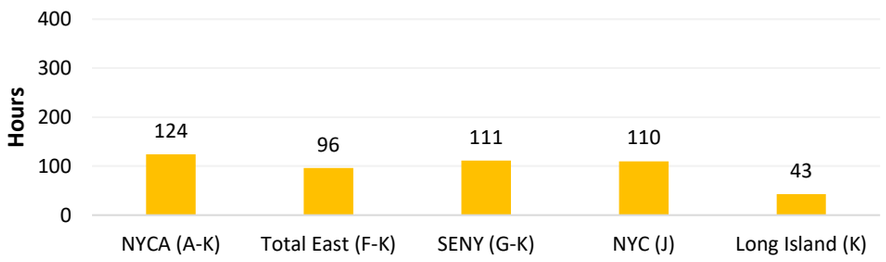
Hours SCR/EDRP Deployed



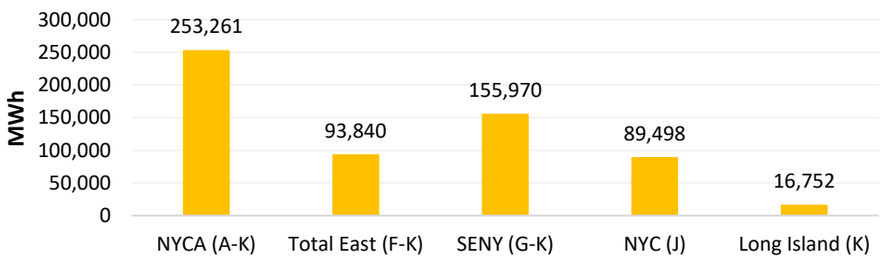
Total MWh SCR/EDRP Deployed



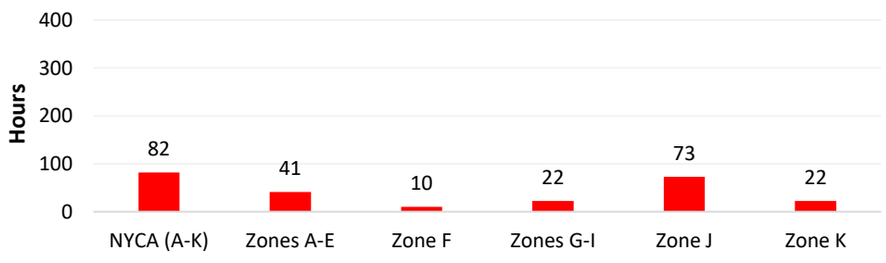
Hours with Reserve Violations



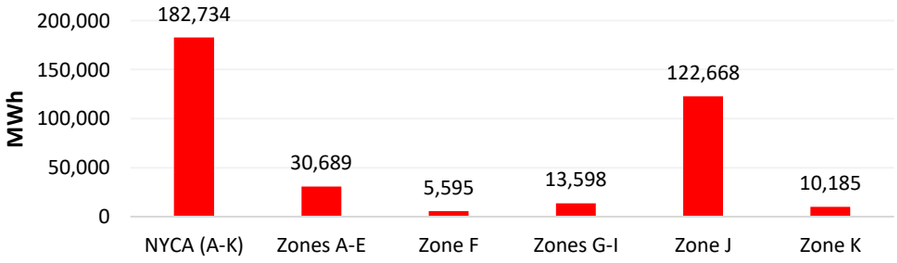
Total MWh of Reserve Violations

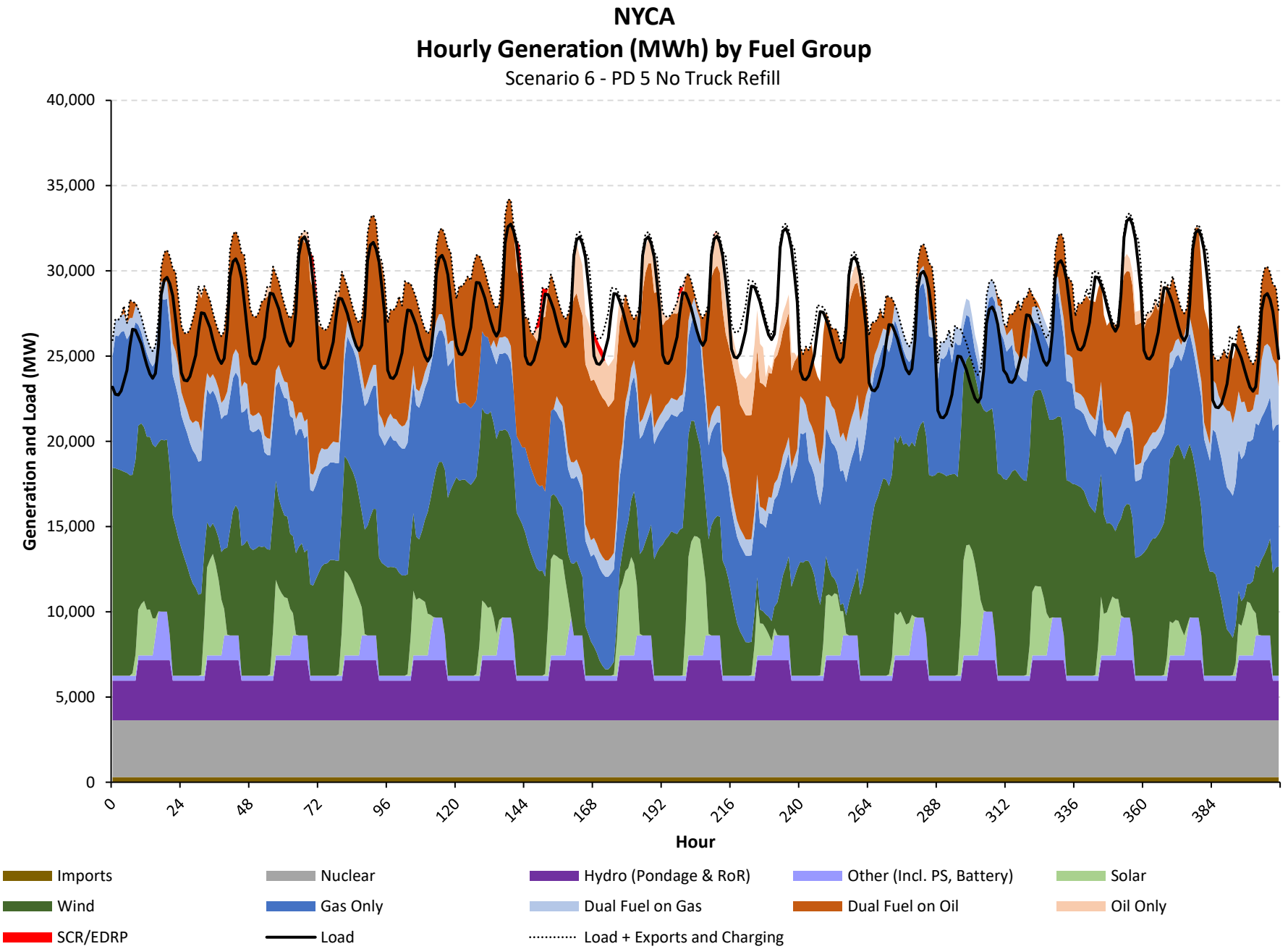


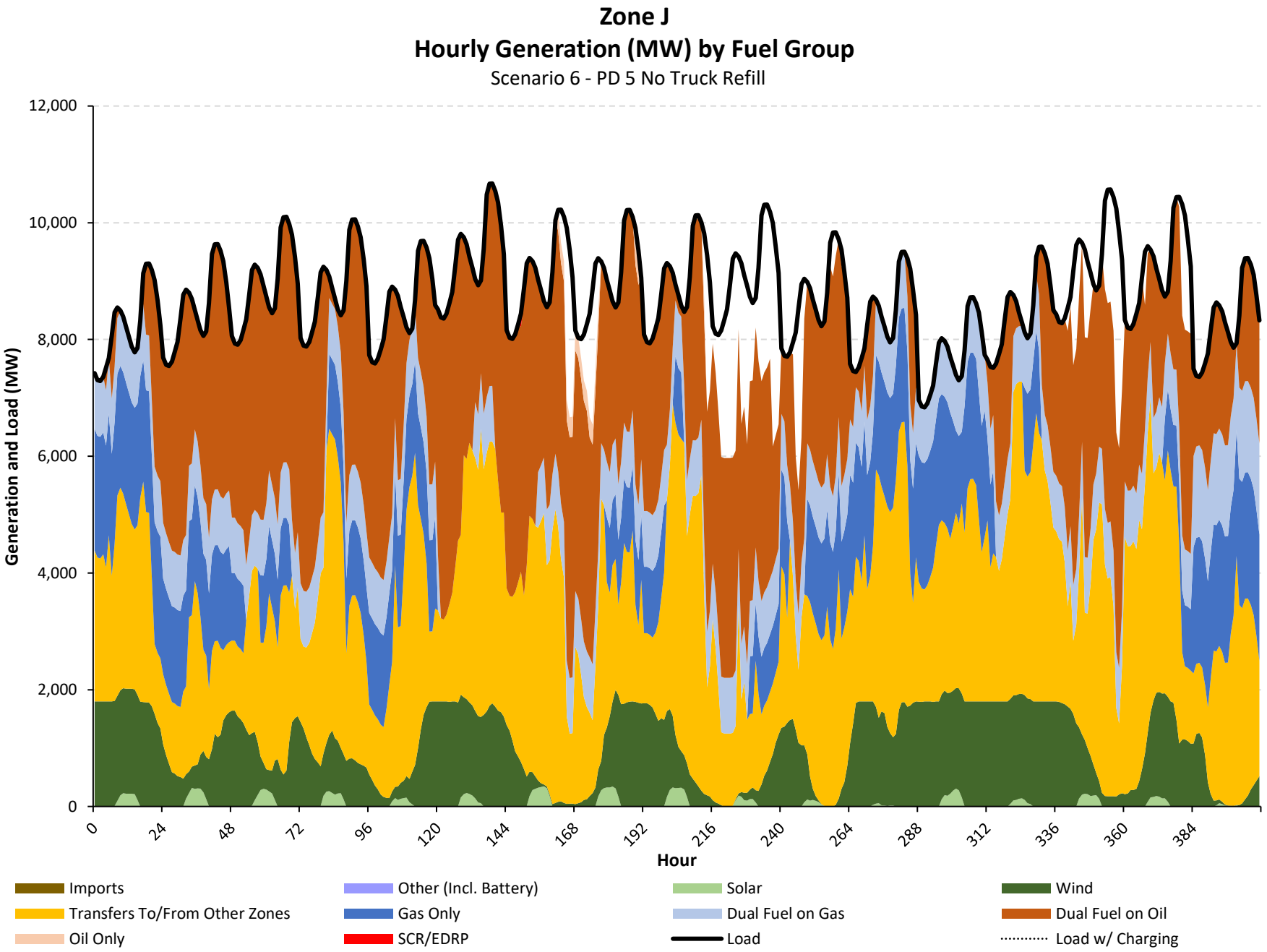
Hours with Loss of Load



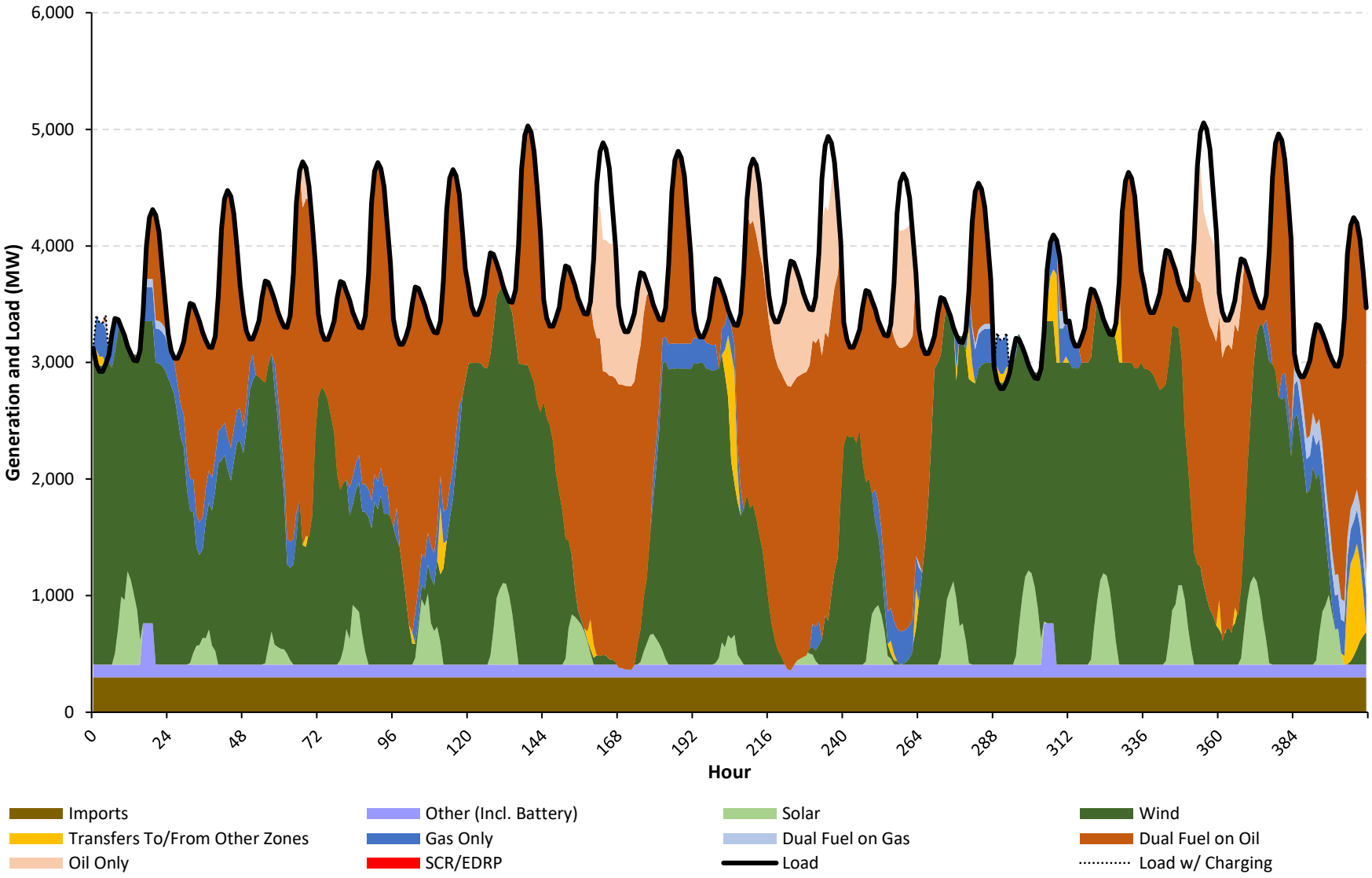
Total MWh of Lost Load




NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 6 - PD 5 No Truck Refill
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 6 - PD 5 No Truck Refill
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

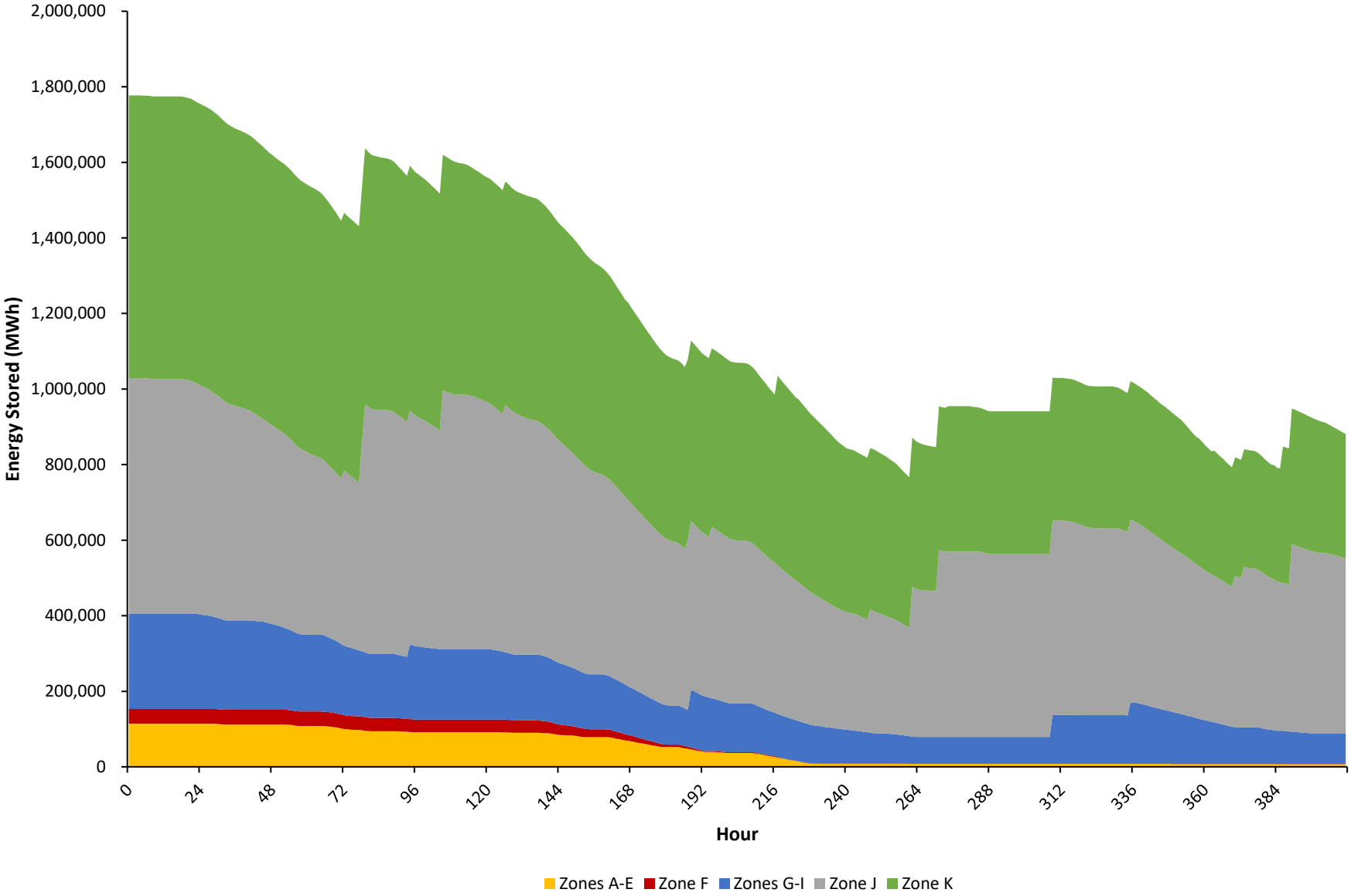
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 6 - PD 5 No Truck Refill

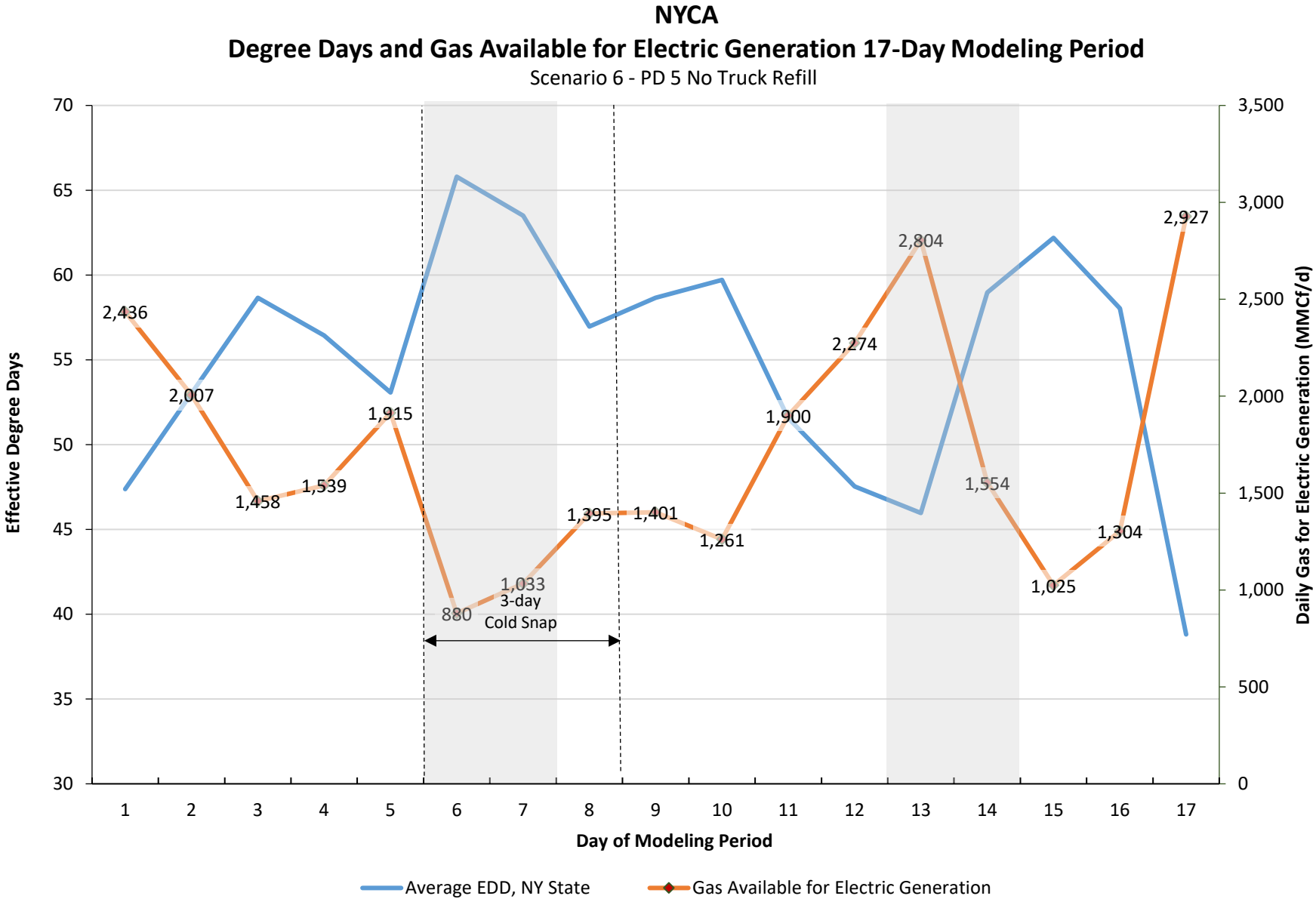


NYCA

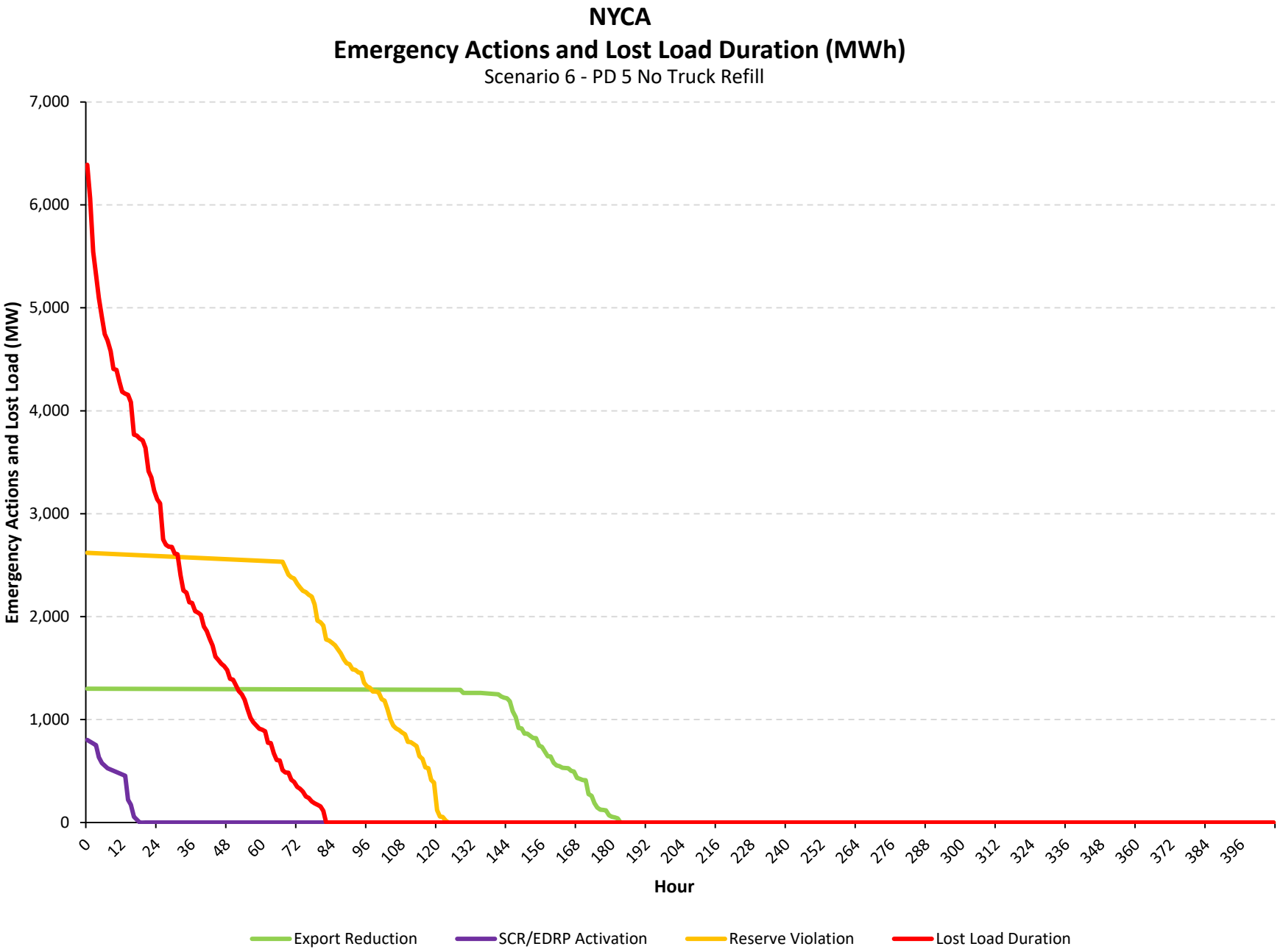
Quantity of Stored Fuel for Oil and Dual Fuel Units

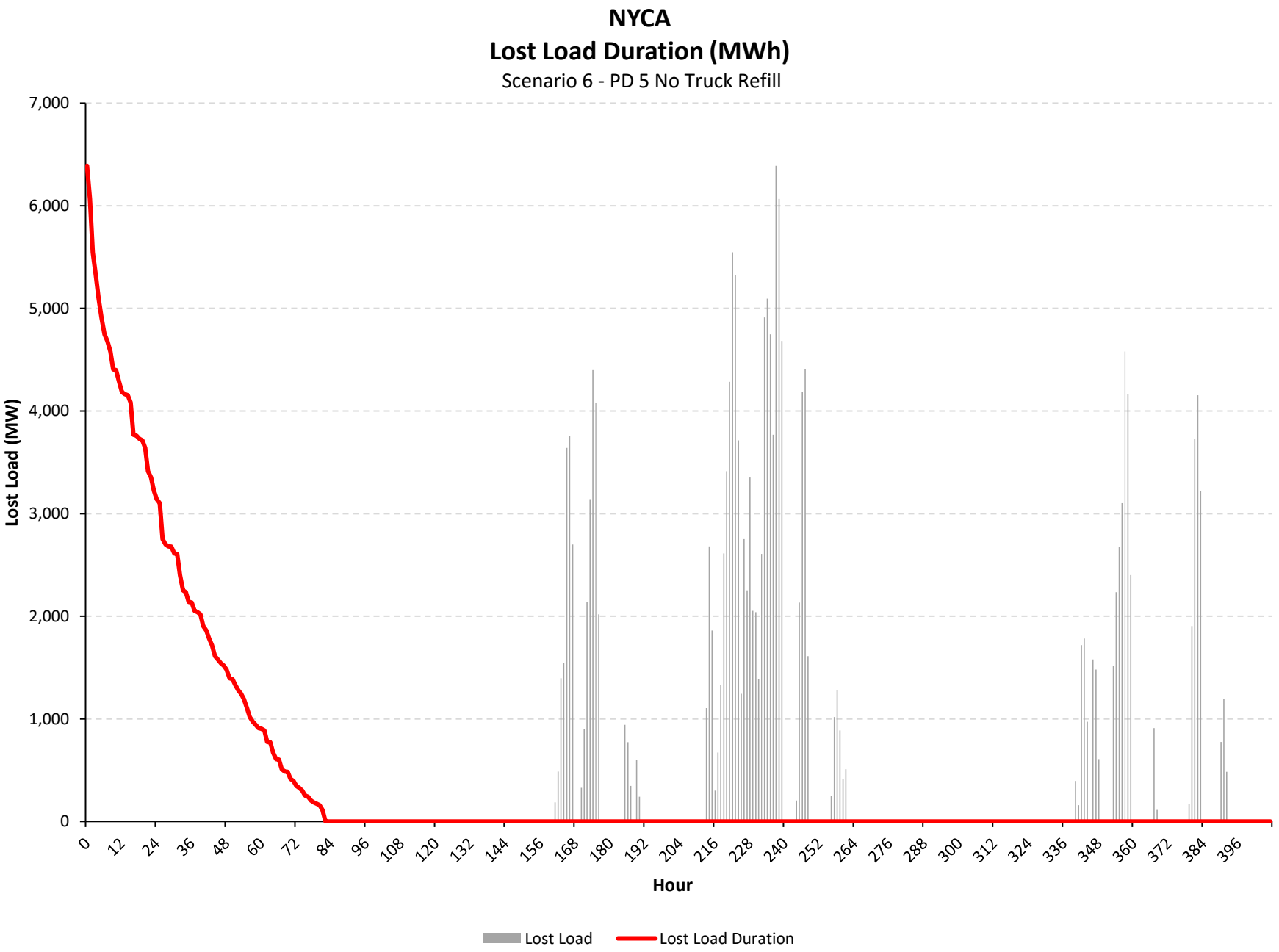
Scenario 6 - PD 5 No Truck Refill





Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 6 - PD 5 No Truck Refill
Emergency Actions and Lost Load (MW)
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 6 - PD 5 No Truck Refill
Lost Load (MW)
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

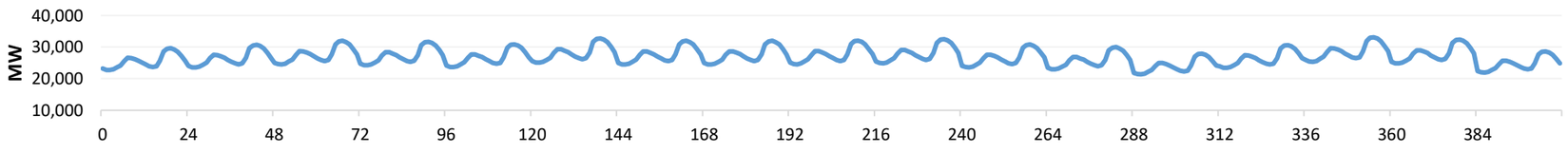
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 6 - PD 6 No Barge Refill (Winter 2030/2031)

Hourly Results Summary

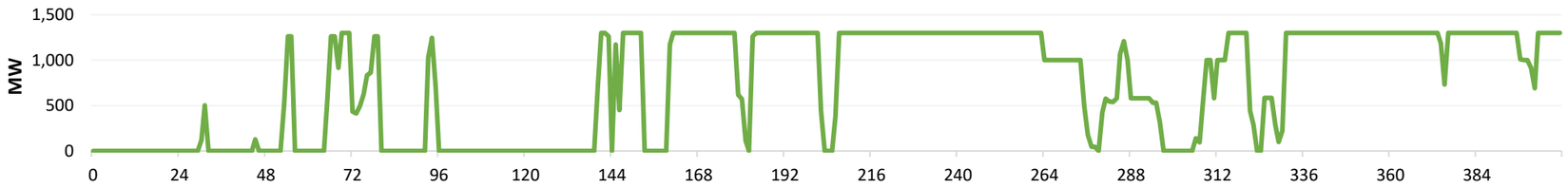
Case Name: Scenario 6 - PD 6 No Barge Refill

Load During Modeling Period



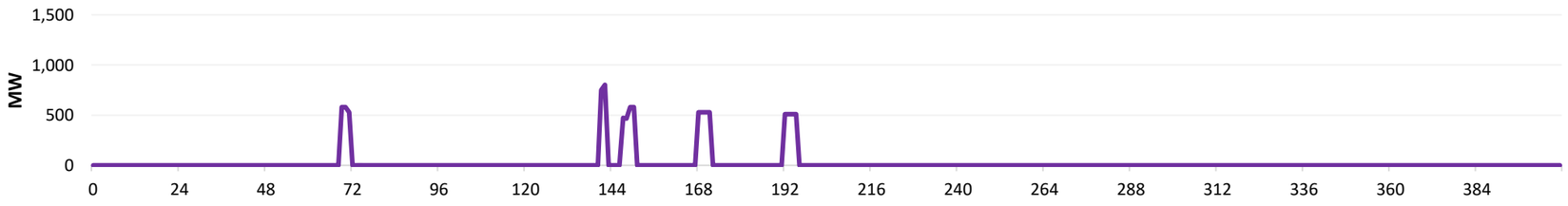
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	No Barge
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

Export to ISO-NE Reduction During Modeling Period



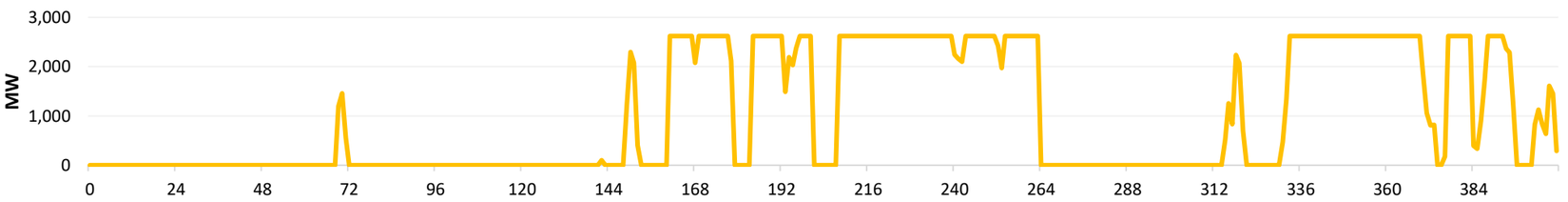
Export Reductions	
Total Hrs.	268
Total MWh	297,709
Avg. MW	729.7

SCR/EDRP Deployed During Modeling Period



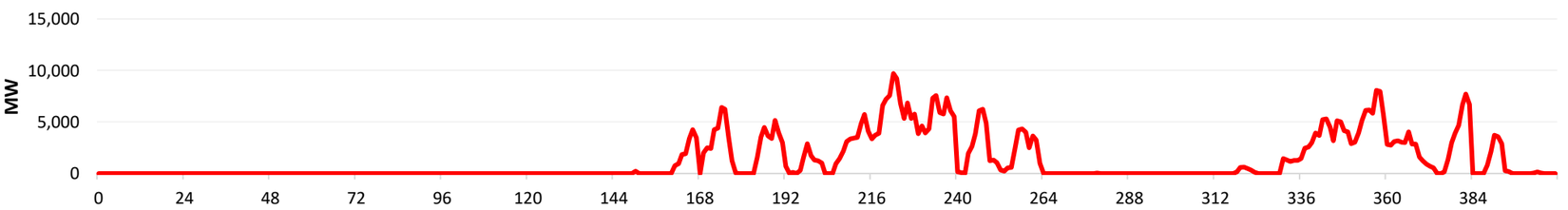
SCR Deployment	
Total Hrs.	17
Total MWh	9,476
Avg. MW	23.2

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	175
Total MWh	400,563
Avg. MW	981.8
First Hour with Viol.	69

Loss of Load During Modeling Period



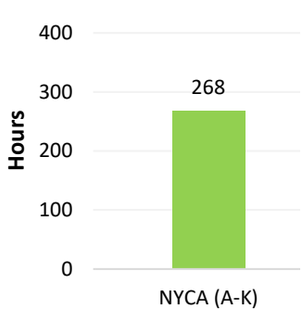
Loss of Load	
Total Hrs.	162
Total MWh	520,409
Avg. MW	1,275.5
First Hour with Losses	150

Full Period Results Summary

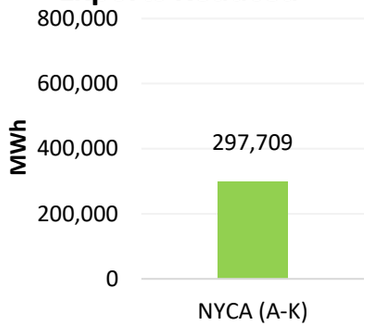
Case Name: Scenario 6 - PD 6 No Barge Refill

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	No Barge
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

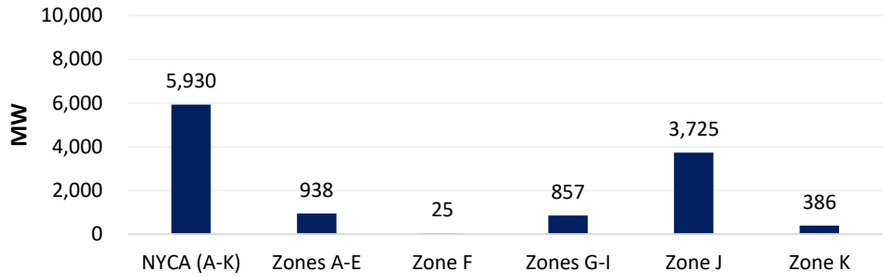
Hours Exports Reduced



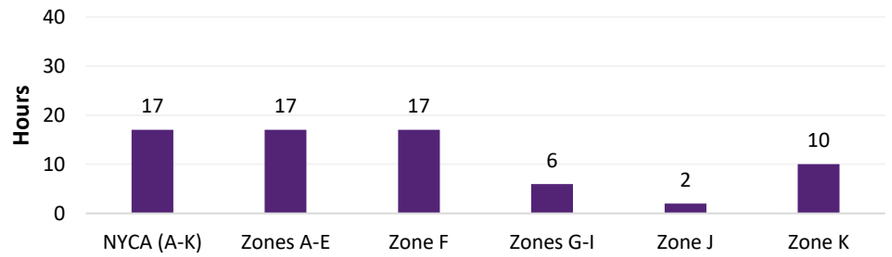
Total MWh of Exports Reduced



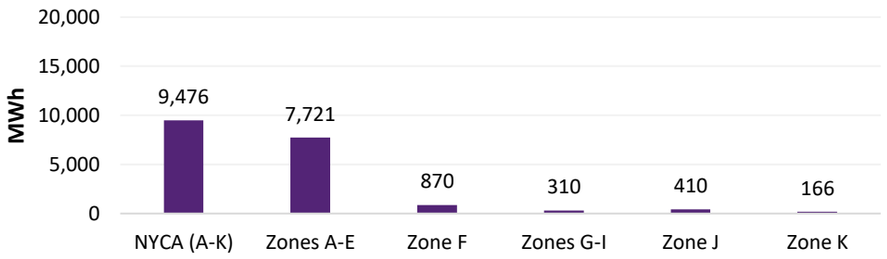
Average Capacity Not Available Due to Exhausted Fuel Inventory



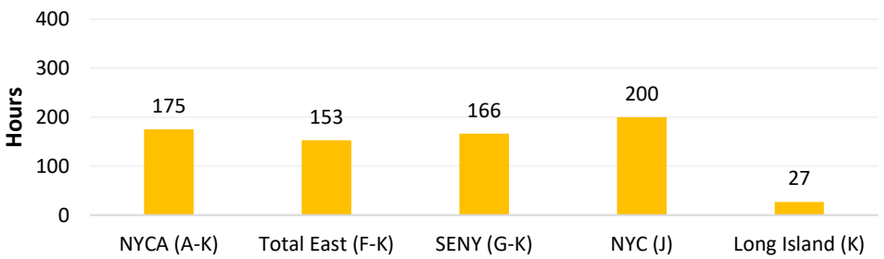
Hours SCR/EDRP Deployed



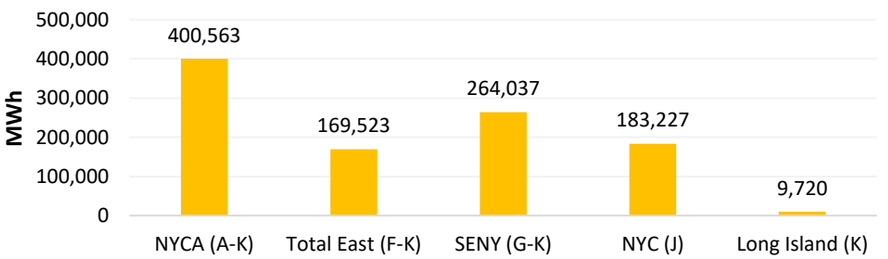
Total MWh SCR/EDRP Deployed



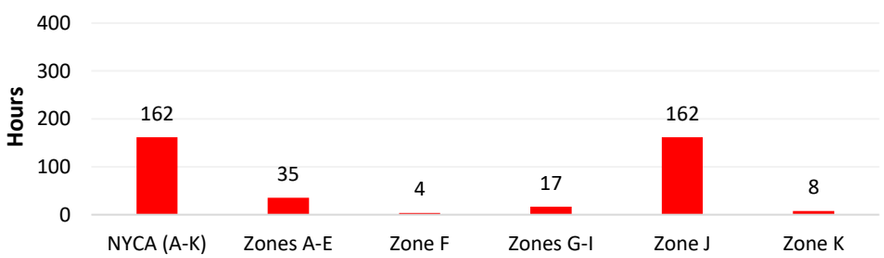
Hours with Reserve Violations



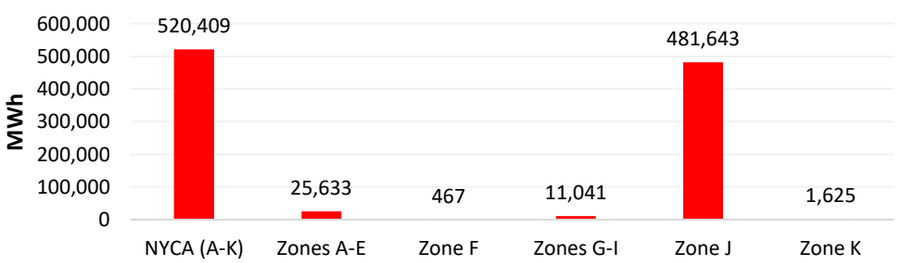
Total MWh of Reserve Violations

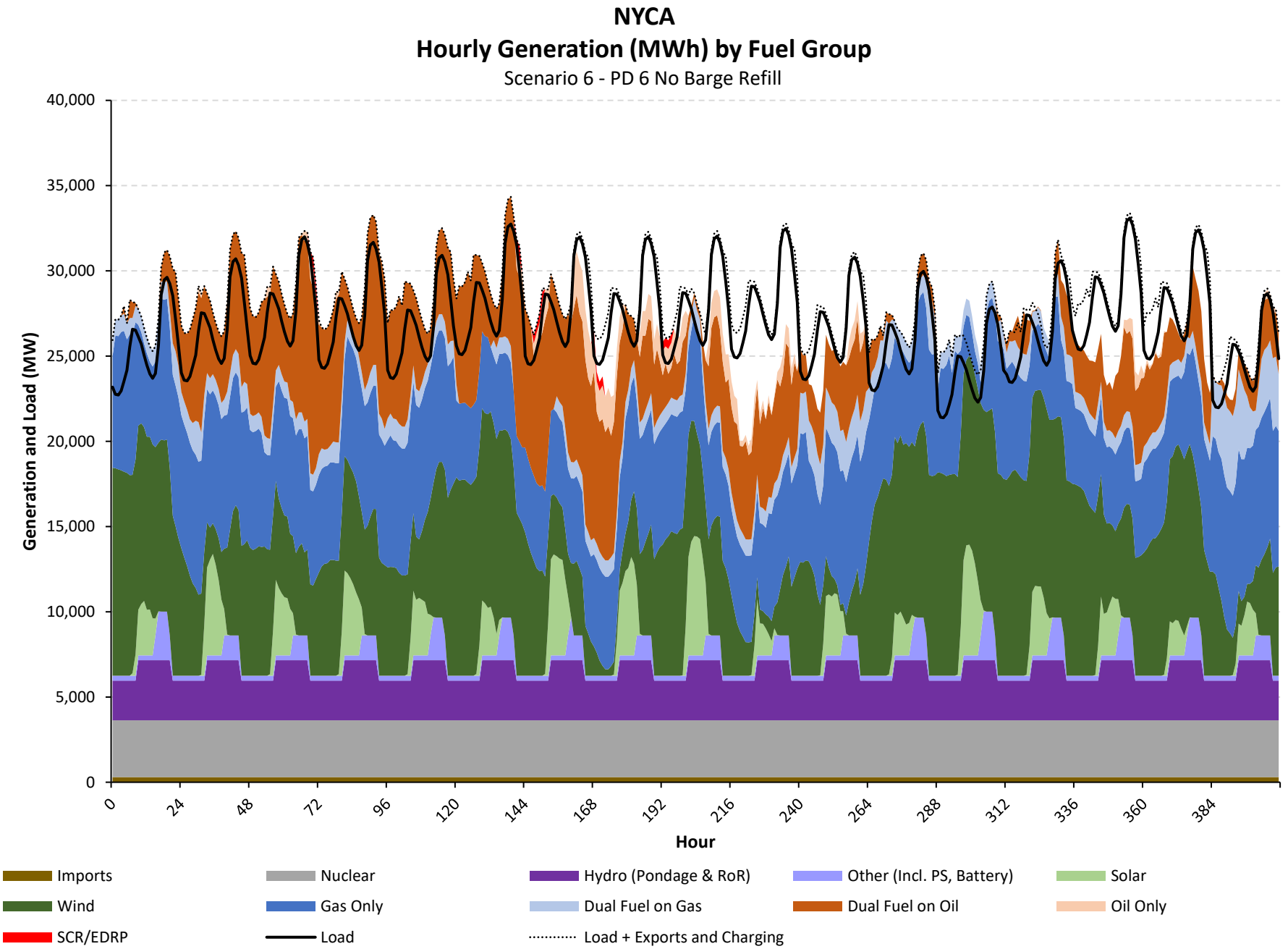


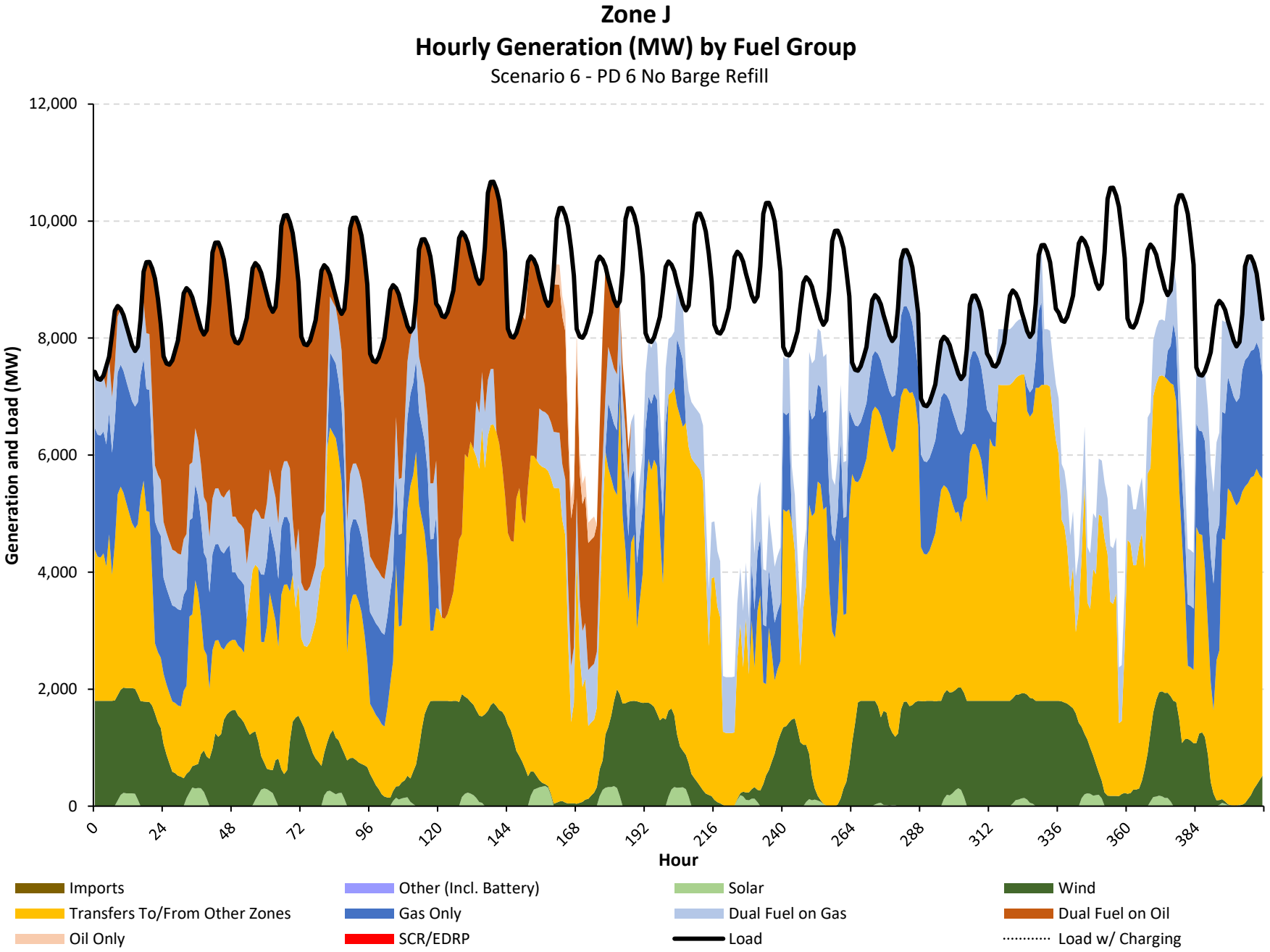
Hours with Loss of Load



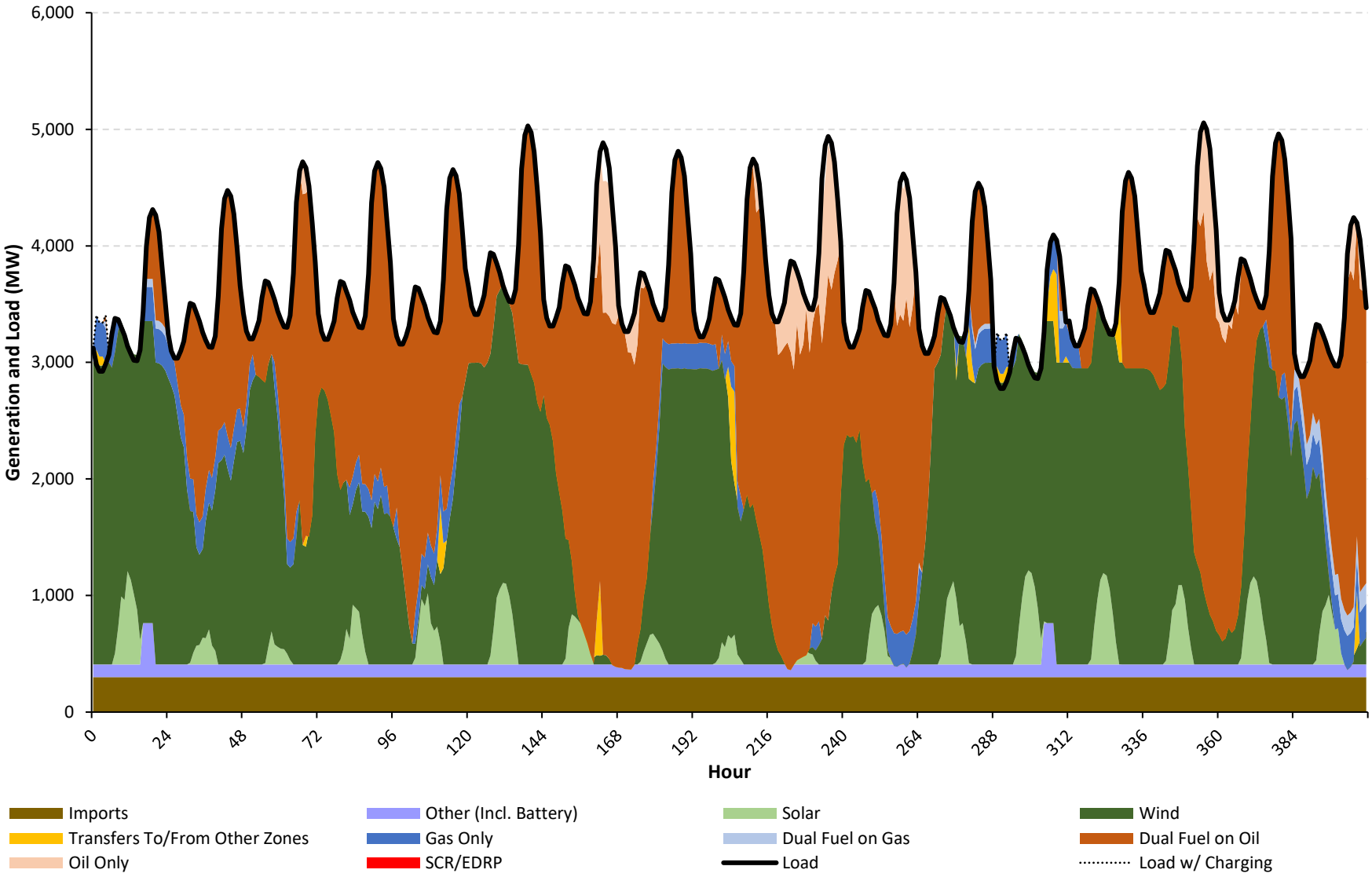
Total MWh of Lost Load

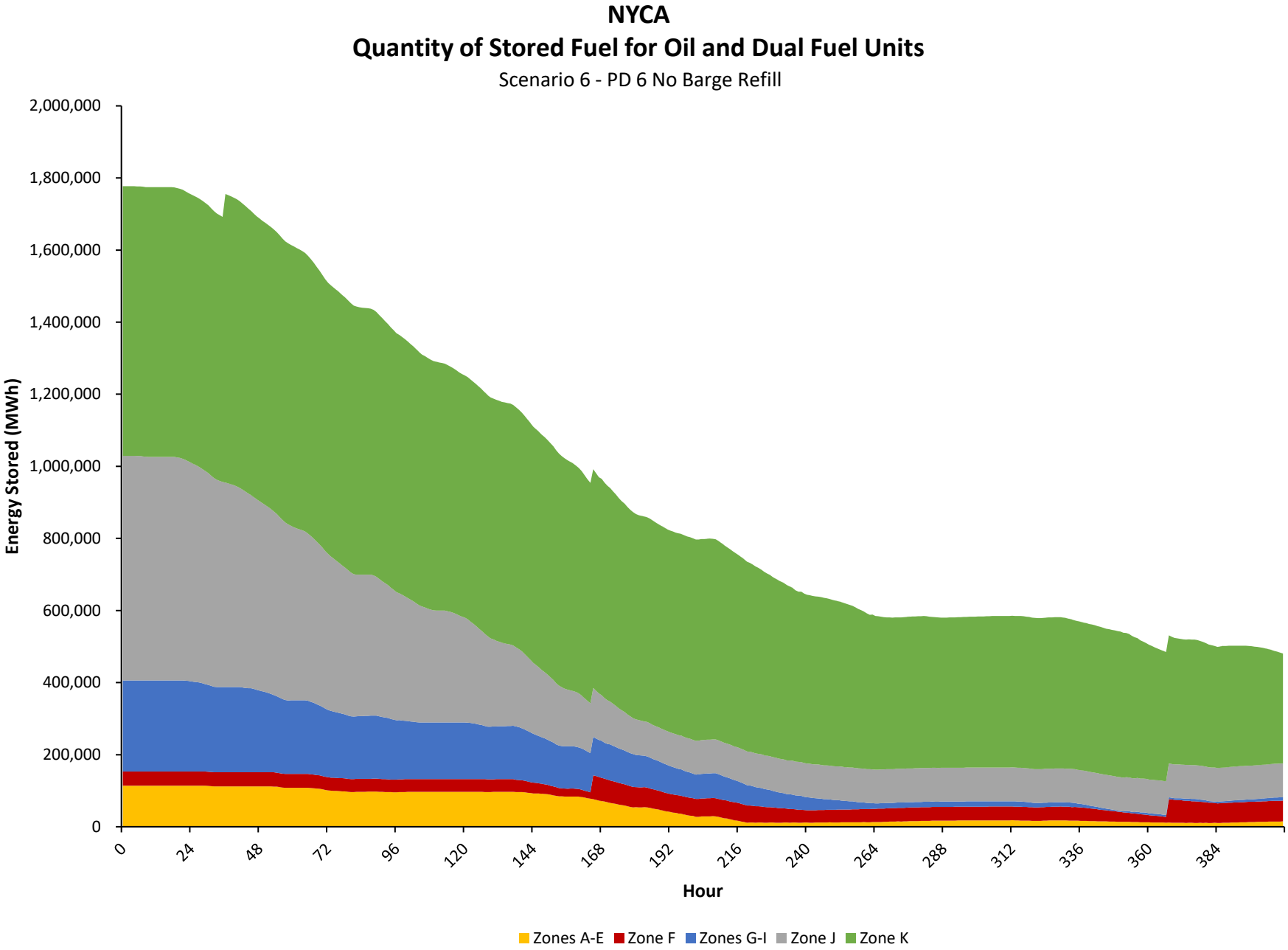


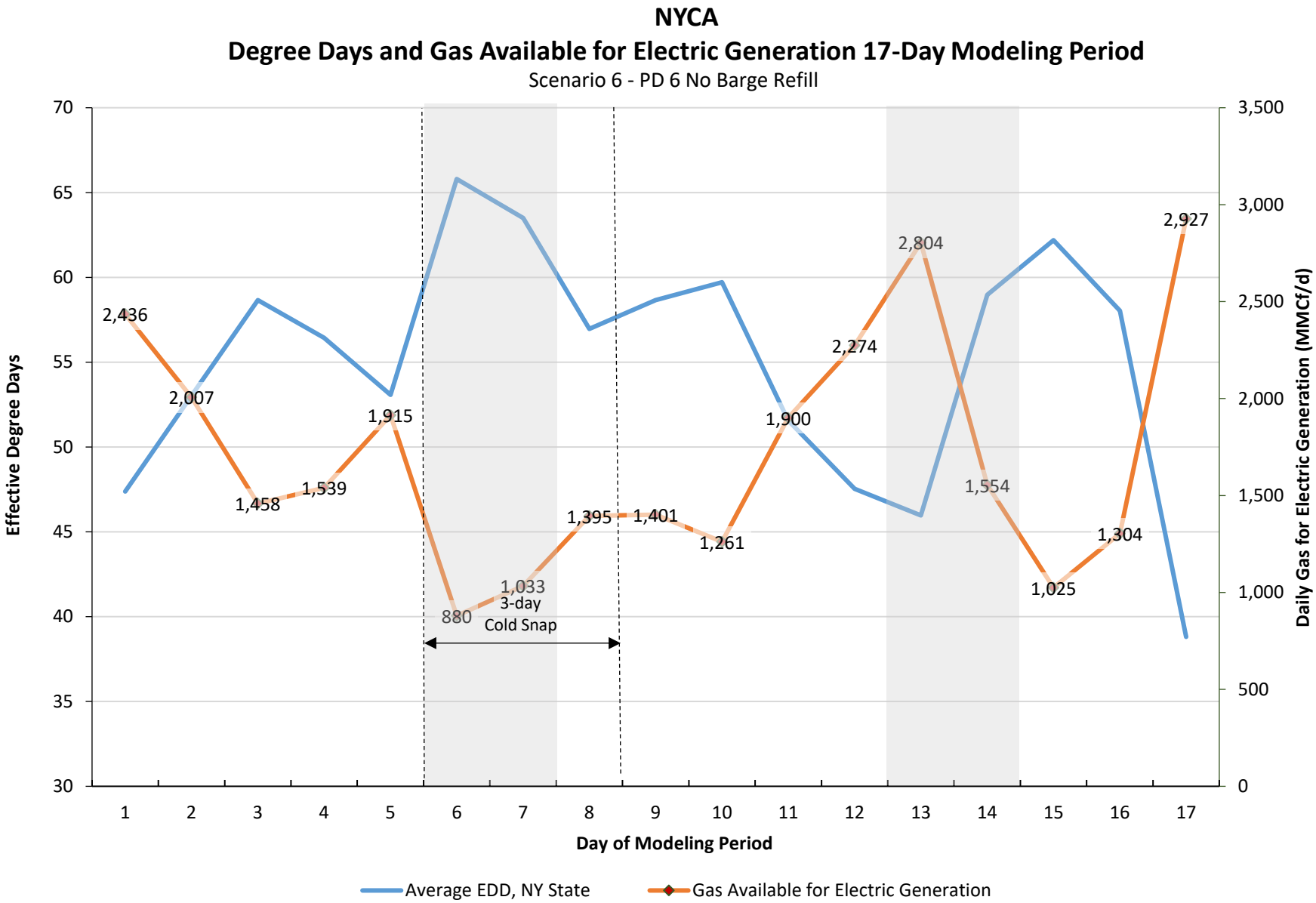

NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 6 - PD 6 No Barge Refill
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 6 - PD 6 No Barge Refill
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

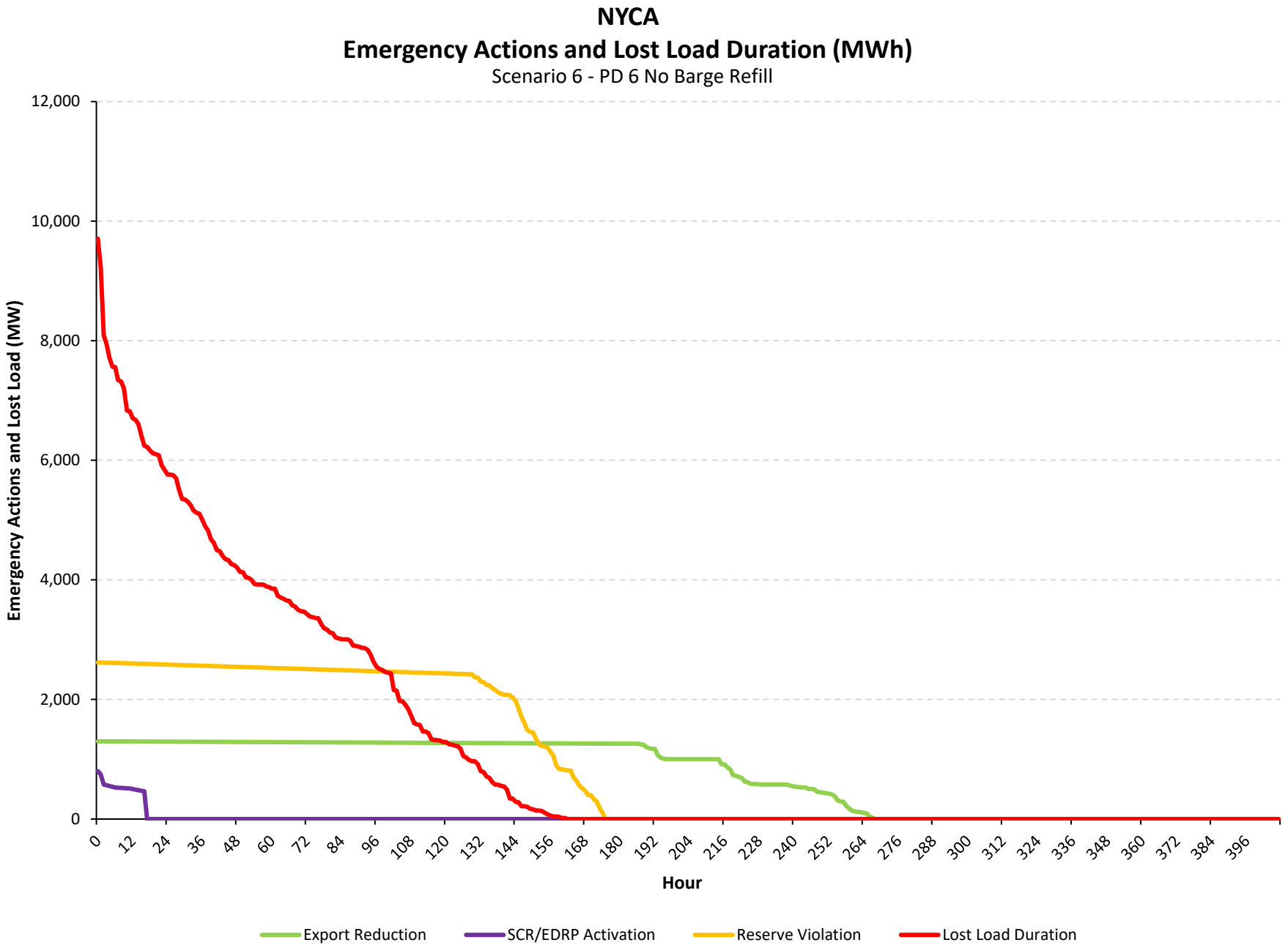
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 6 - PD 6 No Barge Refill

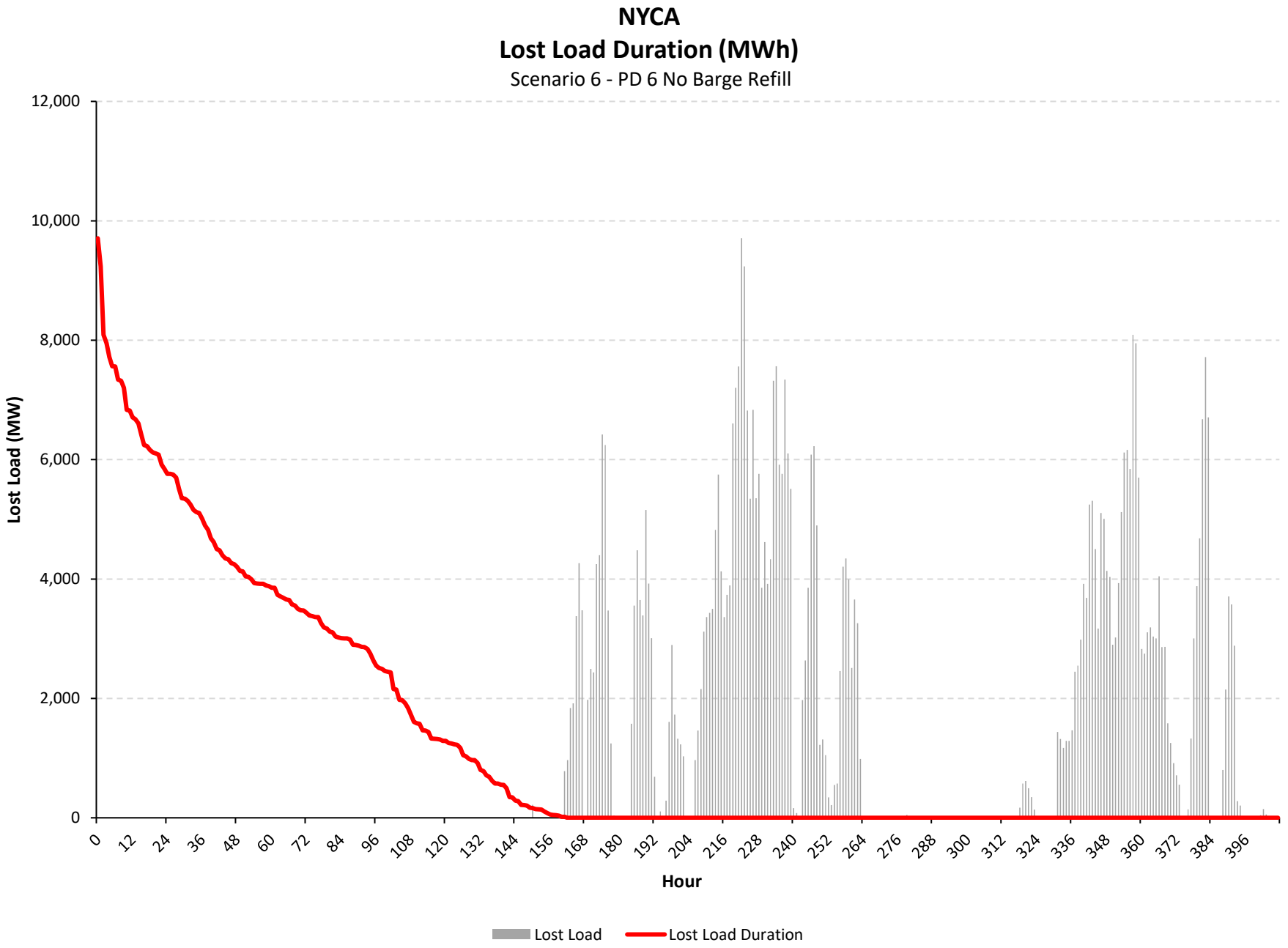



NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 6 - PD 6 No Barge Refill
Energy Stored (MWh)
2,000,000
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Zones A-E
Zone F
Zones G-I
Zone J
Zone K



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 6 - PD 6 No Barge Refill
Emergency Actions and Lost Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 6 - PD 6 No Barge Refill
Lost Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

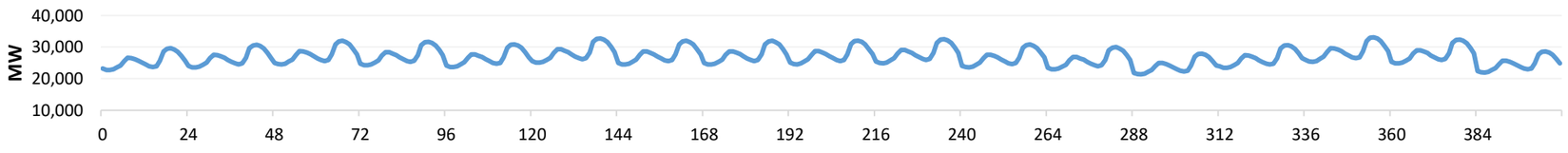
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 6 - PD 7 No Refill (Winter 2030/2031)

Hourly Results Summary

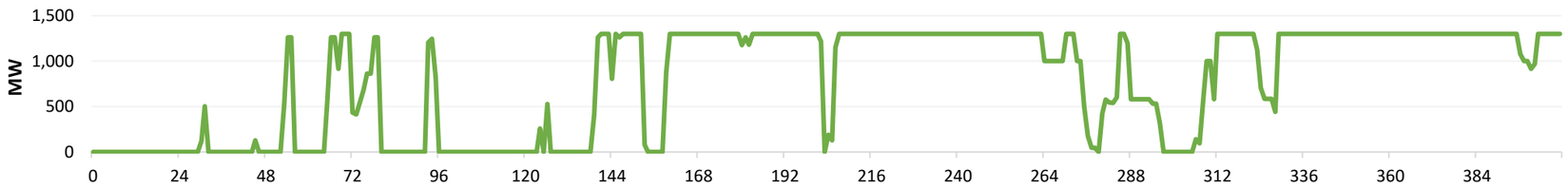
Case Name: Scenario 6 - PD 7 No Refill

Load During Modeling Period



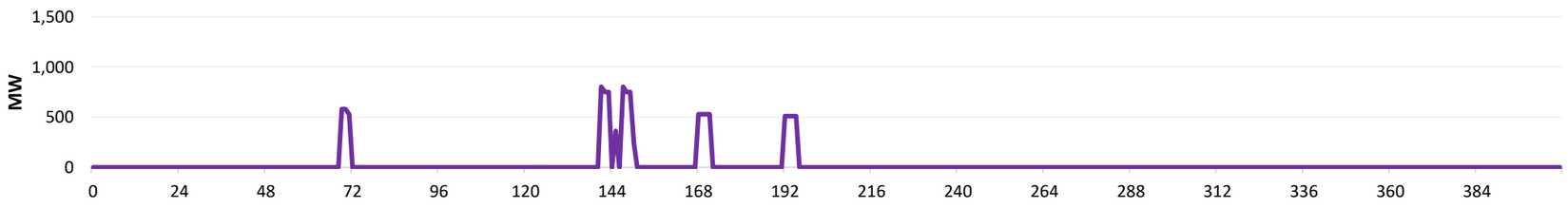
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	No Refill
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

Export to ISO-NE Reduction During Modeling Period



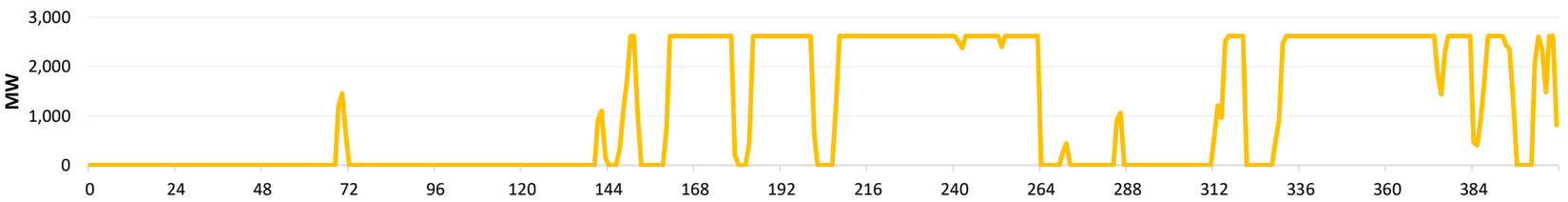
Export Reductions	
Total Hrs.	279
Total MWh	317,763
Avg. MW	778.8

SCR/EDRP Deployed During Modeling Period



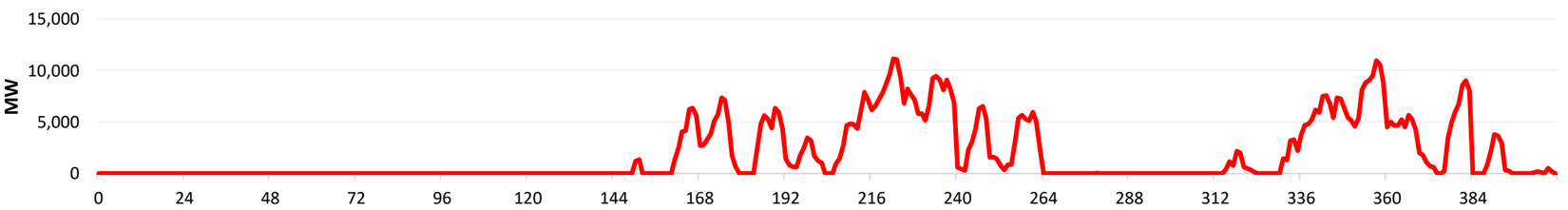
SCR Deployment	
Total Hrs.	19
Total MWh	11,039
Avg. MW	27.1

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	196
Total MWh	452,153
Avg. MW	1,108.2
First Hour with Viol.	69

Loss of Load During Modeling Period



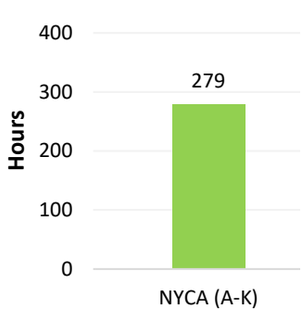
Loss of Load	
Total Hrs.	171
Total MWh	742,132
Avg. MW	1,819.0
First Hour with Losses	150

Full Period Results Summary

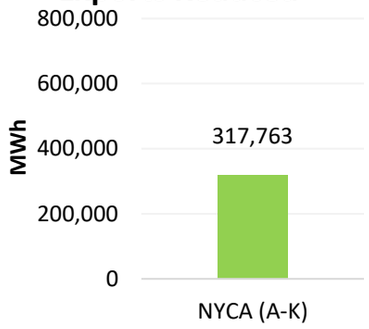
Case Name: Scenario 6 - PD 7 No Refill

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	No Refill
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

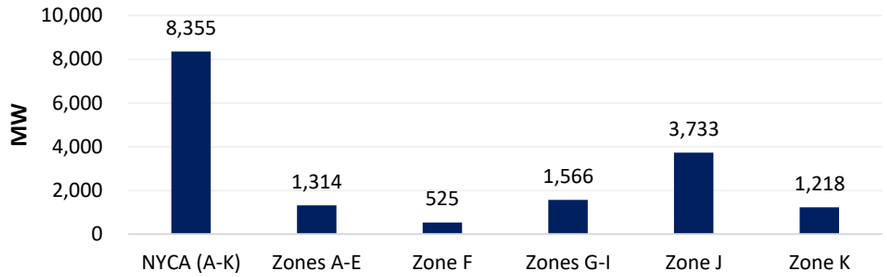
Hours Exports Reduced



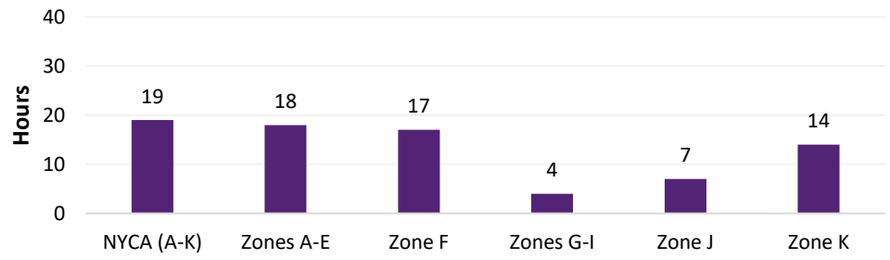
Total MWh of Exports Reduced



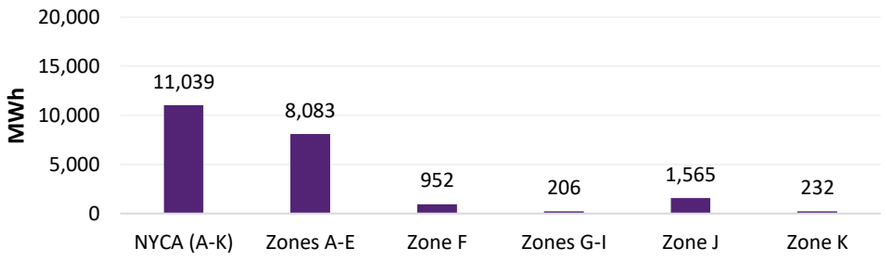
Average Capacity Not Available Due to Exhausted Fuel Inventory



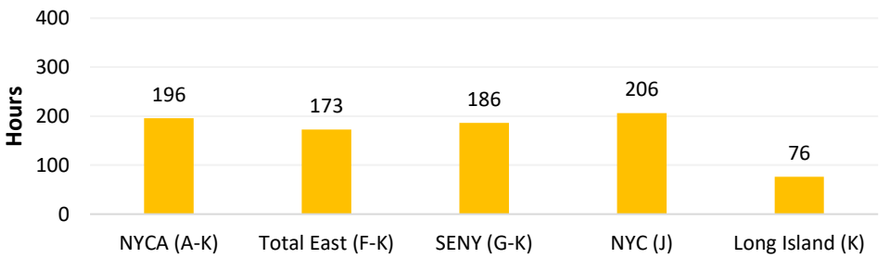
Hours SCR/EDRP Deployed



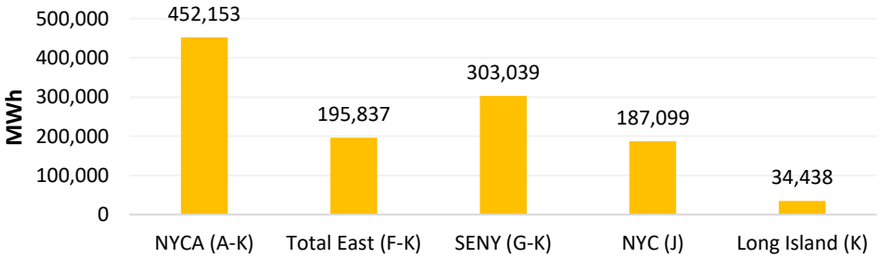
Total MWh SCR/EDRP Deployed



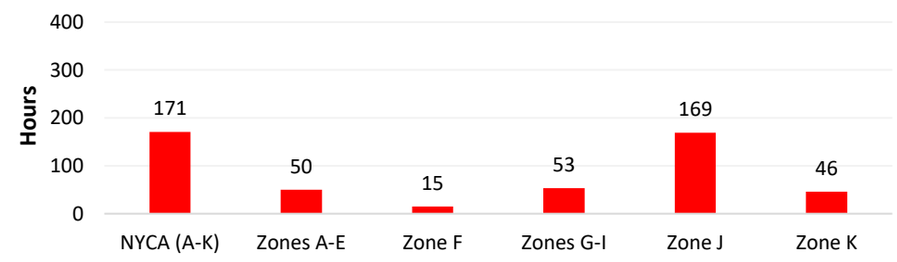
Hours with Reserve Violations



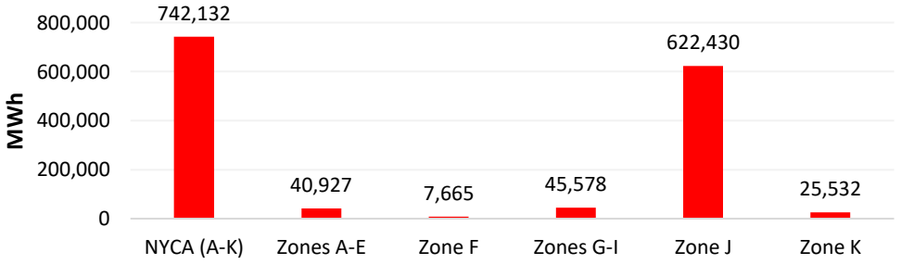
Total MWh of Reserve Violations



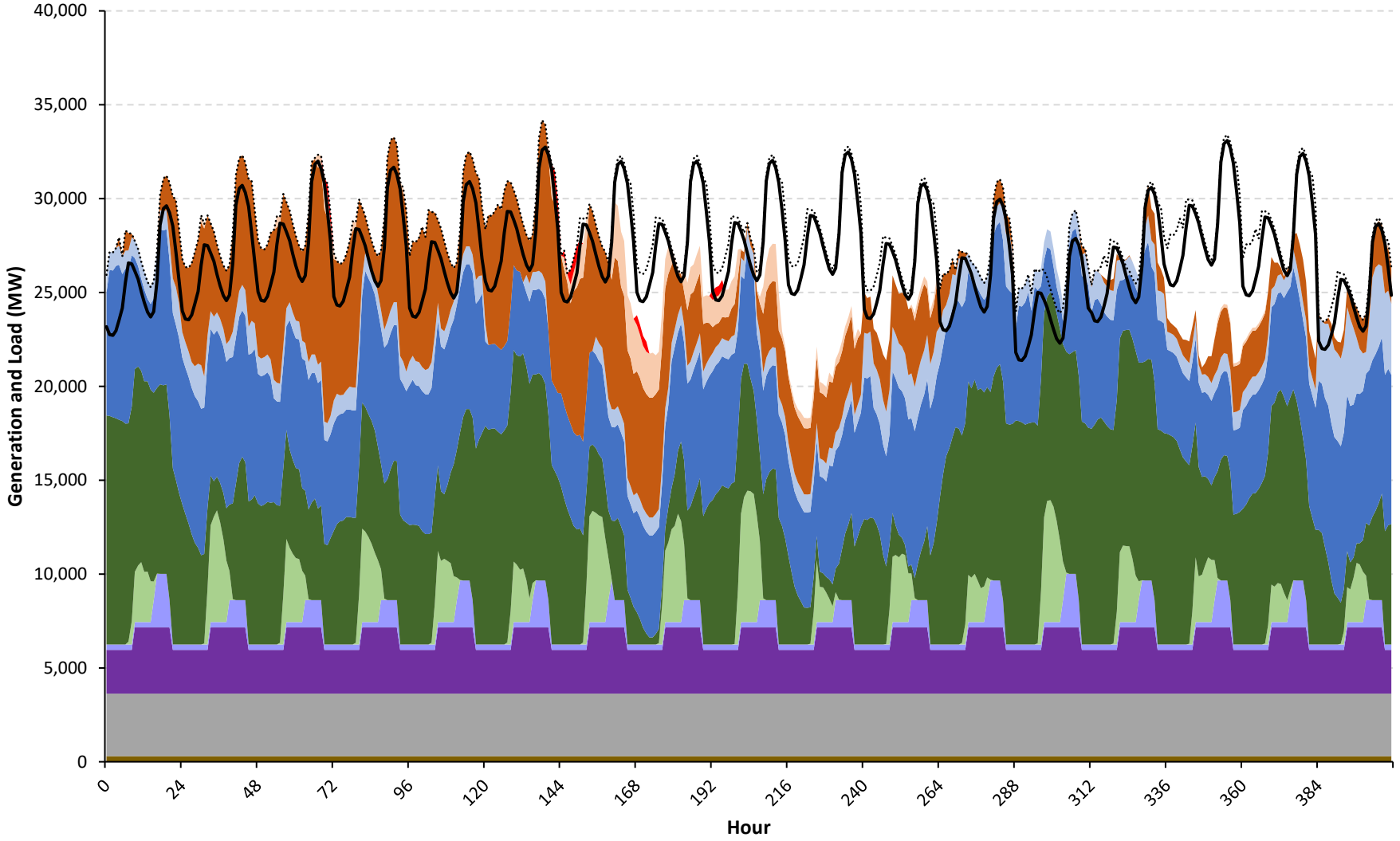
Hours with Loss of Load

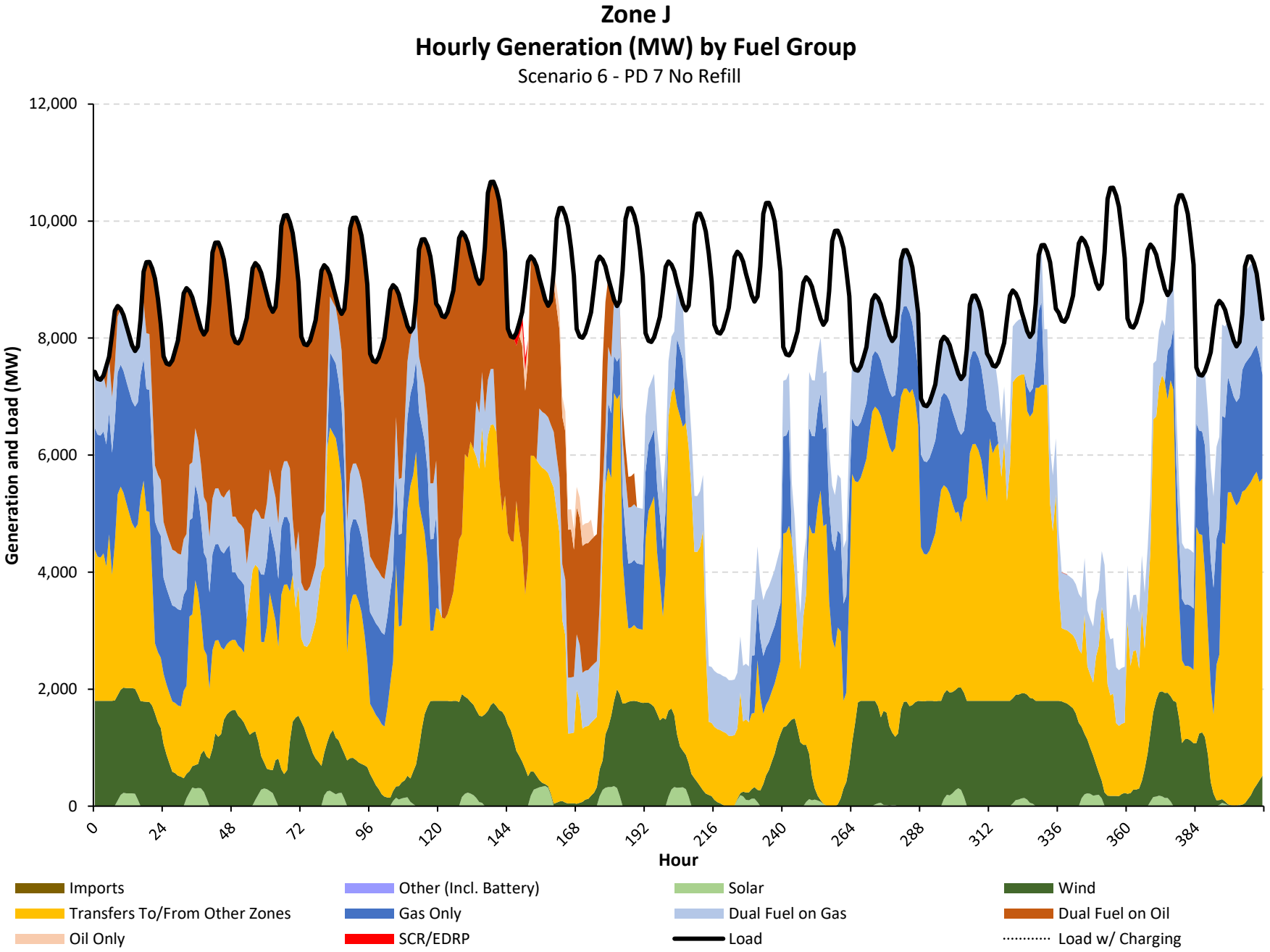


Total MWh of Lost Load

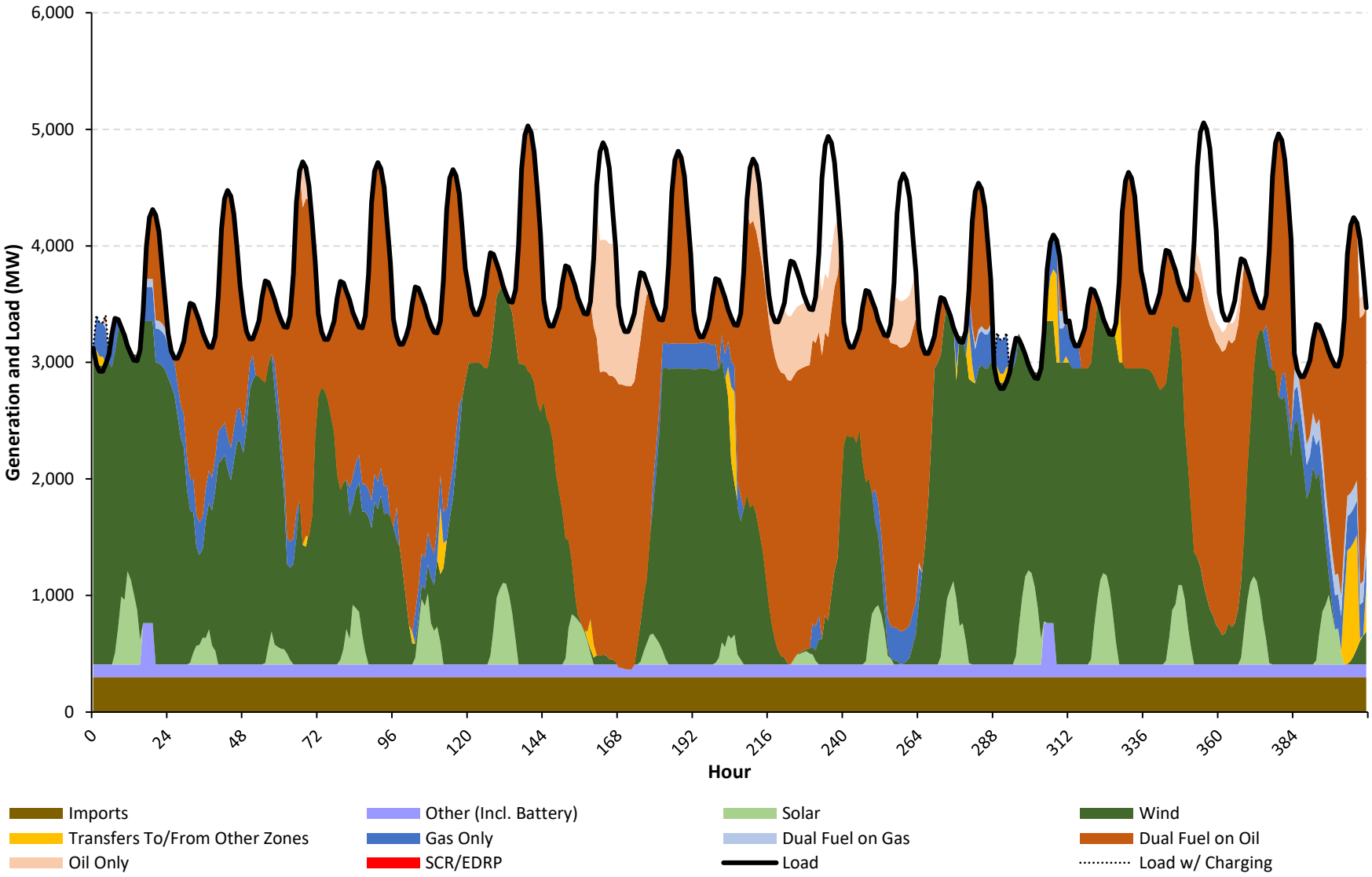


NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 6 - PD 7 No Refill




Zone J
Hourly Generation (MW) by Fuel Group
Scenario 6 - PD 7 No Refill
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

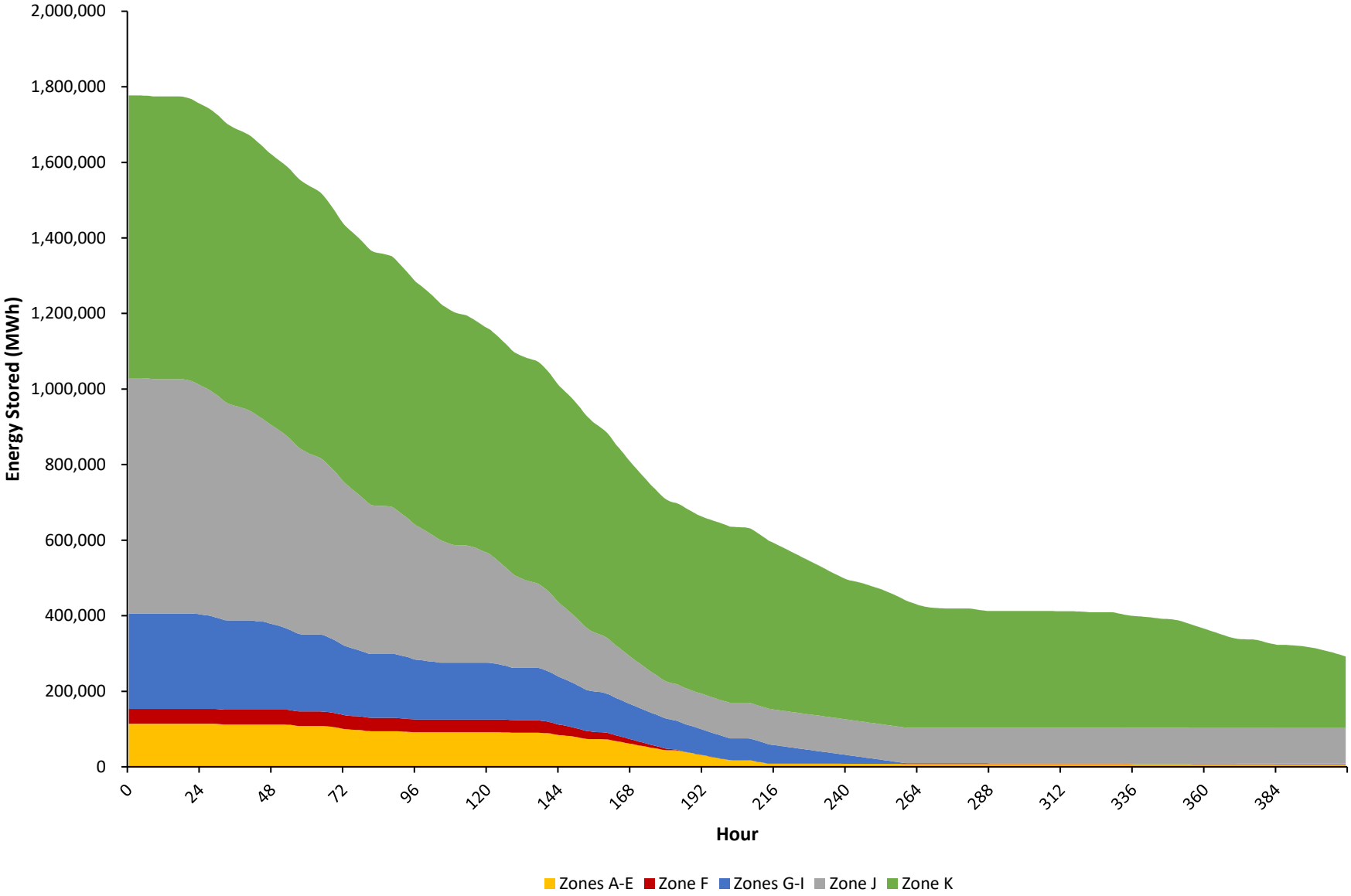
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 6 - PD 7 No Refill

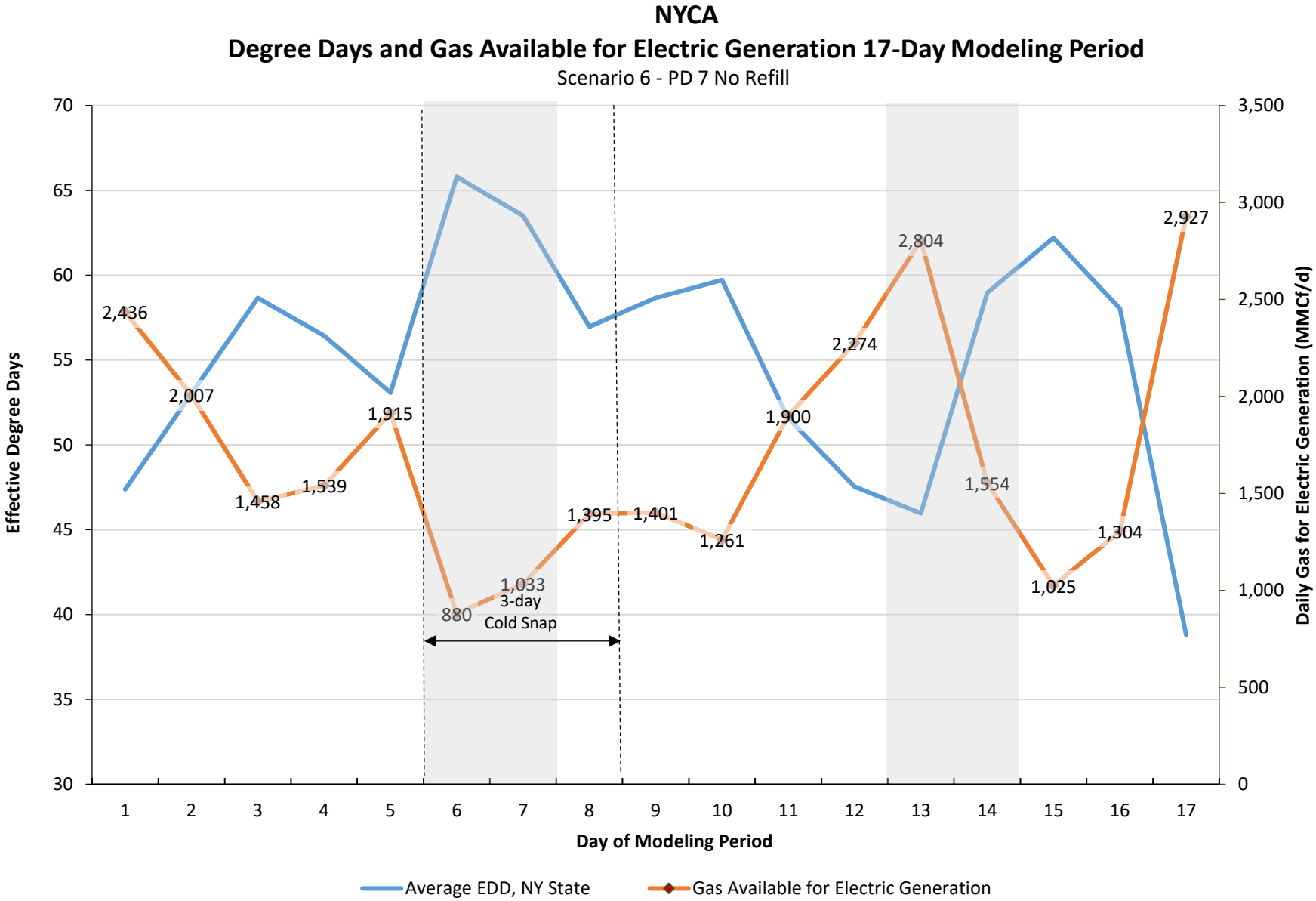


NYCA

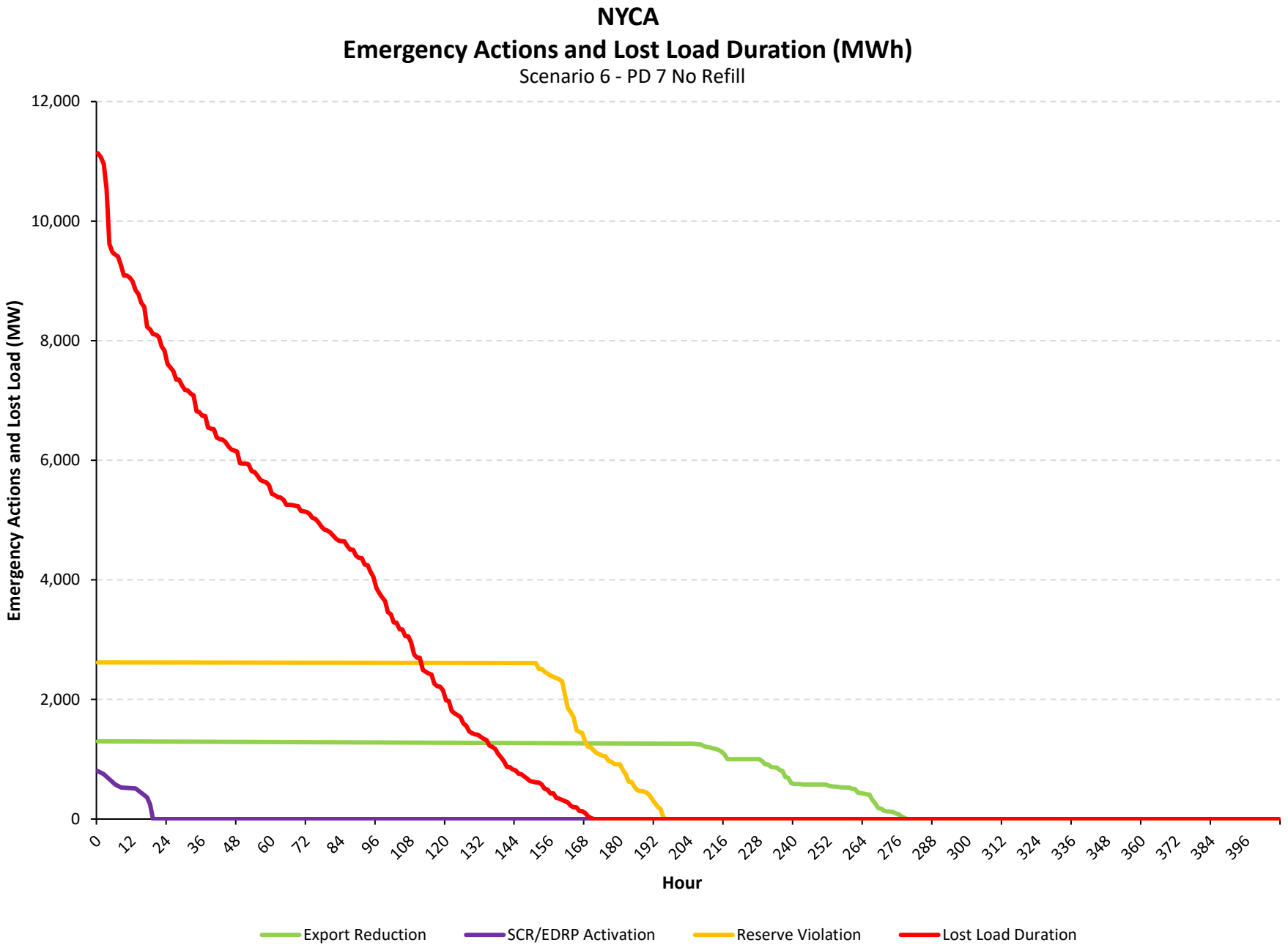
Quantity of Stored Fuel for Oil and Dual Fuel Units

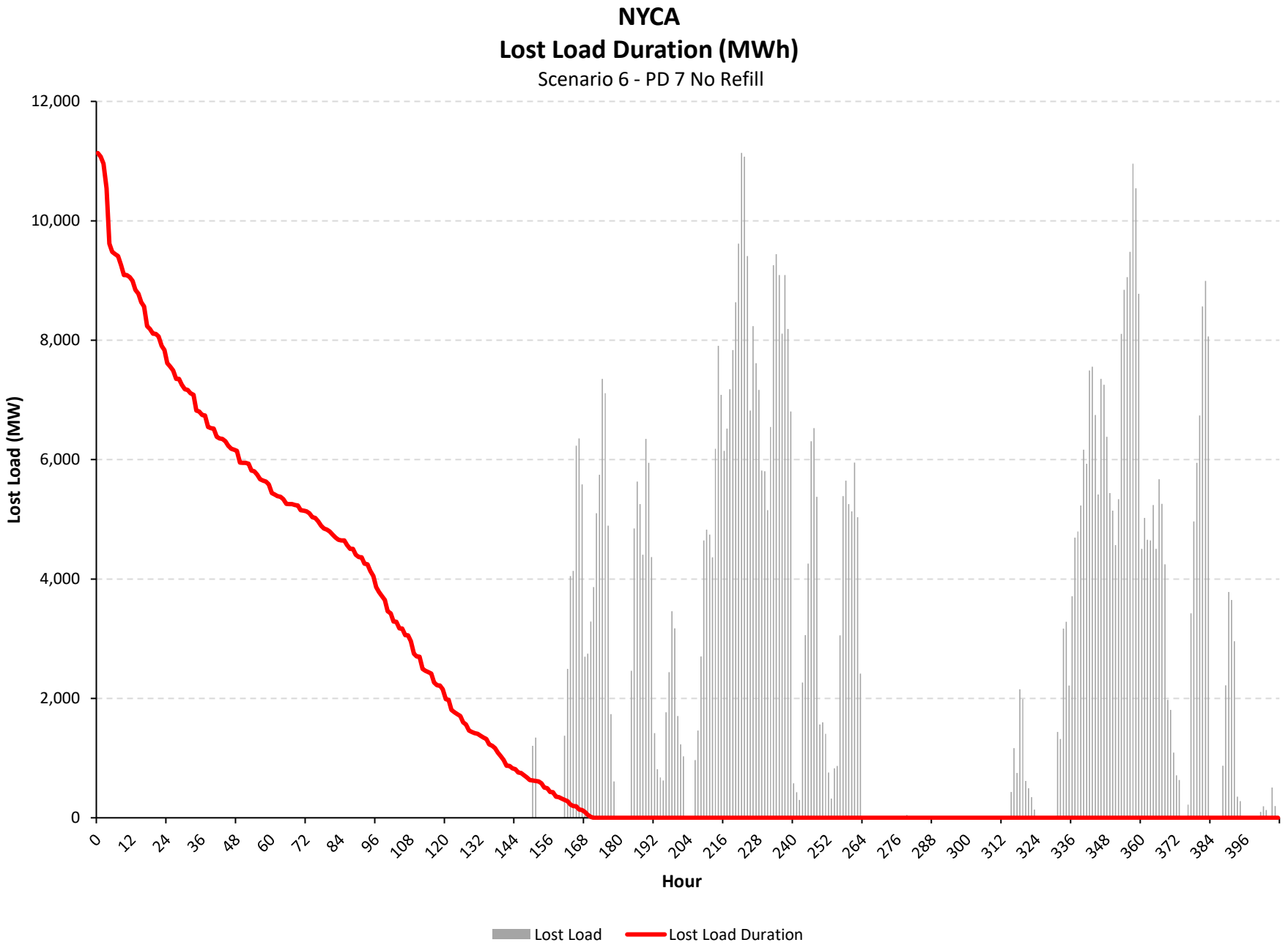
Scenario 6 - PD 7 No Refill





Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 6 - PD 7 No Refill
Emergency Actions and Lost Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 6 - PD 7 No Refill
Lost Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

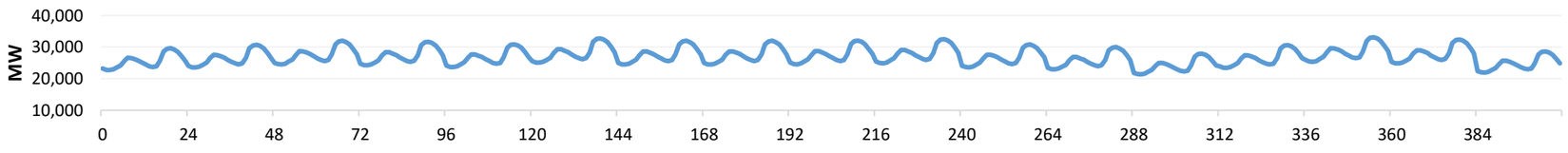
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 6 - PD 8 Non-Firm Gas Unavailable (F-K) (Winter 2030/2031)

Hourly Results Summary

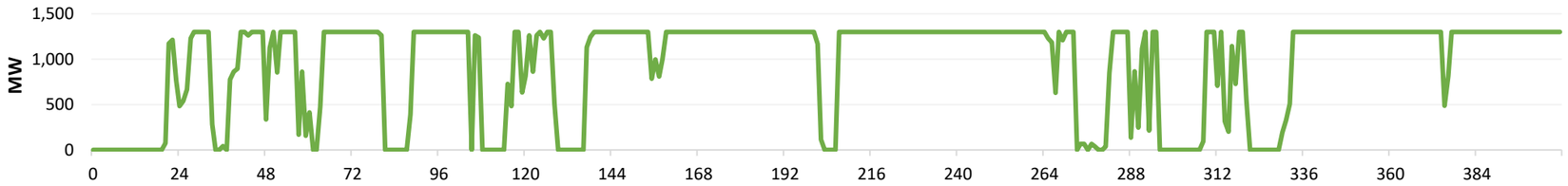
Case Name: Scenario 6 - PD 8 Non-Firm Gas Unavailable (F-K)

Load During Modeling Period



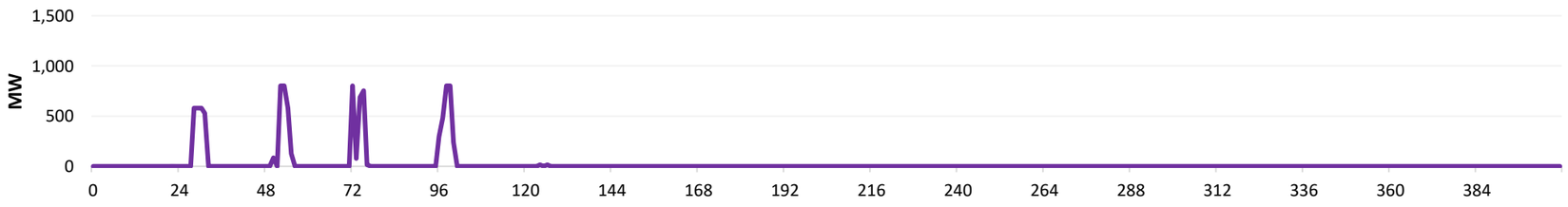
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	F-K
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

Export to ISO-NE Reduction During Modeling Period



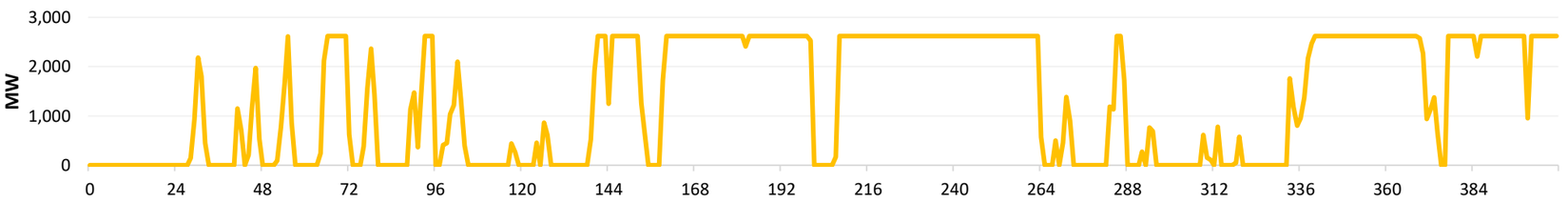
Export Reductions	
Total Hrs.	331
Total MWh	387,167
Avg. MW	948.9

SCR/EDRP Deployed During Modeling Period



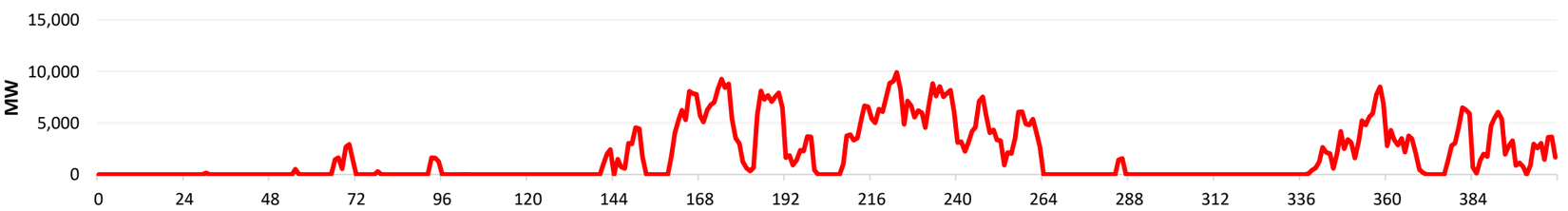
SCR Deployment	
Total Hrs.	21
Total MWh	9,648
Avg. MW	23.6

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	255
Total MWh	545,643
Avg. MW	1,337.4
First Hour with Viol.	28

Loss of Load During Modeling Period



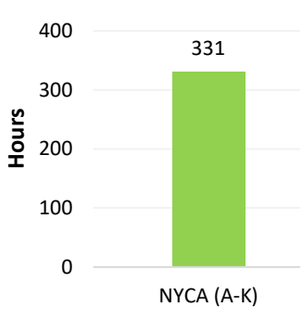
Loss of Load	
Total Hrs.	187
Total MWh	739,326
Avg. MW	1,812.1
First Hour with Losses	30

Full Period Results Summary

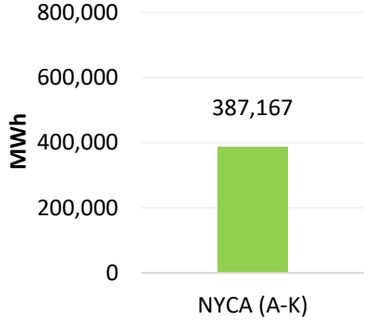
Case Name: Scenario 6 - PD 8 Non-Firm Gas Unavailable (F-K)

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	F-K
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

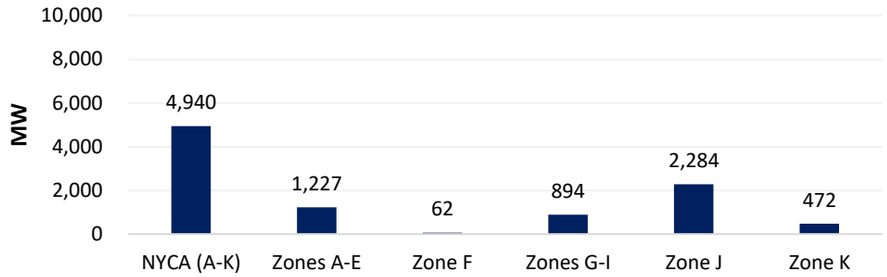
Hours Exports Reduced



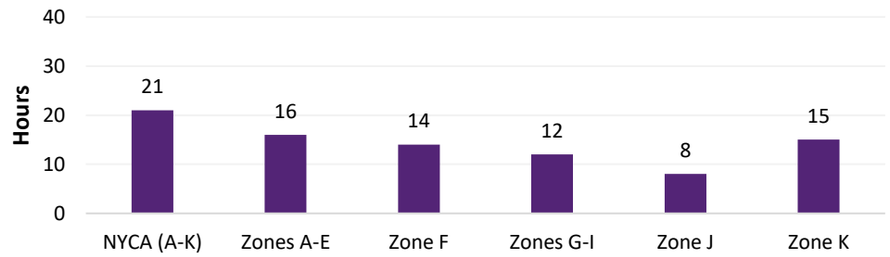
Total MWh of Exports Reduced



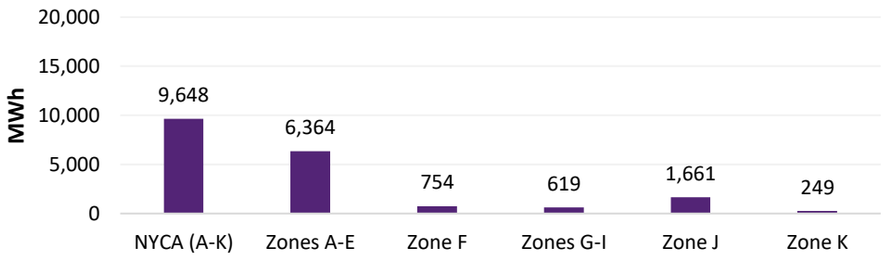
Average Capacity Not Available Due to Exhausted Fuel Inventory



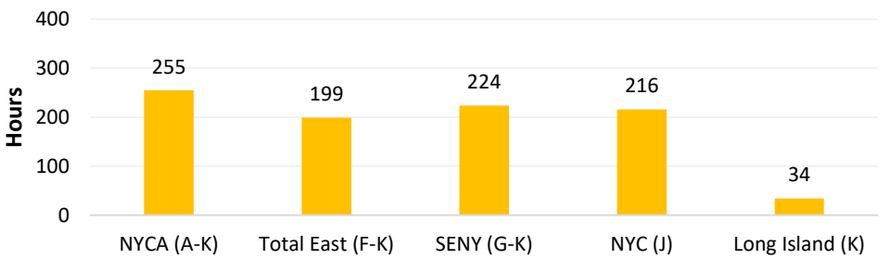
Hours SCR/EDRP Deployed



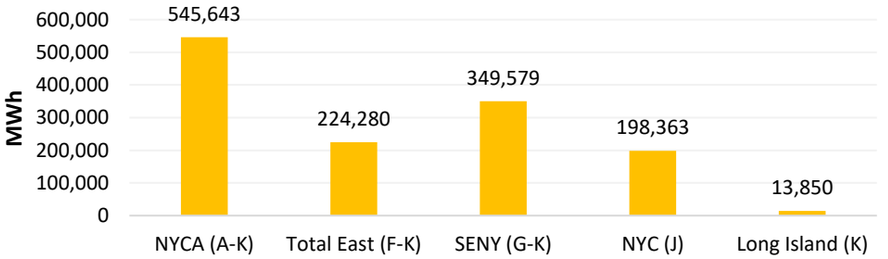
Total MWh SCR/EDRP Deployed



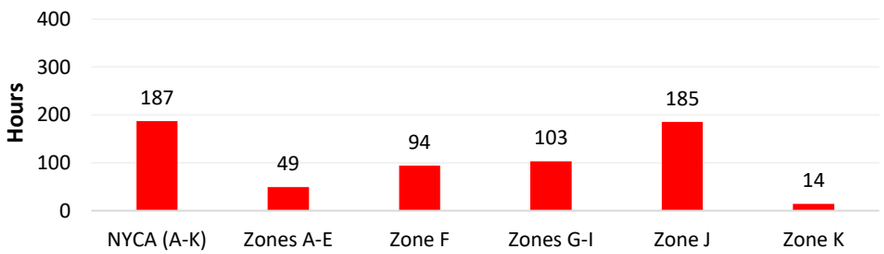
Hours with Reserve Violations



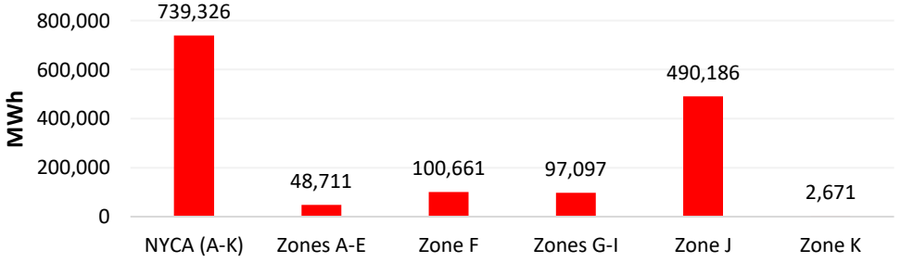
Total MWh of Reserve Violations

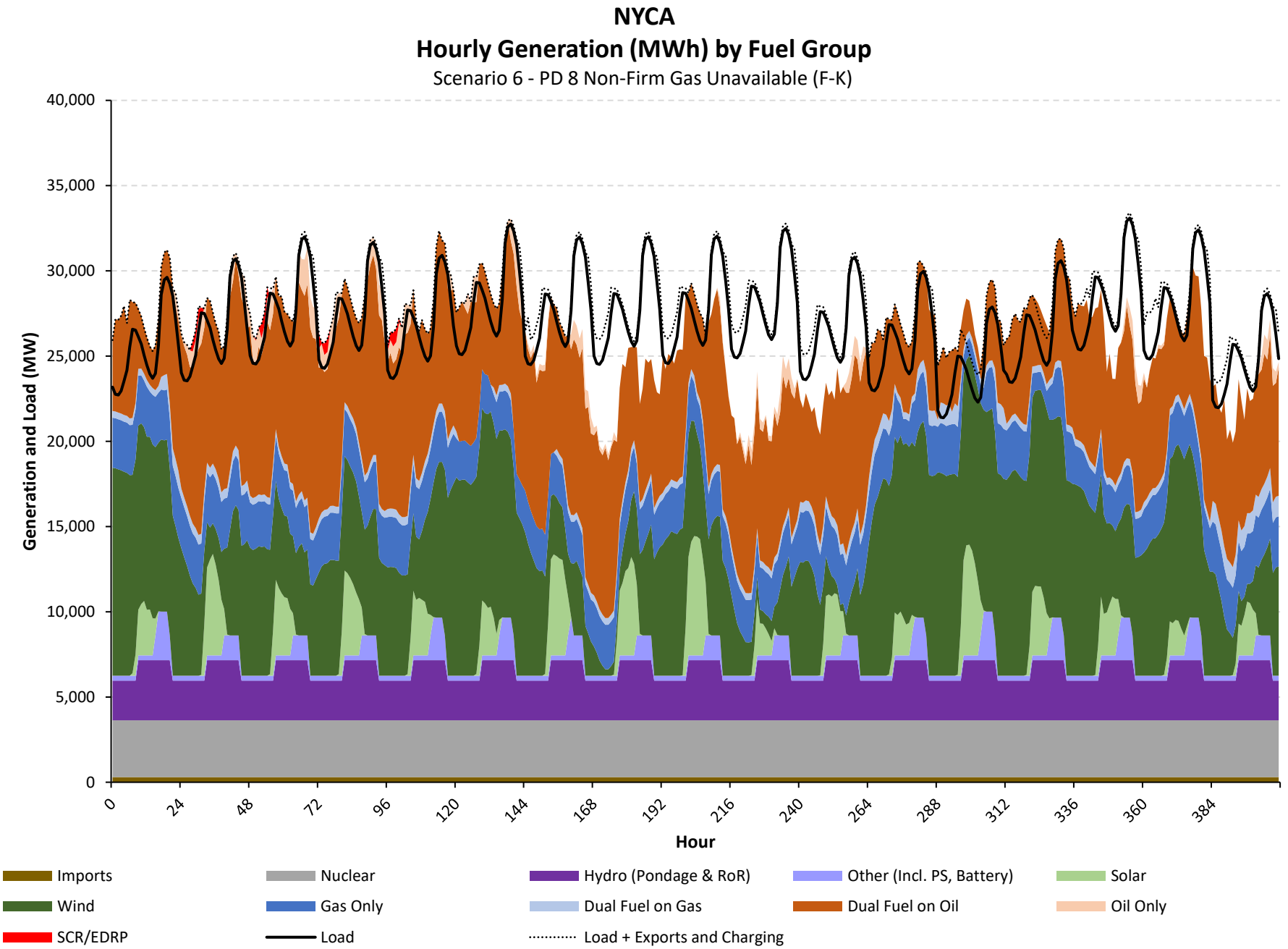


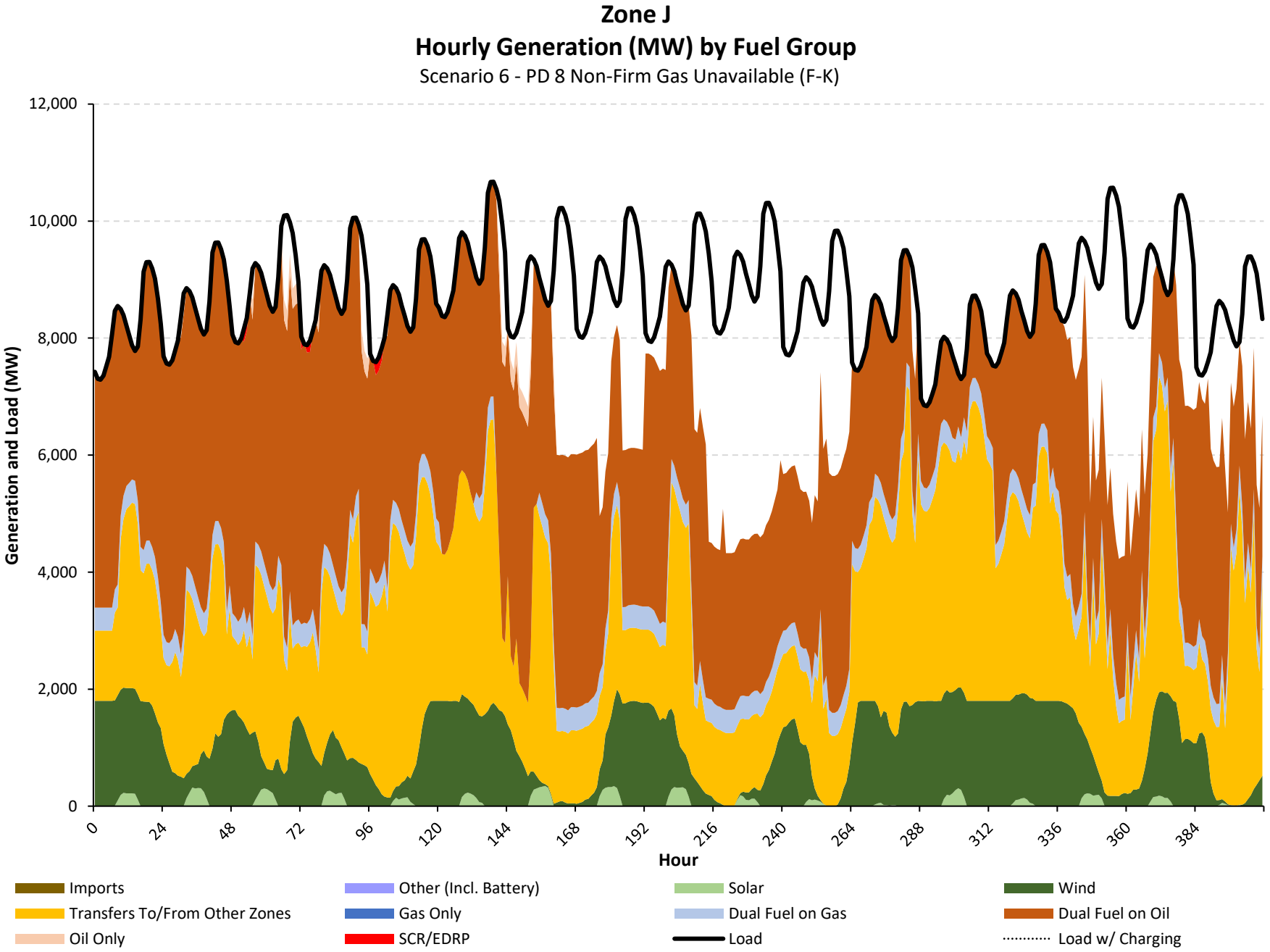
Hours with Loss of Load



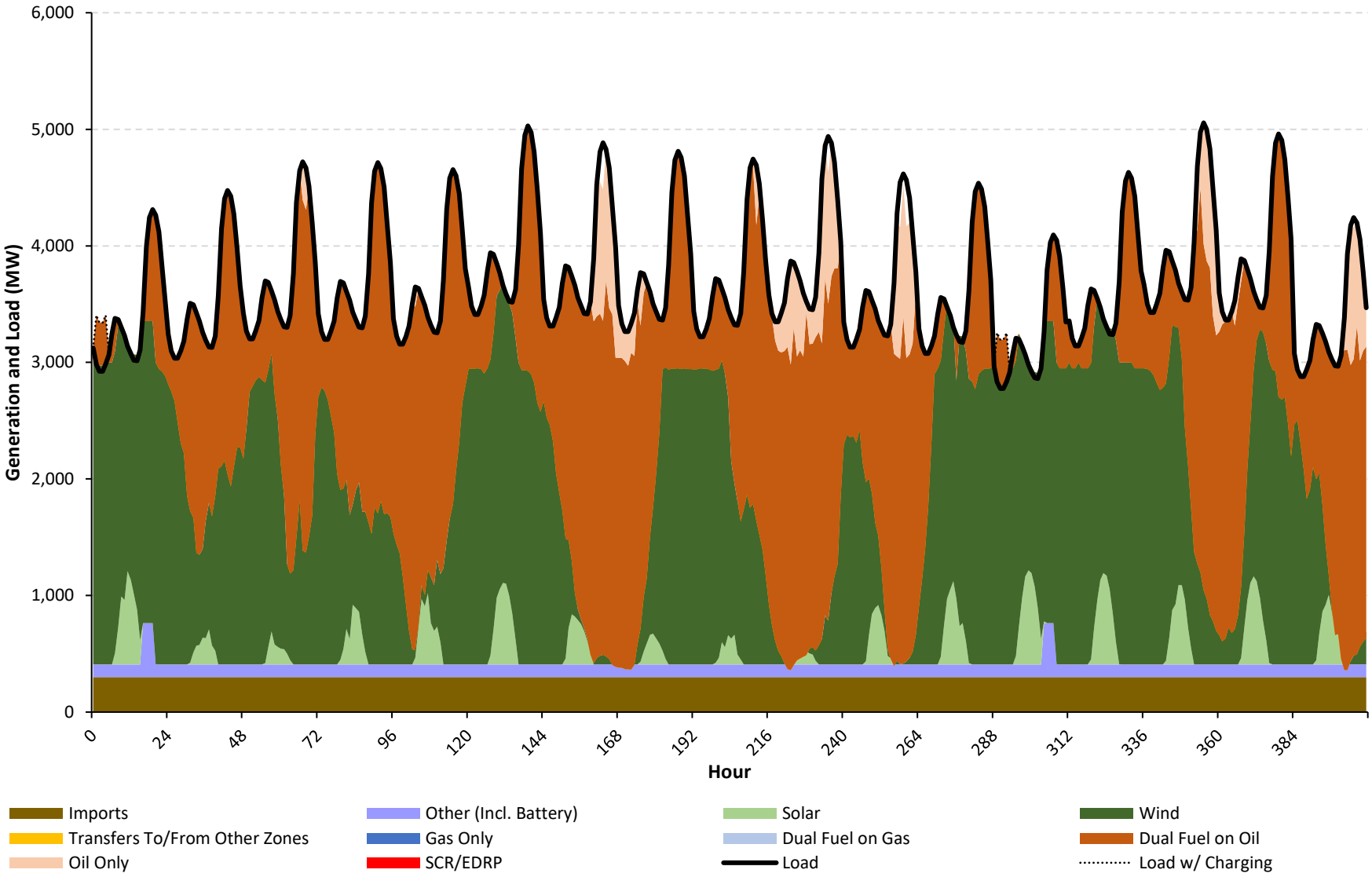
Total MWh of Lost Load




NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 6 - PD 8 Non-Firm Gas Unavailable (F-K)
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 6 - PD 8 Non-Firm Gas Unavailable (F-K)
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

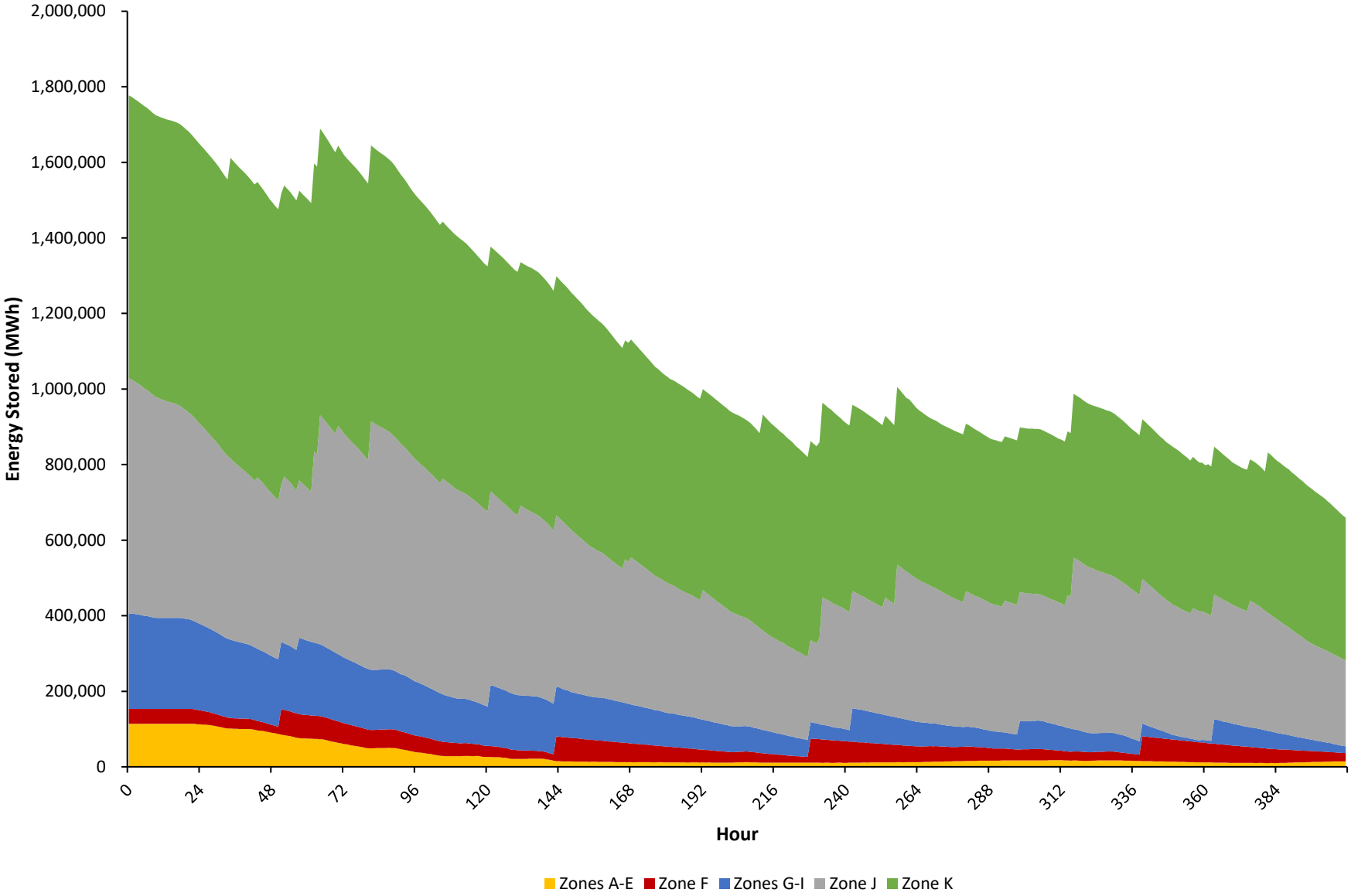
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 6 - PD 8 Non-Firm Gas Unavailable (F-K)



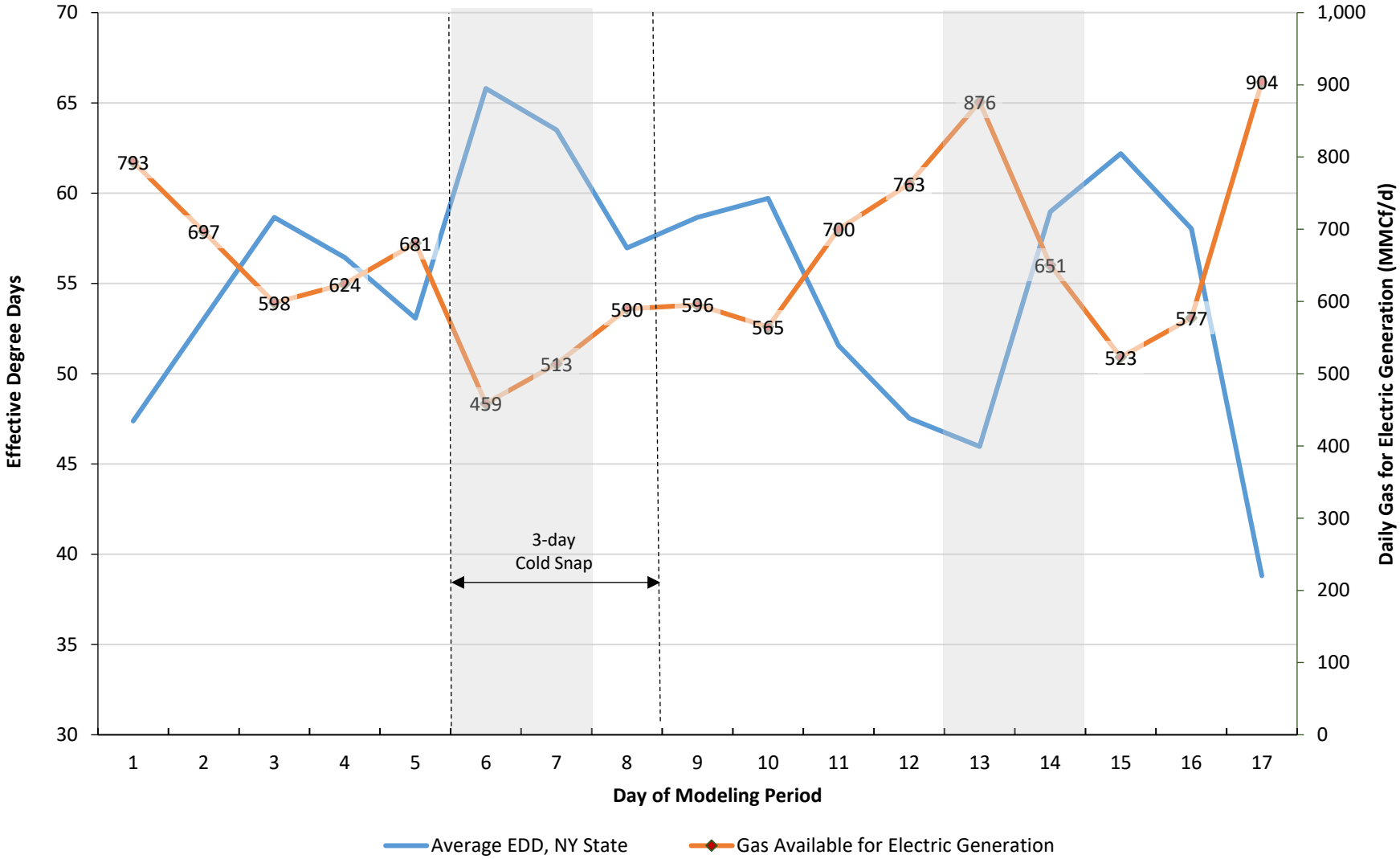
NYCA

Quantity of Stored Fuel for Oil and Dual Fuel Units

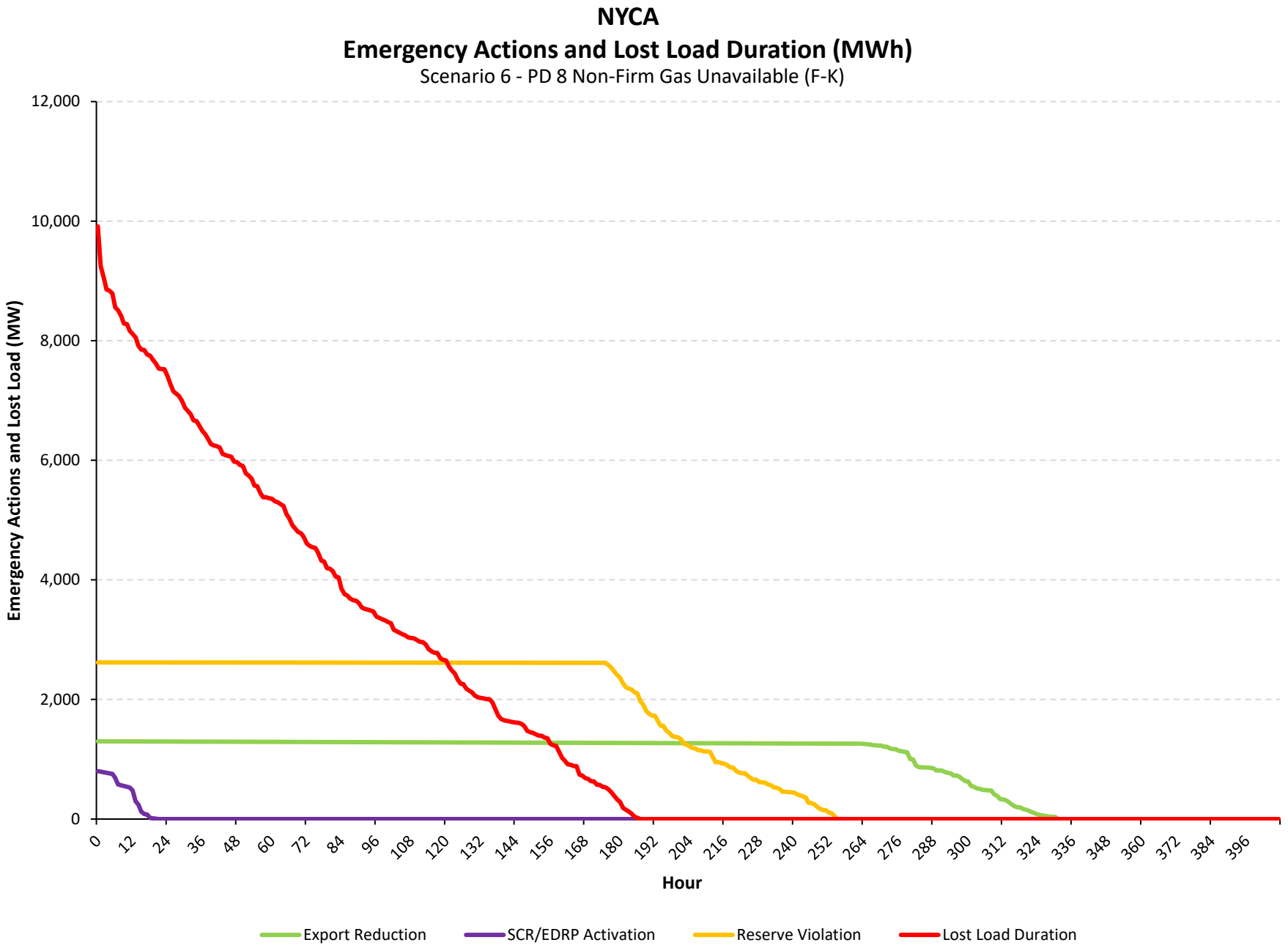
Scenario 6 - PD 8 Non-Firm Gas Unavailable (F-K)

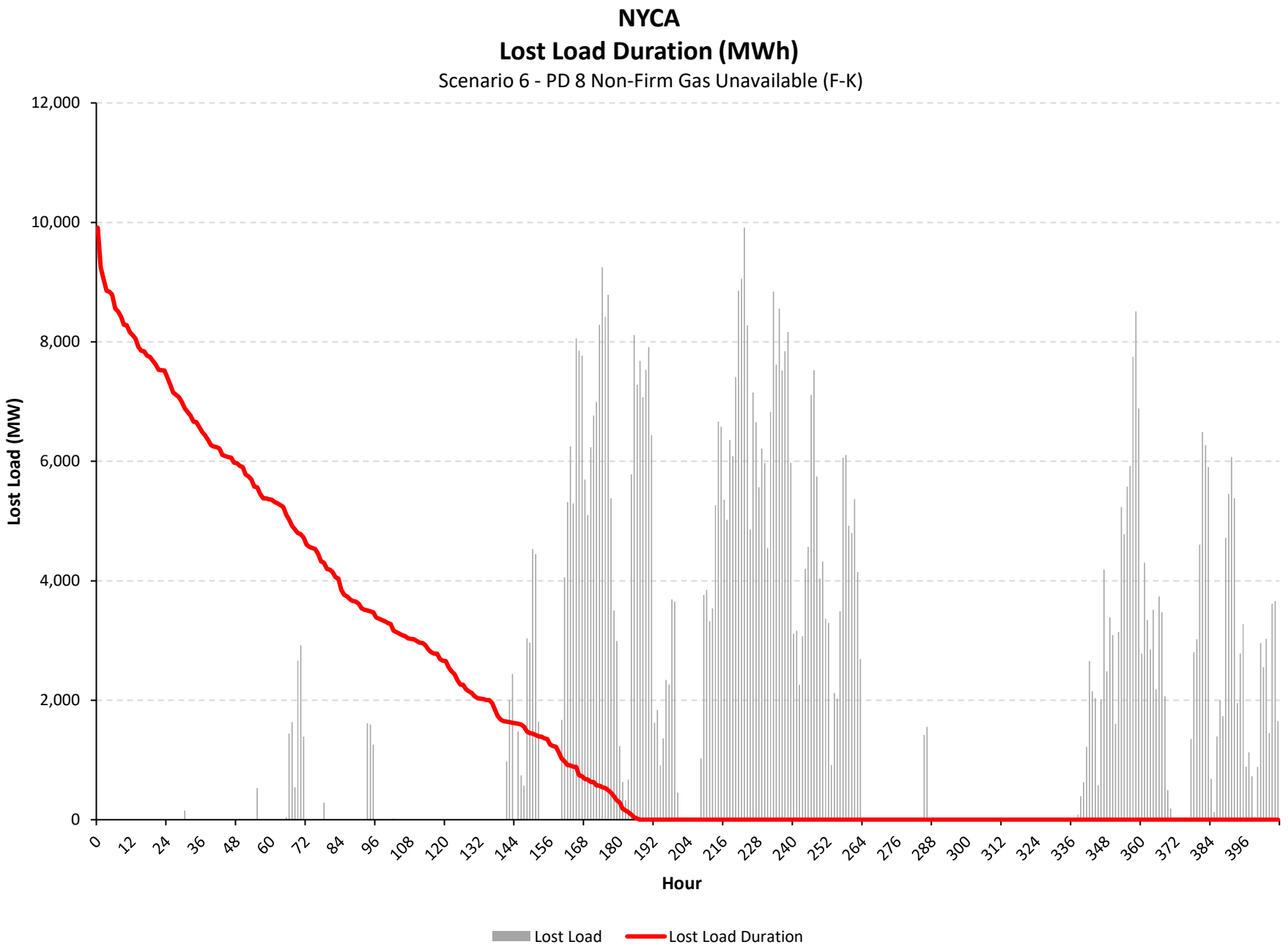


NYCA
Degree Days and Gas Available for Electric Generation 17-Day Modeling Period
Scenario 6 - PD 8 Non-Firm Gas Unavailable (F-K)



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 6 - PD 8 Non-Firm Gas Unavailable (F-K)
Emergency Actions and Lost Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 6 - PD 8 Non-Firm Gas Unavailable (F-K)
Lost Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

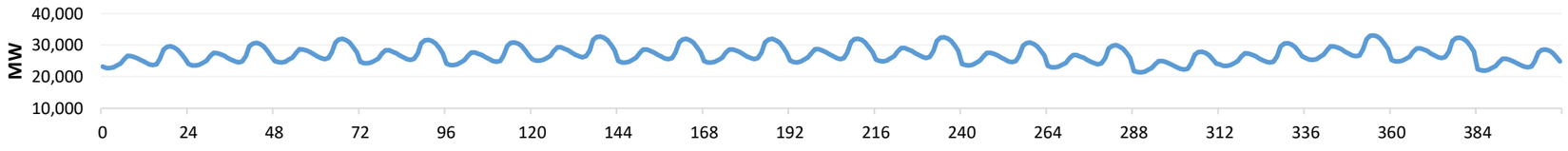
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 6 - PD 9 Non-Firm Gas Unavailable (NYCA) (Winter 2030/2031)

Hourly Results Summary

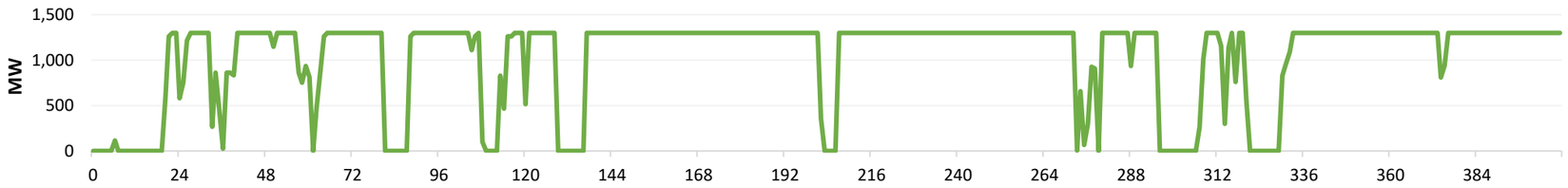
Case Name: Scenario 6 - PD 9 Non-Firm Gas Unavailable (NYCA)

Load During Modeling Period



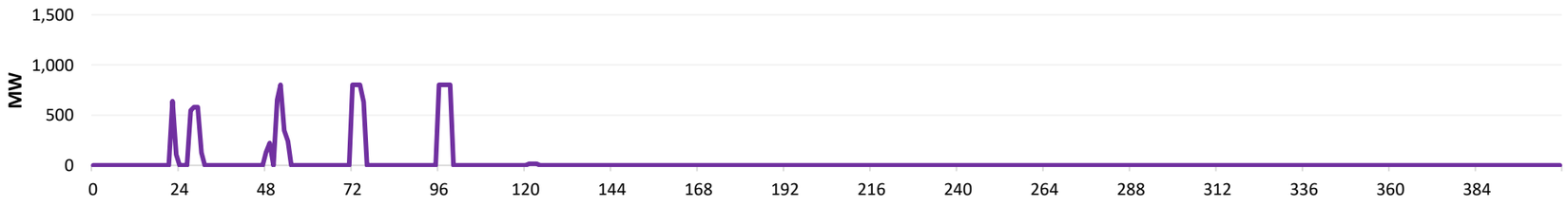
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	NYISO
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

Export to ISO-NE Reduction During Modeling Period



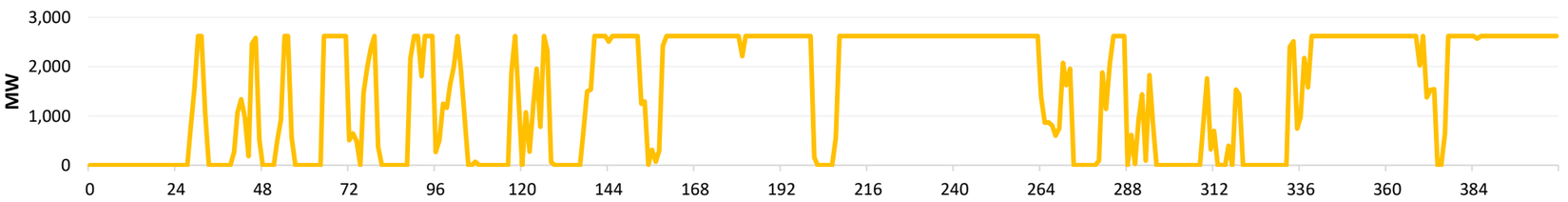
Export Reductions	
Total Hrs.	344
Total MWh	420,009
Avg. MW	1,029.4

SCR/EDRP Deployed During Modeling Period



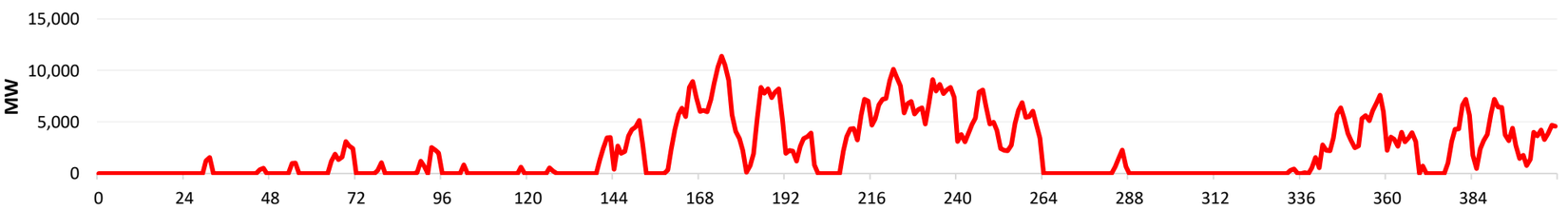
SCR Deployment	
Total Hrs.	23
Total MWh	11,265
Avg. MW	27.6

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	287
Total MWh	616,586
Avg. MW	1,511.2
First Hour with Viol.	28

Loss of Load During Modeling Period



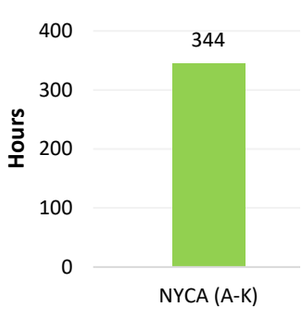
Loss of Load	
Total Hrs.	205
Total MWh	858,923
Avg. MW	2,105.2
First Hour with Losses	30

Full Period Results Summary

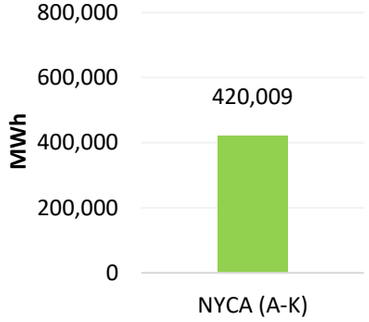
Case Name: Scenario 6 - PD 9 Non-Firm Gas Unavailable (NYCA)

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	NYISO
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

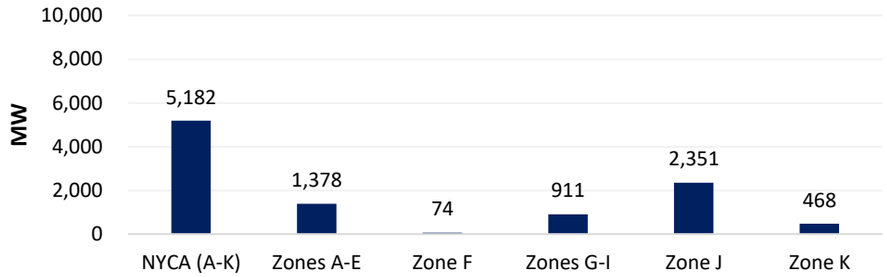
Hours Exports Reduced



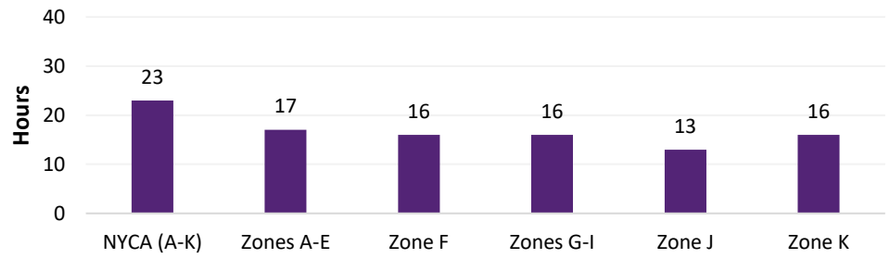
Total MWh of Exports Reduced



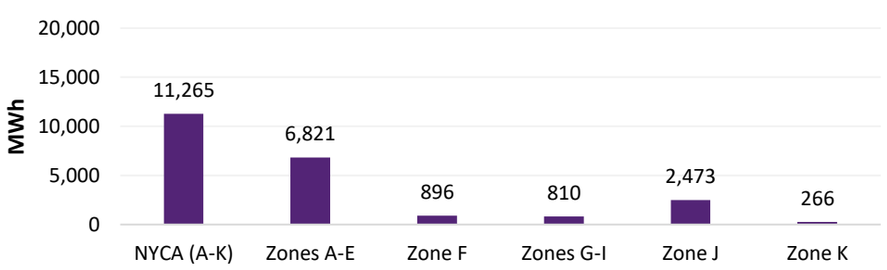
Average Capacity Not Available Due to Exhausted Fuel Inventory



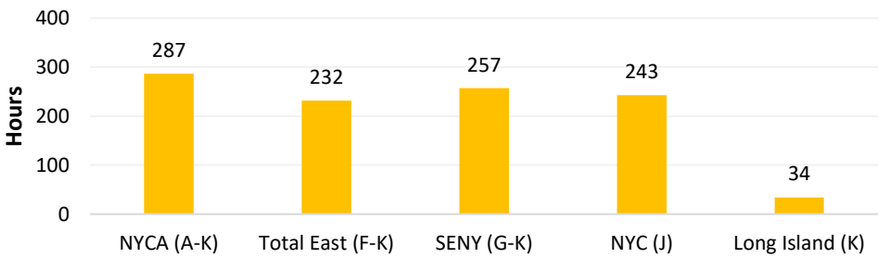
Hours SCR/EDRP Deployed



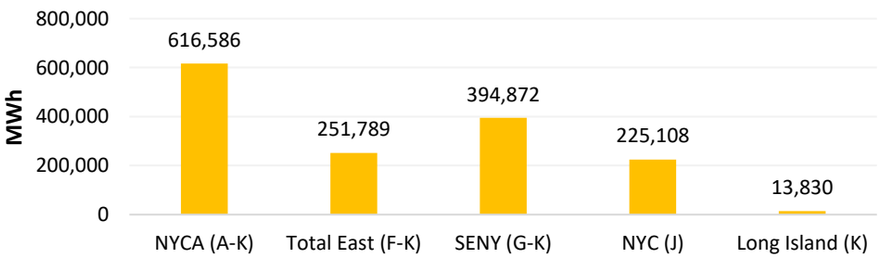
Total MWh SCR/EDRP Deployed



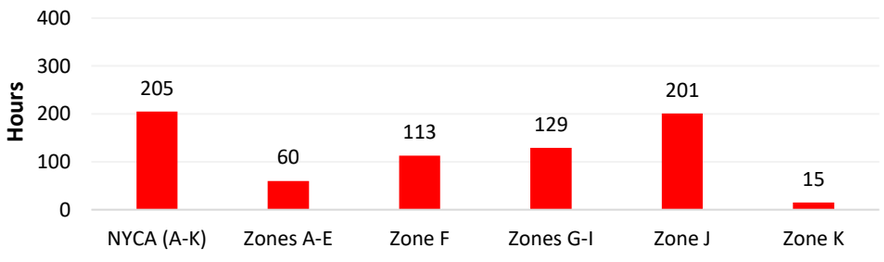
Hours with Reserve Violations



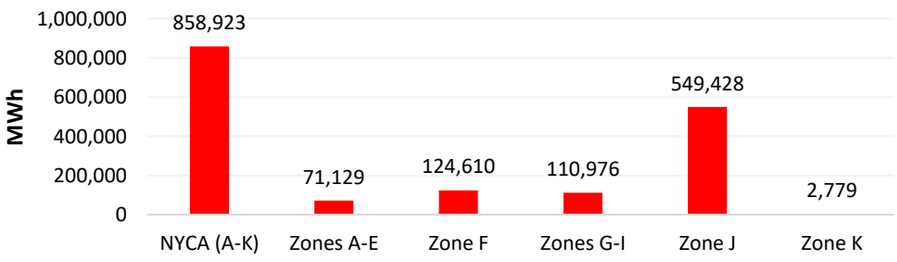
Total MWh of Reserve Violations

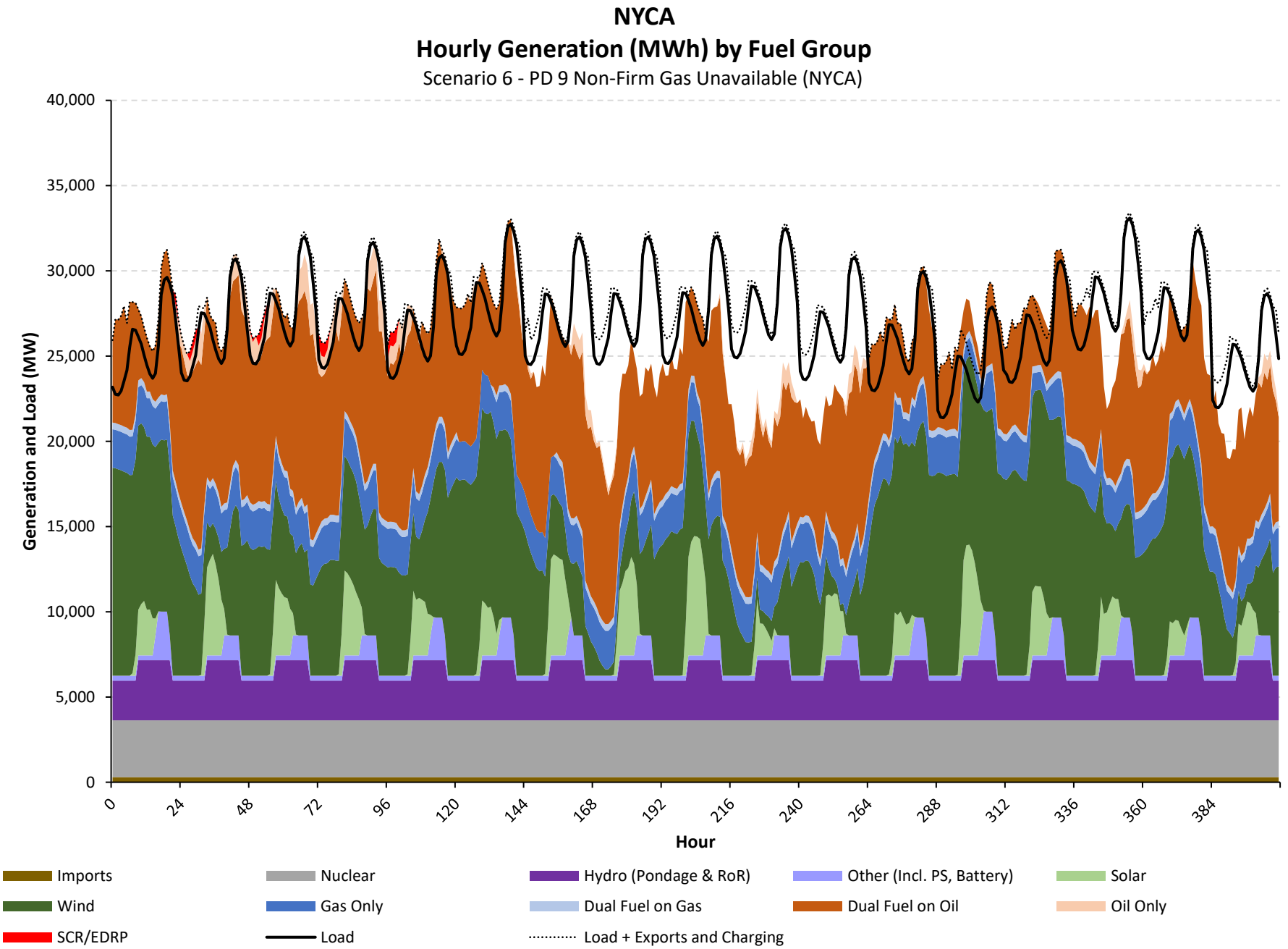


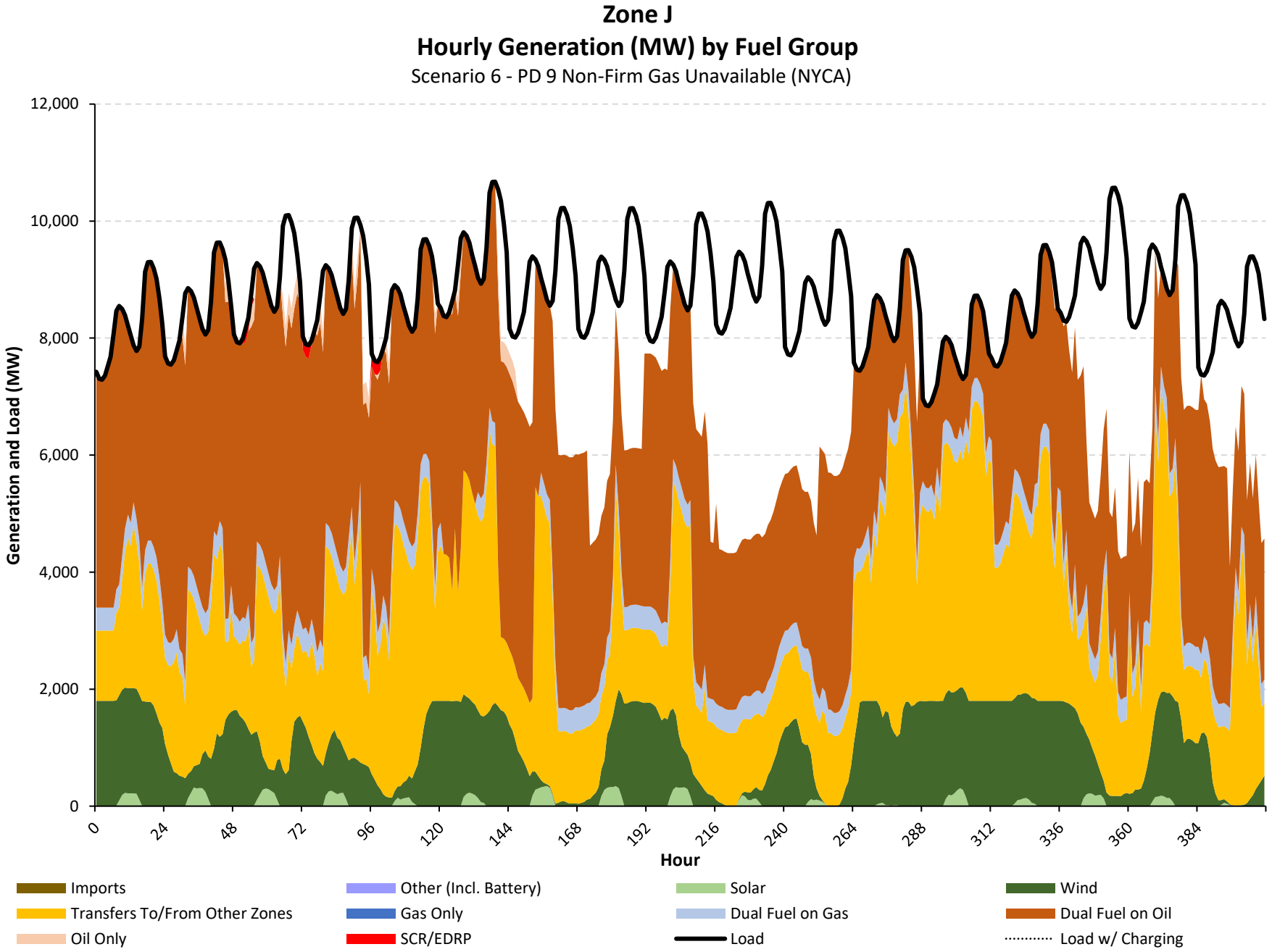
Hours with Loss of Load



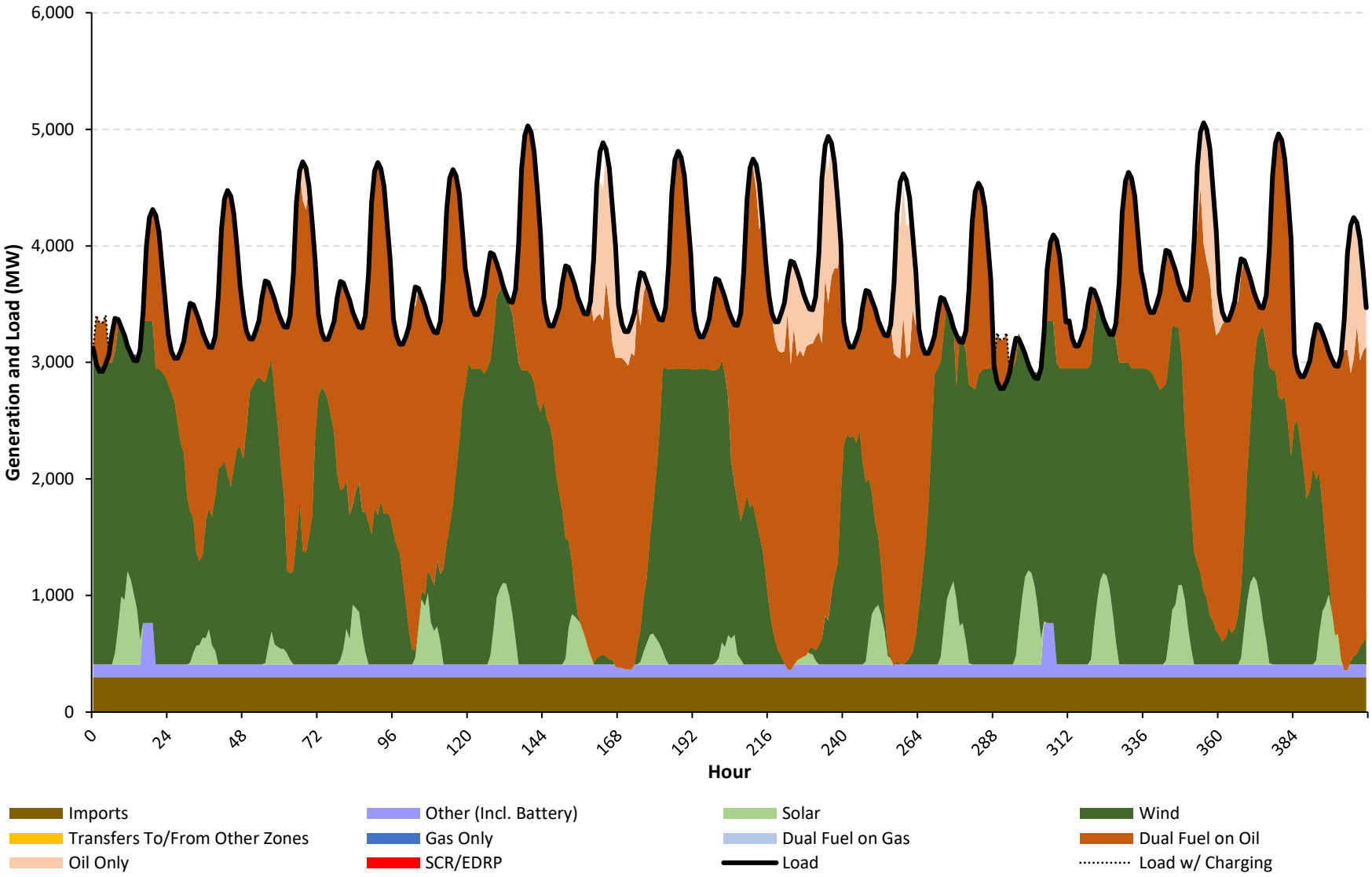
Total MWh of Lost Load




NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 6 - PD 9 Non-Firm Gas Unavailable (NYCA)
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 6 - PD 9 Non-Firm Gas Unavailable (NYCA)
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

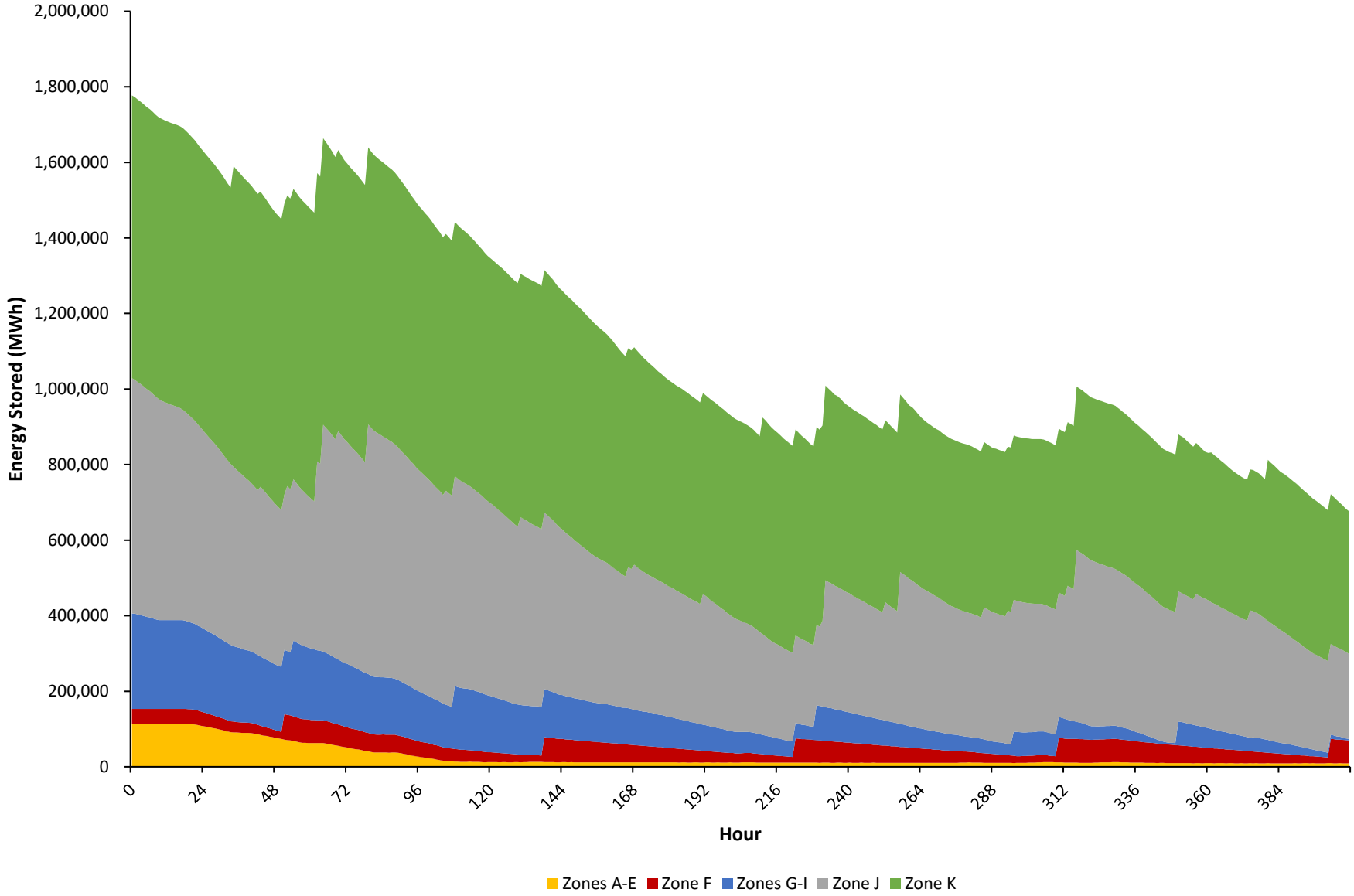
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 6 - PD 9 Non-Firm Gas Unavailable (NYCA)

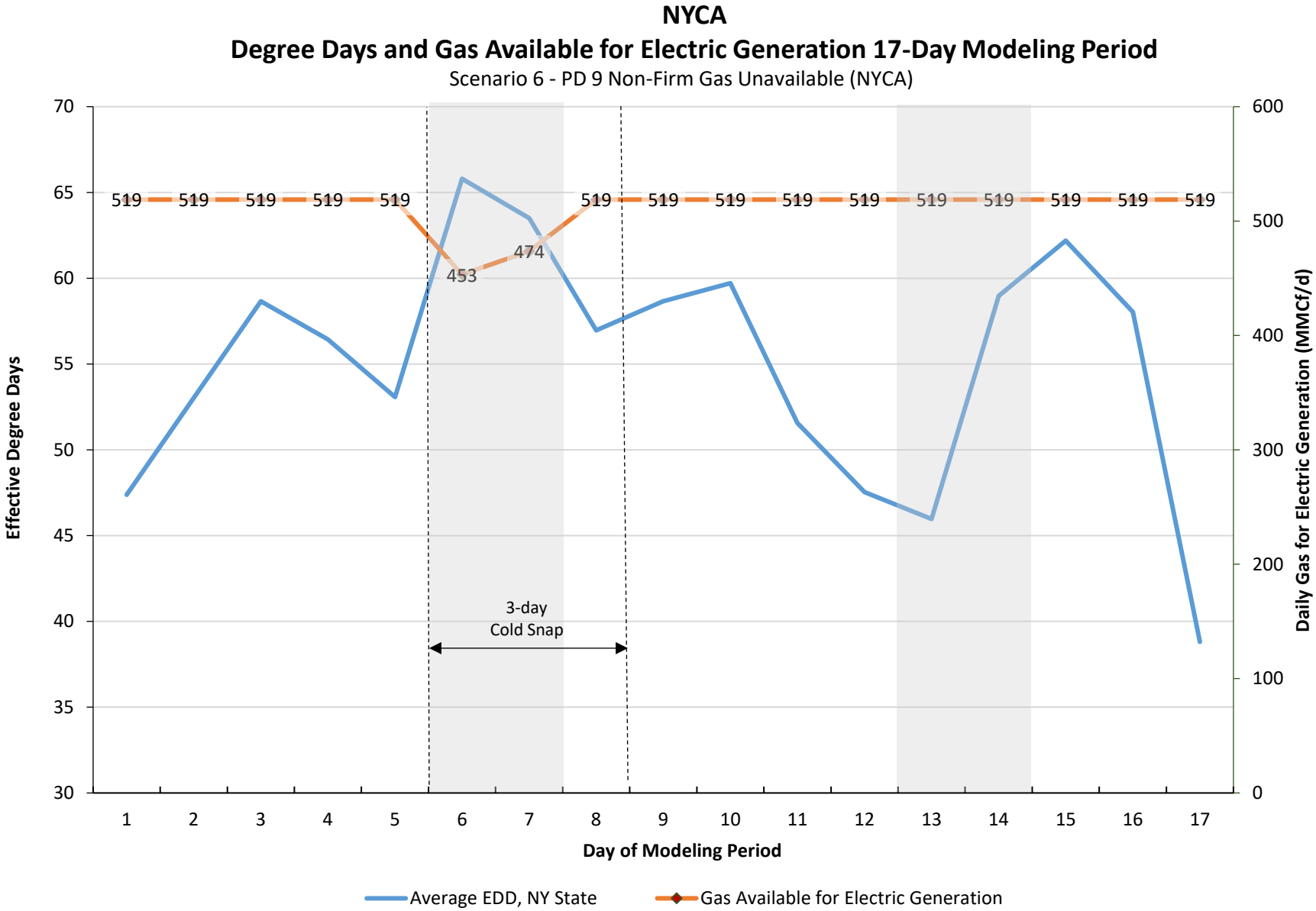


NYCA

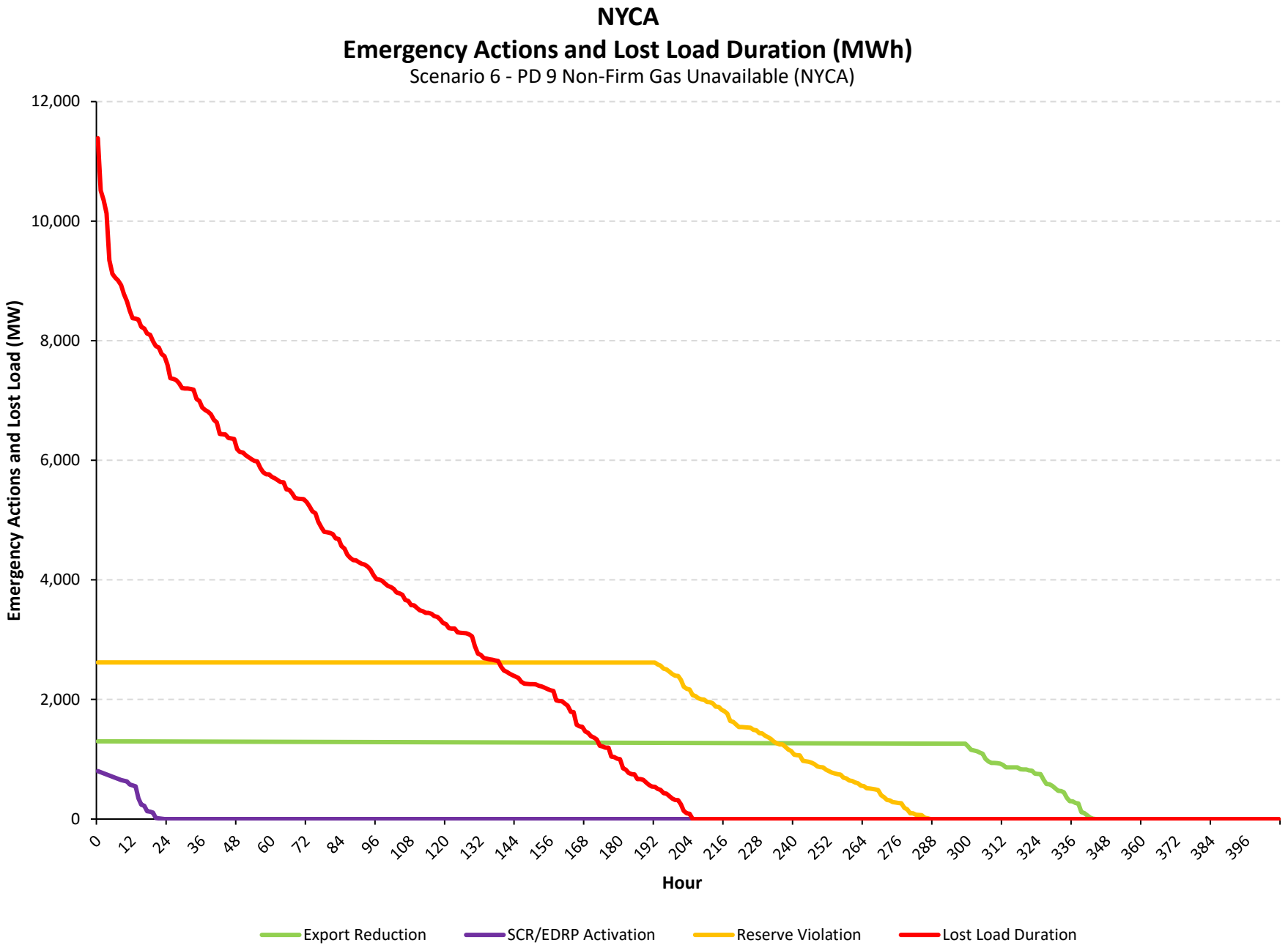
Quantity of Stored Fuel for Oil and Dual Fuel Units

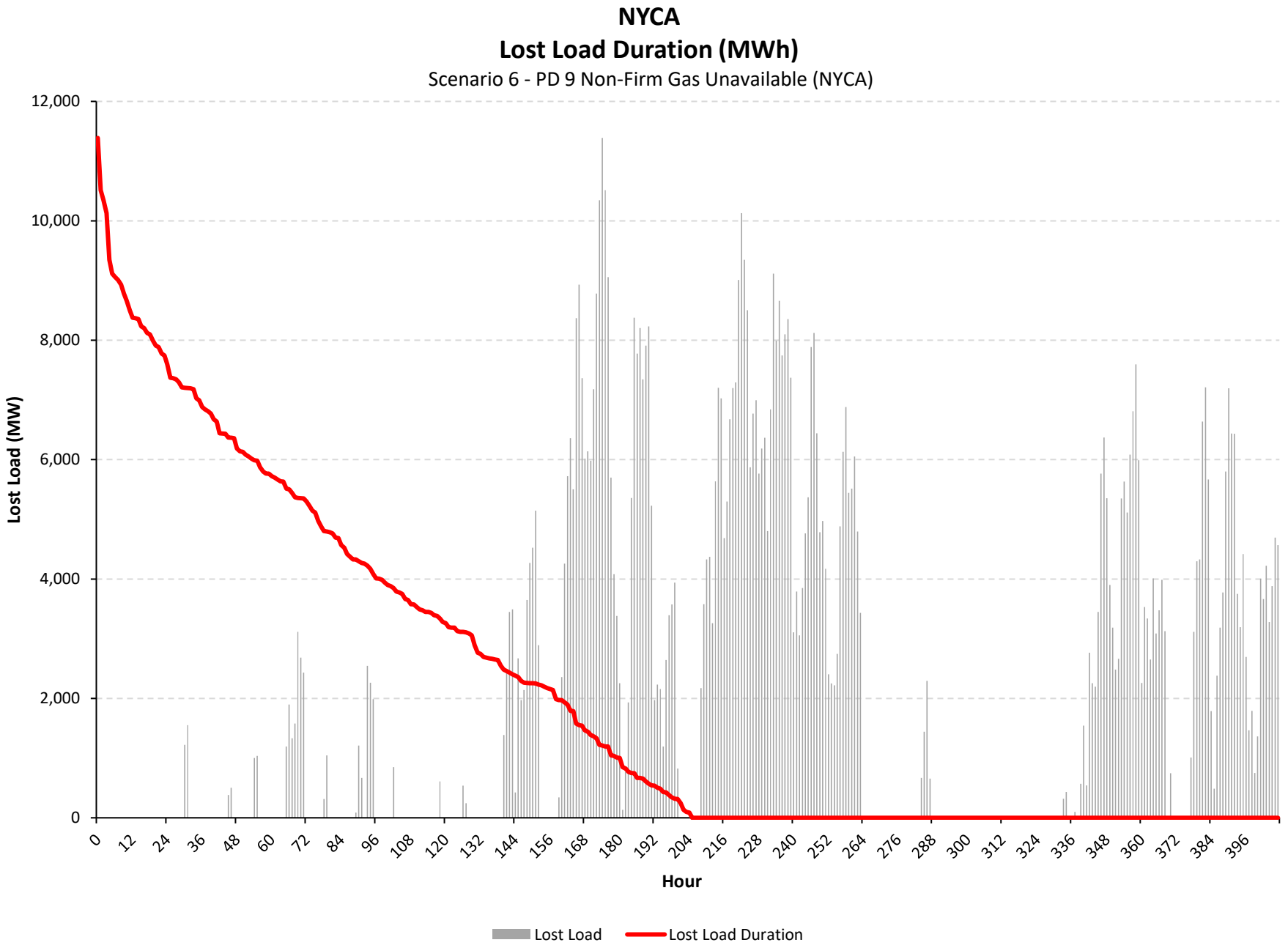
Scenario 6 - PD 9 Non-Firm Gas Unavailable (NYCA)





Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 6 - PD 9 Non-Firm Gas Unavailable (NYCA)
Emergency Actions and Lost Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 6 - PD 9 Non-Firm Gas Unavailable (NYCA)
Lost Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

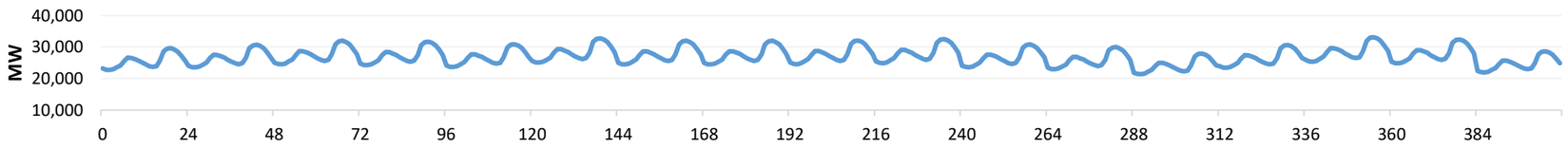
Case: Scenario 6 - PD 10 Non-Firm Gas Unavailable (4 days) (Winter 2030/2031)

Hourly Results Summary

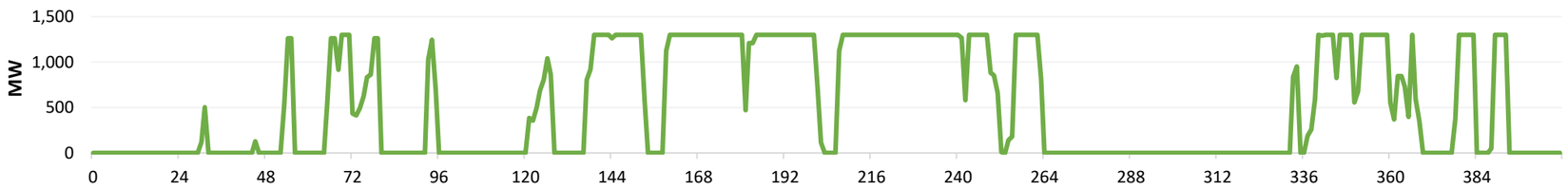
Case Name: Scenario 6 - PD 10 Non-Firm Gas Unavailable (4 days)

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	3-4 days
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

Load During Modeling Period

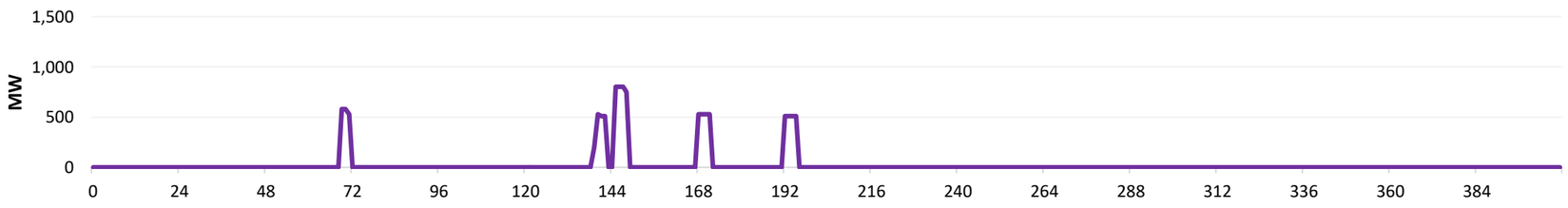


Export to ISO-NE Reduction During Modeling Period



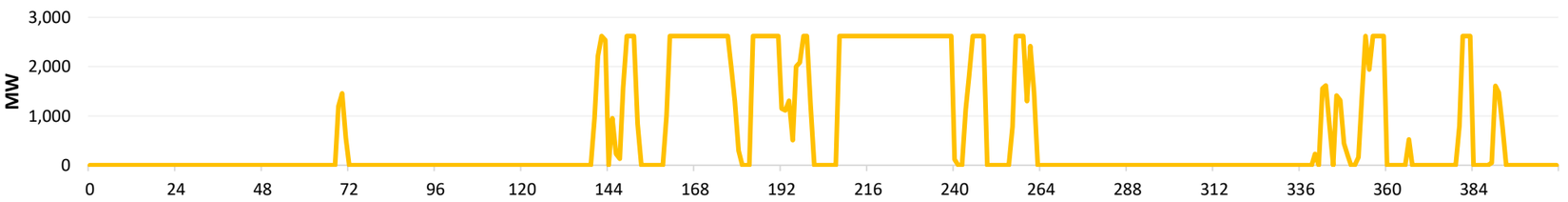
Export Reductions	
Total Hrs.	193
Total MWh	211,579
Avg. MW	518.6

SCR/EDRP Deployed During Modeling Period



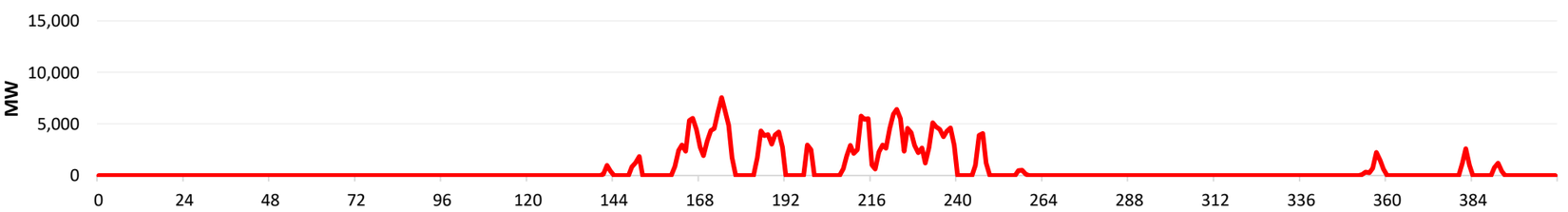
SCR Deployment	
Total Hrs.	19
Total MWh	10,730
Avg. MW	26.3

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	125
Total MWh	256,289
Avg. MW	628.2
First Hour with Viol.	69

Loss of Load During Modeling Period



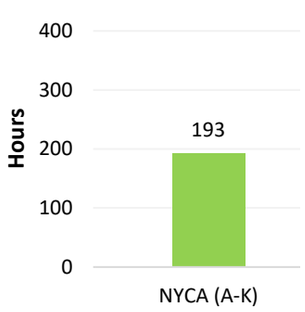
Loss of Load	
Total Hrs.	86
Total MWh	241,919
Avg. MW	592.9
First Hour with Losses	141

Full Period Results Summary

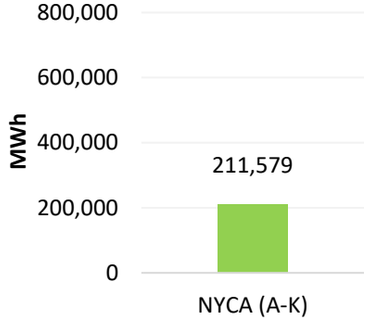
Case Name: Scenario 6 - PD 10 Non-Firm Gas Unavailable (4 days)

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	3-4 days
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

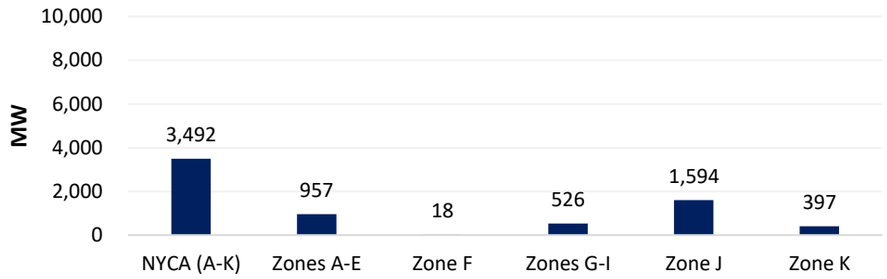
Hours Exports Reduced



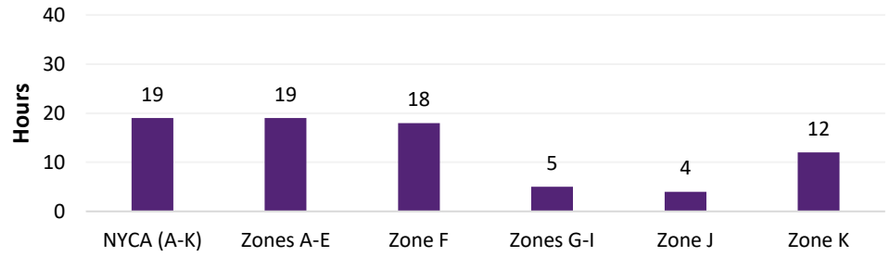
Total MWh of Exports Reduced



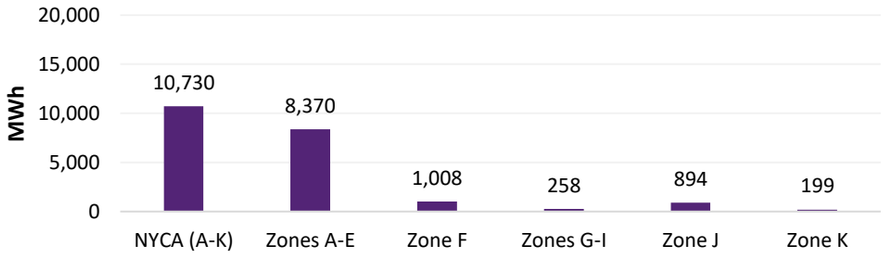
Average Capacity Not Available Due to Exhausted Fuel Inventory



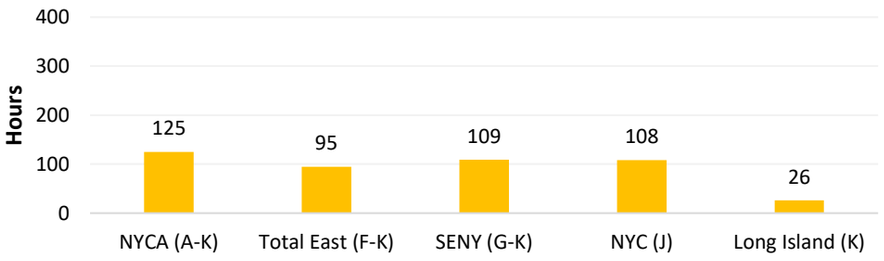
Hours SCR/EDRP Deployed



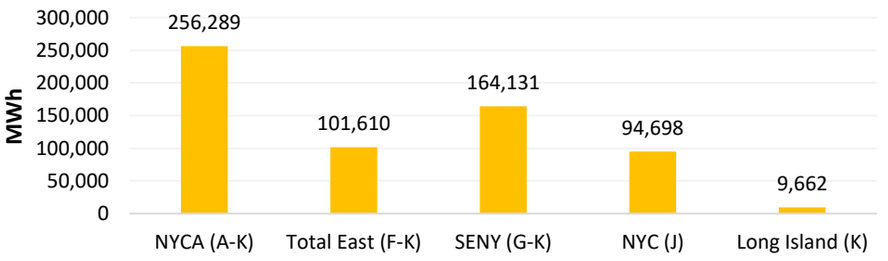
Total MWh SCR/EDRP Deployed



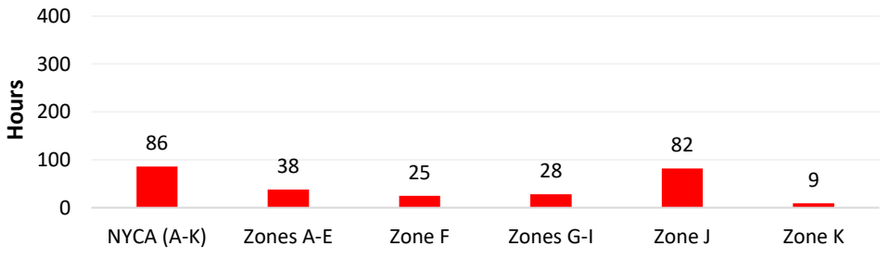
Hours with Reserve Violations



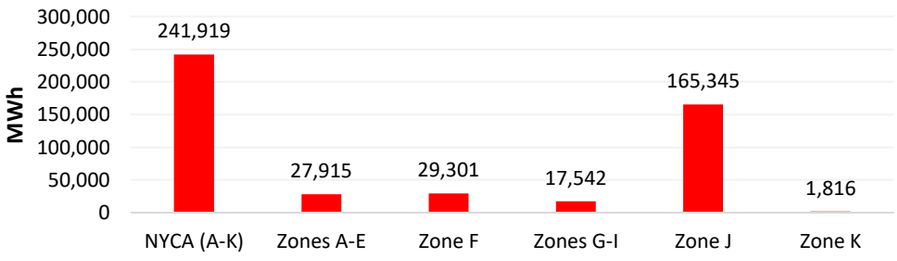
Total MWh of Reserve Violations

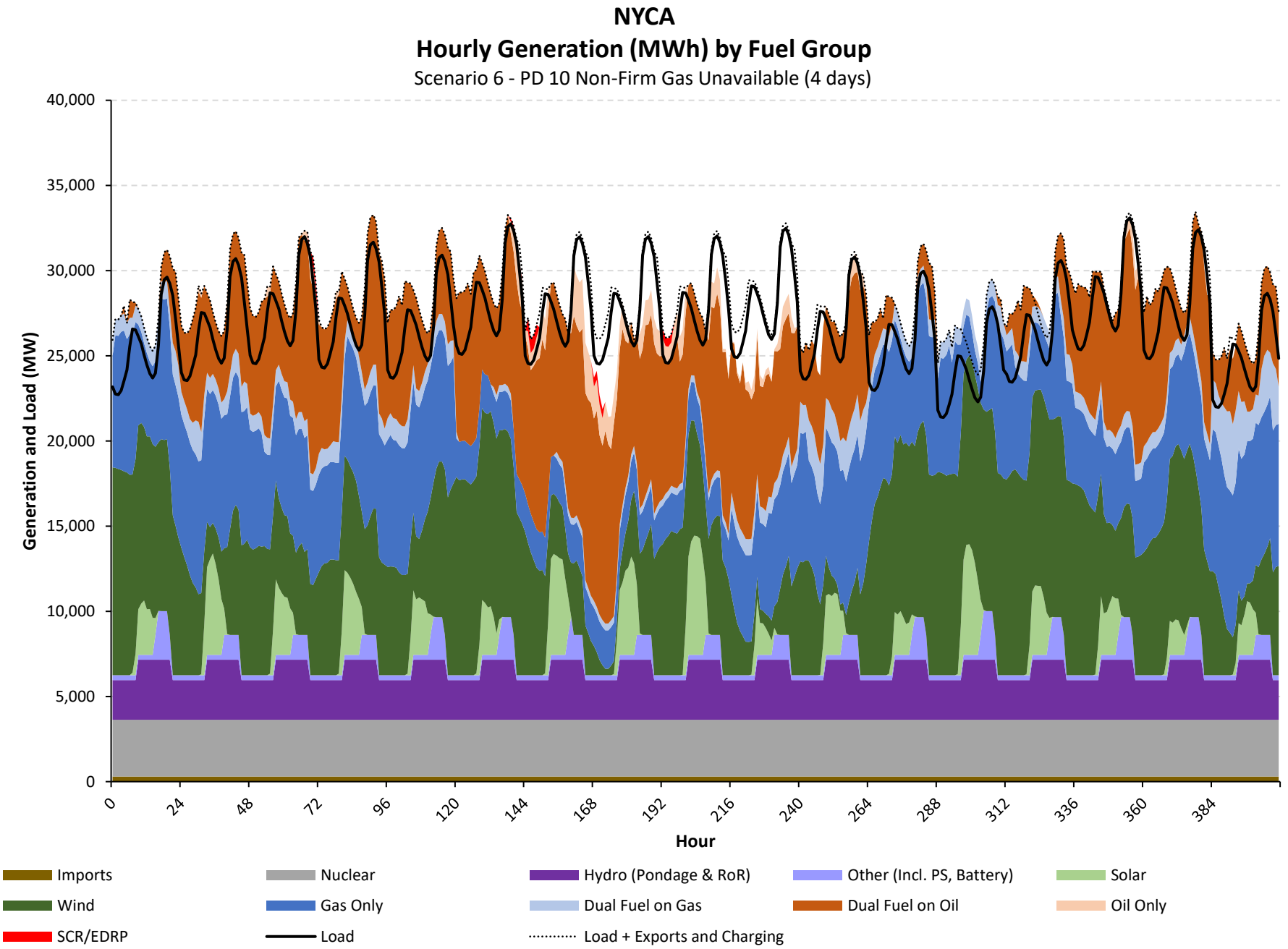


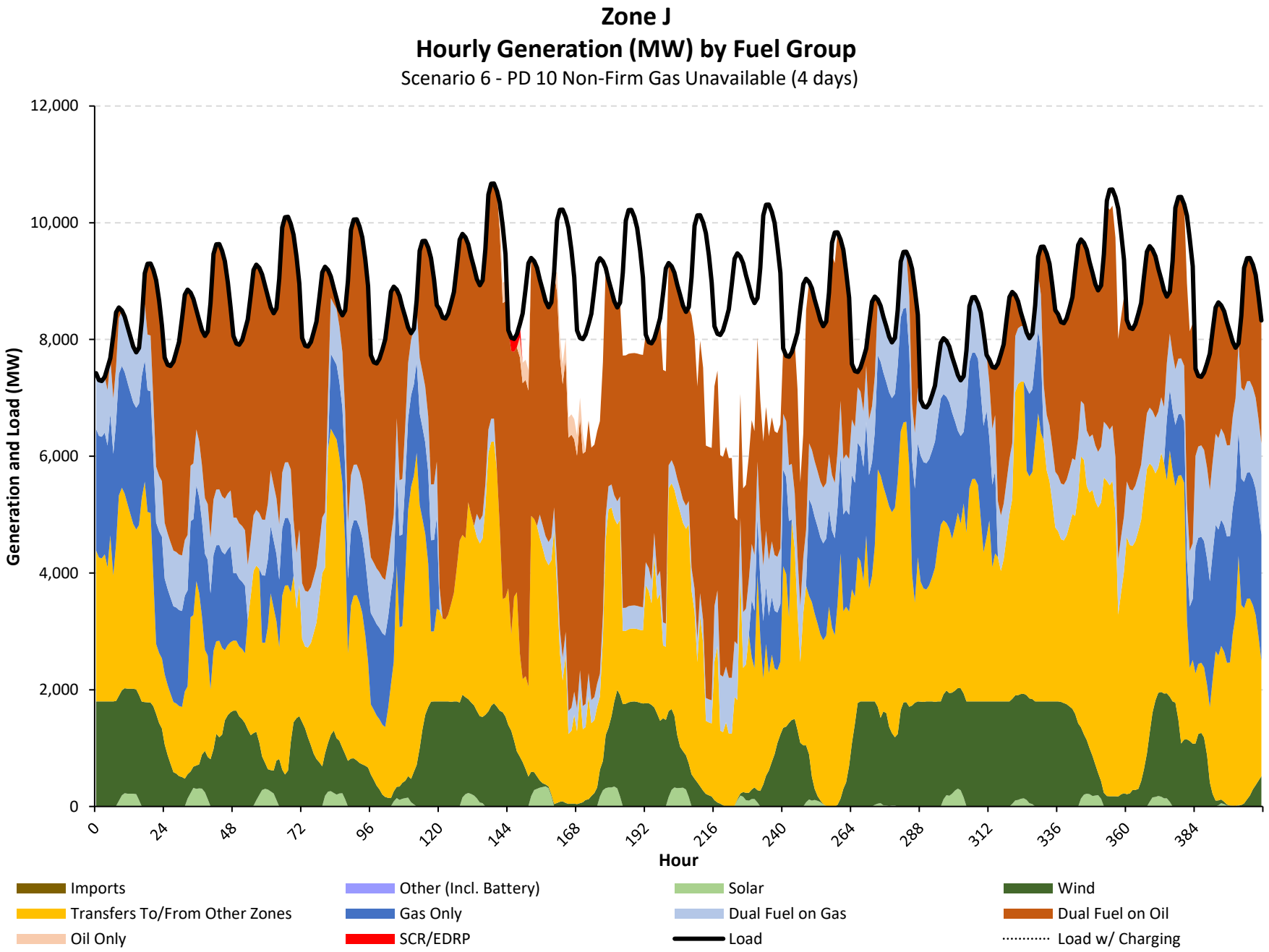
Hours with Loss of Load



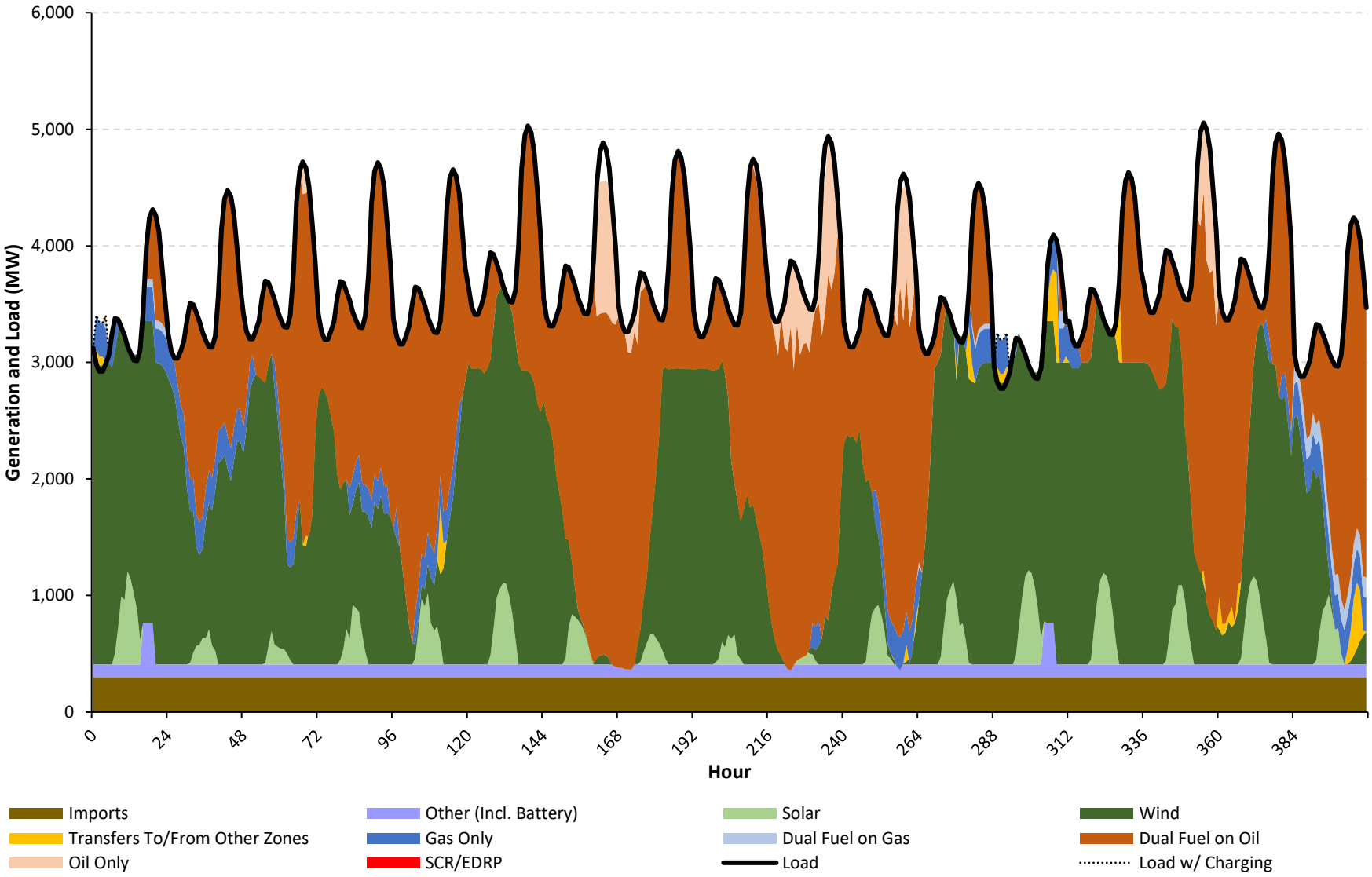
Total MWh of Lost Load

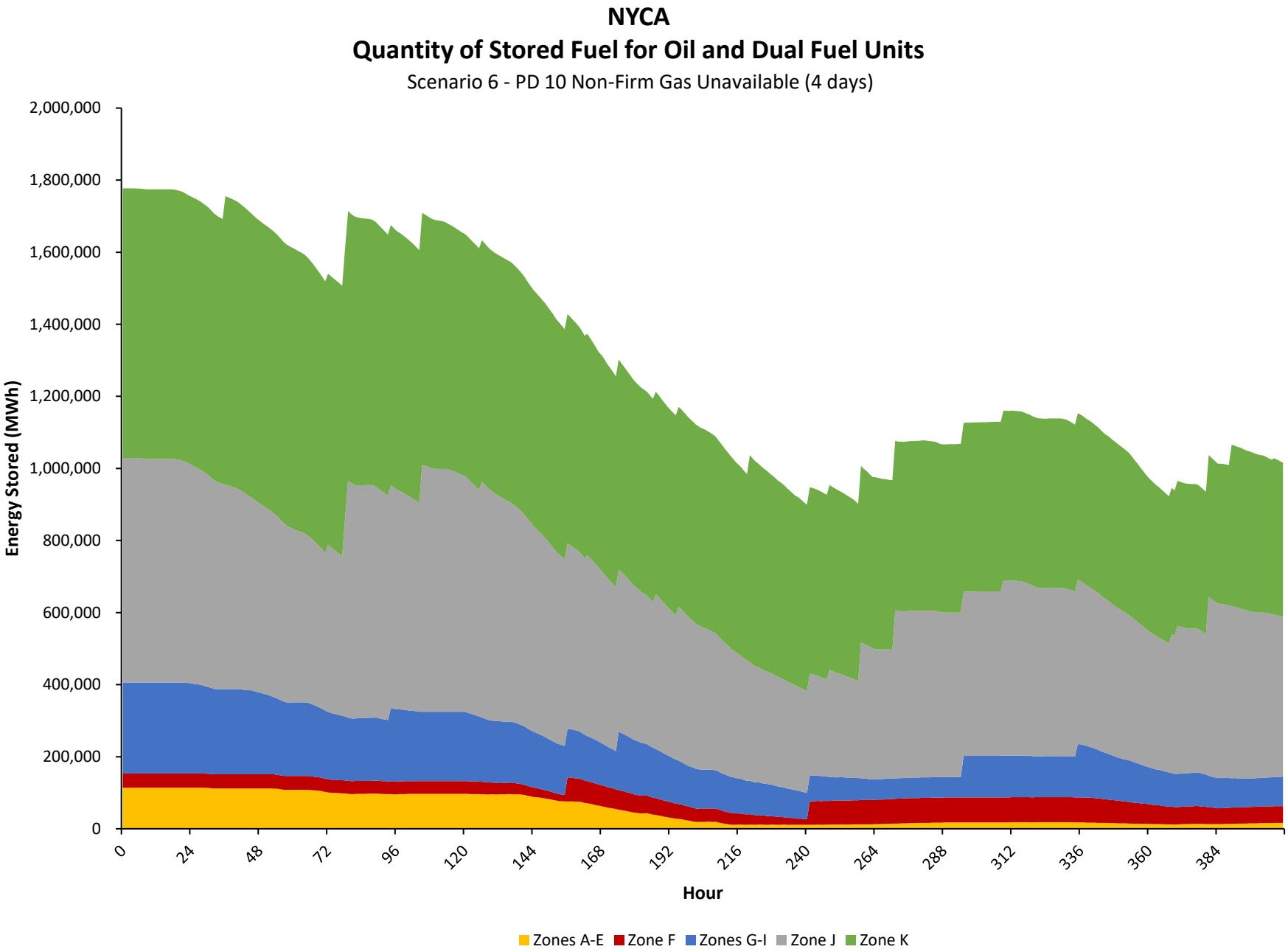



NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 6 - PD 10 Non-Firm Gas Unavailable (4 days)
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

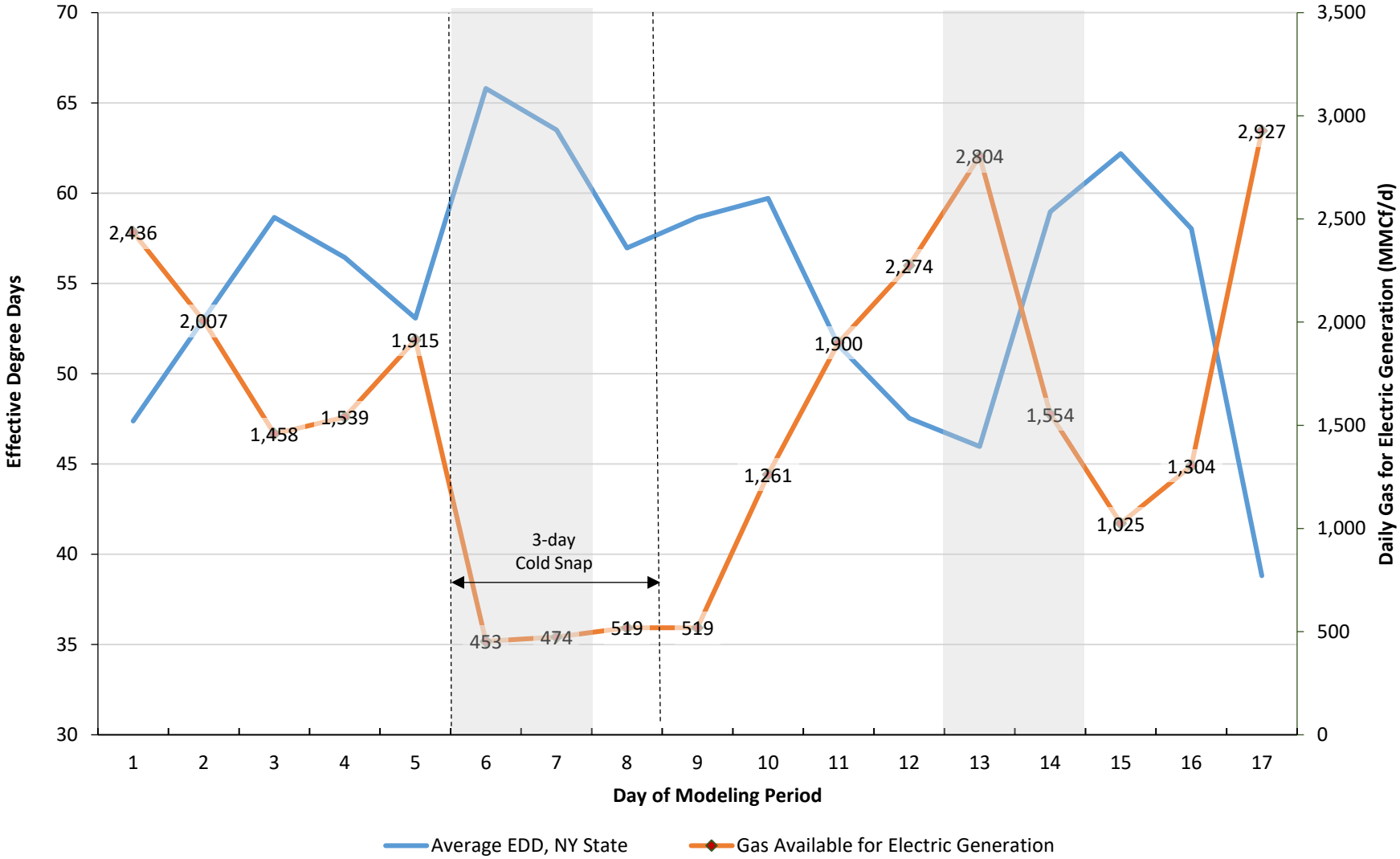

Zone J
Hourly Generation (MW) by Fuel Group
Scenario 6 - PD 10 Non-Firm Gas Unavailable (4 days)
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

Zone K
Hourly Generation (MW) by Fuel Group
Scenario 6 - PD 10 Non-Firm Gas Unavailable (4 days)

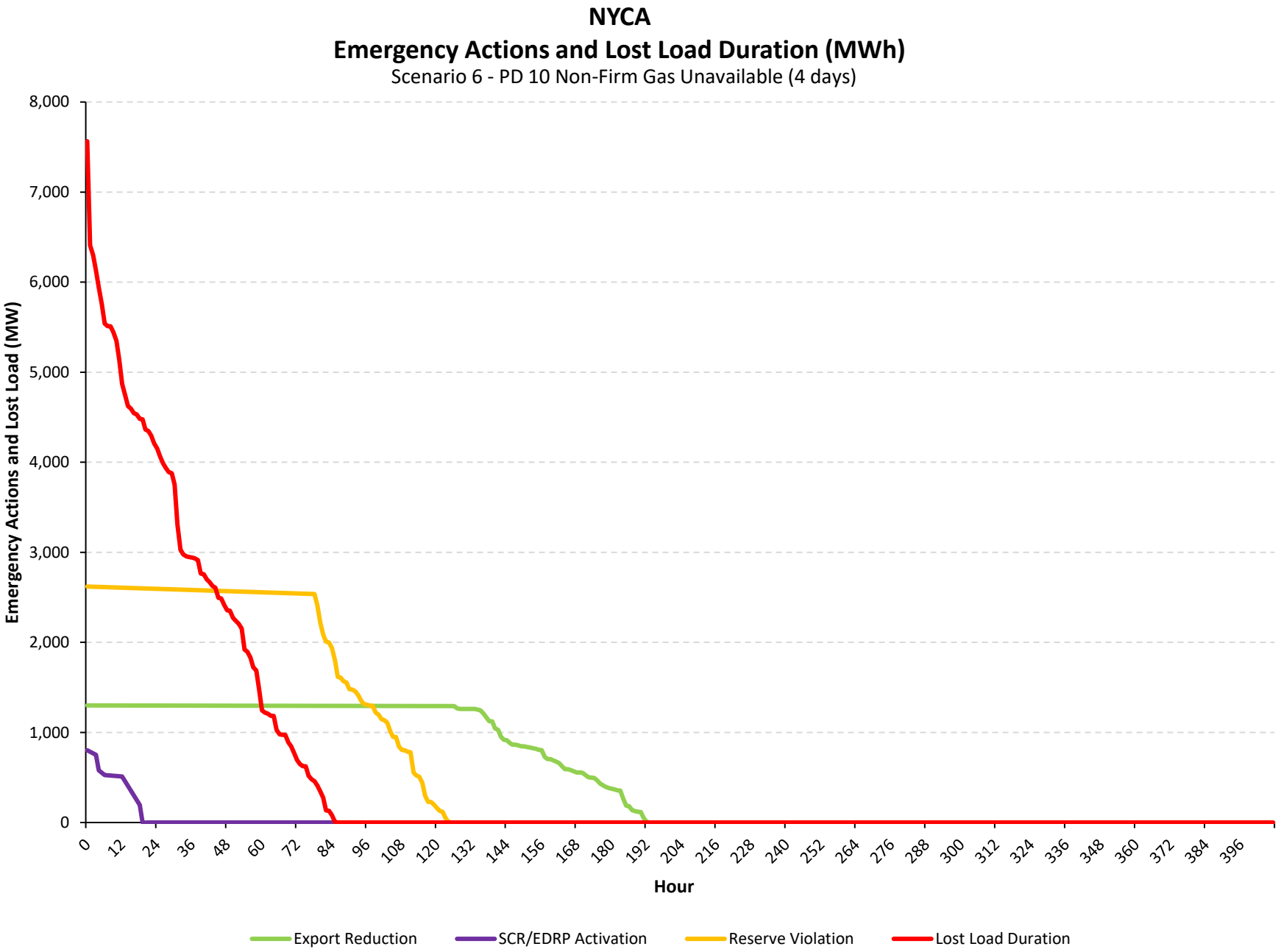


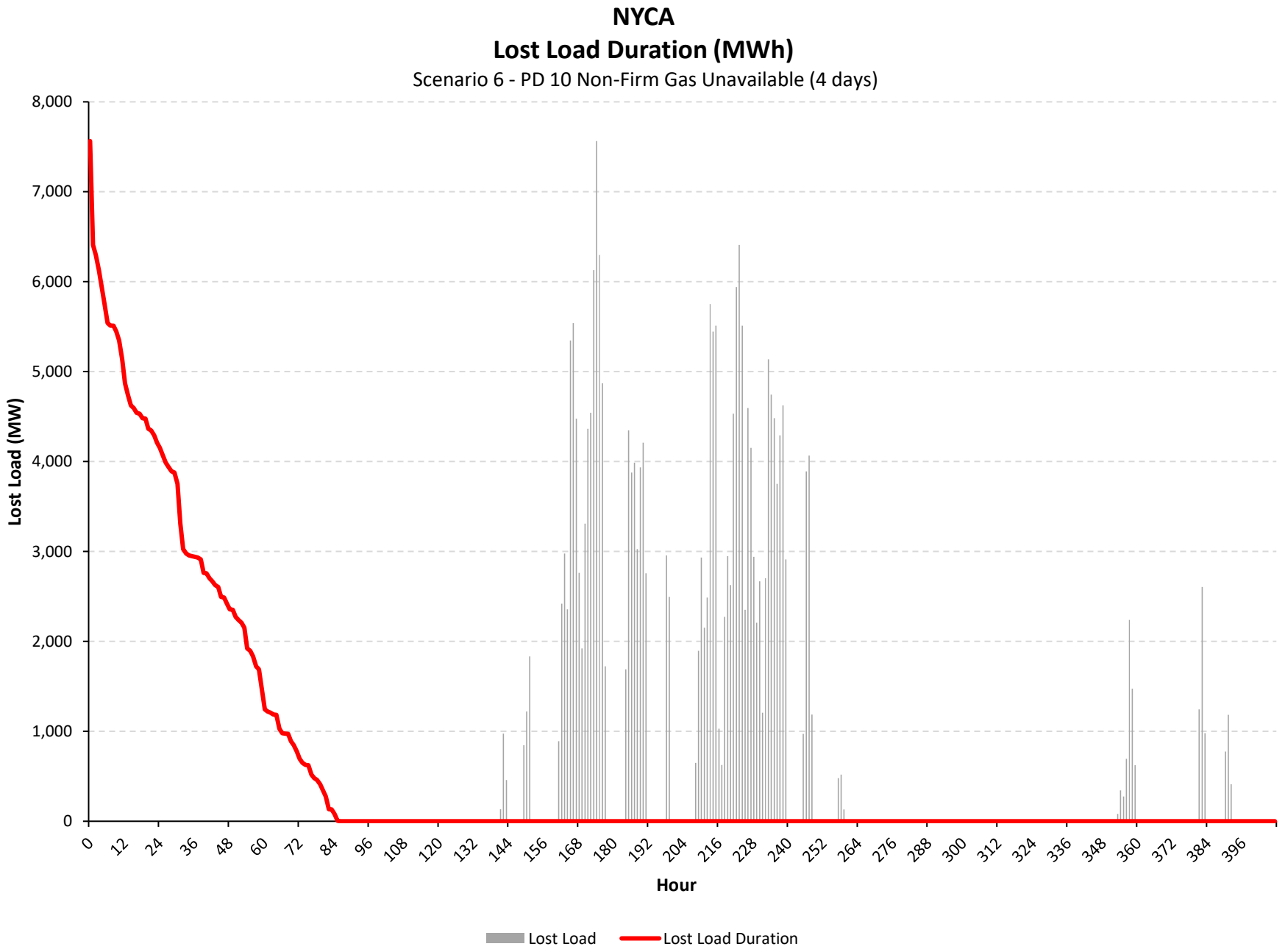

NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 6 - PD 10 Non-Firm Gas Unavailable (4 days)
Energy Stored (MWh)
2,000,000
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Zones A-E
Zone F
Zones G-I
Zone J
Zone K

NYCA
Degree Days and Gas Available for Electric Generation 17-Day Modeling Period
Scenario 6 - PD 10 Non-Firm Gas Unavailable (4 days)



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 6 - PD 10 Non-Firm Gas Unavailable (4 days)
Emergency Actions and Lost Load (MW)
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 6 - PD 10 Non-Firm Gas Unavailable (4 days)
Lost Load (MW)
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

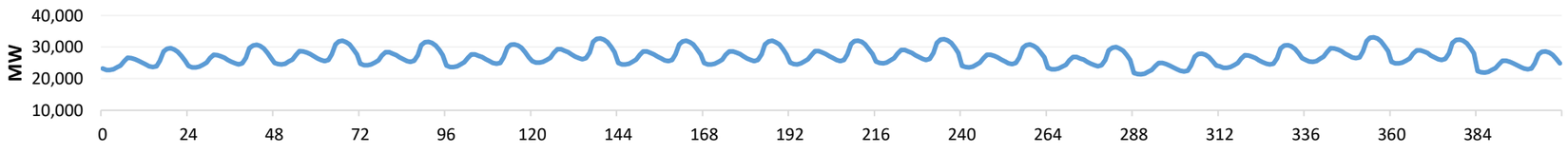
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 6 - PD 11 Combination Disruption (Winter 2030/2031)

Hourly Results Summary

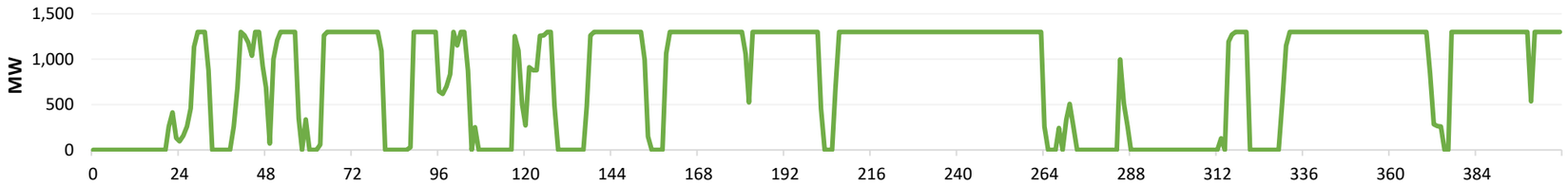
Case Name: Scenario 6 - PD 11 Combination Disruption

Load During Modeling Period



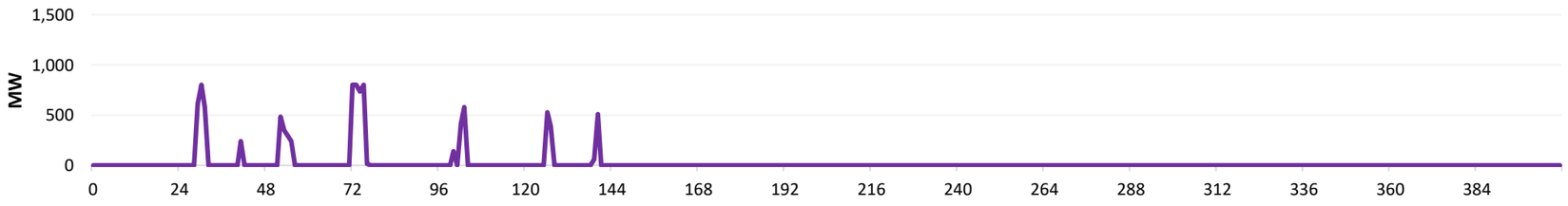
Case Summary	
Derate (EFORd) Increase:	High
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	Reduced
Loss of Gas Fired Gen.	Reduced
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

Export to ISO-NE Reduction During Modeling Period



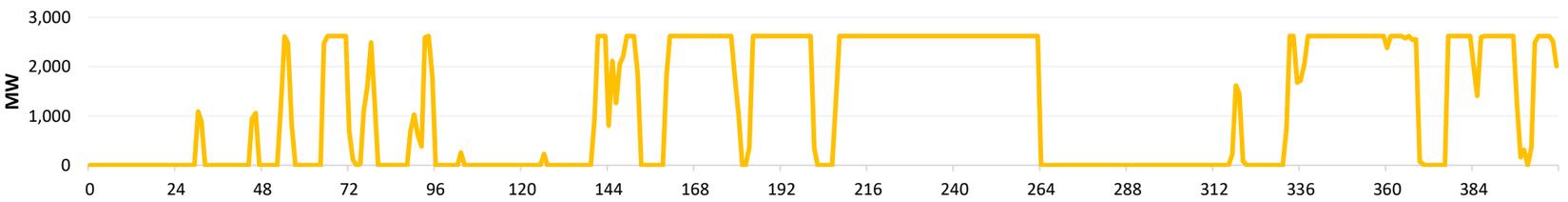
Export Reductions	
Total Hrs.	291
Total MWh	334,184
Avg. MW	819.1

SCR/EDRP Deployed During Modeling Period



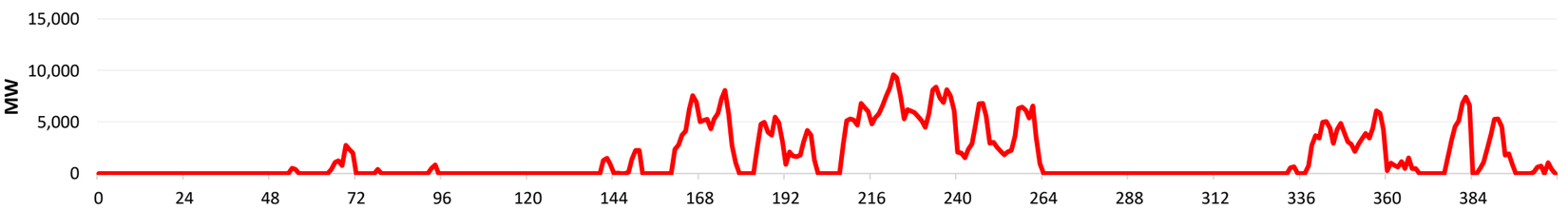
SCR Deployment	
Total Hrs.	20
Total MWh	9,371
Avg. MW	23.0

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	214
Total MWh	482,047
Avg. MW	1,181.5
First Hour with Viol.	30

Loss of Load During Modeling Period



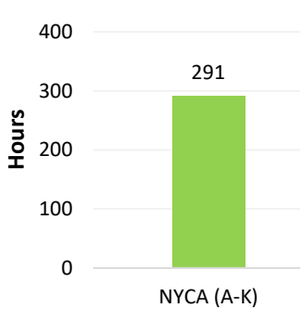
Loss of Load	
Total Hrs.	166
Total MWh	618,145
Avg. MW	1,515.1
First Hour with Losses	54

Full Period Results Summary

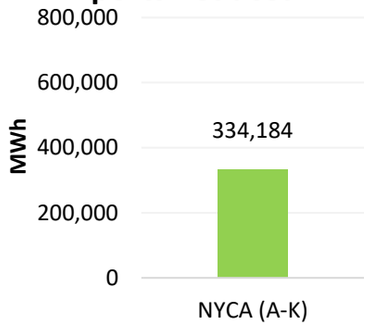
Case Name: Scenario 6 - PD 11 Combination Disruption

Case Summary	
Derate (EFORd) Increase:	High
Starting Storage:	Historical
Renewables:	Delayed
Refill Contingency:	Reduced
Loss of Gas Fired Gen.	Reduced
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

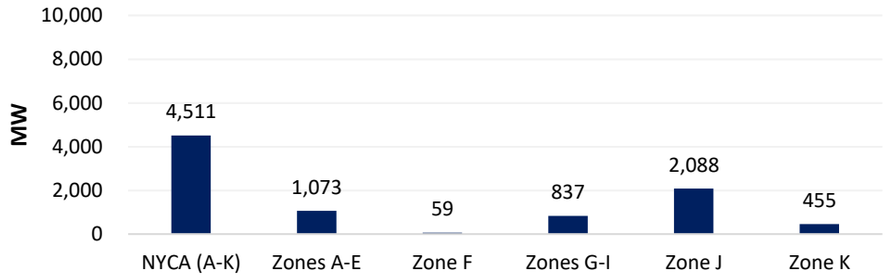
Hours Exports Reduced



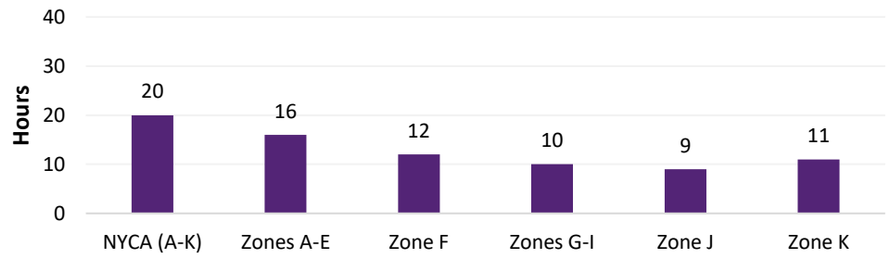
Total MWh of Exports Reduced



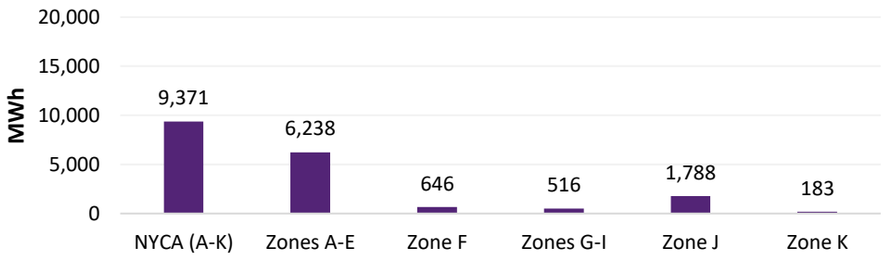
Average Capacity Not Available Due to Exhausted Fuel Inventory



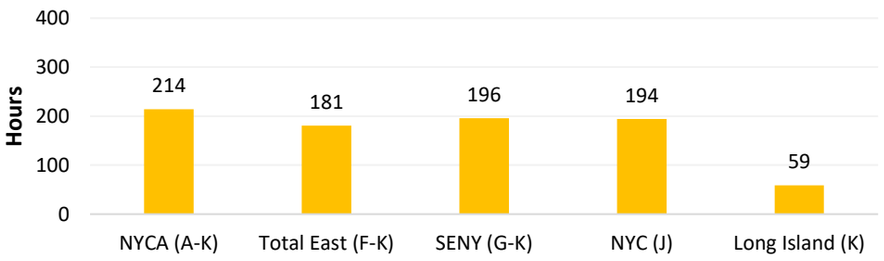
Hours SCR/EDRP Deployed



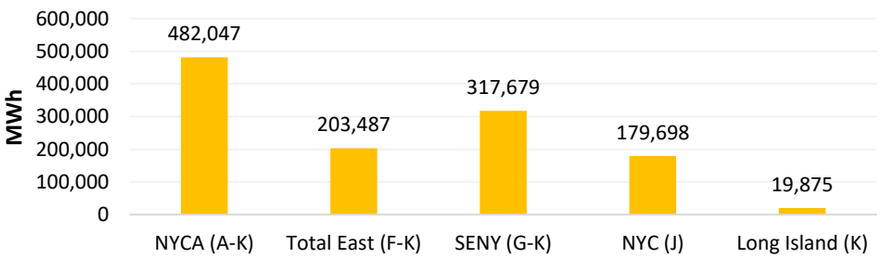
Total MWh SCR/EDRP Deployed



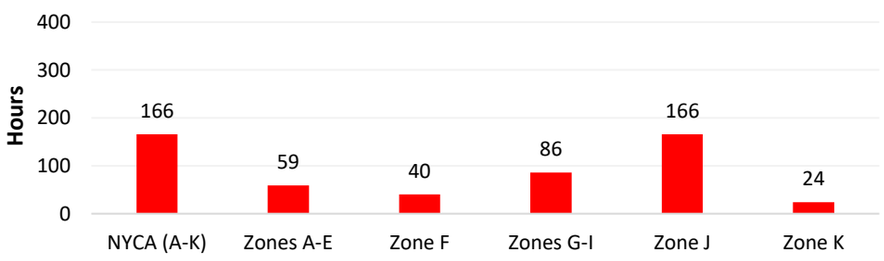
Hours with Reserve Violations



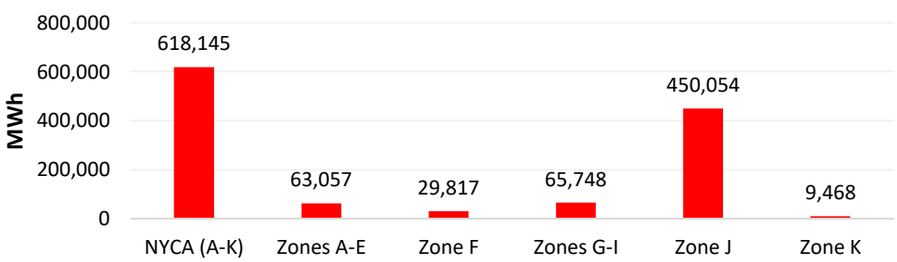
Total MWh of Reserve Violations

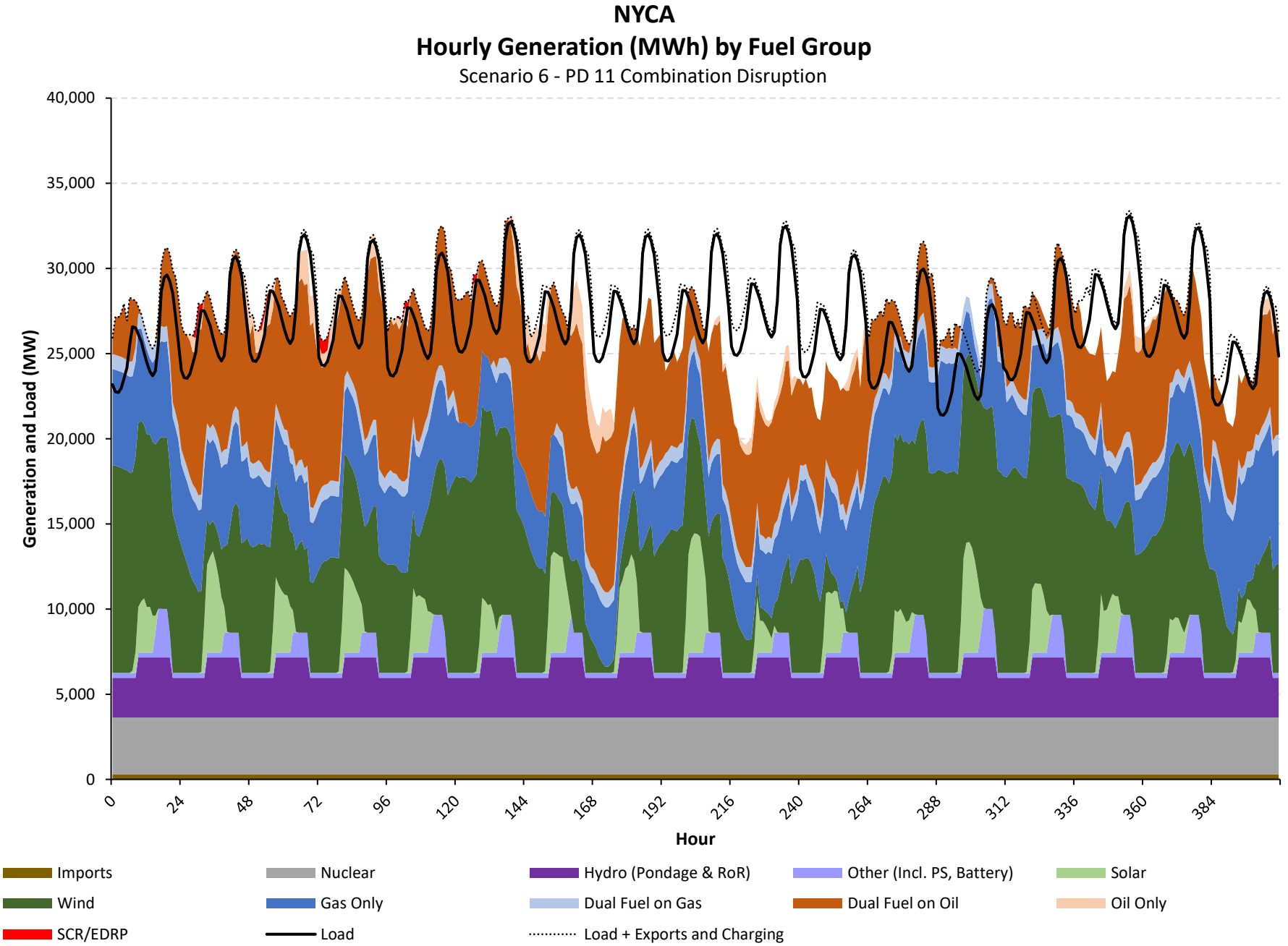


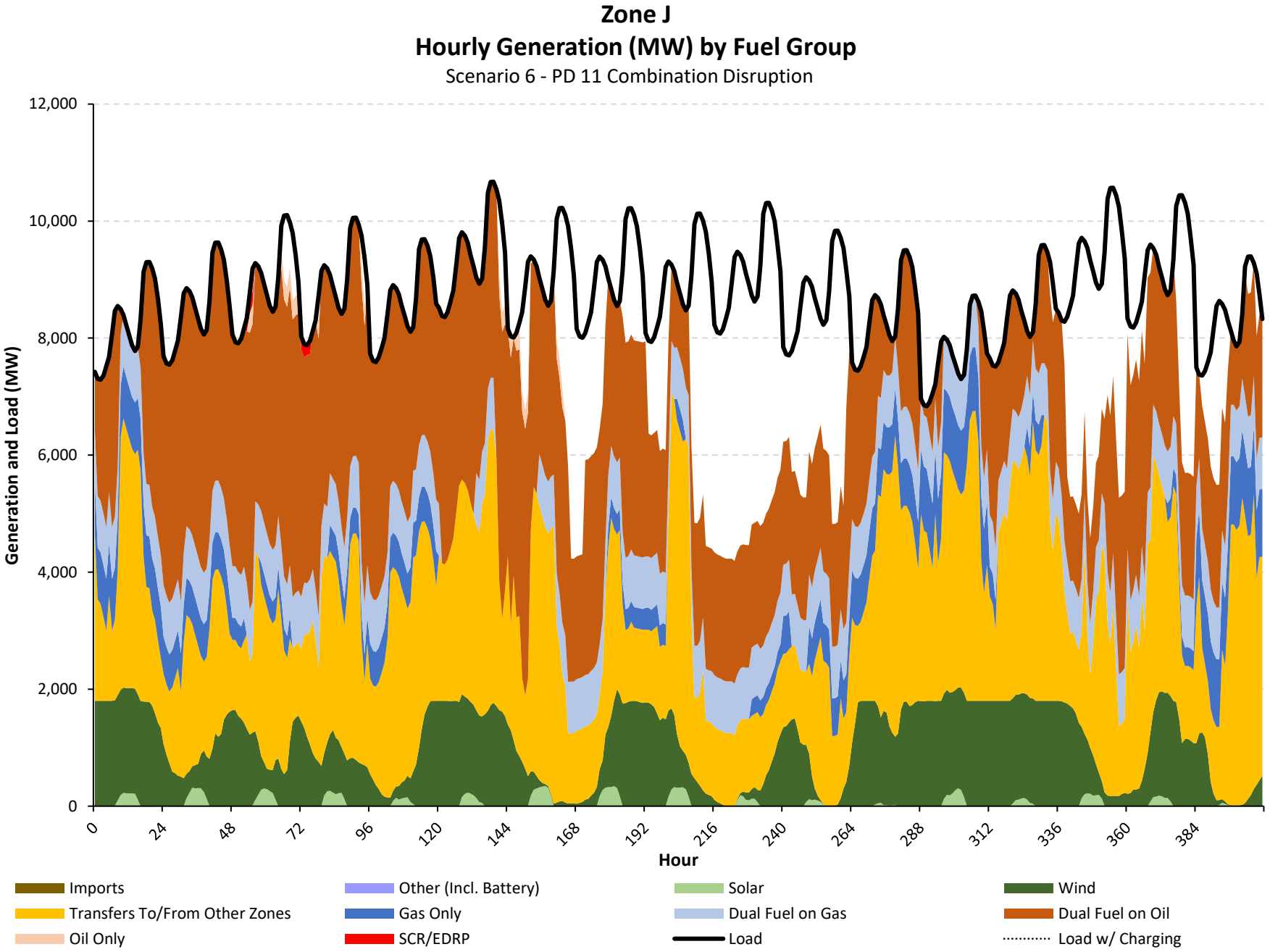
Hours with Loss of Load



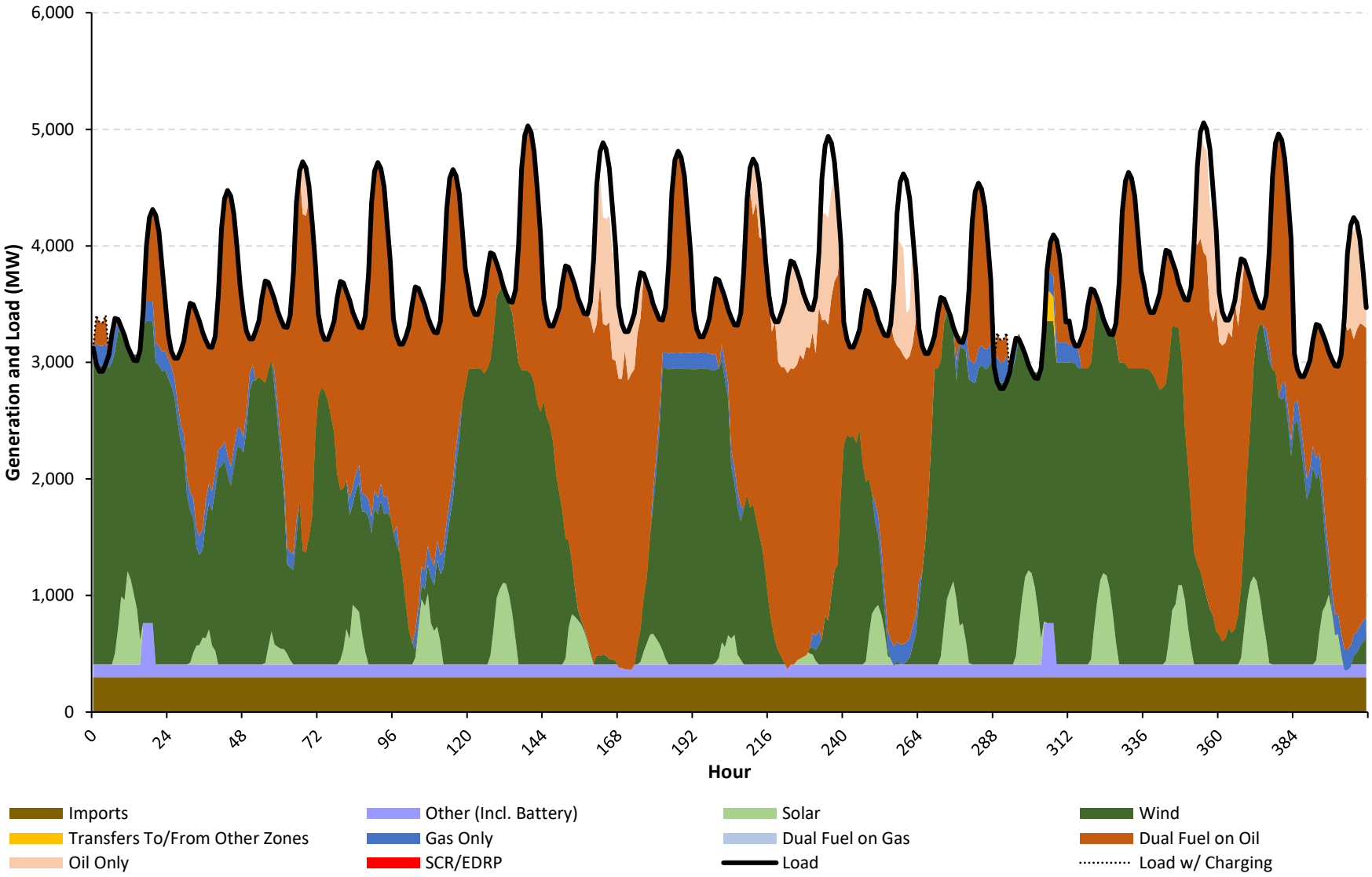
Total MWh of Lost Load




NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 6 - PD 11 Combination Disruption
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 6 - PD 11 Combination Disruption
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

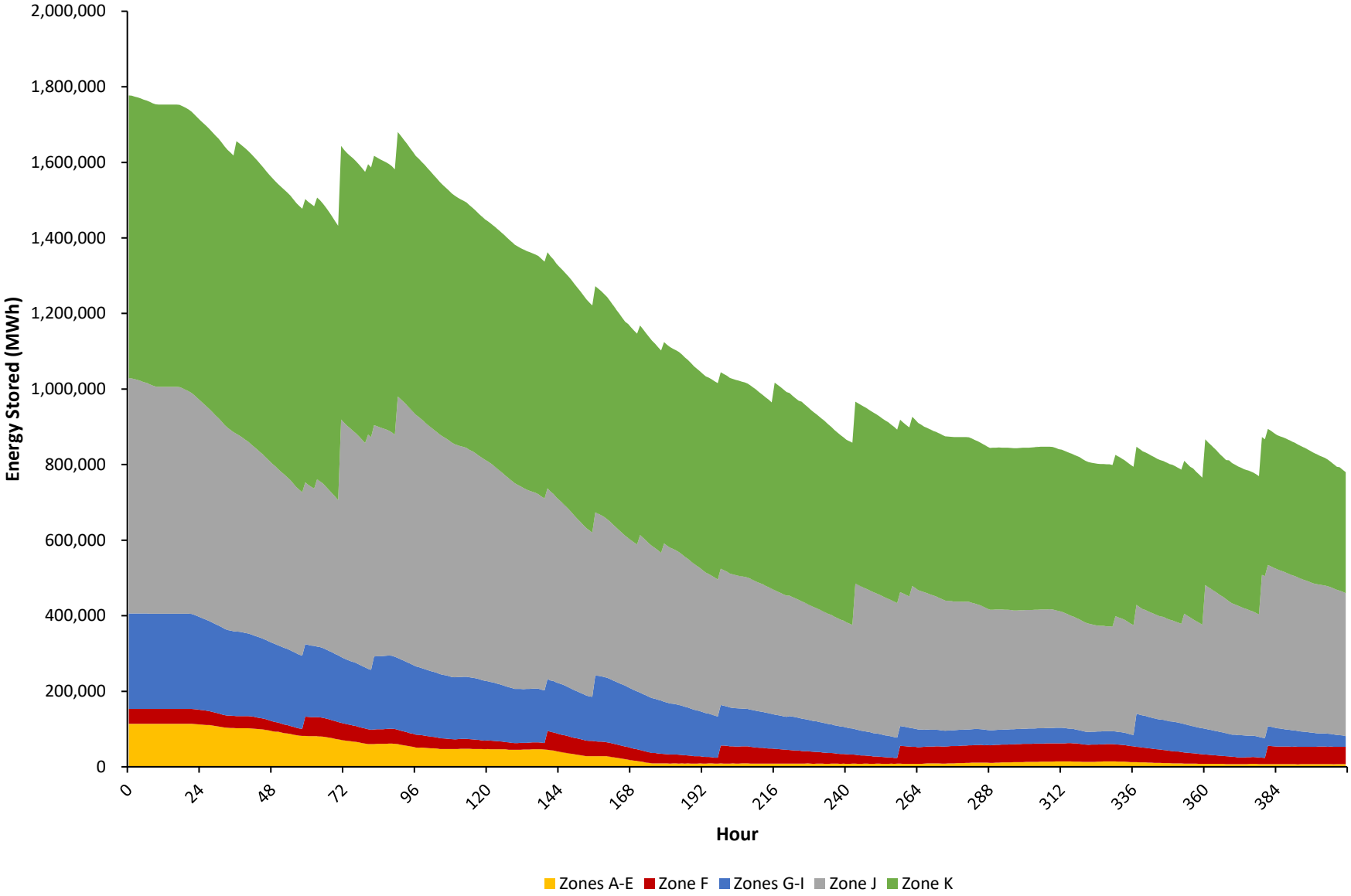
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 6 - PD 11 Combination Disruption

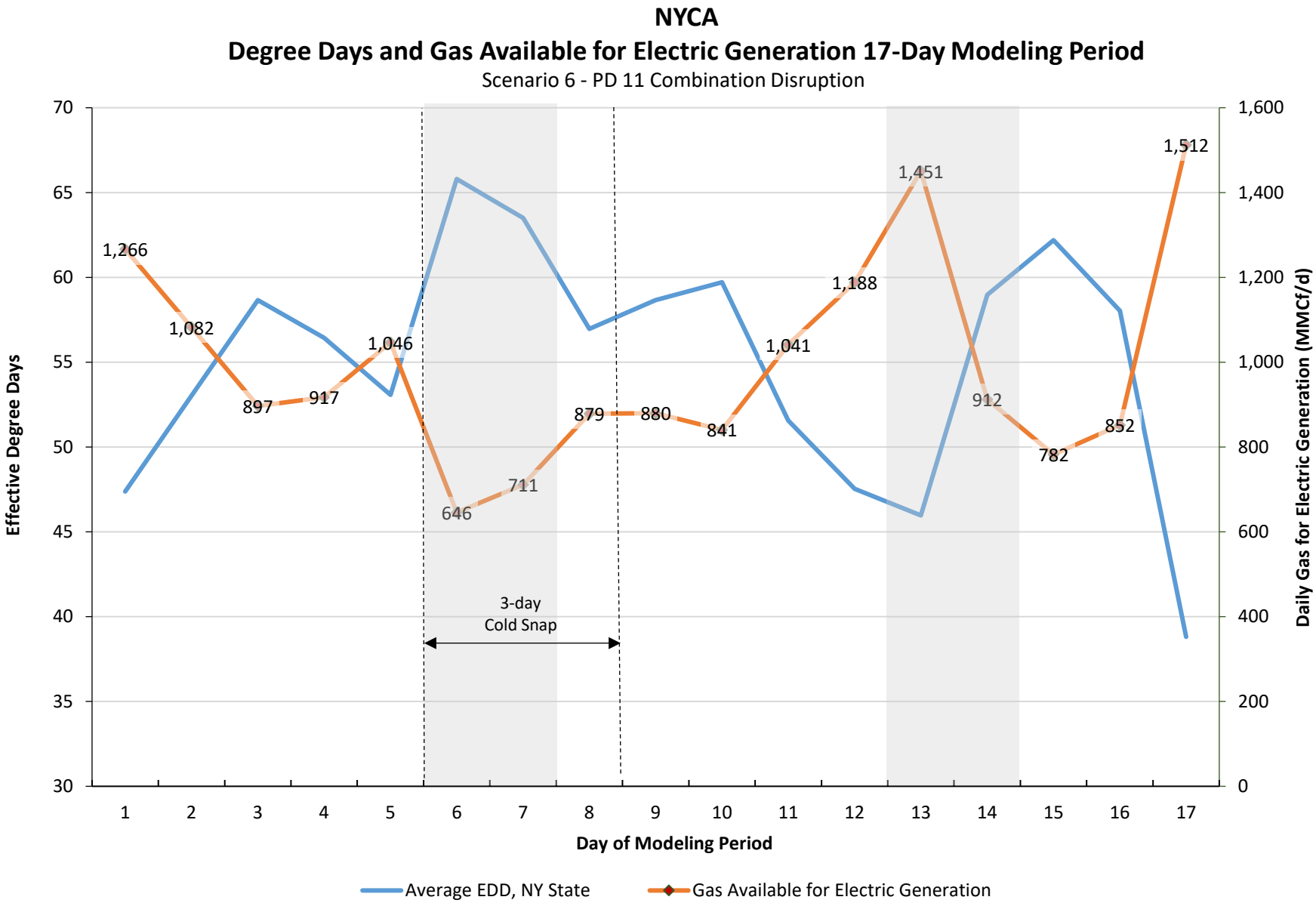


NYCA

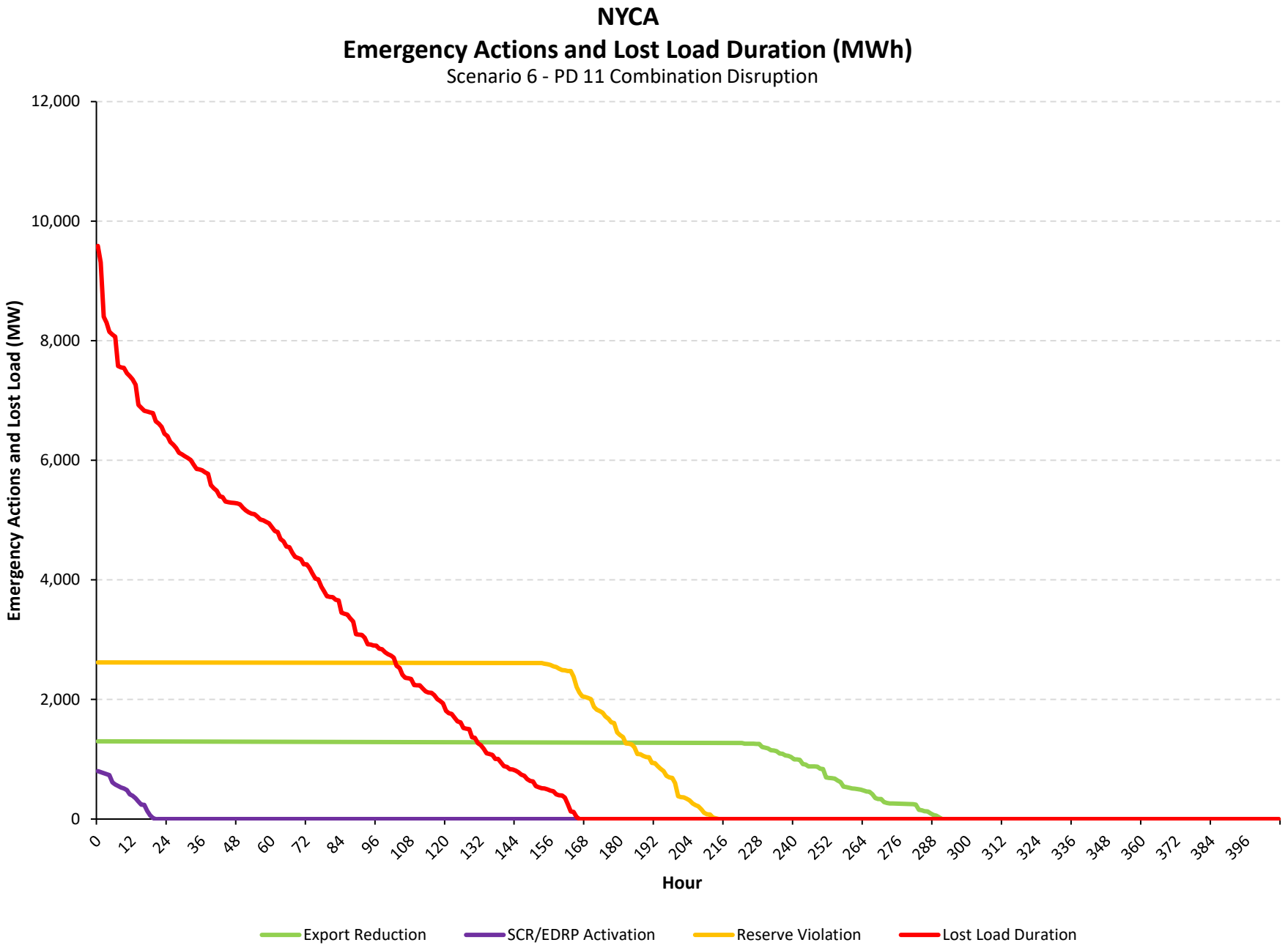
Quantity of Stored Fuel for Oil and Dual Fuel Units

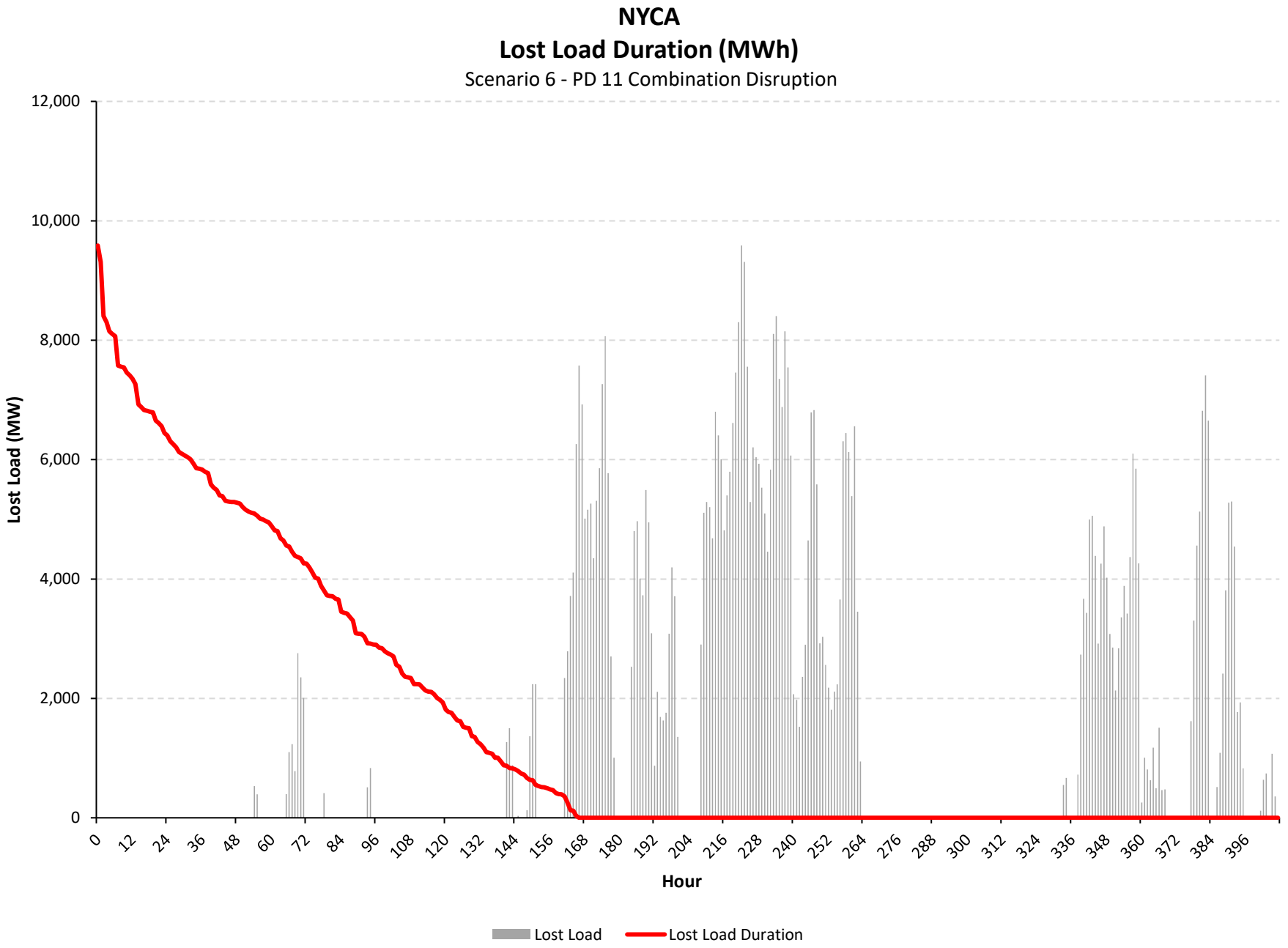
Scenario 6 - PD 11 Combination Disruption





Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 6 - PD 11 Combination Disruption
Emergency Actions and Lost Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 6 - PD 11 Combination Disruption
Lost Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

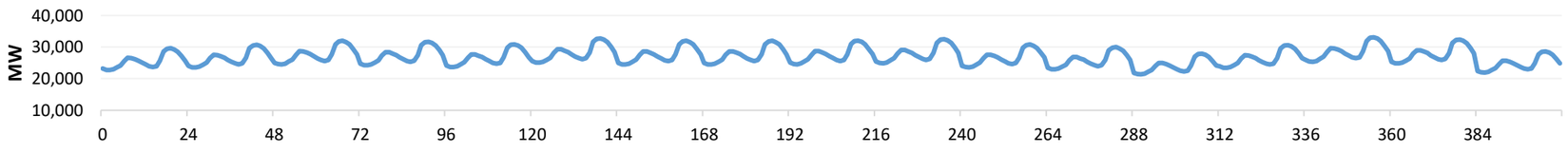
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 7 - PD 1 No Disruptions (Winter 2030/2031)

Hourly Results Summary

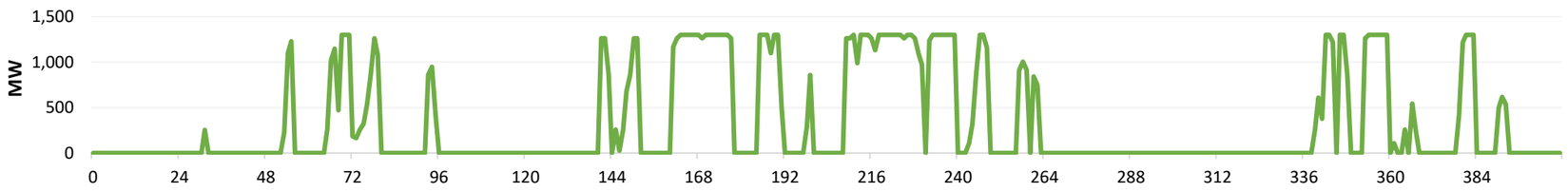
Case Name: Scenario 7 - PD 1 No Disruptions

Load During Modeling Period



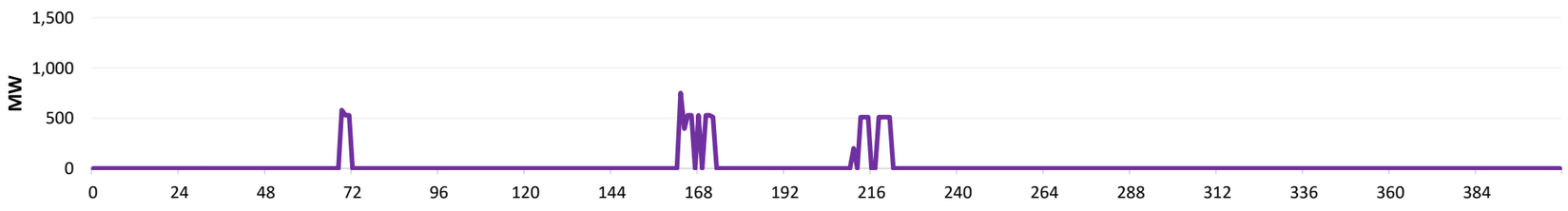
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



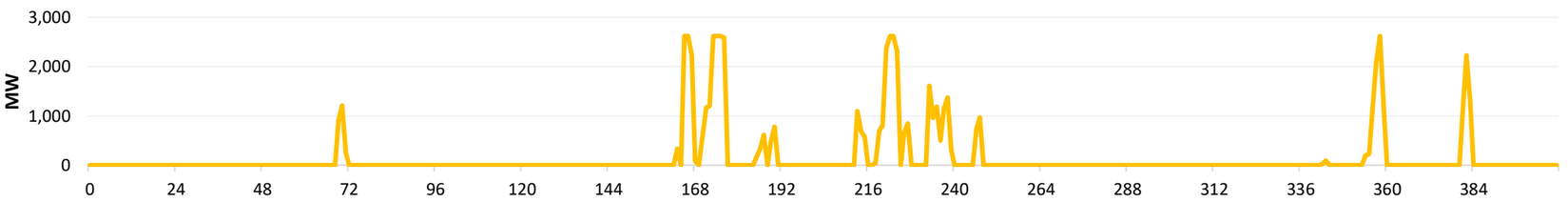
Export Reductions	
Total Hrs.	127
Total MWh	128,707
Avg. MW	315.5

SCR/EDRP Deployed During Modeling Period



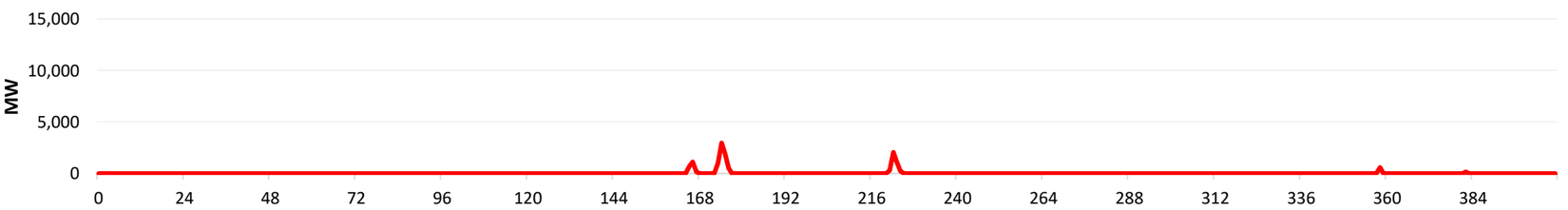
SCR Deployment	
Total Hrs.	19
Total MWh	9,693
Avg. MW	23.8

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	52
Total MWh	62,437
Avg. MW	153.0
First Hour with Viol.	69

Loss of Load During Modeling Period



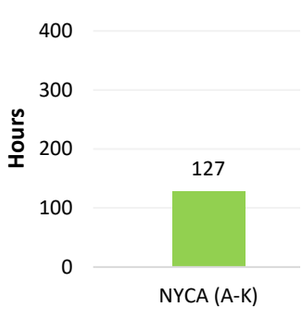
Loss of Load	
Total Hrs.	14
Total MWh	12,831
Avg. MW	31.4
First Hour with Losses	165

Full Period Results Summary

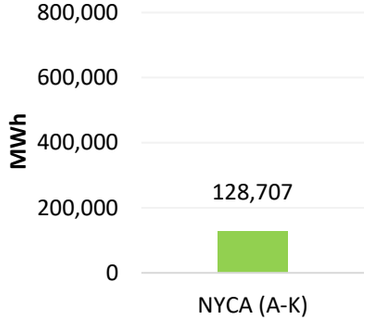
Case Name: Scenario 7 - PD 1 No Disruptions

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

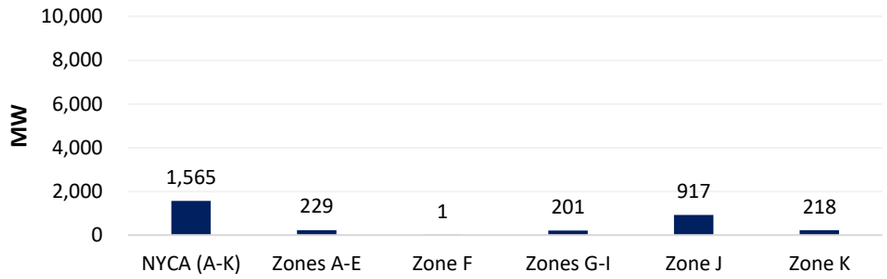
Hours Exports Reduced



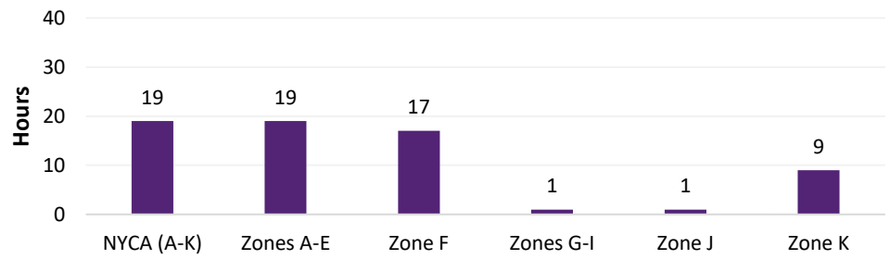
Total MWh of Exports Reduced



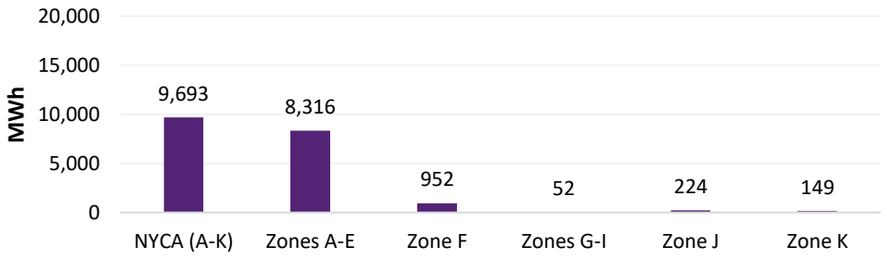
Average Capacity Not Available Due to Exhausted Fuel Inventory



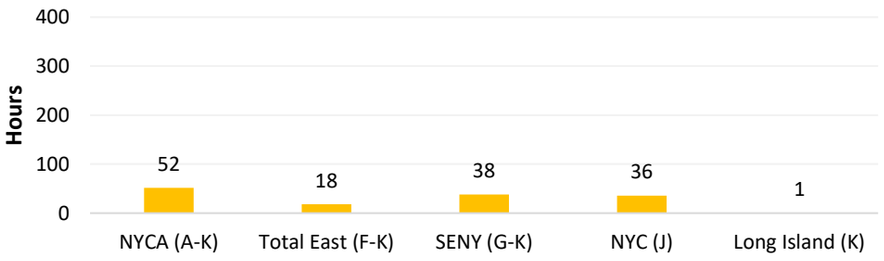
Hours SCR/EDRP Deployed



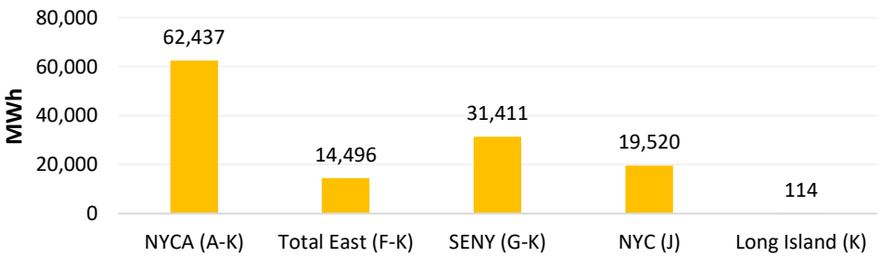
Total MWh SCR/EDRP Deployed



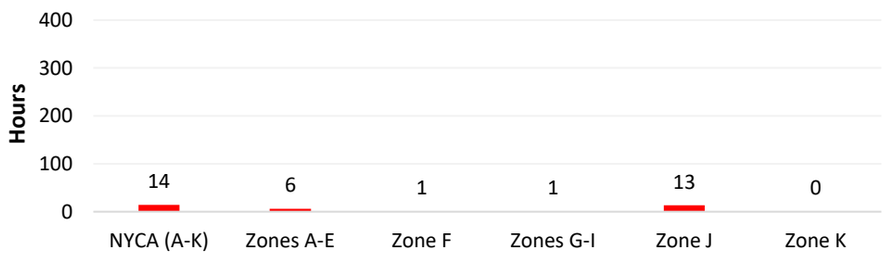
Hours with Reserve Violations



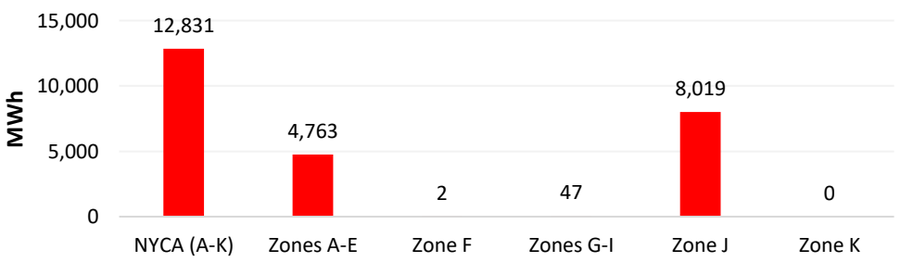
Total MWh of Reserve Violations

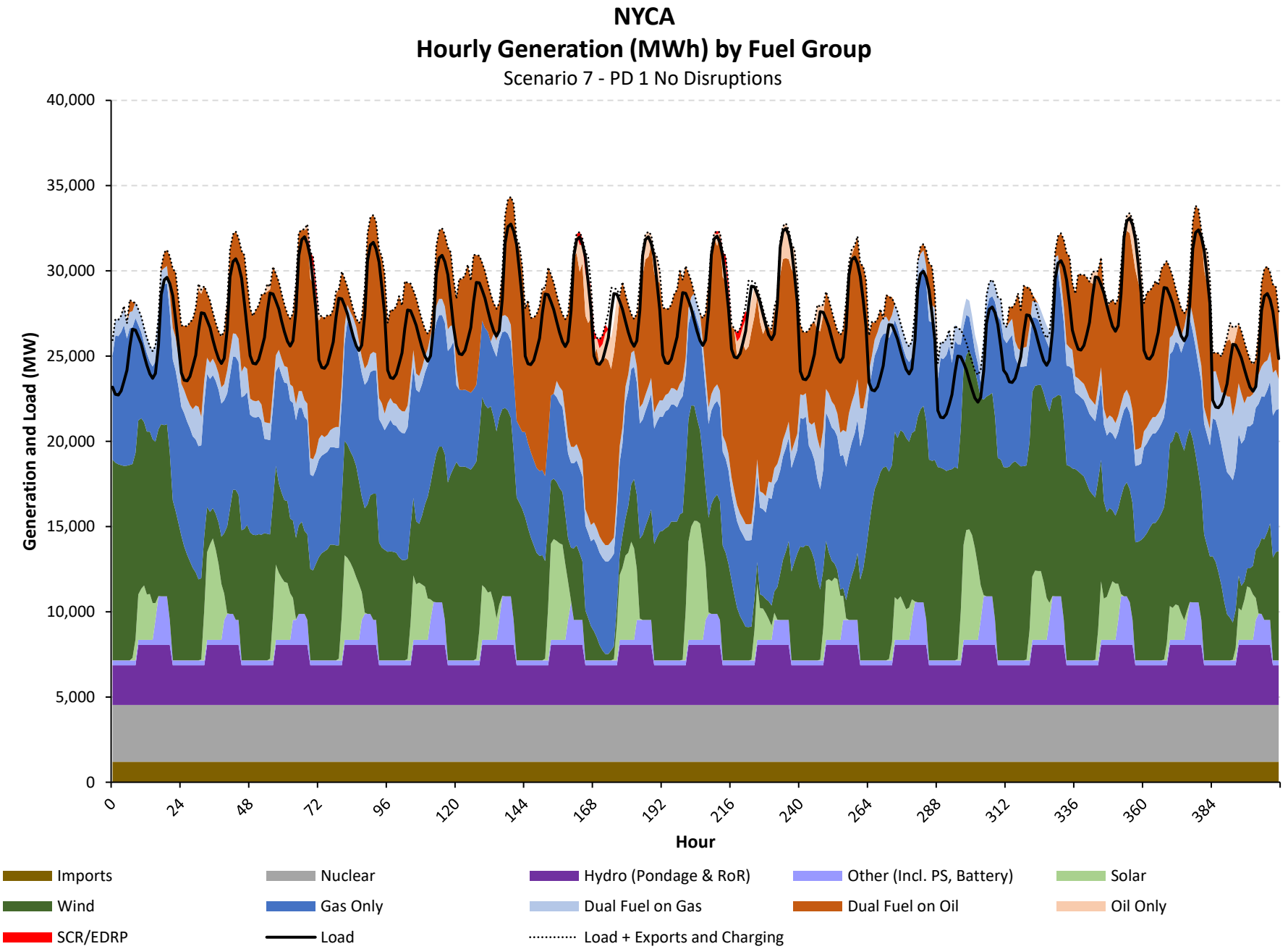


Hours with Loss of Load

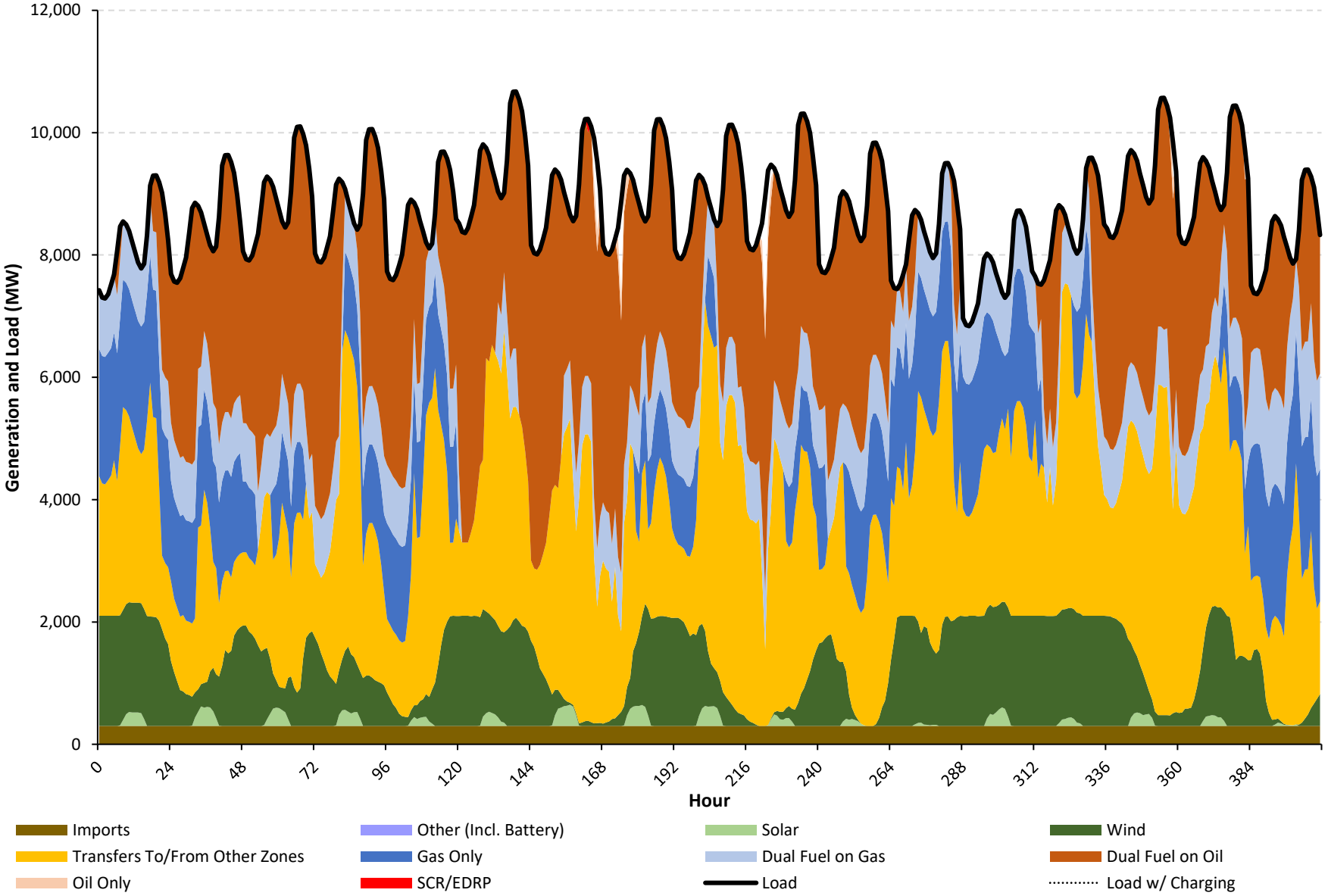


Total MWh of Lost Load

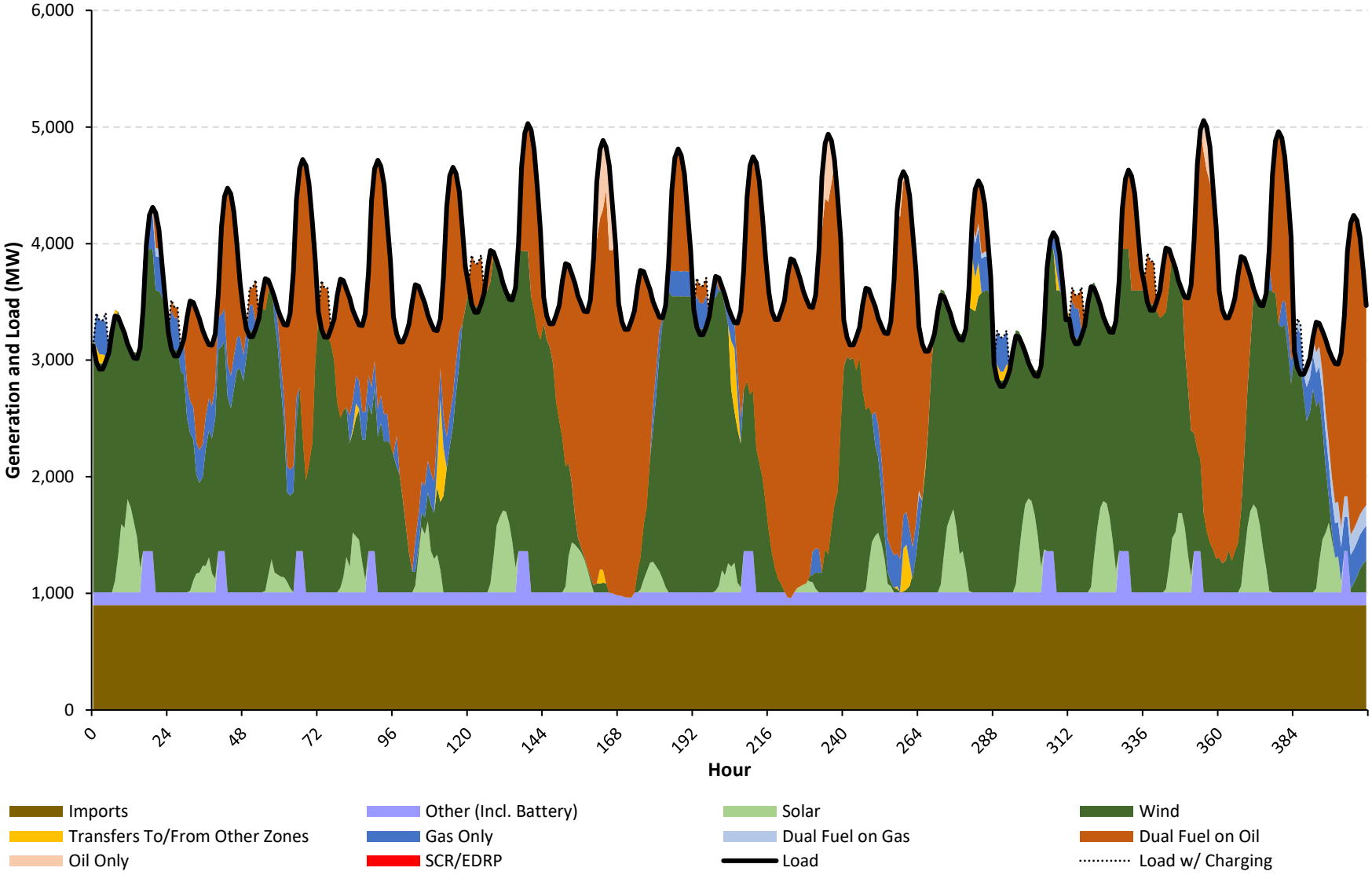


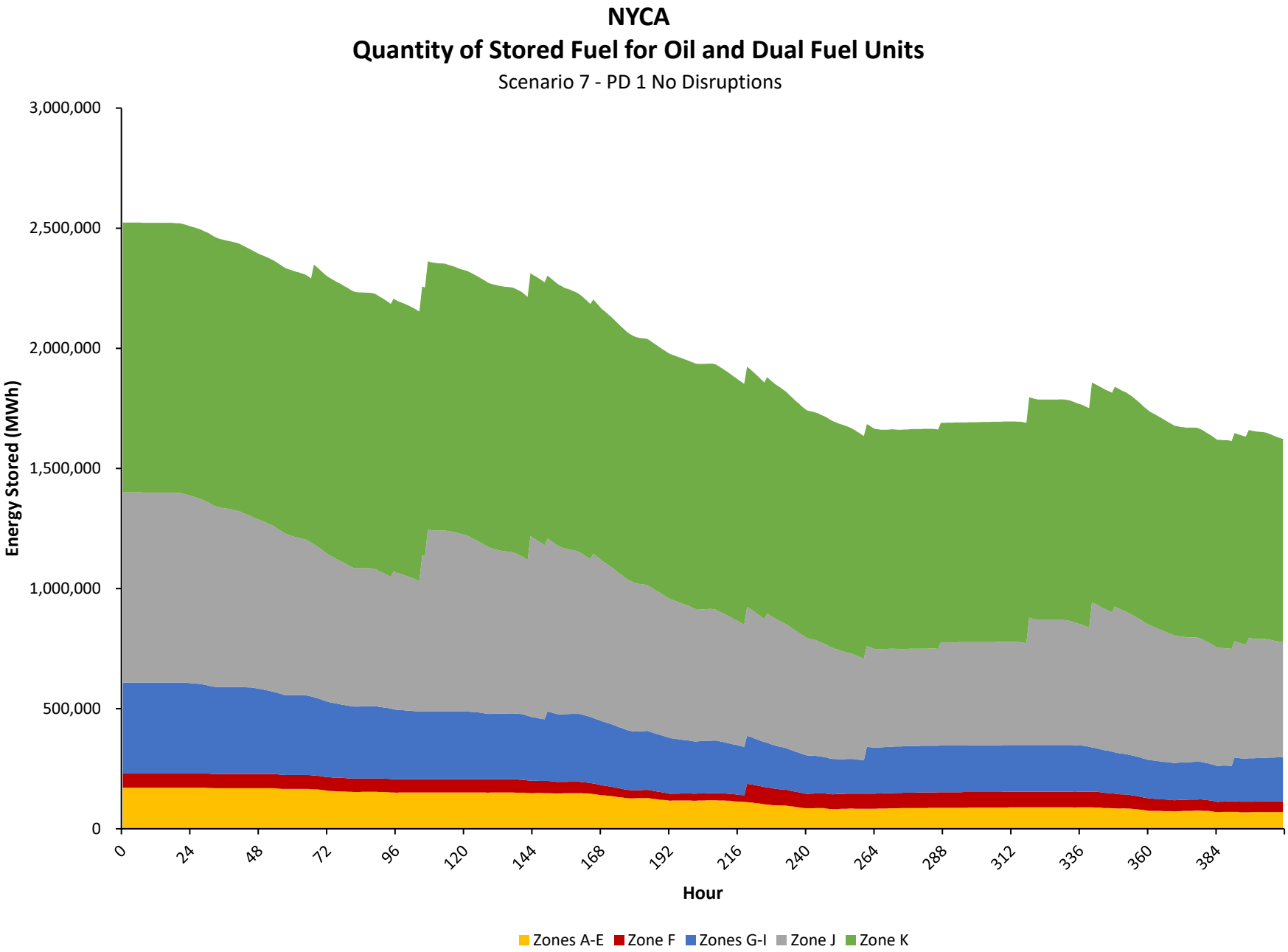

NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 7 - PD 1 No Disruptions
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

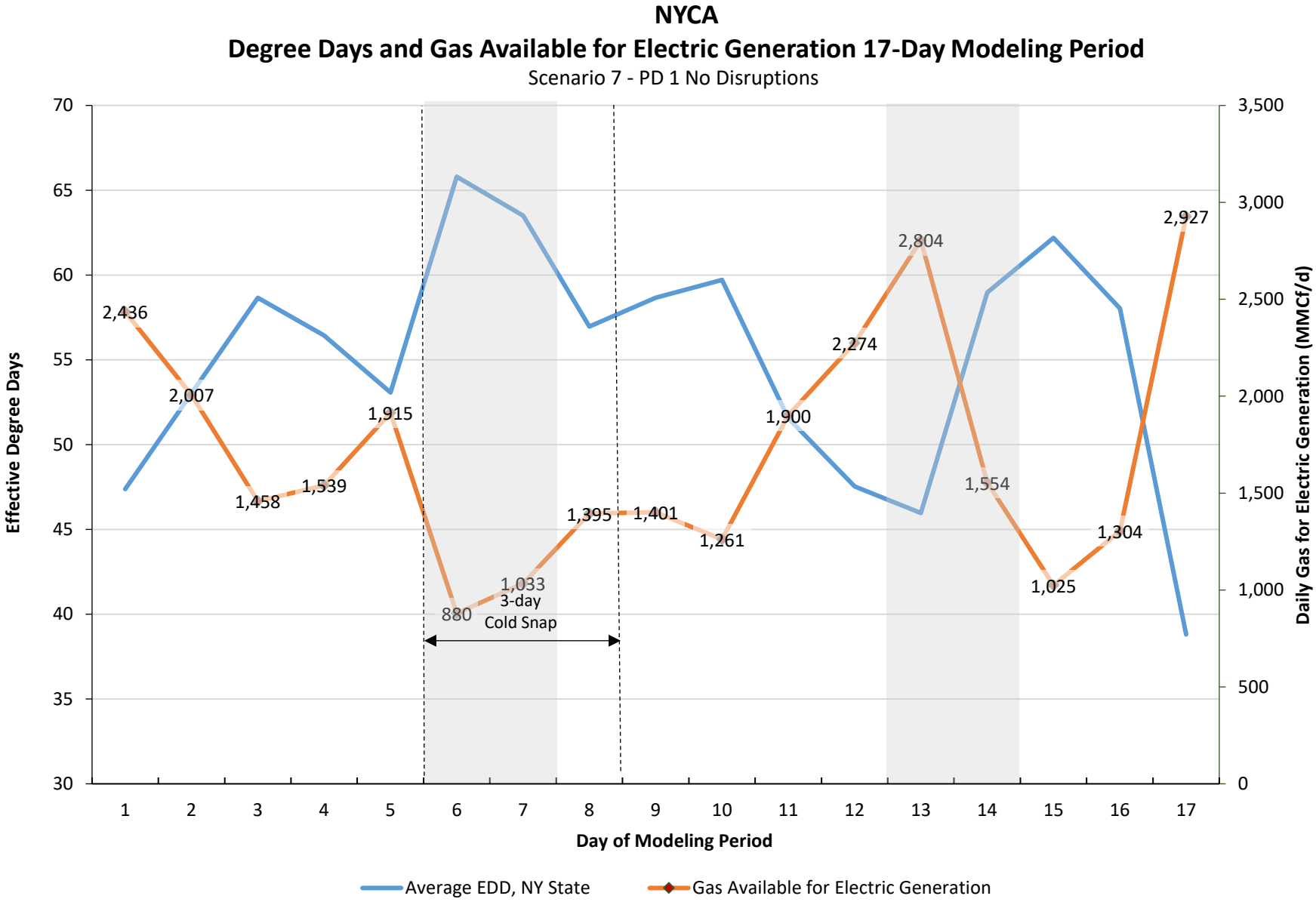
Zone J
Hourly Generation (MW) by Fuel Group
Scenario 7 - PD 1 No Disruptions



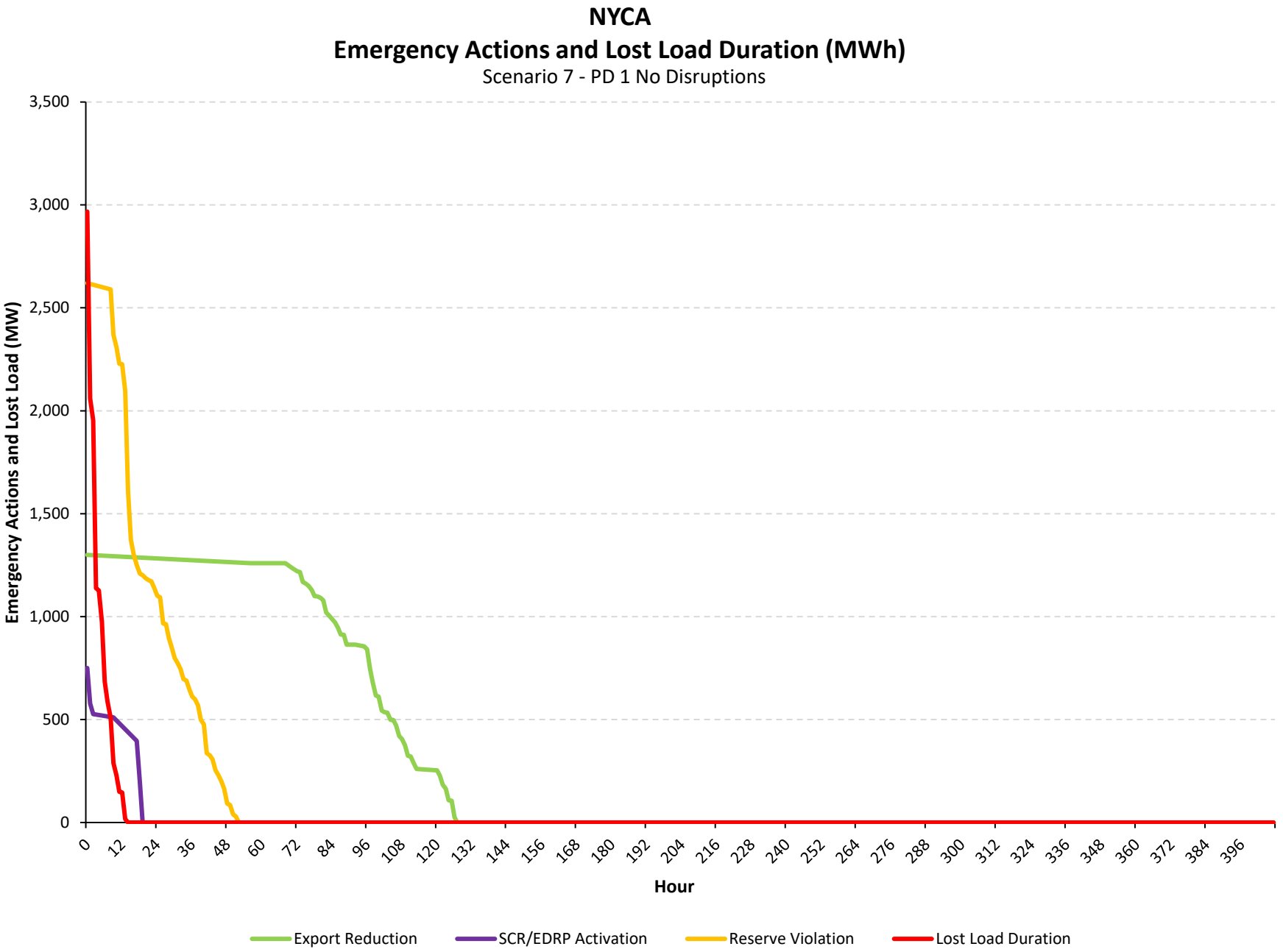
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 7 - PD 1 No Disruptions

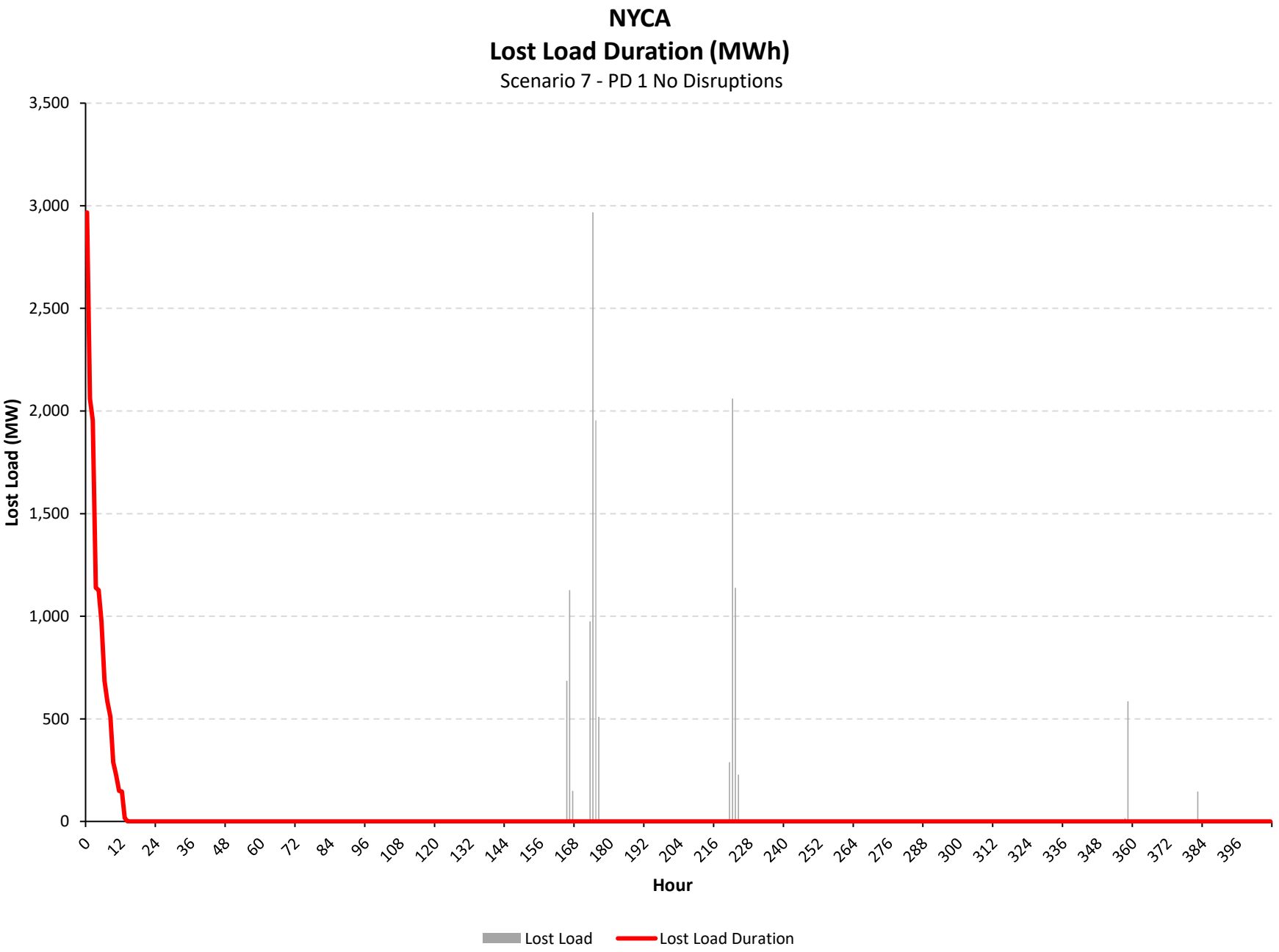



NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 7 - PD 1 No Disruptions
Energy Stored (MWh)
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Zones A-E
Zone F
Zones G-I
Zone J
Zone K



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 7 - PD 1 No Disruptions
Emergency Actions and Lost Load (MW)
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 7 - PD 1 No Disruptions
Lost Load (MW)
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

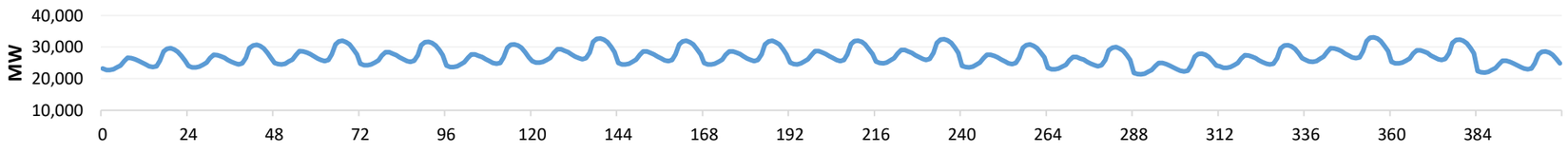
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 7 - PD 2 High Outage (Winter 2030/2031)

Hourly Results Summary

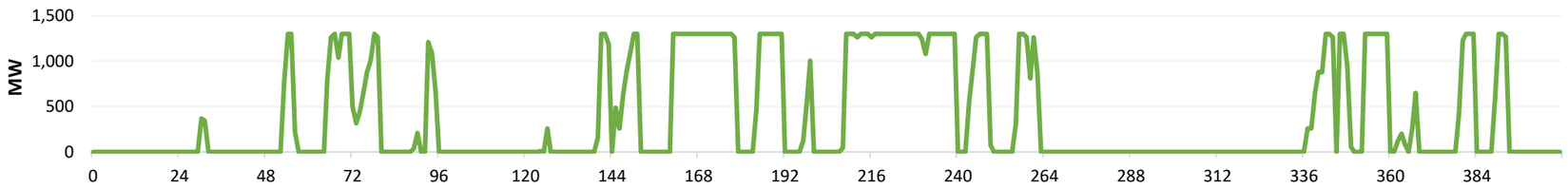
Case Name: Scenario 7 - PD 2 High Outage

Load During Modeling Period



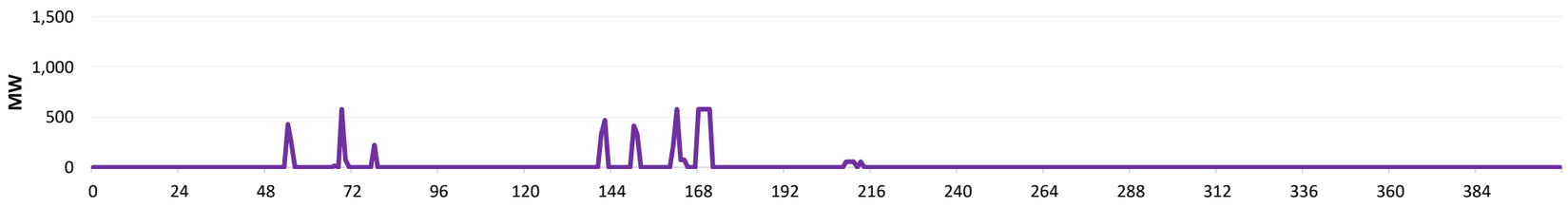
Case Summary	
Derate (EFORd) Increase:	High
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



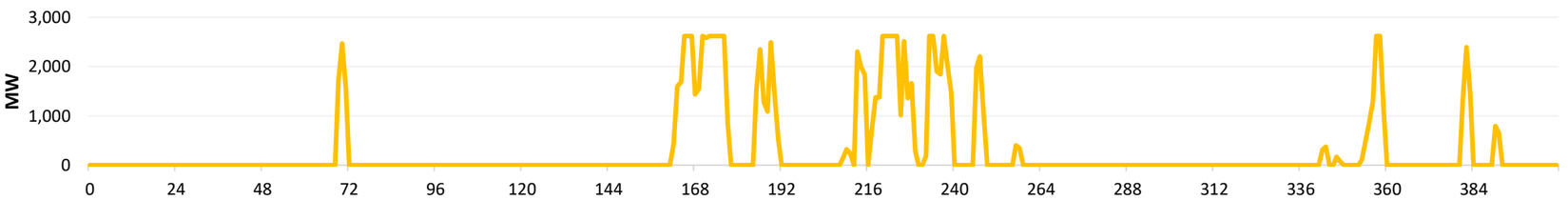
Export Reductions	
Total Hrs.	148
Total MWh	151,525
Avg. MW	371.4

SCR/EDRP Deployed During Modeling Period



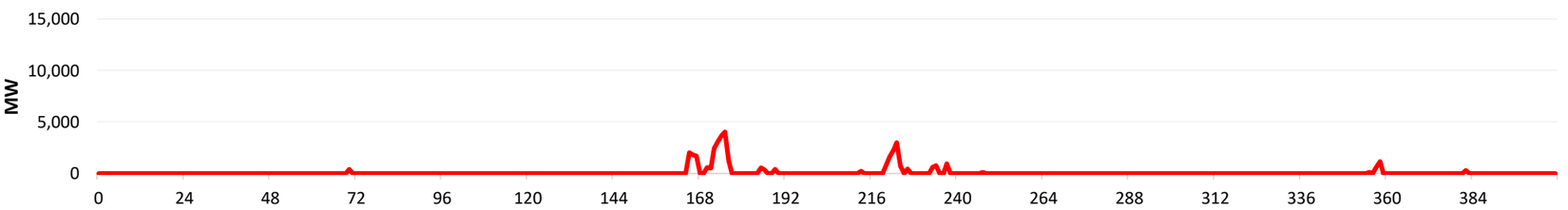
SCR Deployment	
Total Hrs.	22
Total MWh	6,577
Avg. MW	16.1

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	74
Total MWh	118,254
Avg. MW	289.8
First Hour with Viol.	69

Loss of Load During Modeling Period

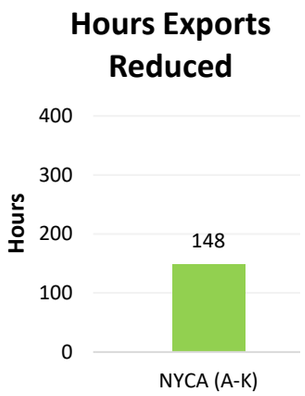


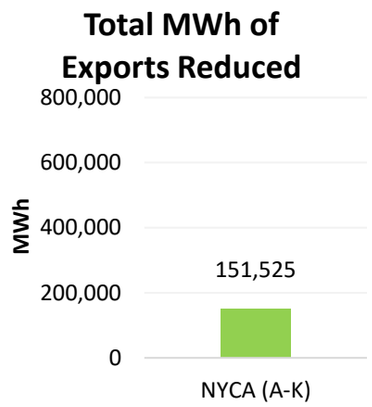
Loss of Load	
Total Hrs.	30
Total MWh	36,627
Avg. MW	89.8
First Hour with Losses	70

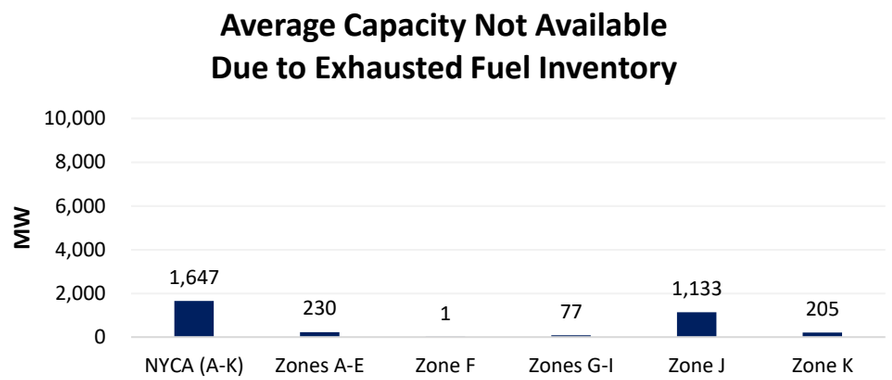
Full Period Results Summary

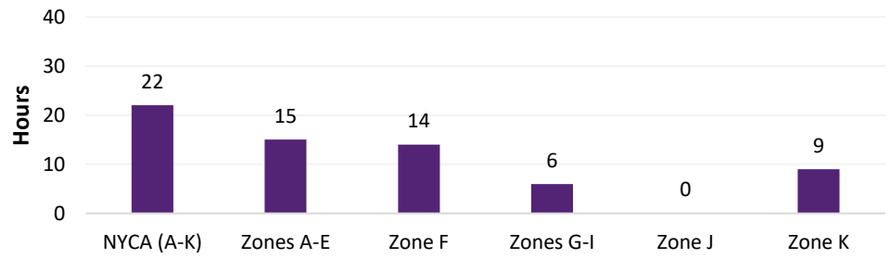
Case Name: Scenario 7 - PD 2 High Outage

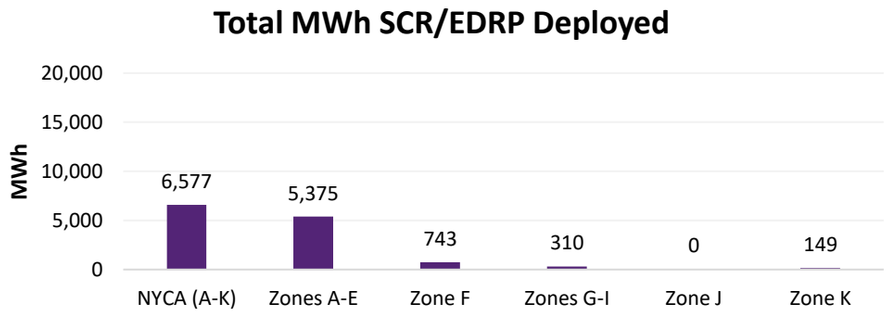
Case Summary	
Derate (EFORd) Increase:	High
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

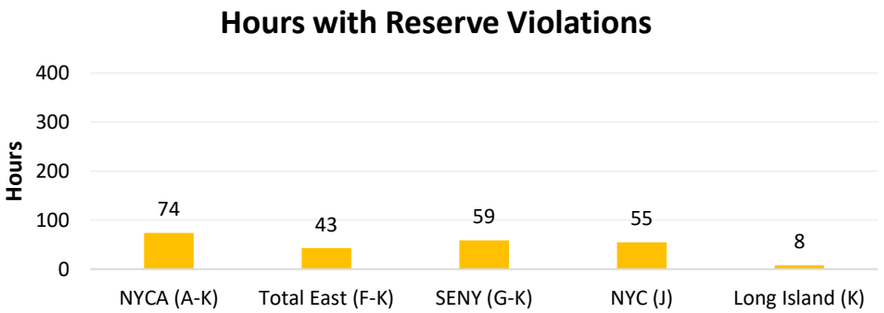


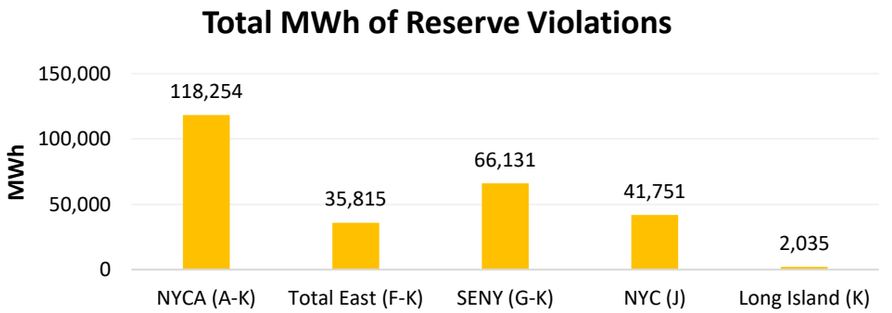


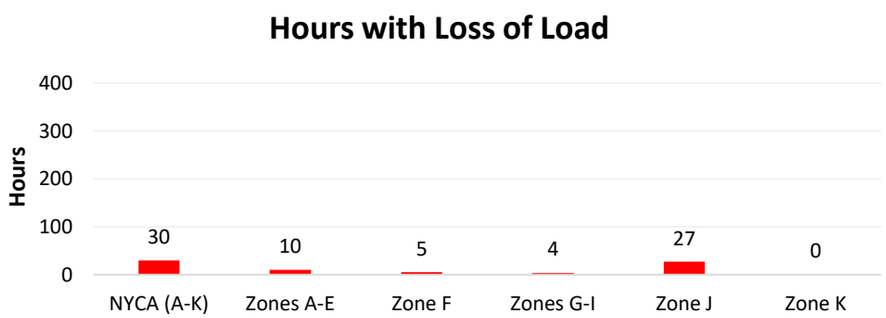


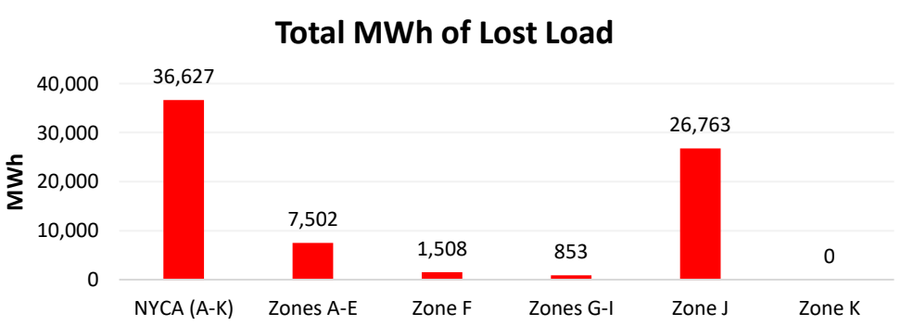


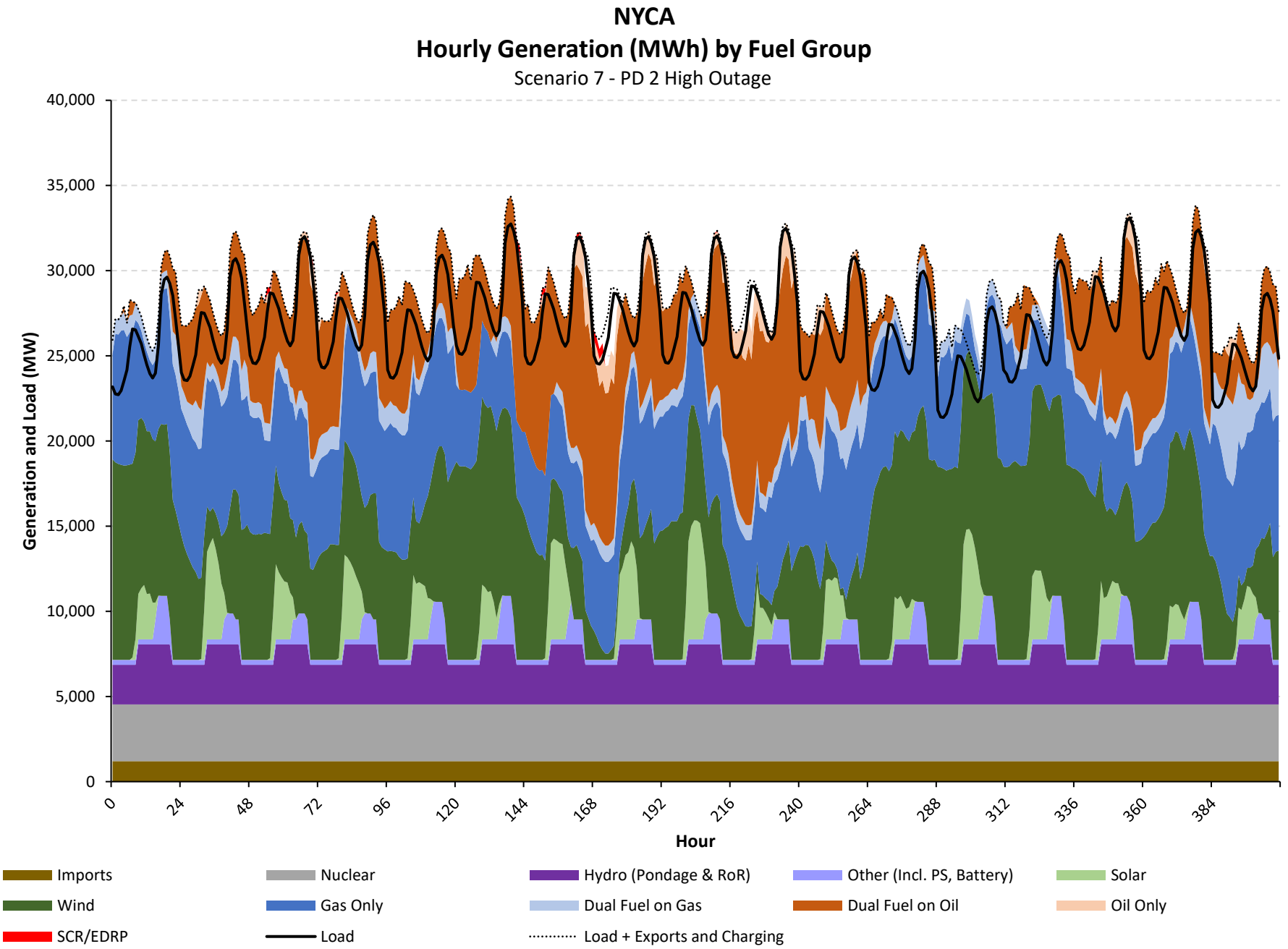


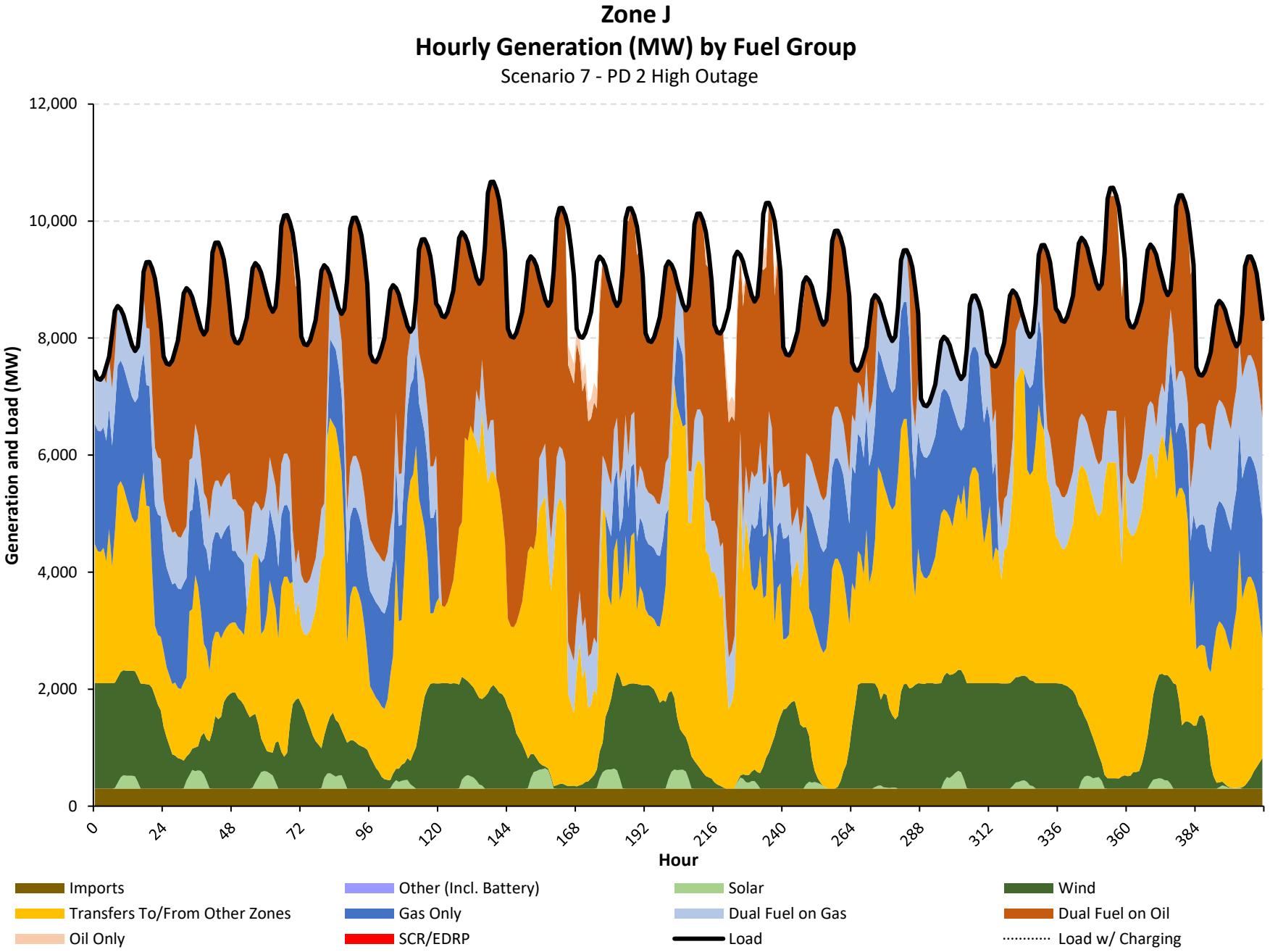




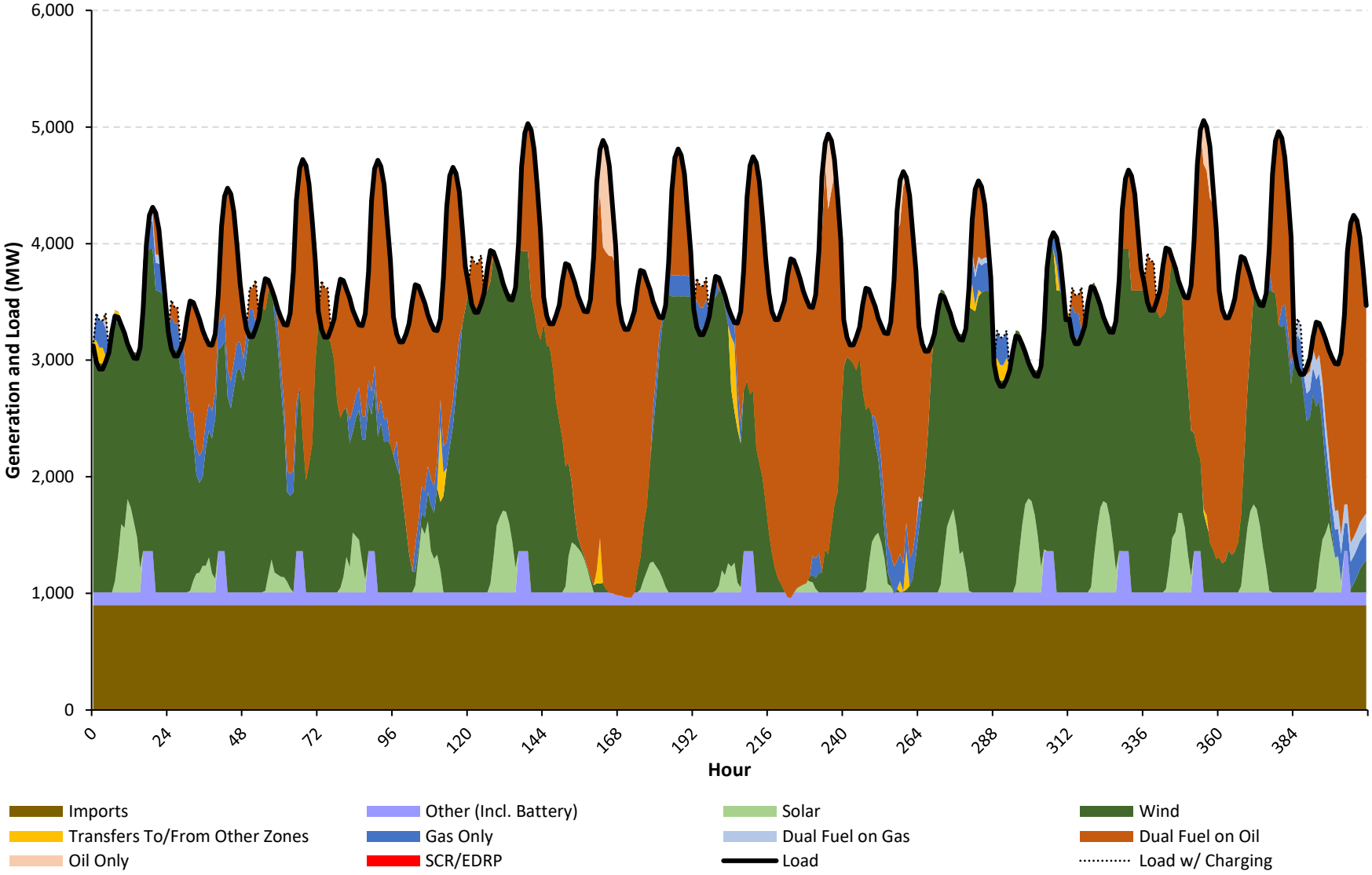




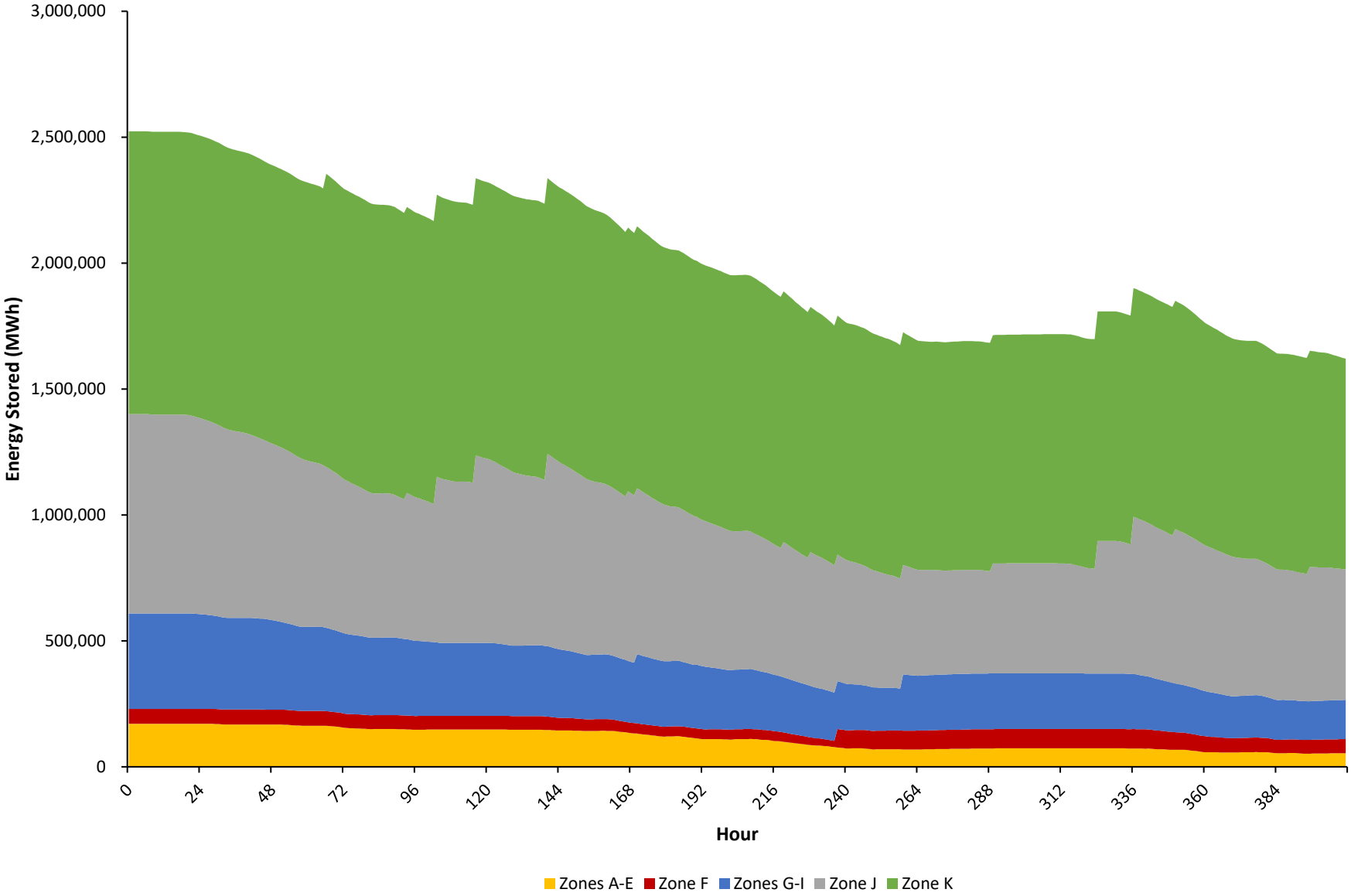

NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 7 - PD 2 High Outage
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

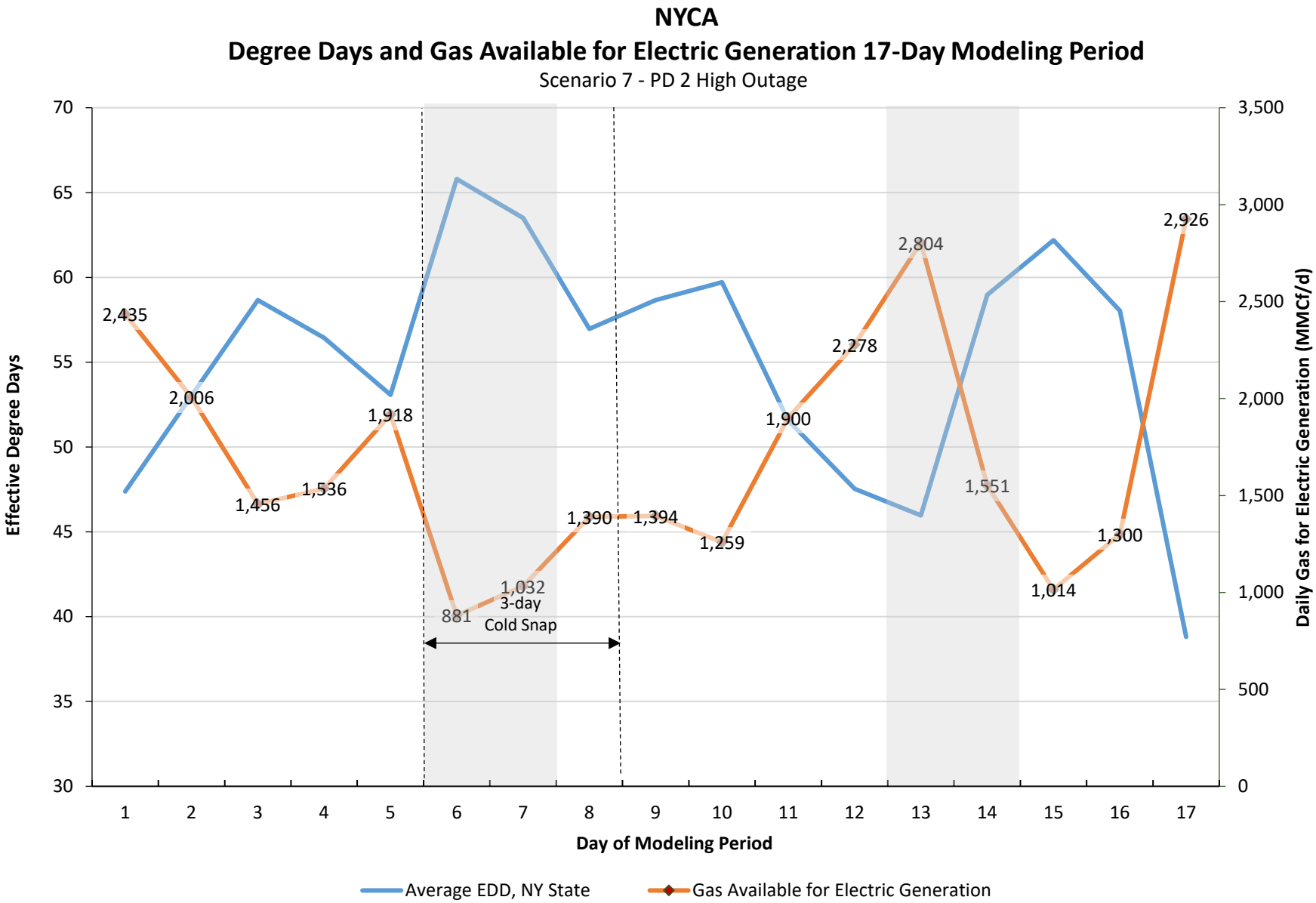

Zone J
Hourly Generation (MW) by Fuel Group
Scenario 7 - PD 2 High Outage
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

Zone K
Hourly Generation (MW) by Fuel Group
Scenario 7 - PD 2 High Outage

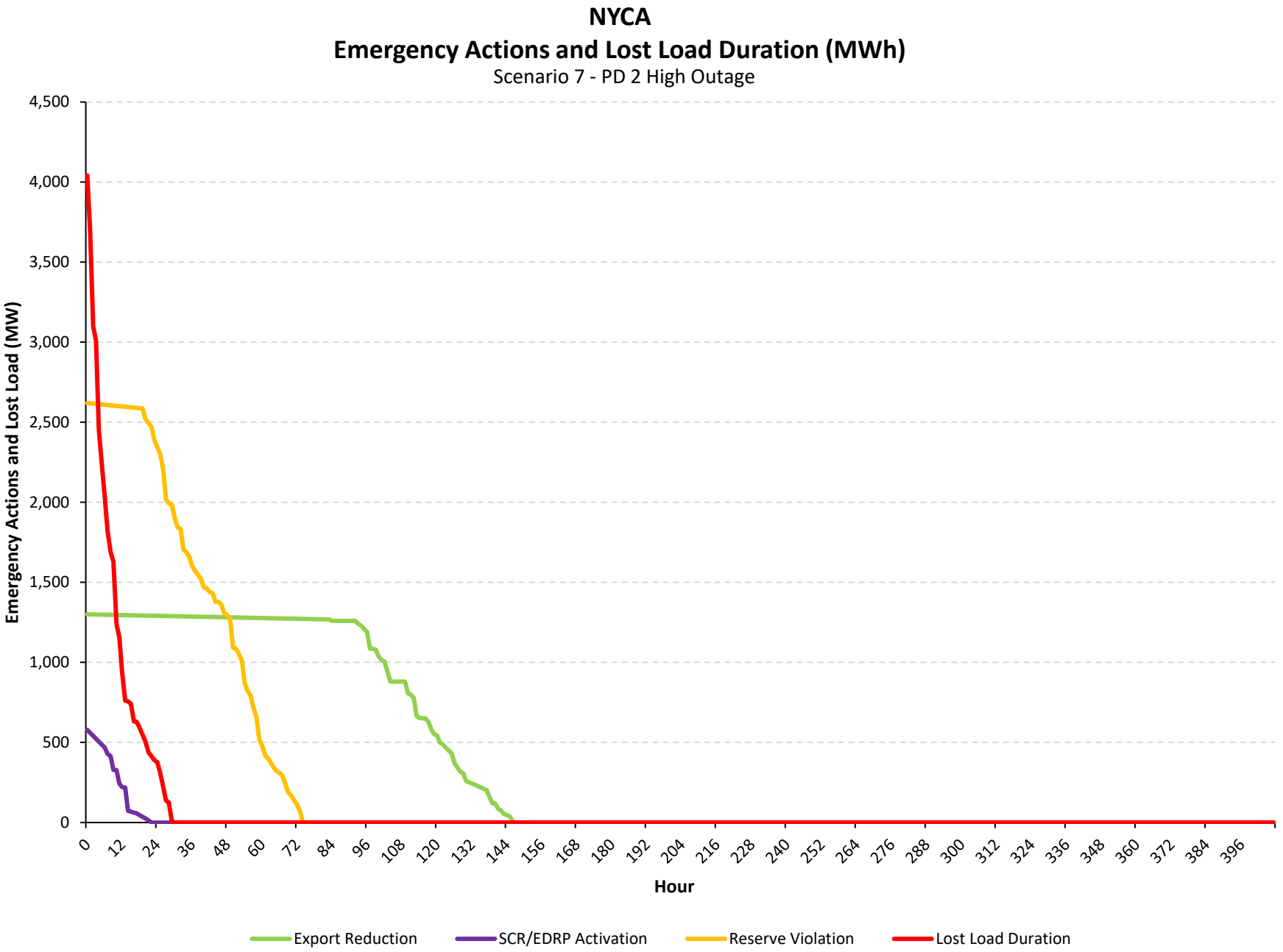


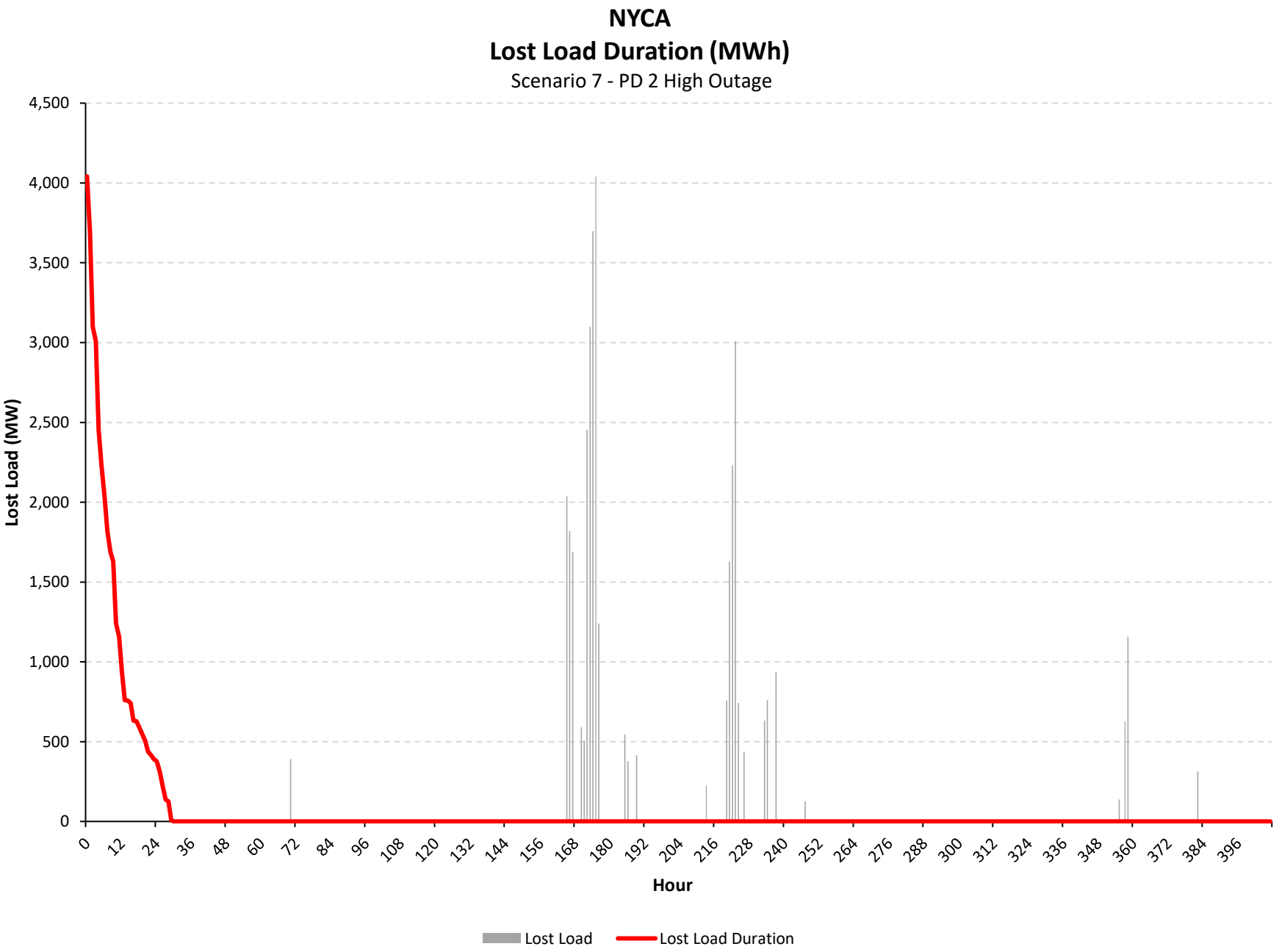
NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 7 - PD 2 High Outage





Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 7 - PD 2 High Outage
Emergency Actions and Lost Load (MW)
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 7 - PD 2 High Outage
Lost Load (MW)
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

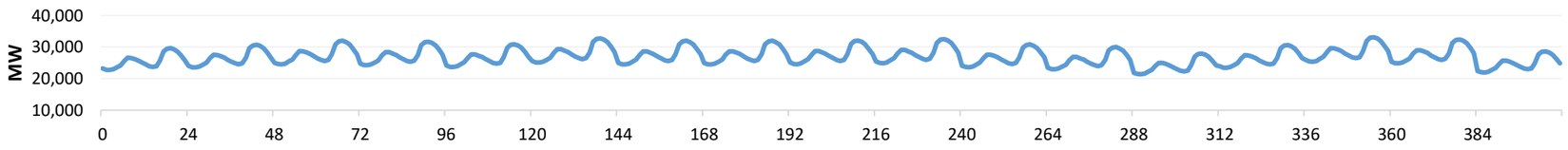
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 7 - PD 3 SENY Deactivation (Winter 2030/2031)

Hourly Results Summary

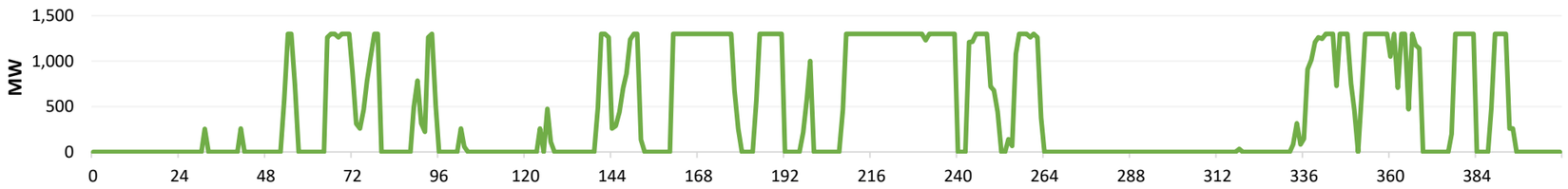
Case Name: Scenario 7 - PD 3 SENY Deactivation

Load During Modeling Period



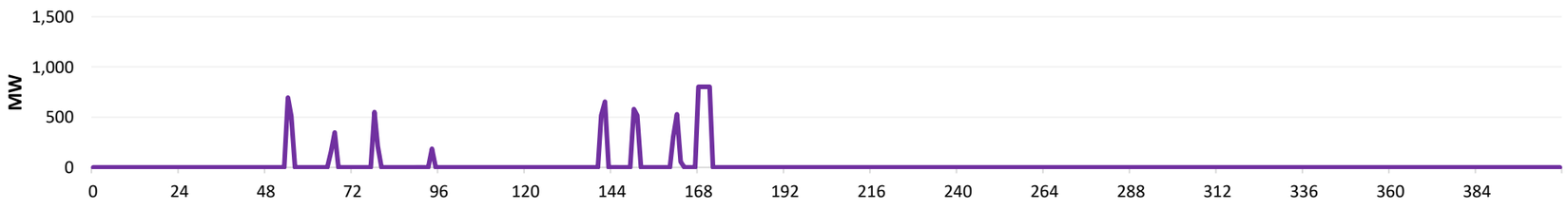
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	Roseton
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



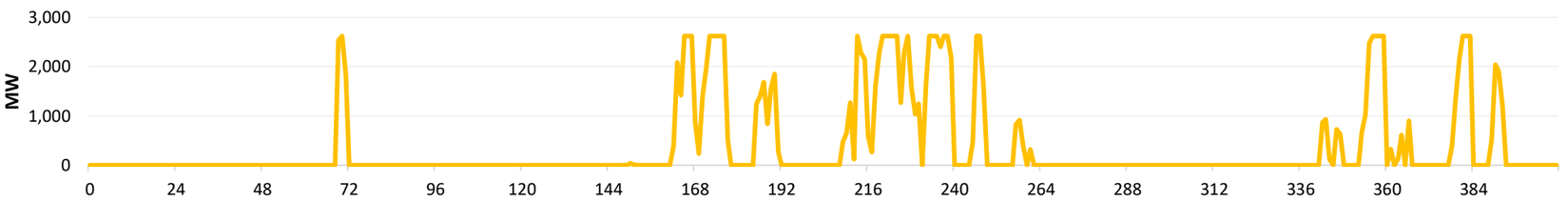
Export Reductions	
Total Hrs.	177
Total MWh	180,480
Avg. MW	442.4

SCR/EDRP Deployed During Modeling Period



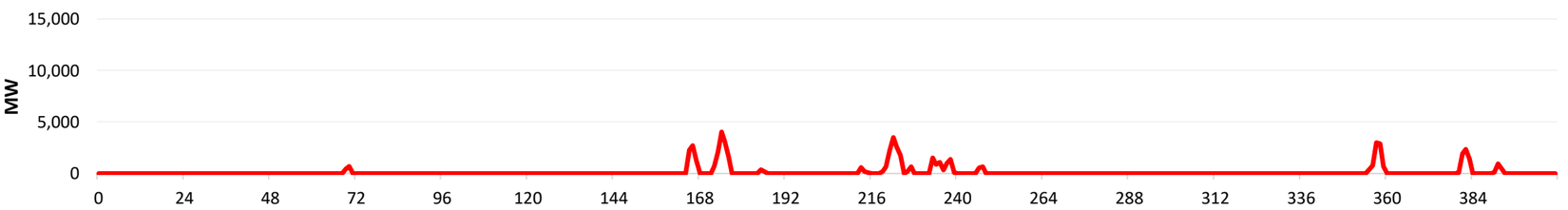
SCR Deployment	
Total Hrs.	18
Total MWh	9,013
Avg. MW	22.1

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	92
Total MWh	149,572
Avg. MW	366.6
First Hour with Viol.	69

Loss of Load During Modeling Period



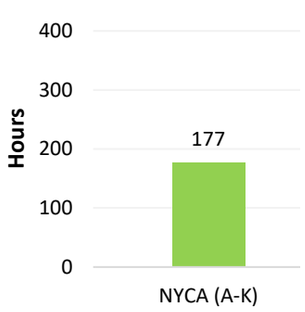
Loss of Load	
Total Hrs.	44
Total MWh	54,478
Avg. MW	133.5
First Hour with Losses	69

Full Period Results Summary

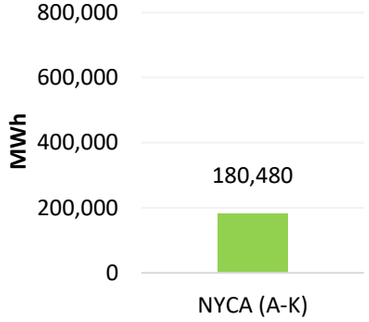
Case Name: Scenario 7 - PD 3 SENY Deactivation

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	Roseton
Import Scenario:	All

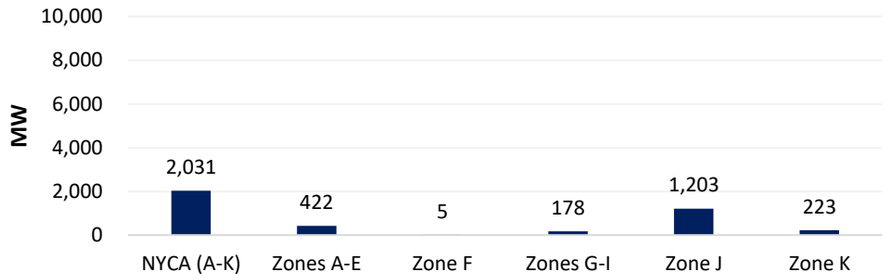
Hours Exports Reduced



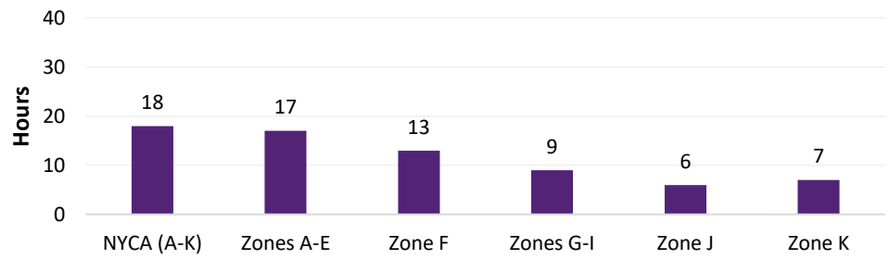
Total MWh of Exports Reduced



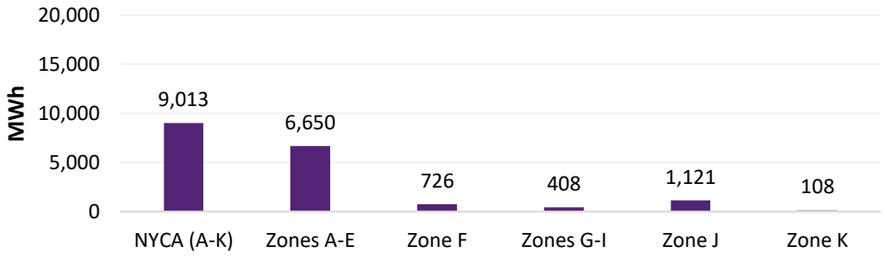
Average Capacity Not Available Due to Exhausted Fuel Inventory



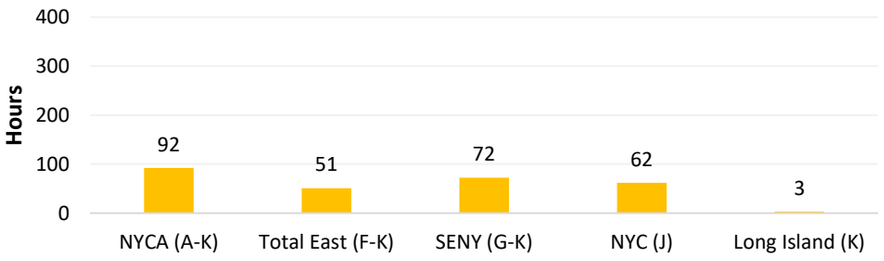
Hours SCR/EDRP Deployed



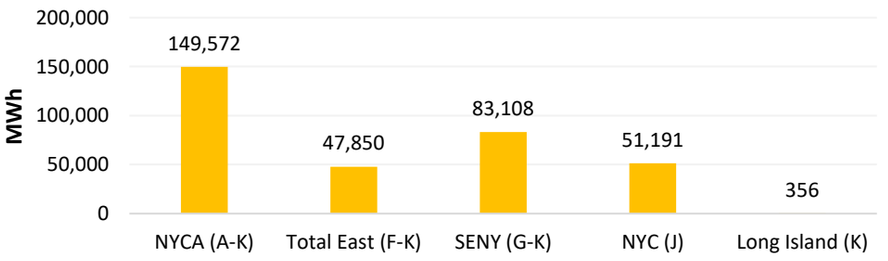
Total MWh SCR/EDRP Deployed



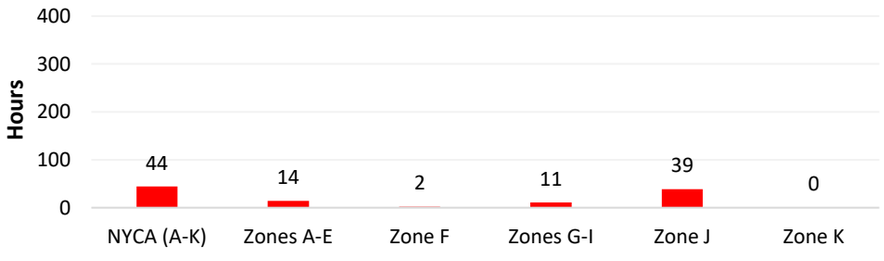
Hours with Reserve Violations



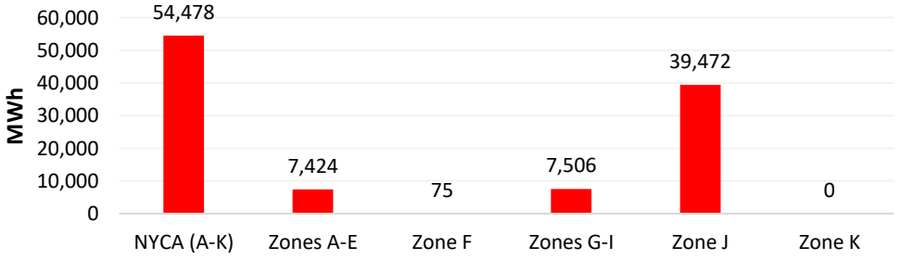
Total MWh of Reserve Violations

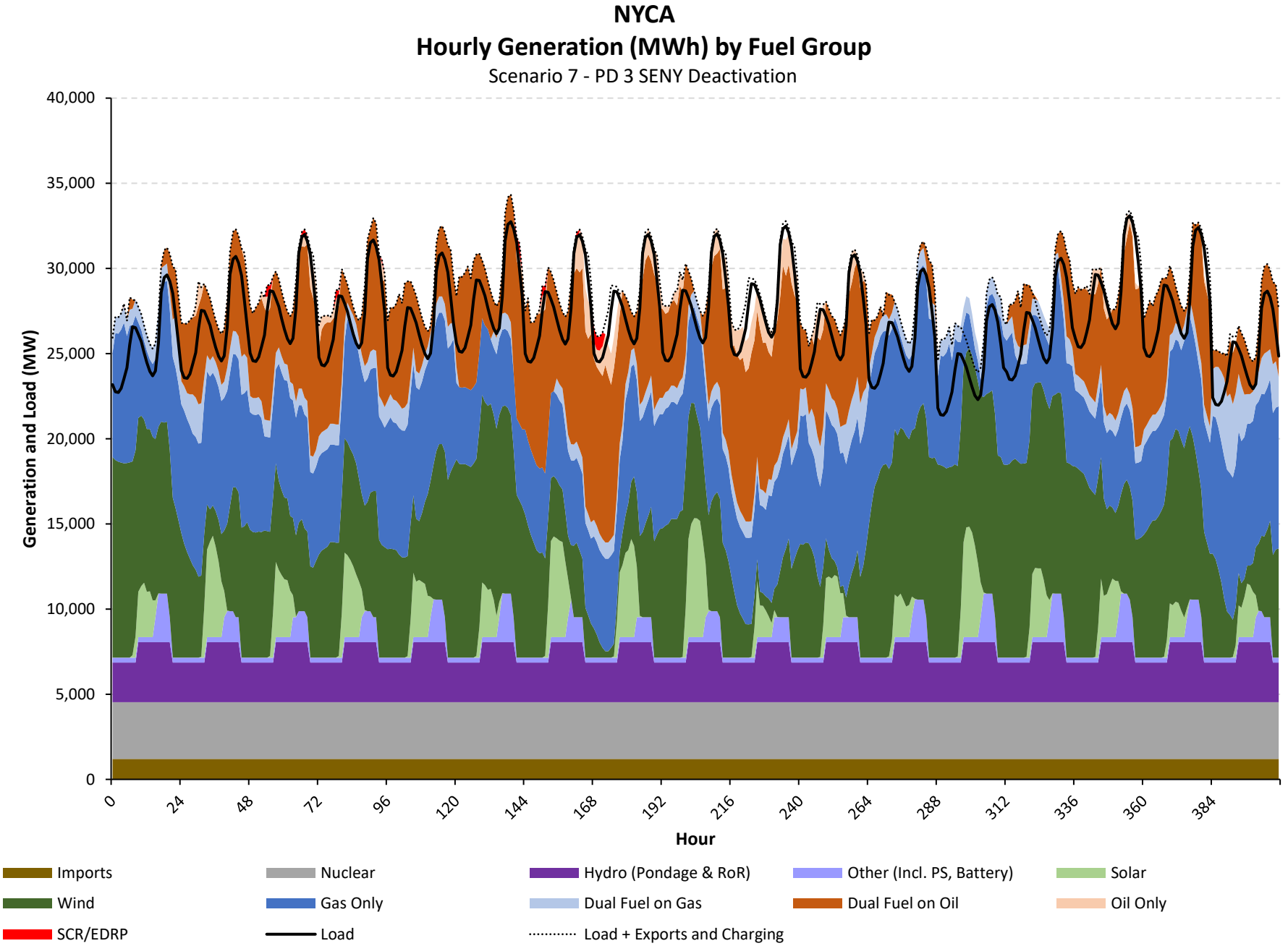


Hours with Loss of Load

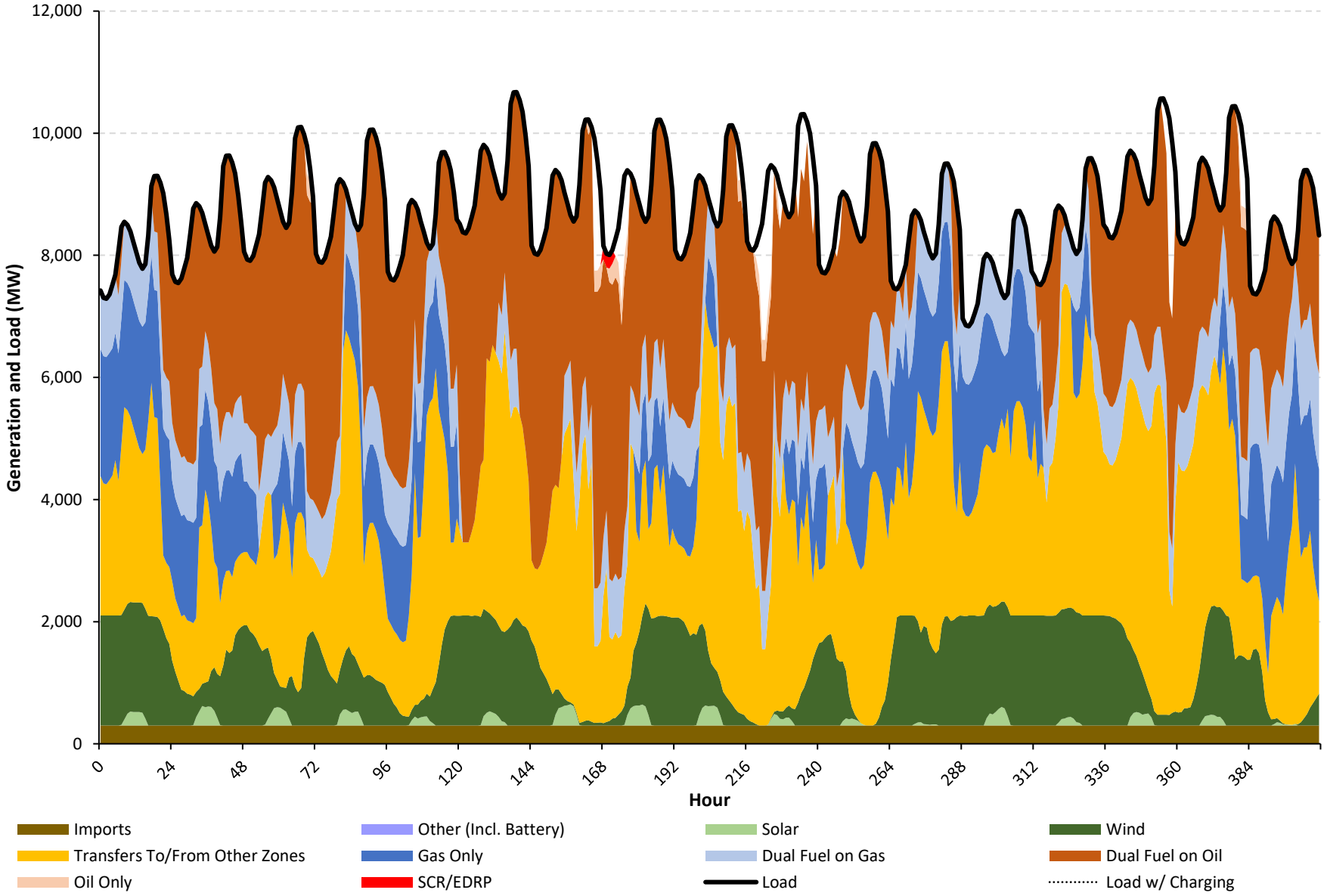


Total MWh of Lost Load

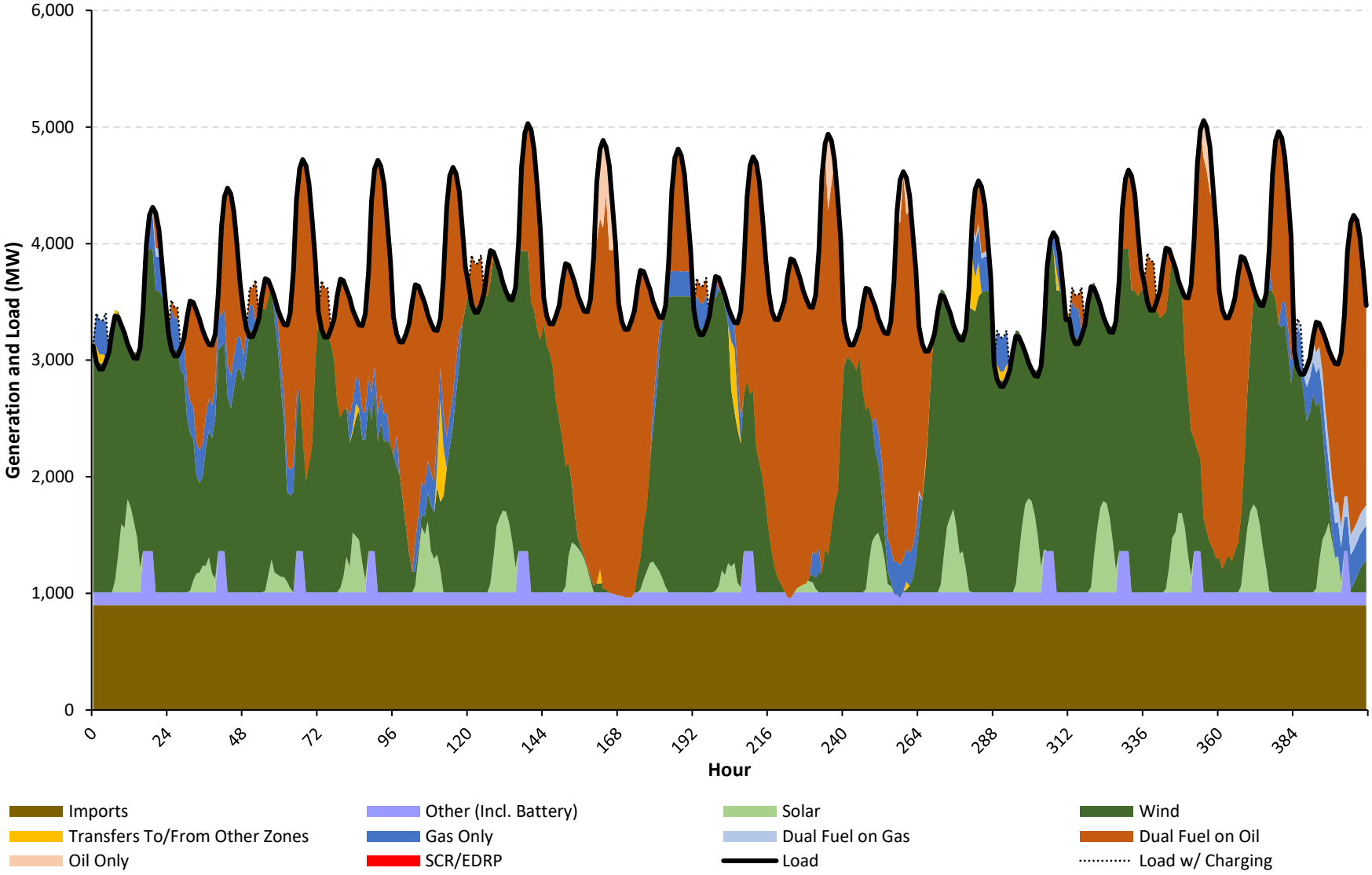



NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 7 - PD 3 SENY Deactivation
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

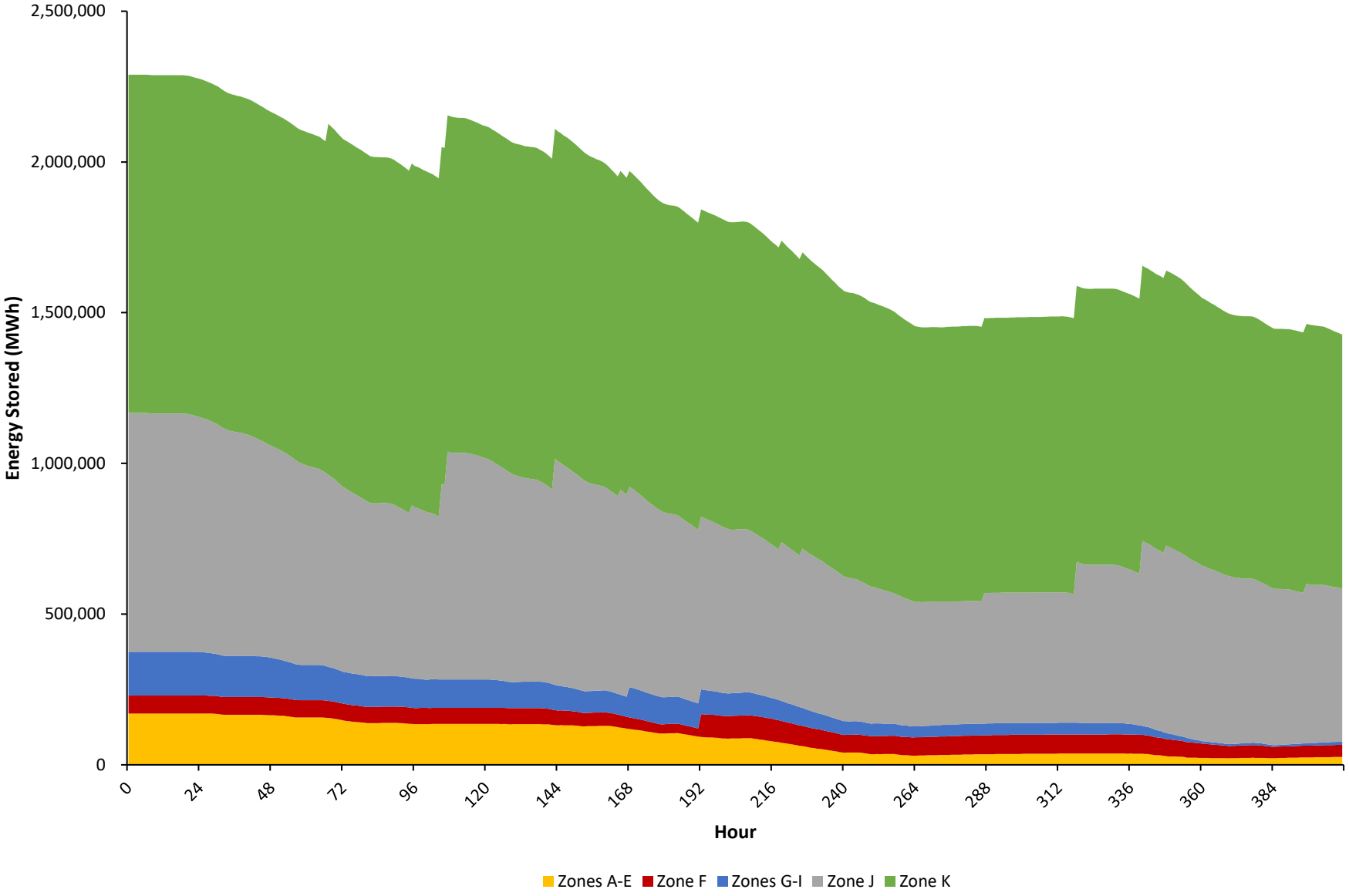
Zone J
Hourly Generation (MW) by Fuel Group
Scenario 7 - PD 3 SENY Deactivation

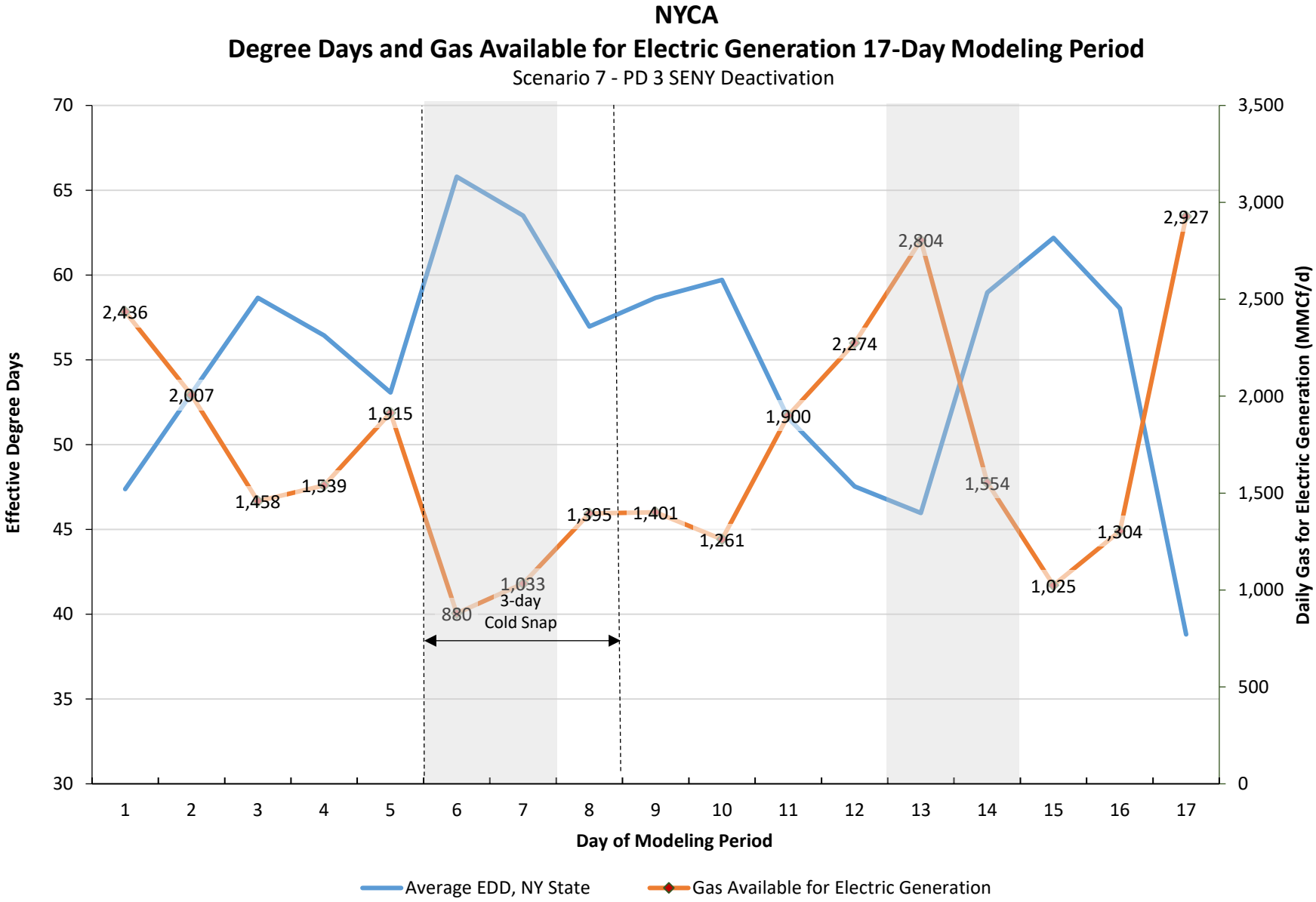


Zone K
Hourly Generation (MW) by Fuel Group
Scenario 7 - PD 3 SENY Deactivation



NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 7 - PD 3 SENY Deactivation



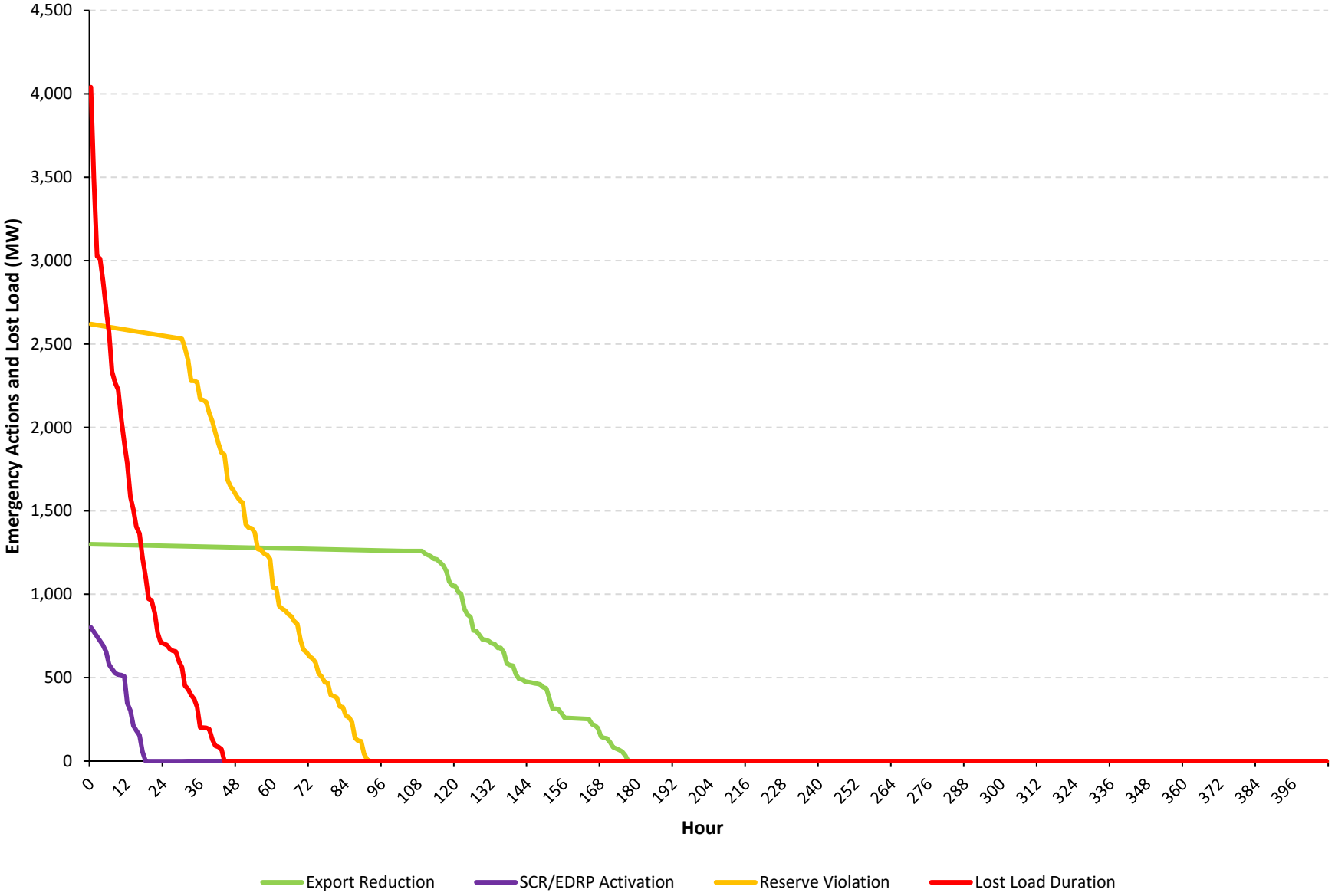


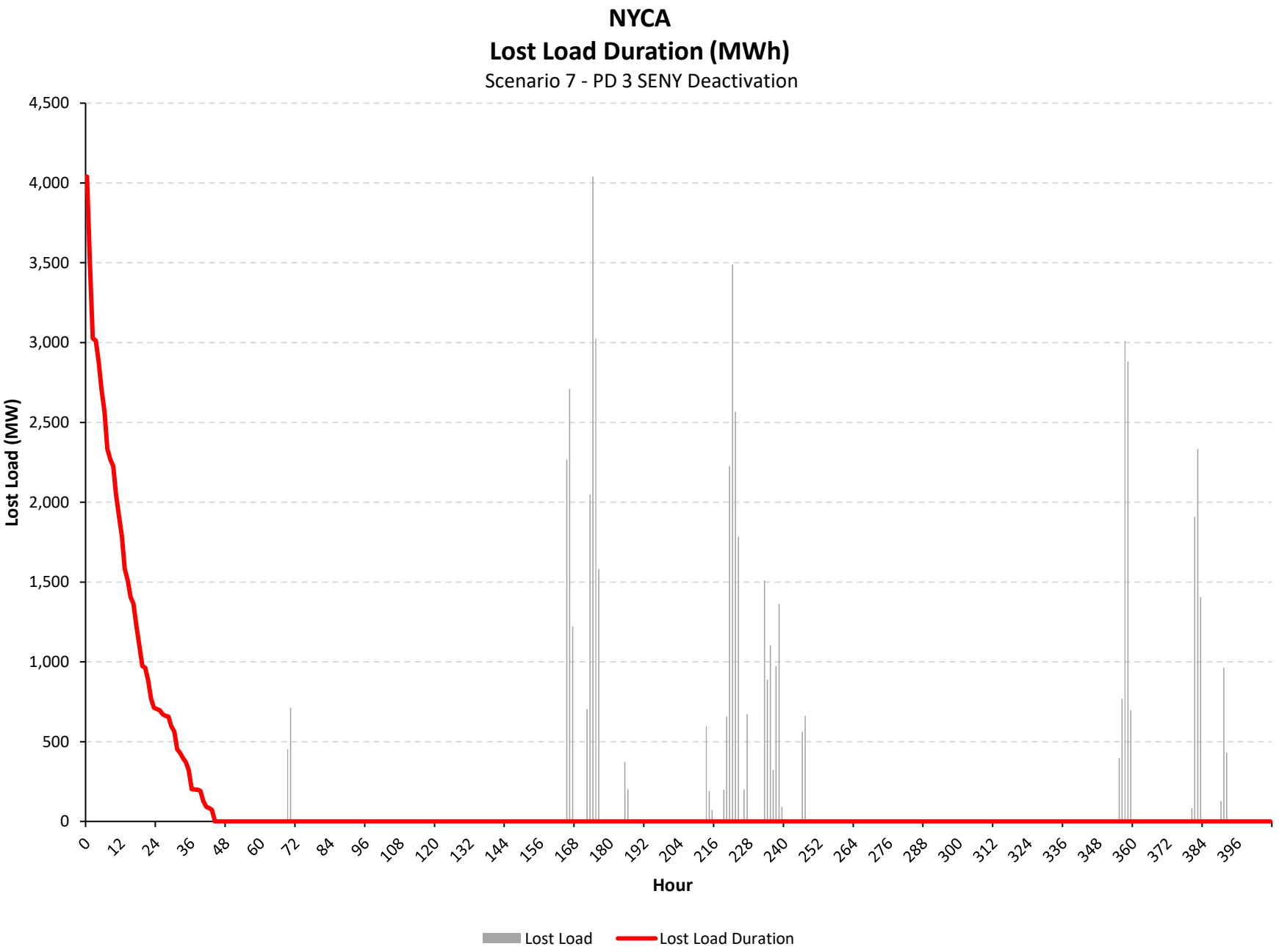
Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.

NYCA

Emergency Actions and Lost Load Duration (MWh)

Scenario 7 - PD 3 SENY Deactivation




NYCA
Lost Load Duration (MWh)
Scenario 7 - PD 3 SENY Deactivation
Lost Load (MW)
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

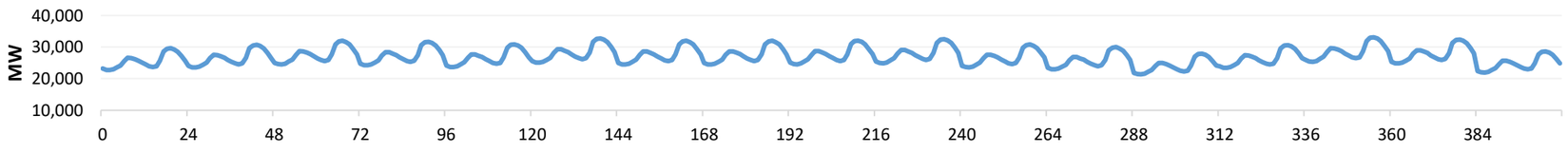
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 7 - PD 4 Nuclear Station Outage (Winter 2030/2031)

Hourly Results Summary

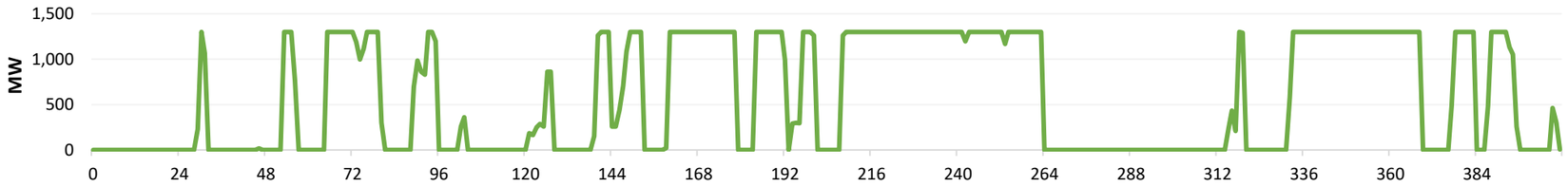
Case Name: Scenario 7 - PD 4 Nuclear Station Outage

Load During Modeling Period



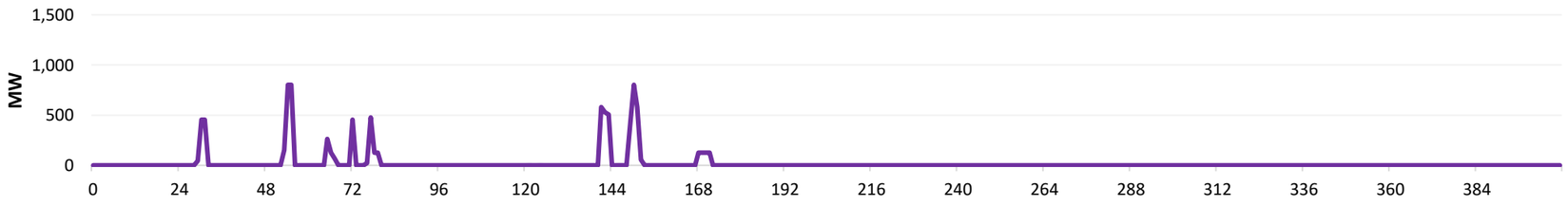
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	On
Plant Outage:	None
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



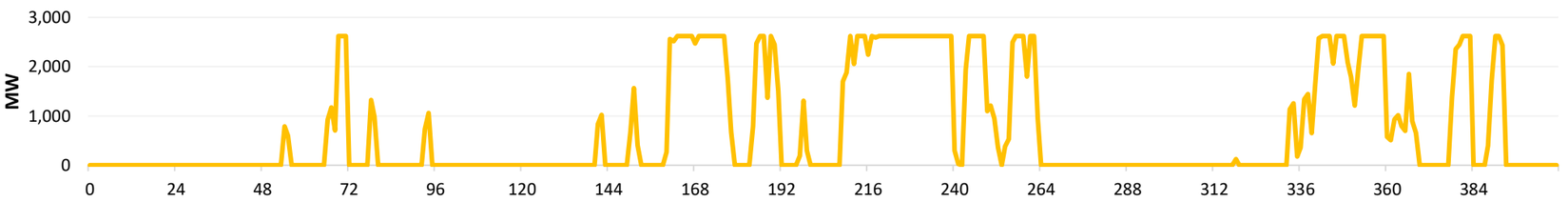
Export Reductions	
Total Hrs.	207
Total MWh	234,398
Avg. MW	574.5

SCR/EDRP Deployed During Modeling Period



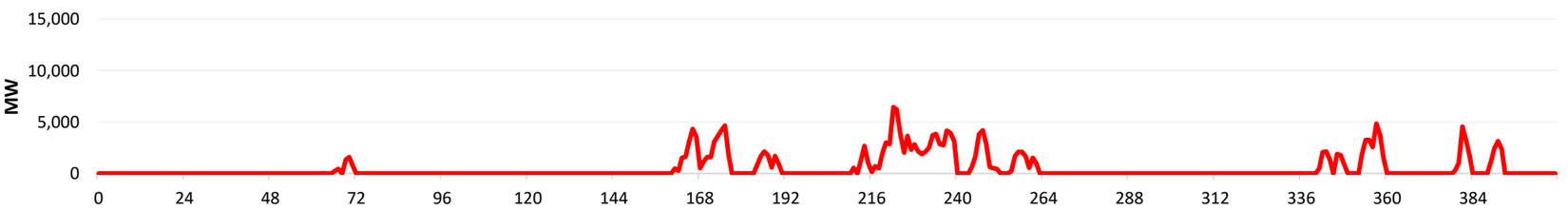
SCR Deployment	
Total Hrs.	25
Total MWh	8,315
Avg. MW	20.4

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	148
Total MWh	285,553
Avg. MW	699.9
First Hour with Viol.	31

Loss of Load During Modeling Period



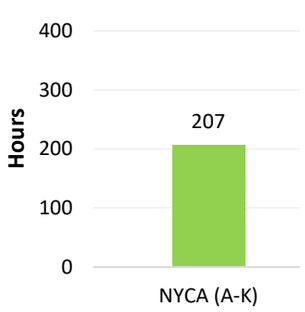
Loss of Load	
Total Hrs.	97
Total MWh	203,620
Avg. MW	499.1
First Hour with Losses	66

Full Period Results Summary

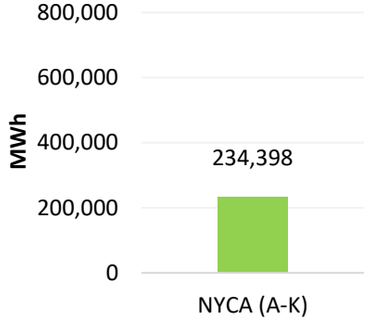
Case Name: Scenario 7 - PD 4 Nuclear Station Outage

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	On
Plant Outage:	None
Import Scenario:	All

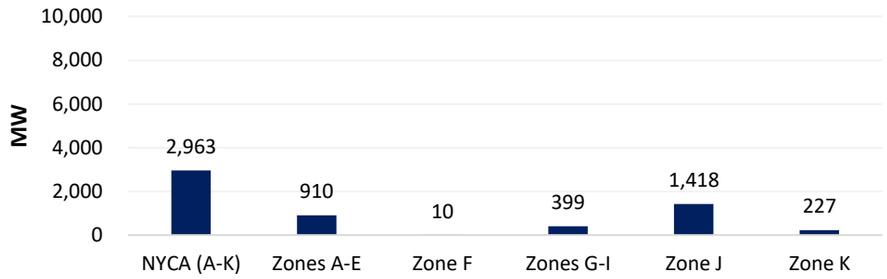
Hours Exports Reduced



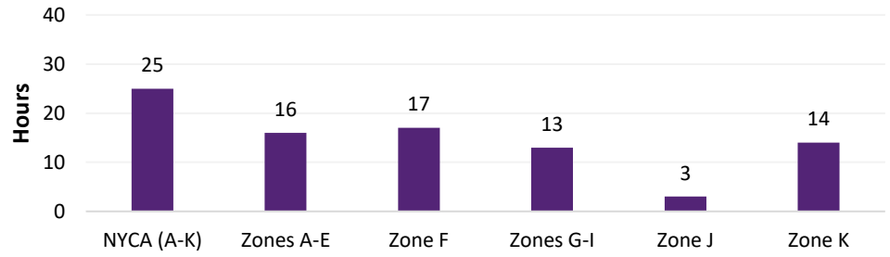
Total MWh of Exports Reduced



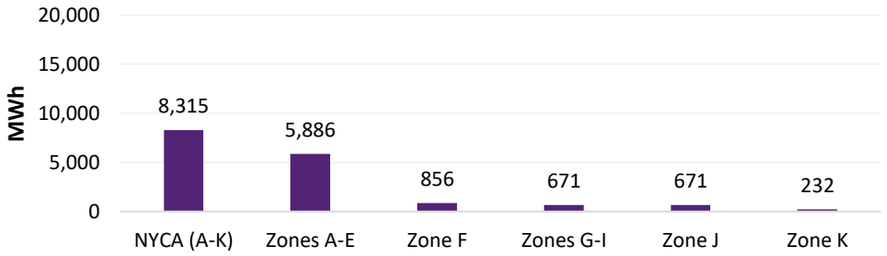
Average Capacity Not Available Due to Exhausted Fuel Inventory



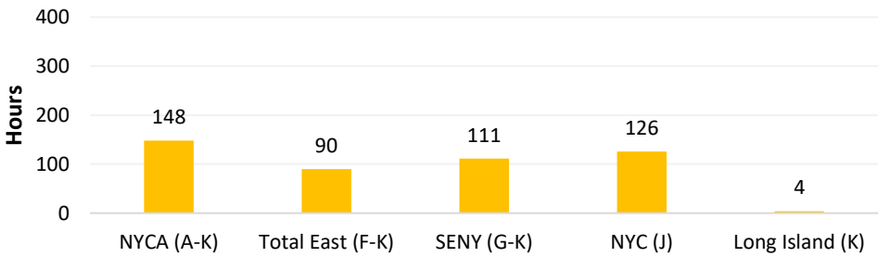
Hours SCR/EDRP Deployed



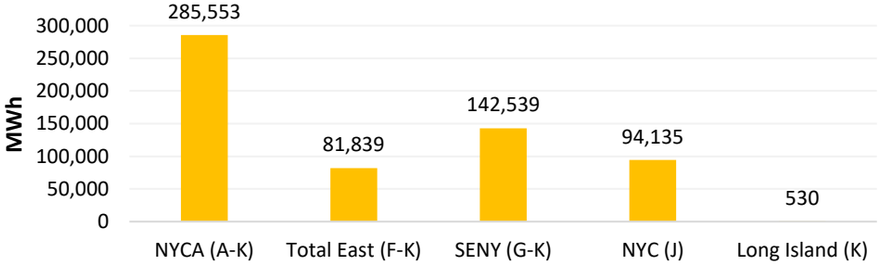
Total MWh SCR/EDRP Deployed



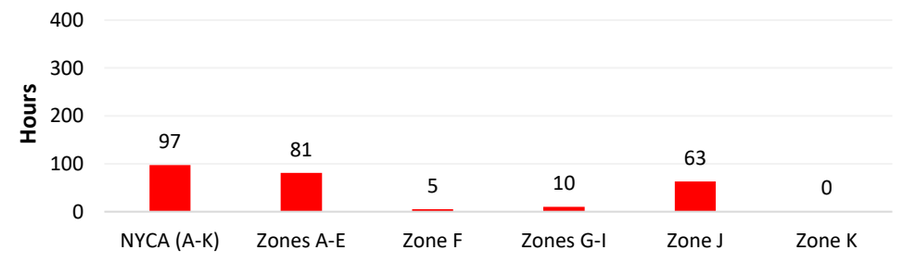
Hours with Reserve Violations



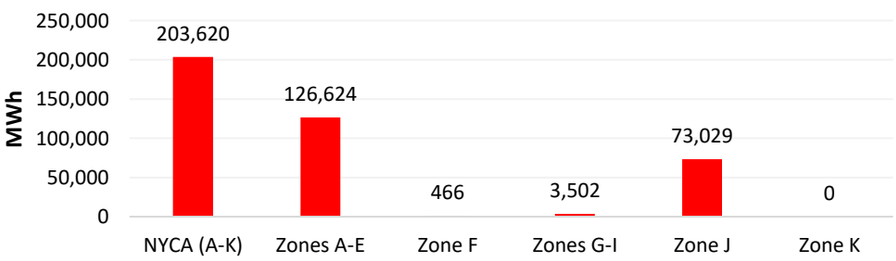
Total MWh of Reserve Violations

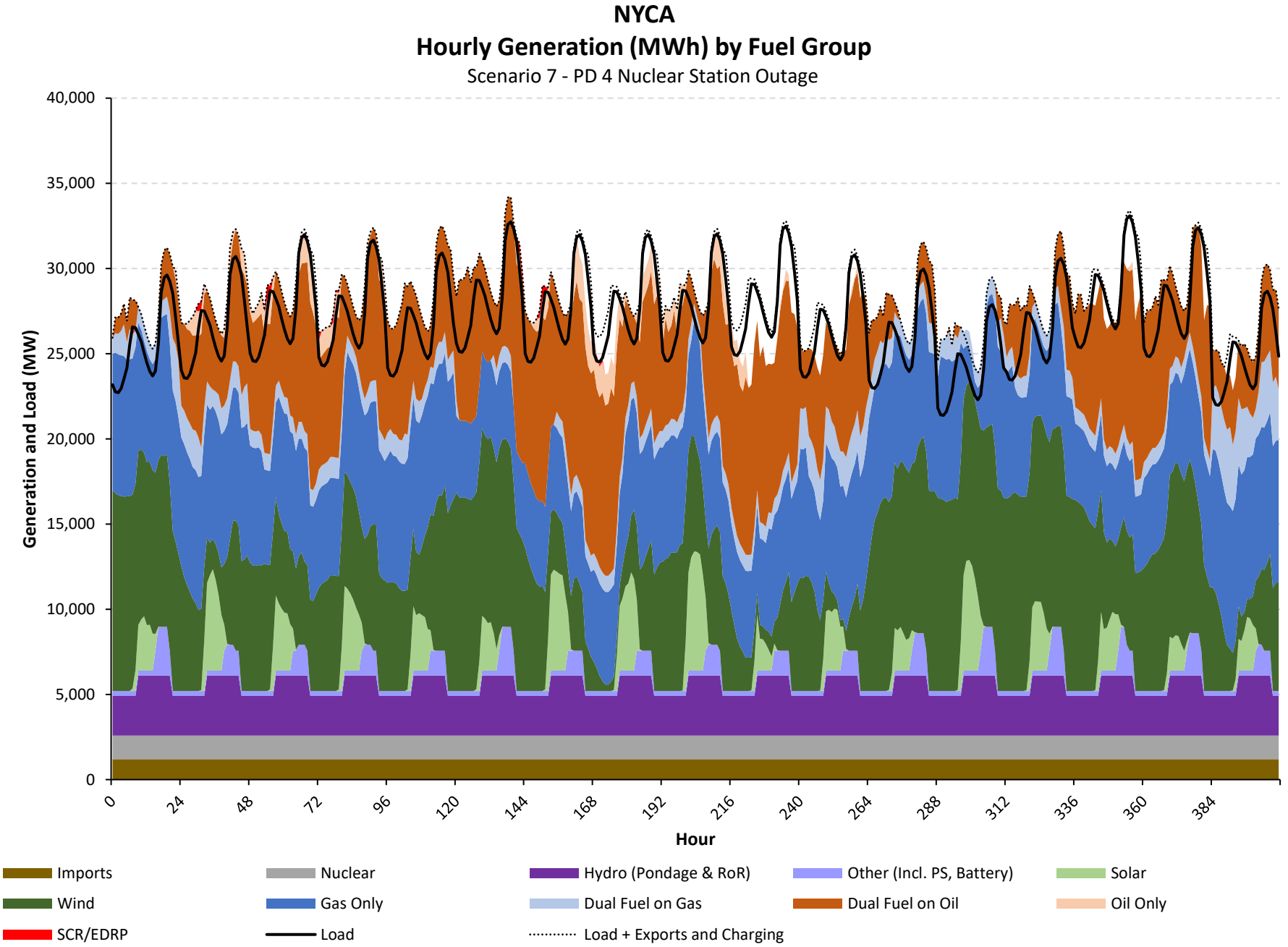


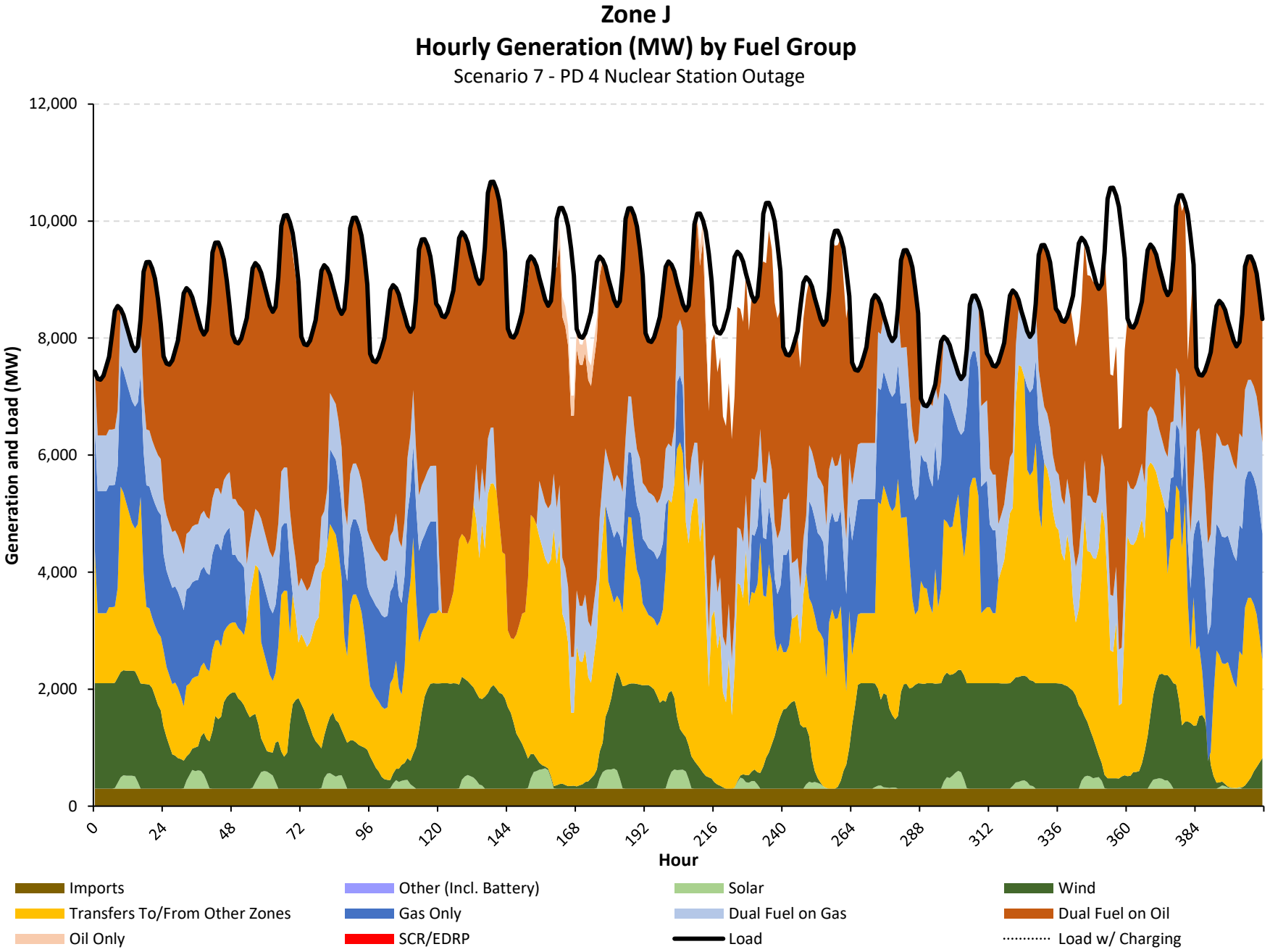
Hours with Loss of Load



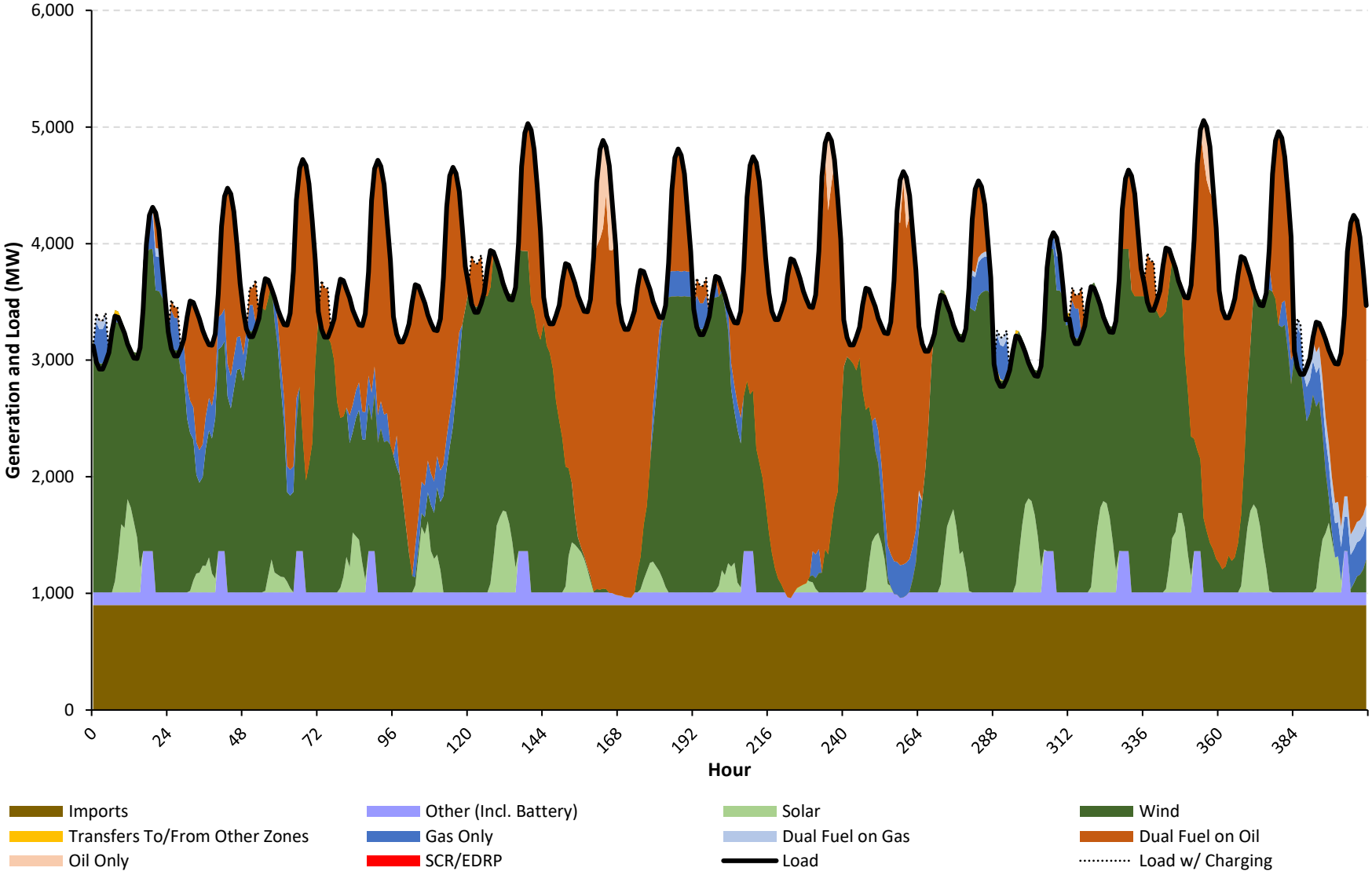
Total MWh of Lost Load




NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 7 - PD 4 Nuclear Station Outage
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 7 - PD 4 Nuclear Station Outage
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

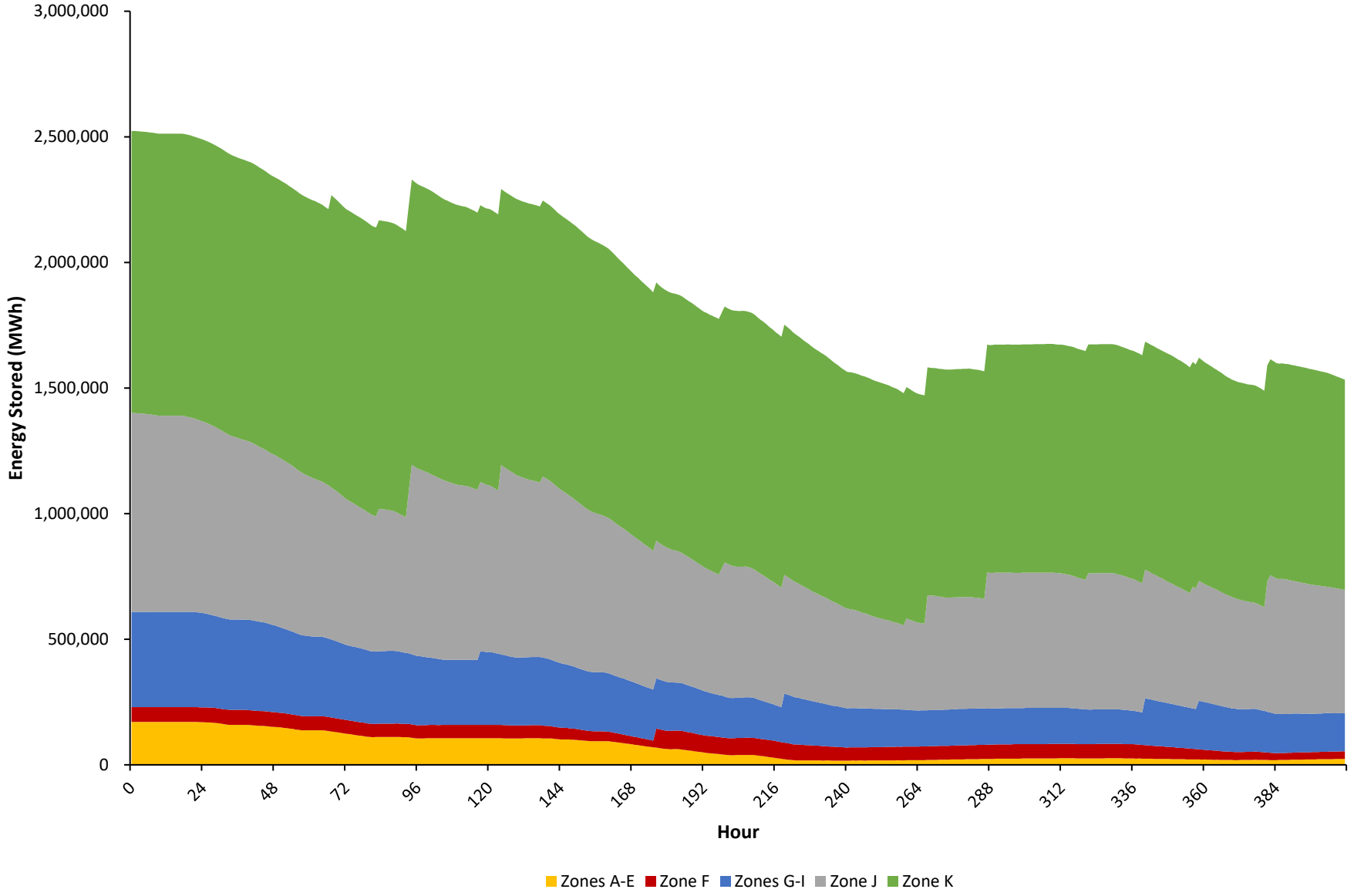
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 7 - PD 4 Nuclear Station Outage



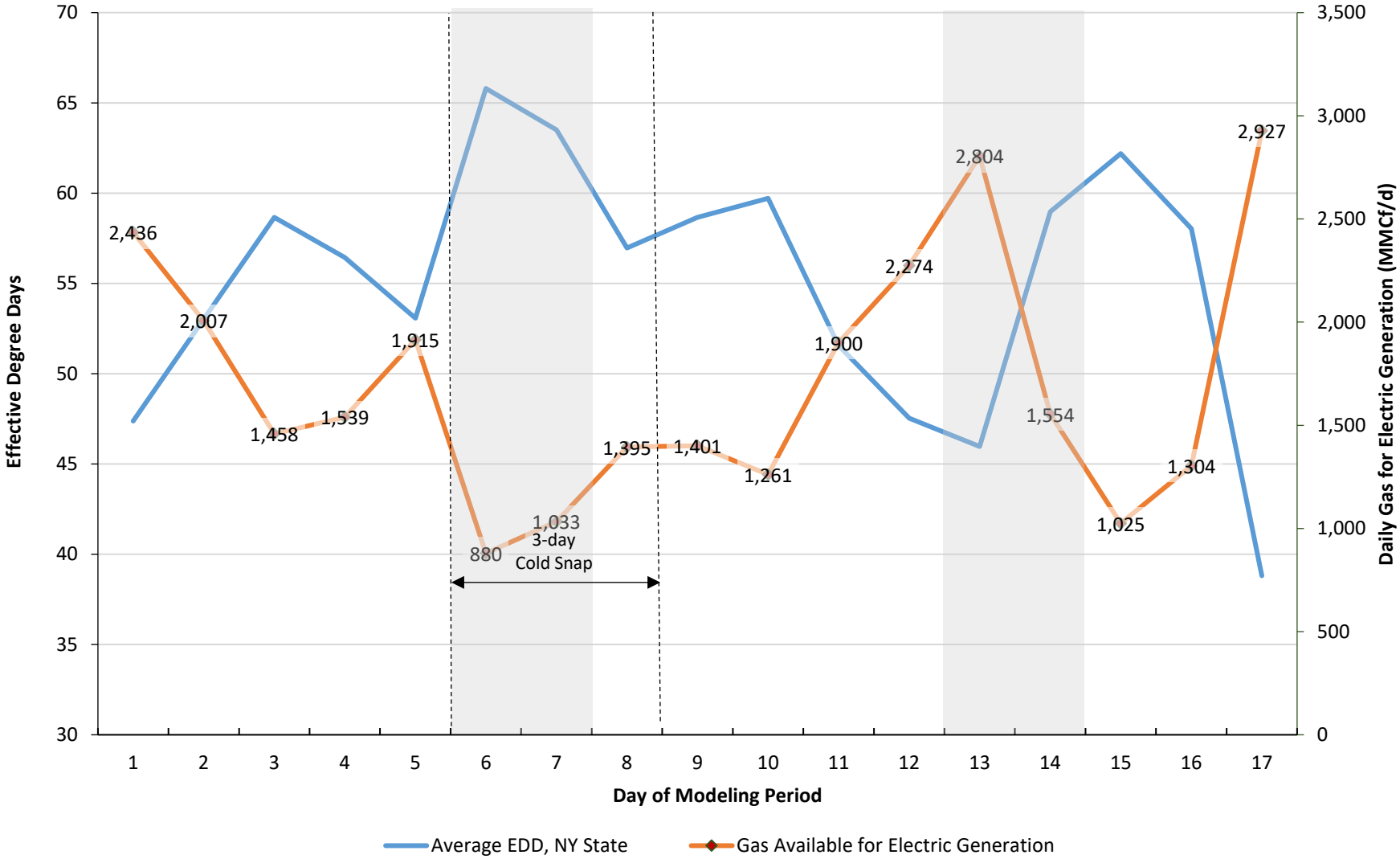
NYCA

Quantity of Stored Fuel for Oil and Dual Fuel Units

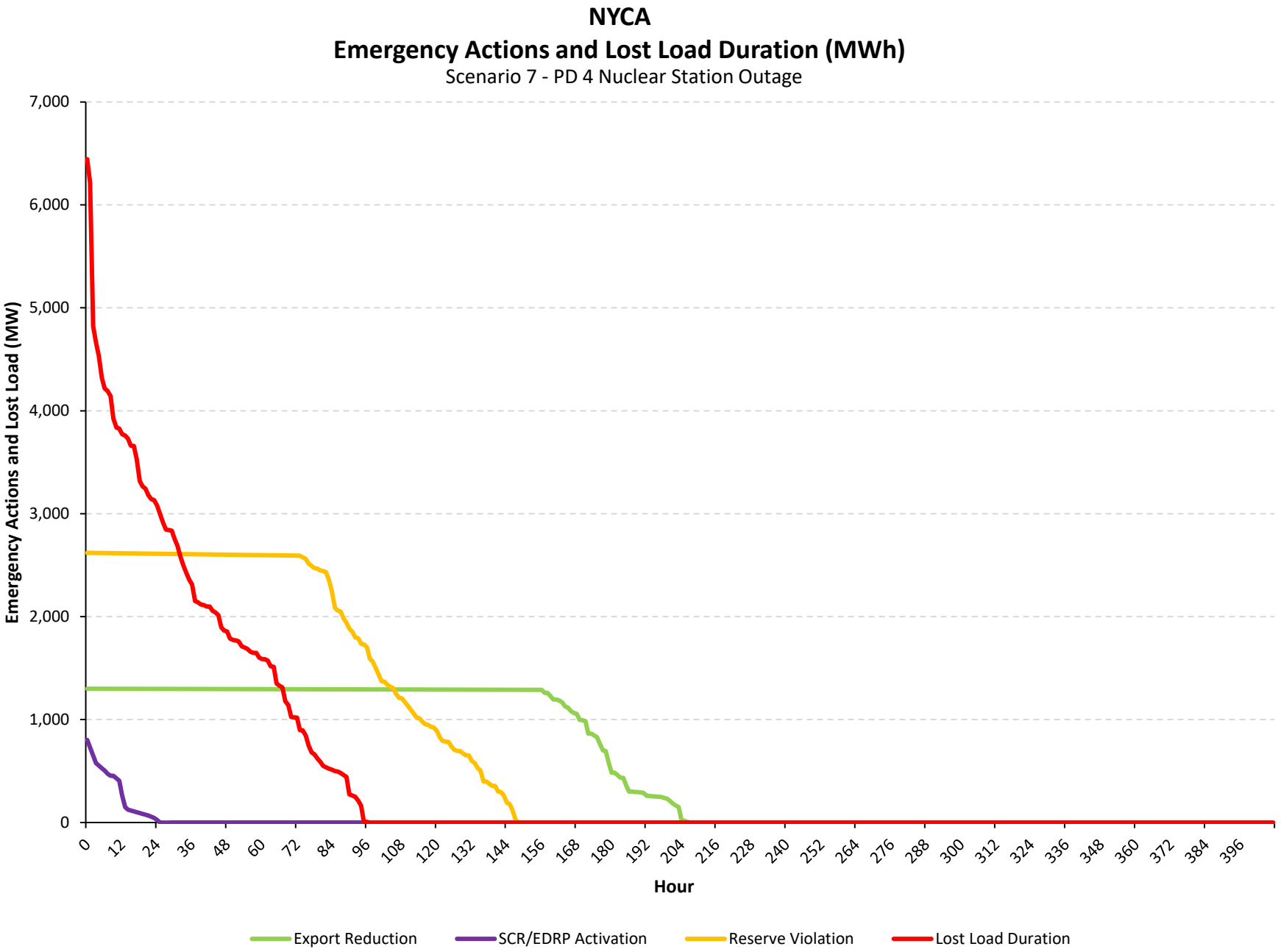
Scenario 7 - PD 4 Nuclear Station Outage

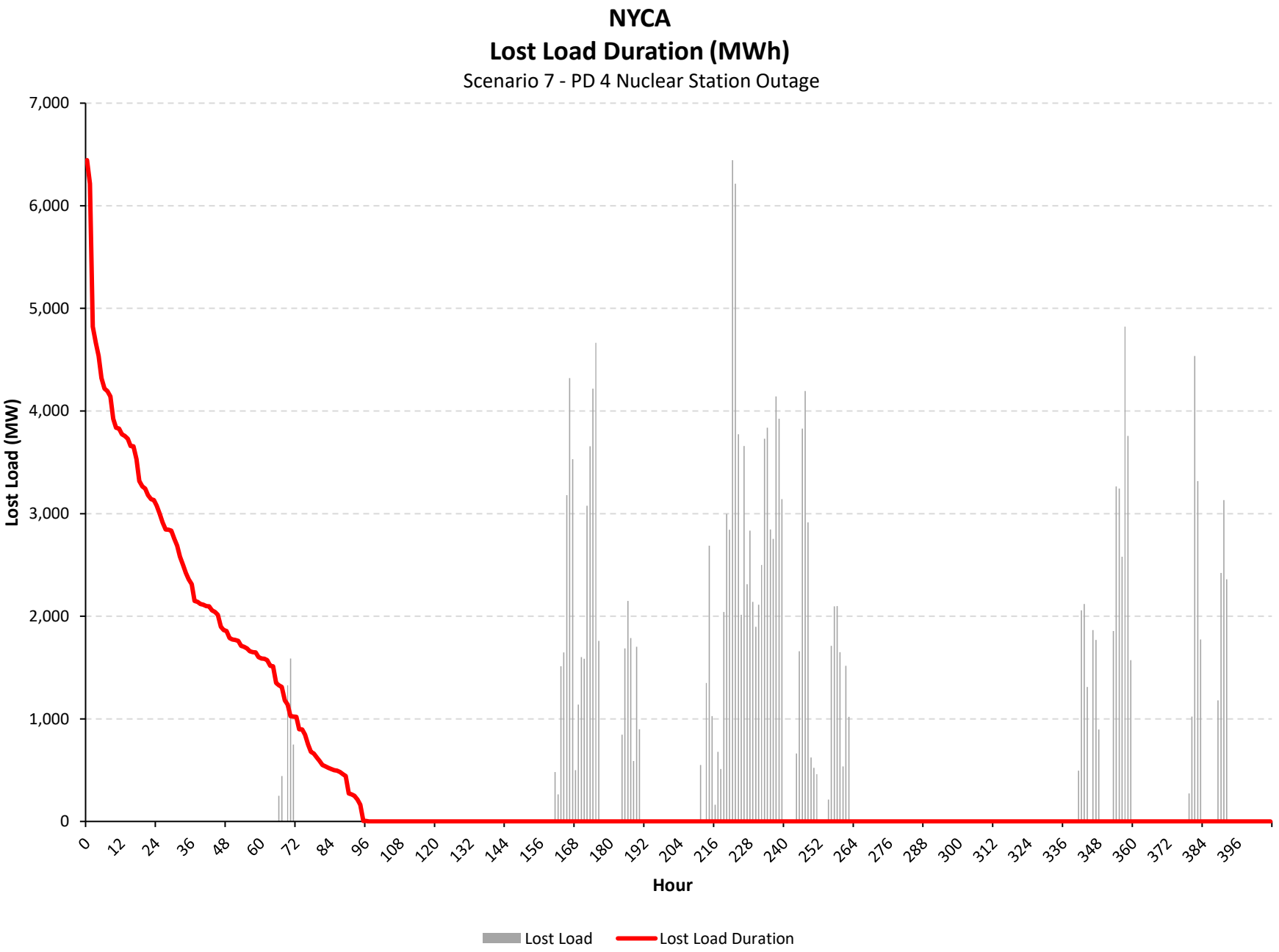


NYCA
Degree Days and Gas Available for Electric Generation 17-Day Modeling Period
Scenario 7 - PD 4 Nuclear Station Outage



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 7 - PD 4 Nuclear Station Outage
Emergency Actions and Lost Load (MW)
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 7 - PD 4 Nuclear Station Outage
Lost Load (MW)
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

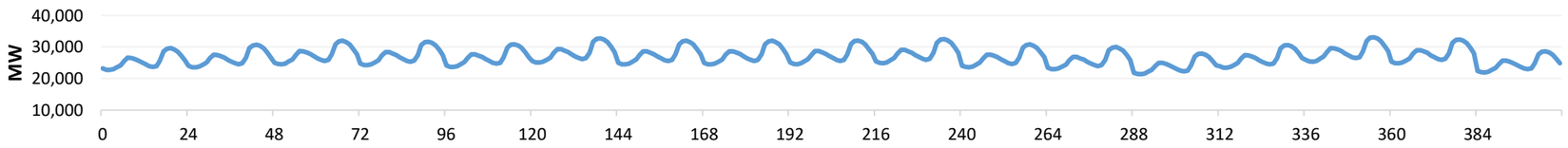
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 7 - PD 5 No Truck Refill (Winter 2030/2031)

Hourly Results Summary

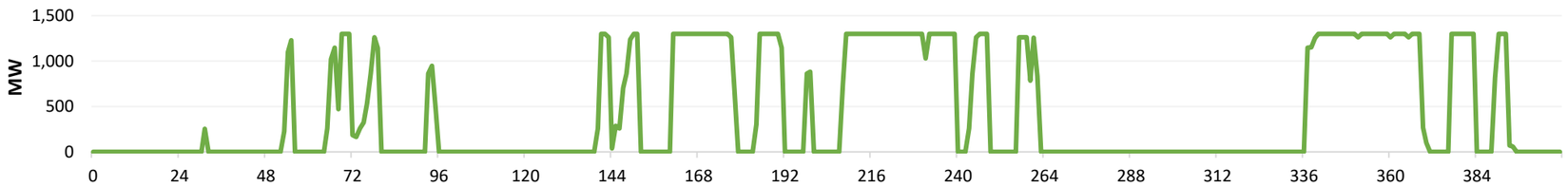
Case Name: Scenario 7 - PD 5 No Truck Refill

Load During Modeling Period



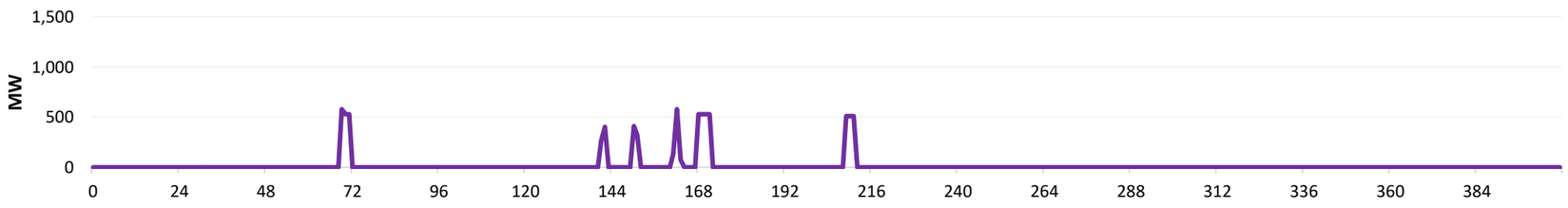
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	No Trucks
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



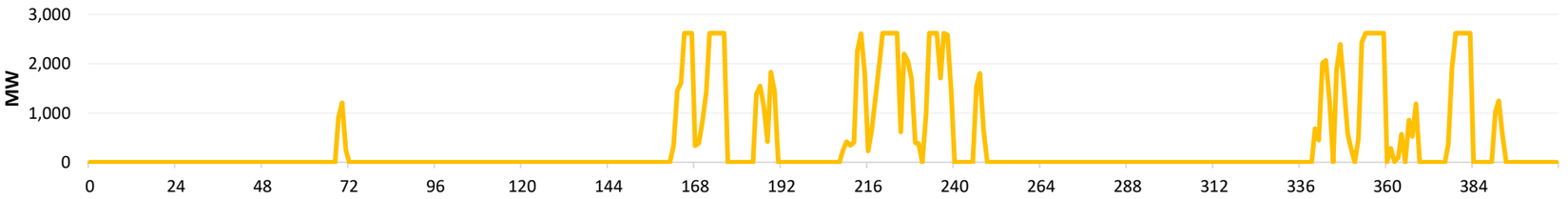
Export Reductions	
Total Hrs.	153
Total MWh	169,615
Avg. MW	415.7

SCR/EDRP Deployed During Modeling Period



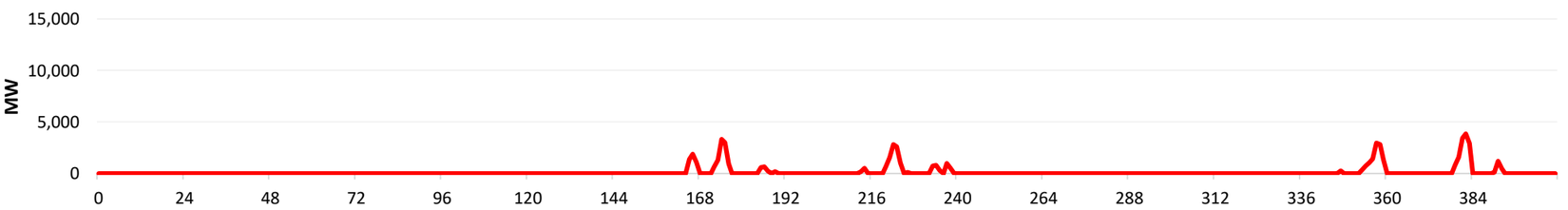
SCR Deployment	
Total Hrs.	17
Total MWh	7,456
Avg. MW	18.3

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	92
Total MWh	144,725
Avg. MW	354.7
First Hour with Viol.	69

Loss of Load During Modeling Period



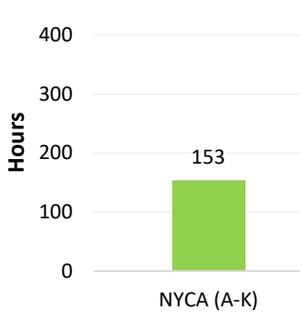
Loss of Load	
Total Hrs.	41
Total MWh	53,501
Avg. MW	131.1
First Hour with Losses	165

Full Period Results Summary

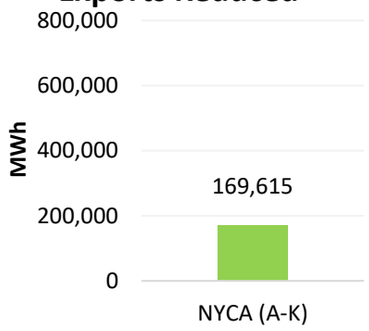
Case Name: Scenario 7 - PD 5 No Truck Refill

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	No Trucks
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

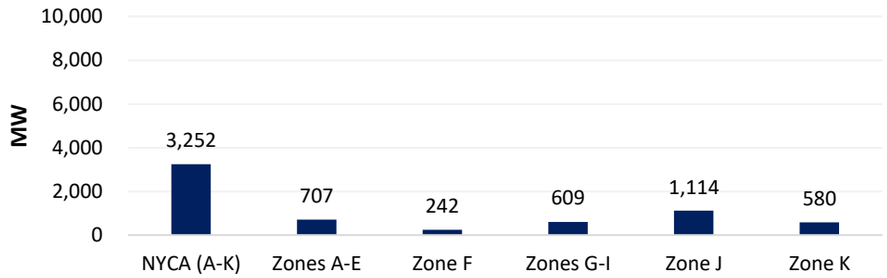
Hours Exports Reduced



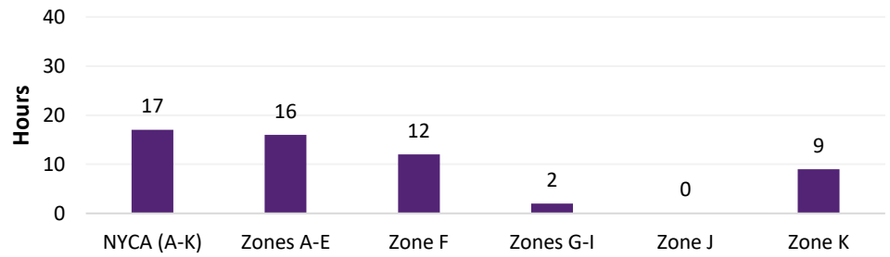
Total MWh of Exports Reduced



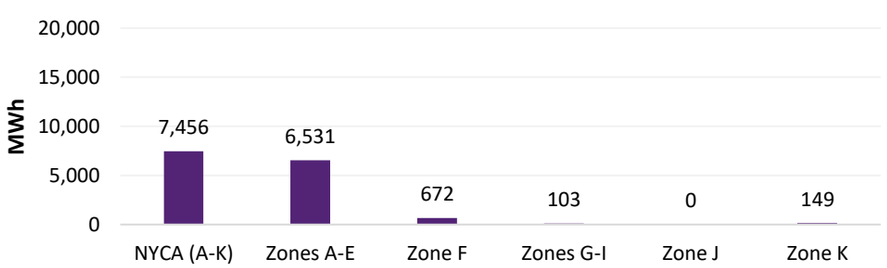
Average Capacity Not Available Due to Exhausted Fuel Inventory



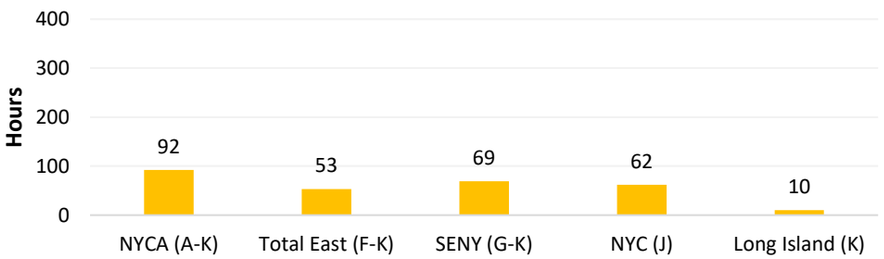
Hours SCR/EDRP Deployed



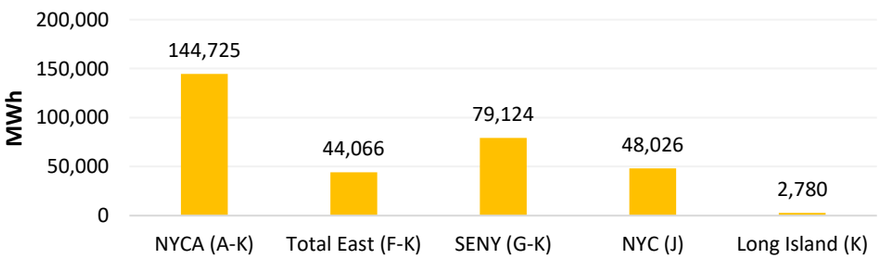
Total MWh SCR/EDRP Deployed



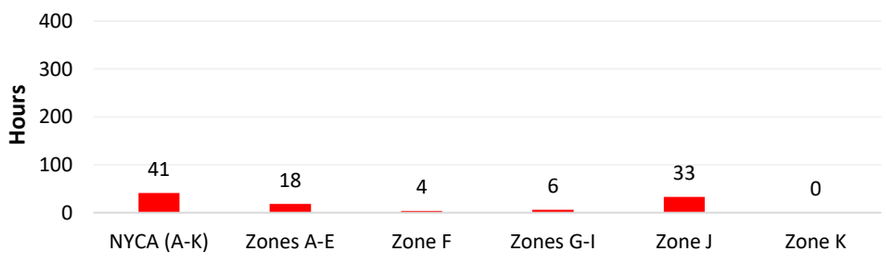
Hours with Reserve Violations



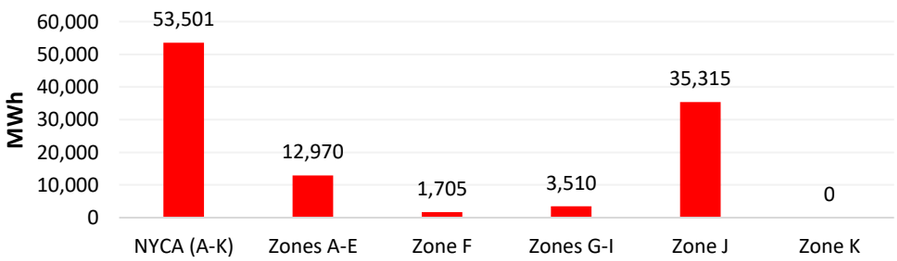
Total MWh of Reserve Violations

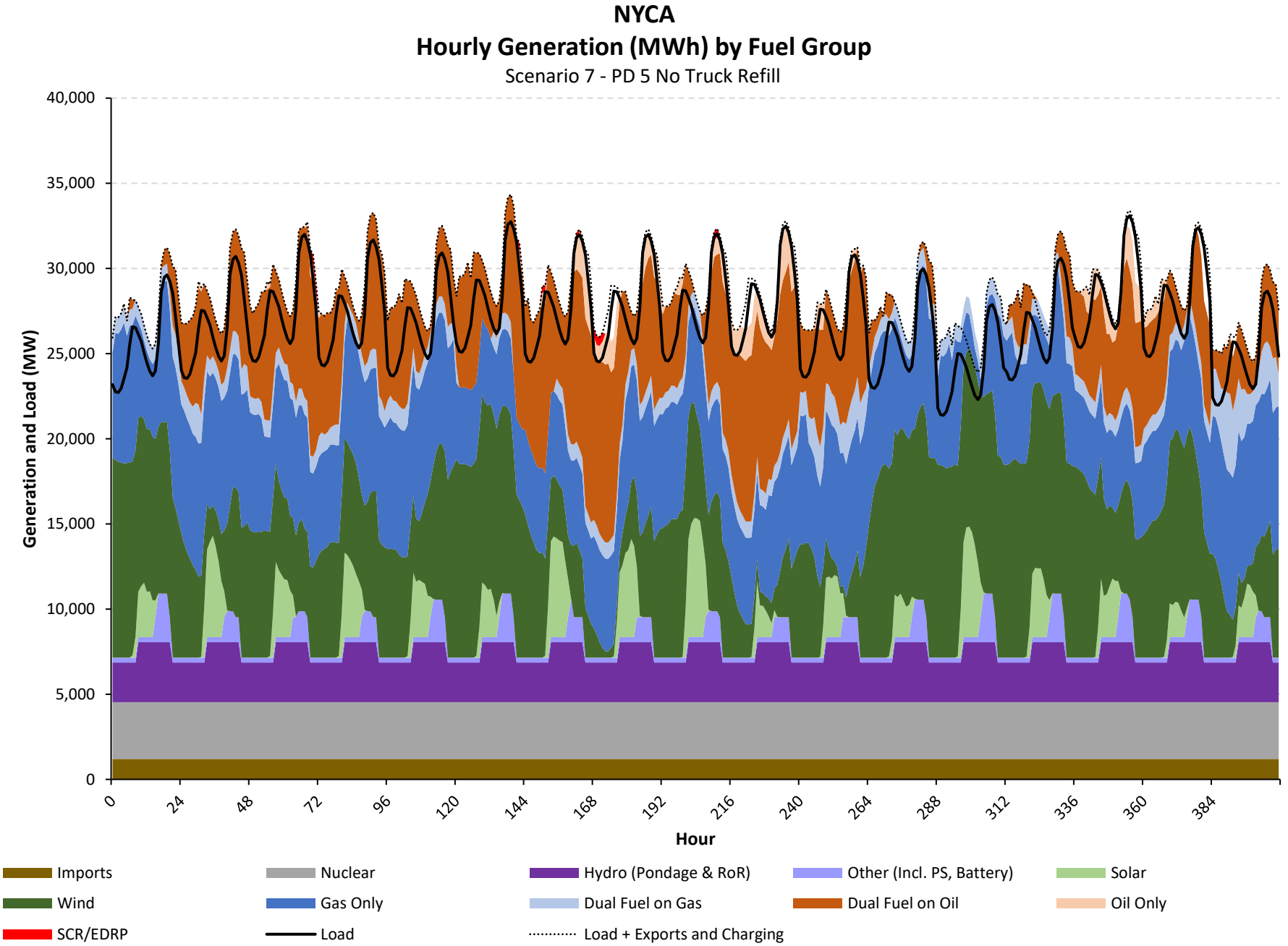


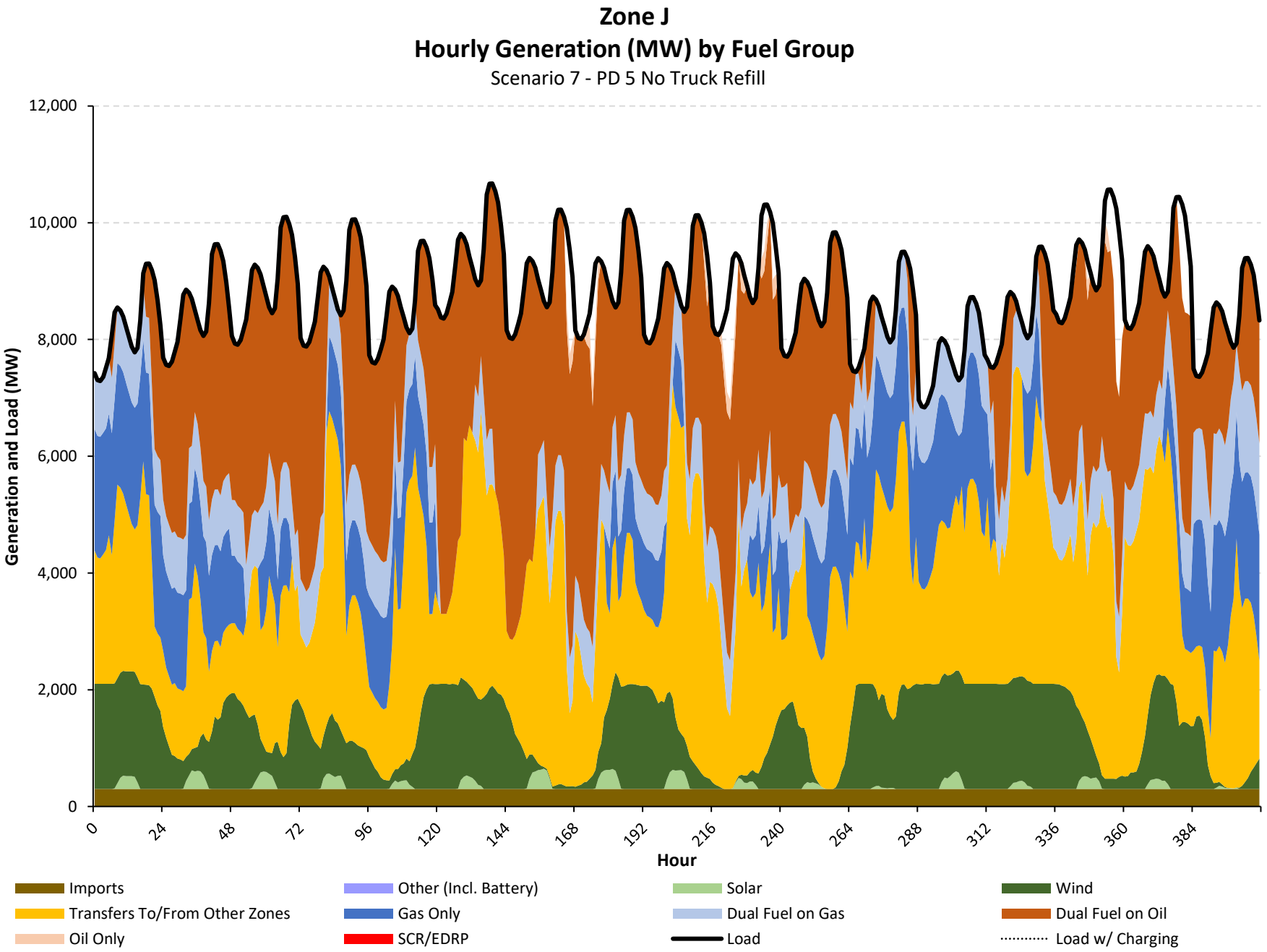
Hours with Loss of Load



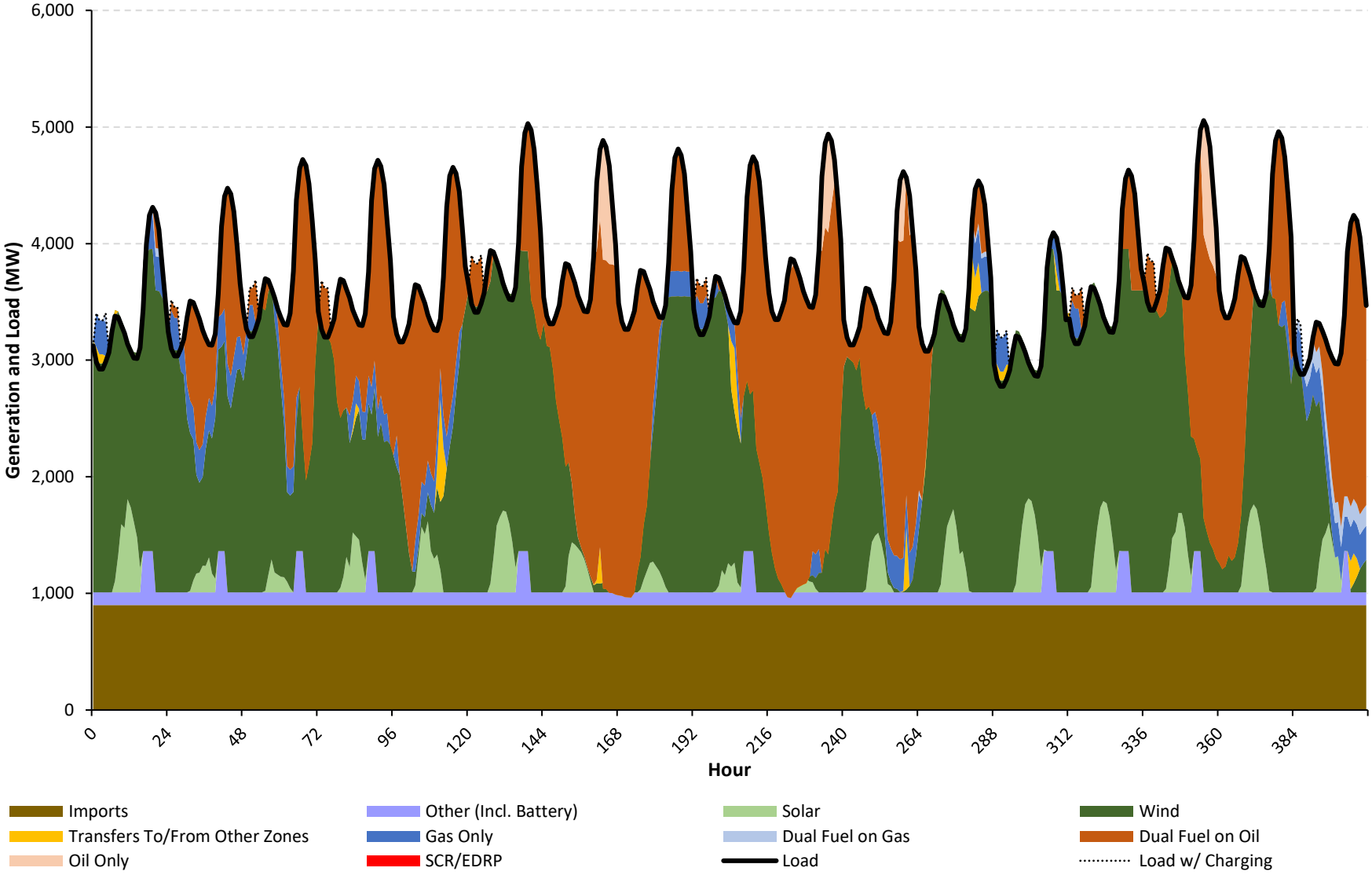
Total MWh of Lost Load




NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 7 - PD 5 No Truck Refill
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 7 - PD 5 No Truck Refill
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

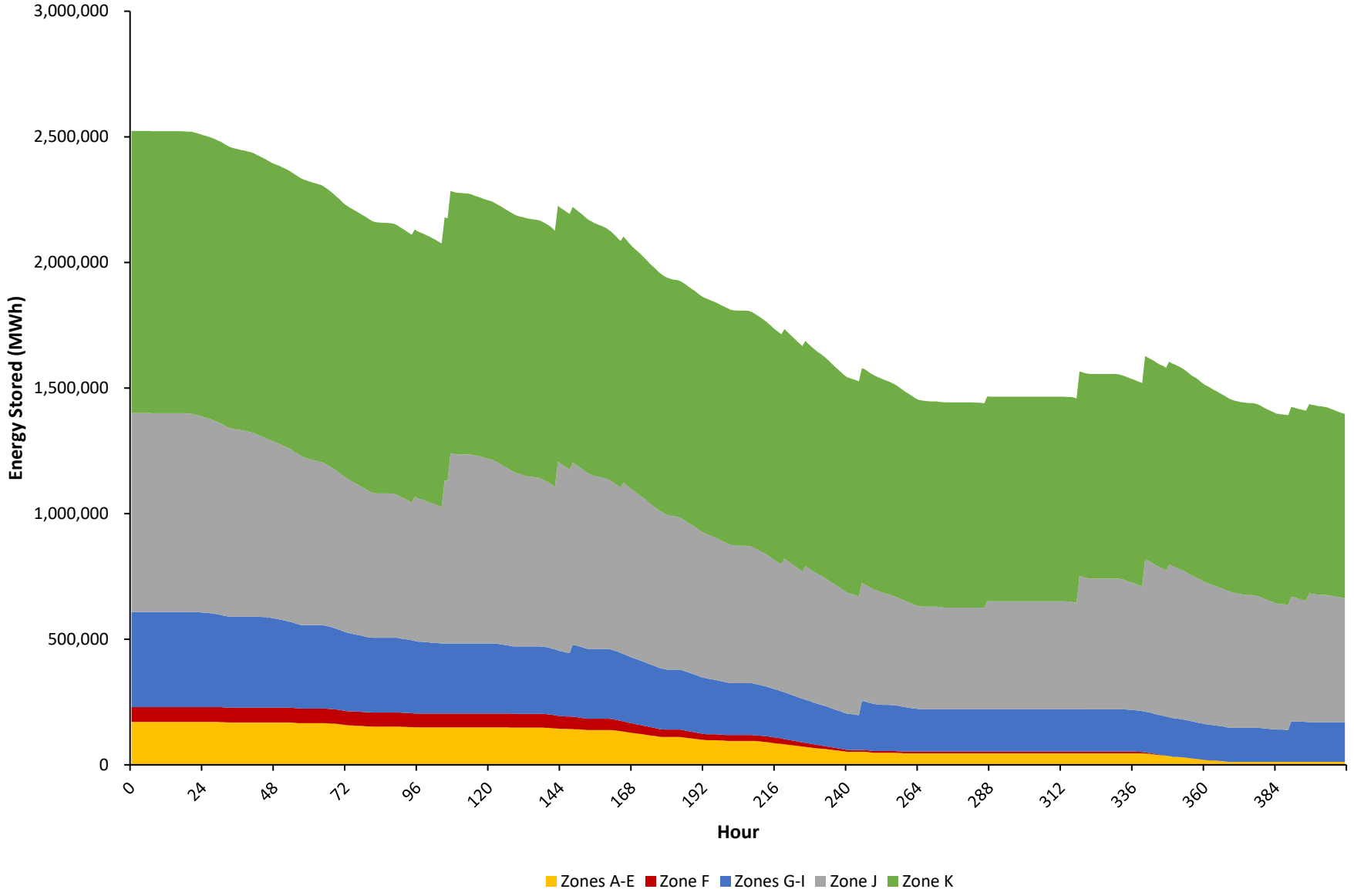
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 7 - PD 5 No Truck Refill

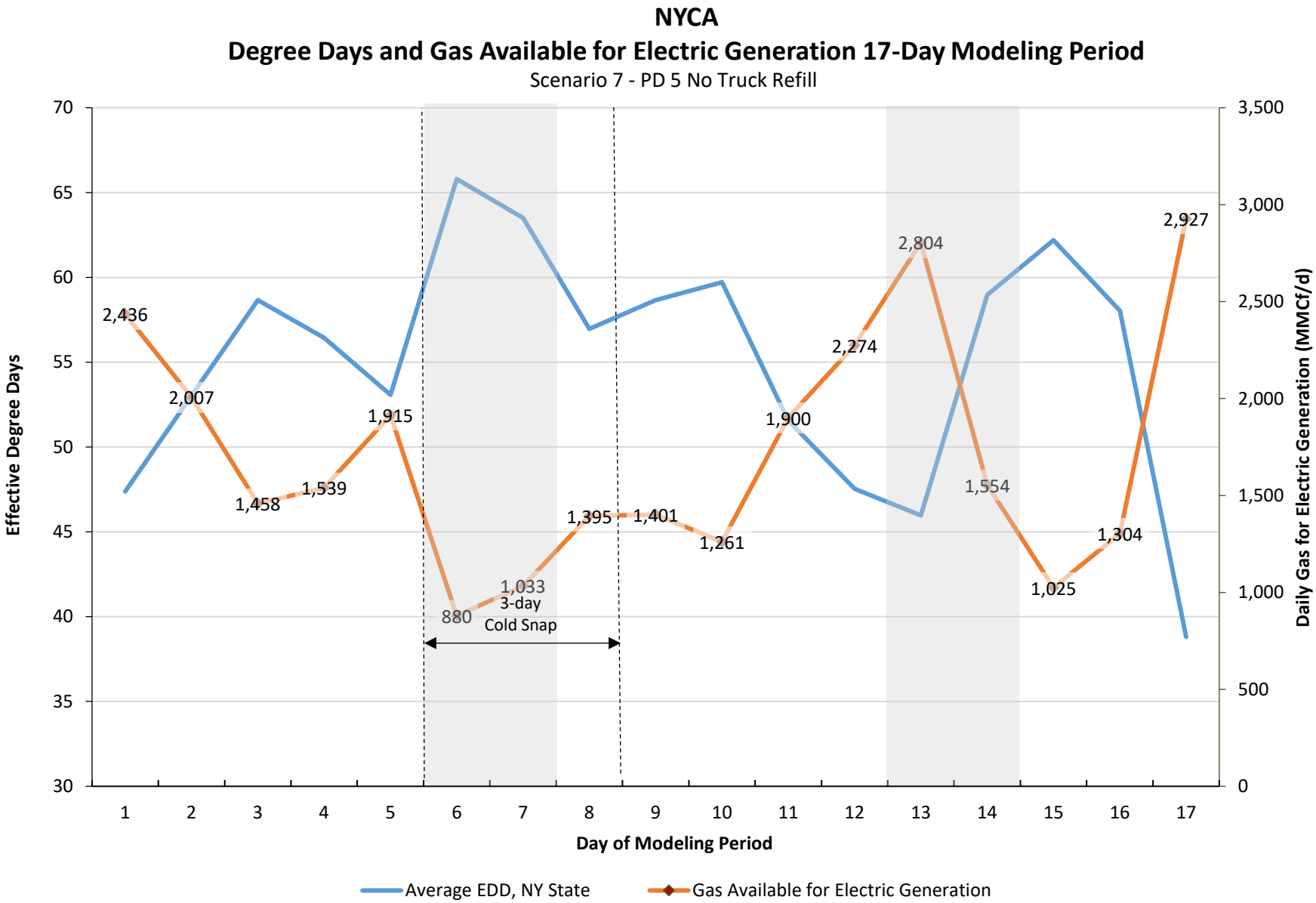


NYCA

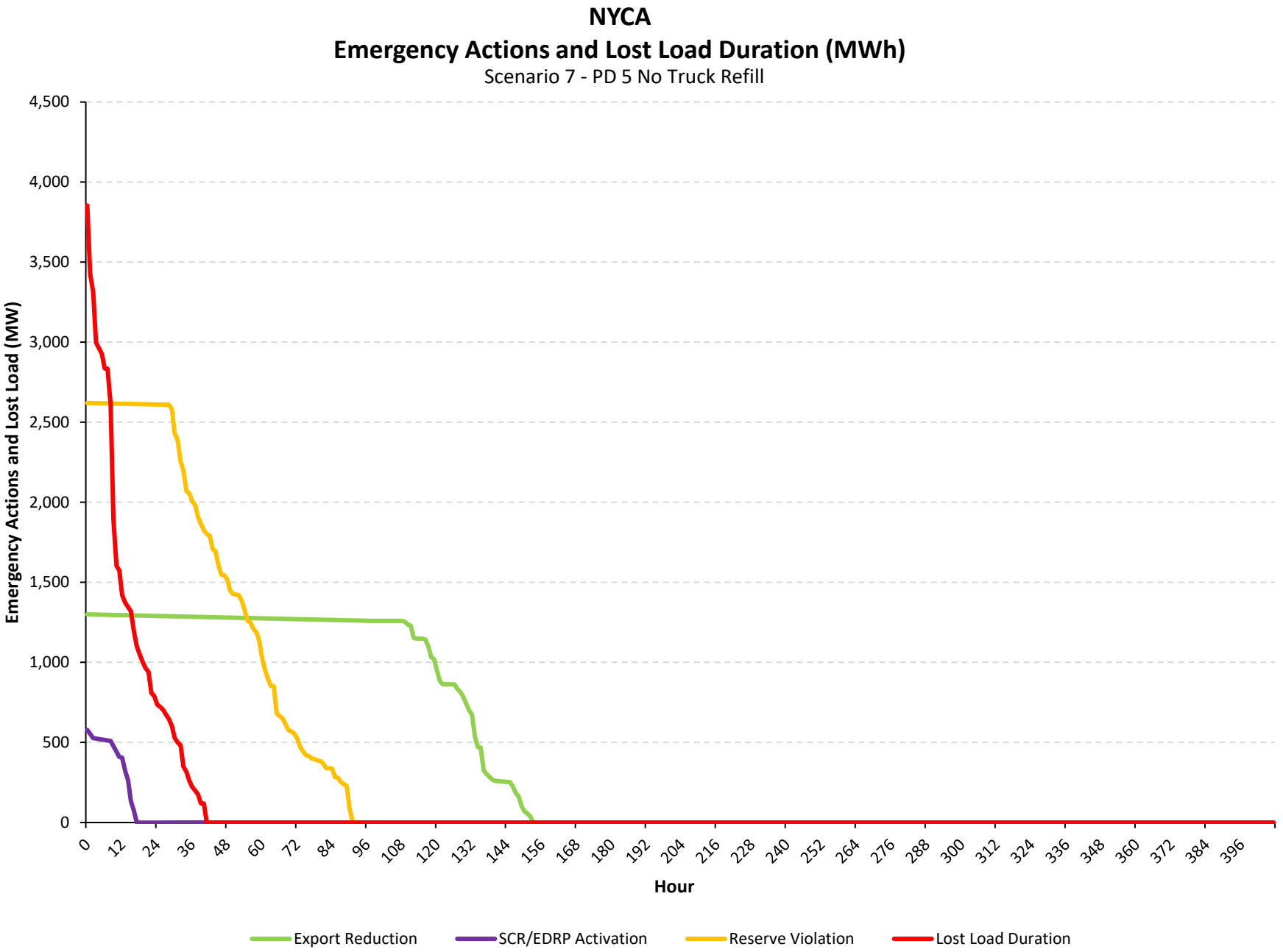
Quantity of Stored Fuel for Oil and Dual Fuel Units

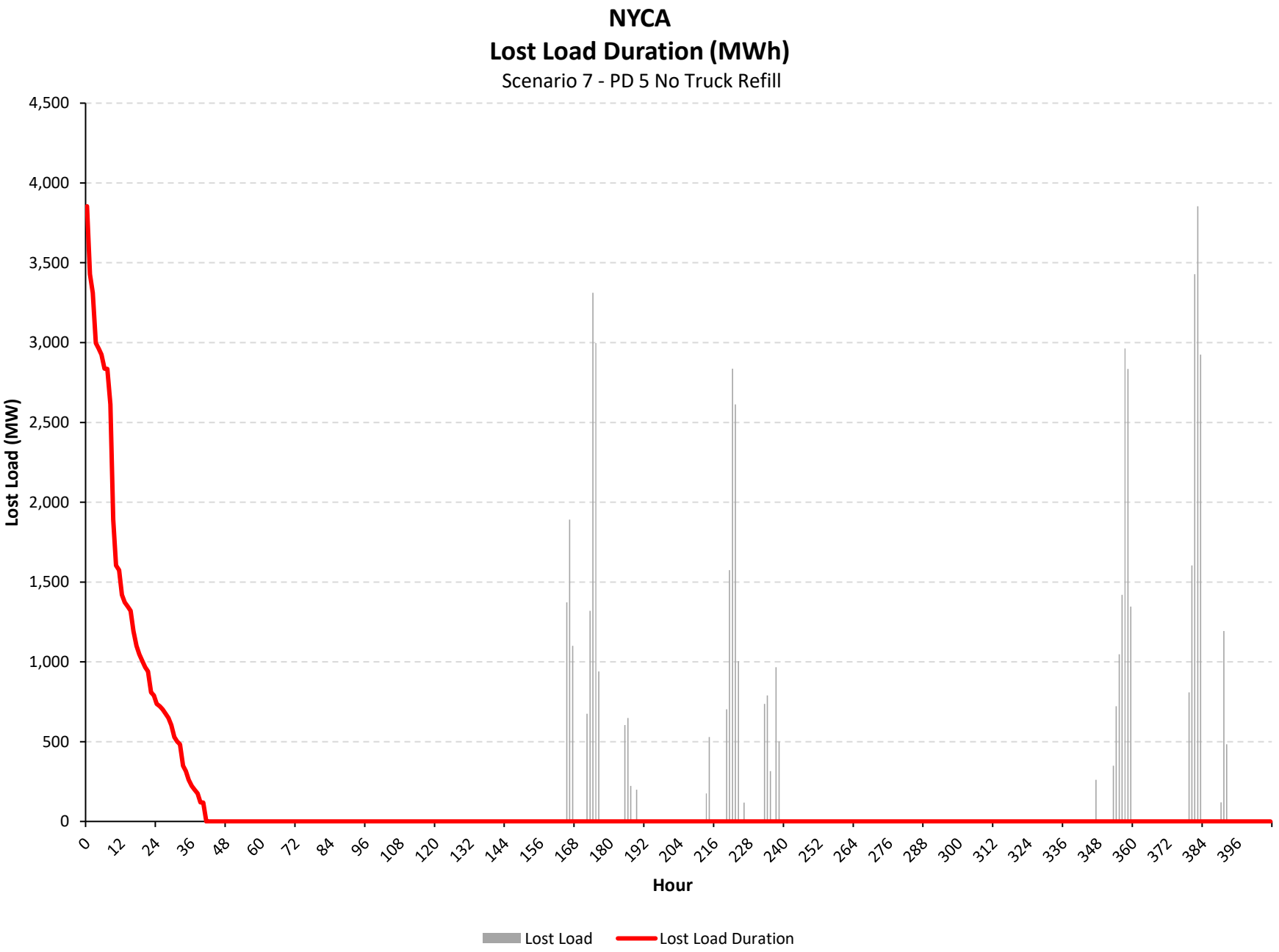
Scenario 7 - PD 5 No Truck Refill





Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 7 - PD 5 No Truck Refill
Emergency Actions and Lost Load (MW)
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 7 - PD 5 No Truck Refill
Lost Load (MW)
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

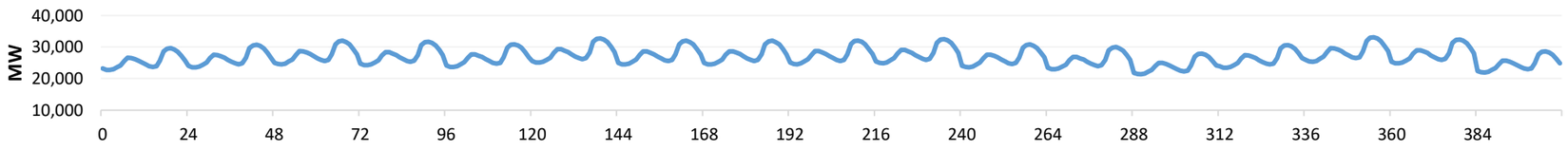
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 7 - PD 6 No Barge Refill (Winter 2030/2031)

Hourly Results Summary

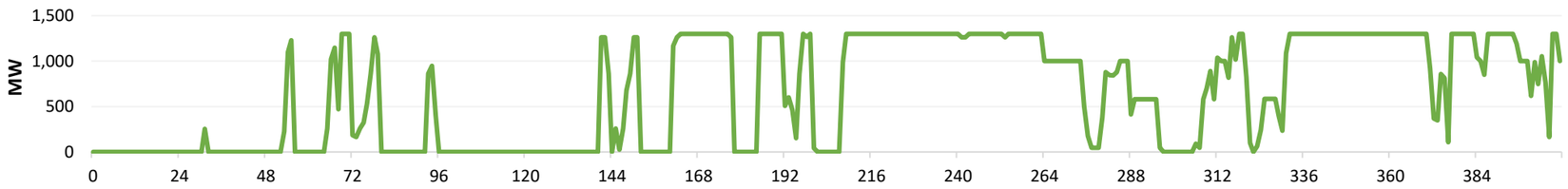
Case Name: Scenario 7 - PD 6 No Barge Refill

Load During Modeling Period



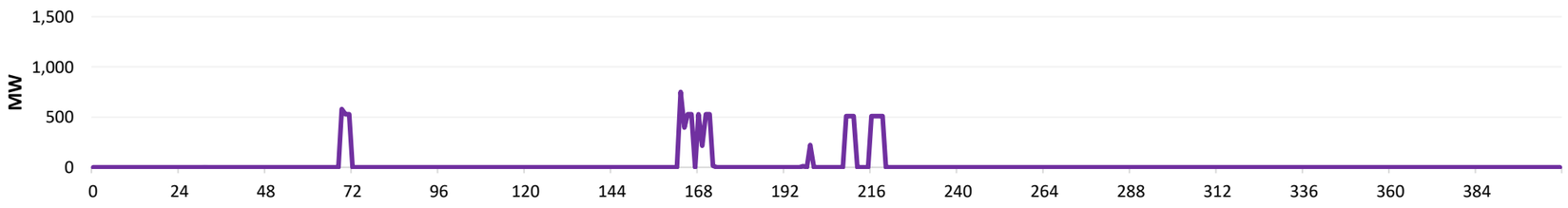
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	No Barge
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



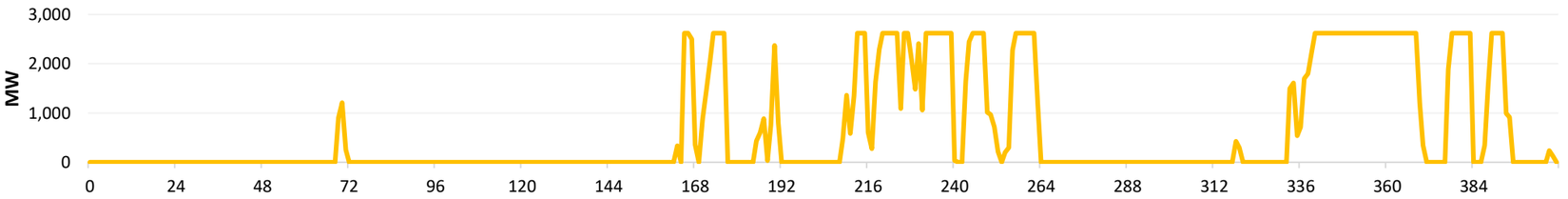
Export Reductions	
Total Hrs.	255
Total MWh	263,036
Avg. MW	644.7

SCR/EDRP Deployed During Modeling Period



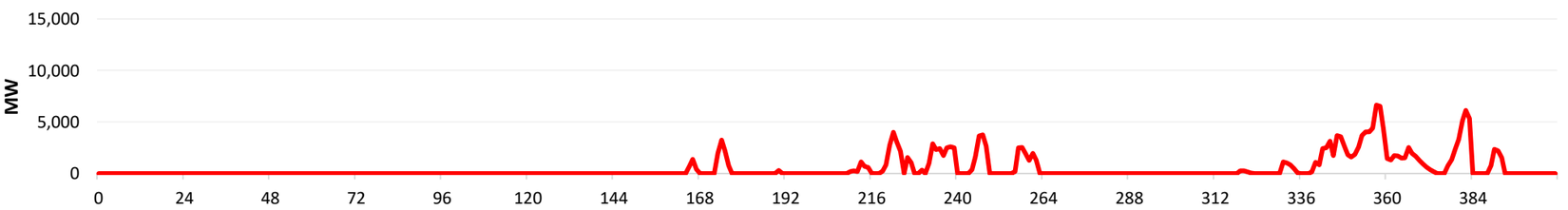
SCR Deployment	
Total Hrs.	21
Total MWh	9,448
Avg. MW	23.2

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	131
Total MWh	252,999
Avg. MW	620.1
First Hour with Viol.	69

Loss of Load During Modeling Period



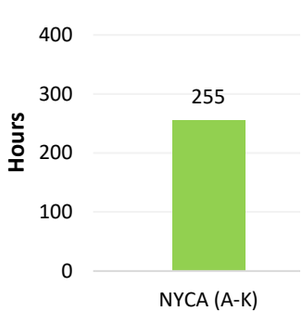
Loss of Load	
Total Hrs.	100
Total MWh	189,374
Avg. MW	464.2
First Hour with Losses	165

Full Period Results Summary

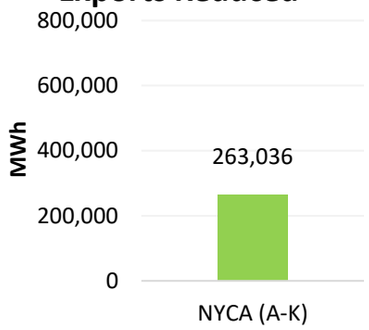
Case Name: Scenario 7 - PD 6 No Barge Refill

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	No Barge
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

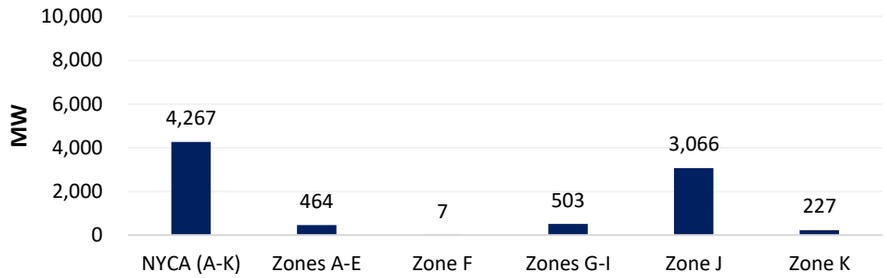
Hours Exports Reduced



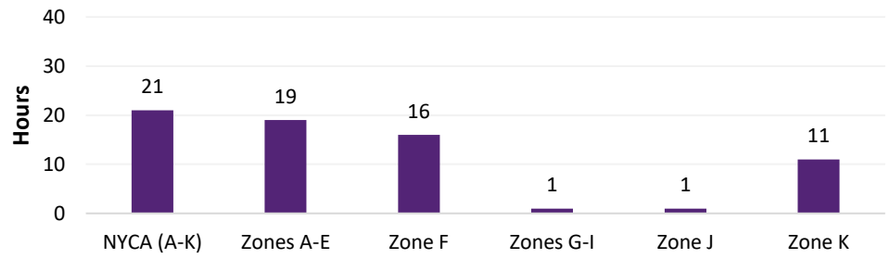
Total MWh of Exports Reduced



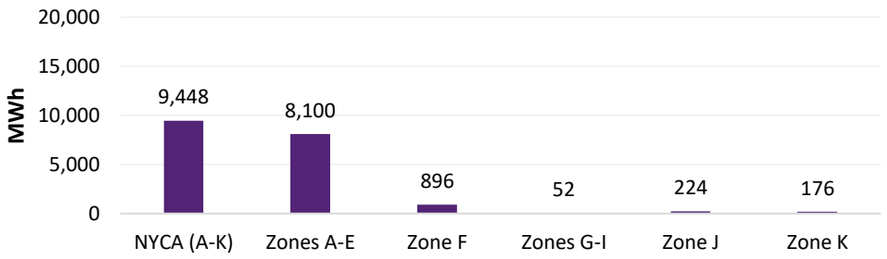
Average Capacity Not Available Due to Exhausted Fuel Inventory



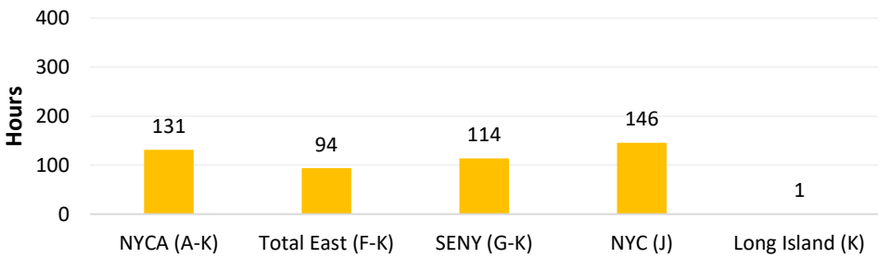
Hours SCR/EDRP Deployed



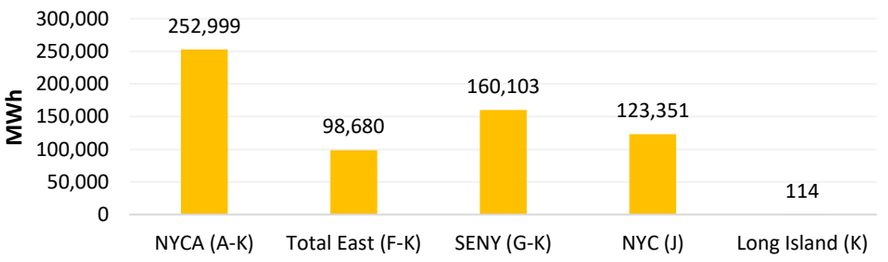
Total MWh SCR/EDRP Deployed



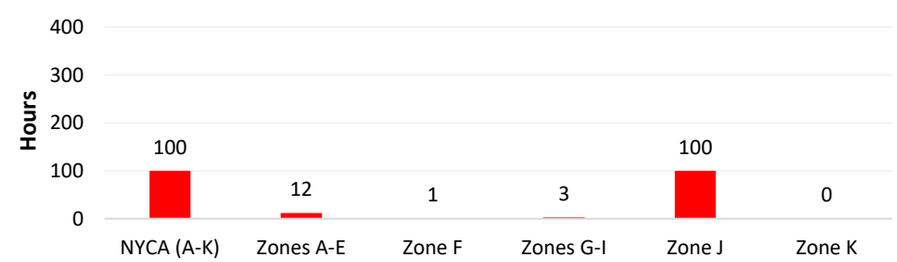
Hours with Reserve Violations



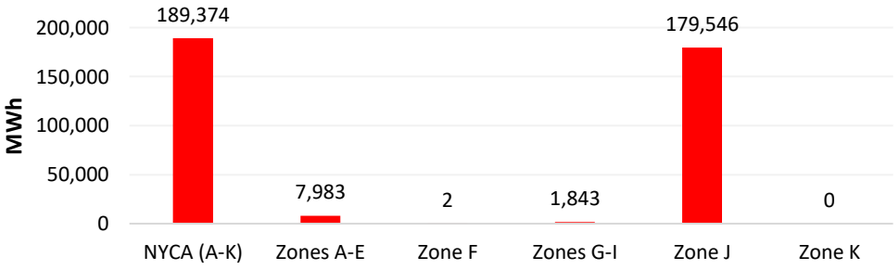
Total MWh of Reserve Violations

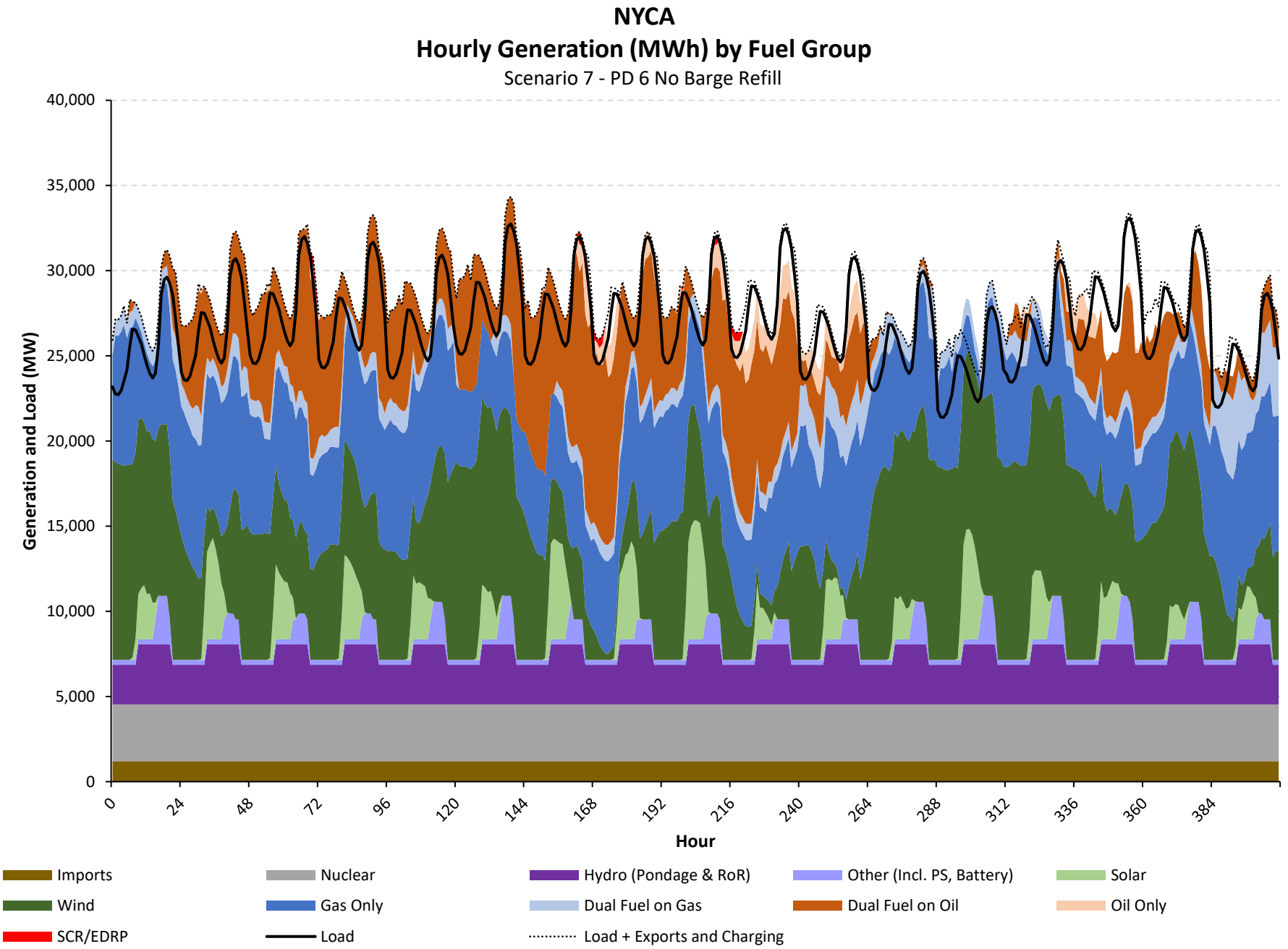


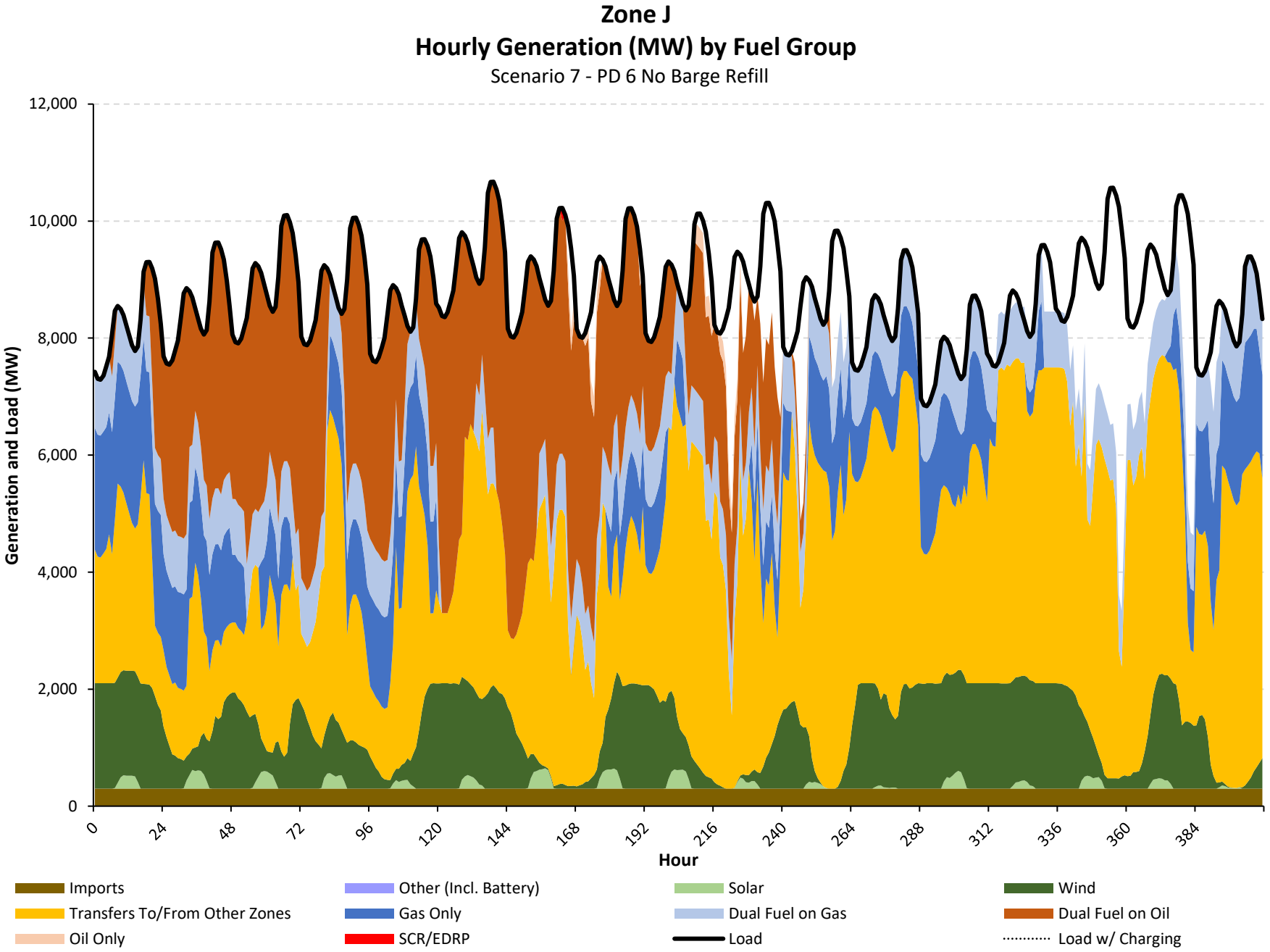
Hours with Loss of Load



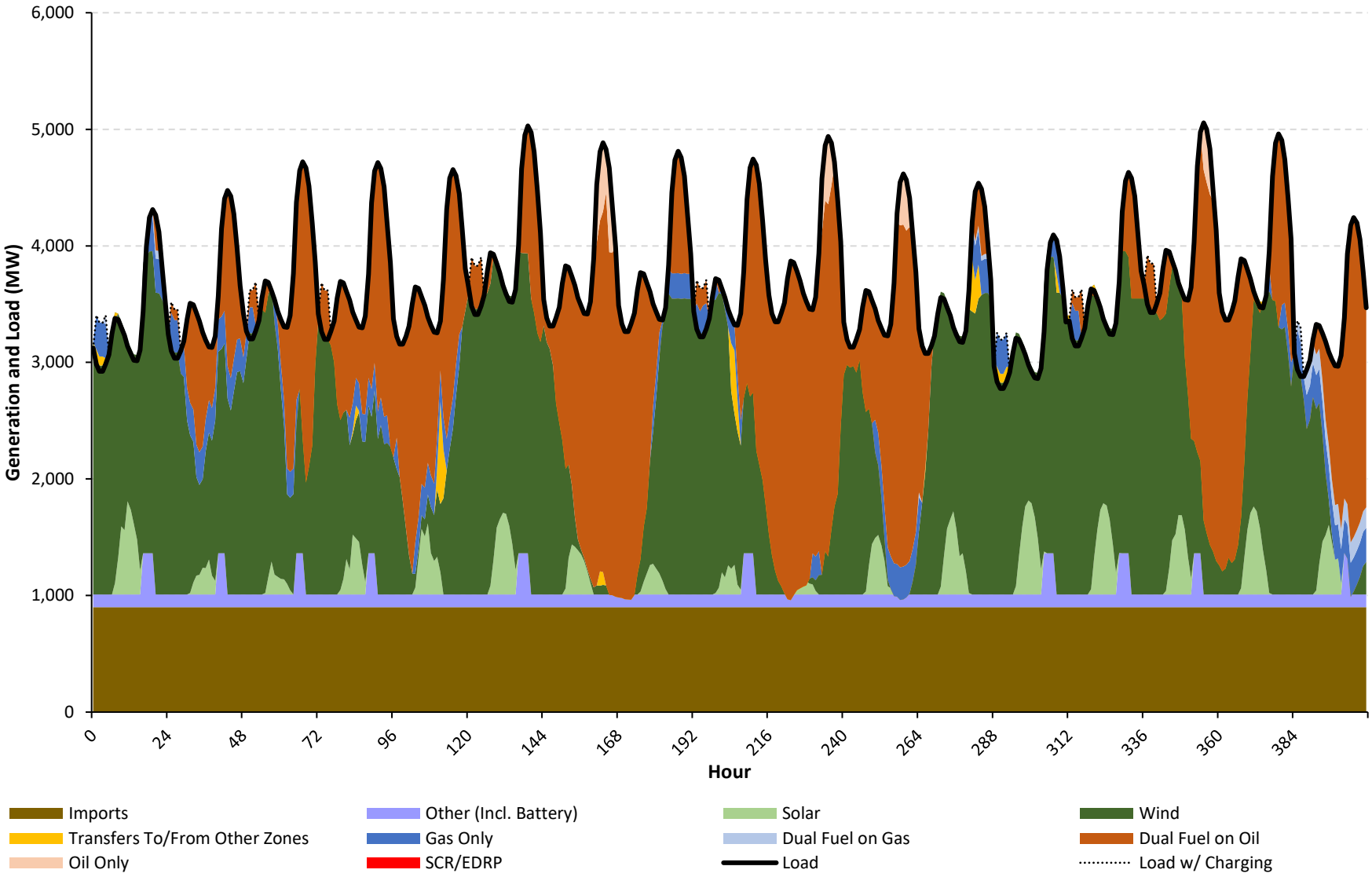
Total MWh of Lost Load

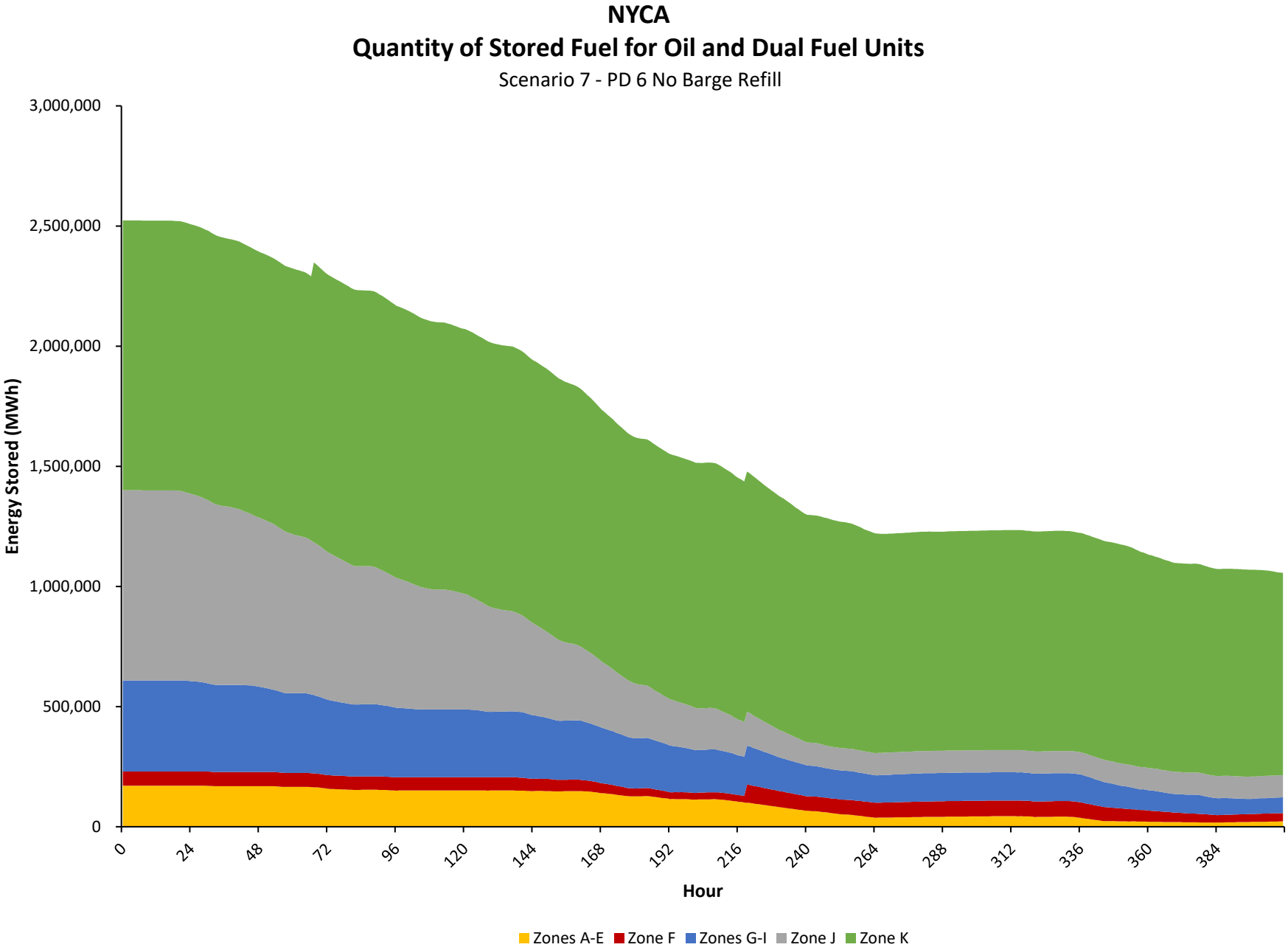



NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 7 - PD 6 No Barge Refill
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

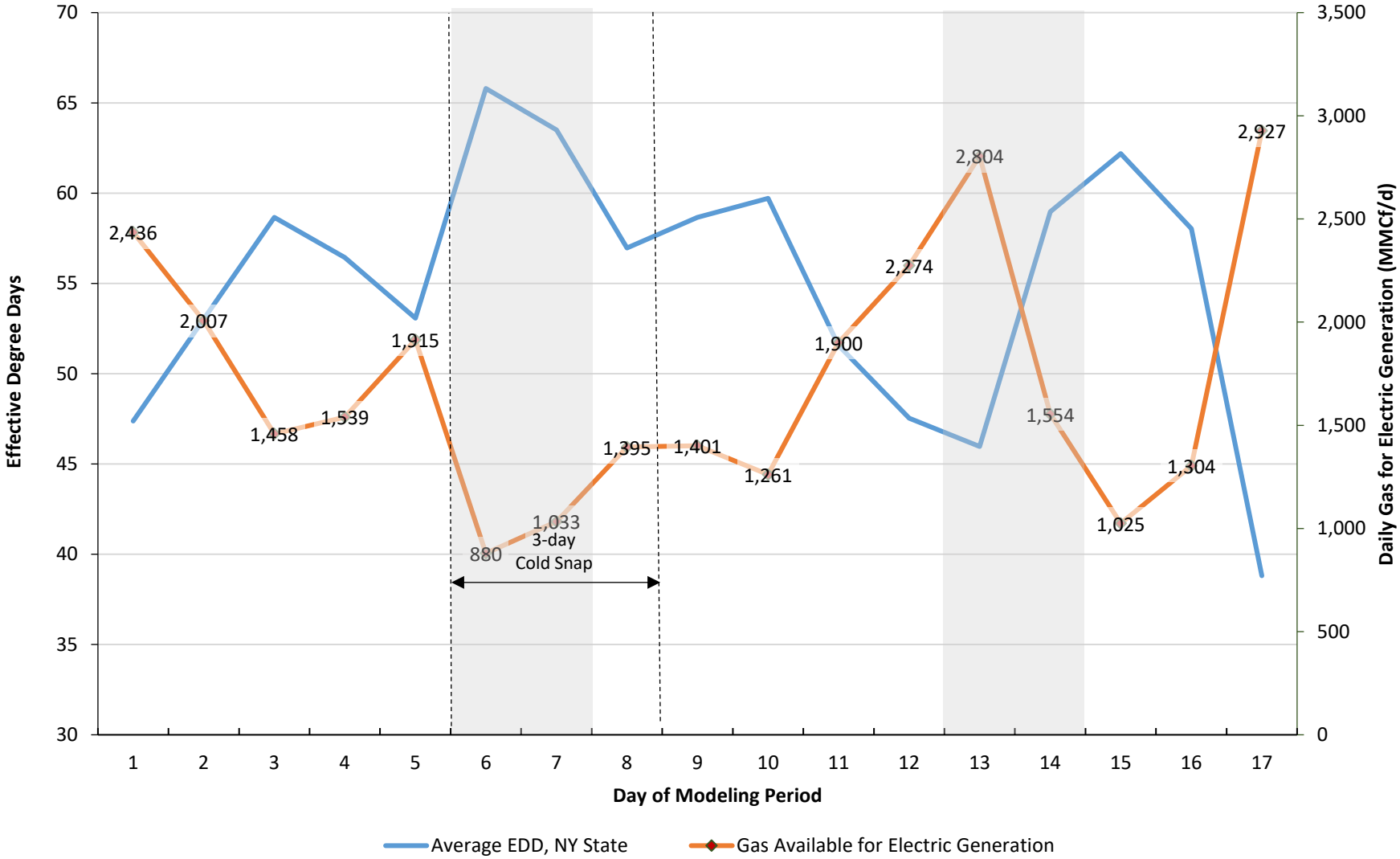

Zone J
Hourly Generation (MW) by Fuel Group
Scenario 7 - PD 6 No Barge Refill
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

Zone K
Hourly Generation (MW) by Fuel Group
Scenario 7 - PD 6 No Barge Refill

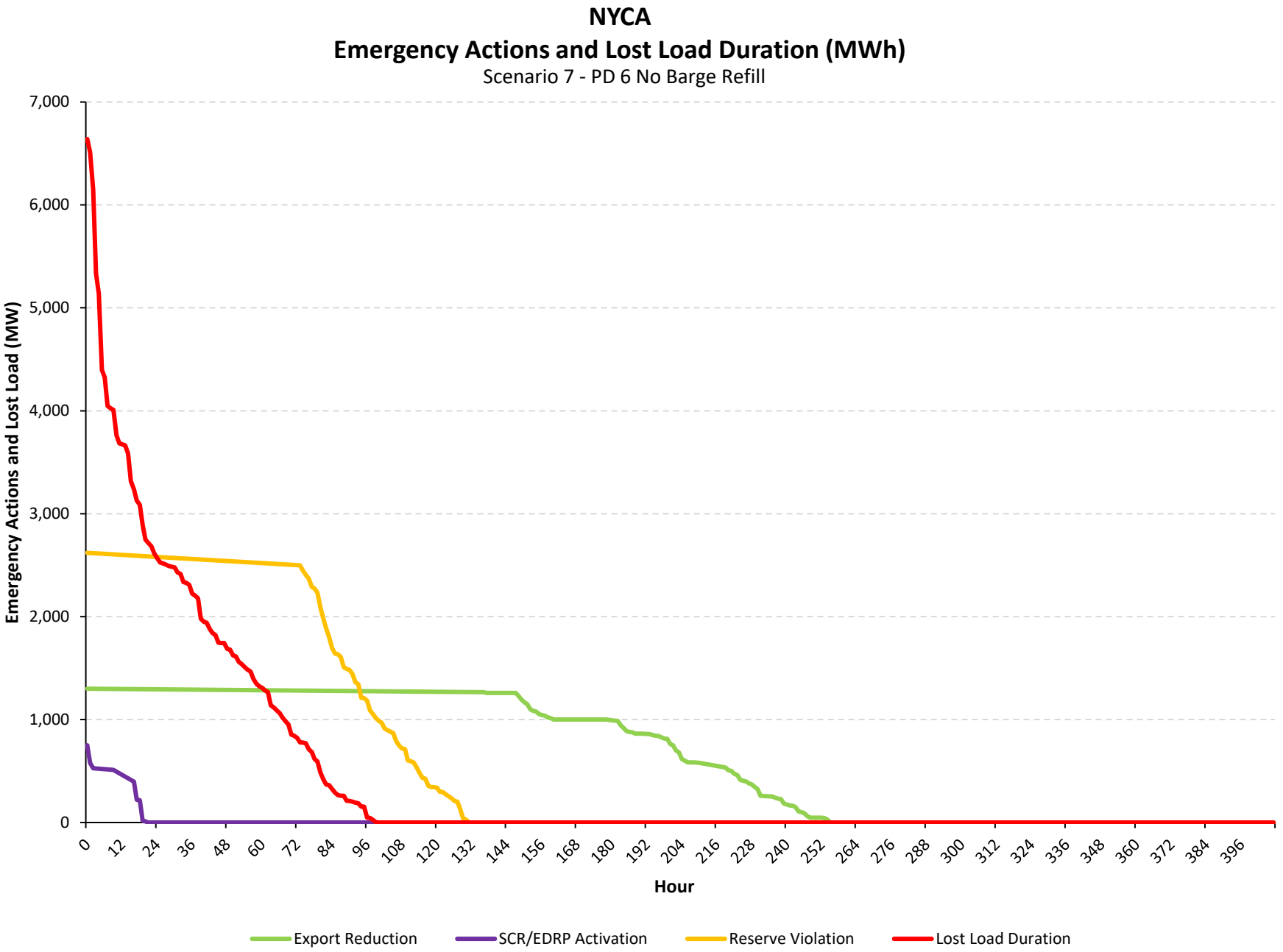


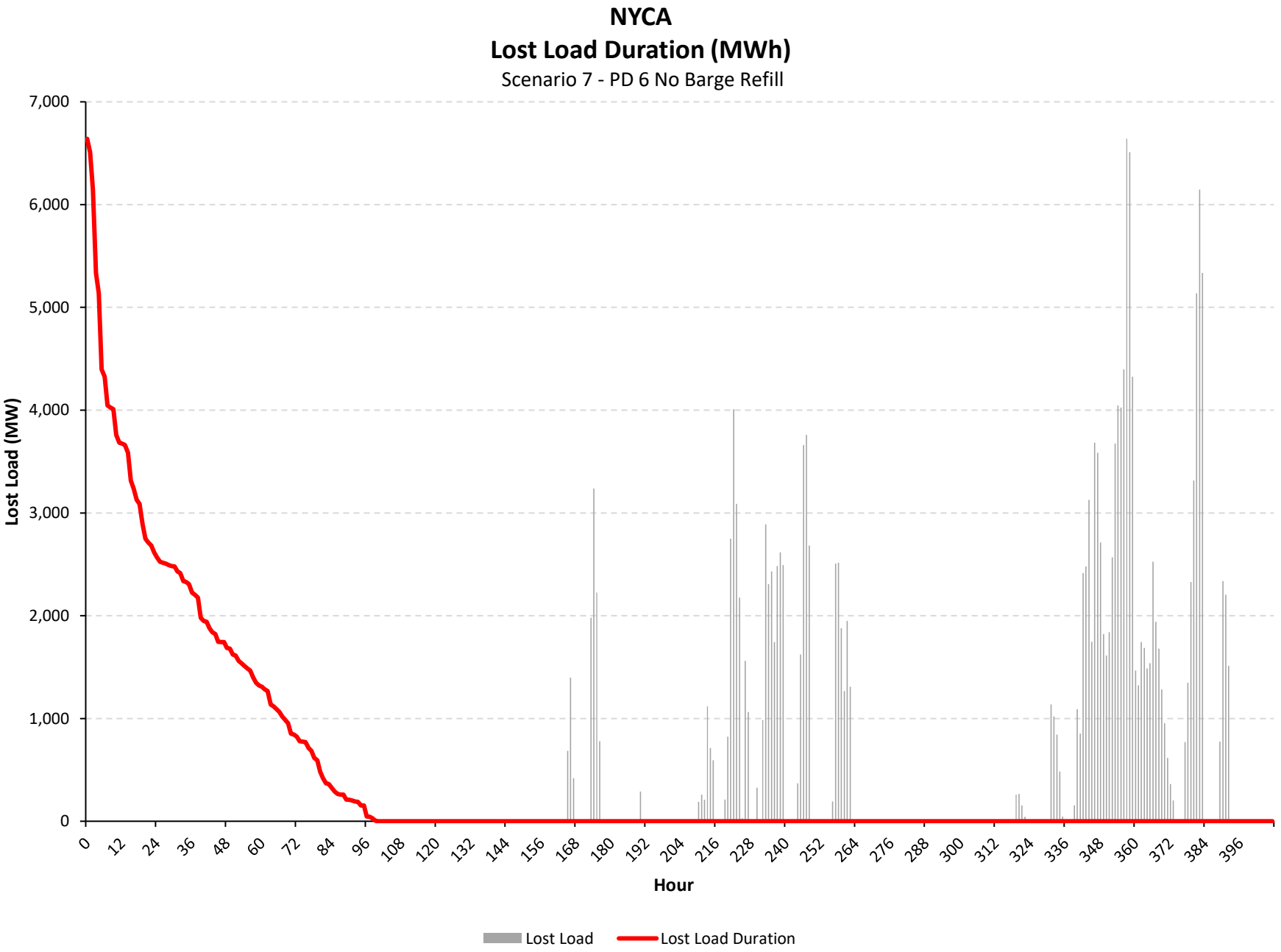

NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 7 - PD 6 No Barge Refill
Energy Stored (MWh)
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Zones A-E
Zone F
Zones G-I
Zone J
Zone K

NYCA
Degree Days and Gas Available for Electric Generation 17-Day Modeling Period
Scenario 7 - PD 6 No Barge Refill



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 7 - PD 6 No Barge Refill
Emergency Actions and Lost Load (MW)
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 7 - PD 6 No Barge Refill
Lost Load (MW)
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

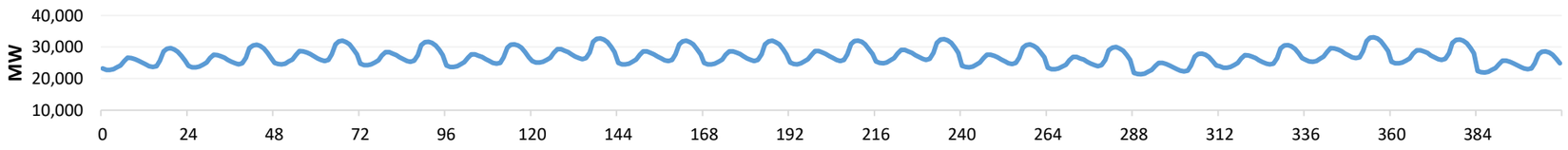
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 7 - PD 7 No Refill (Winter 2030/2031)

Hourly Results Summary

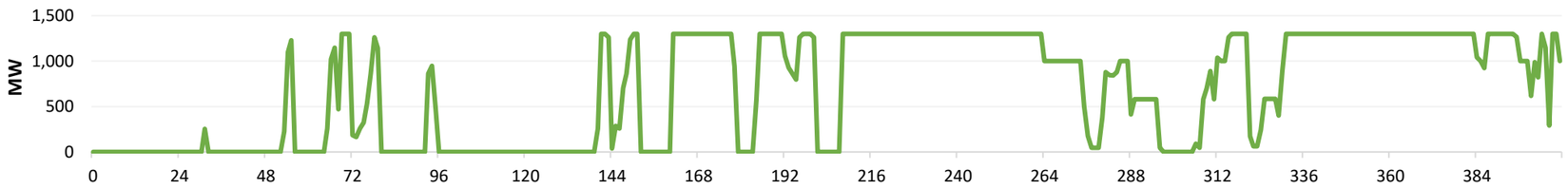
Case Name: Scenario 7 - PD 7 No Refill

Load During Modeling Period



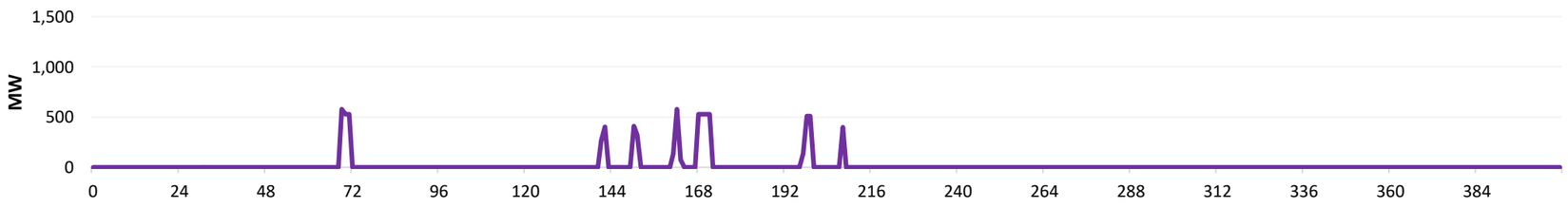
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	No Refill
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



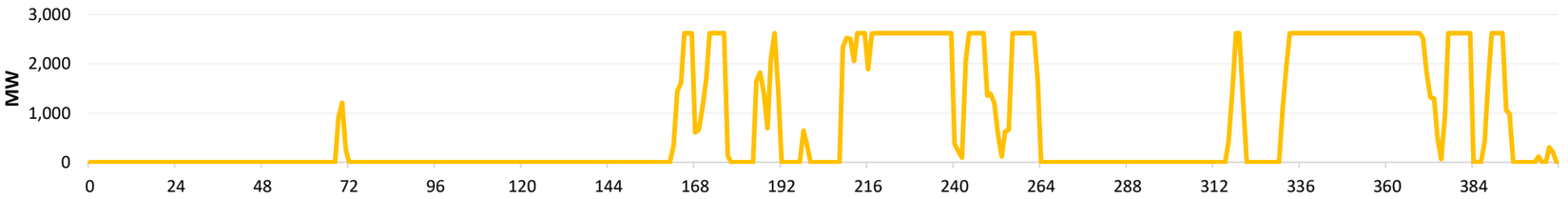
Export Reductions	
Total Hrs.	260
Total MWh	278,624
Avg. MW	682.9

SCR/EDRP Deployed During Modeling Period



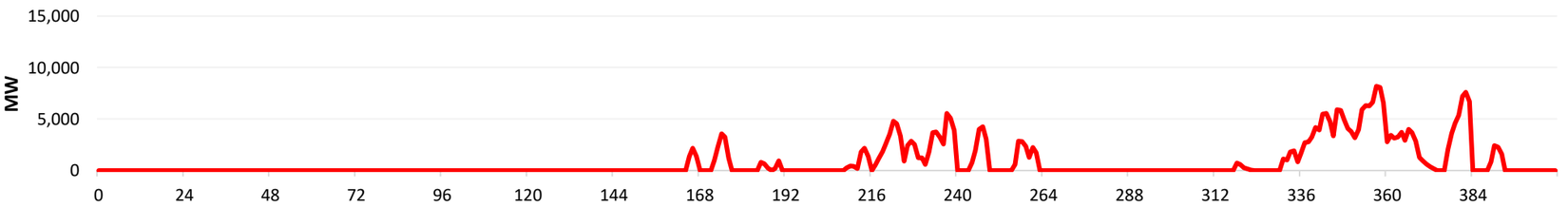
SCR Deployment	
Total Hrs.	18
Total MWh	7,480
Avg. MW	18.3

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	152
Total MWh	315,044
Avg. MW	772.2
First Hour with Viol.	69

Loss of Load During Modeling Period



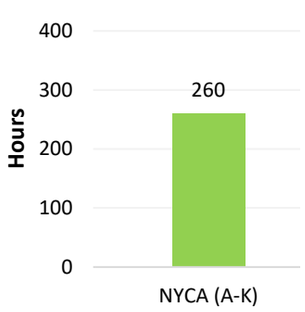
Loss of Load	
Total Hrs.	114
Total MWh	320,921
Avg. MW	786.6
First Hour with Losses	165

Full Period Results Summary

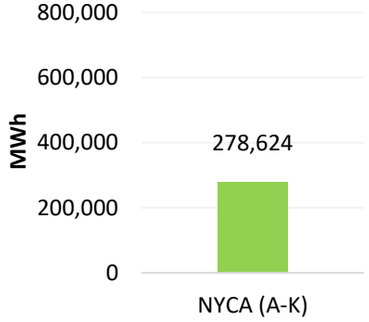
Case Name: Scenario 7 - PD 7 No Refill

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	No Refill
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

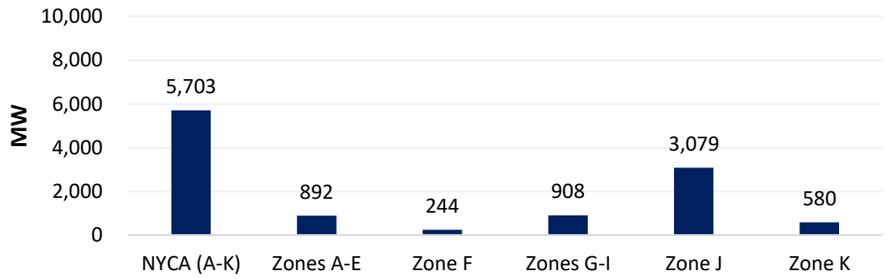
Hours Exports Reduced



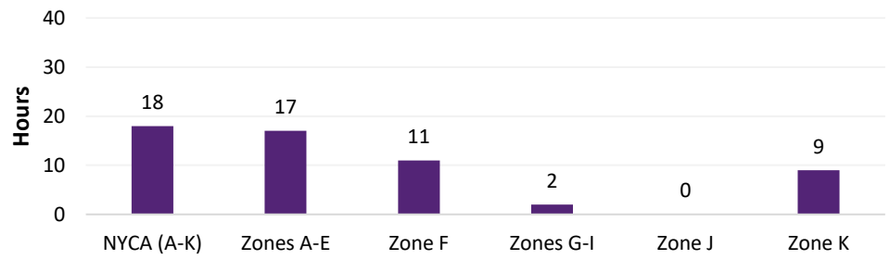
Total MWh of Exports Reduced



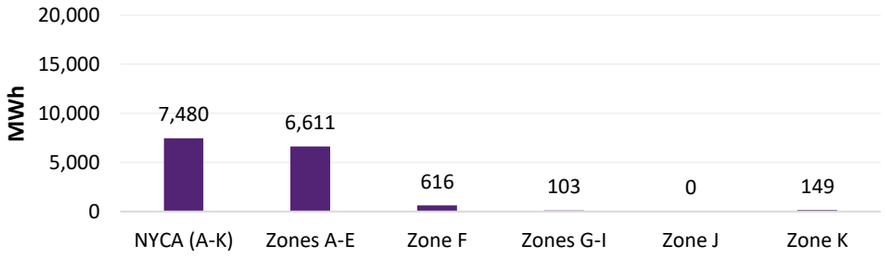
Average Capacity Not Available Due to Exhausted Fuel Inventory



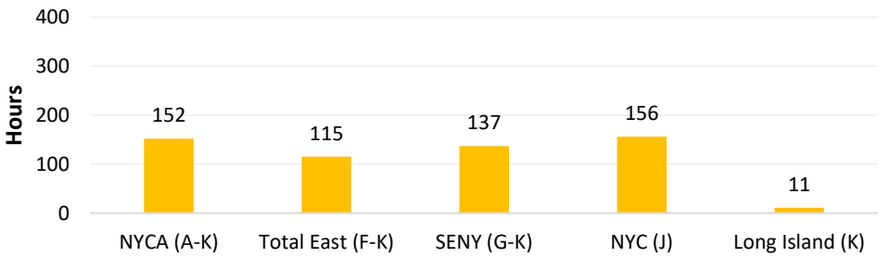
Hours SCR/EDRP Deployed



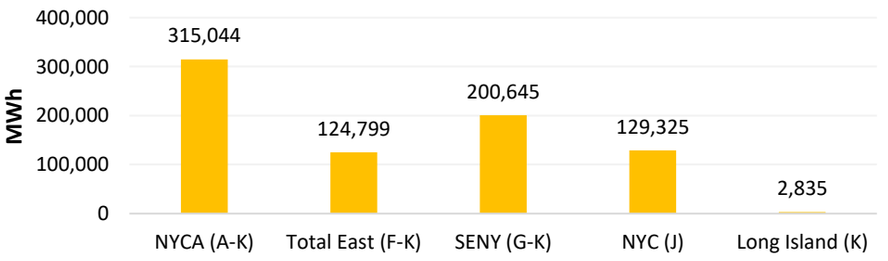
Total MWh SCR/EDRP Deployed



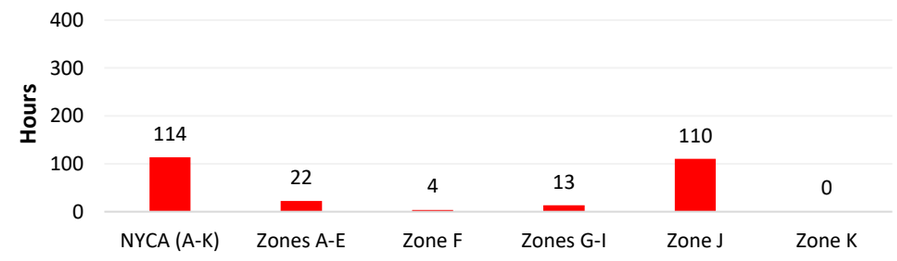
Hours with Reserve Violations



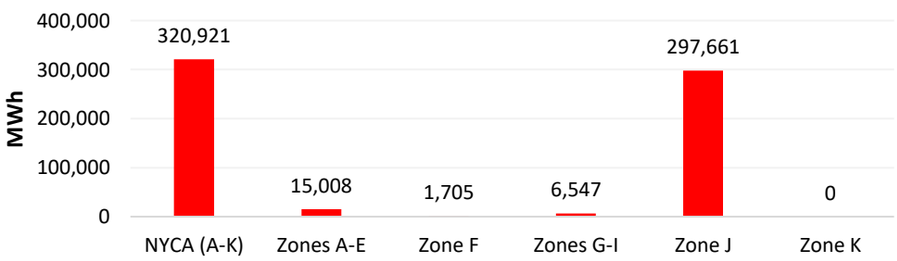
Total MWh of Reserve Violations

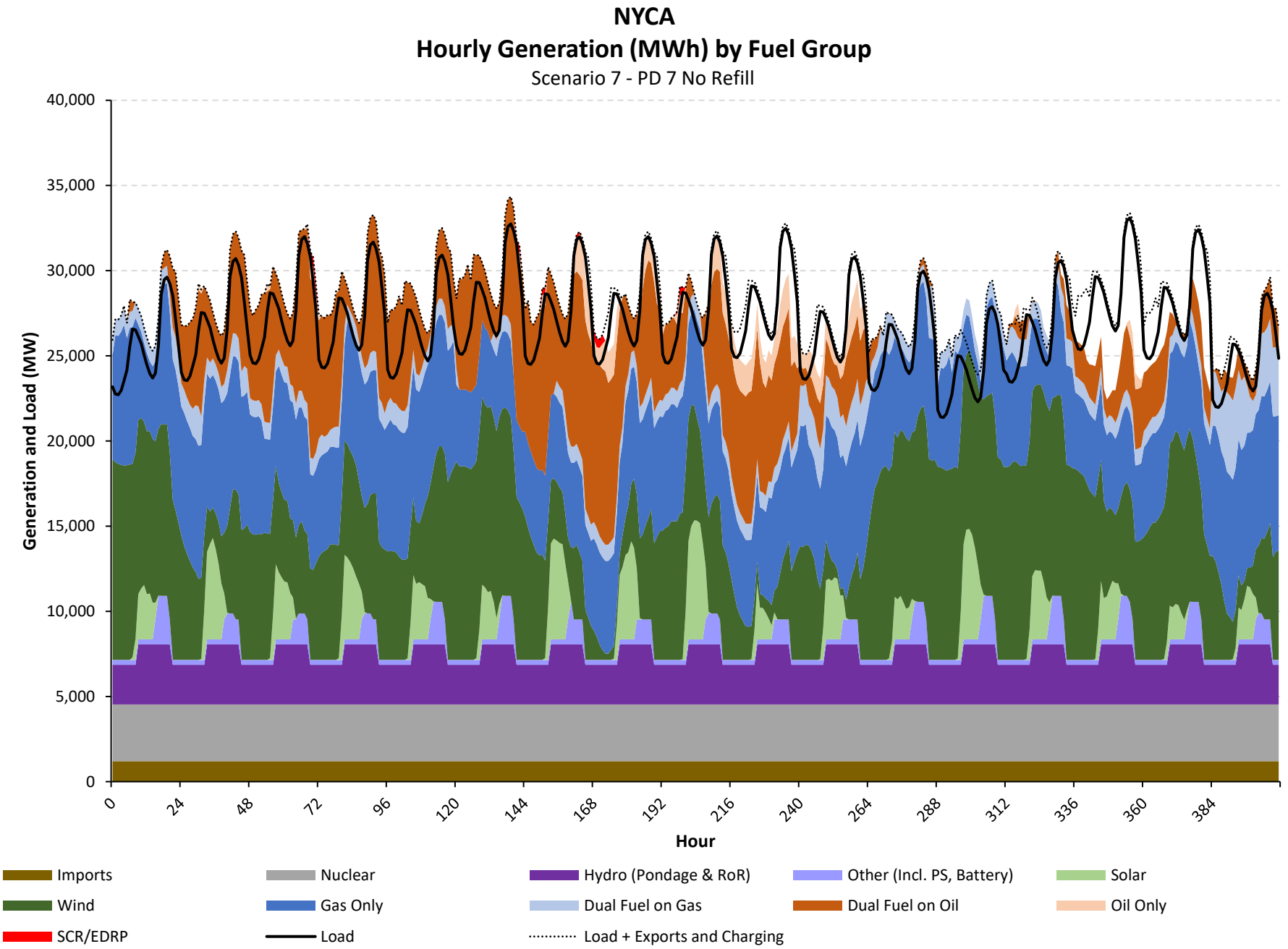


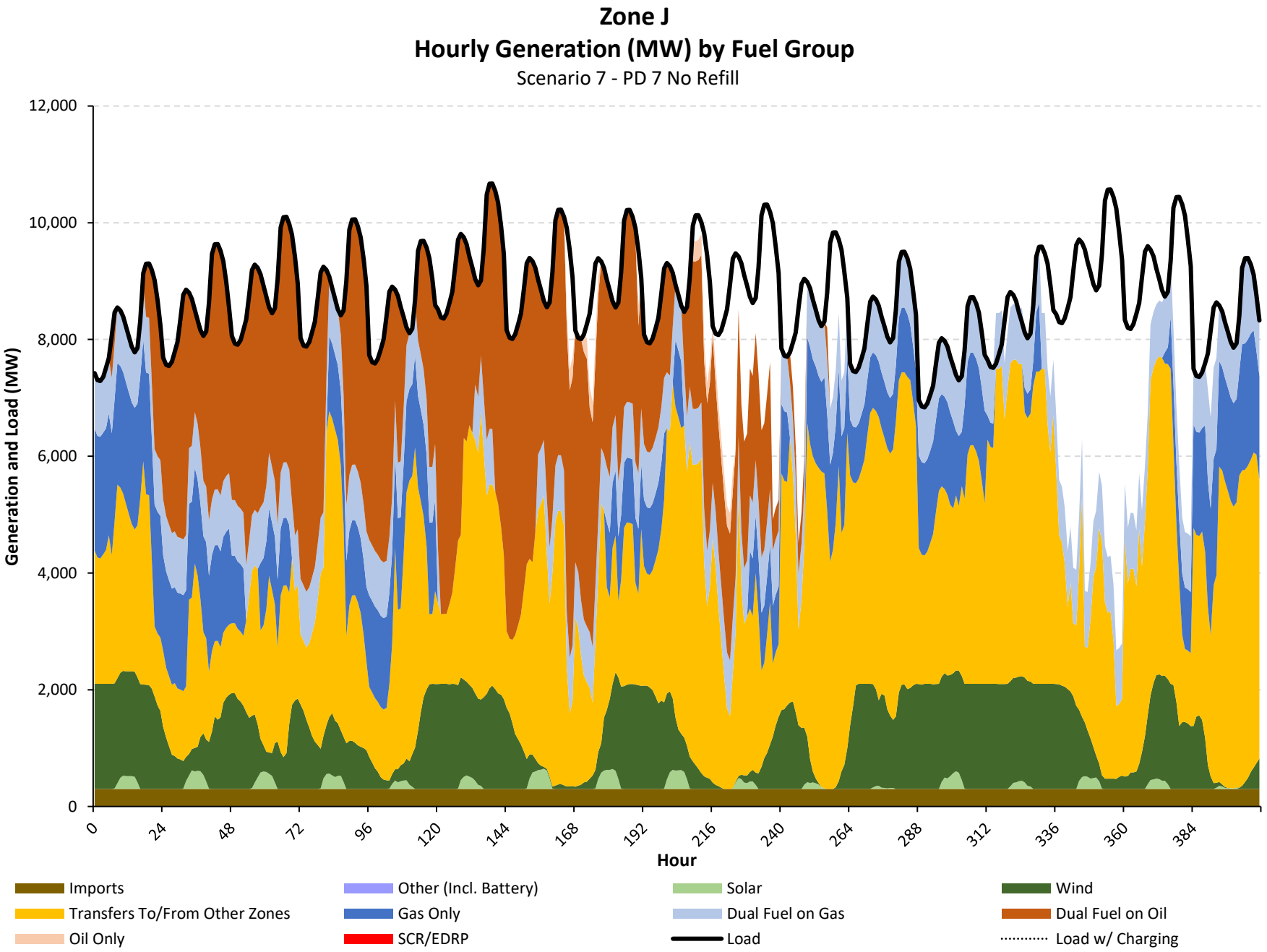
Hours with Loss of Load



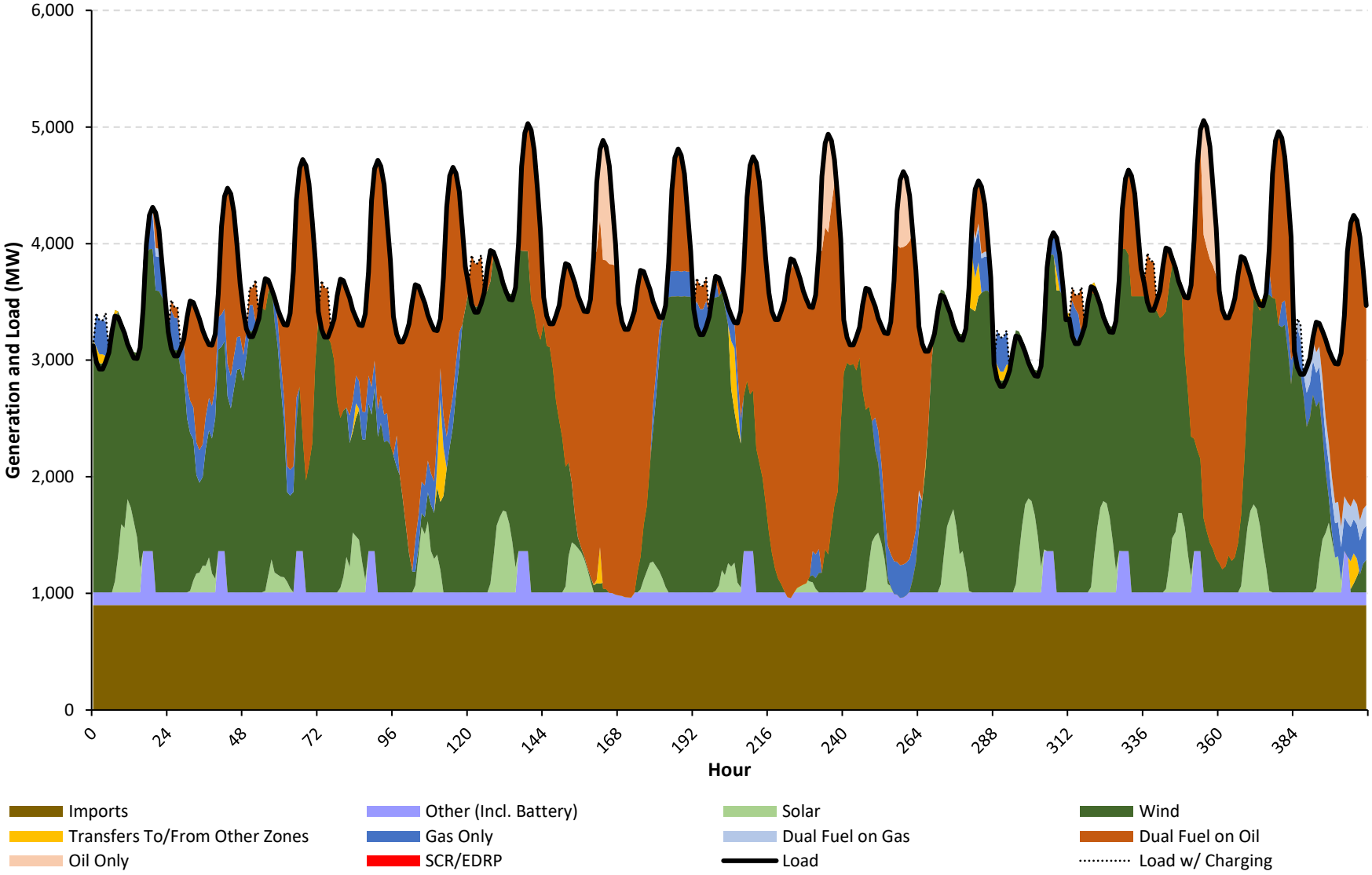
Total MWh of Lost Load

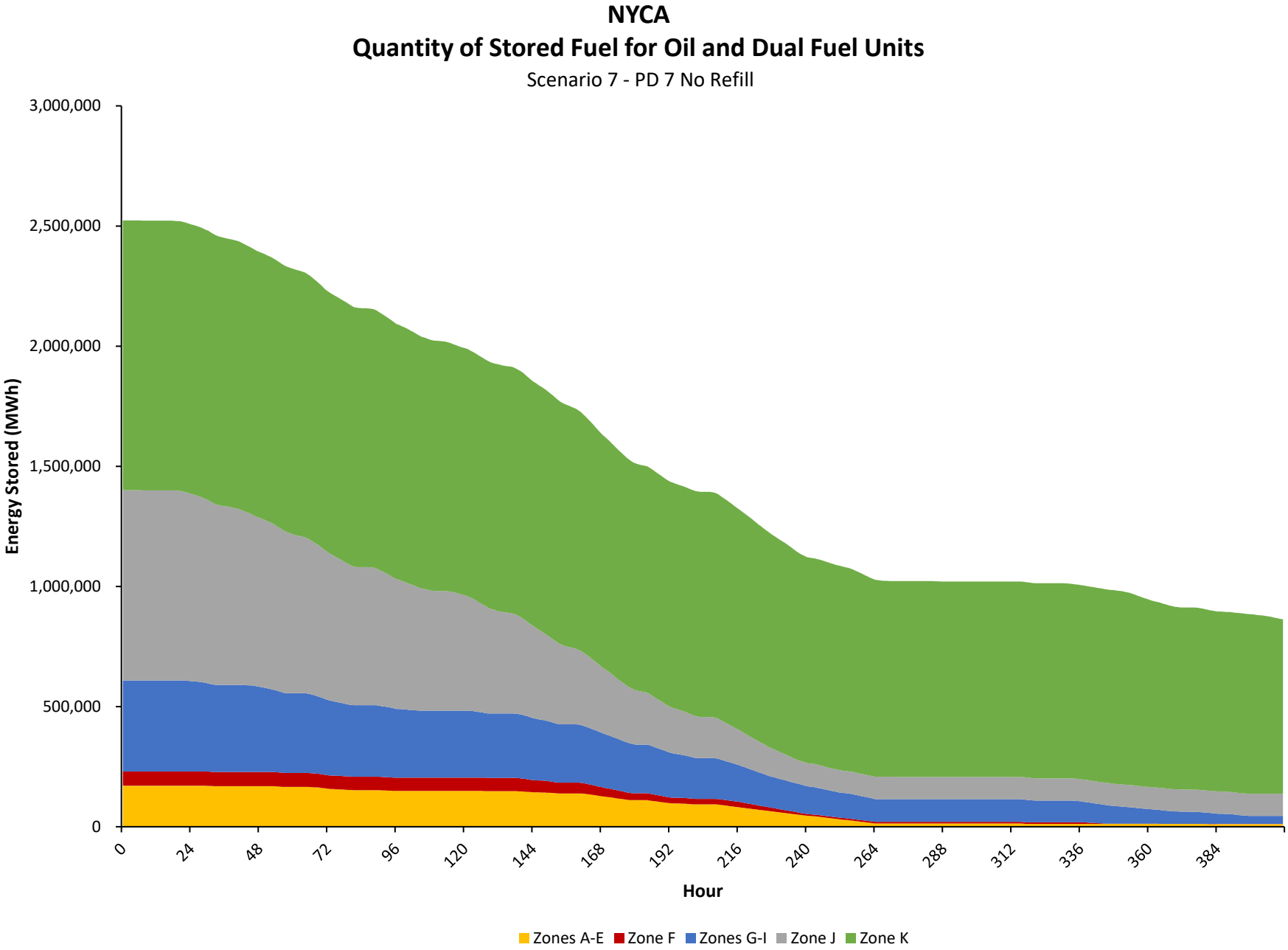


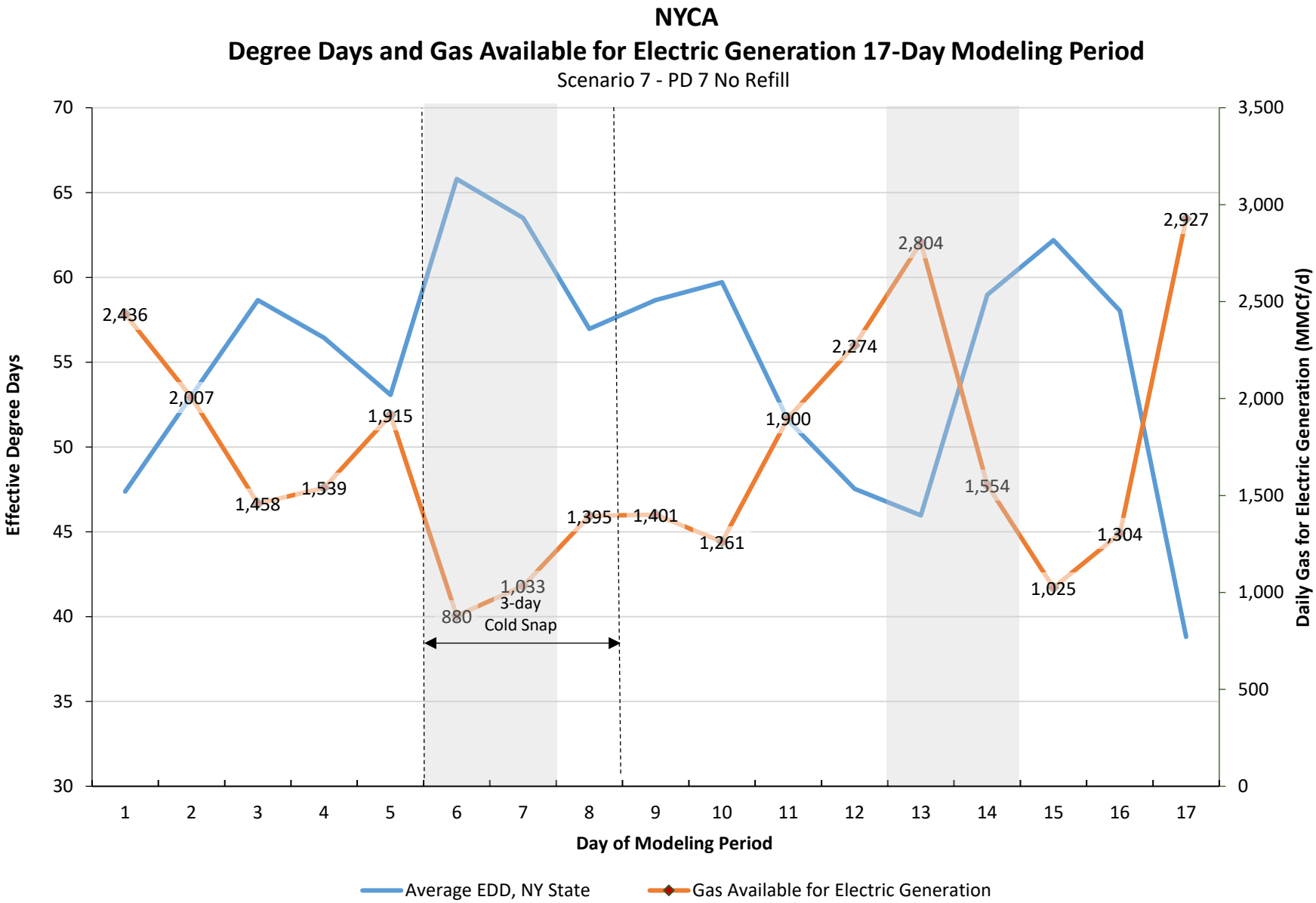

NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 7 - PD 7 No Refill
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 7 - PD 7 No Refill
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

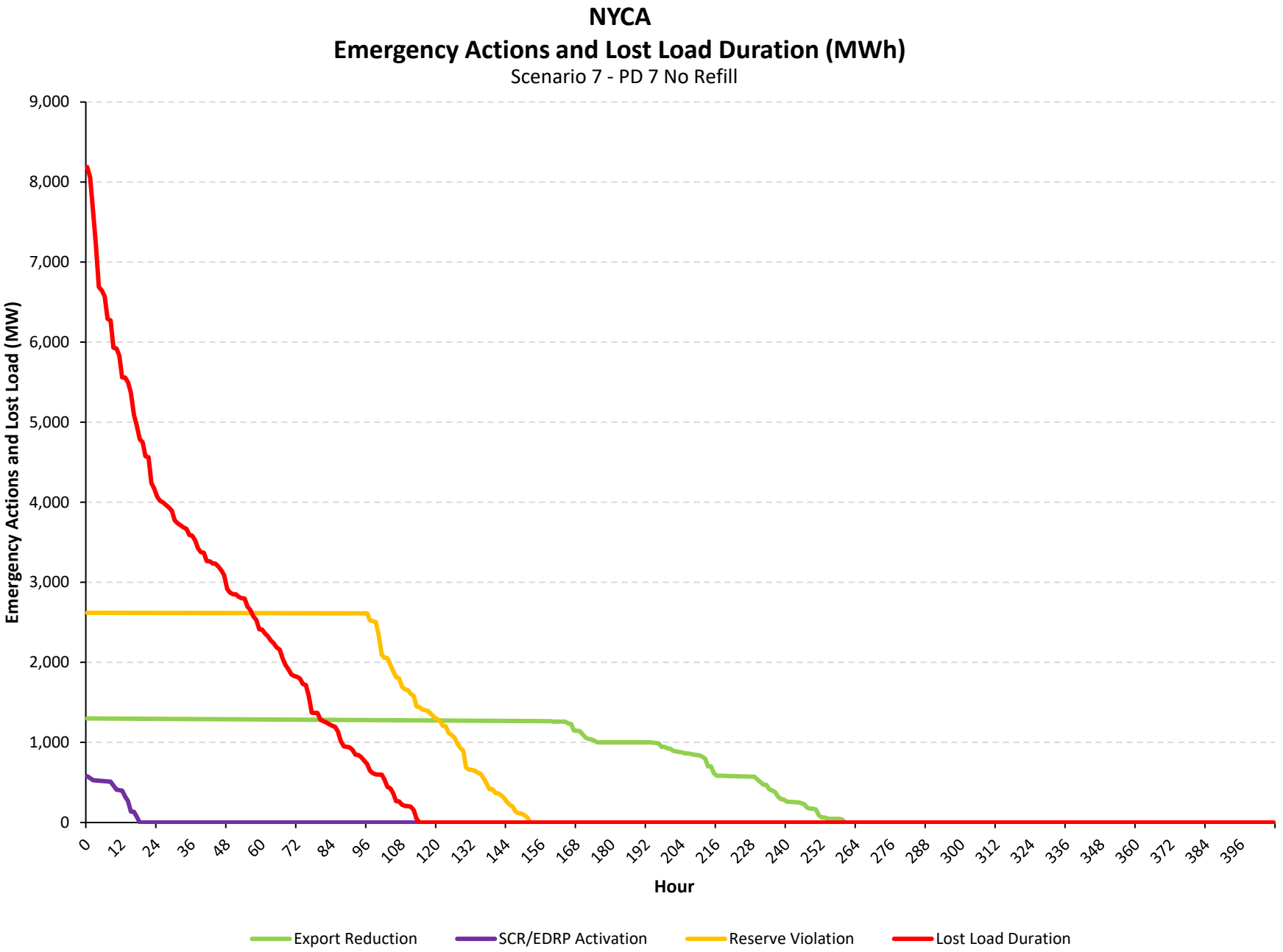
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 7 - PD 7 No Refill

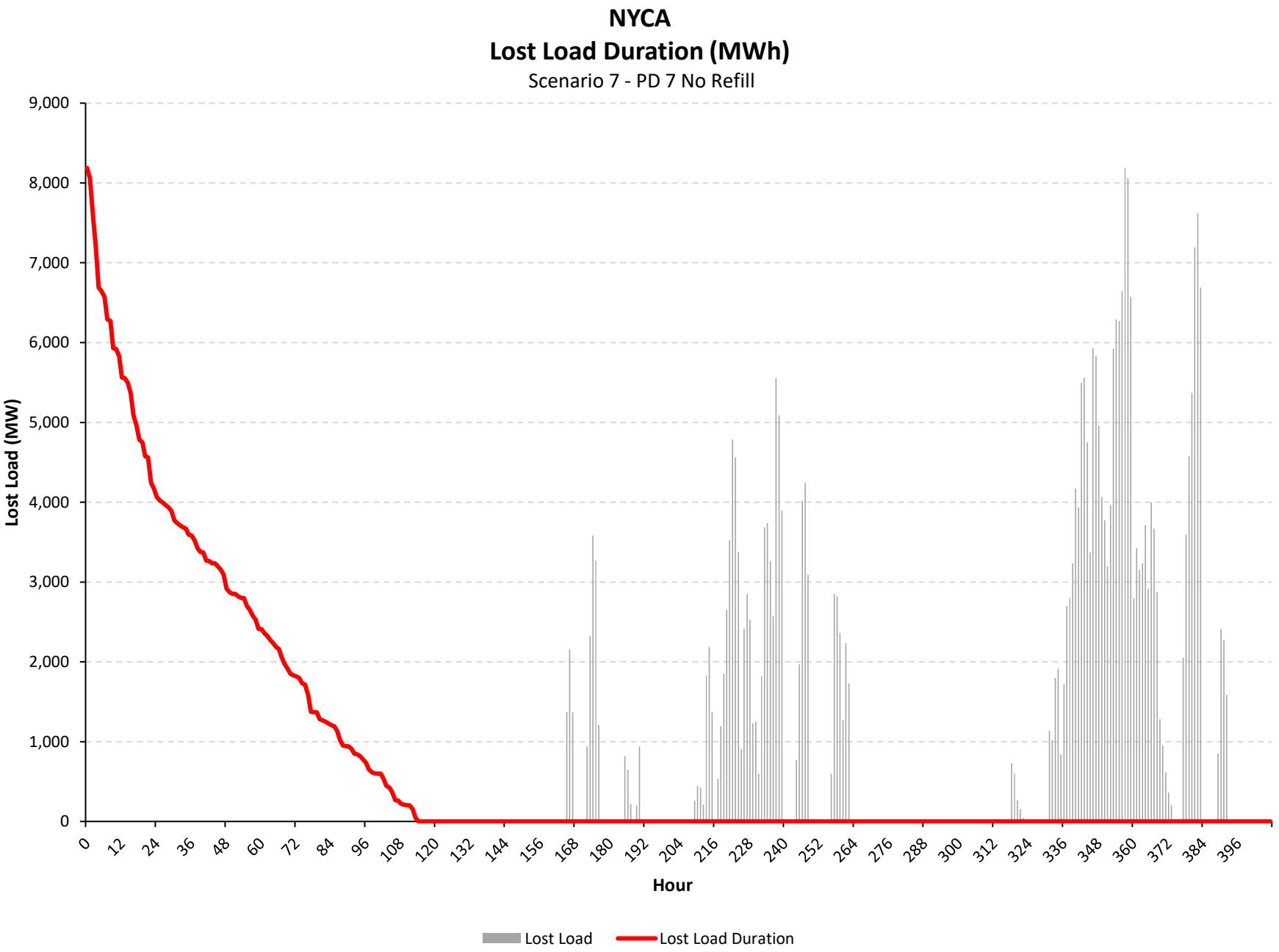



NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 7 - PD 7 No Refill
Energy Stored (MWh)
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Zones A-E
Zone F
Zones G-I
Zone J
Zone K



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 7 - PD 7 No Refill
Emergency Actions and Lost Load (MW)
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 7 - PD 7 No Refill
Lost Load (MW)
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

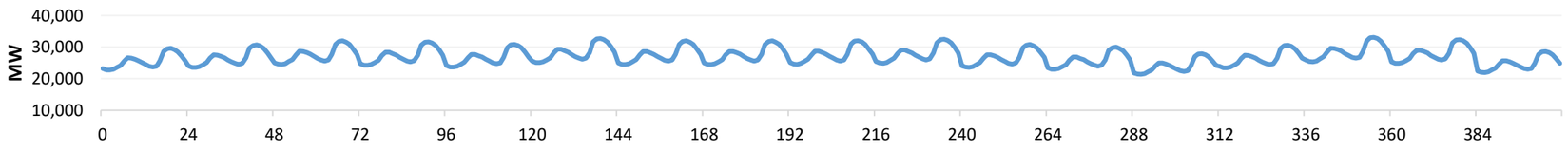
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 7 - PD 8 Non-Firm Gas Unavailable (F-K) (Winter 2030/2031)

Hourly Results Summary

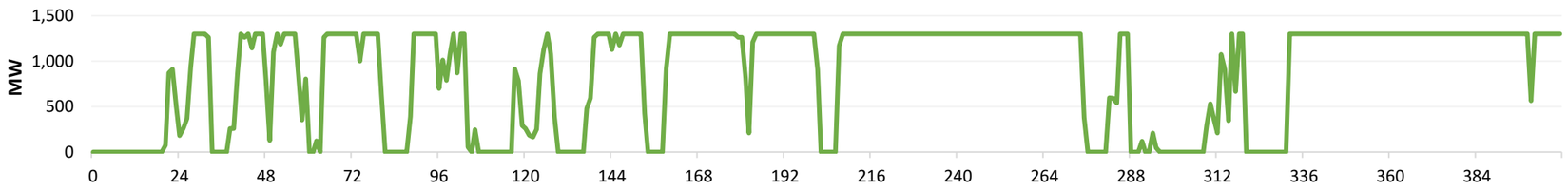
Case Name: Scenario 7 - PD 8 Non-Firm Gas Unavailable (F-K)

Load During Modeling Period



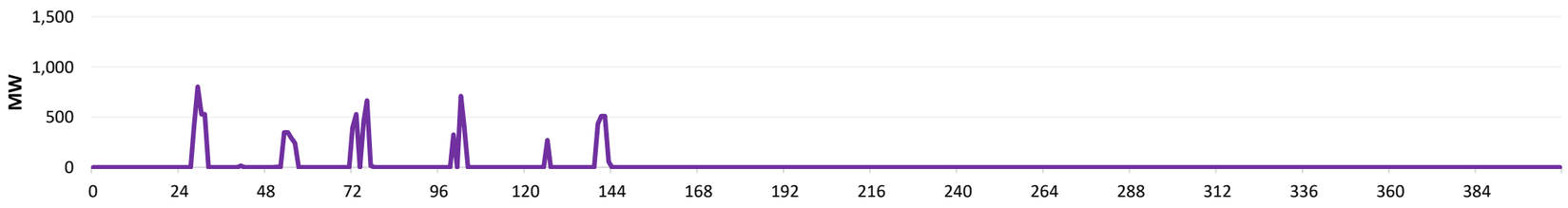
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	F-K
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



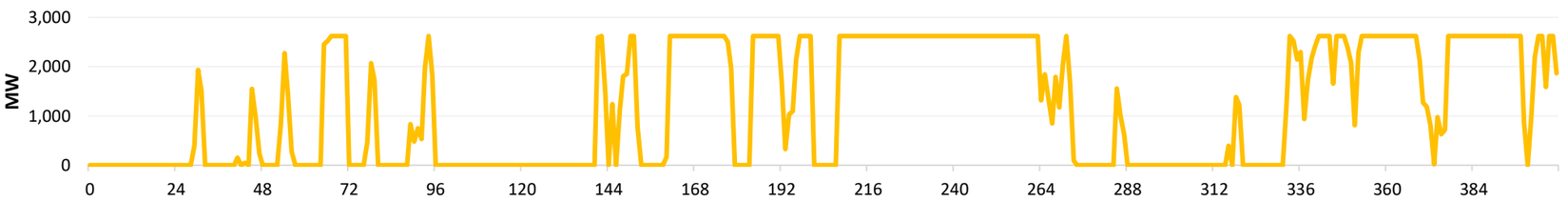
Export Reductions	
Total Hrs.	308
Total MWh	353,216
Avg. MW	865.7

SCR/EDRP Deployed During Modeling Period



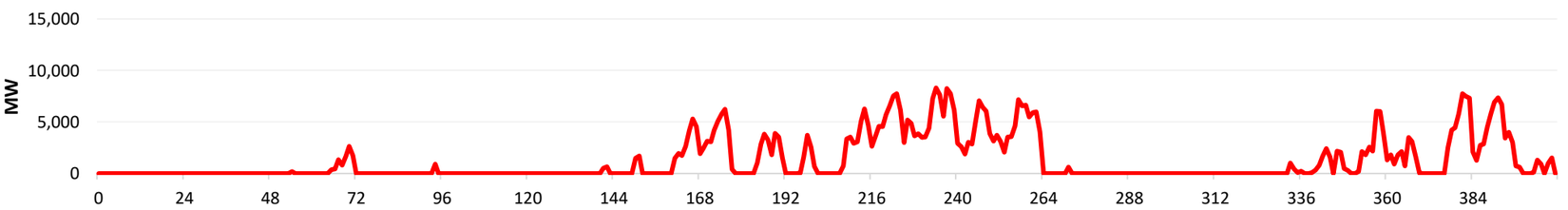
SCR Deployment	
Total Hrs.	23
Total MWh	8,788
Avg. MW	21.5

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	222
Total MWh	481,846
Avg. MW	1,181.0
First Hour with Viol.	29

Loss of Load During Modeling Period



Loss of Load	
Total Hrs.	159
Total MWh	524,789
Avg. MW	1,286.2
First Hour with Losses	54

Full Period Results Summary

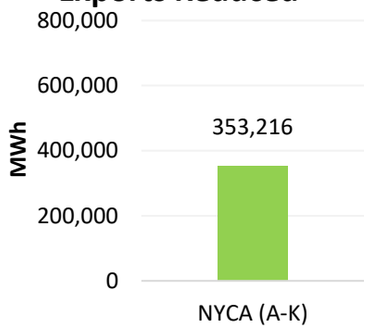
Case Name: Scenario 7 - PD 8 Non-Firm Gas Unavailable (F-K)

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	F-K
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

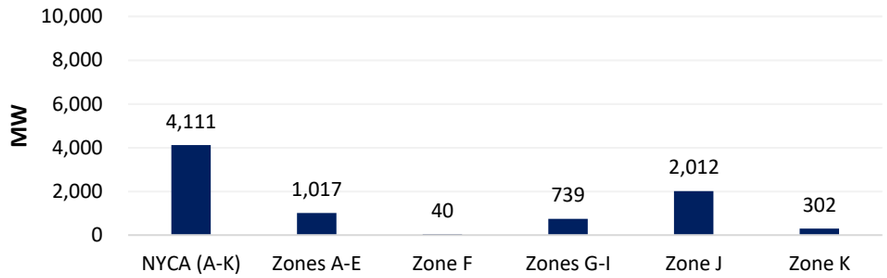
Hours Exports Reduced



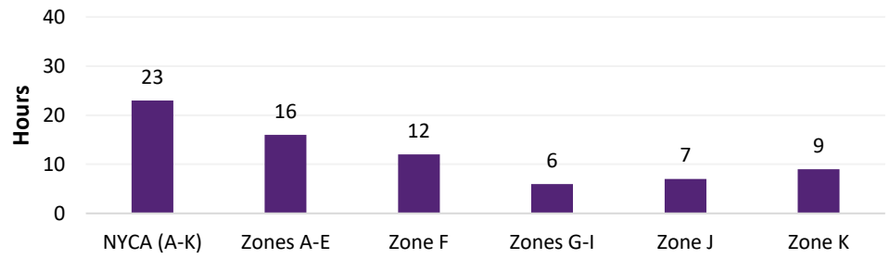
Total MWh of Exports Reduced



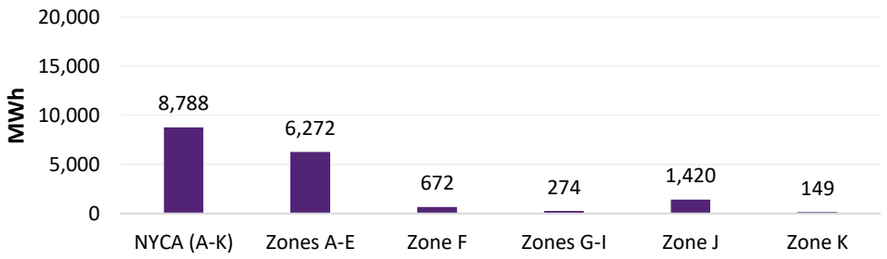
Average Capacity Not Available Due to Exhausted Fuel Inventory



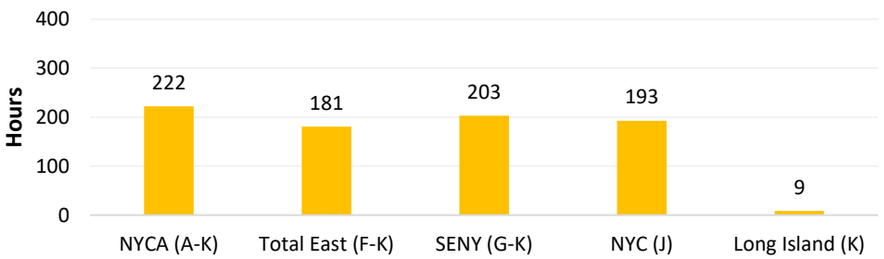
Hours SCR/EDRP Deployed



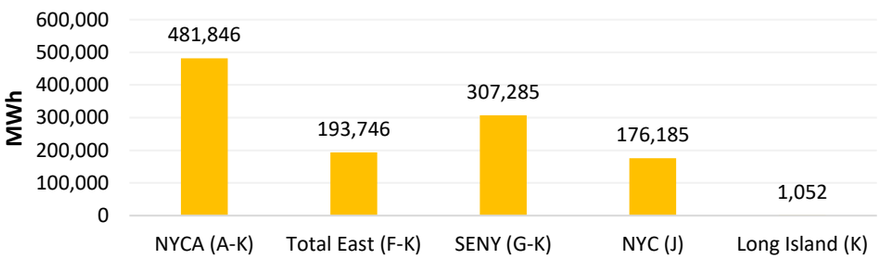
Total MWh SCR/EDRP Deployed



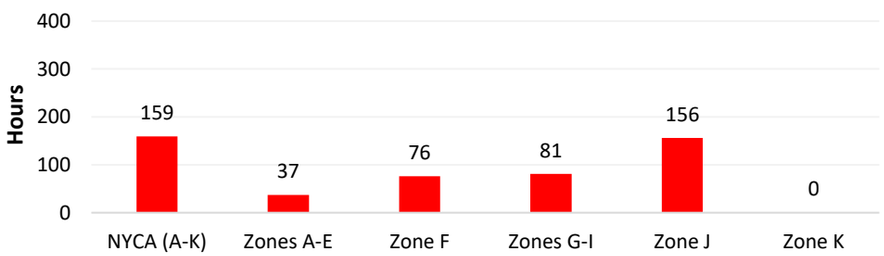
Hours with Reserve Violations



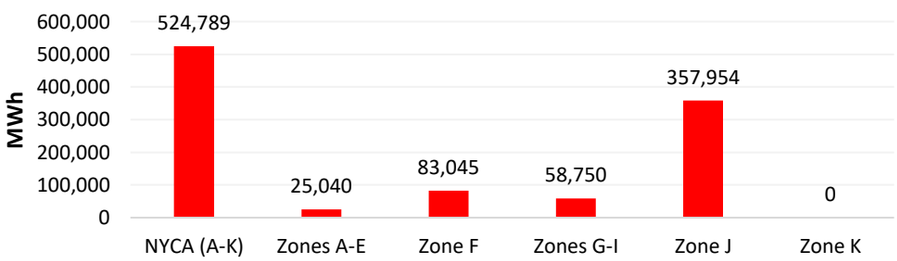
Total MWh of Reserve Violations

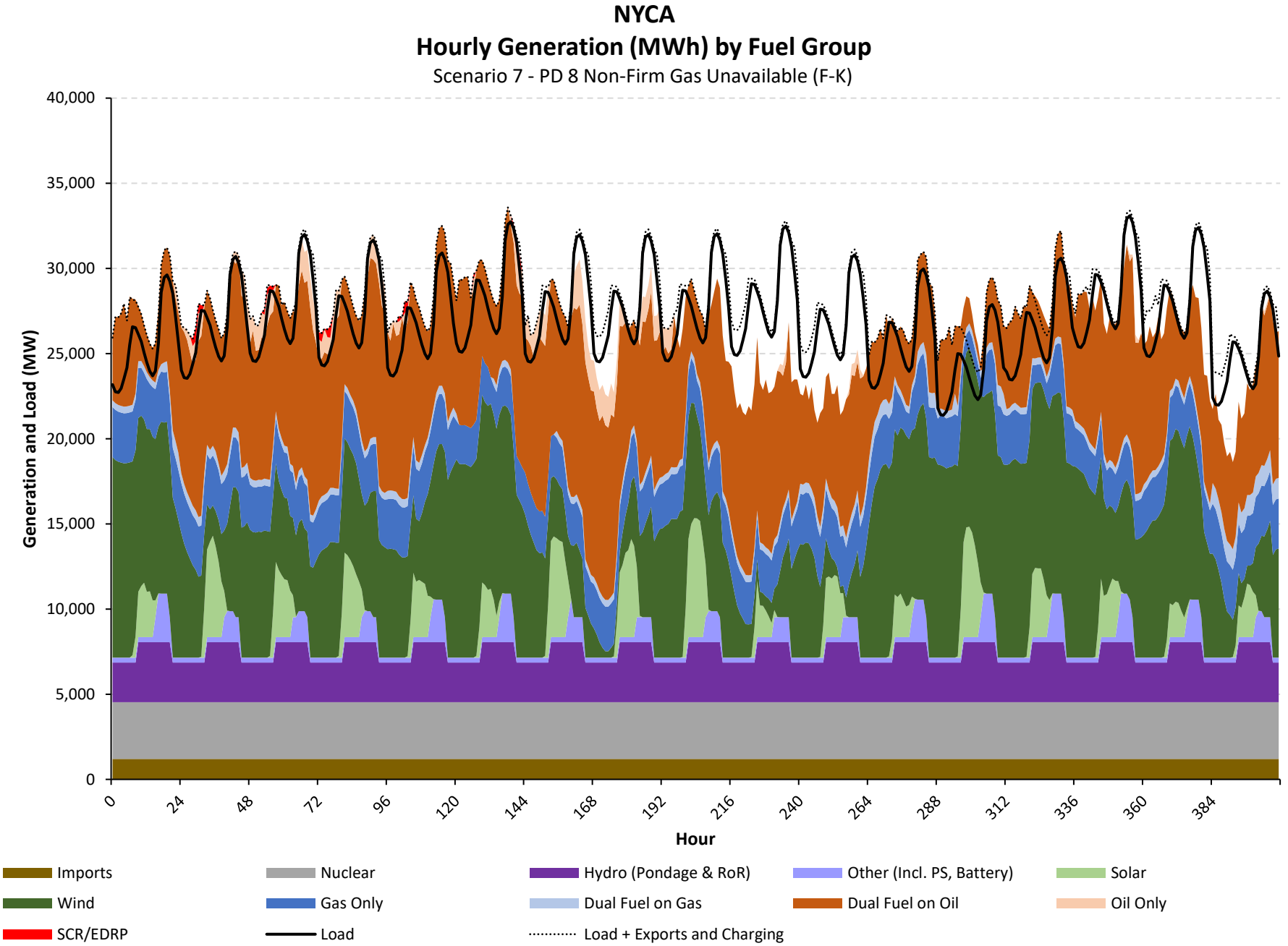


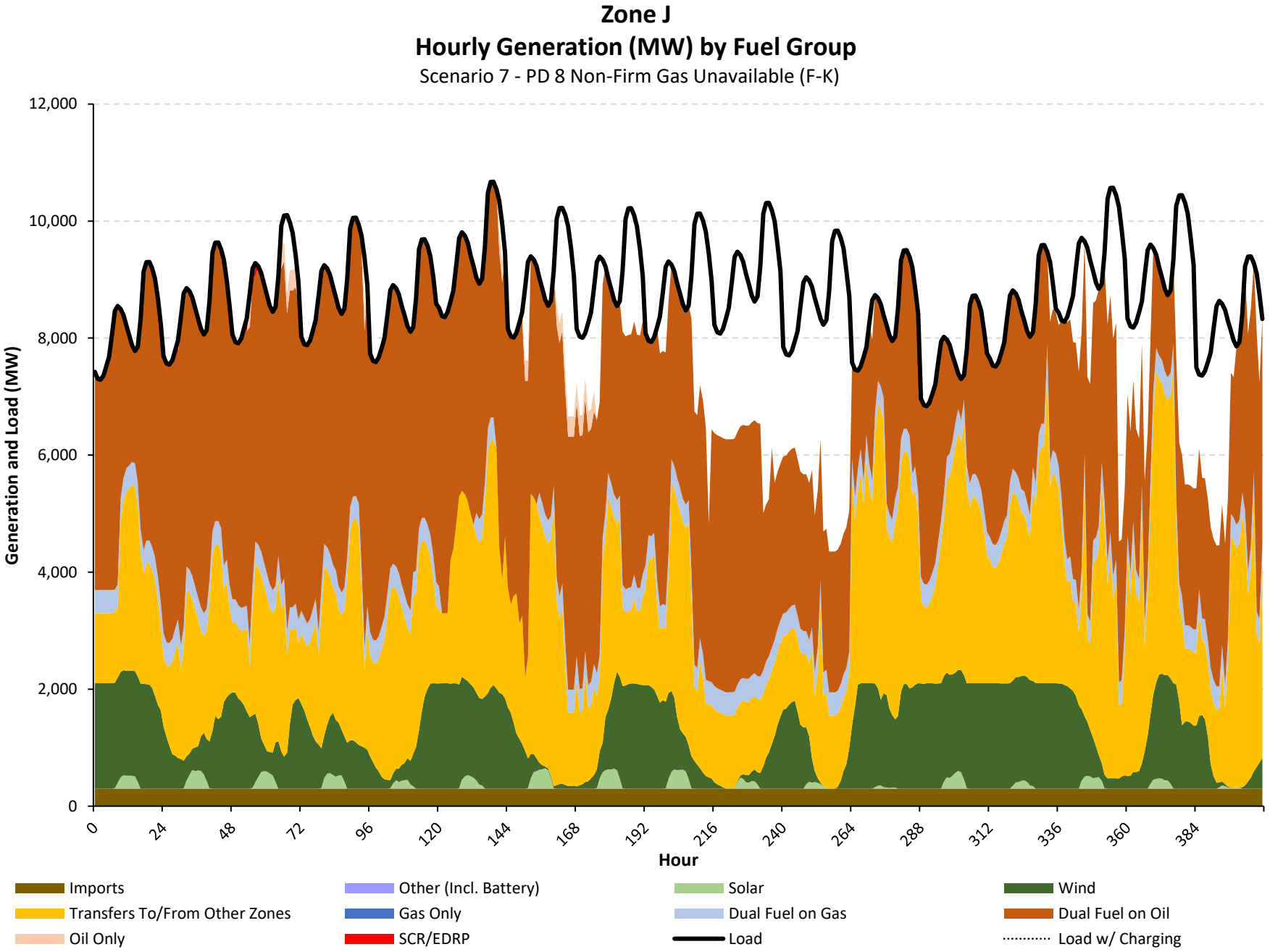
Hours with Loss of Load



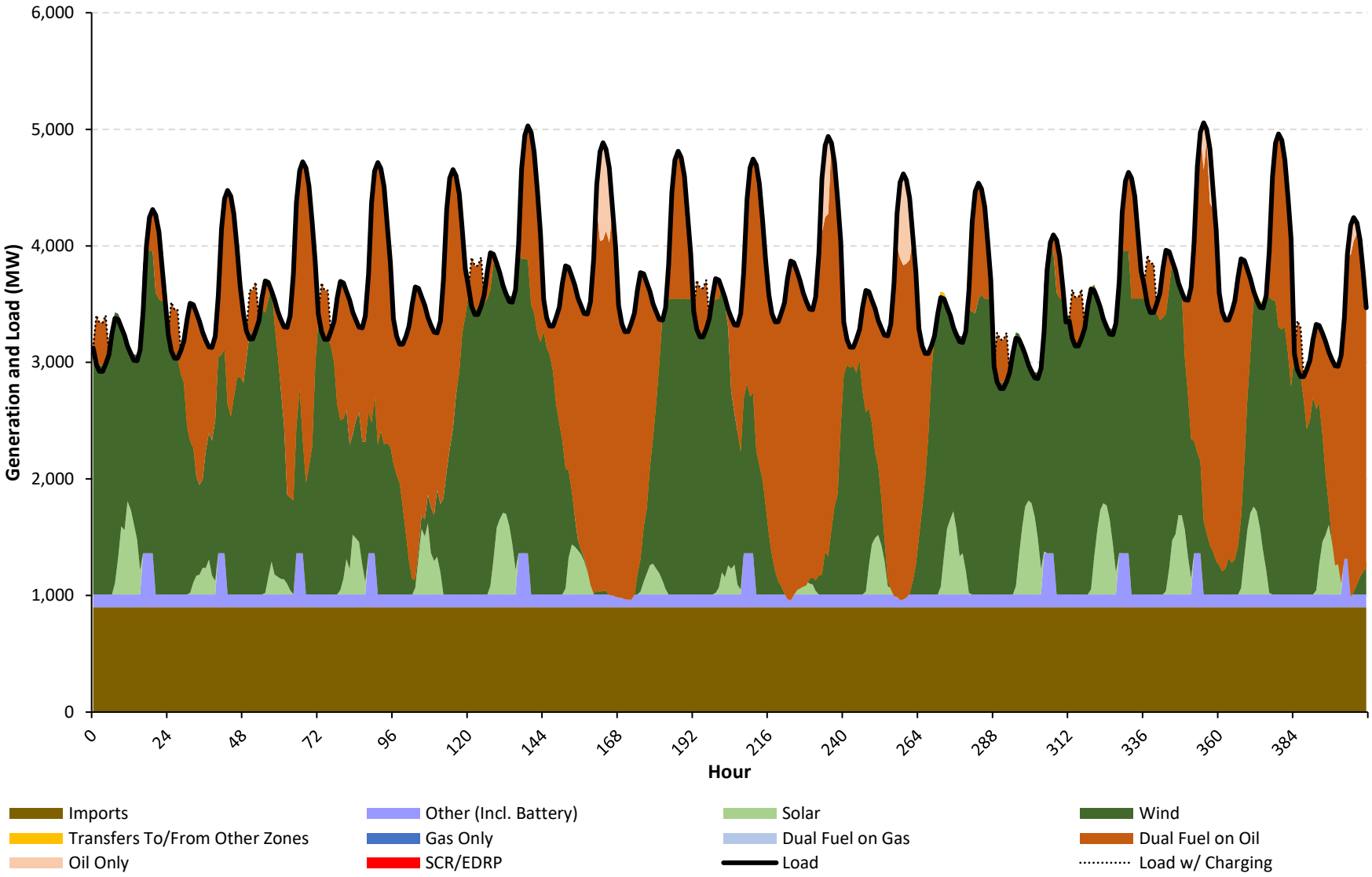
Total MWh of Lost Load

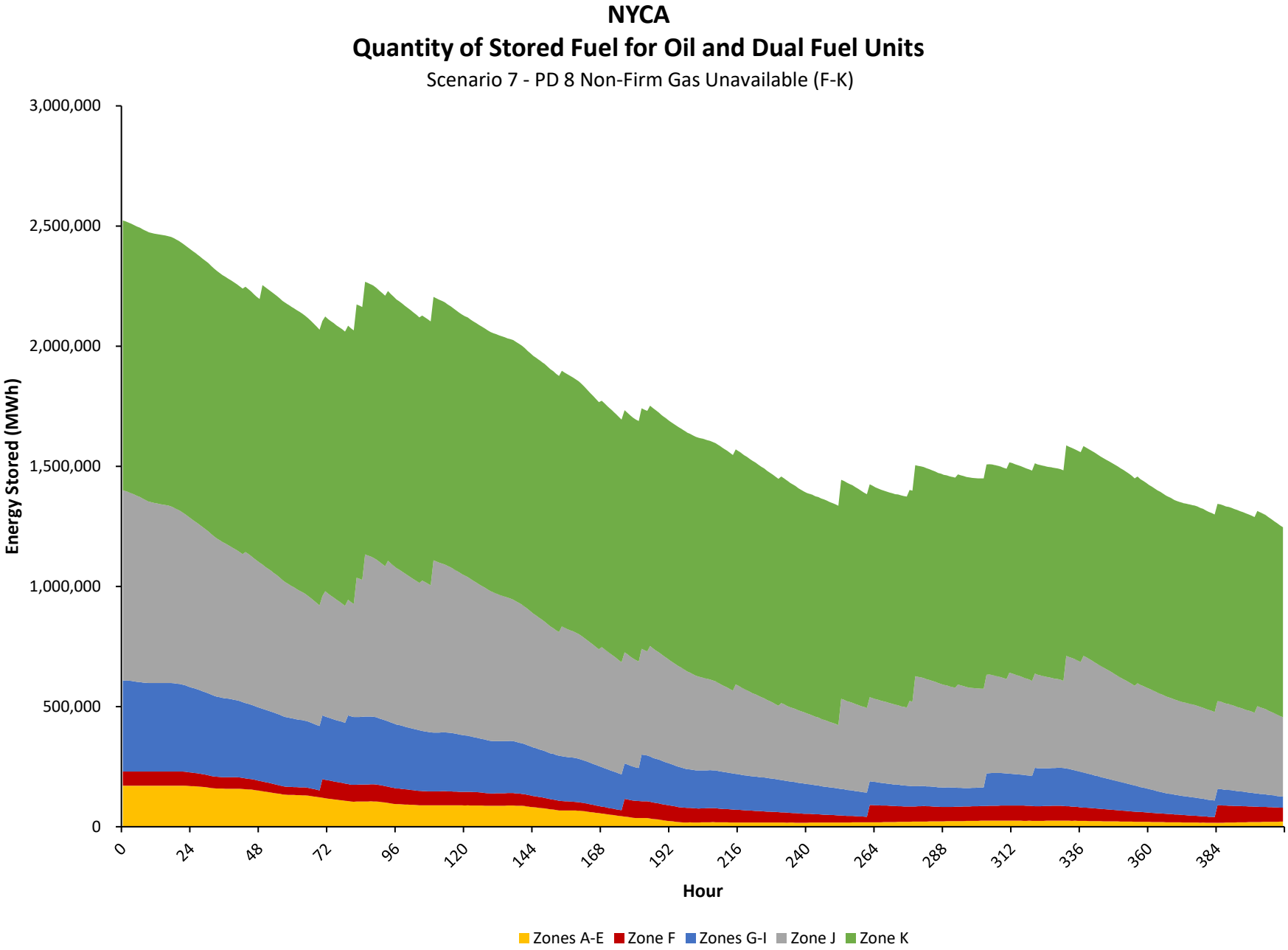



NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 7 - PD 8 Non-Firm Gas Unavailable (F-K)
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

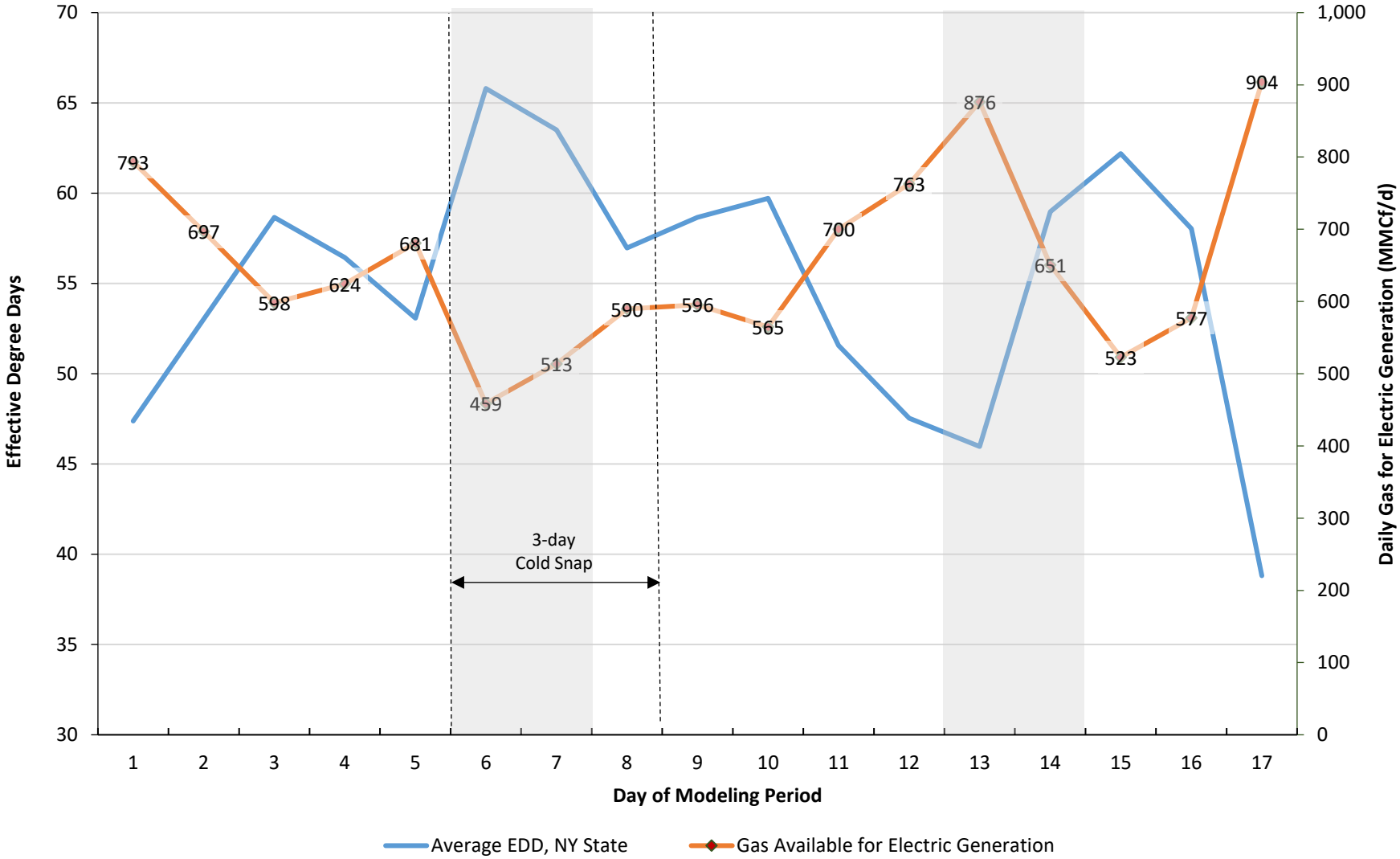

Zone J
Hourly Generation (MW) by Fuel Group
Scenario 7 - PD 8 Non-Firm Gas Unavailable (F-K)
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

Zone K
Hourly Generation (MW) by Fuel Group
Scenario 7 - PD 8 Non-Firm Gas Unavailable (F-K)

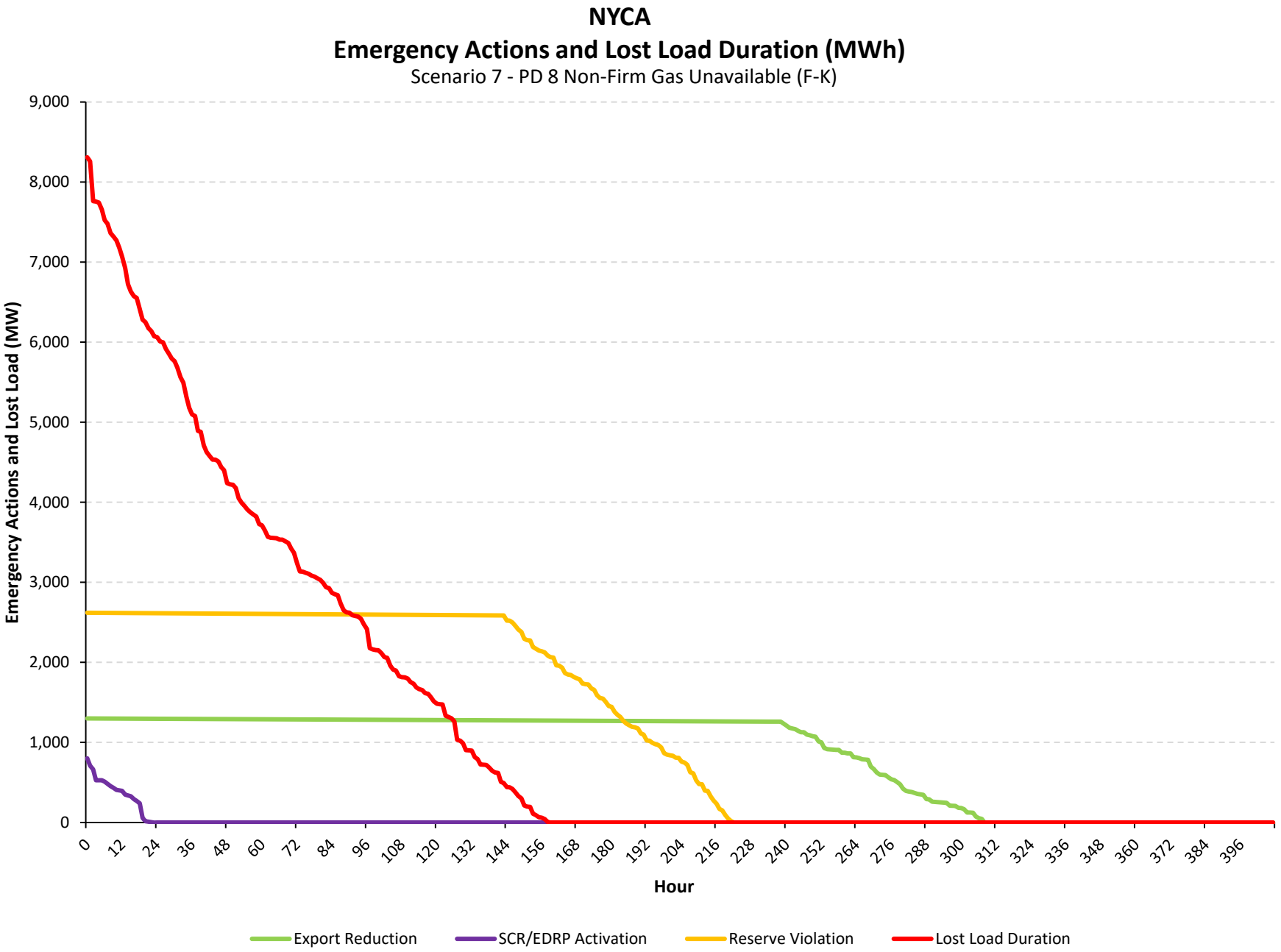


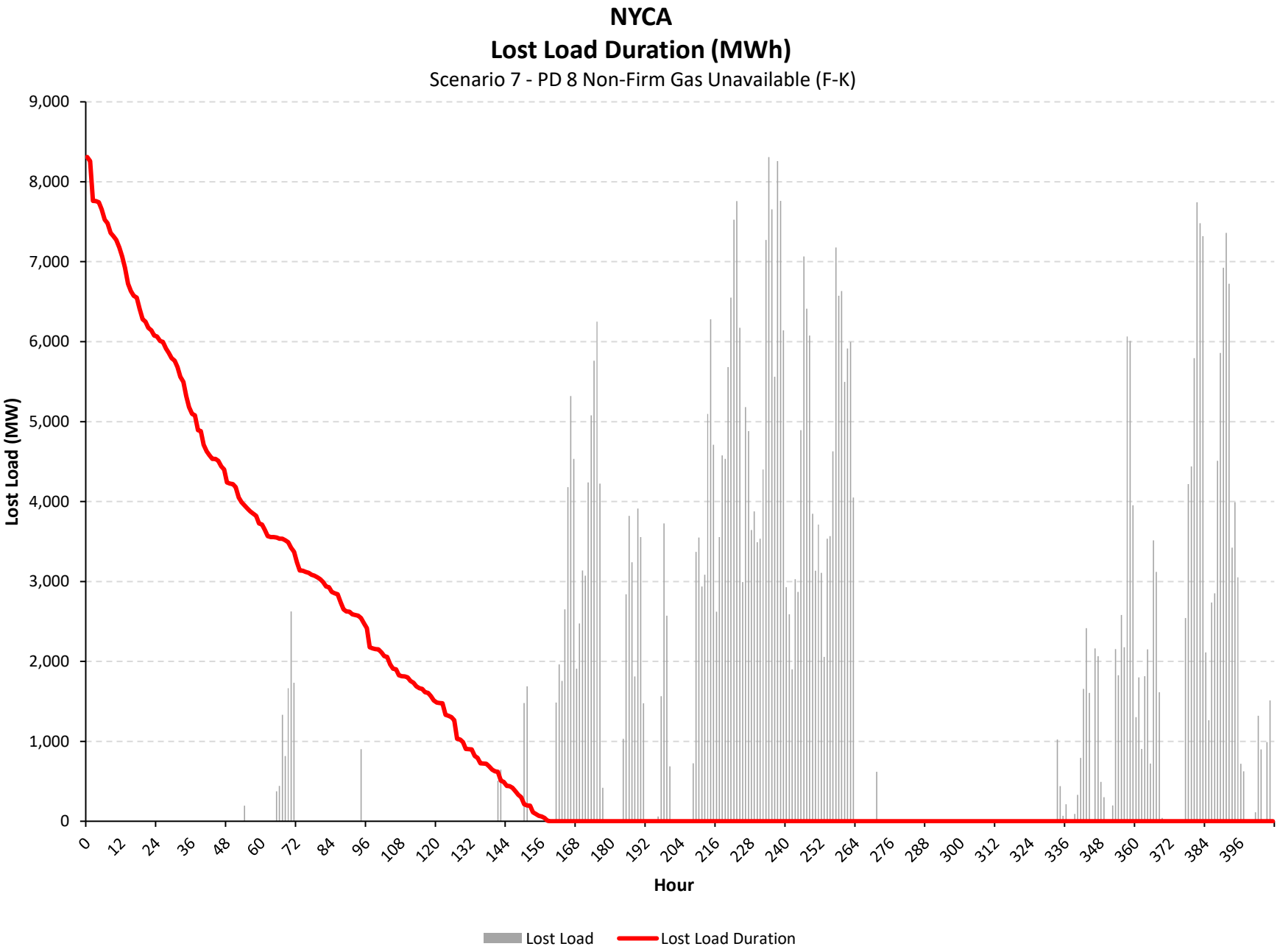

NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 7 - PD 8 Non-Firm Gas Unavailable (F-K)
Energy Stored (MWh)
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Zones A-E
Zone F
Zones G-I
Zone J
Zone K

NYCA
Degree Days and Gas Available for Electric Generation 17-Day Modeling Period
Scenario 7 - PD 8 Non-Firm Gas Unavailable (F-K)



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 7 - PD 8 Non-Firm Gas Unavailable (F-K)
Emergency Actions and Lost Load (MW)
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 7 - PD 8 Non-Firm Gas Unavailable (F-K)
Lost Load (MW)
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

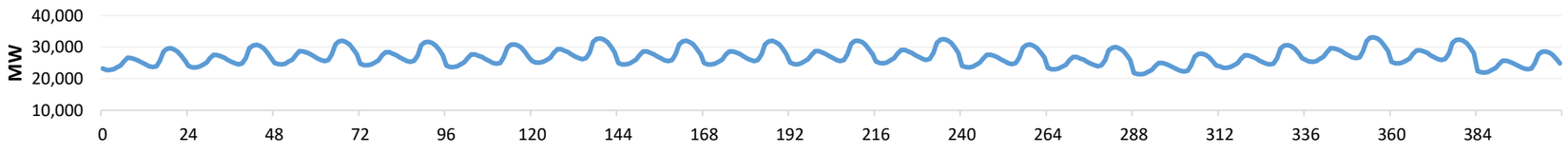
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 7 - PD 9 Non-Firm Gas Unavailable (NYCA) (Winter 2030/2031)

Hourly Results Summary

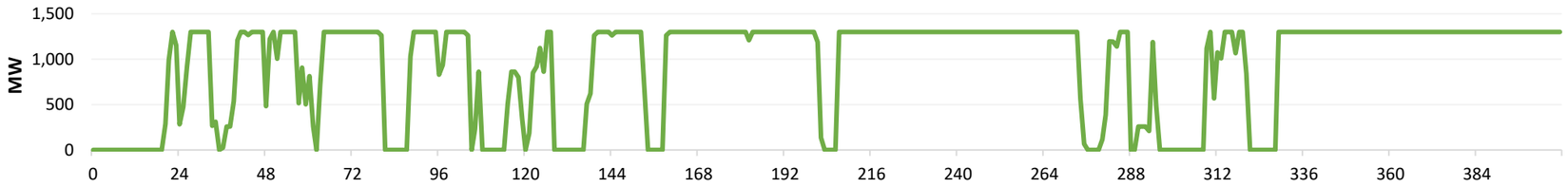
Case Name: Scenario 7 - PD 9 Non-Firm Gas Unavailable (NYCA)

Load During Modeling Period



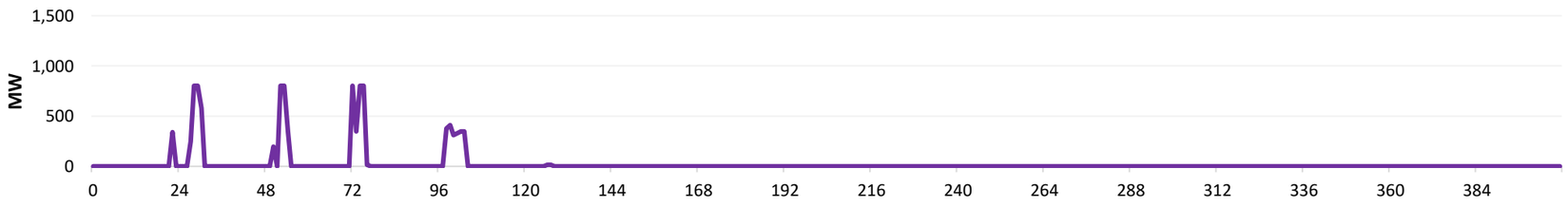
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	NYISO
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



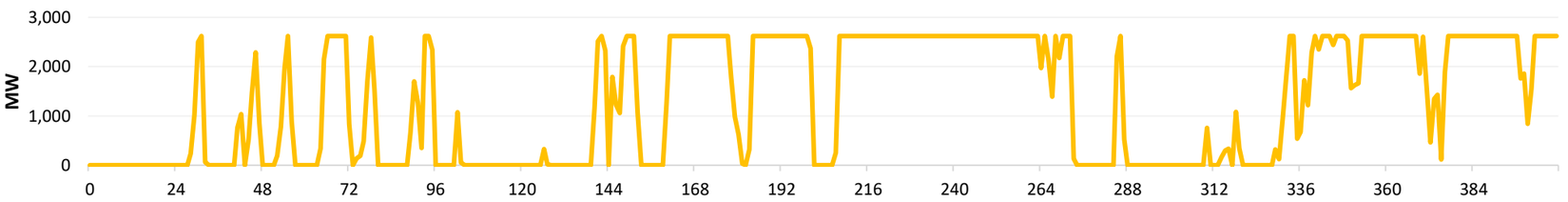
Export Reductions	
Total Hrs.	325
Total MWh	383,560
Avg. MW	940.1

SCR/EDRP Deployed During Modeling Period



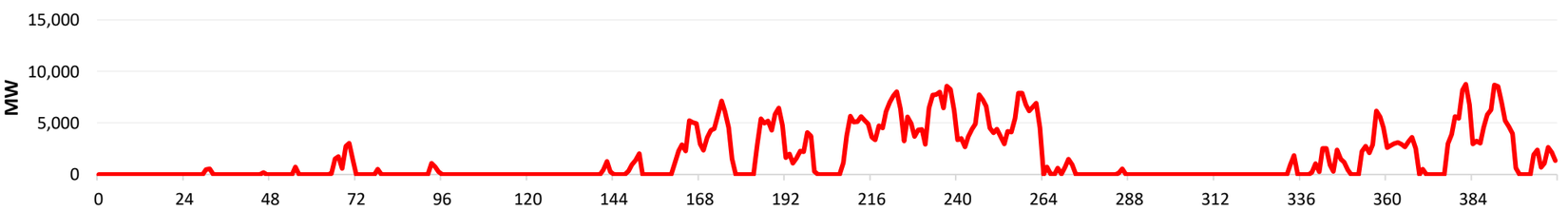
SCR Deployment	
Total Hrs.	22
Total MWh	9,837
Avg. MW	24.1

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	249
Total MWh	527,951
Avg. MW	1,294.0
First Hour with Viol.	28

Loss of Load During Modeling Period



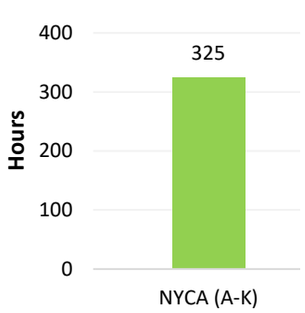
Loss of Load	
Total Hrs.	178
Total MWh	641,328
Avg. MW	1,571.9
First Hour with Losses	30

Full Period Results Summary

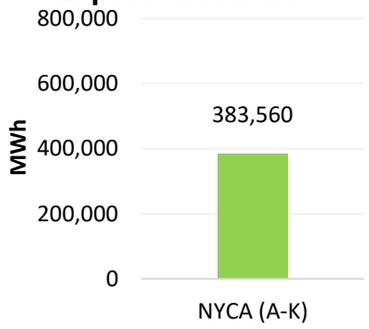
Case Name: Scenario 7 - PD 9 Non-Firm Gas Unavailable (NYCA)

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	NYISO
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

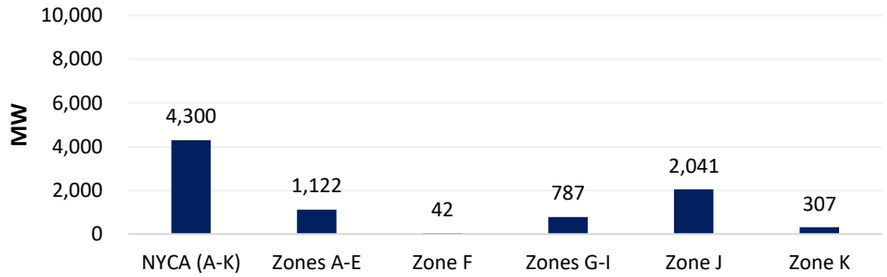
Hours Exports Reduced



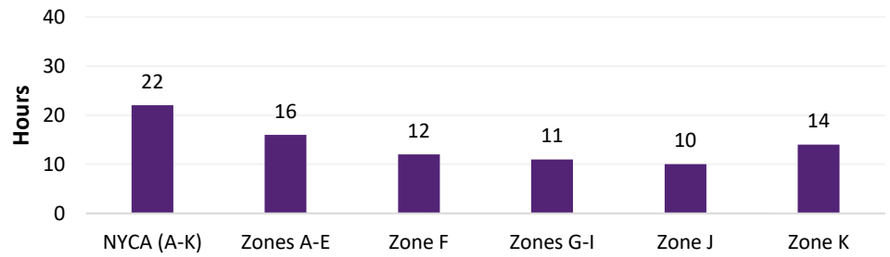
Total MWh of Exports Reduced



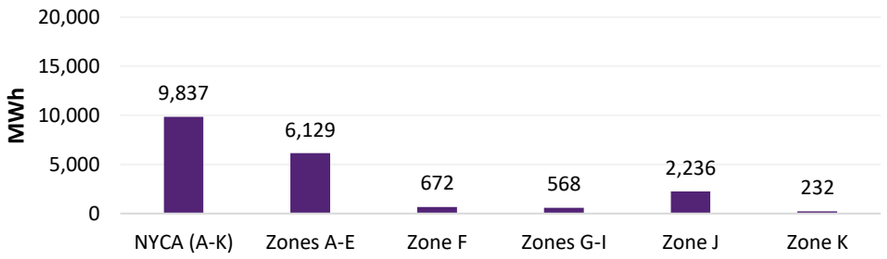
Average Capacity Not Available Due to Exhausted Fuel Inventory



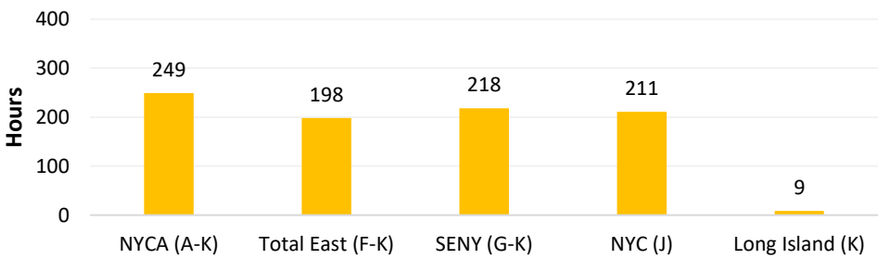
Hours SCR/EDRP Deployed



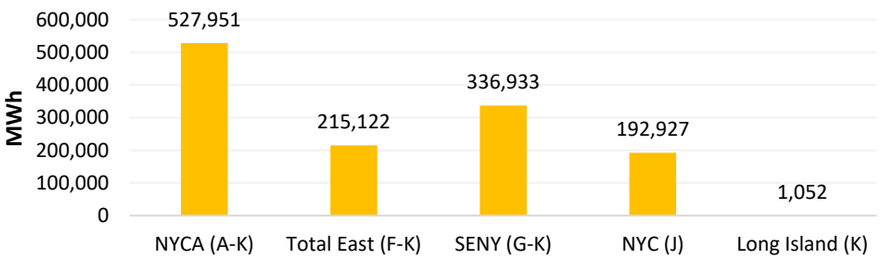
Total MWh SCR/EDRP Deployed



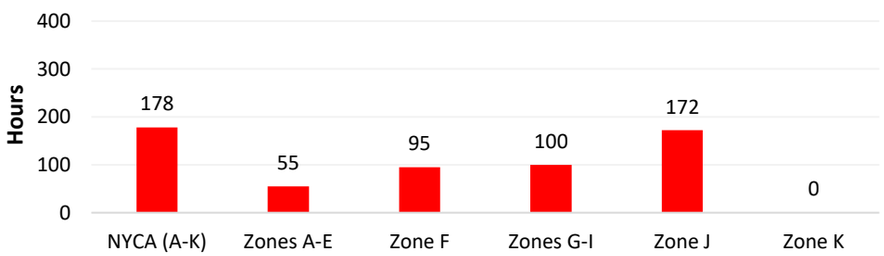
Hours with Reserve Violations



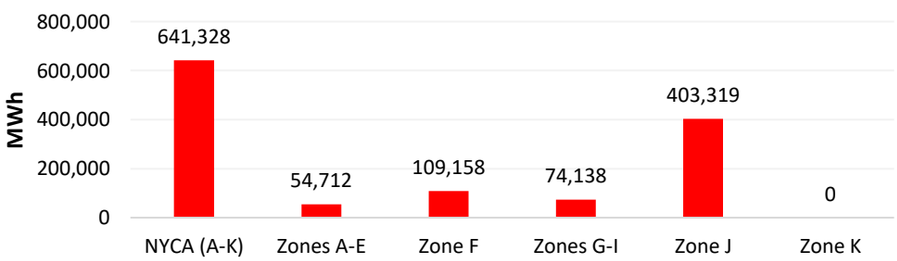
Total MWh of Reserve Violations

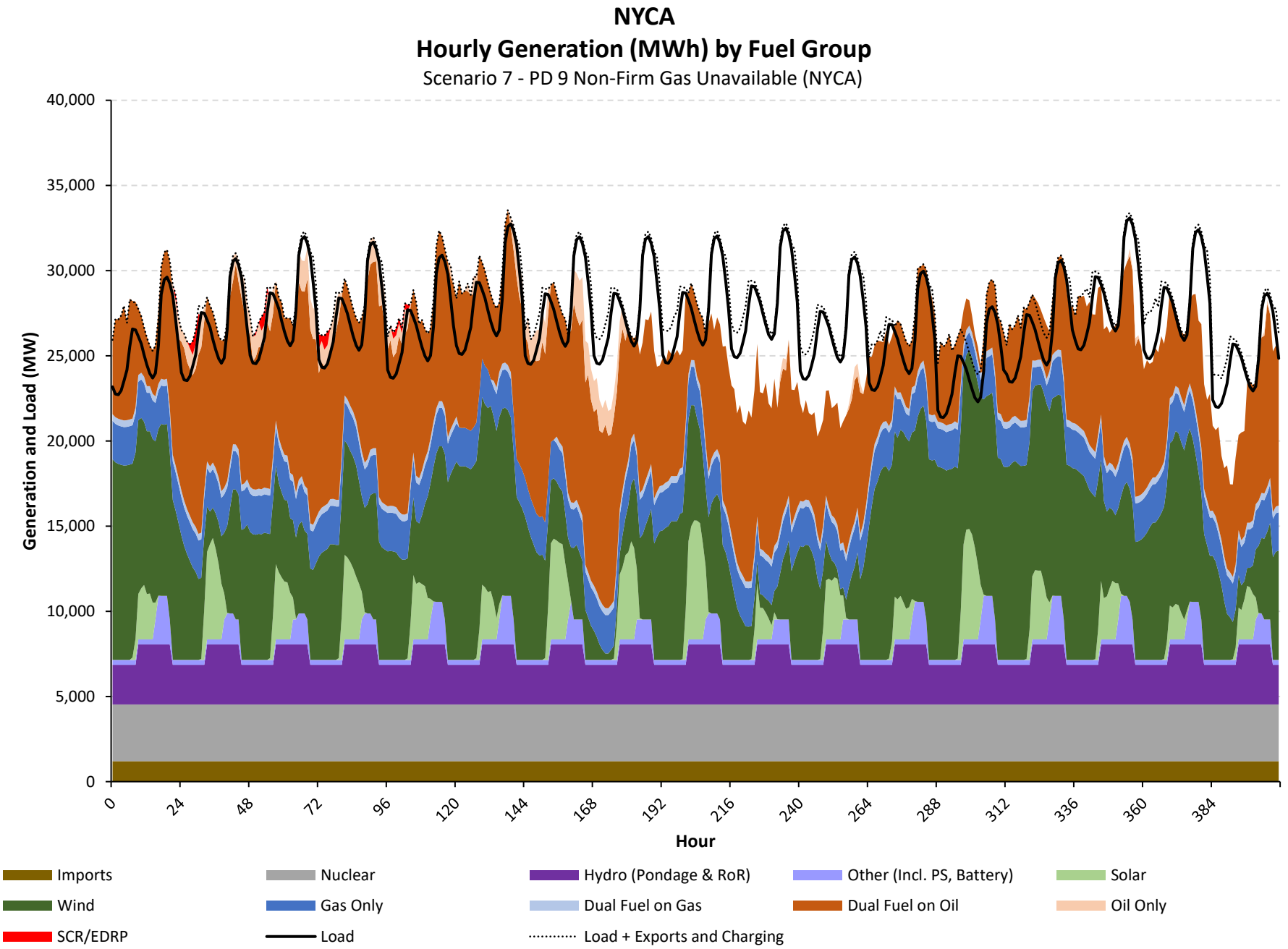


Hours with Loss of Load

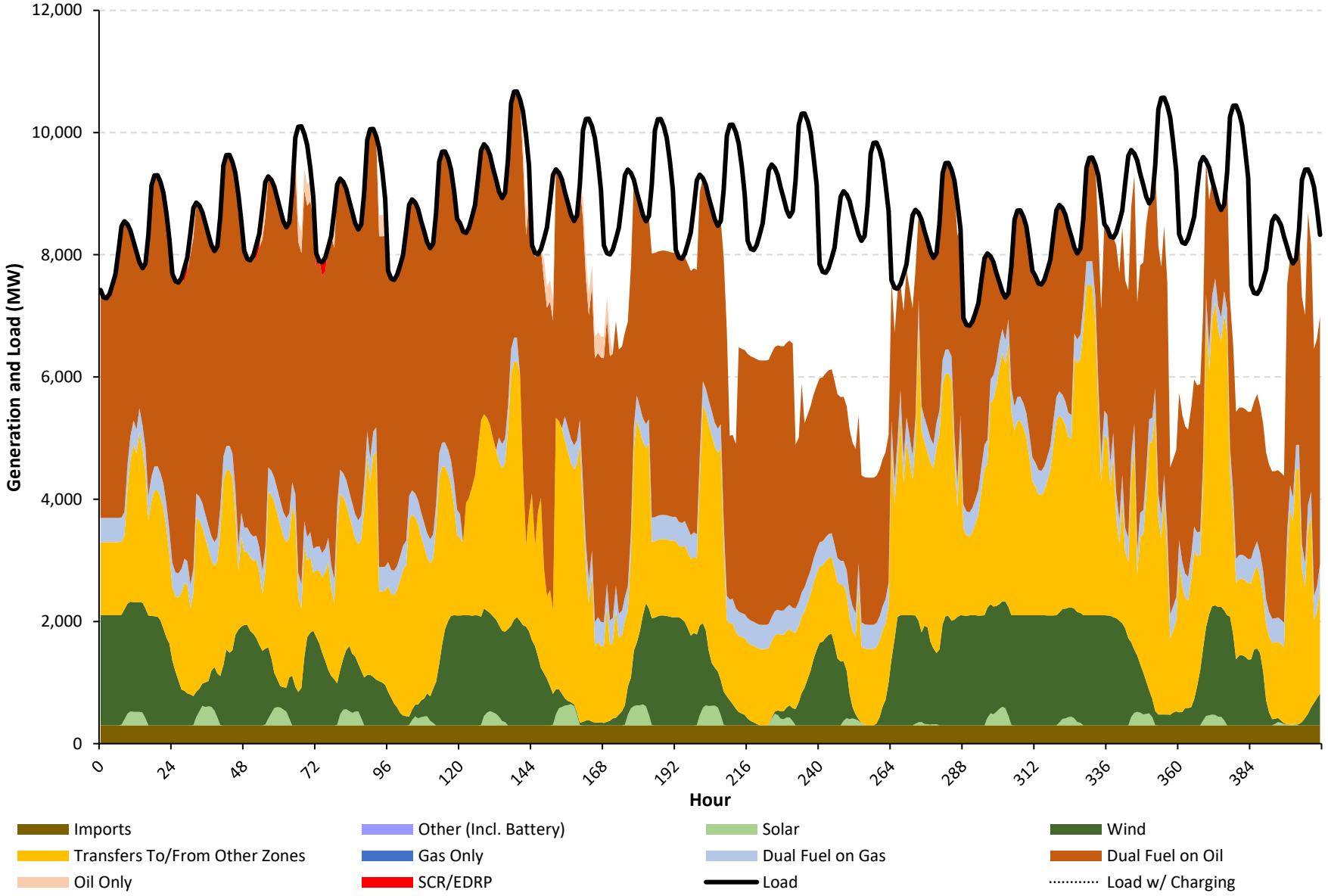


Total MWh of Lost Load

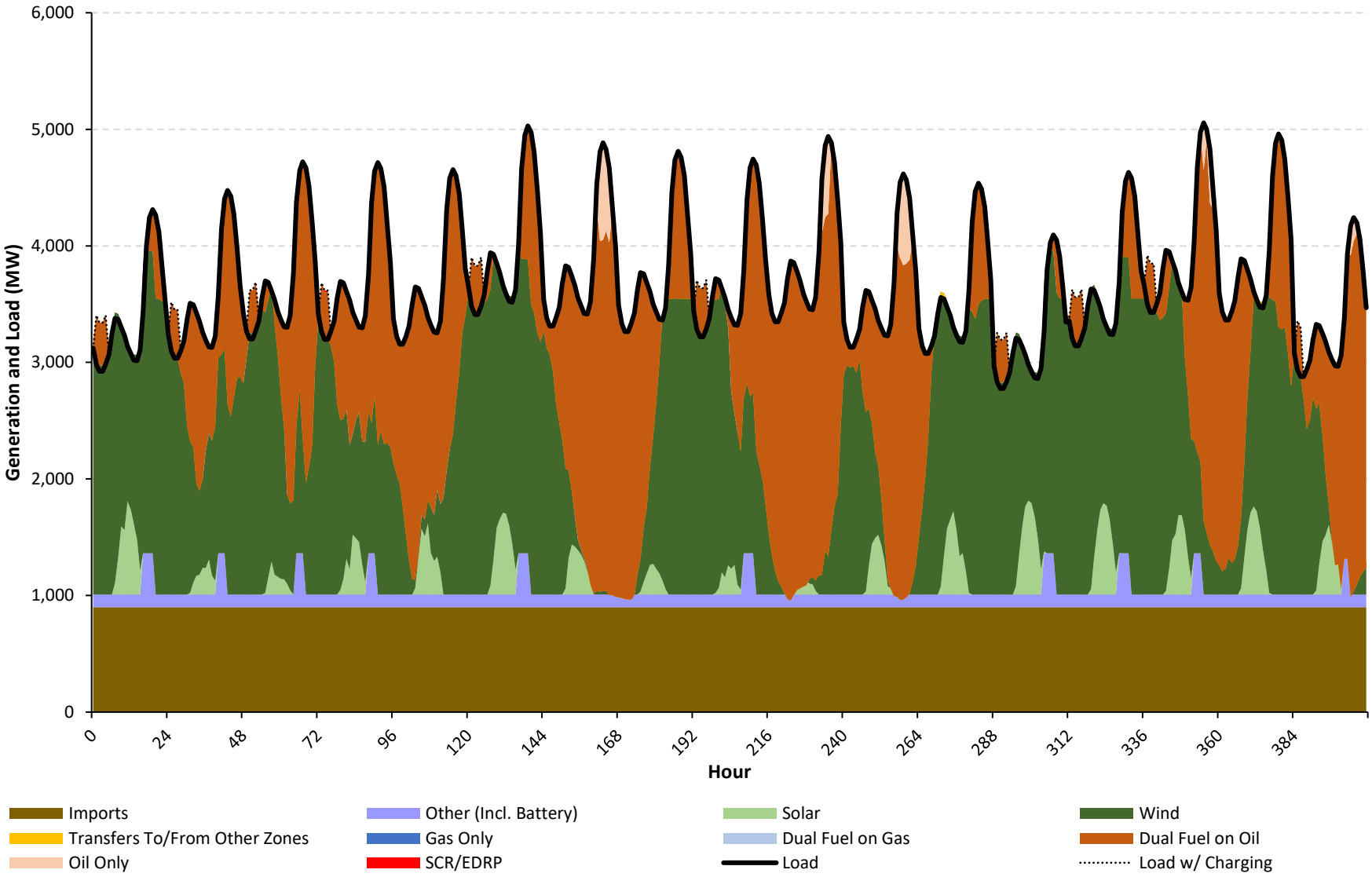



NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 7 - PD 9 Non-Firm Gas Unavailable (NYCA)
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

Zone J
Hourly Generation (MW) by Fuel Group
Scenario 7 - PD 9 Non-Firm Gas Unavailable (NYCA)



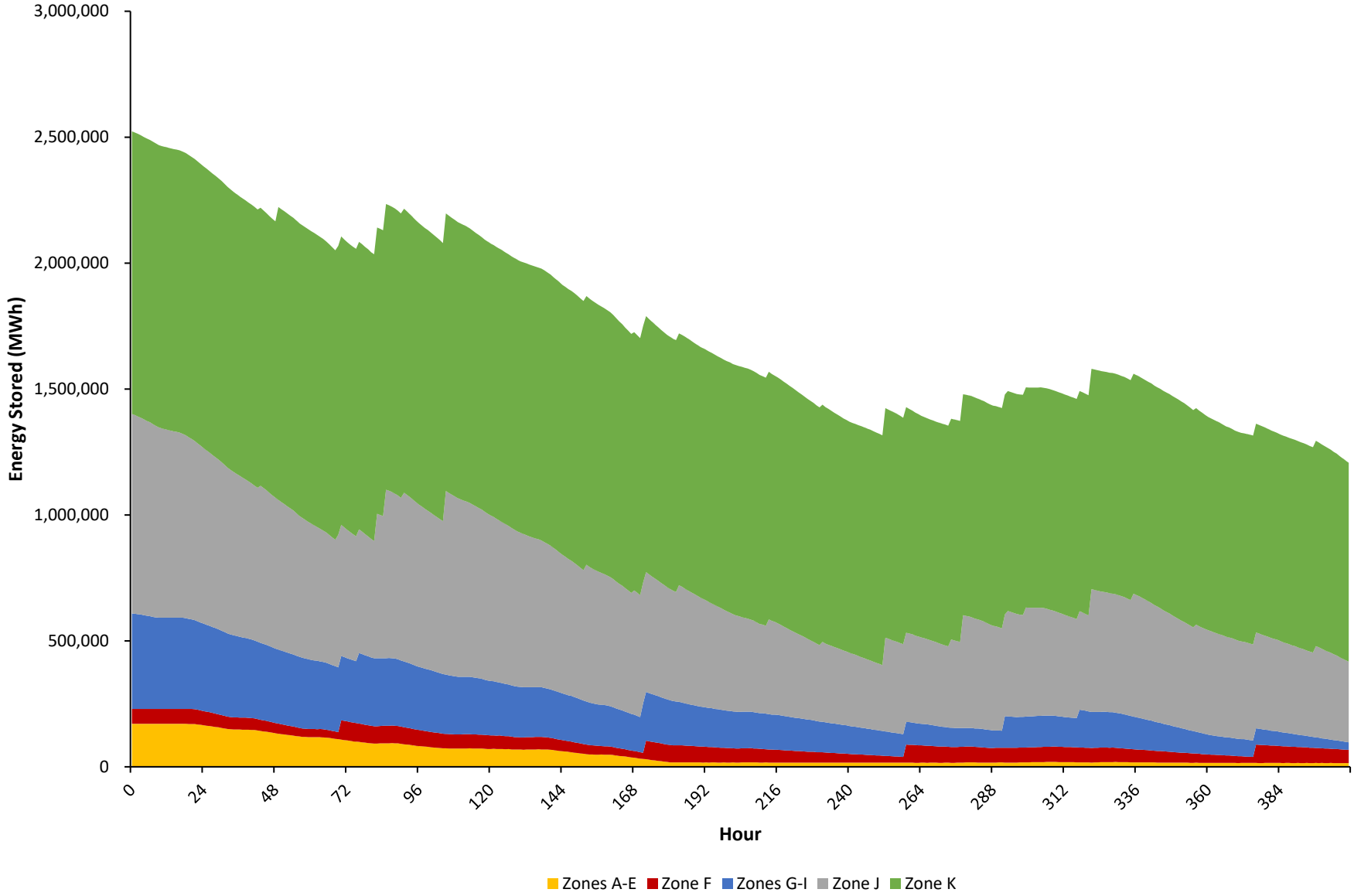
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 7 - PD 9 Non-Firm Gas Unavailable (NYCA)



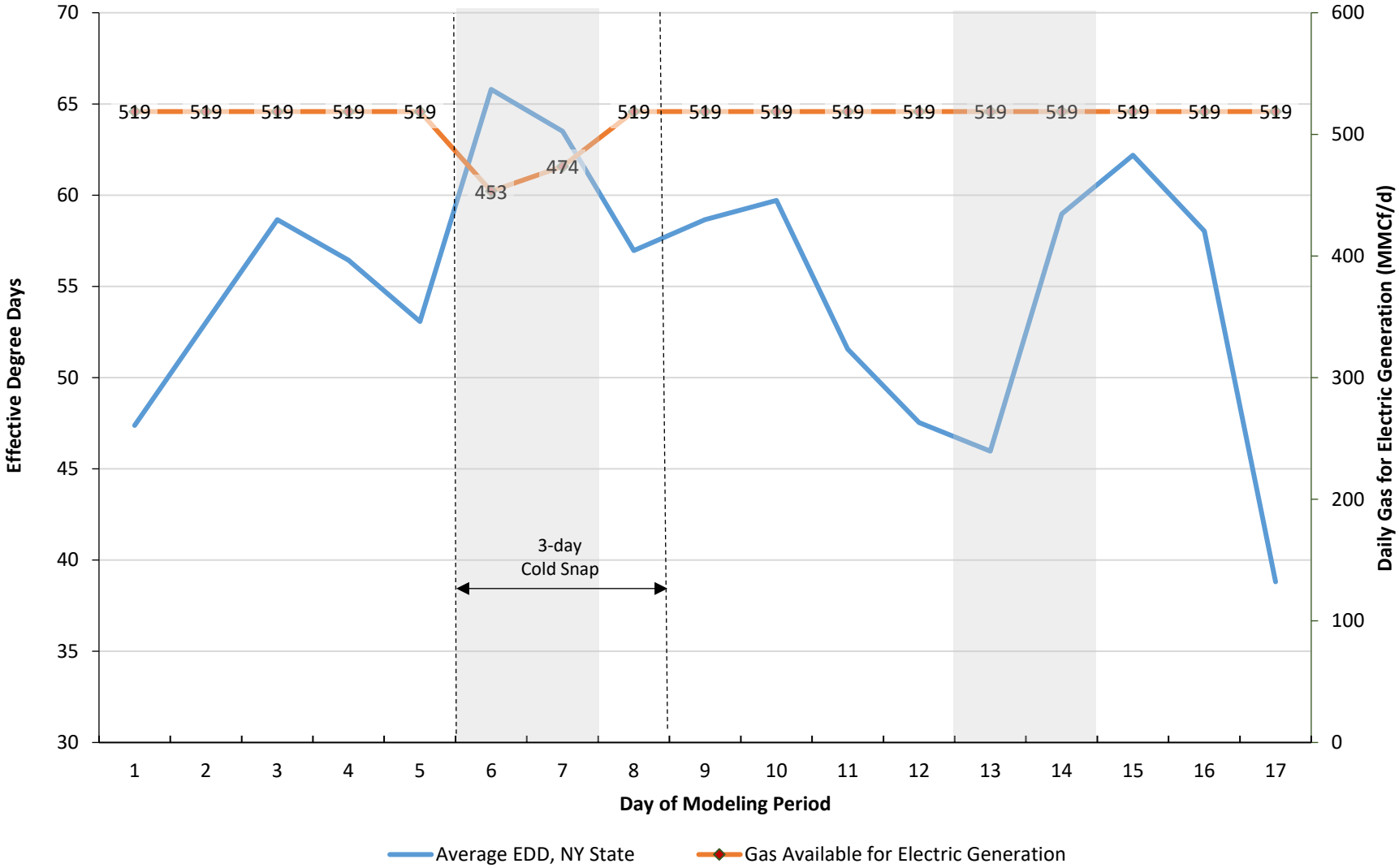
NYCA

Quantity of Stored Fuel for Oil and Dual Fuel Units

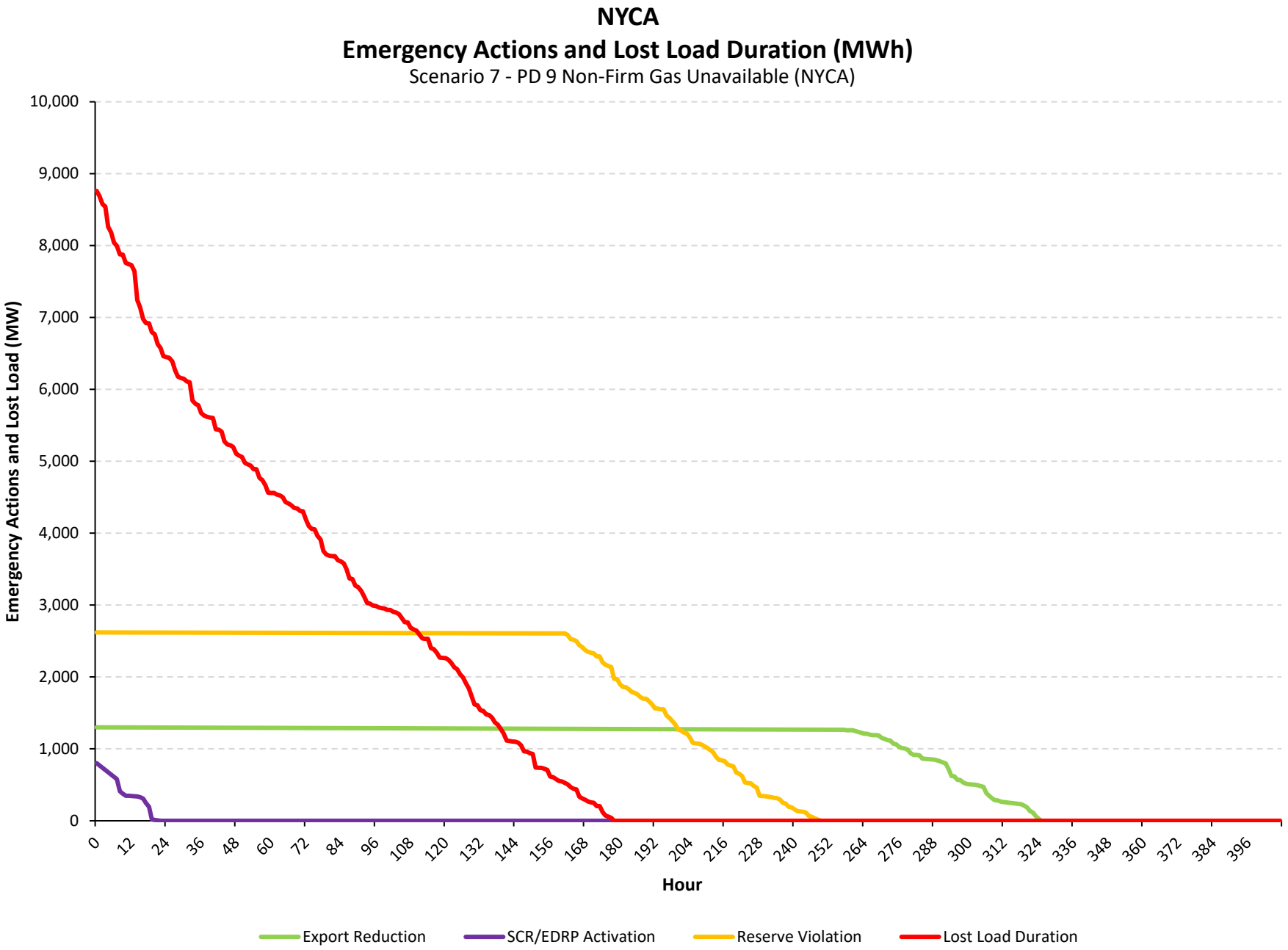
Scenario 7 - PD 9 Non-Firm Gas Unavailable (NYCA)

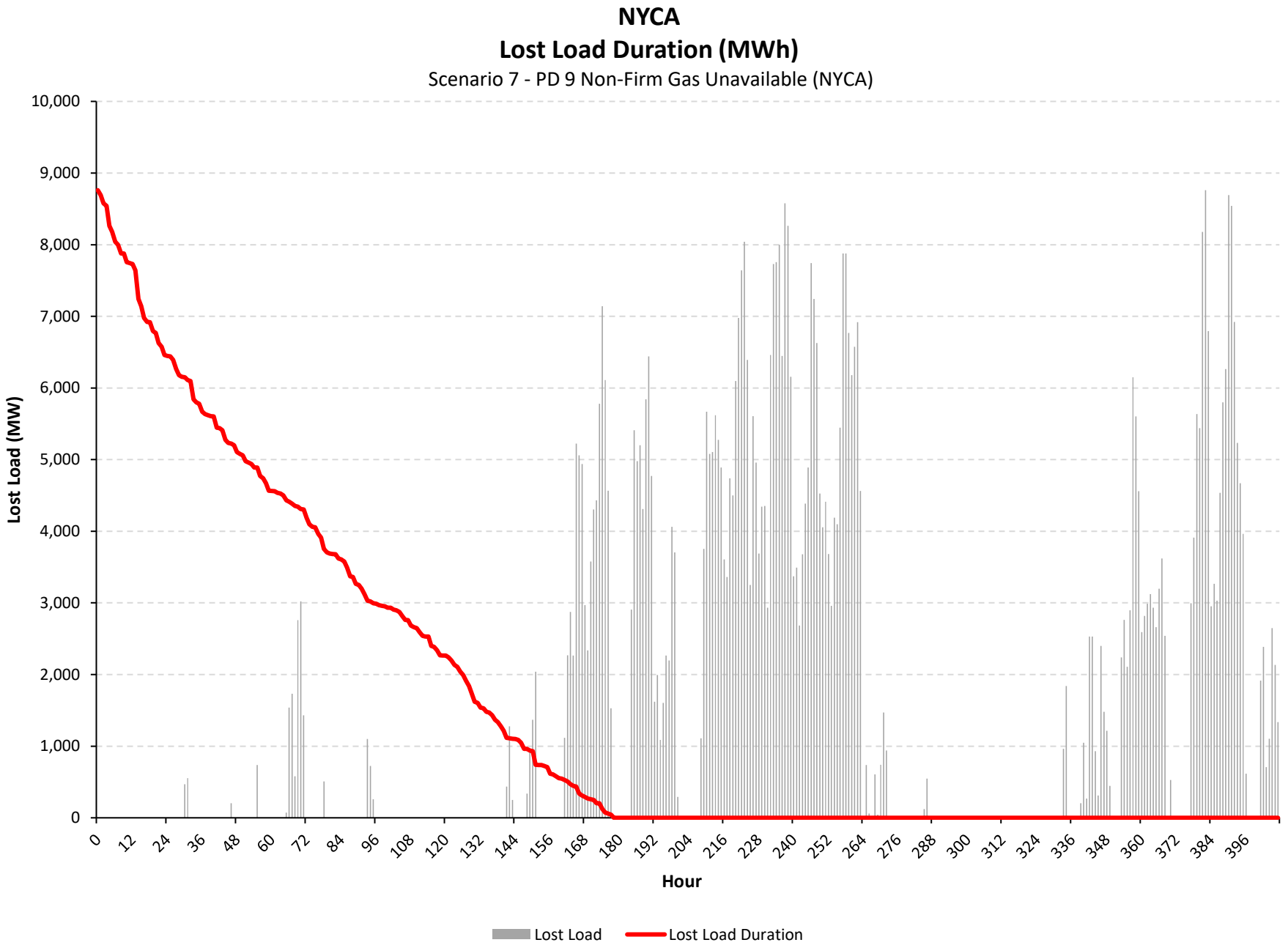


NYCA
Degree Days and Gas Available for Electric Generation 17-Day Modeling Period
Scenario 7 - PD 9 Non-Firm Gas Unavailable (NYCA)



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 7 - PD 9 Non-Firm Gas Unavailable (NYCA)
Emergency Actions and Lost Load (MW)
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 7 - PD 9 Non-Firm Gas Unavailable (NYCA)
Lost Load (MW)
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

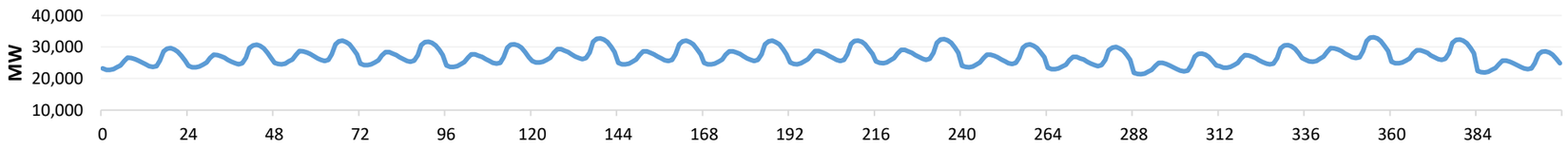
Case: Scenario 7 - PD 10 Non-Firm Gas Unavailable (4 days) (Winter 2030/2031)

Hourly Results Summary

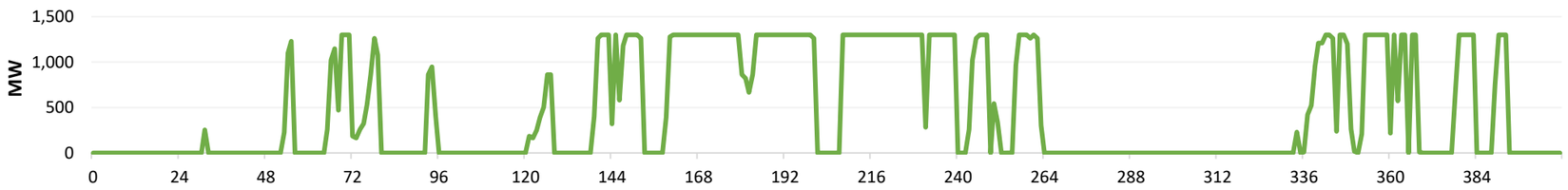
Case Name: Scenario 7 - PD 10 Non-Firm Gas Unavailable (4 days)

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	3-4 days
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

Load During Modeling Period

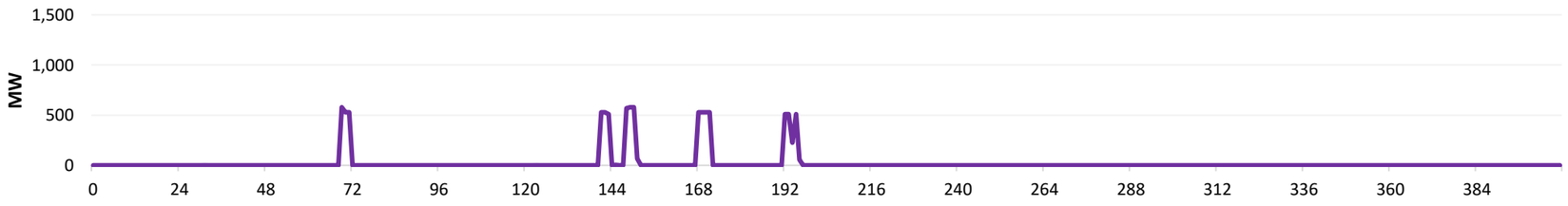


Export to ISO-NE Reduction During Modeling Period



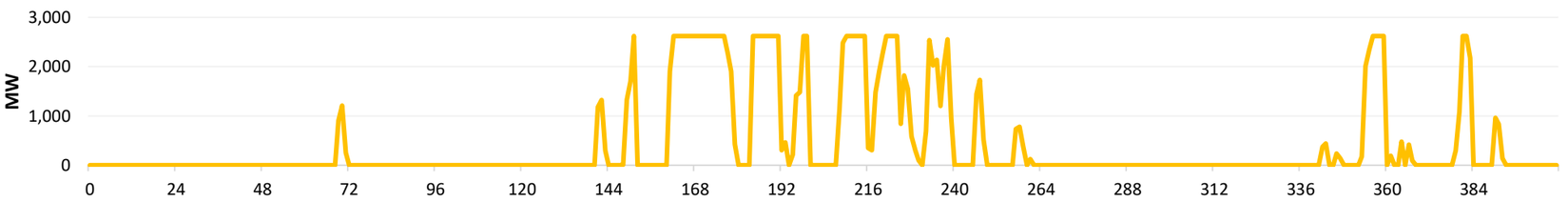
Export Reductions	
Total Hrs.	176
Total MWh	184,811
Avg. MW	453.0

SCR/EDRP Deployed During Modeling Period



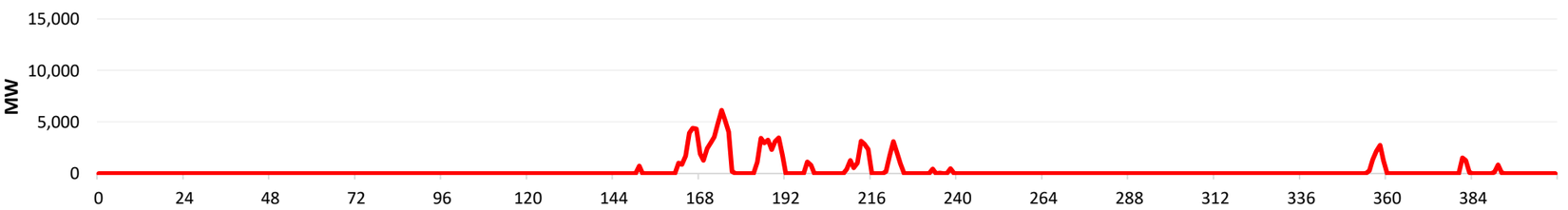
SCR Deployment	
Total Hrs.	20
Total MWh	8,911
Avg. MW	21.8

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	106
Total MWh	175,923
Avg. MW	431.2
First Hour with Viol.	69

Loss of Load During Modeling Period



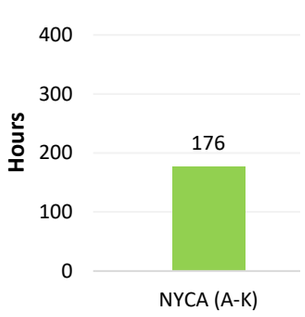
Loss of Load	
Total Hrs.	53
Total MWh	105,166
Avg. MW	257.8
First Hour with Losses	151

Full Period Results Summary

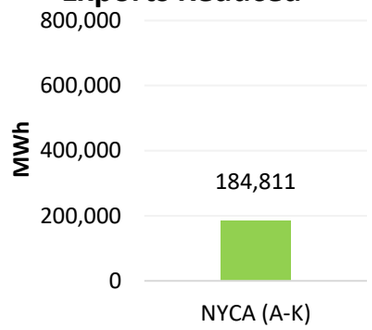
Case Name: Scenario 7 - PD 10 Non-Firm Gas Unavailable (4 days)

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	3-4 days
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

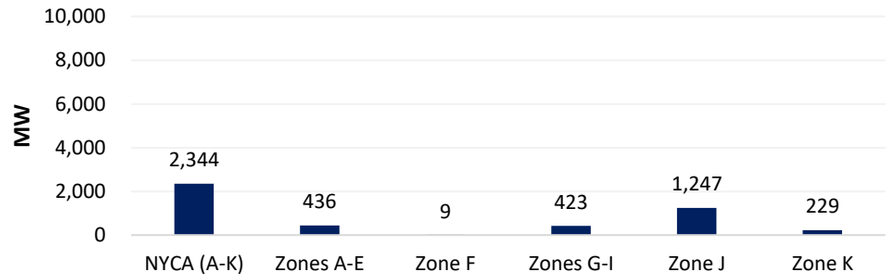
Hours Exports Reduced



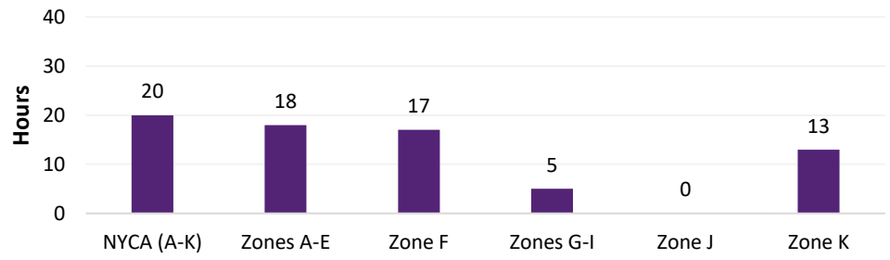
Total MWh of Exports Reduced



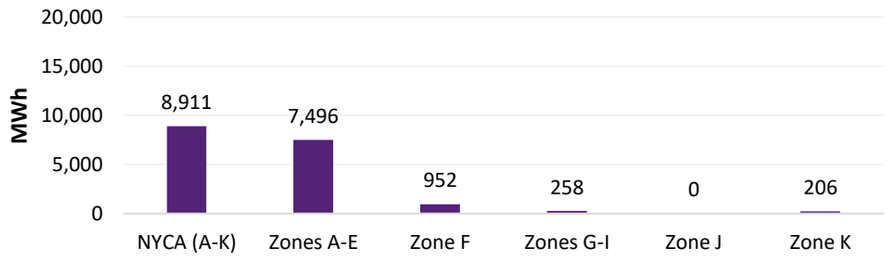
Average Capacity Not Available Due to Exhausted Fuel Inventory



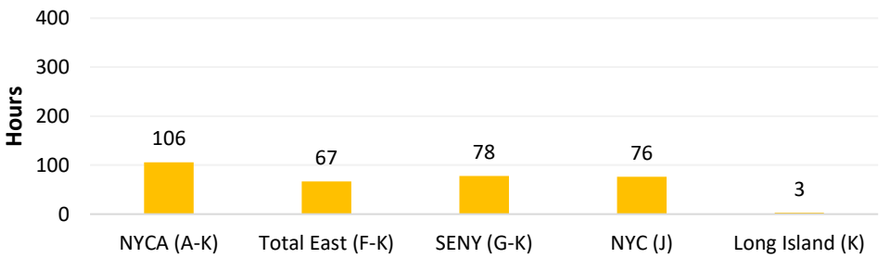
Hours SCR/EDRP Deployed



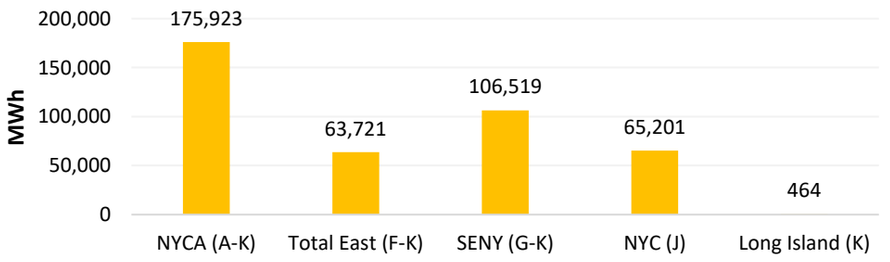
Total MWh SCR/EDRP Deployed



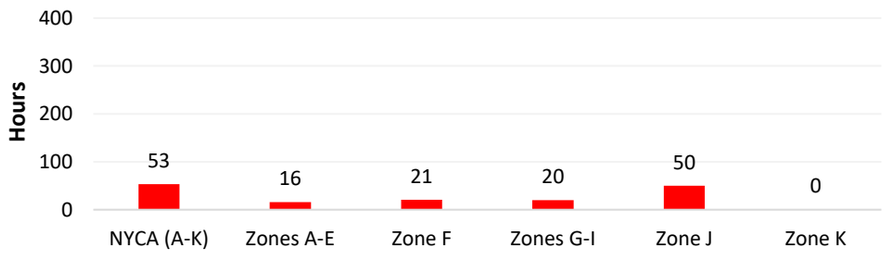
Hours with Reserve Violations



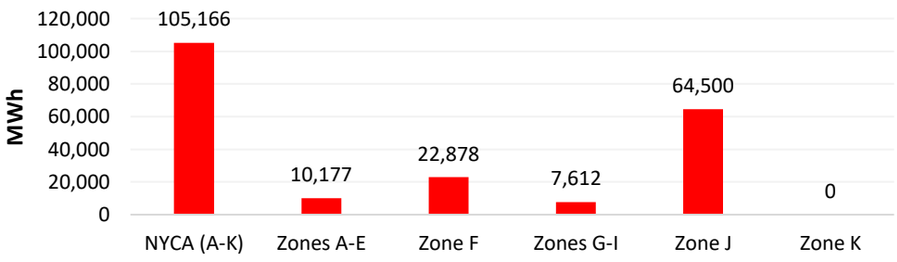
Total MWh of Reserve Violations

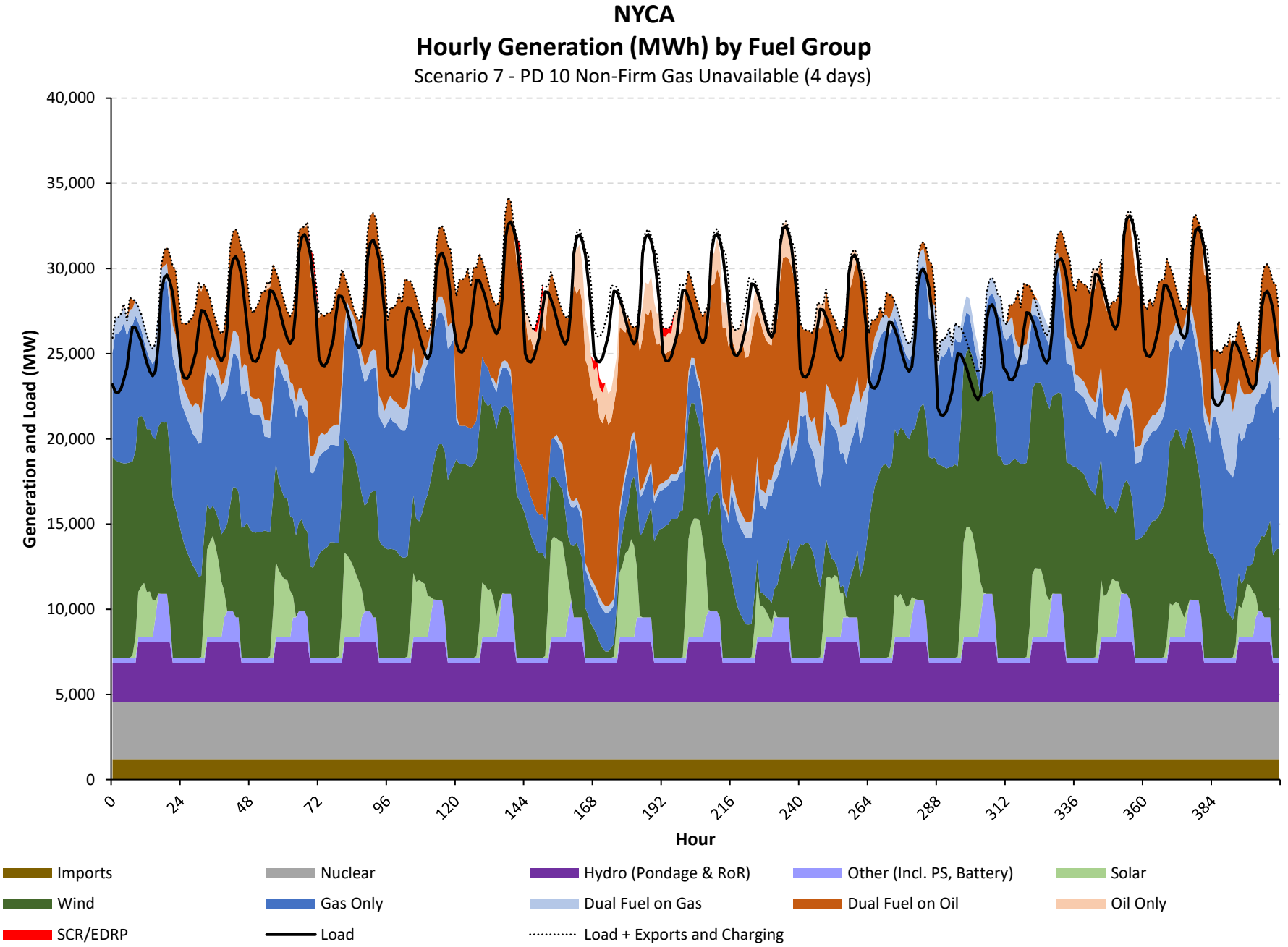


Hours with Loss of Load

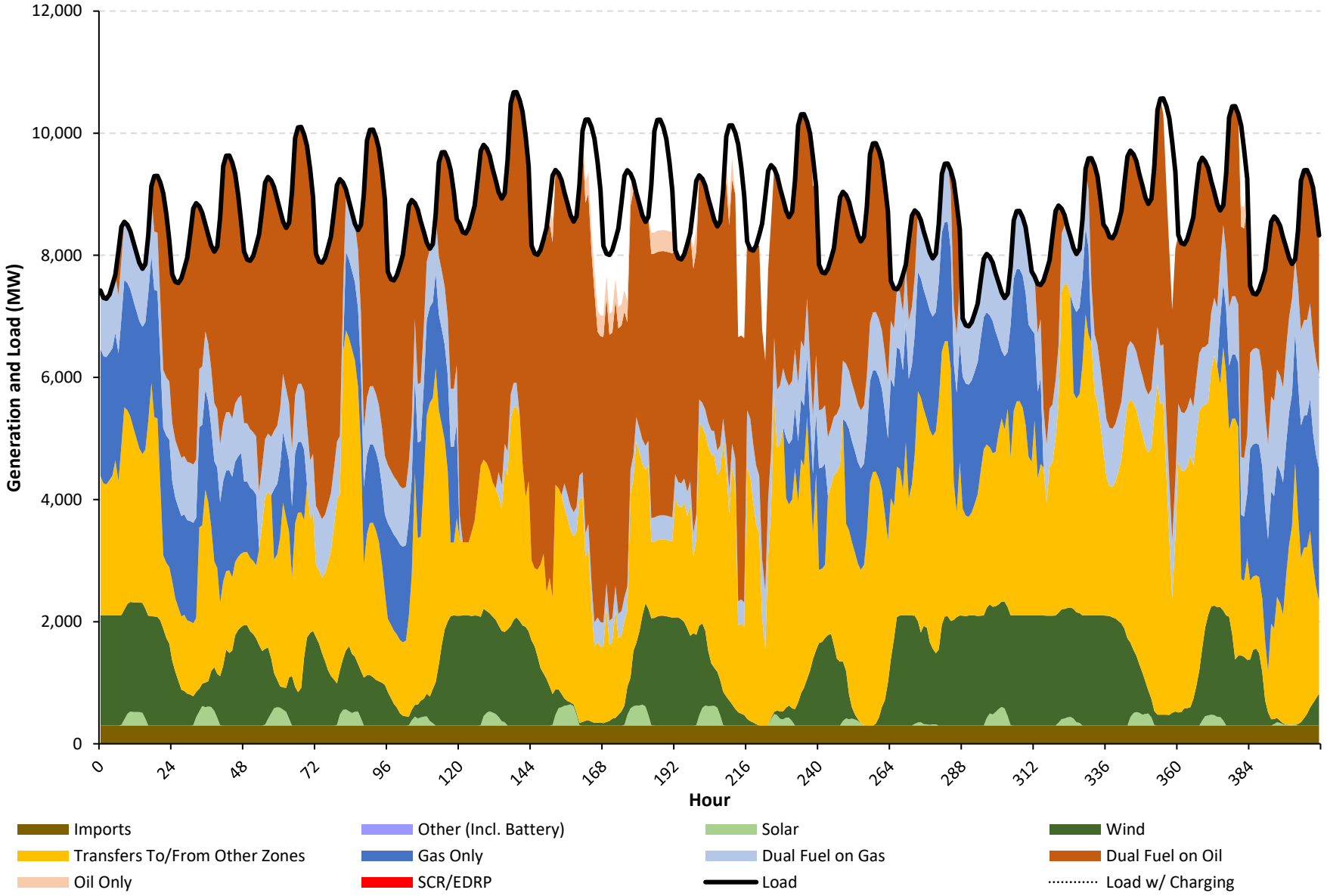


Total MWh of Lost Load

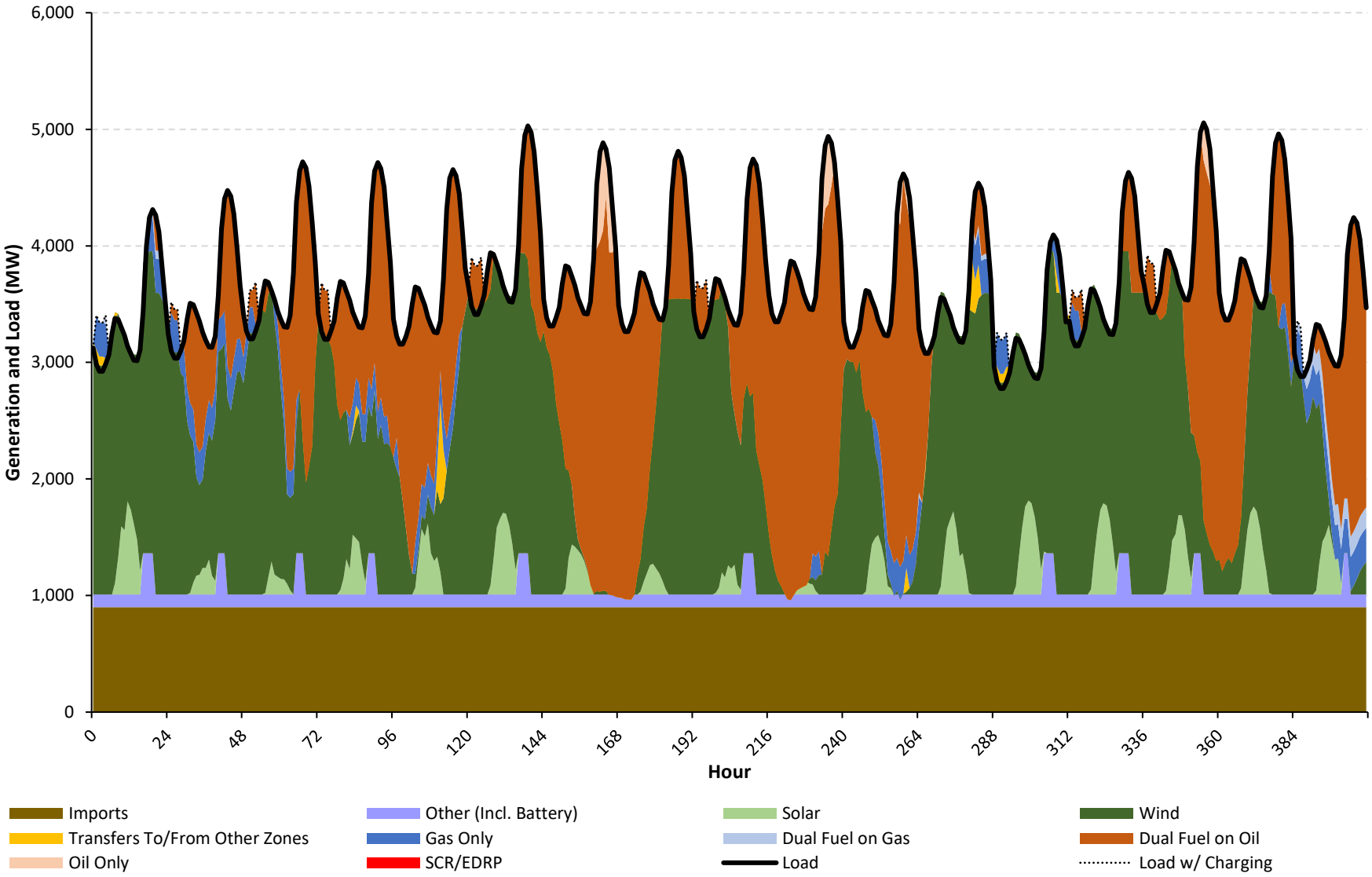



NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 7 - PD 10 Non-Firm Gas Unavailable (4 days)
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

Zone J
Hourly Generation (MW) by Fuel Group
Scenario 7 - PD 10 Non-Firm Gas Unavailable (4 days)



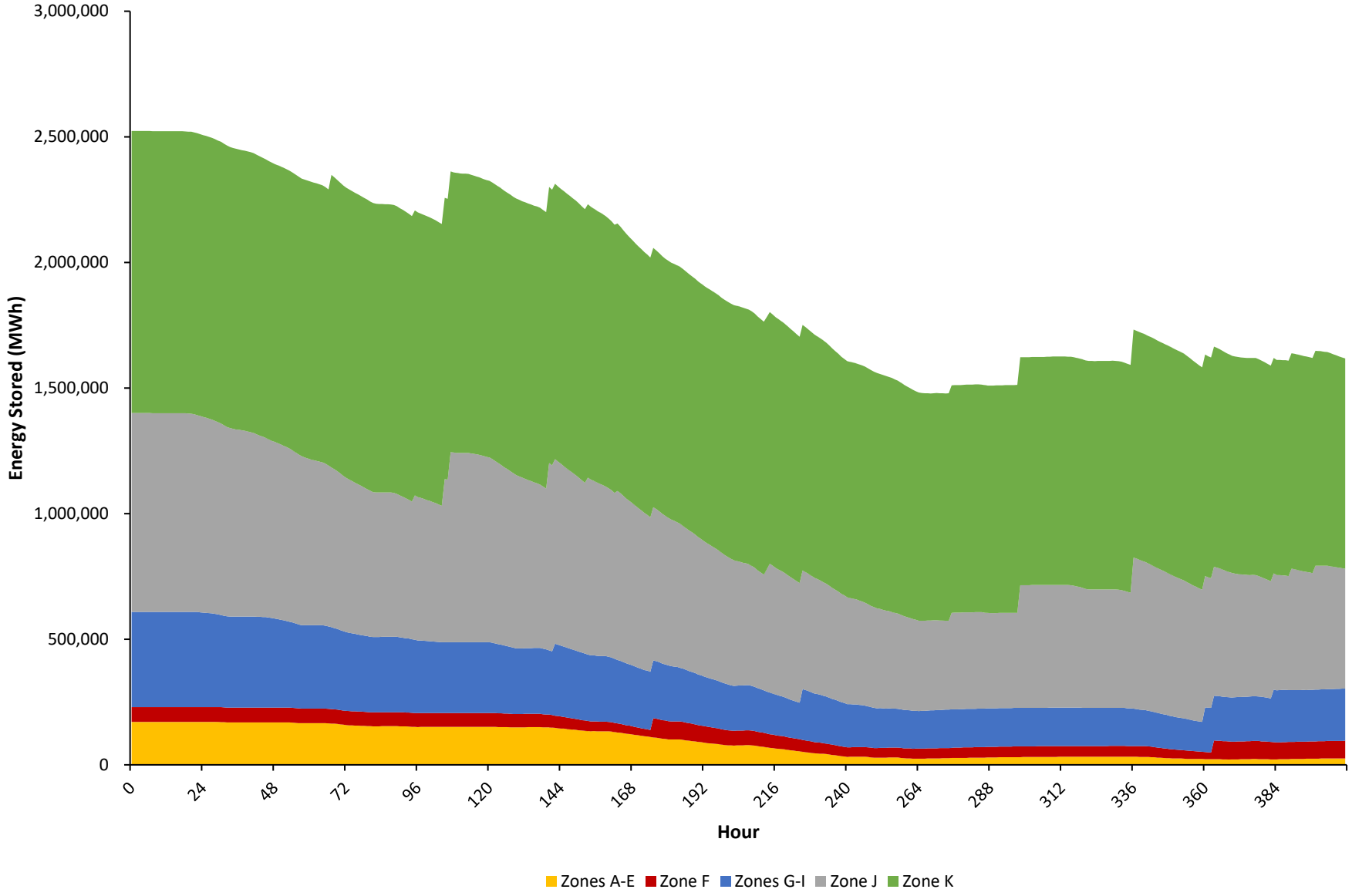
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 7 - PD 10 Non-Firm Gas Unavailable (4 days)



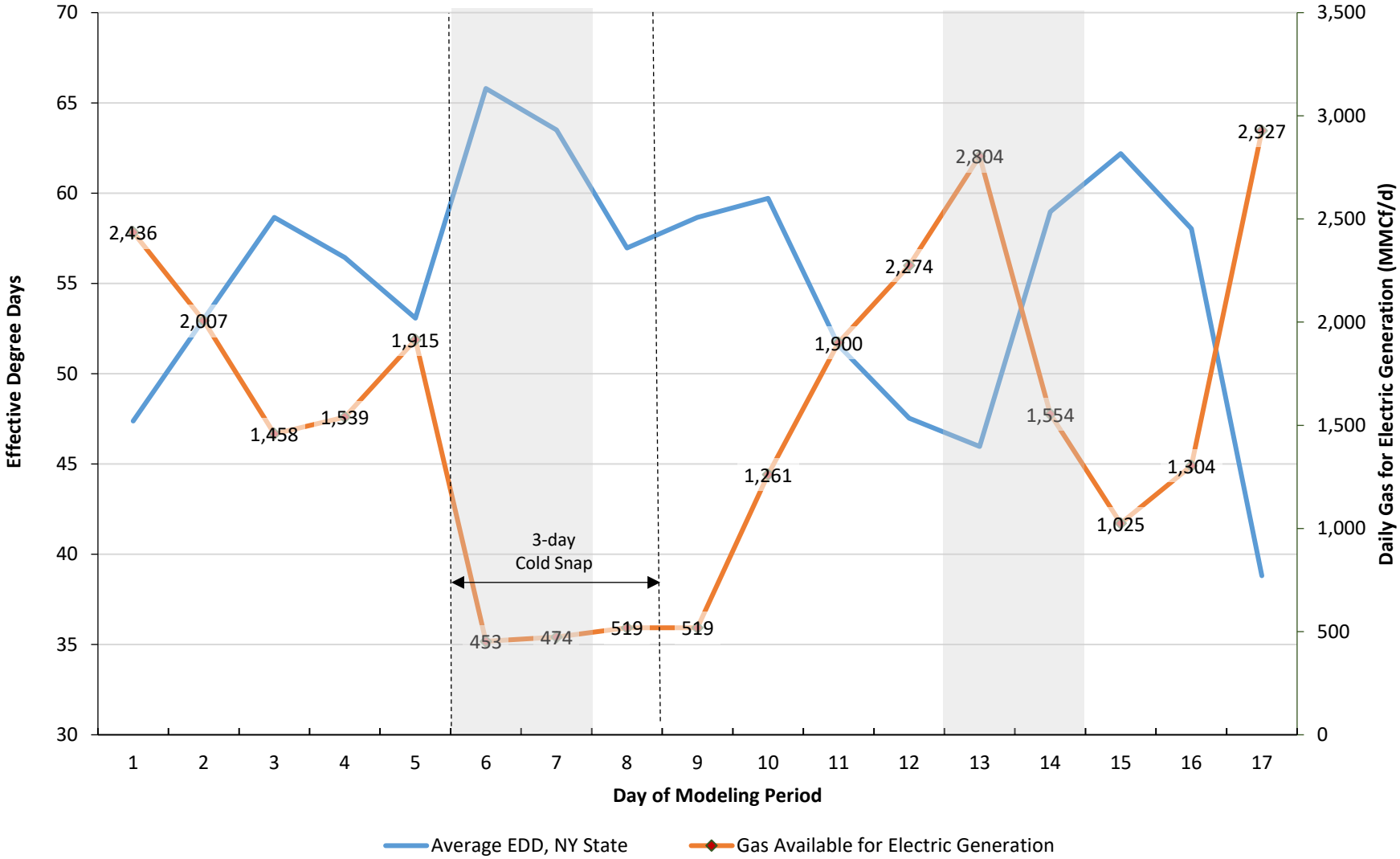
NYCA

Quantity of Stored Fuel for Oil and Dual Fuel Units

Scenario 7 - PD 10 Non-Firm Gas Unavailable (4 days)



NYCA
Degree Days and Gas Available for Electric Generation 17-Day Modeling Period
Scenario 7 - PD 10 Non-Firm Gas Unavailable (4 days)

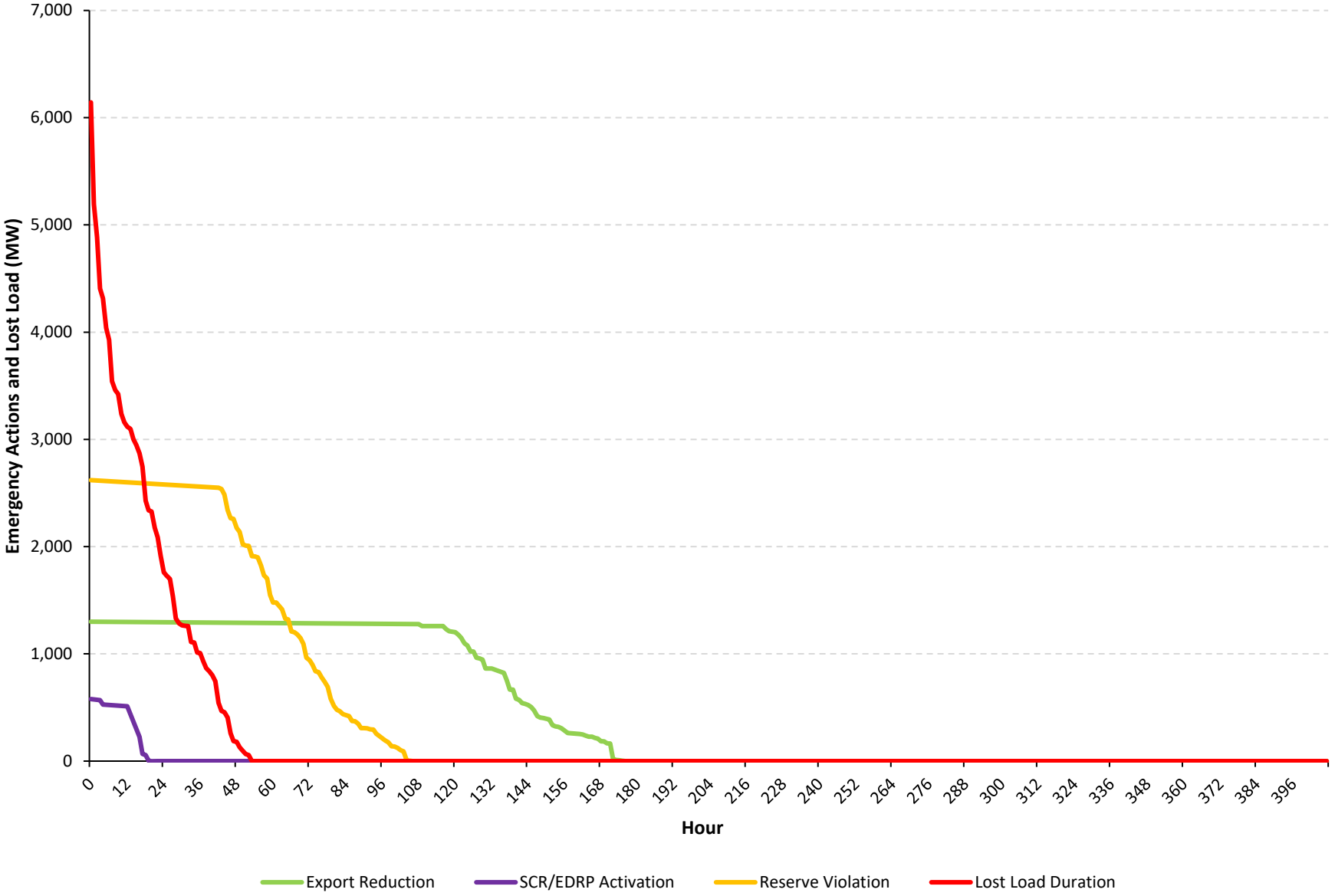


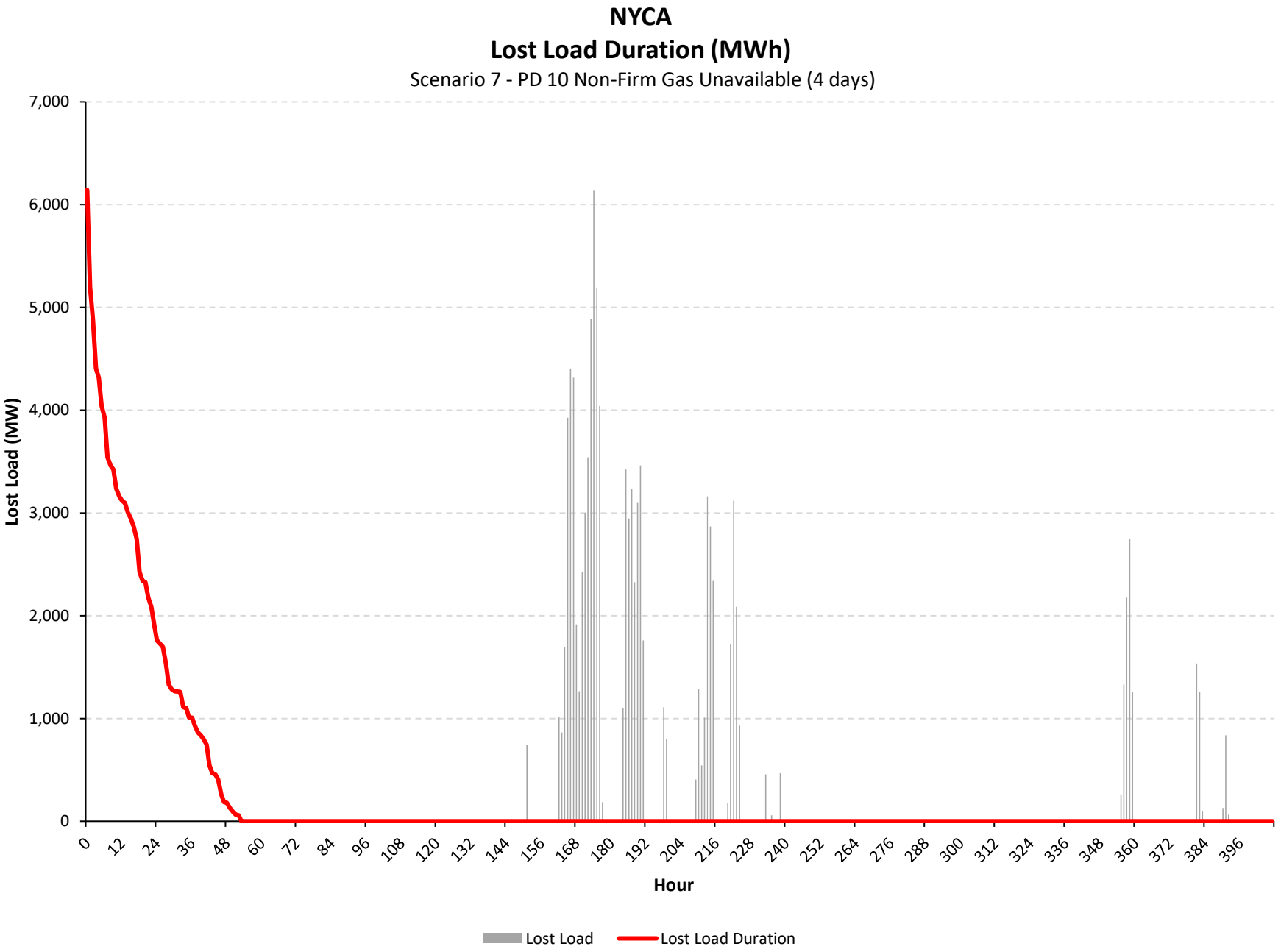
Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.

NYCA

Emergency Actions and Lost Load Duration (MWh)

Scenario 7 - PD 10 Non-Firm Gas Unavailable (4 days)




NYCA
Lost Load Duration (MWh)
Scenario 7 - PD 10 Non-Firm Gas Unavailable (4 days)
Lost Load (MW)
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

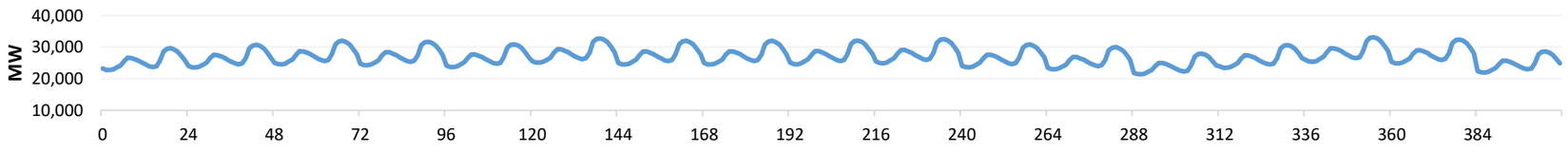
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 7 - PD 11 Combination Disruption (Winter 2030/2031)

Hourly Results Summary

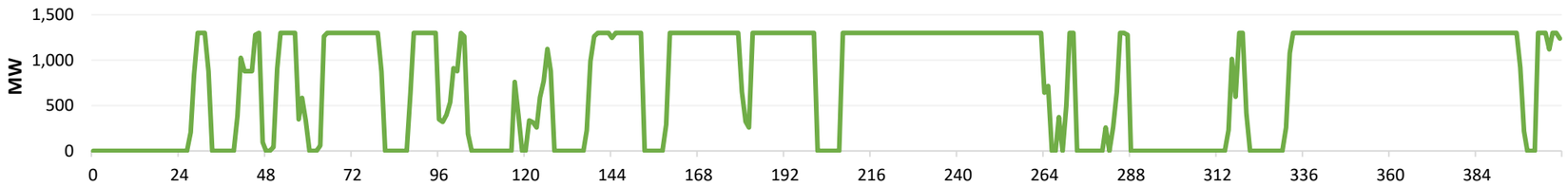
Case Name: Scenario 7 - PD 11 Combination Disruption

Load During Modeling Period



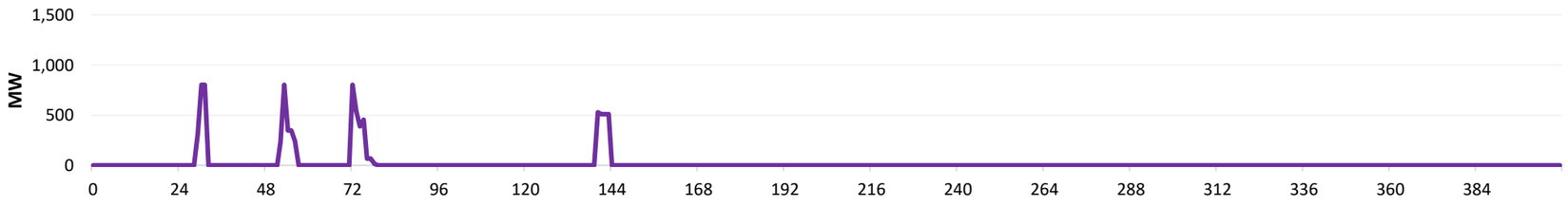
Case Summary	
Derate (EFORd) Increase:	High
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	Reduced
Loss of Gas Fired Gen.	Reduced
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

Export to ISO-NE Reduction During Modeling Period



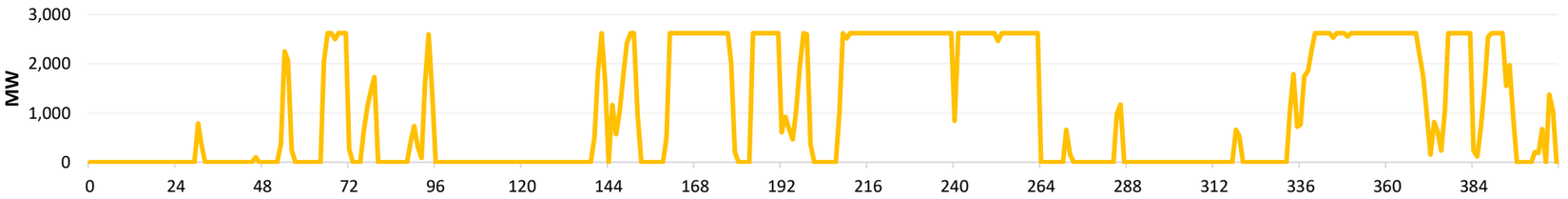
Export Reductions	
Total Hrs.	274
Total MWh	315,266
Avg. MW	772.7

SCR/EDRP Deployed During Modeling Period



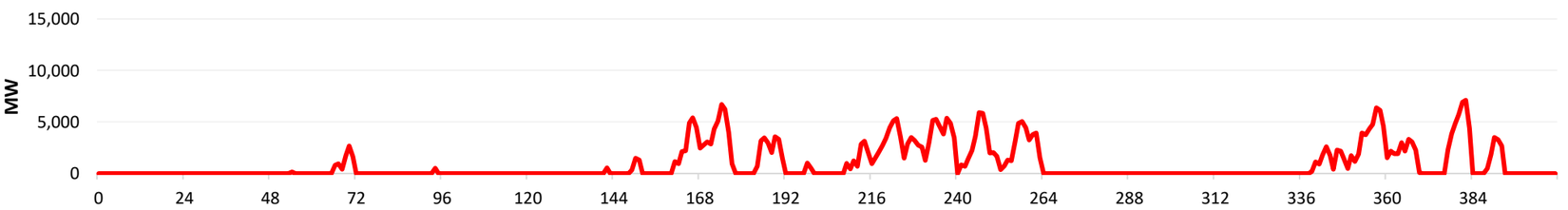
SCR Deployment	
Total Hrs.	19
Total MWh	8,281
Avg. MW	20.3

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	205
Total MWh	418,171
Avg. MW	1,024.9
First Hour with Viol.	30

Loss of Load During Modeling Period



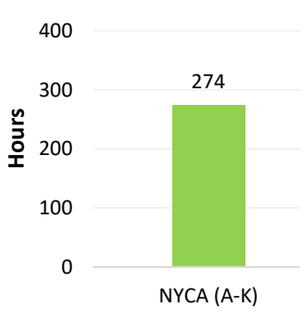
Loss of Load	
Total Hrs.	136
Total MWh	374,591
Avg. MW	918.1
First Hour with Losses	54

Full Period Results Summary

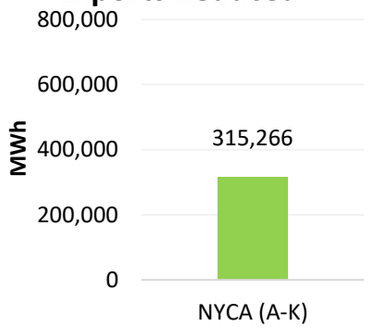
Case Name: Scenario 7 - PD 11 Combination Disruption

Case Summary	
Derate (EFORd) Increase:	High
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	Reduced
Loss of Gas Fired Gen.	Reduced
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	All

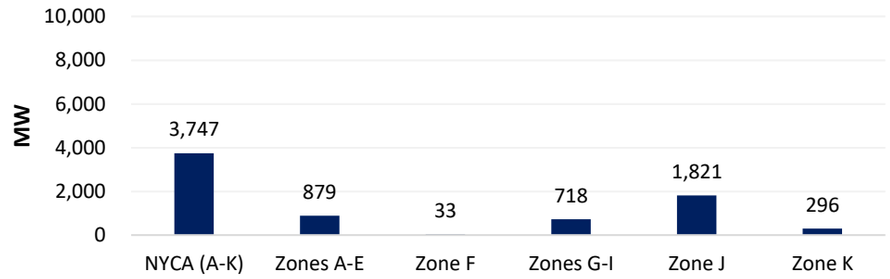
Hours Exports Reduced



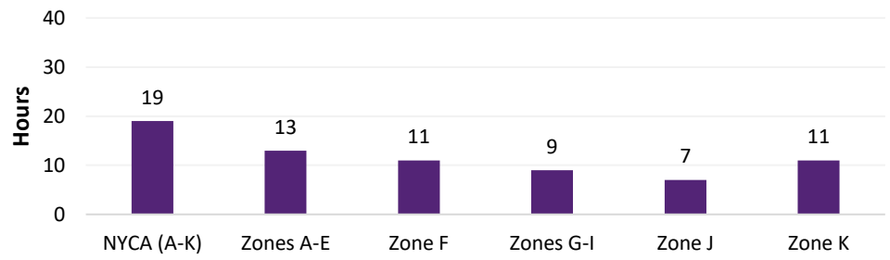
Total MWh of Exports Reduced



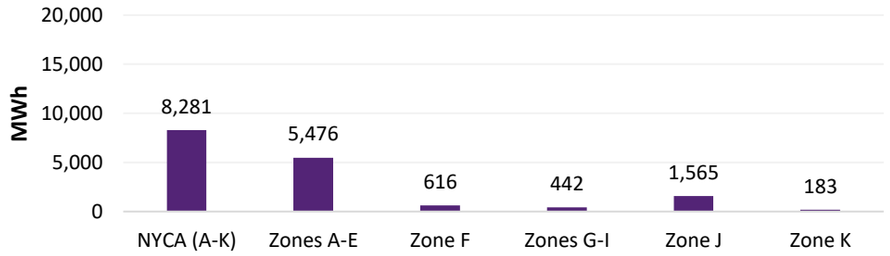
Average Capacity Not Available Due to Exhausted Fuel Inventory



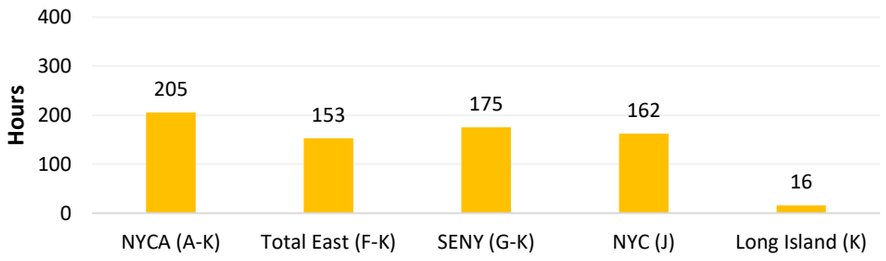
Hours SCR/EDRP Deployed



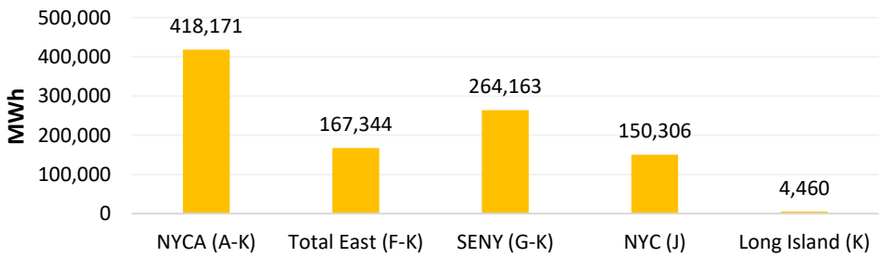
Total MWh SCR/EDRP Deployed



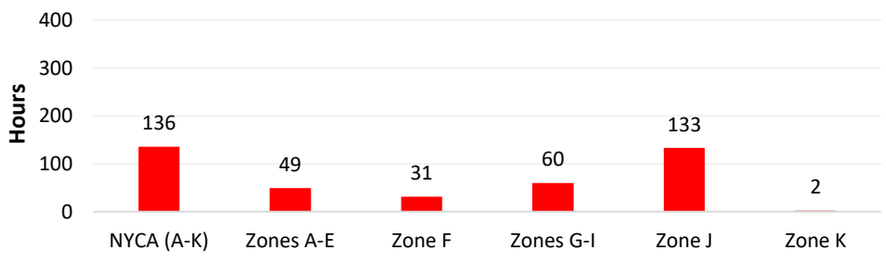
Hours with Reserve Violations



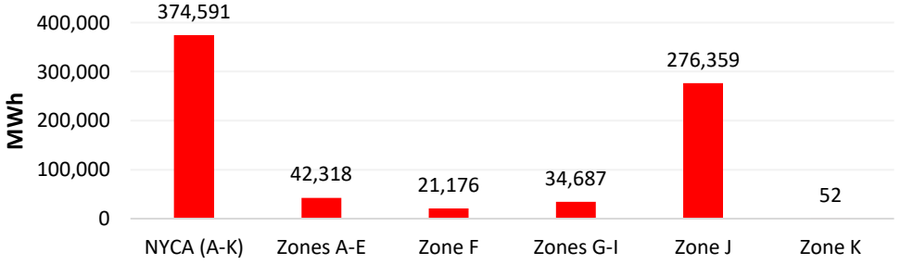
Total MWh of Reserve Violations

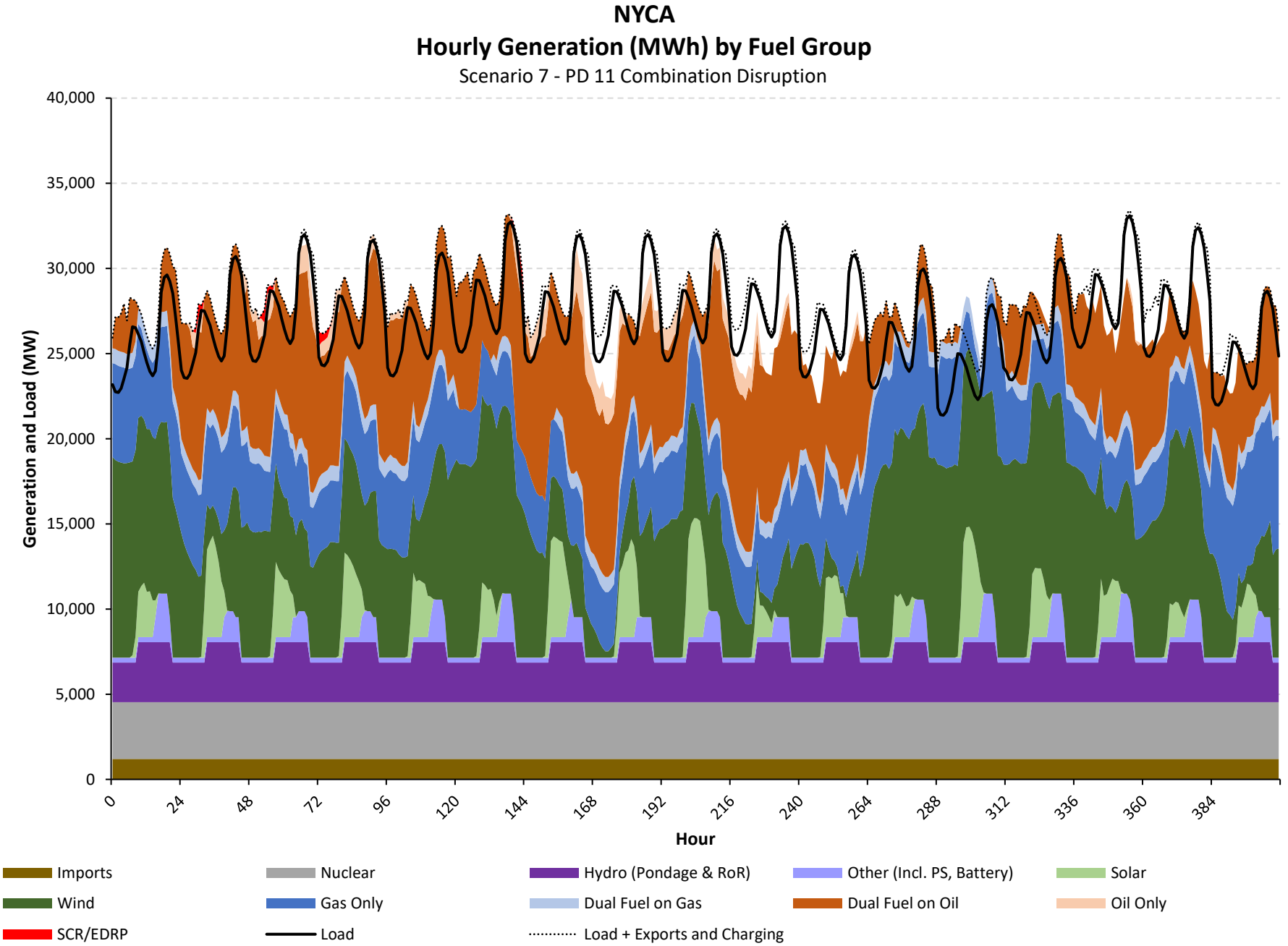


Hours with Loss of Load

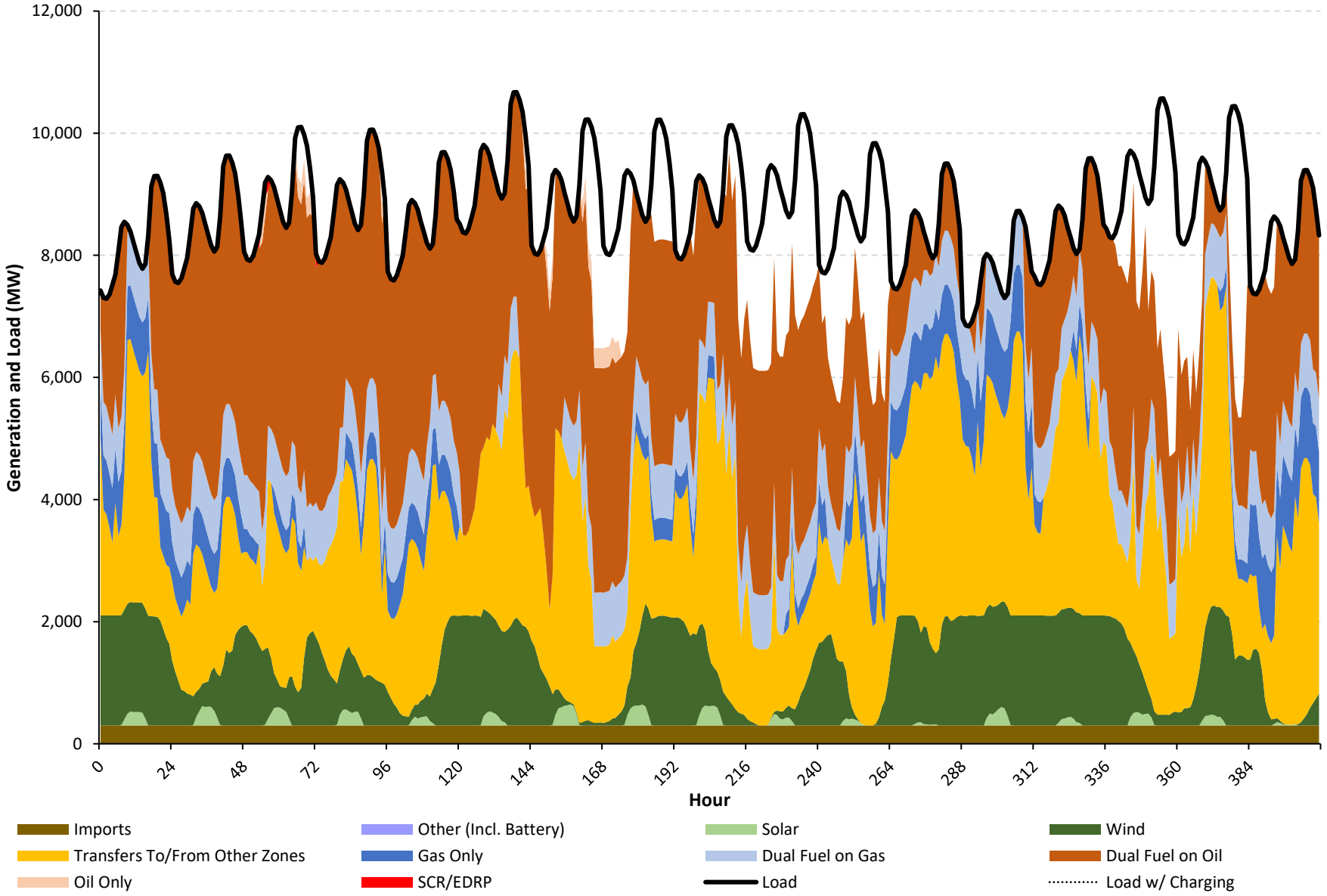


Total MWh of Lost Load

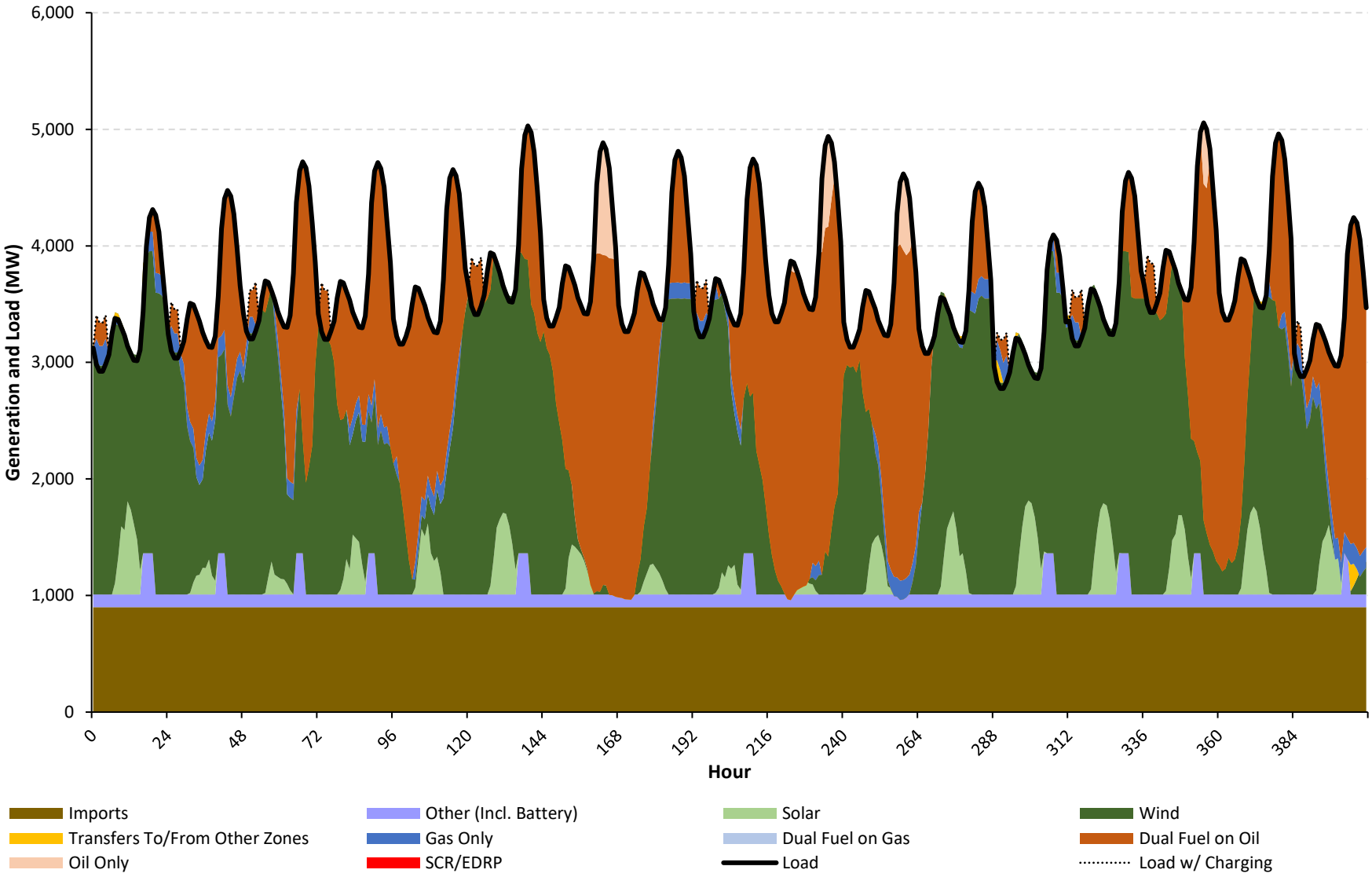



NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 7 - PD 11 Combination Disruption
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

Zone J
Hourly Generation (MW) by Fuel Group
Scenario 7 - PD 11 Combination Disruption



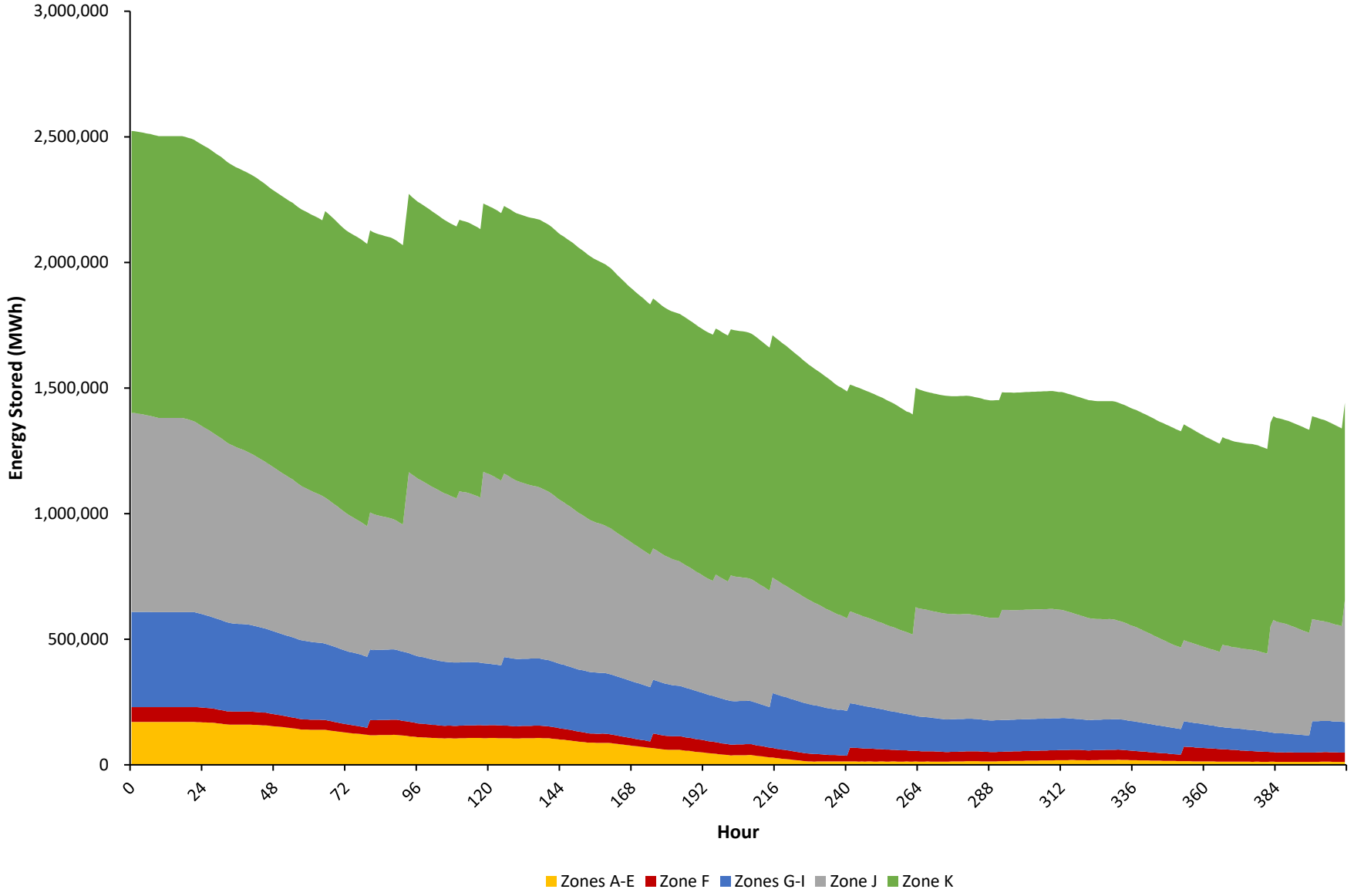
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 7 - PD 11 Combination Disruption

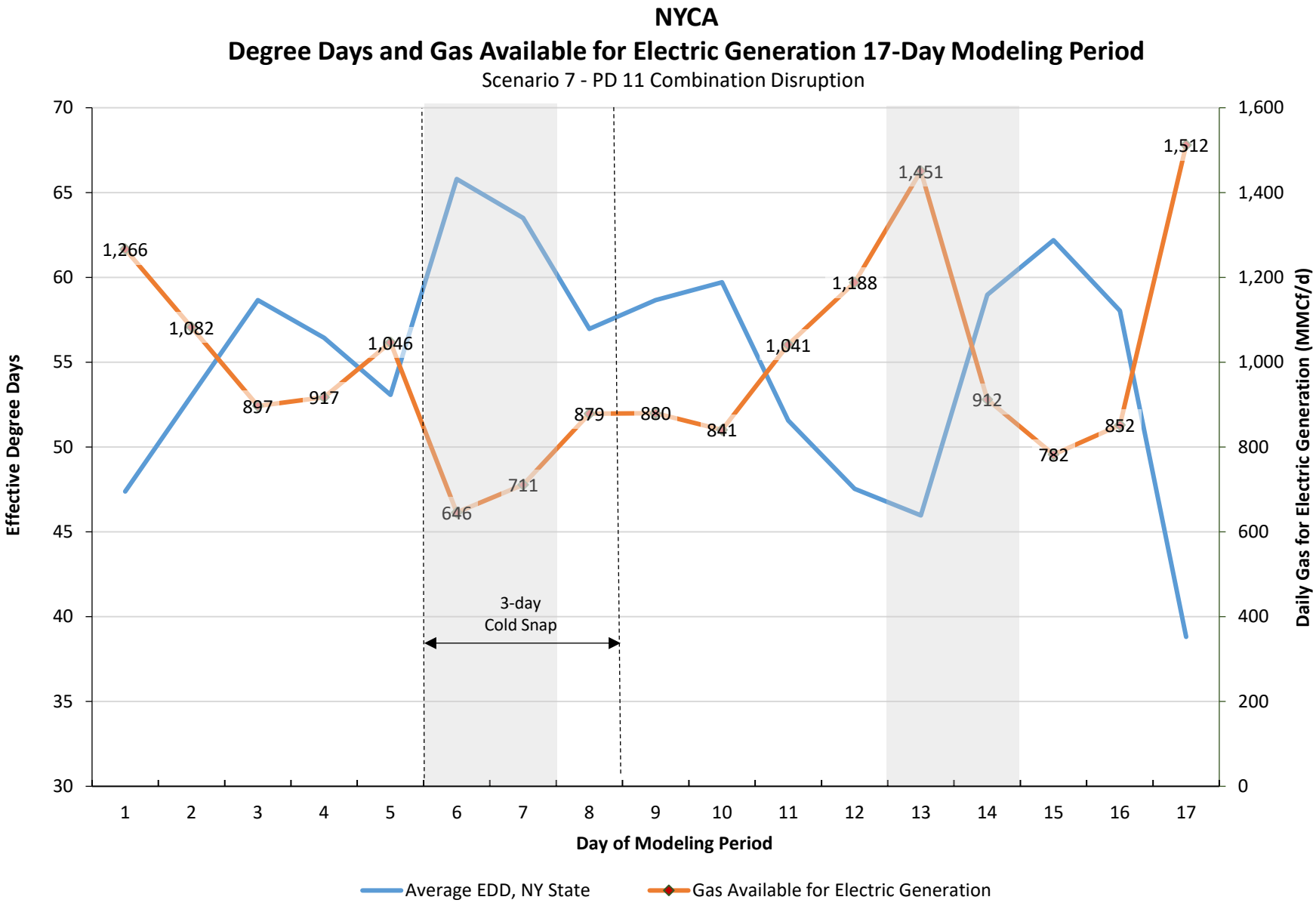


NYCA

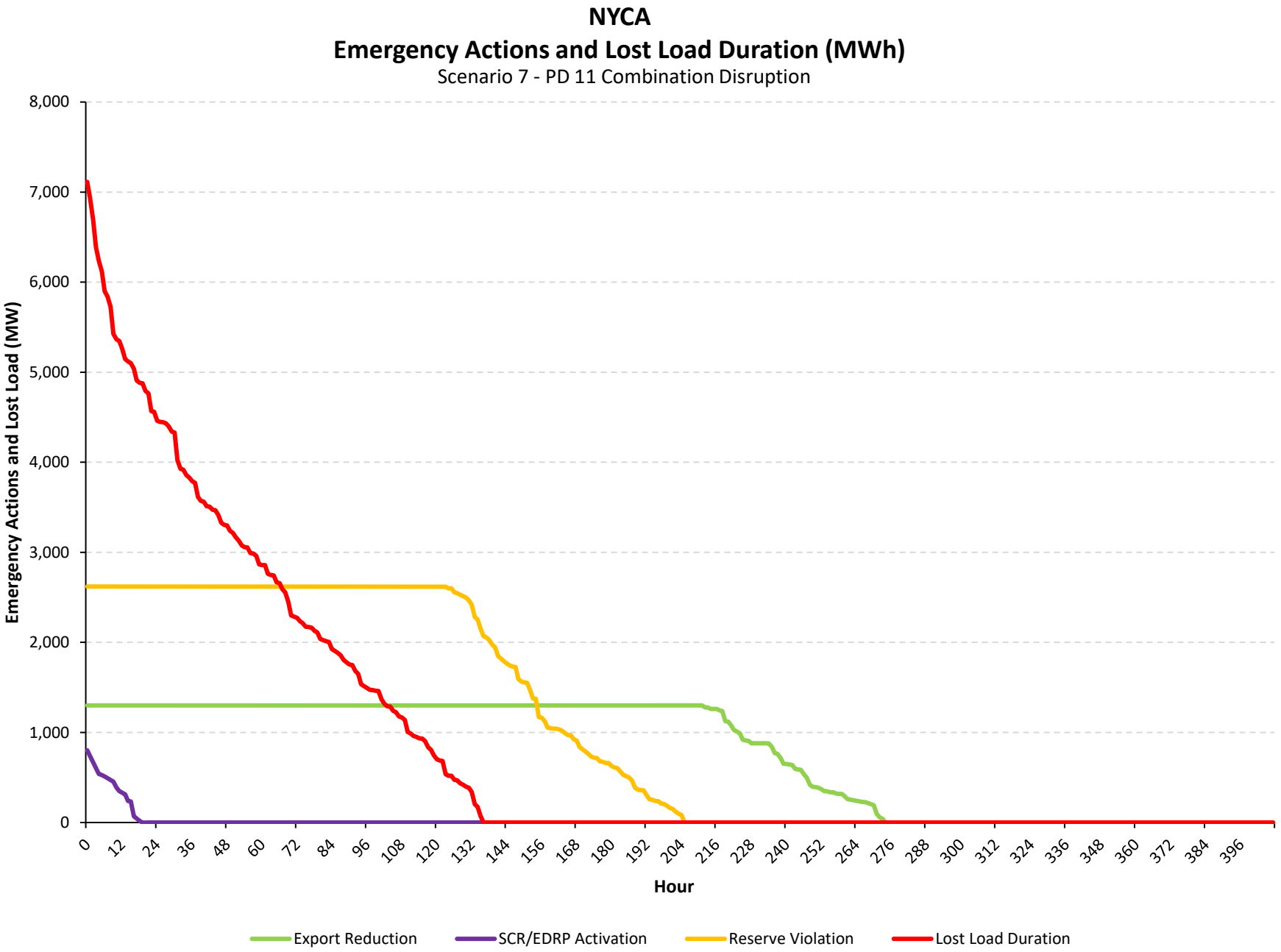
Quantity of Stored Fuel for Oil and Dual Fuel Units

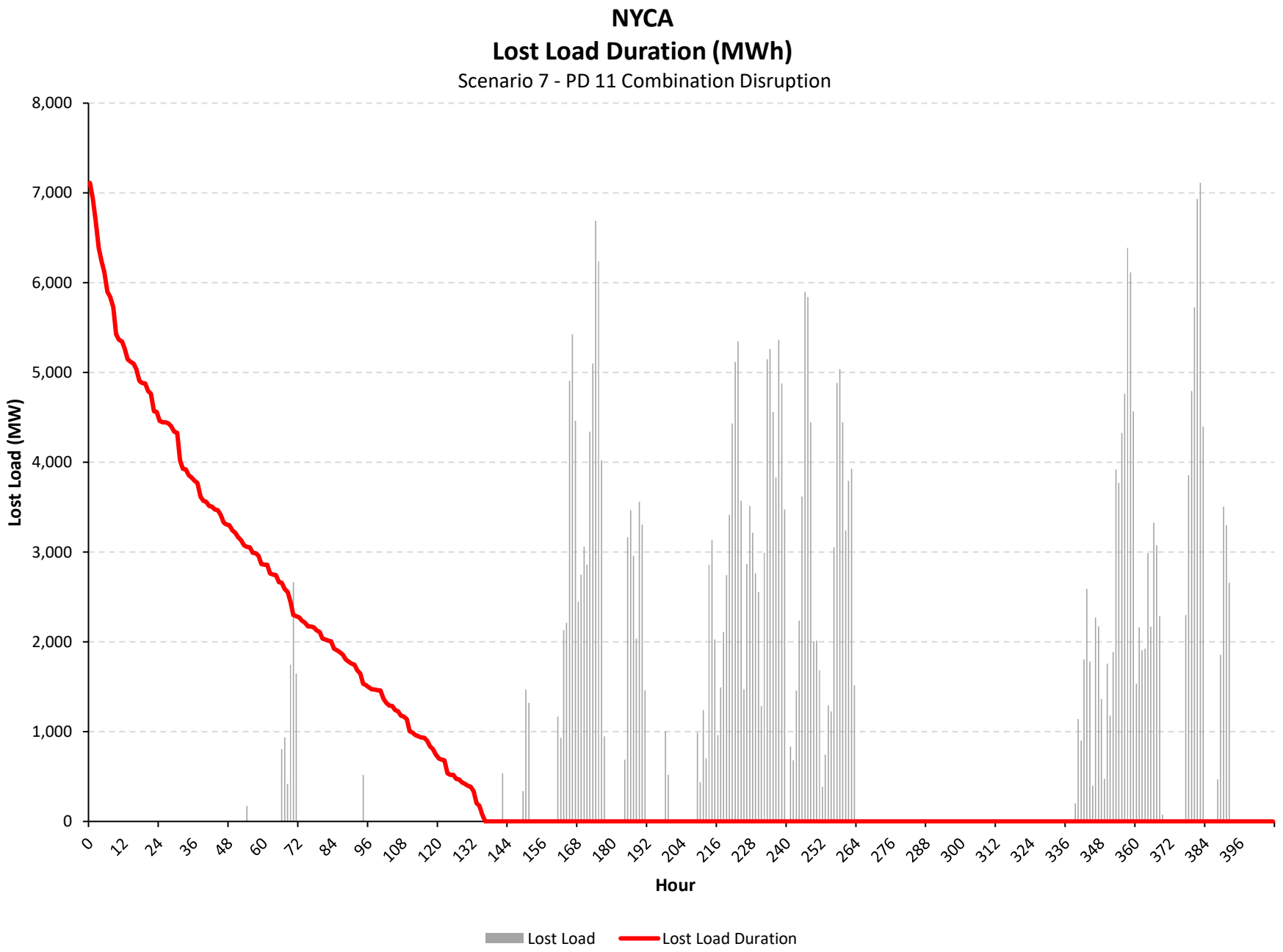
Scenario 7 - PD 11 Combination Disruption





Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 7 - PD 11 Combination Disruption
Emergency Actions and Lost Load (MW)
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 7 - PD 11 Combination Disruption
Lost Load (MW)
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

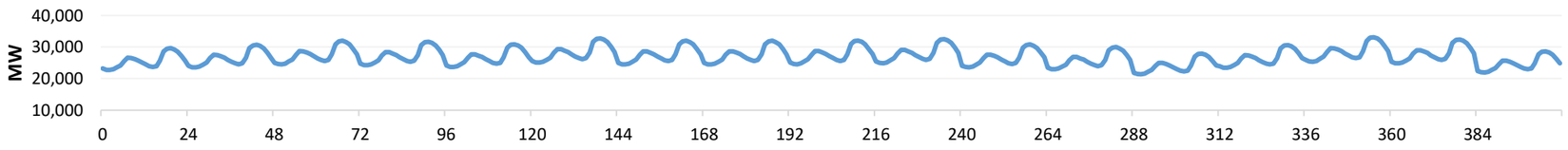
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 8 - PD 1 No Disruptions (Winter 2030/2031)

Hourly Results Summary

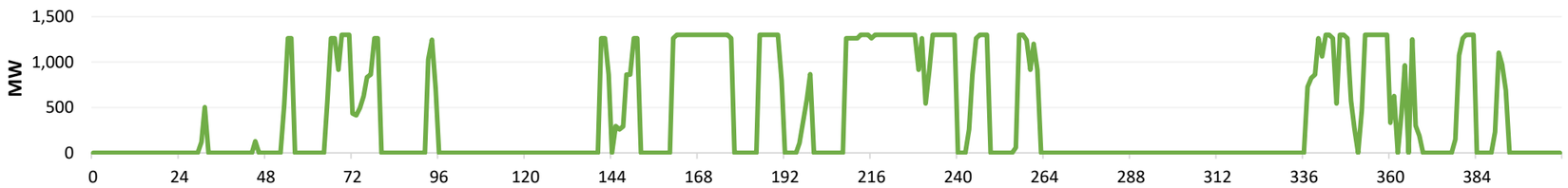
Case Name: Scenario 8 - PD 1 No Disruptions

Load During Modeling Period



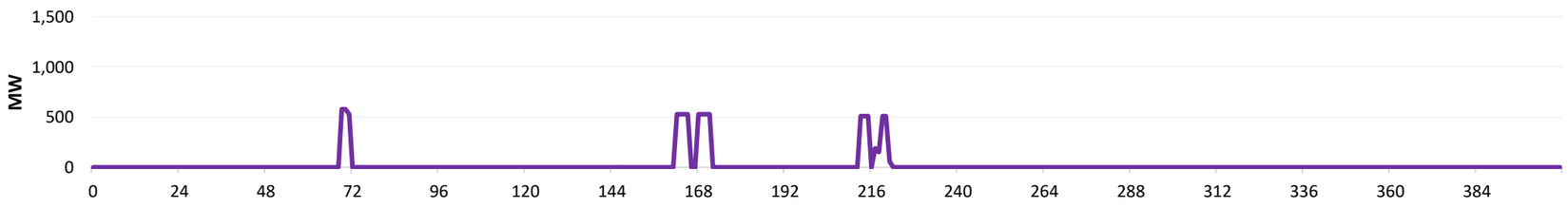
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

Export to ISO-NE Reduction During Modeling Period



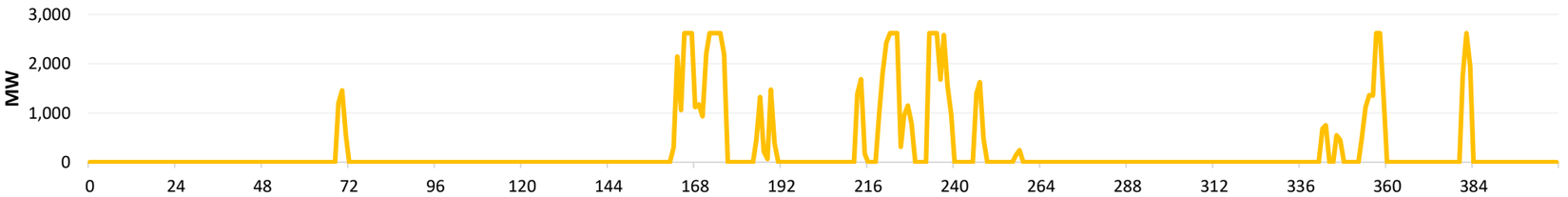
Export Reductions	
Total Hrs.	145
Total MWh	150,476
Avg. MW	368.8

SCR/EDRP Deployed During Modeling Period



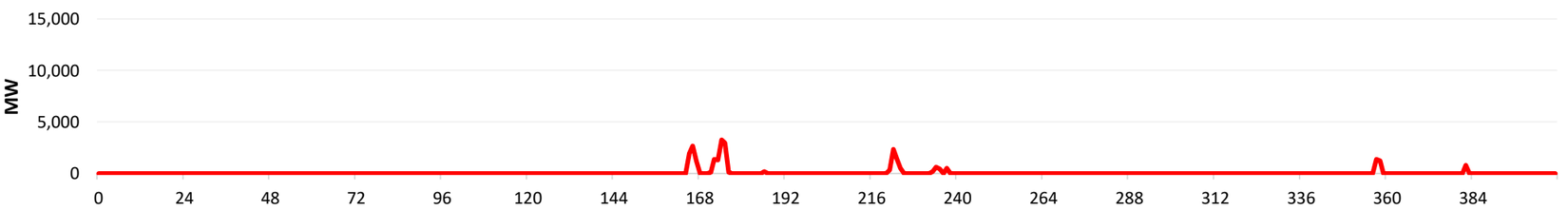
SCR Deployment	
Total Hrs.	19
Total MWh	8,845
Avg. MW	21.7

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	63
Total MWh	94,206
Avg. MW	230.9
First Hour with Viol.	69

Loss of Load During Modeling Period



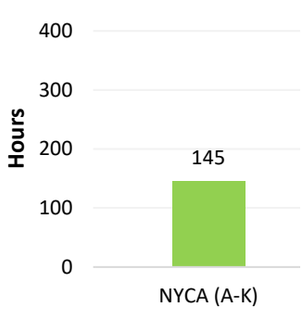
Loss of Load	
Total Hrs.	21
Total MWh	25,019
Avg. MW	61.3
First Hour with Losses	165

Full Period Results Summary

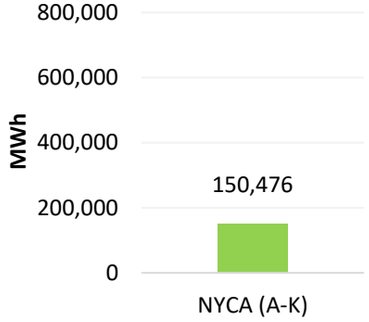
Case Name: Scenario 8 - PD 1 No Disruptions

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

Hours Exports Reduced



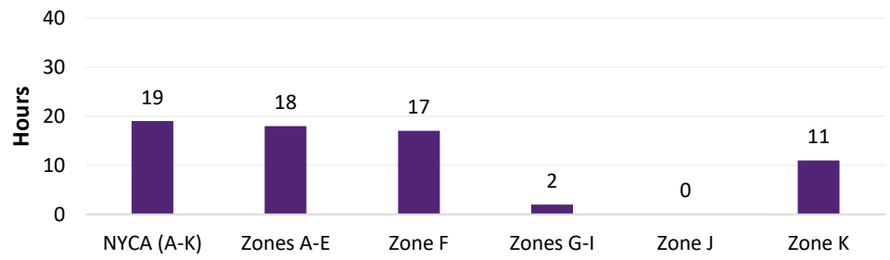
Total MWh of Exports Reduced



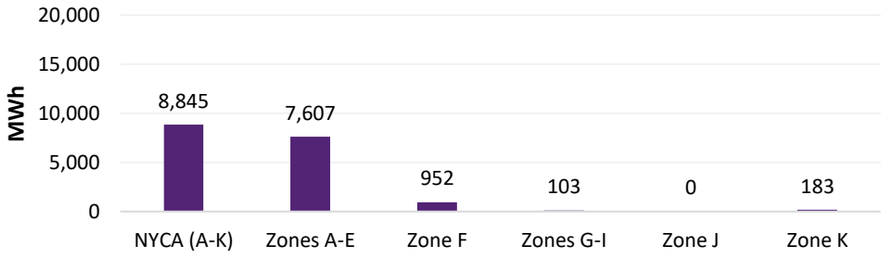
Average Capacity Not Available Due to Exhausted Fuel Inventory



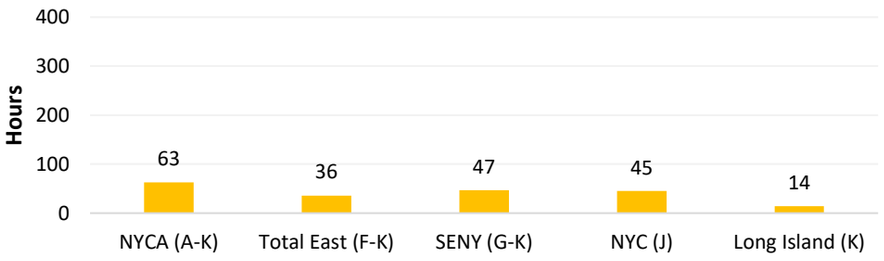
Hours SCR/EDRP Deployed



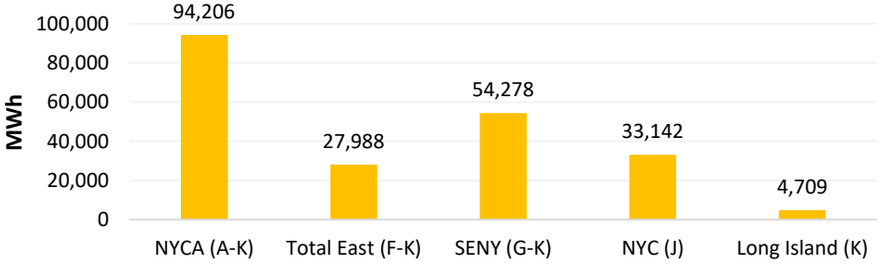
Total MWh SCR/EDRP Deployed



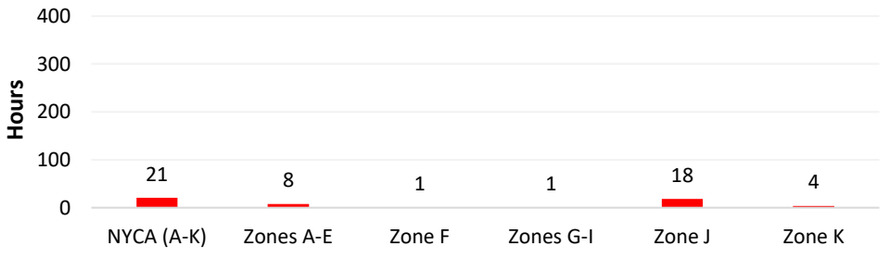
Hours with Reserve Violations



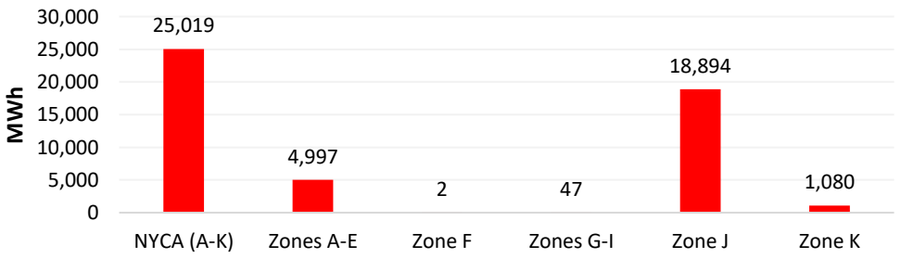
Total MWh of Reserve Violations

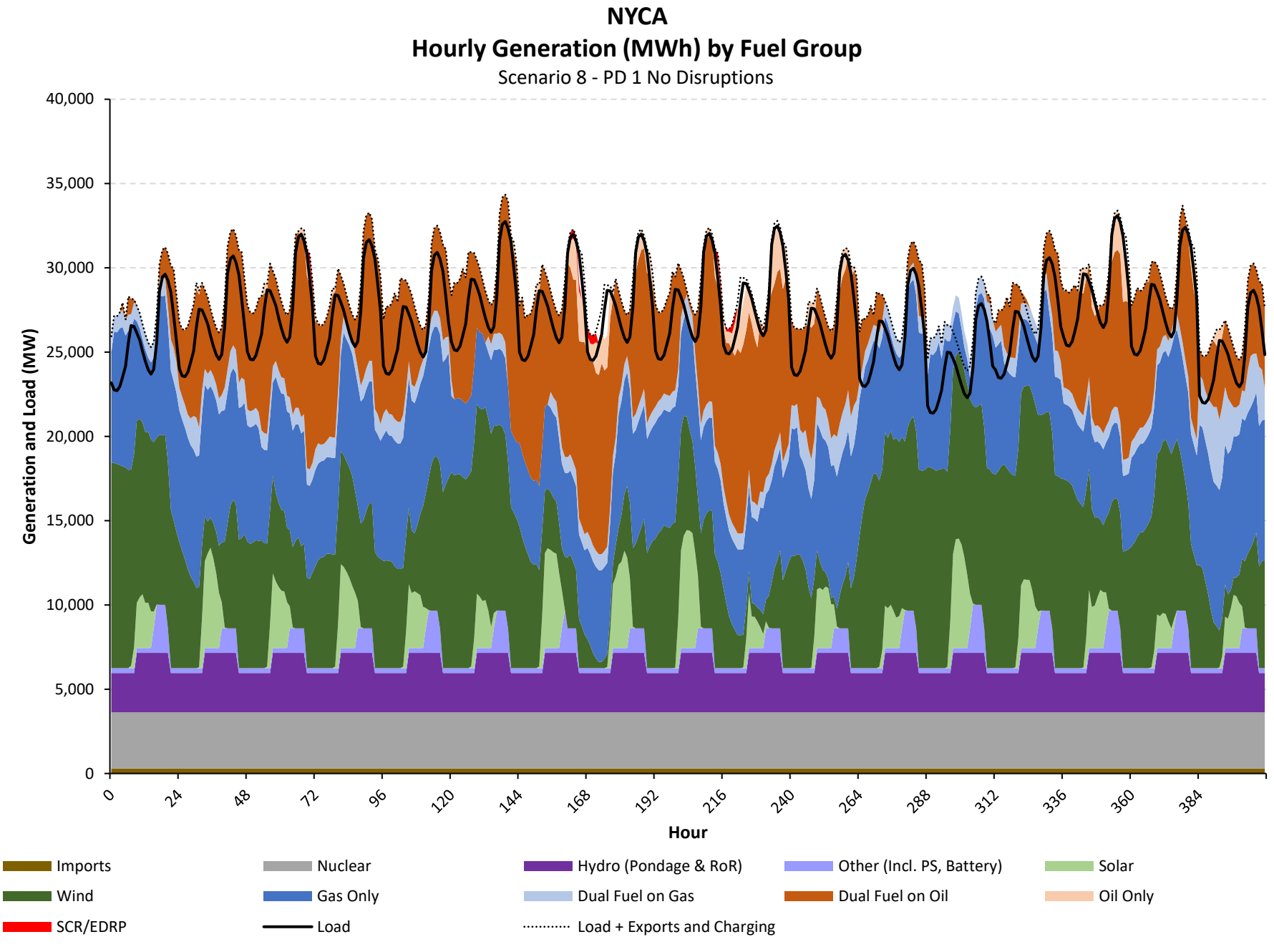


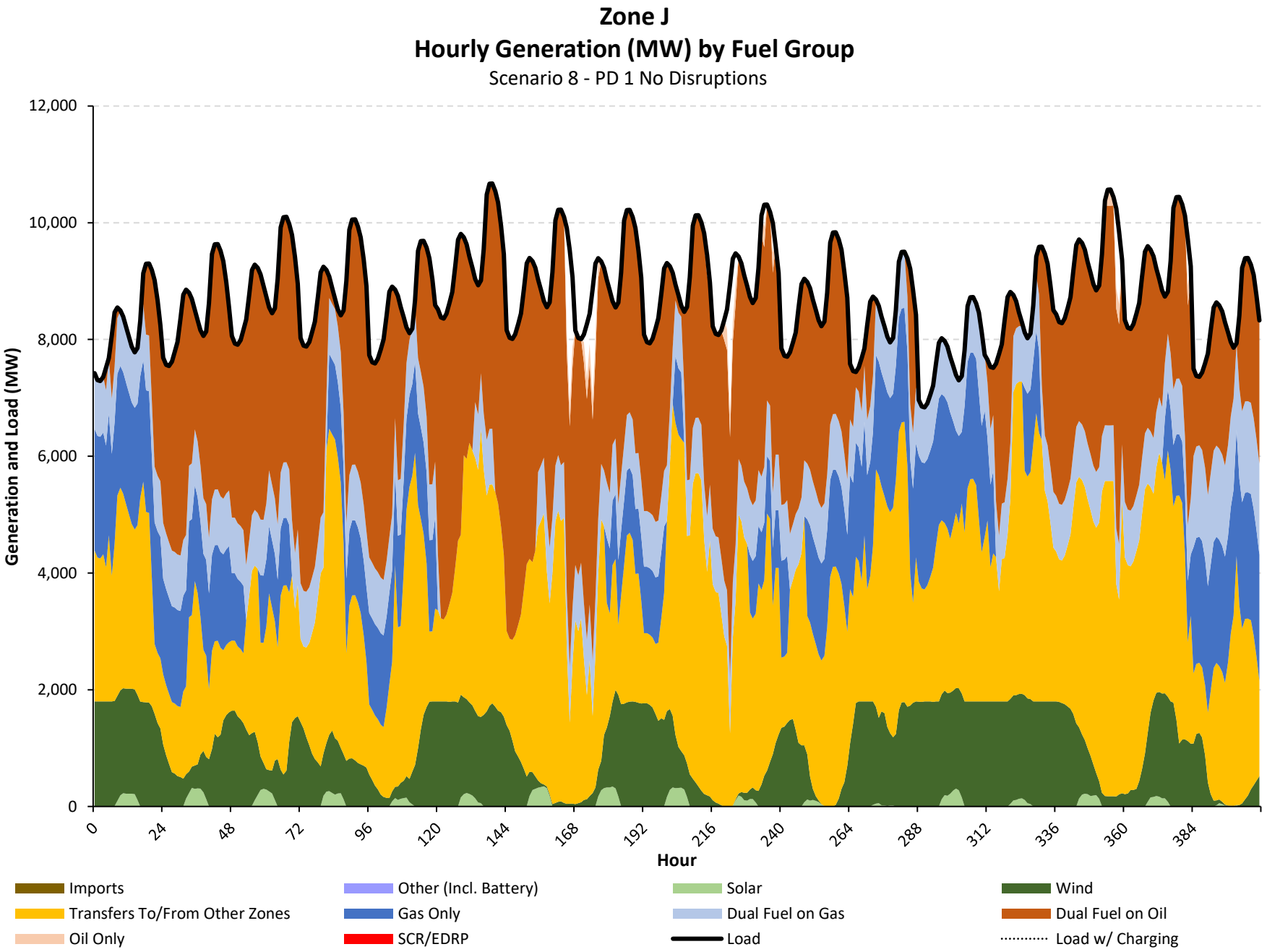
Hours with Loss of Load



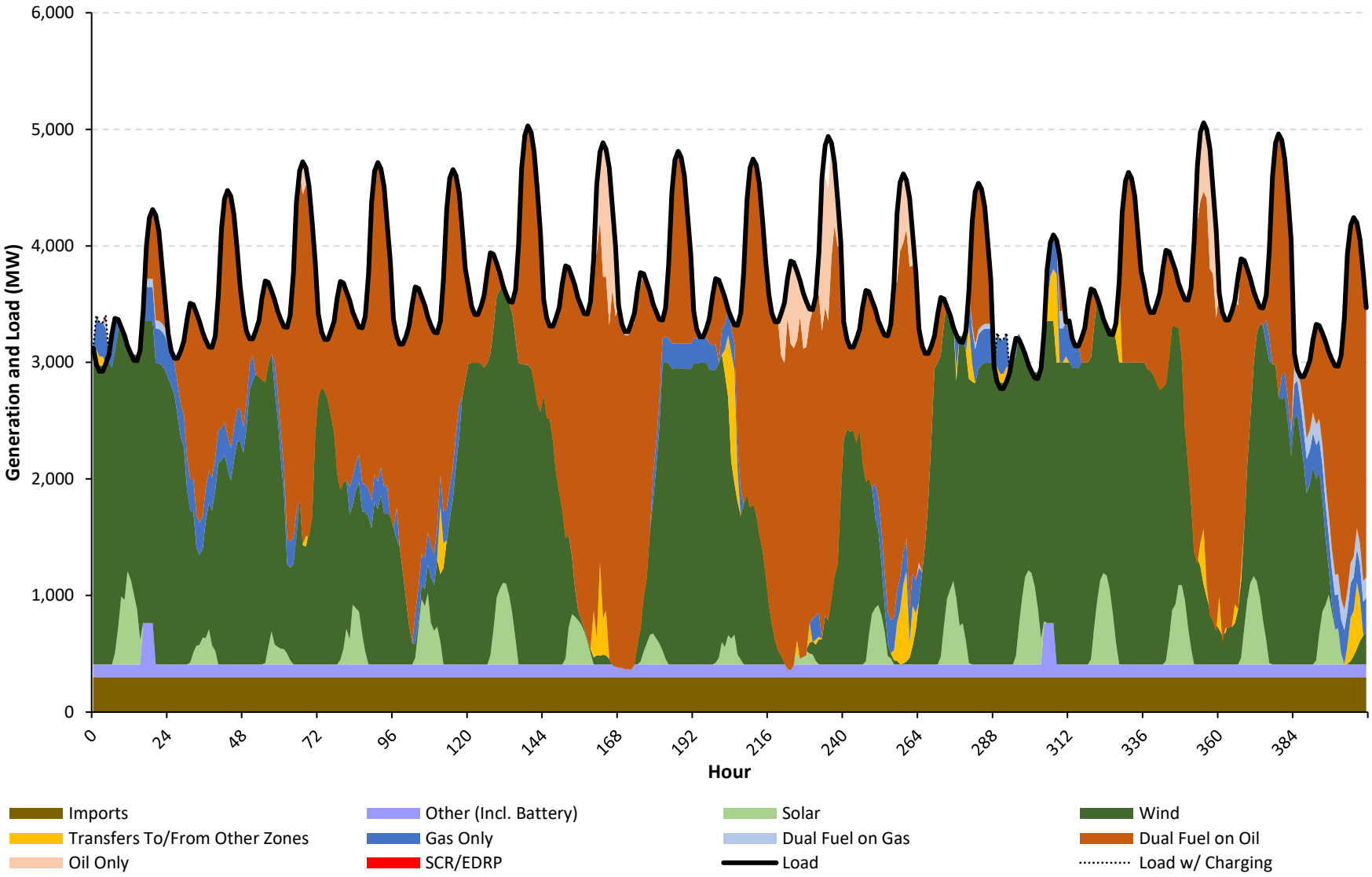
Total MWh of Lost Load

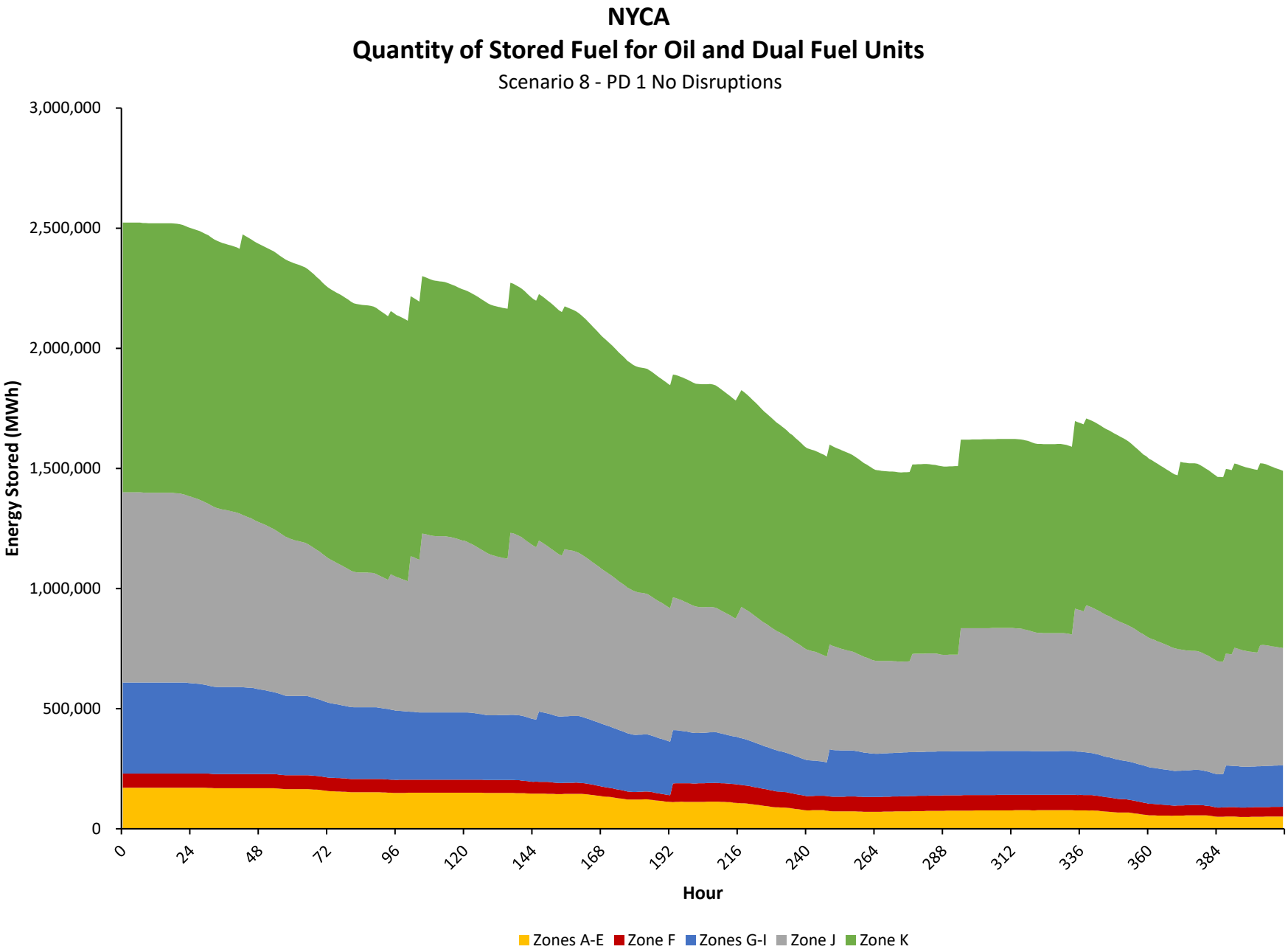


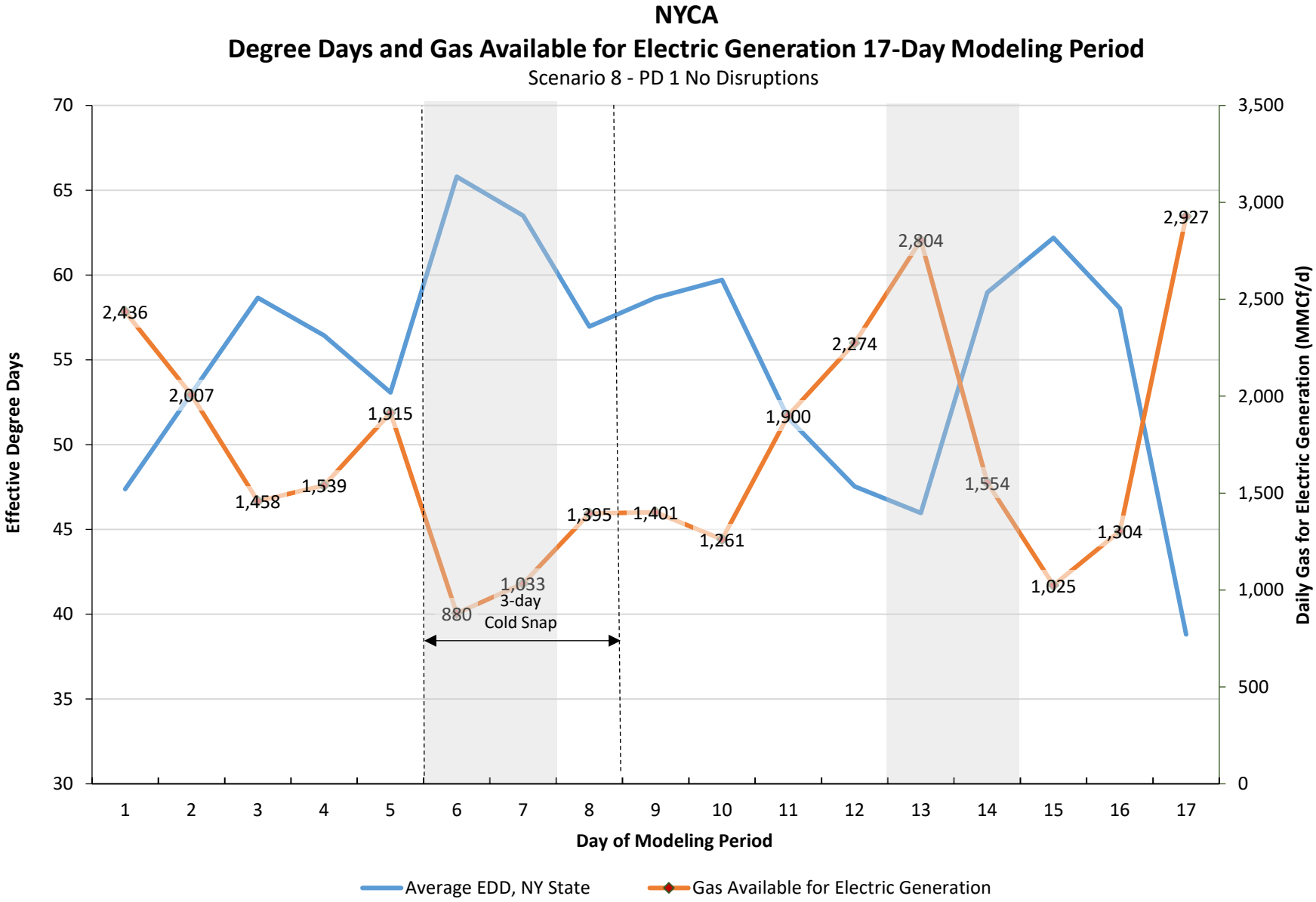

NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 8 - PD 1 No Disruptions
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 8 - PD 1 No Disruptions
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

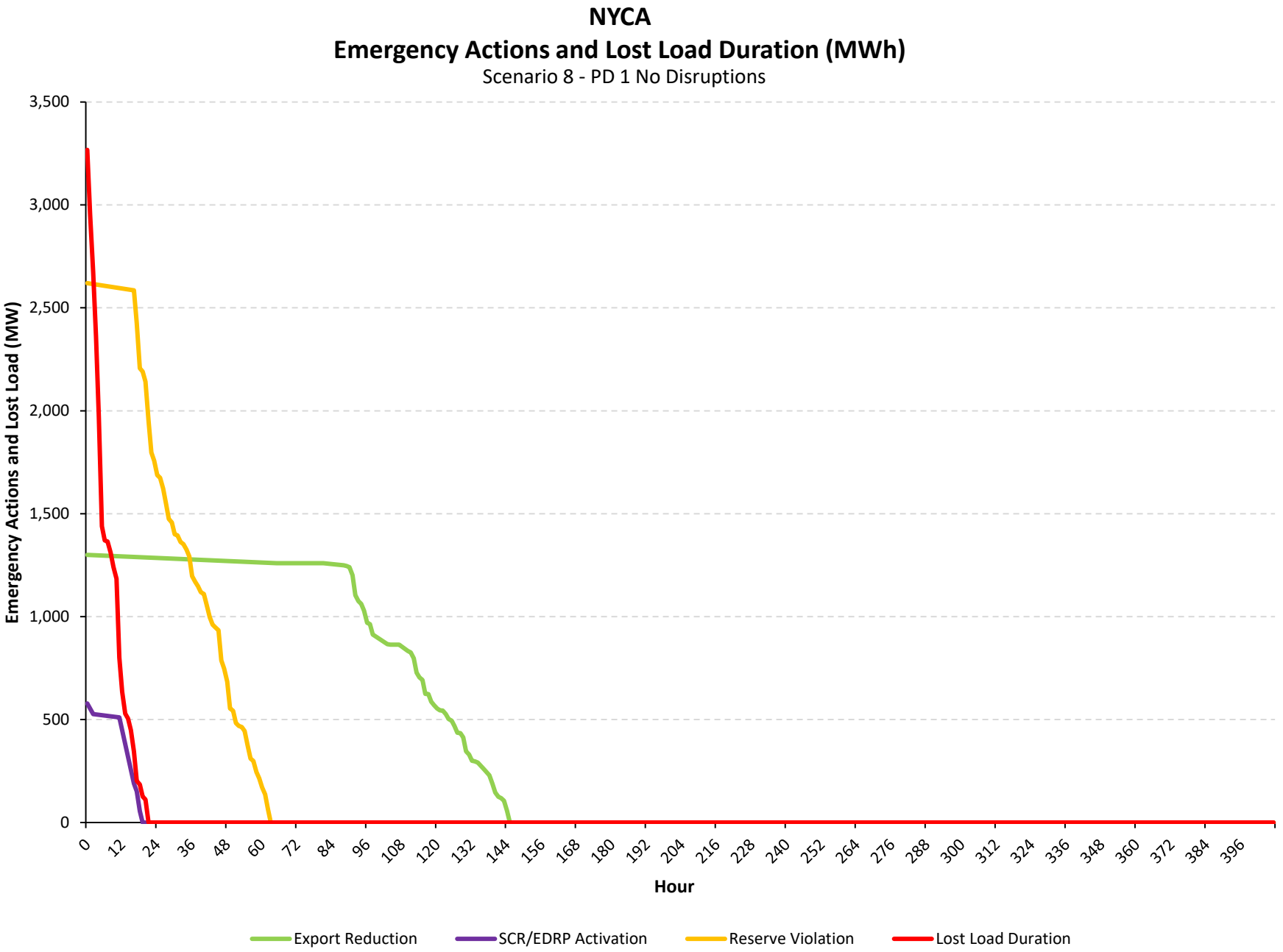
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 8 - PD 1 No Disruptions

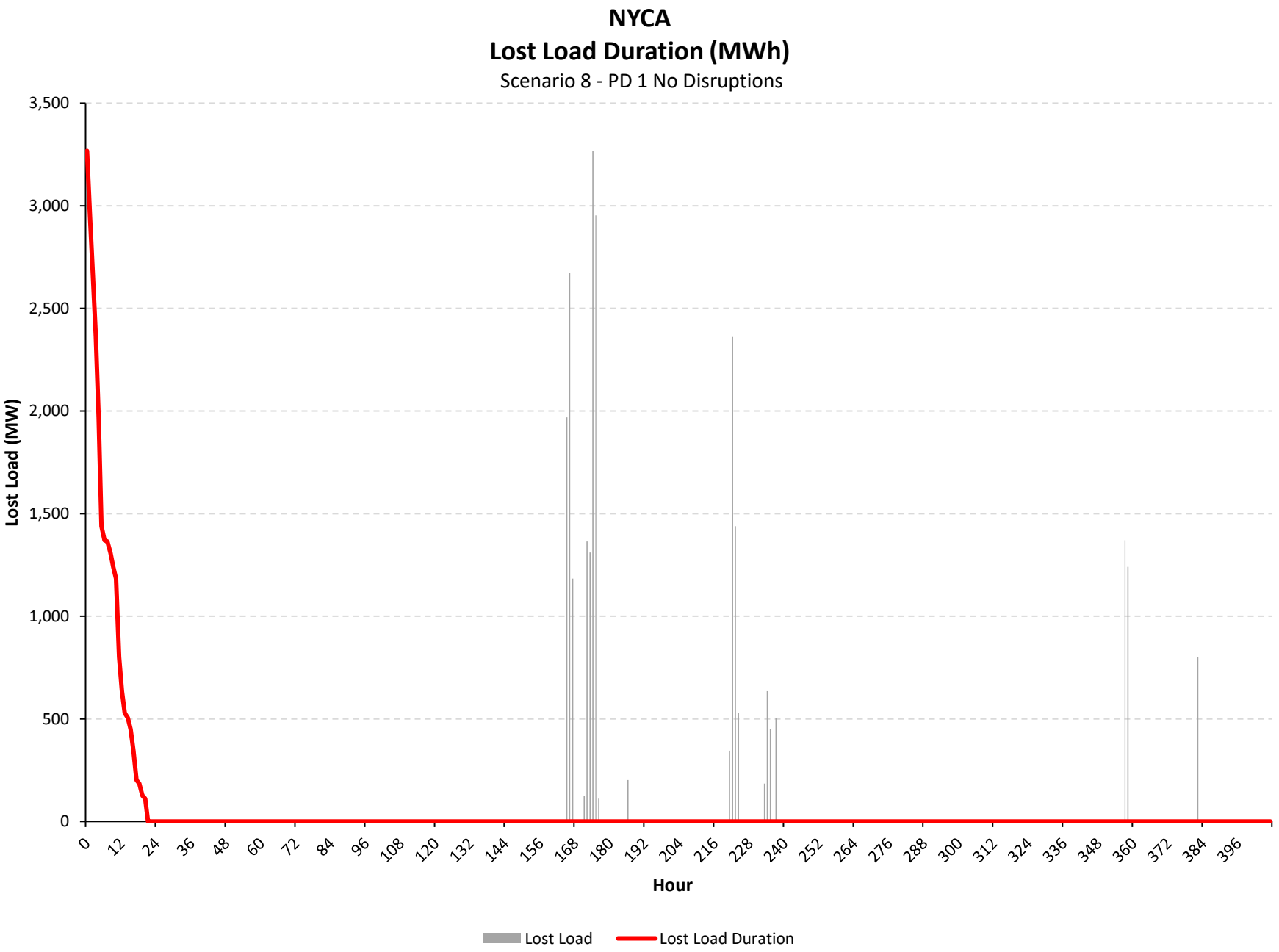



NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 8 - PD 1 No Disruptions
Energy Stored (MWh)
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Zones A-E
Zone F
Zones G-I
Zone J
Zone K



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 8 - PD 1 No Disruptions
Emergency Actions and Lost Load (MW)
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 8 - PD 1 No Disruptions
Lost Load (MW)
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

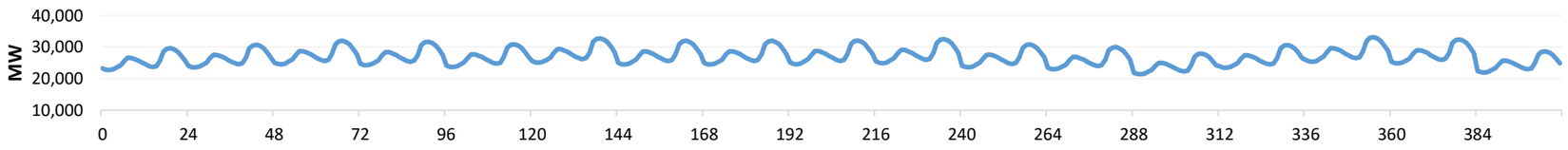
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 8 - PD 2 High Outage (Winter 2030/2031)

Hourly Results Summary

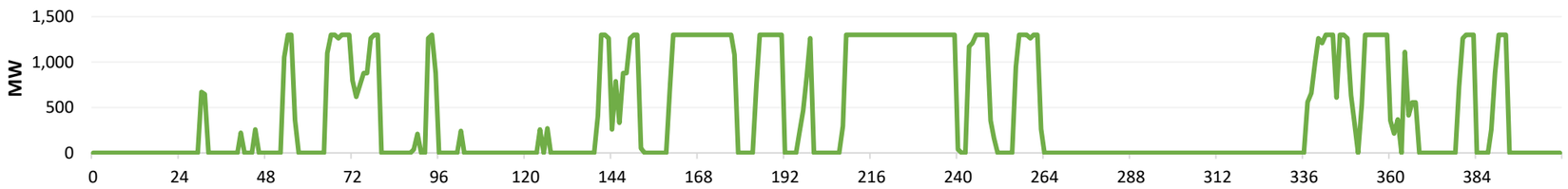
Case Name: Scenario 8 - PD 2 High Outage

Load During Modeling Period



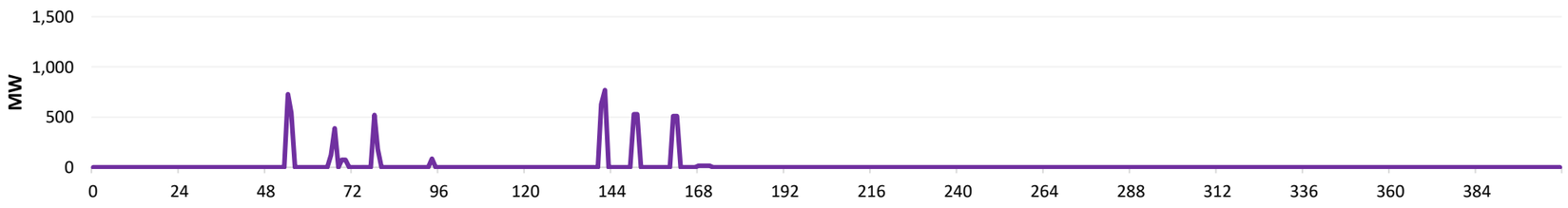
Case Summary	
Derate (EFORd) Increase:	High
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

Export to ISO-NE Reduction During Modeling Period



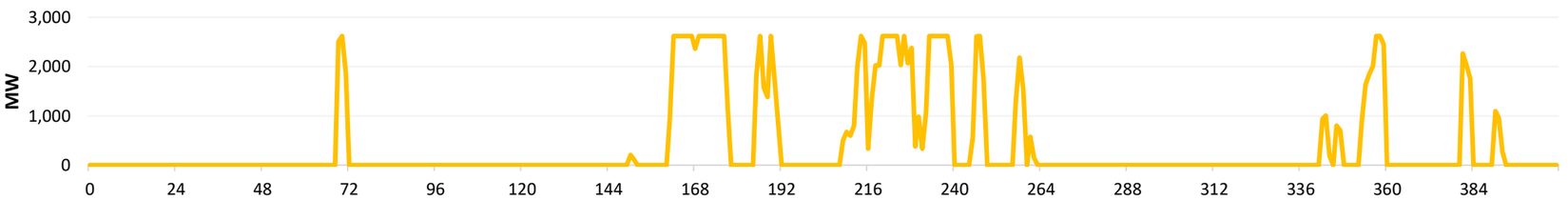
Export Reductions	
Total Hrs.	163
Total MWh	170,653
Avg. MW	418.3

SCR/EDRP Deployed During Modeling Period



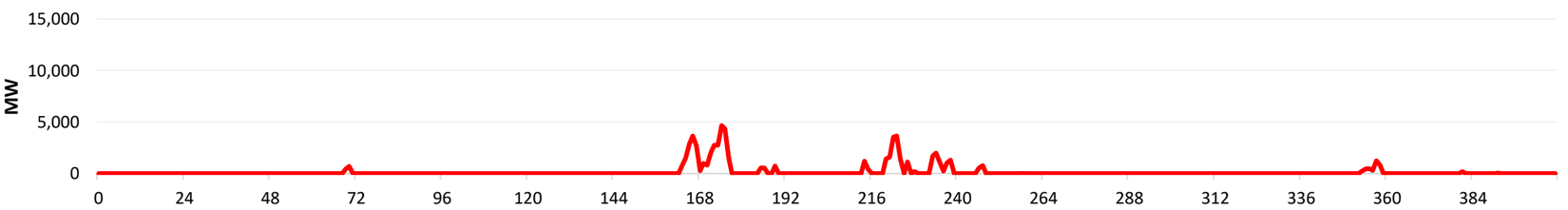
SCR Deployment	
Total Hrs.	19
Total MWh	6,254
Avg. MW	15.3

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	87
Total MWh	158,539
Avg. MW	388.6
First Hour with Viol.	69

Loss of Load During Modeling Period



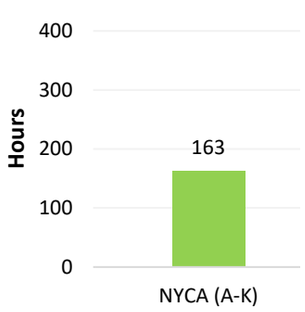
Loss of Load	
Total Hrs.	45
Total MWh	61,378
Avg. MW	150.4
First Hour with Losses	69

Full Period Results Summary

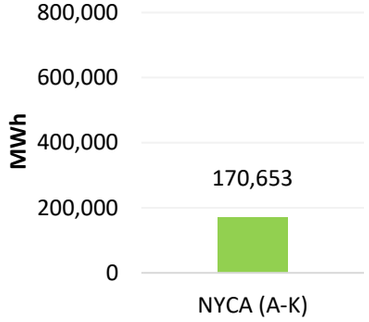
Case Name: Scenario 8 - PD 2 High Outage

Case Summary	
Derate (EFORd) Increase:	High
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

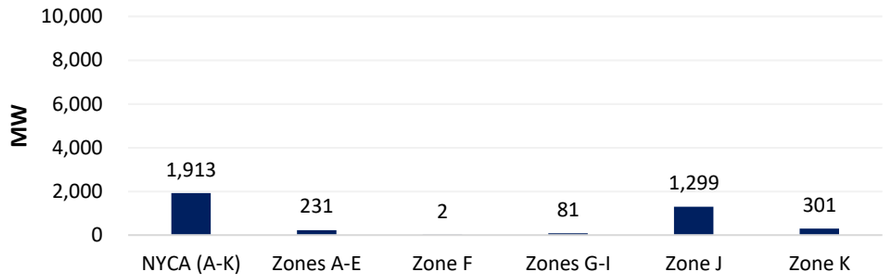
Hours Exports Reduced



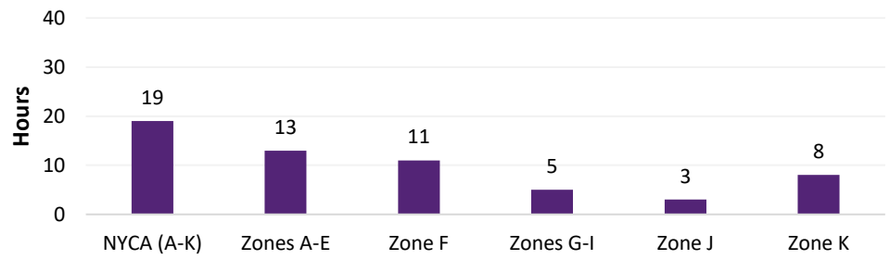
Total MWh of Exports Reduced



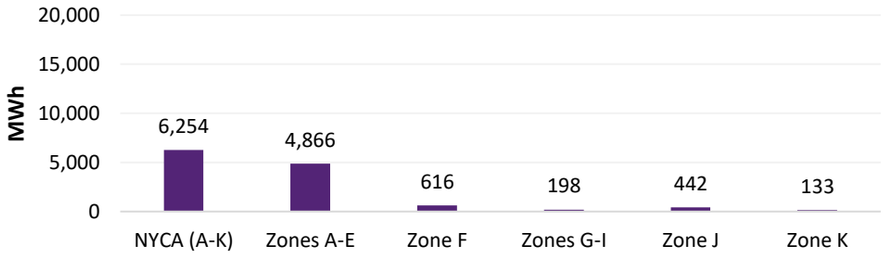
Average Capacity Not Available Due to Exhausted Fuel Inventory



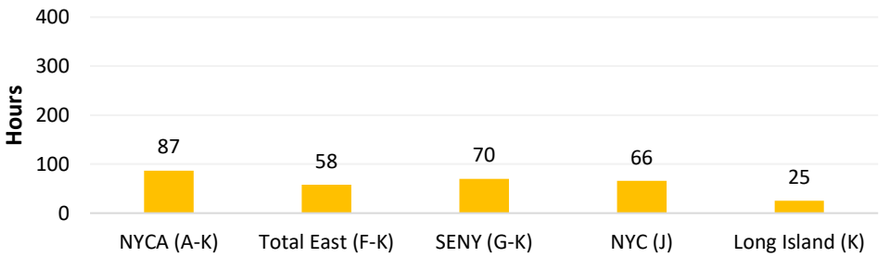
Hours SCR/EDRP Deployed



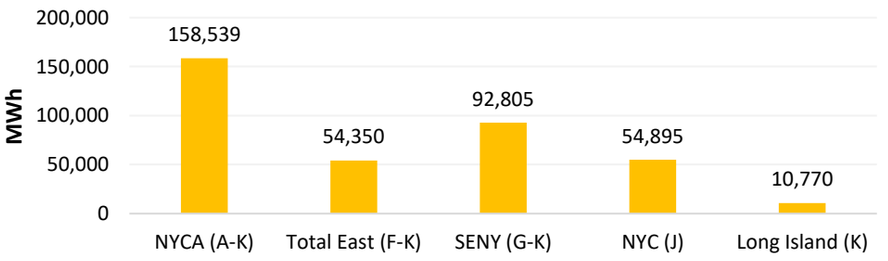
Total MWh SCR/EDRP Deployed



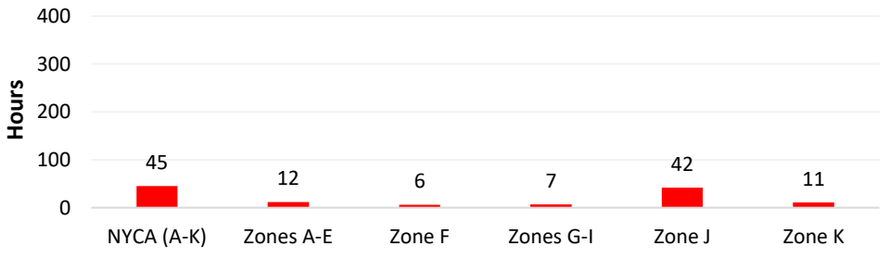
Hours with Reserve Violations



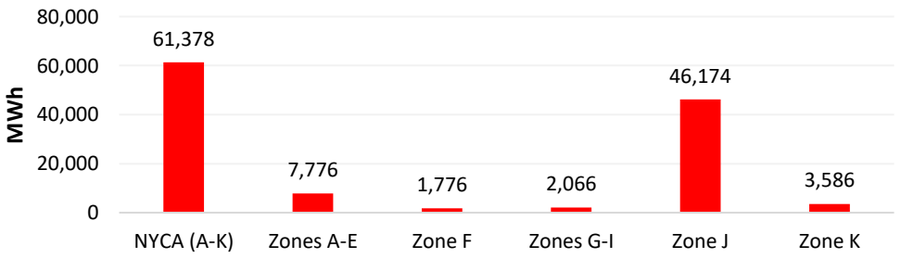
Total MWh of Reserve Violations

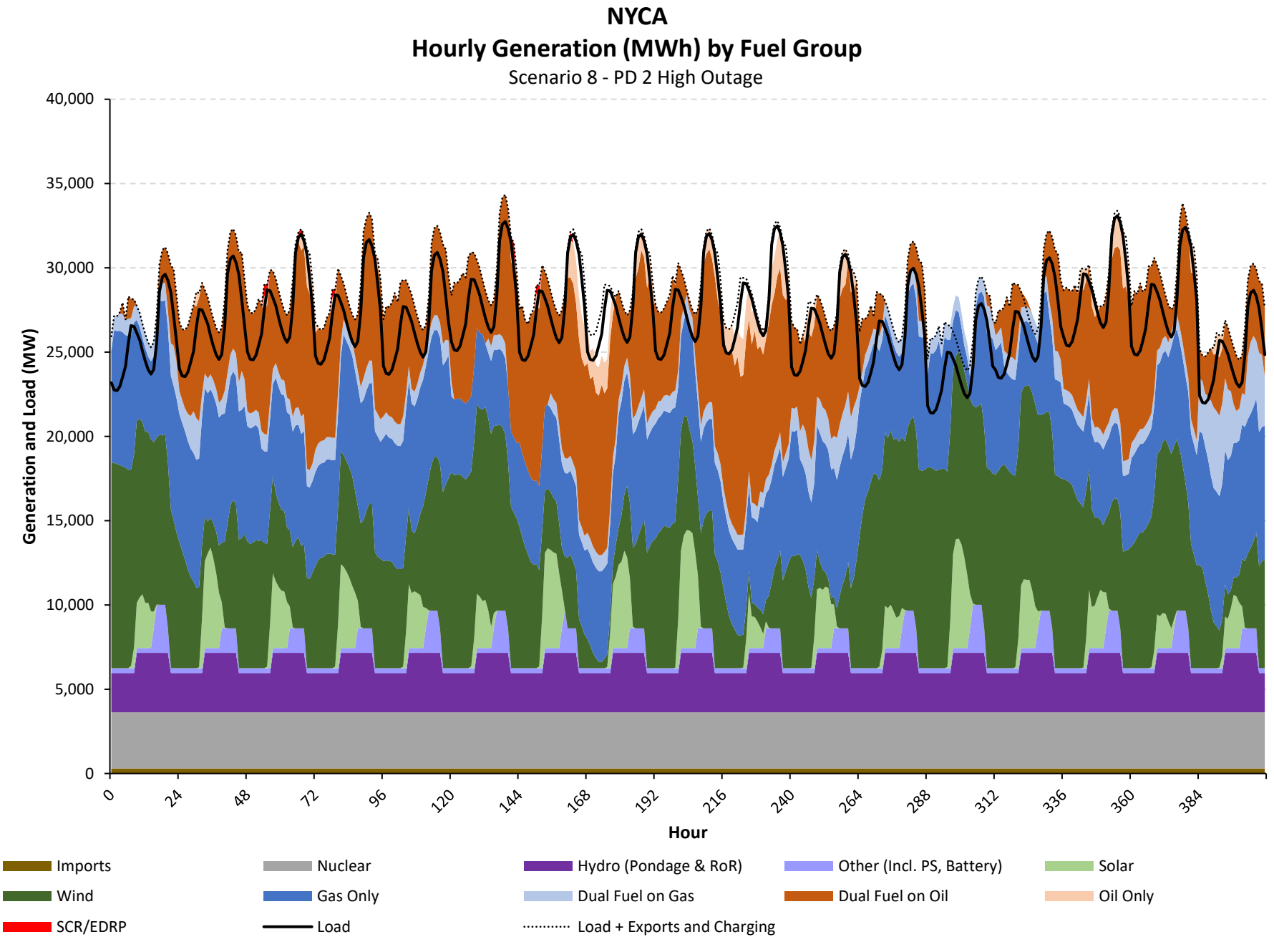


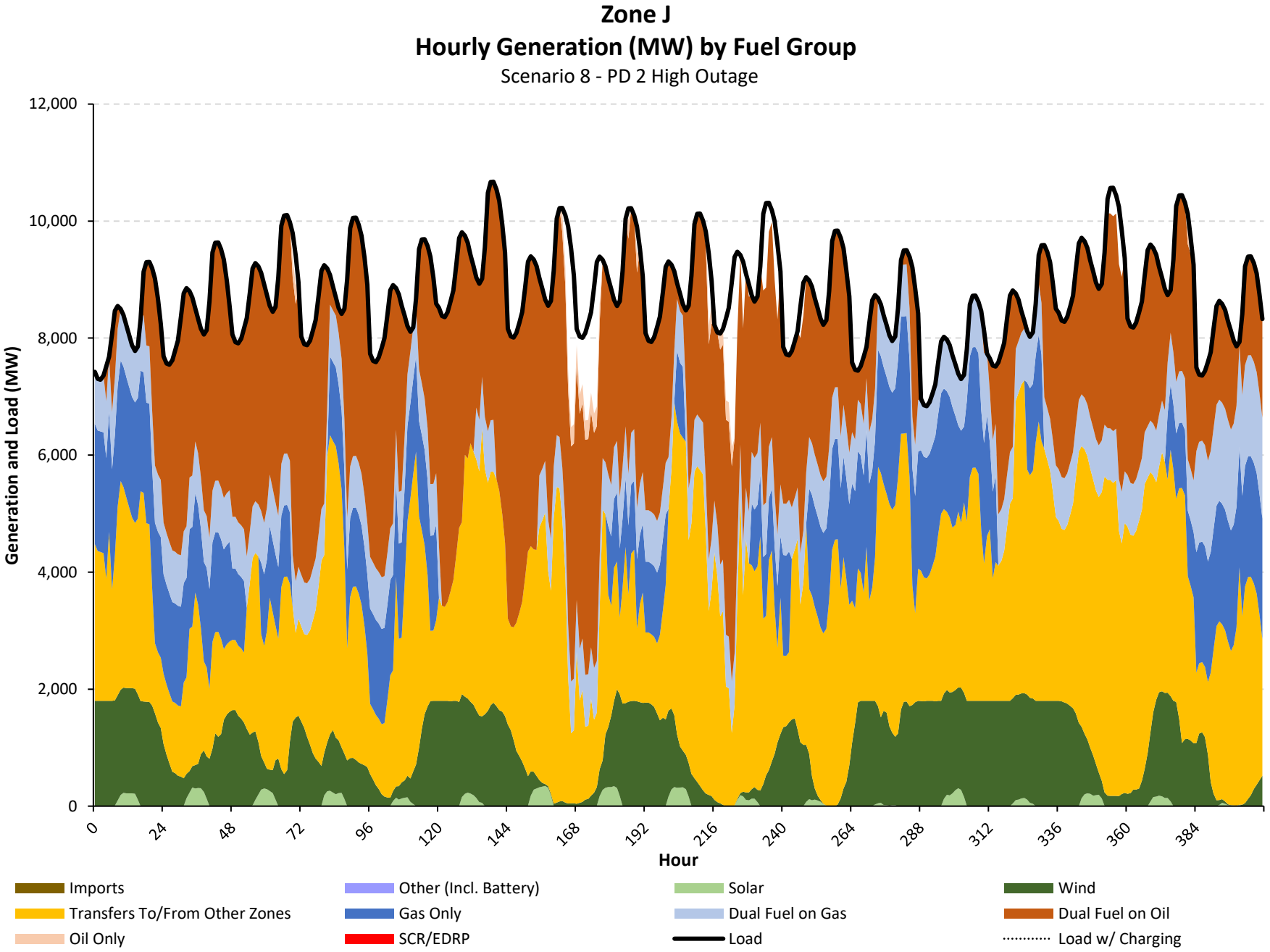
Hours with Loss of Load



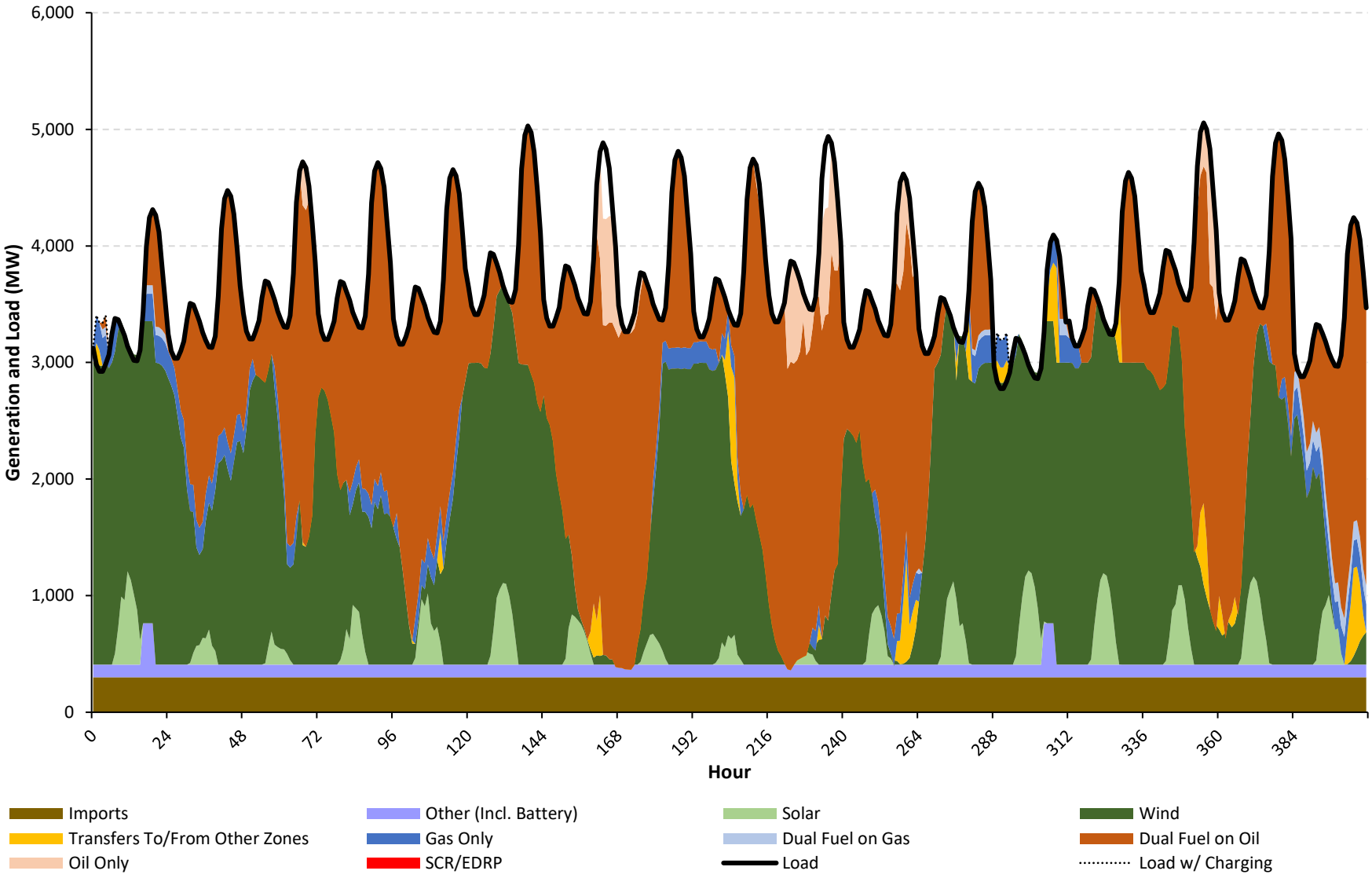
Total MWh of Lost Load



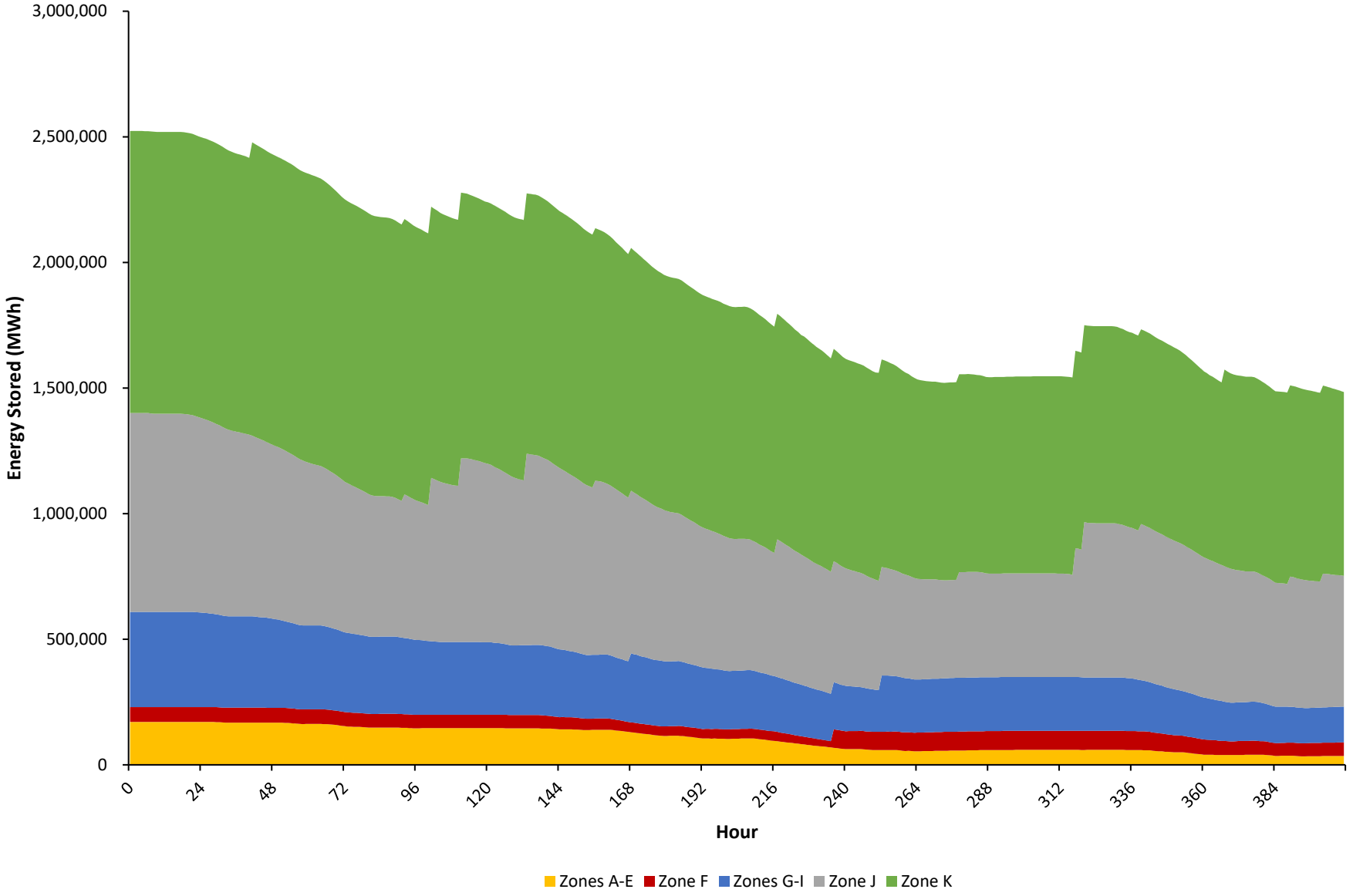

NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 8 - PD 2 High Outage
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

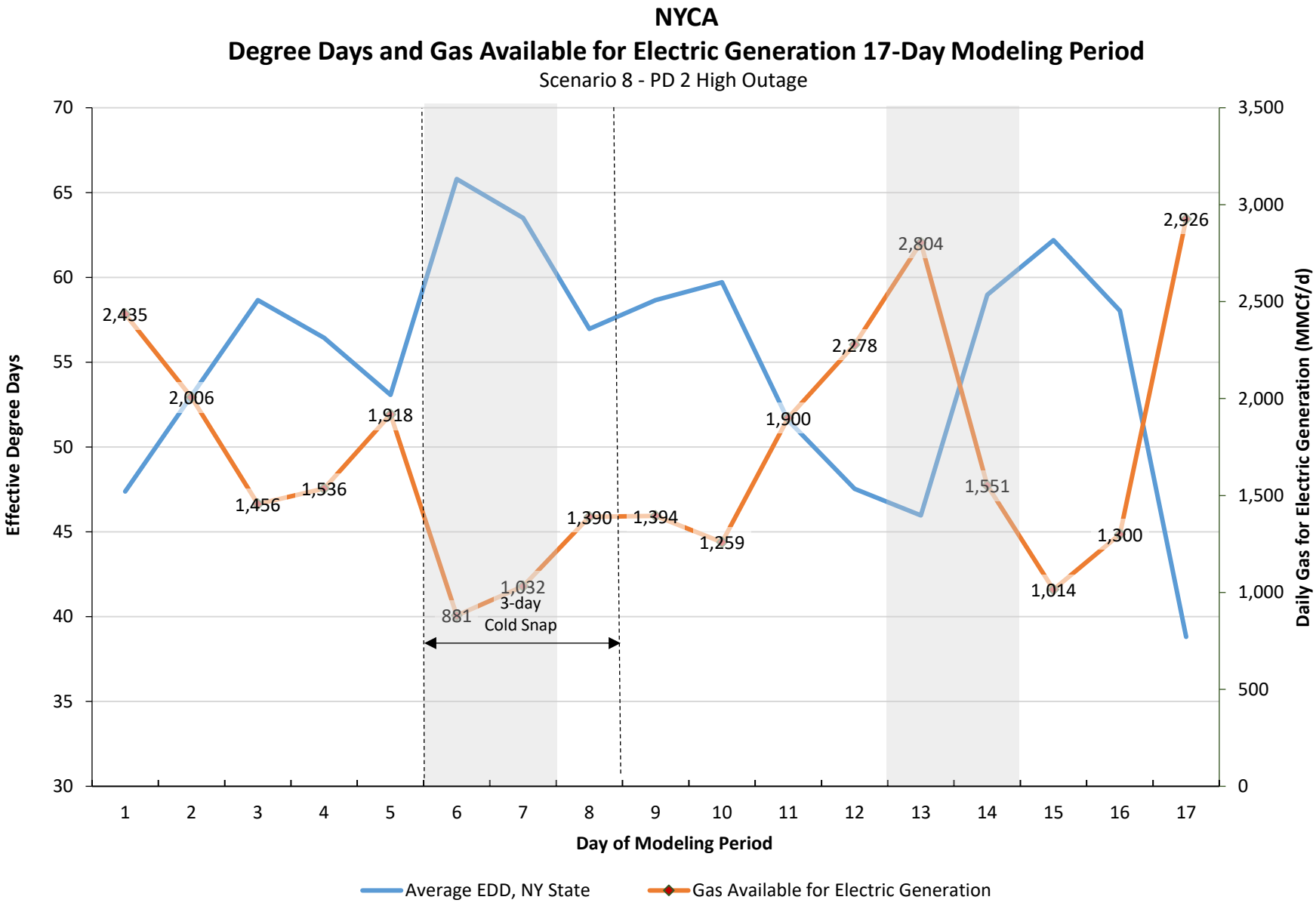

Zone J
Hourly Generation (MW) by Fuel Group
Scenario 8 - PD 2 High Outage
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

Zone K
Hourly Generation (MW) by Fuel Group
Scenario 8 - PD 2 High Outage

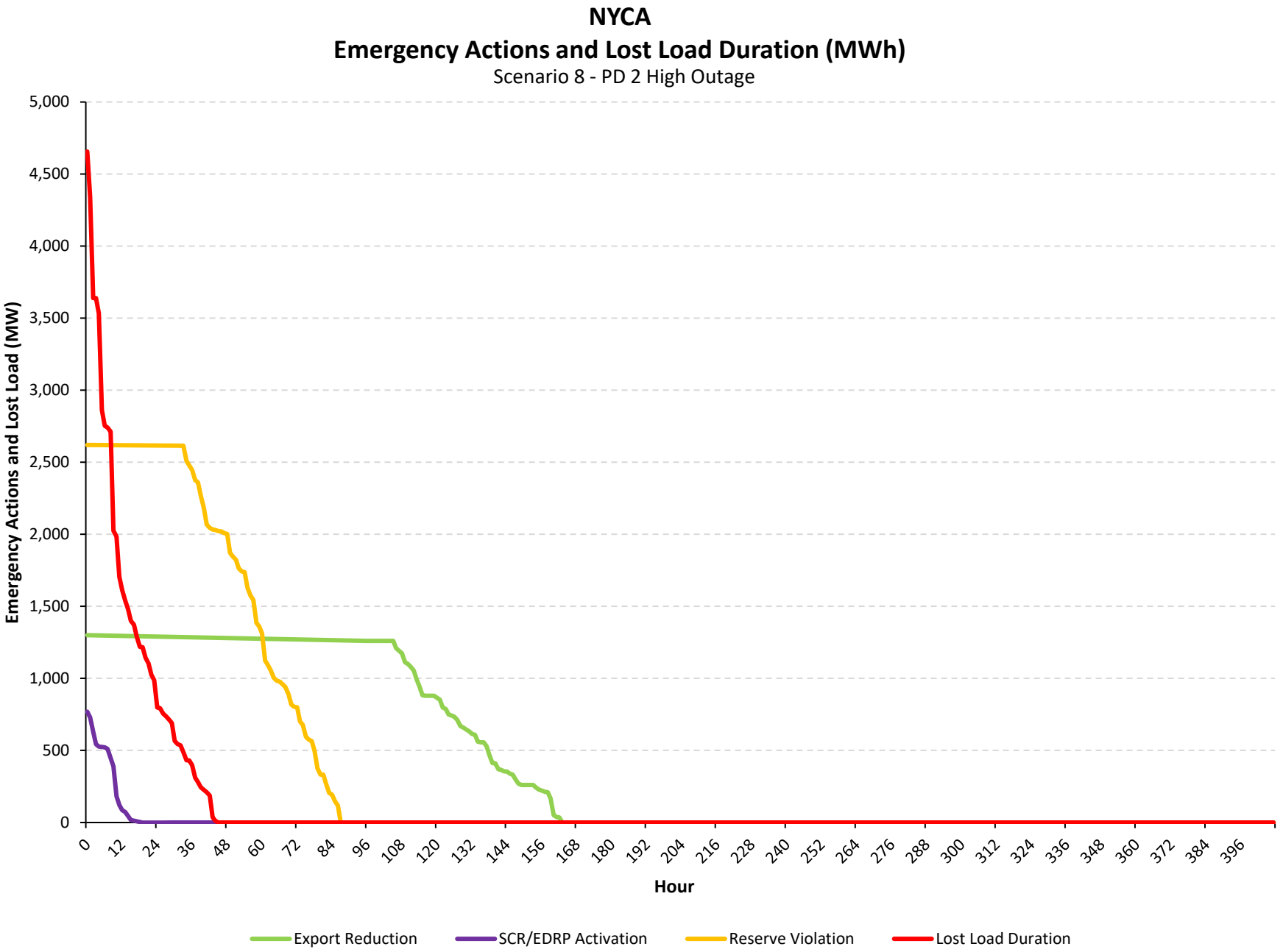


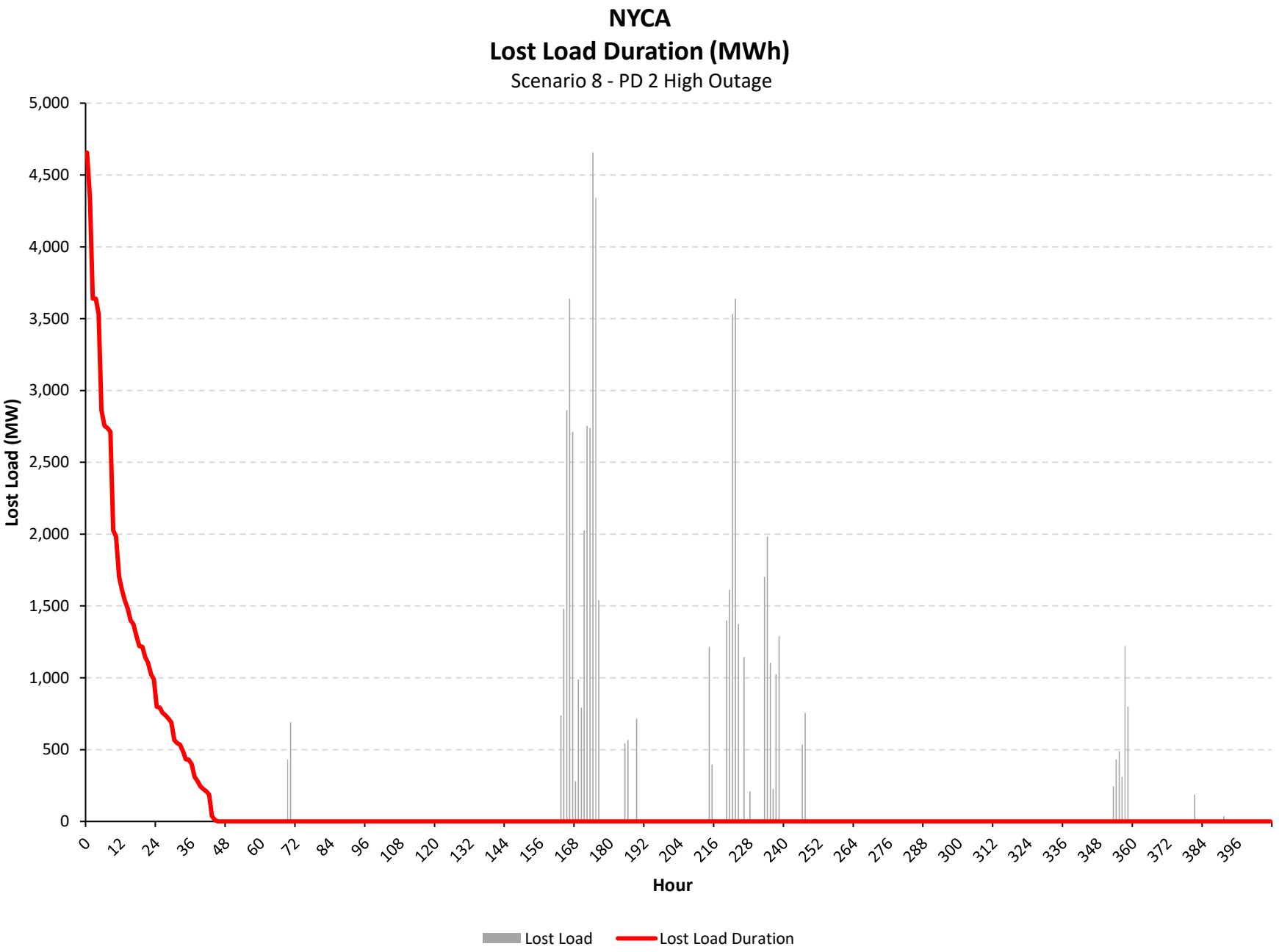
NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 8 - PD 2 High Outage





Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 8 - PD 2 High Outage
Emergency Actions and Lost Load (MW)
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 8 - PD 2 High Outage
Lost Load (MW)
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

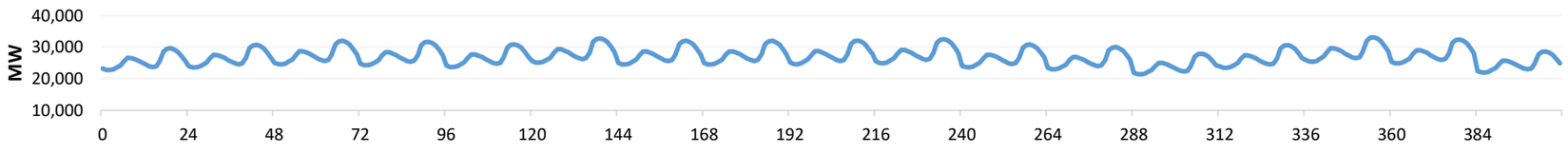
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 8 - PD 3 SENY Deactivation (Winter 2030/2031)

Hourly Results Summary

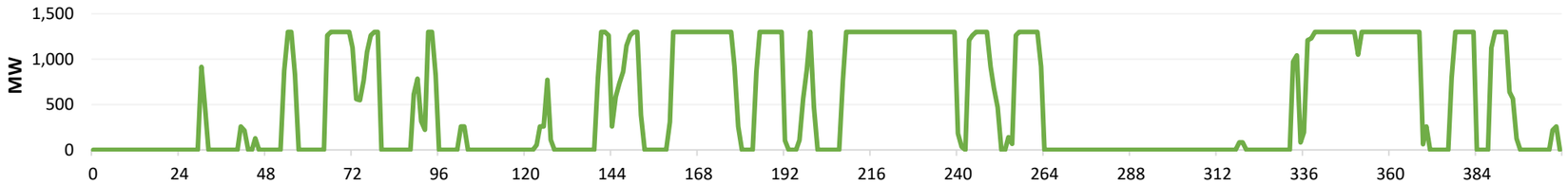
Case Name: Scenario 8 - PD 3 SENY Deactivation

Load During Modeling Period



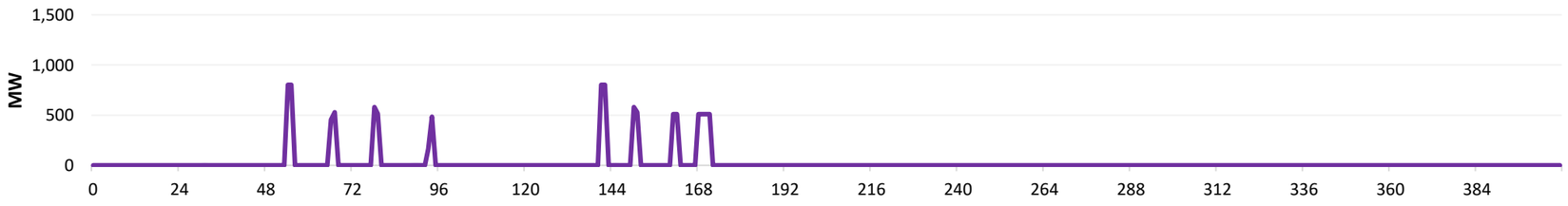
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	Roseton
Import Scenario:	Net Zero

Export to ISO-NE Reduction During Modeling Period



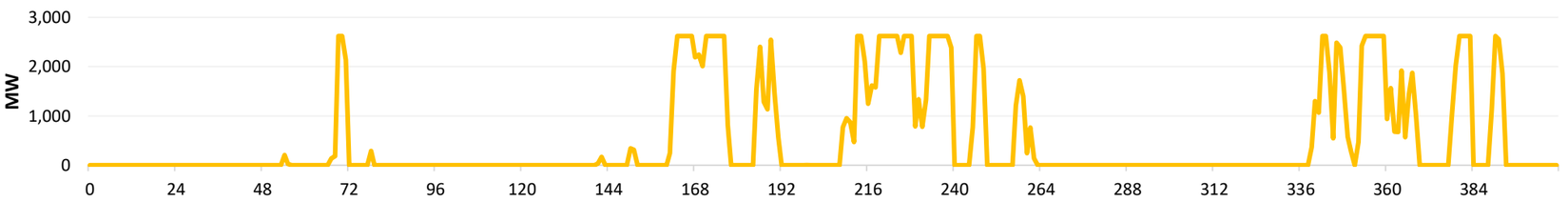
Export Reductions	
Total Hrs.	196
Total MWh	202,014
Avg. MW	495.1

SCR/EDRP Deployed During Modeling Period



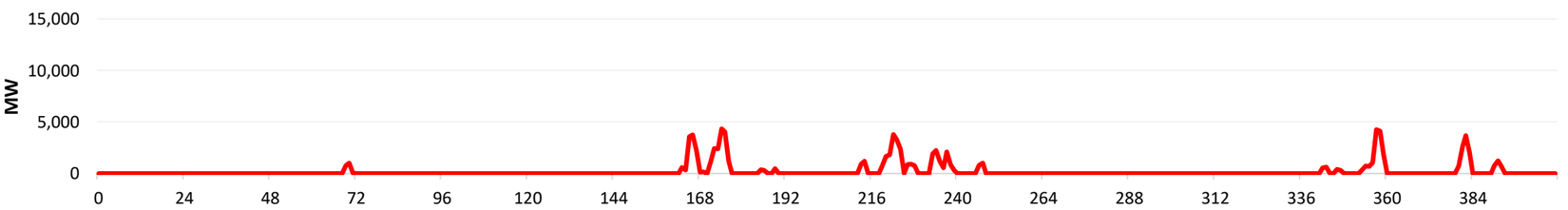
SCR Deployment	
Total Hrs.	18
Total MWh	10,093
Avg. MW	24.7

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	117
Total MWh	203,304
Avg. MW	498.3
First Hour with Viol.	54

Loss of Load During Modeling Period



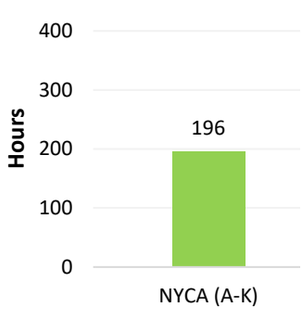
Loss of Load	
Total Hrs.	59
Total MWh	85,504
Avg. MW	209.6
First Hour with Losses	69

Full Period Results Summary

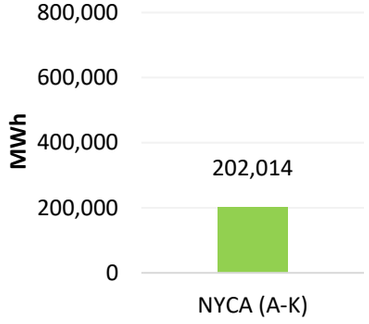
Case Name: Scenario 8 - PD 3 SENY Deactivation

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	Roseton
Import Scenario:	Net Zero

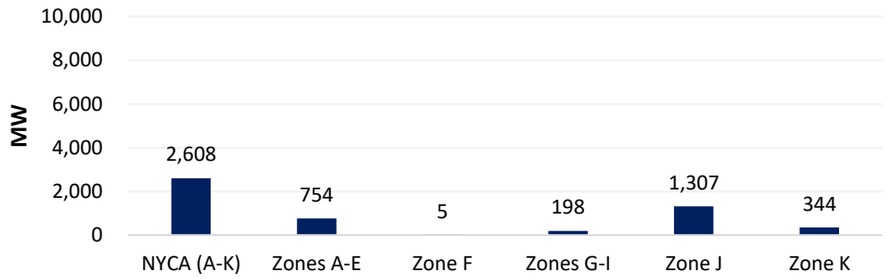
Hours Exports Reduced



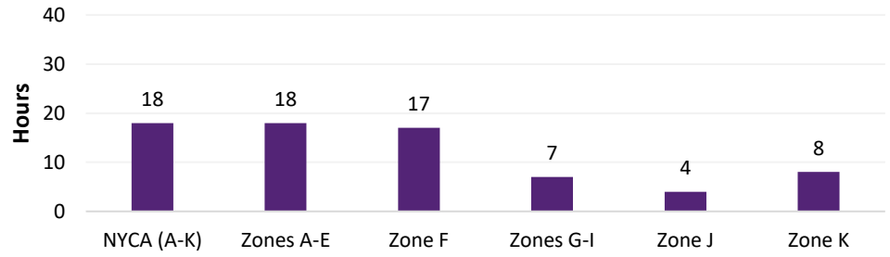
Total MWh of Exports Reduced



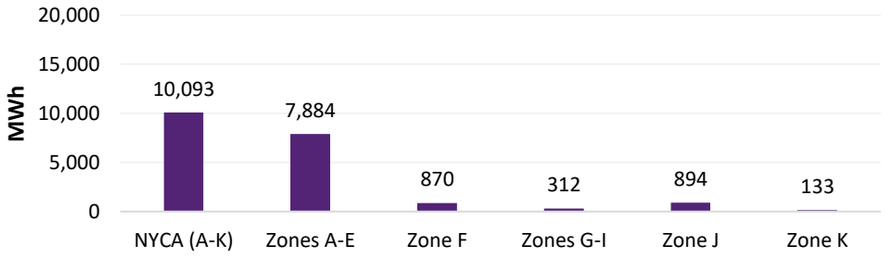
Average Capacity Not Available Due to Exhausted Fuel Inventory



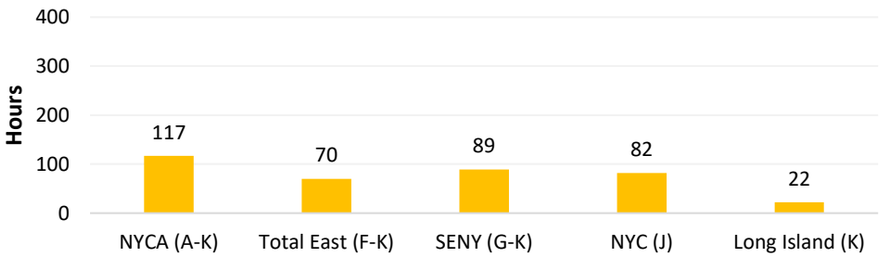
Hours SCR/EDRP Deployed



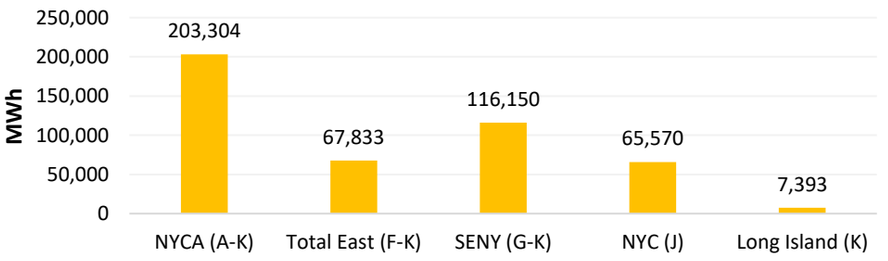
Total MWh SCR/EDRP Deployed



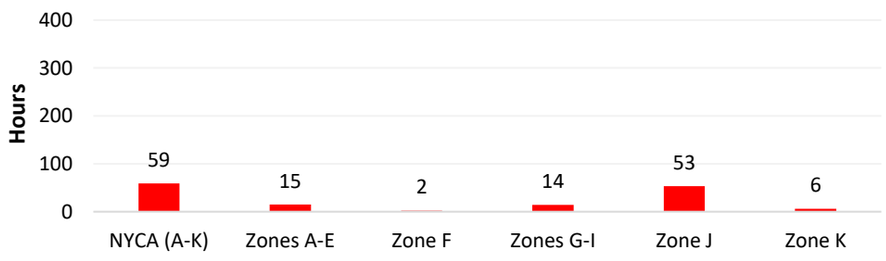
Hours with Reserve Violations



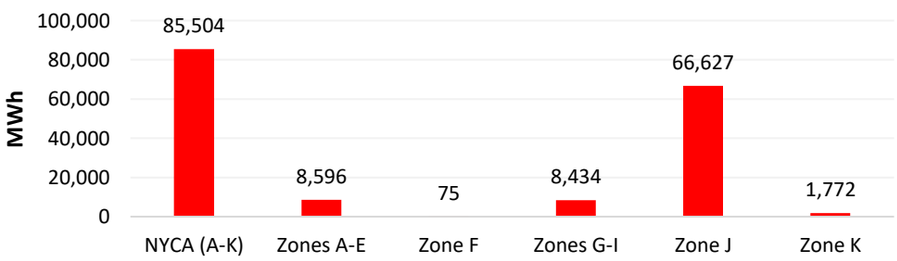
Total MWh of Reserve Violations



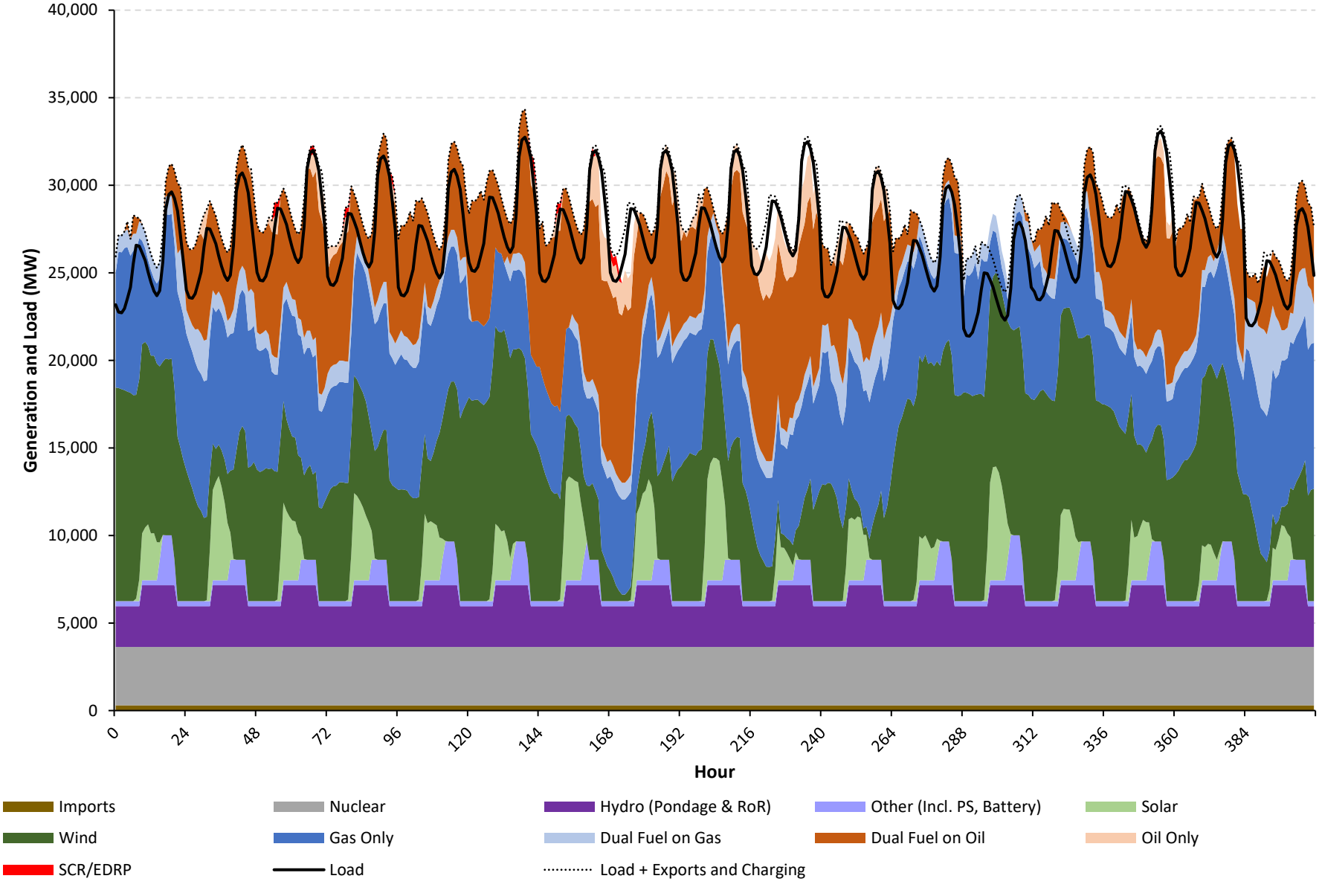
Hours with Loss of Load

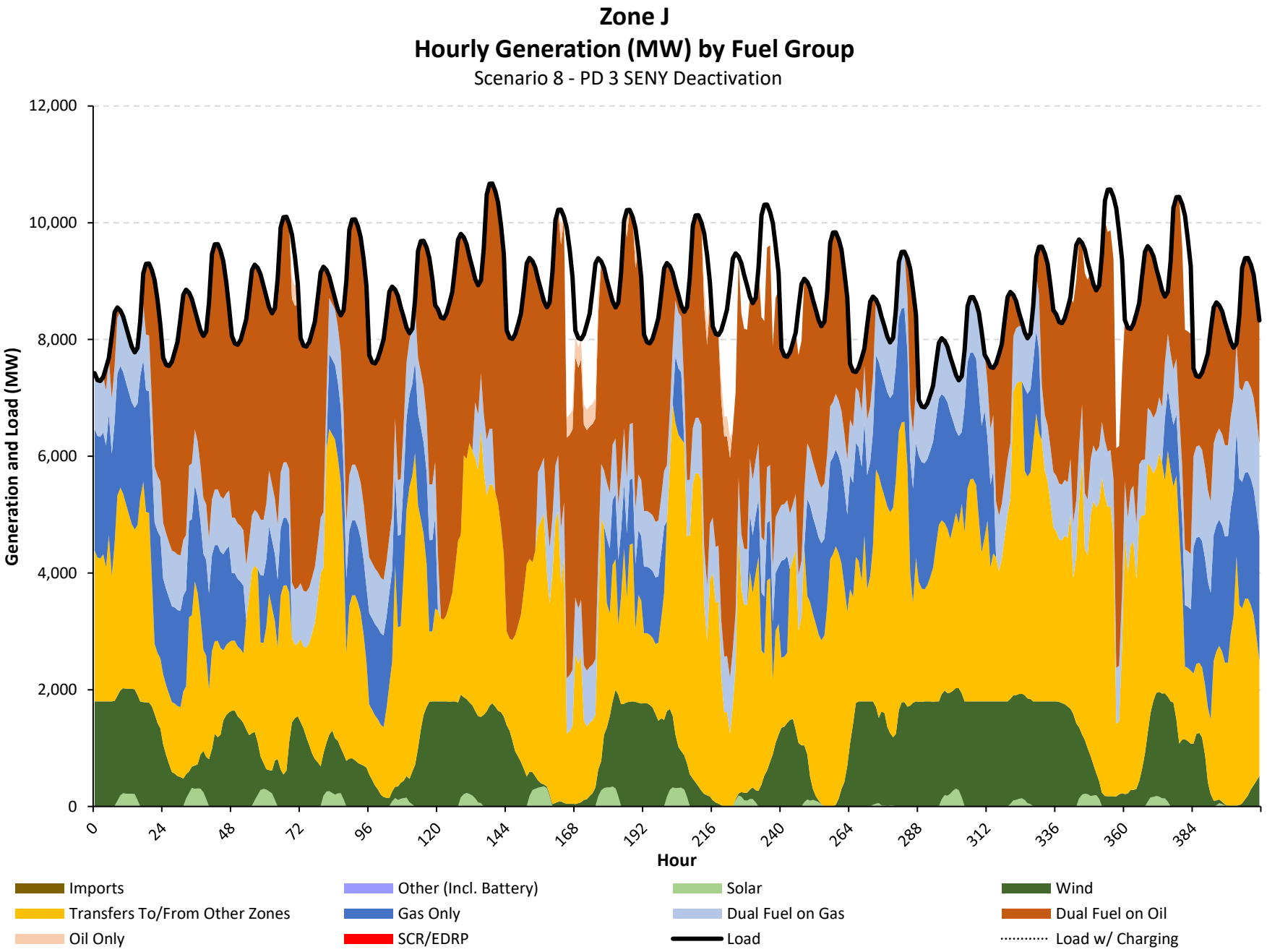


Total MWh of Lost Load

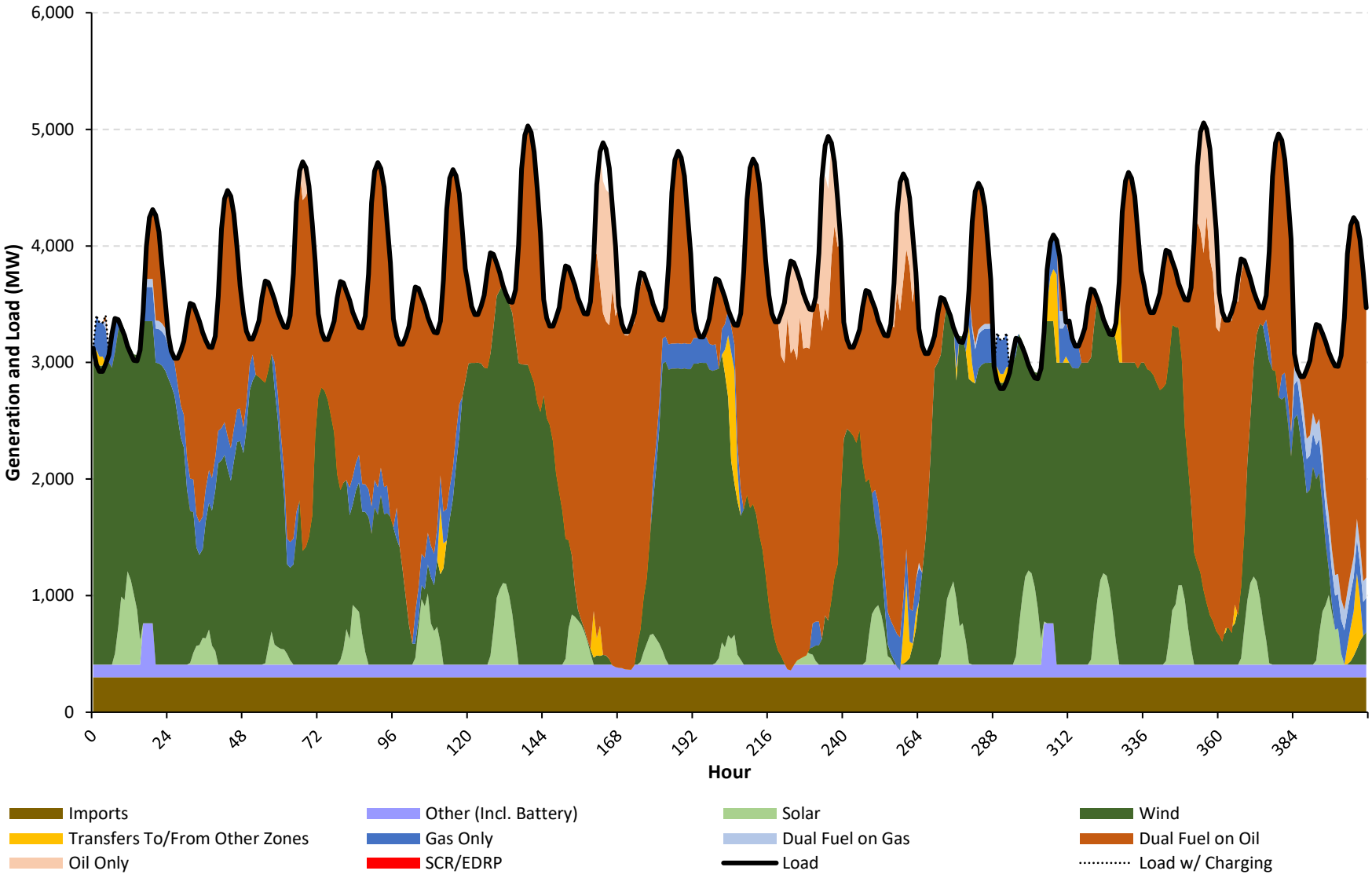


NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 8 - PD 3 SENY Deactivation

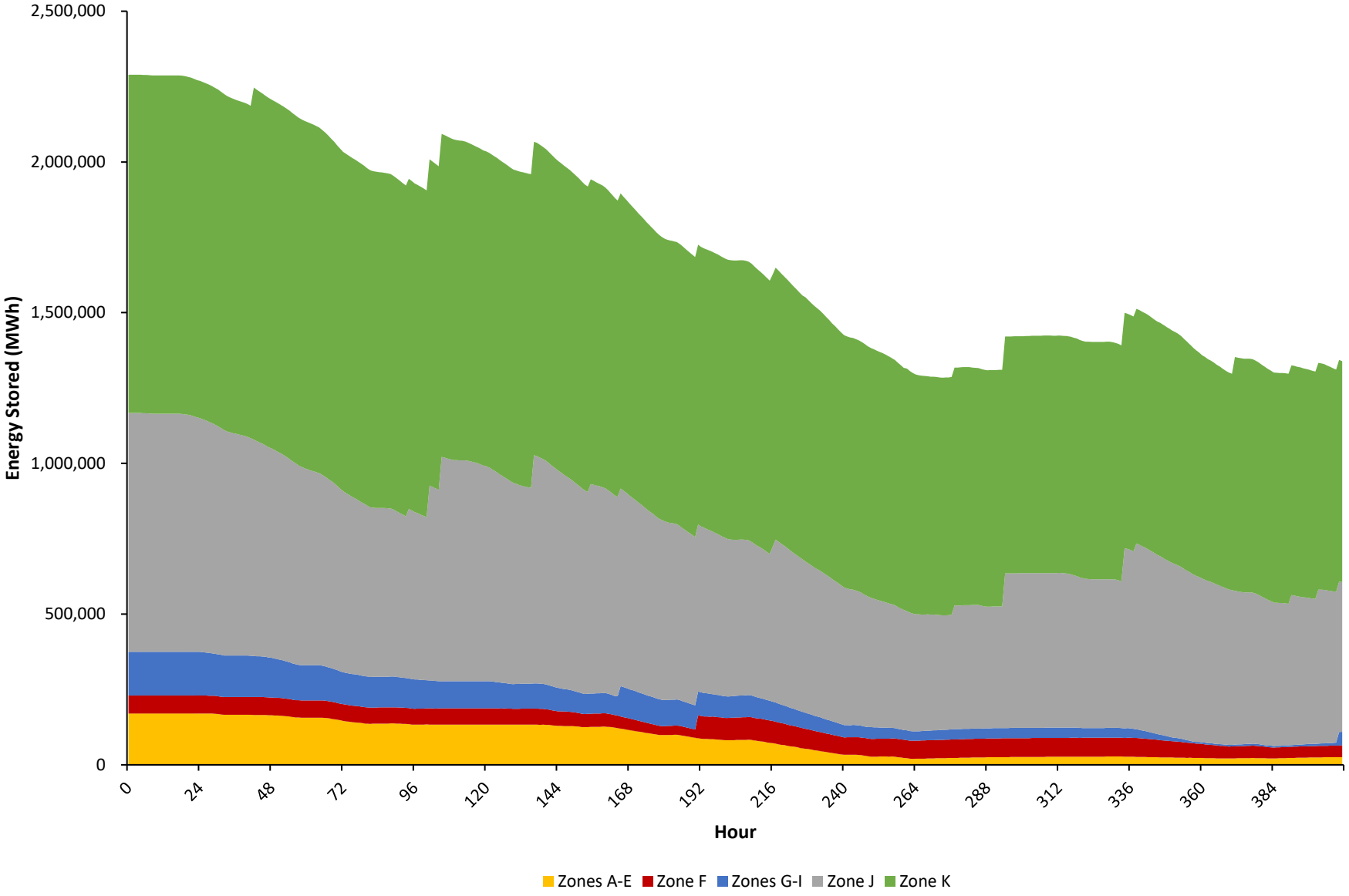


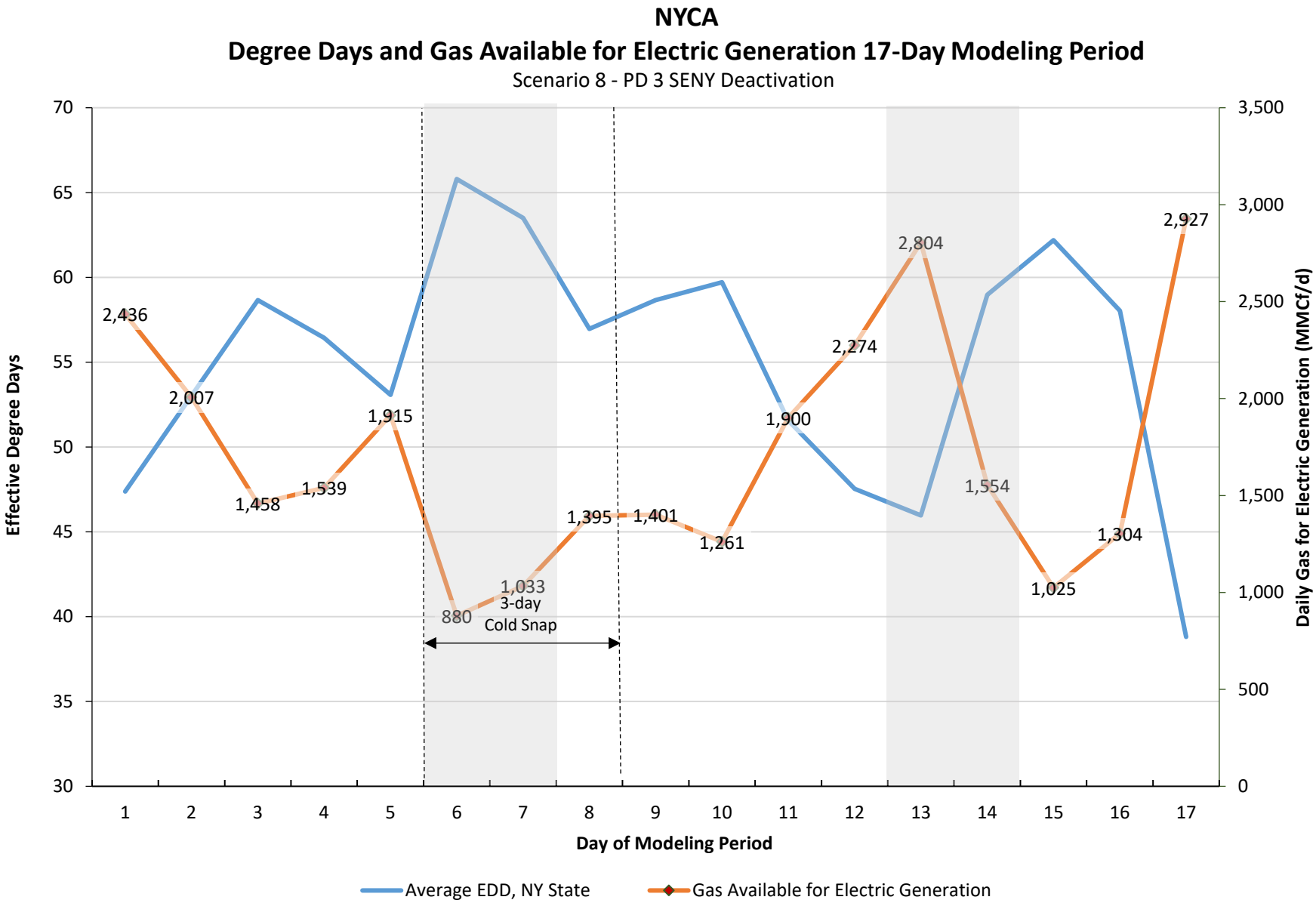

Zone J
Hourly Generation (MW) by Fuel Group
Scenario 8 - PD 3 SENY Deactivation
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

Zone K
Hourly Generation (MW) by Fuel Group
Scenario 8 - PD 3 SENY Deactivation

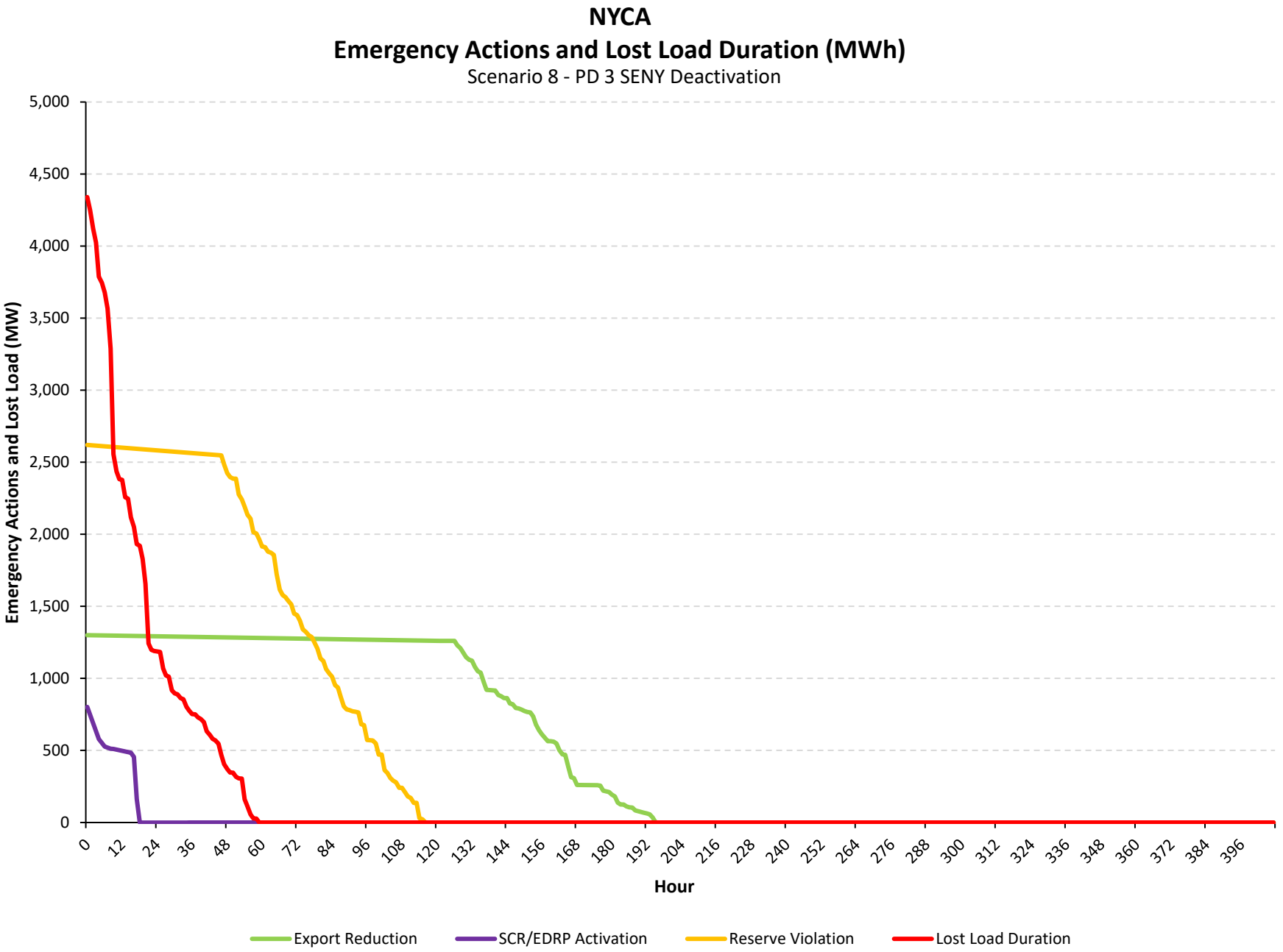


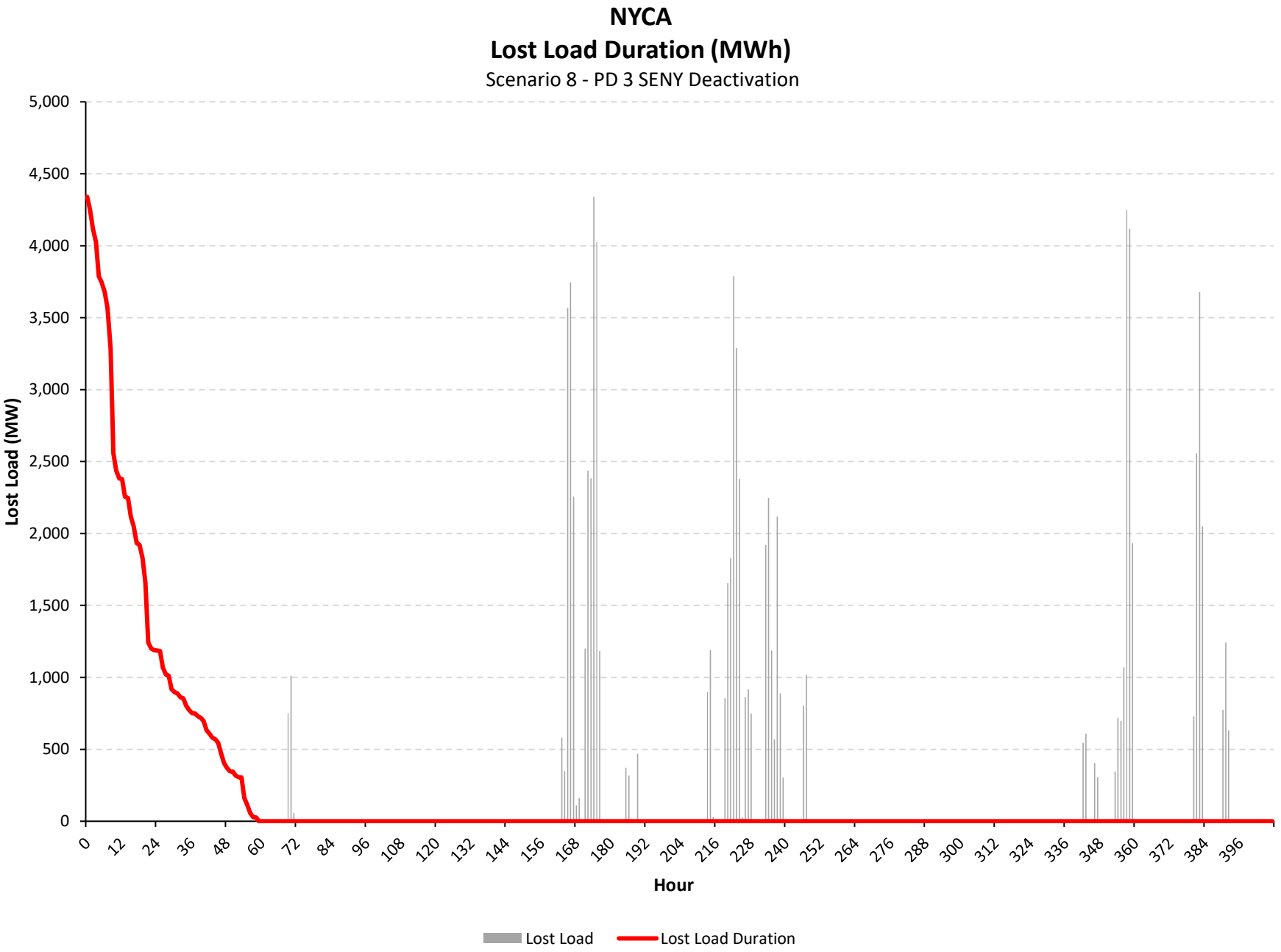
NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 8 - PD 3 SENY Deactivation





Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 8 - PD 3 SENY Deactivation
Emergency Actions and Lost Load (MW)
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 8 - PD 3 SENY Deactivation
Lost Load (MW)
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

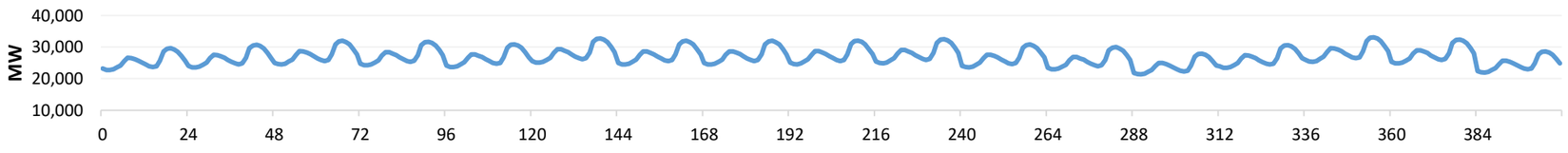
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 8 - PD 4 Nuclear Station Outage (Winter 2030/2031)

Hourly Results Summary

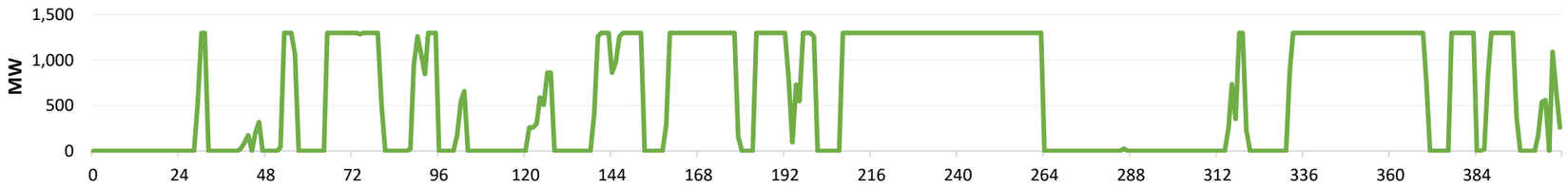
Case Name: Scenario 8 - PD 4 Nuclear Station Outage

Load During Modeling Period



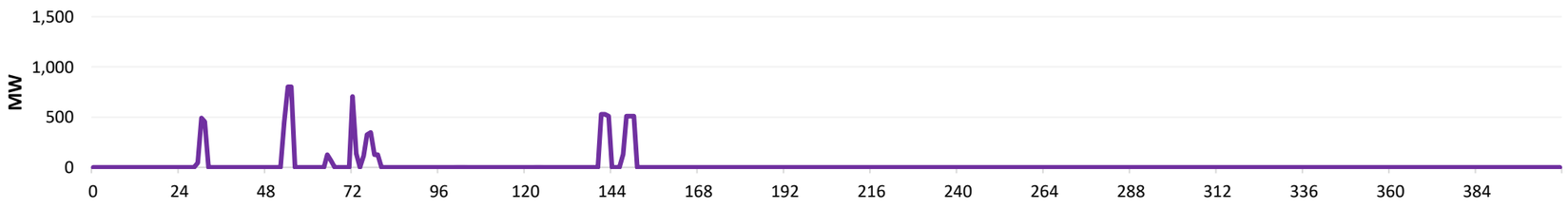
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	On
Plant Outage:	None
Import Scenario:	Net Zero

Export to ISO-NE Reduction During Modeling Period



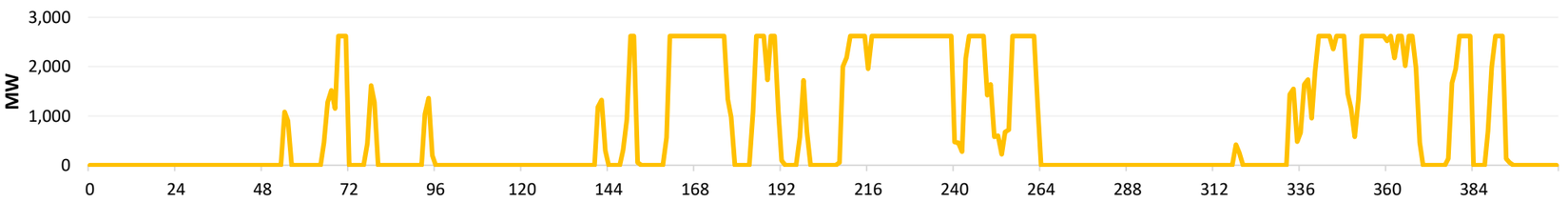
Export Reductions	
Total Hrs.	225
Total MWh	252,045
Avg. MW	617.8

SCR/EDRP Deployed During Modeling Period



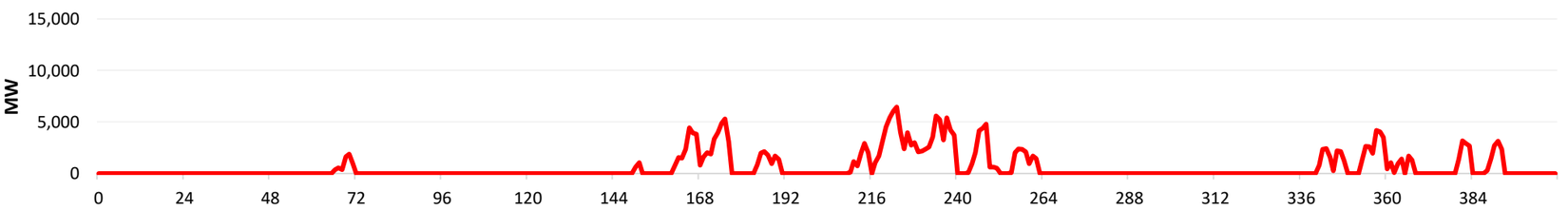
SCR Deployment	
Total Hrs.	22
Total MWh	8,337
Avg. MW	20.4

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	163
Total MWh	317,612
Avg. MW	778.5
First Hour with Viol.	31

Loss of Load During Modeling Period



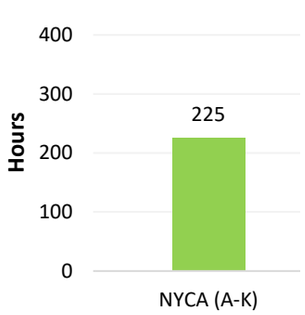
Loss of Load	
Total Hrs.	108
Total MWh	248,636
Avg. MW	609.4
First Hour with Losses	66

Full Period Results Summary

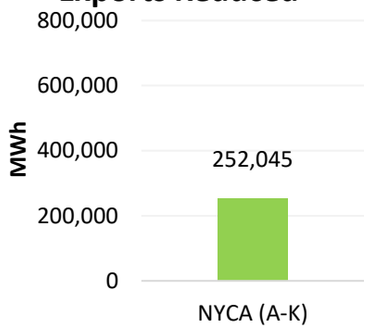
Case Name: Scenario 8 - PD 4 Nuclear Station Outage

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	On
Plant Outage:	None
Import Scenario:	Net Zero

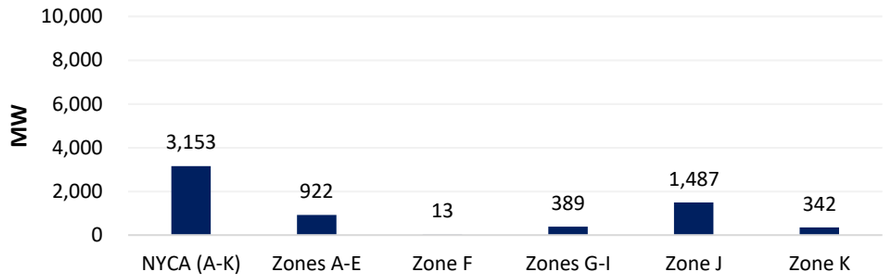
Hours Exports Reduced



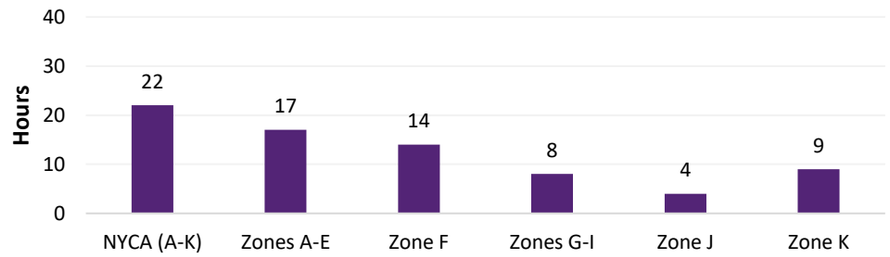
Total MWh of Exports Reduced



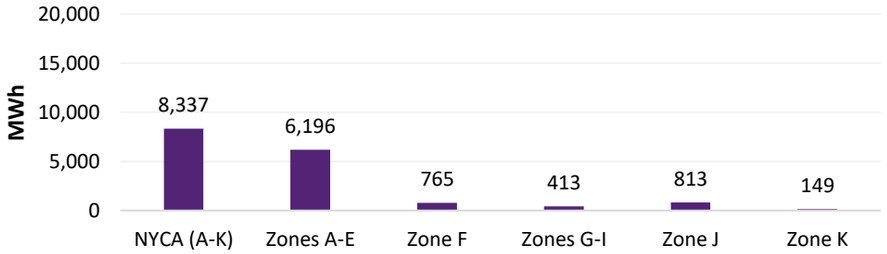
Average Capacity Not Available Due to Exhausted Fuel Inventory



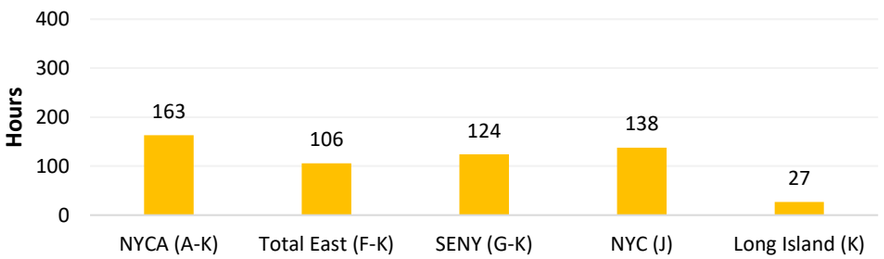
Hours SCR/EDRP Deployed



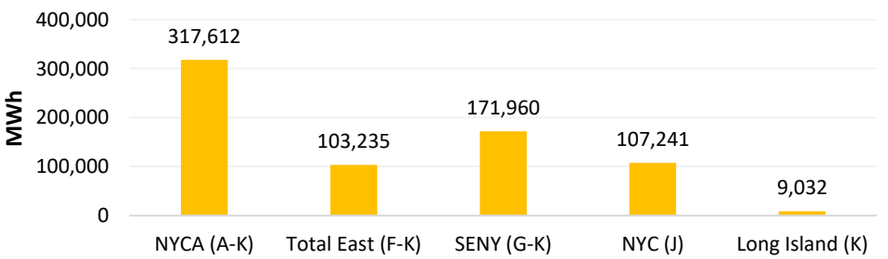
Total MWh SCR/EDRP Deployed



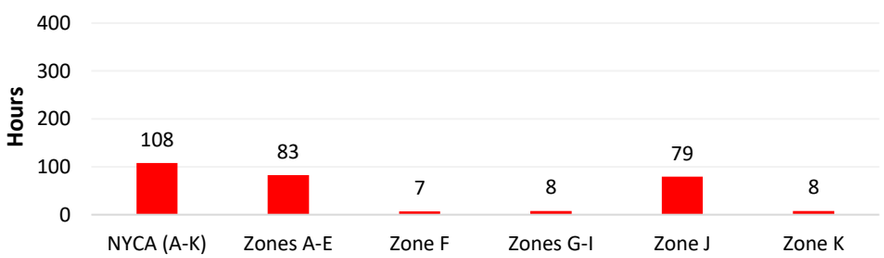
Hours with Reserve Violations



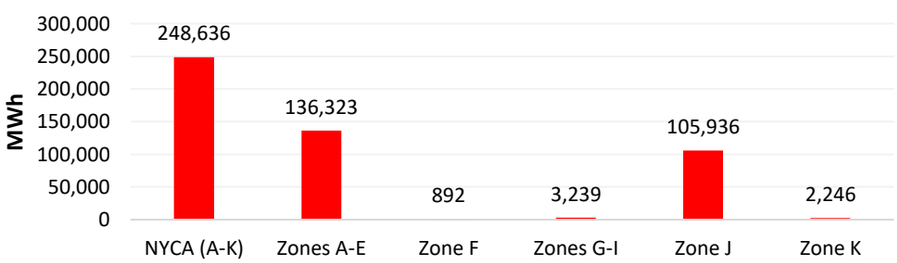
Total MWh of Reserve Violations



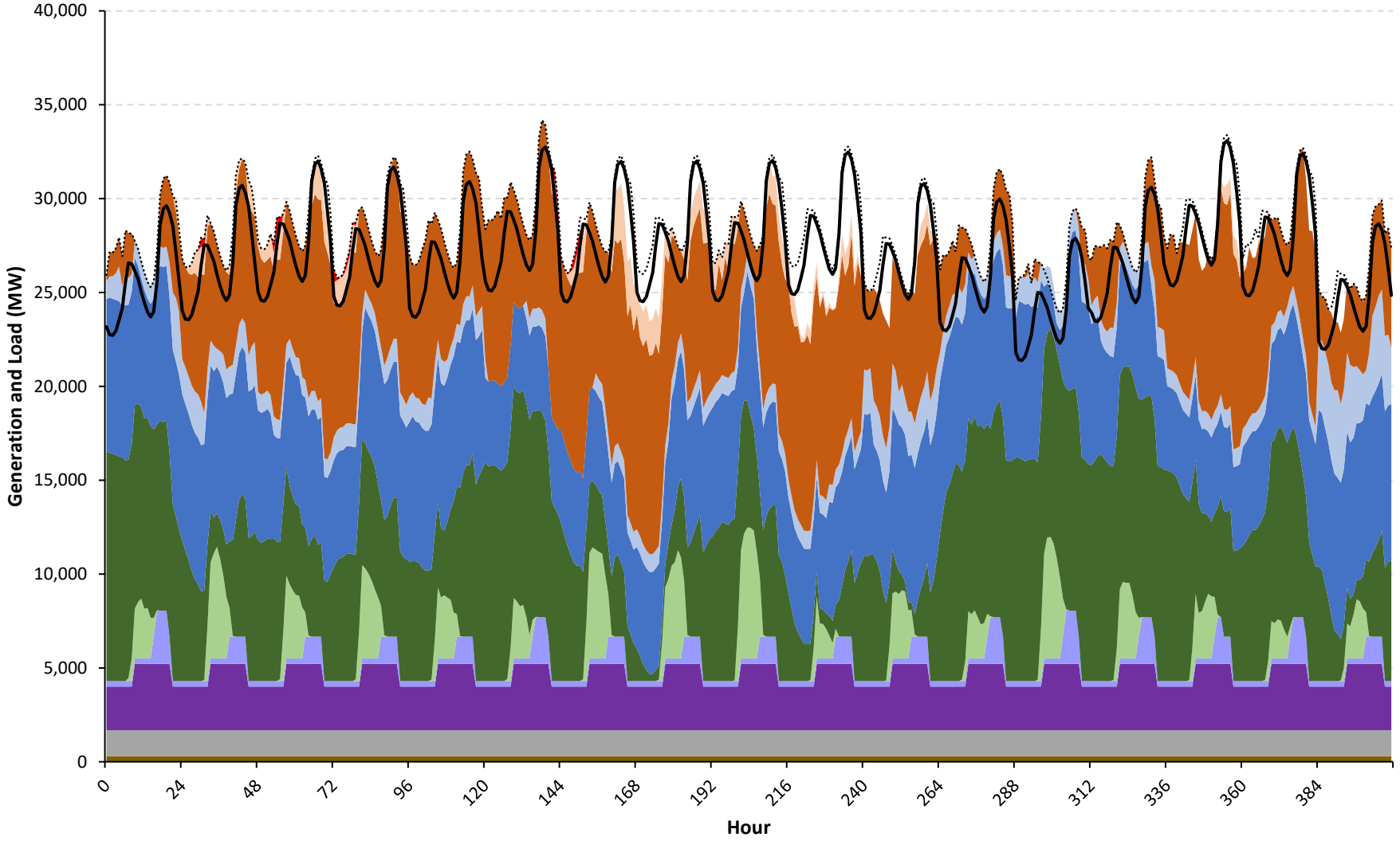
Hours with Loss of Load



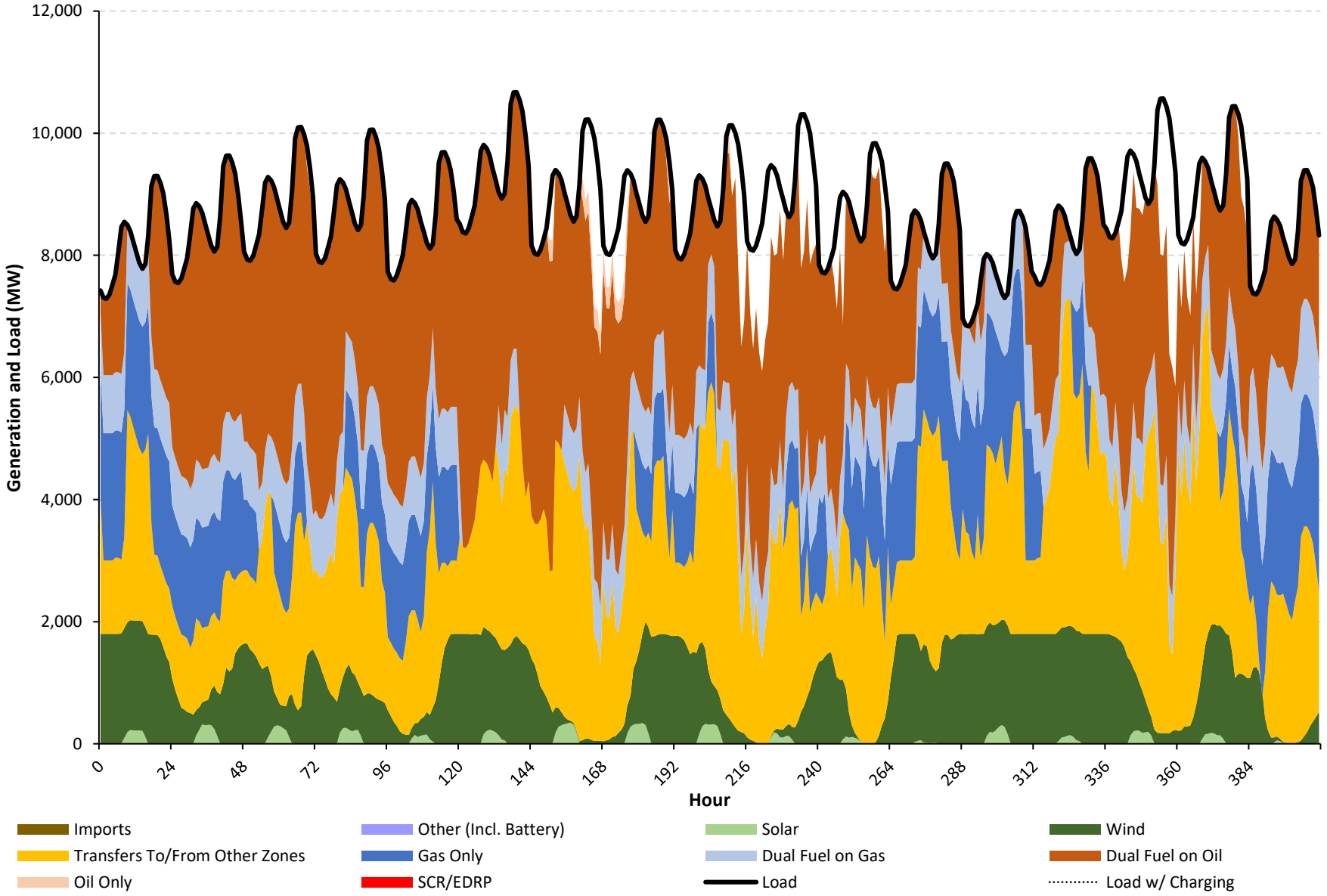
Total MWh of Lost Load



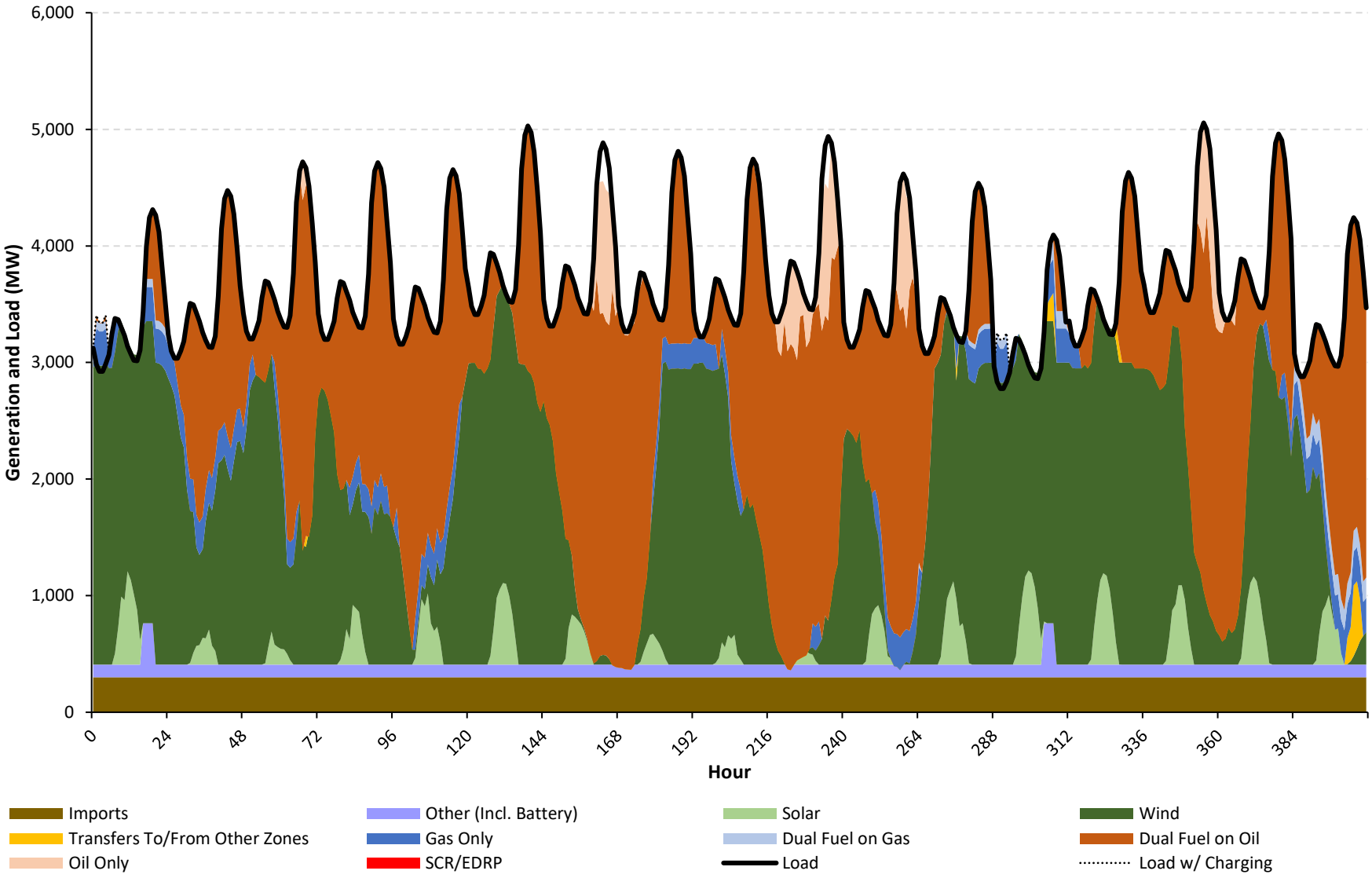
NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 8 - PD 4 Nuclear Station Outage



Zone J
Hourly Generation (MW) by Fuel Group
Scenario 8 - PD 4 Nuclear Station Outage



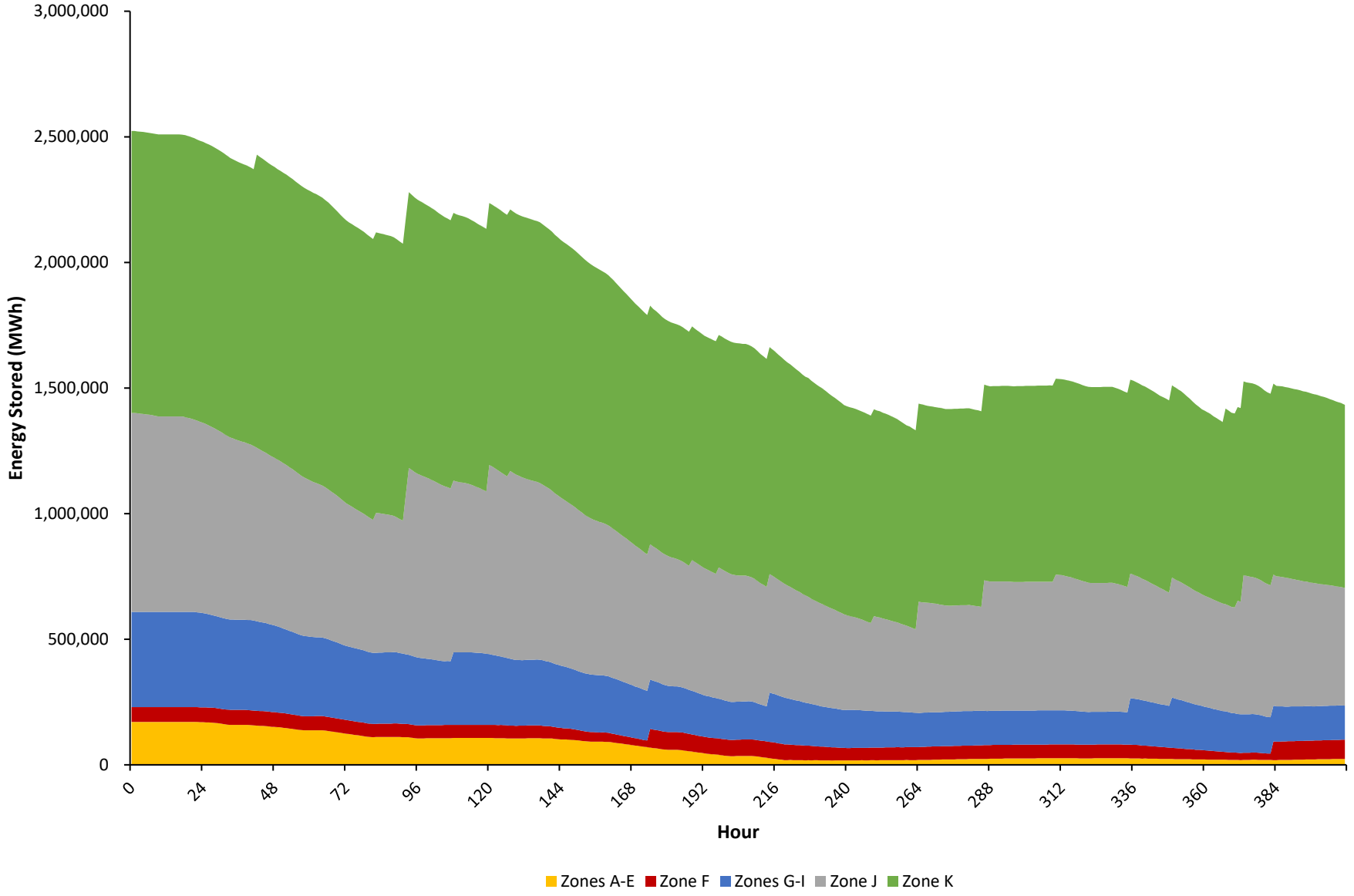
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 8 - PD 4 Nuclear Station Outage



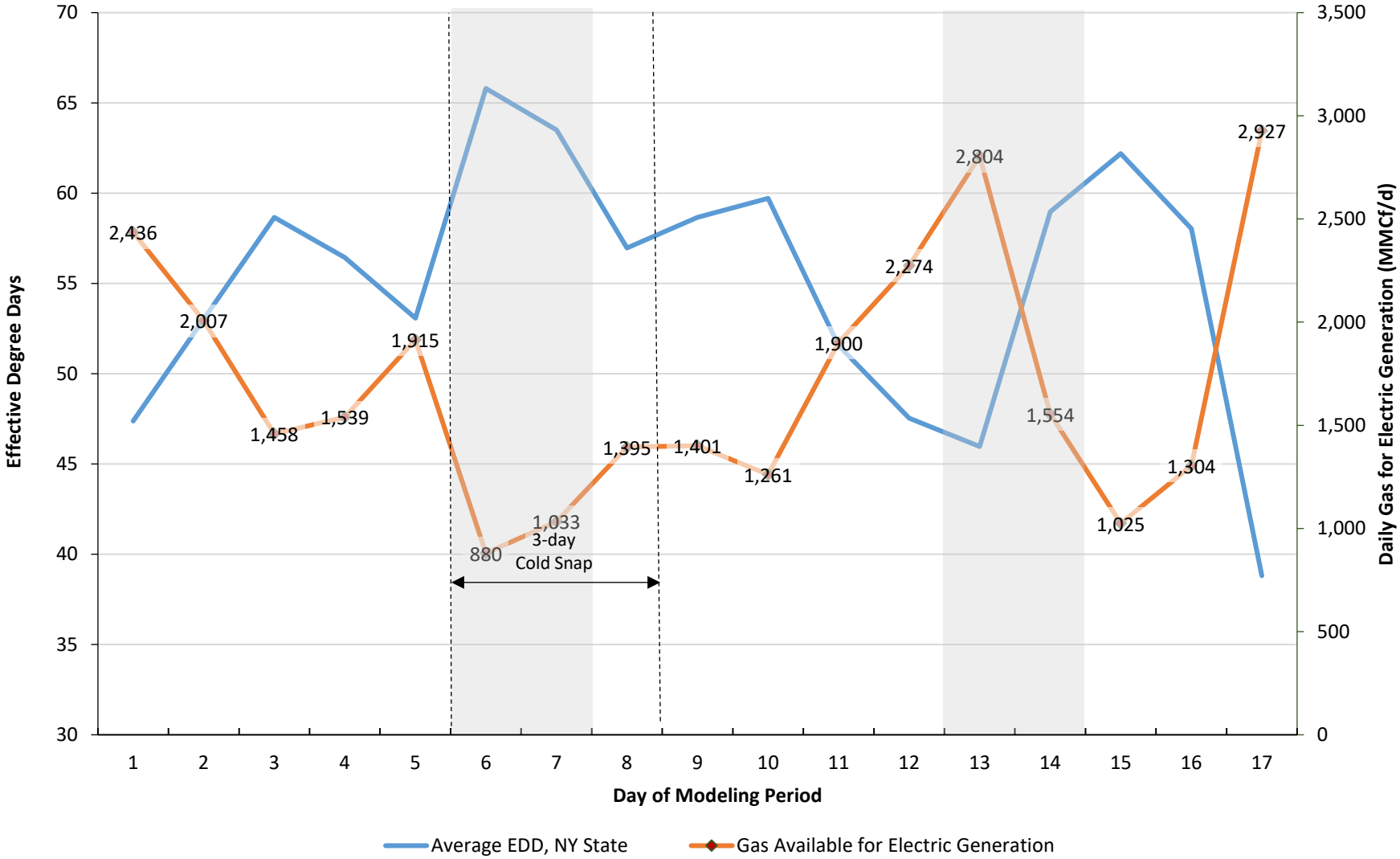
NYCA

Quantity of Stored Fuel for Oil and Dual Fuel Units

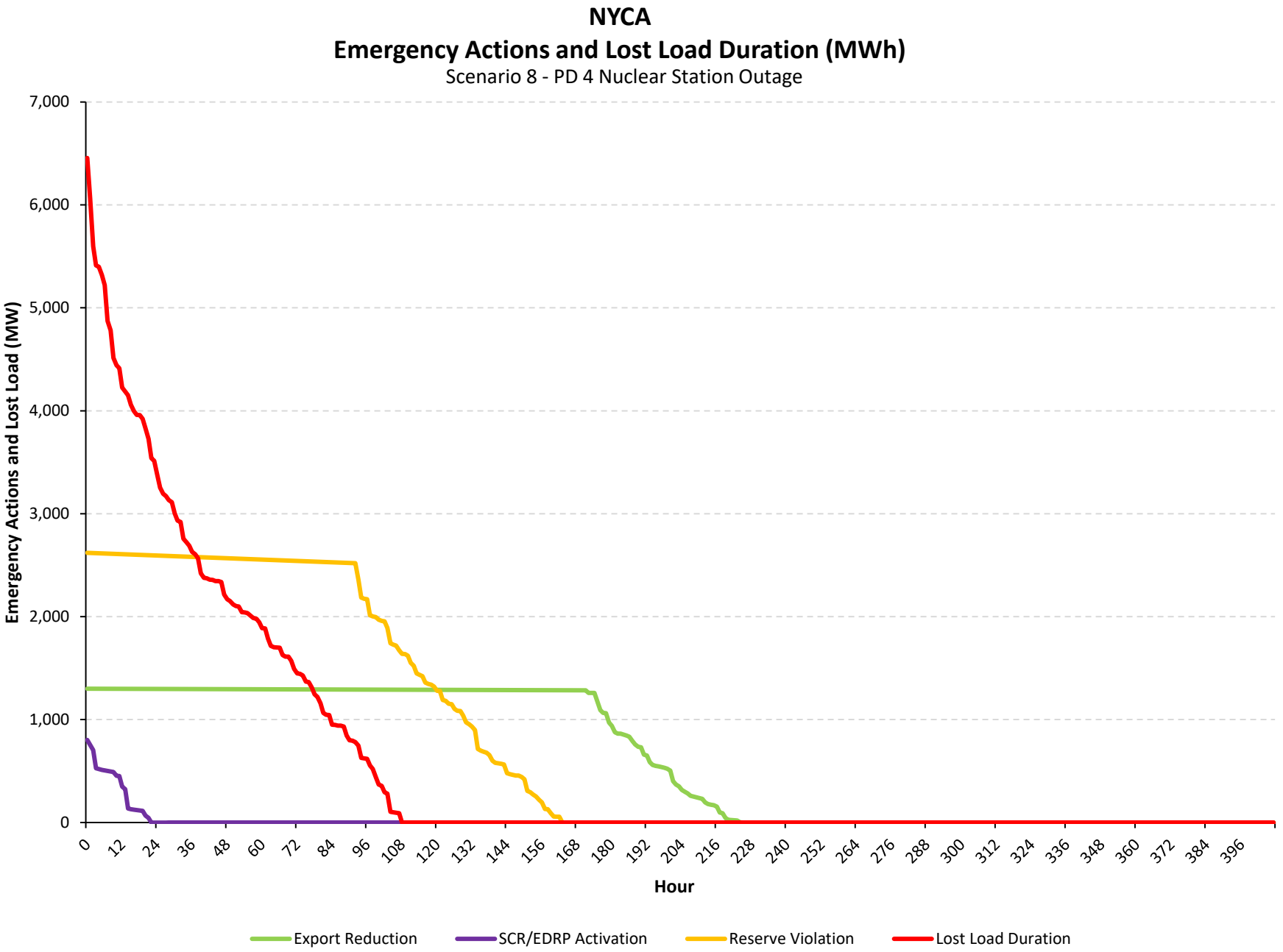
Scenario 8 - PD 4 Nuclear Station Outage

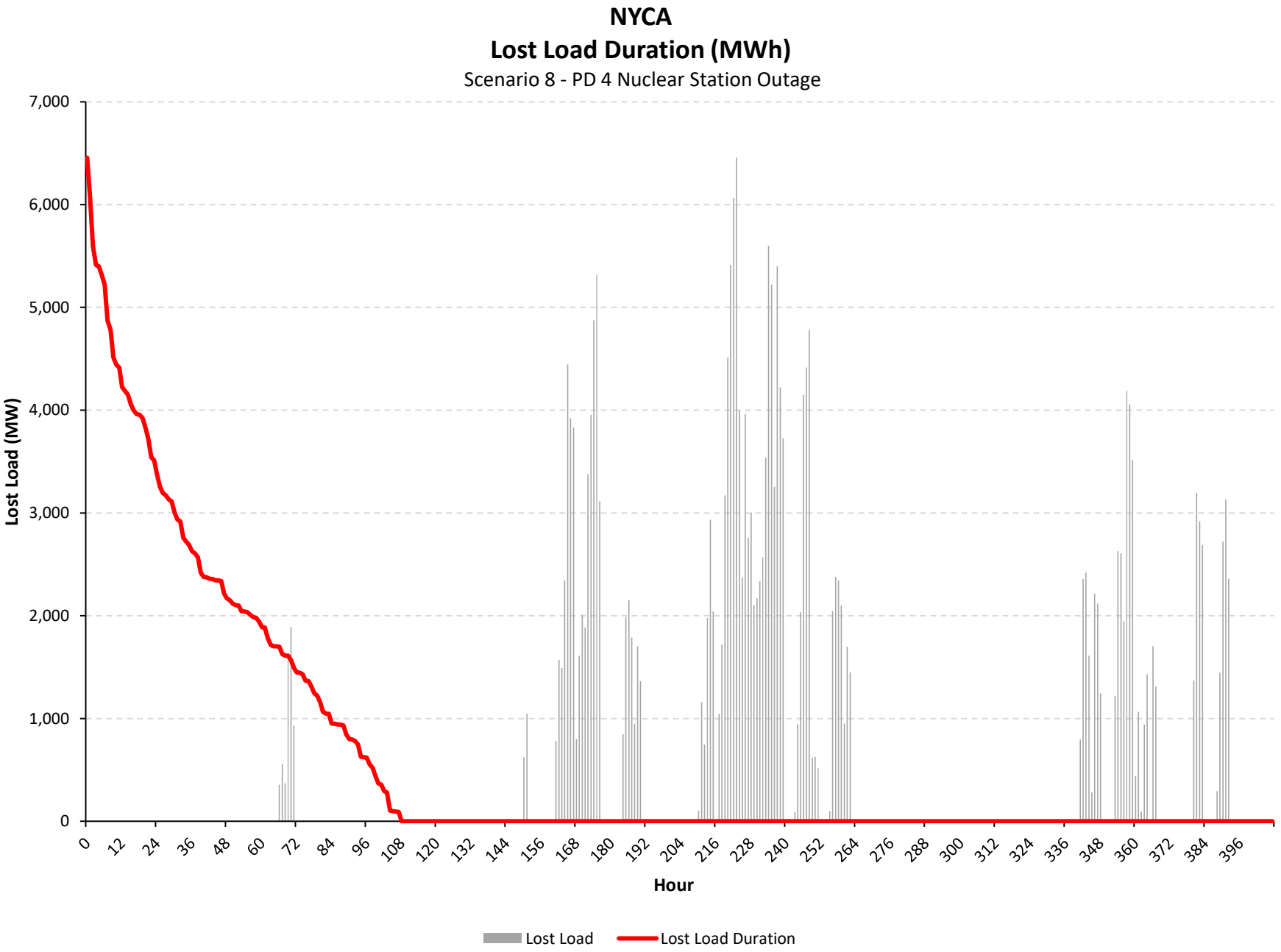


NYCA
Degree Days and Gas Available for Electric Generation 17-Day Modeling Period
Scenario 8 - PD 4 Nuclear Station Outage



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 8 - PD 4 Nuclear Station Outage
Emergency Actions and Lost Load (MW)
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 8 - PD 4 Nuclear Station Outage
Lost Load (MW)
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

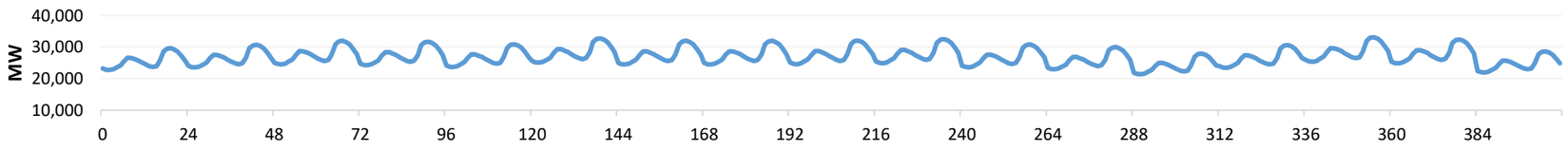
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 8 - PD 5 No Truck Refill (Winter 2030/2031)

Hourly Results Summary

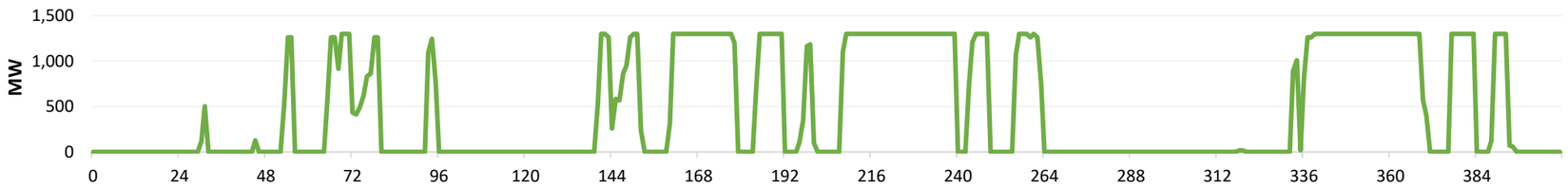
Case Name: Scenario 8 - PD 5 No Truck Refill

Load During Modeling Period



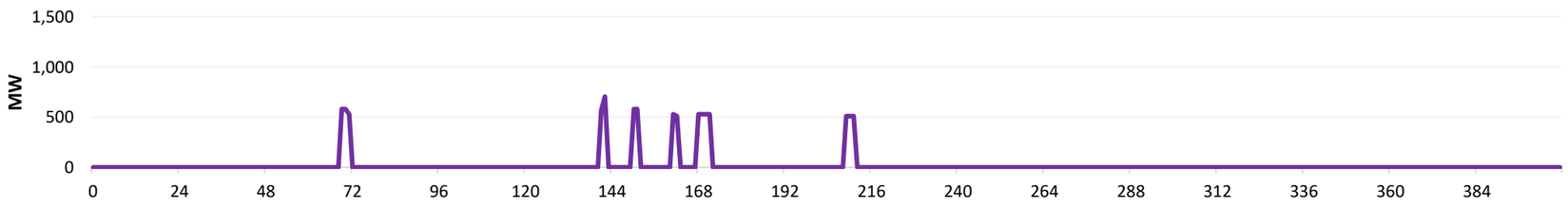
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	No Trucks
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

Export to ISO-NE Reduction During Modeling Period



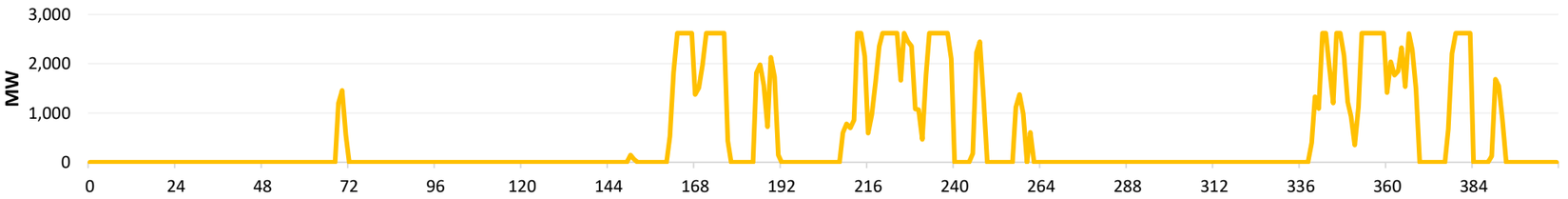
Export Reductions	
Total Hrs.	169
Total MWh	186,953
Avg. MW	458.2

SCR/EDRP Deployed During Modeling Period



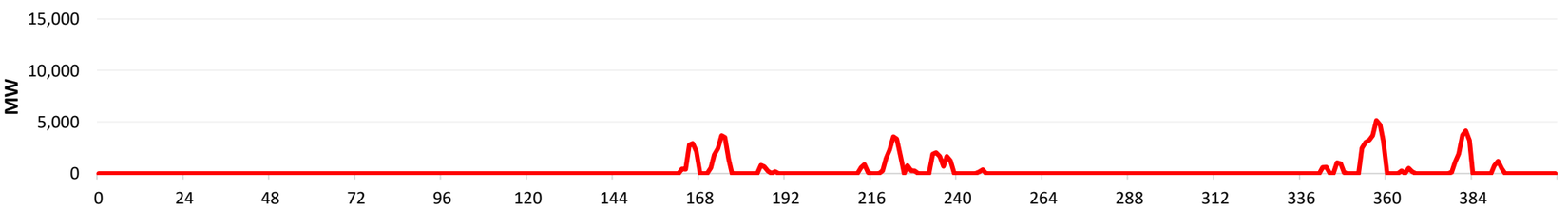
SCR Deployment	
Total Hrs.	16
Total MWh	8,785
Avg. MW	21.5

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	109
Total MWh	198,469
Avg. MW	486.4
First Hour with Viol.	69

Loss of Load During Modeling Period



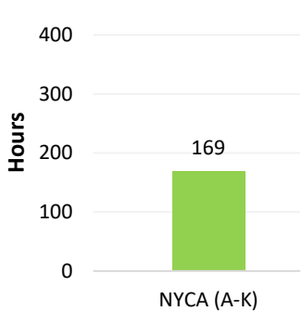
Loss of Load	
Total Hrs.	60
Total MWh	95,664
Avg. MW	234.5
First Hour with Losses	163

Full Period Results Summary

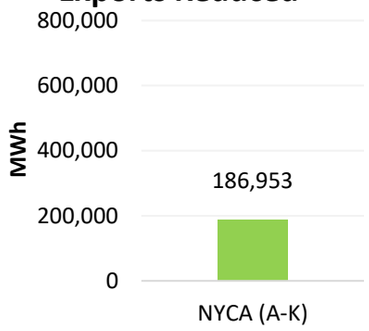
Case Name: Scenario 8 - PD 5 No Truck Refill

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	No Trucks
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

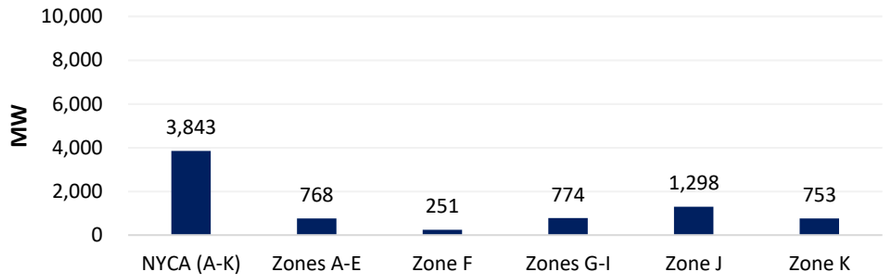
Hours Exports Reduced



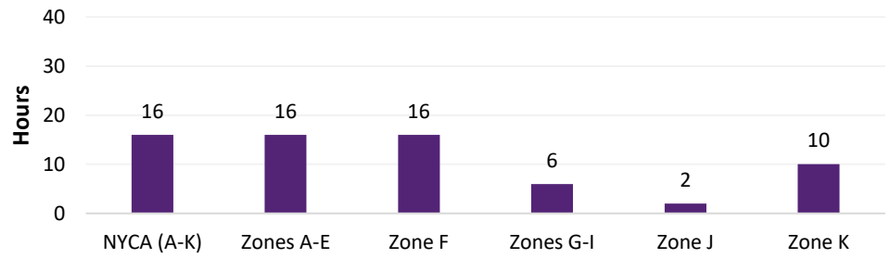
Total MWh of Exports Reduced



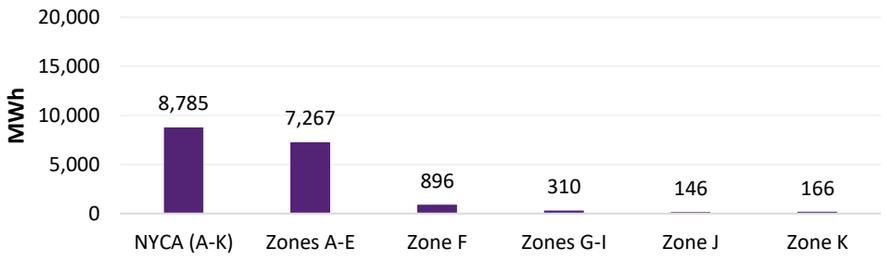
Average Capacity Not Available Due to Exhausted Fuel Inventory



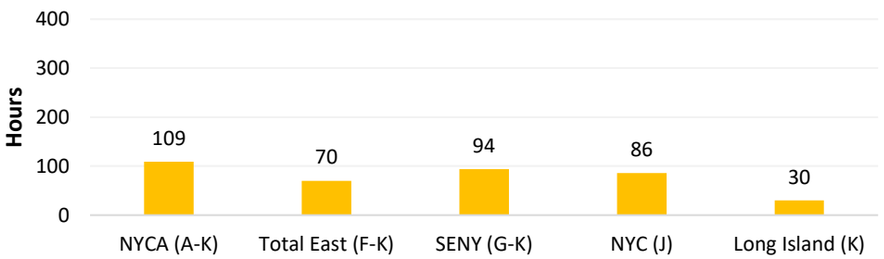
Hours SCR/EDRP Deployed



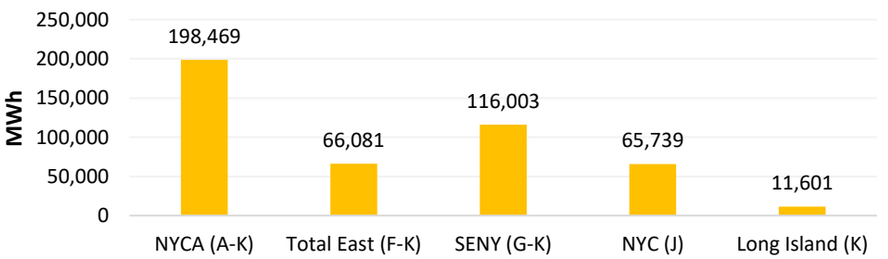
Total MWh SCR/EDRP Deployed



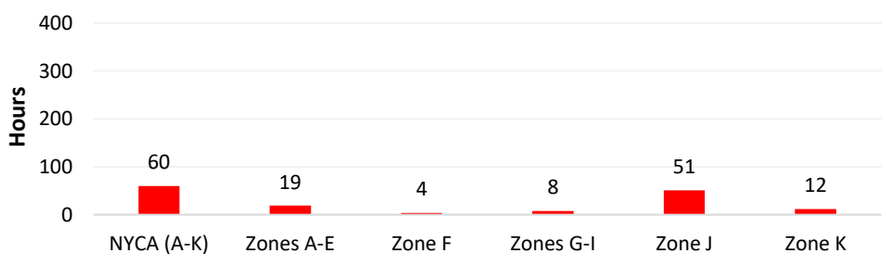
Hours with Reserve Violations



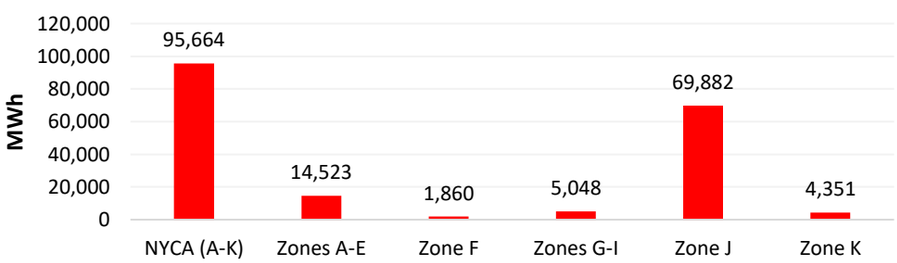
Total MWh of Reserve Violations



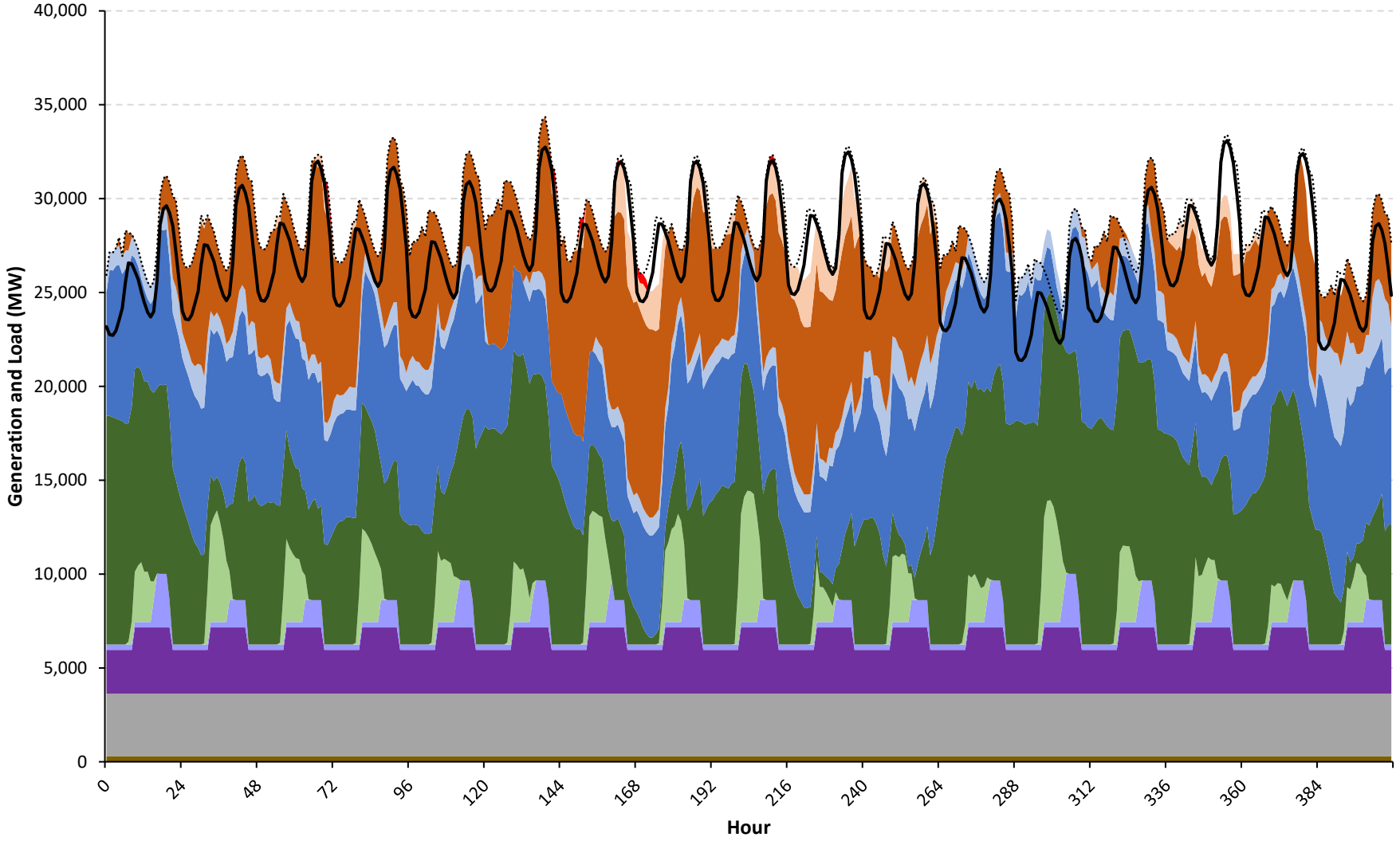
Hours with Loss of Load

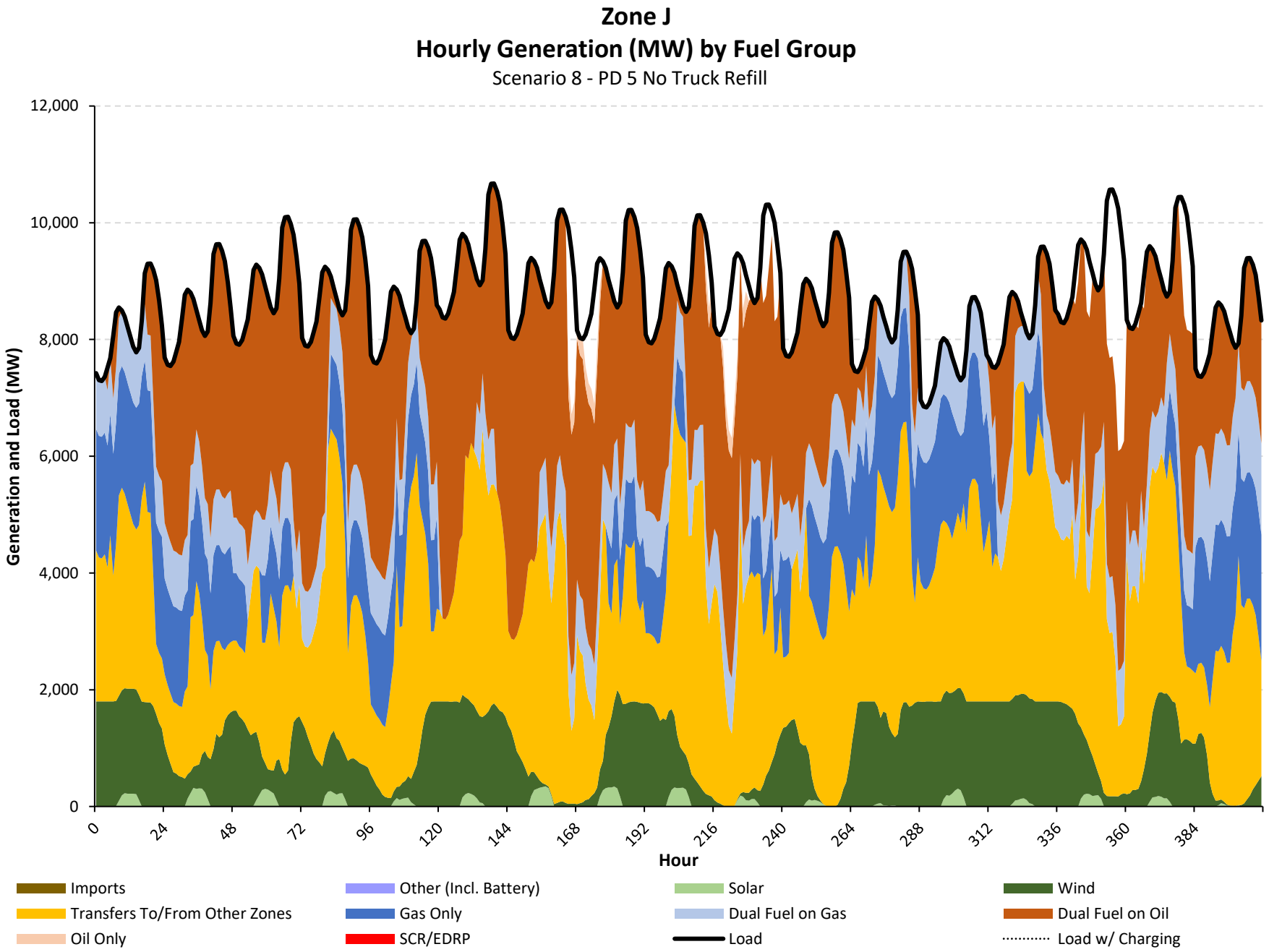


Total MWh of Lost Load

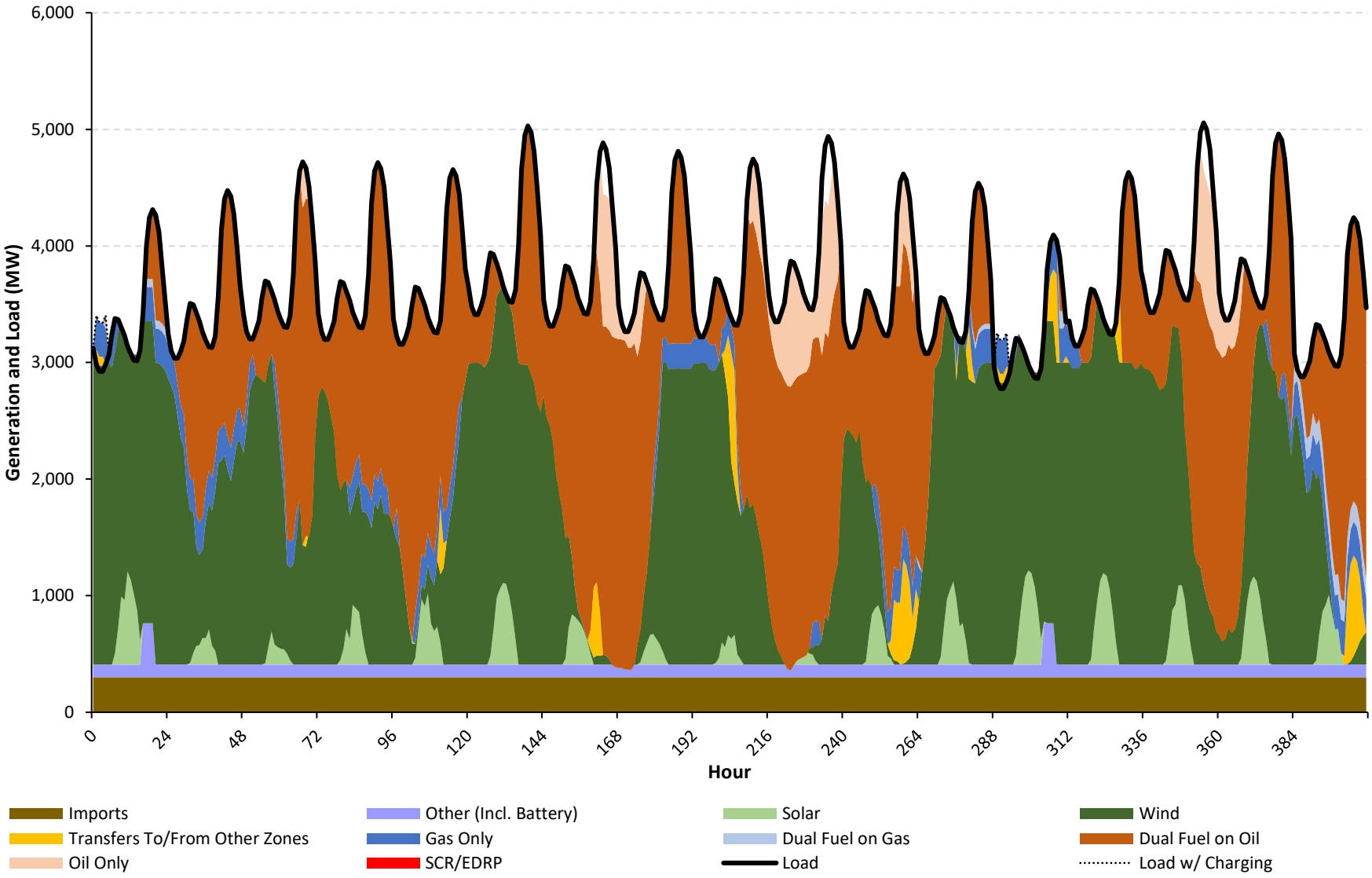


NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 8 - PD 5 No Truck Refill




Zone J
Hourly Generation (MW) by Fuel Group
Scenario 8 - PD 5 No Truck Refill
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

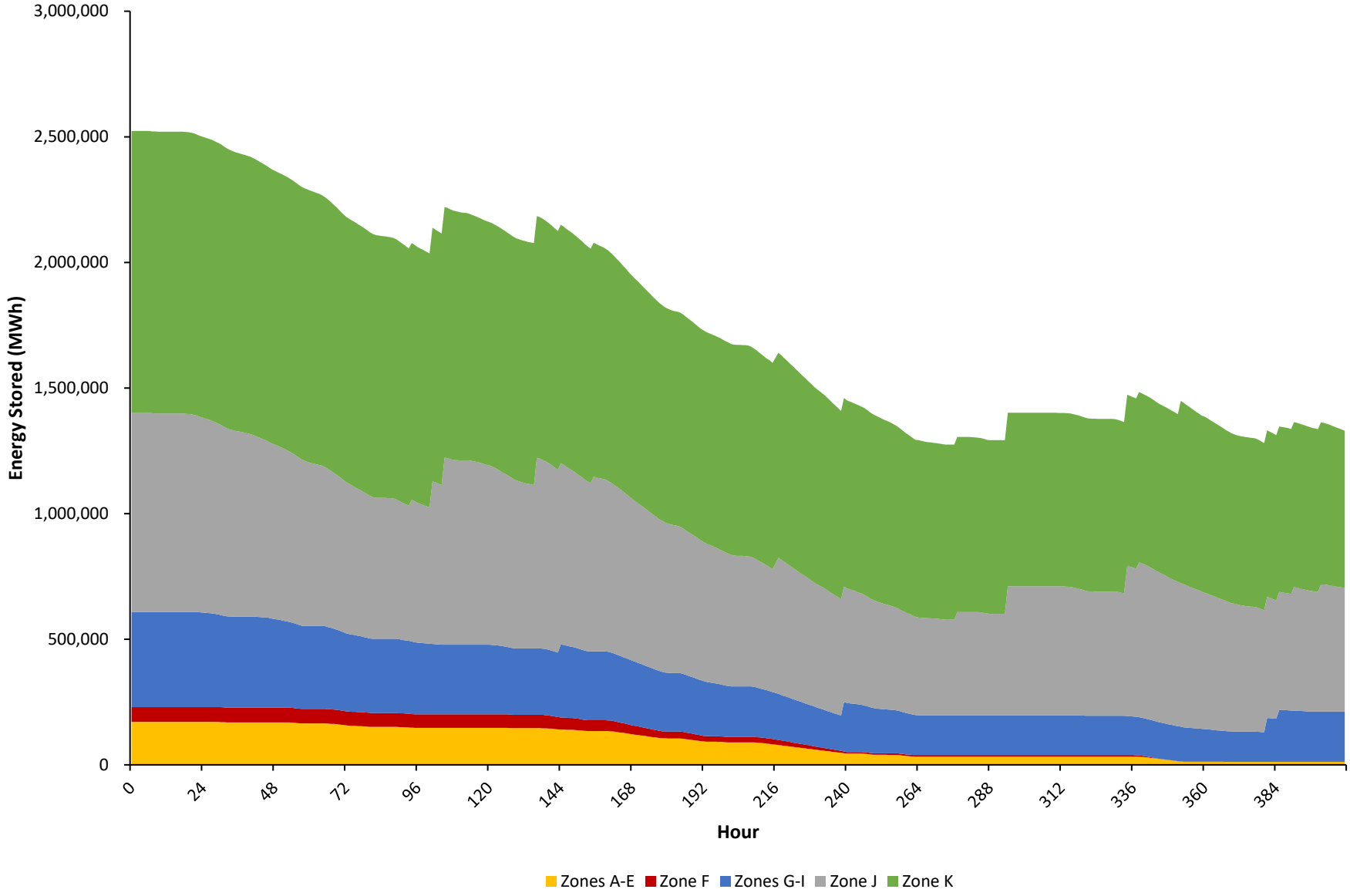
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 8 - PD 5 No Truck Refill

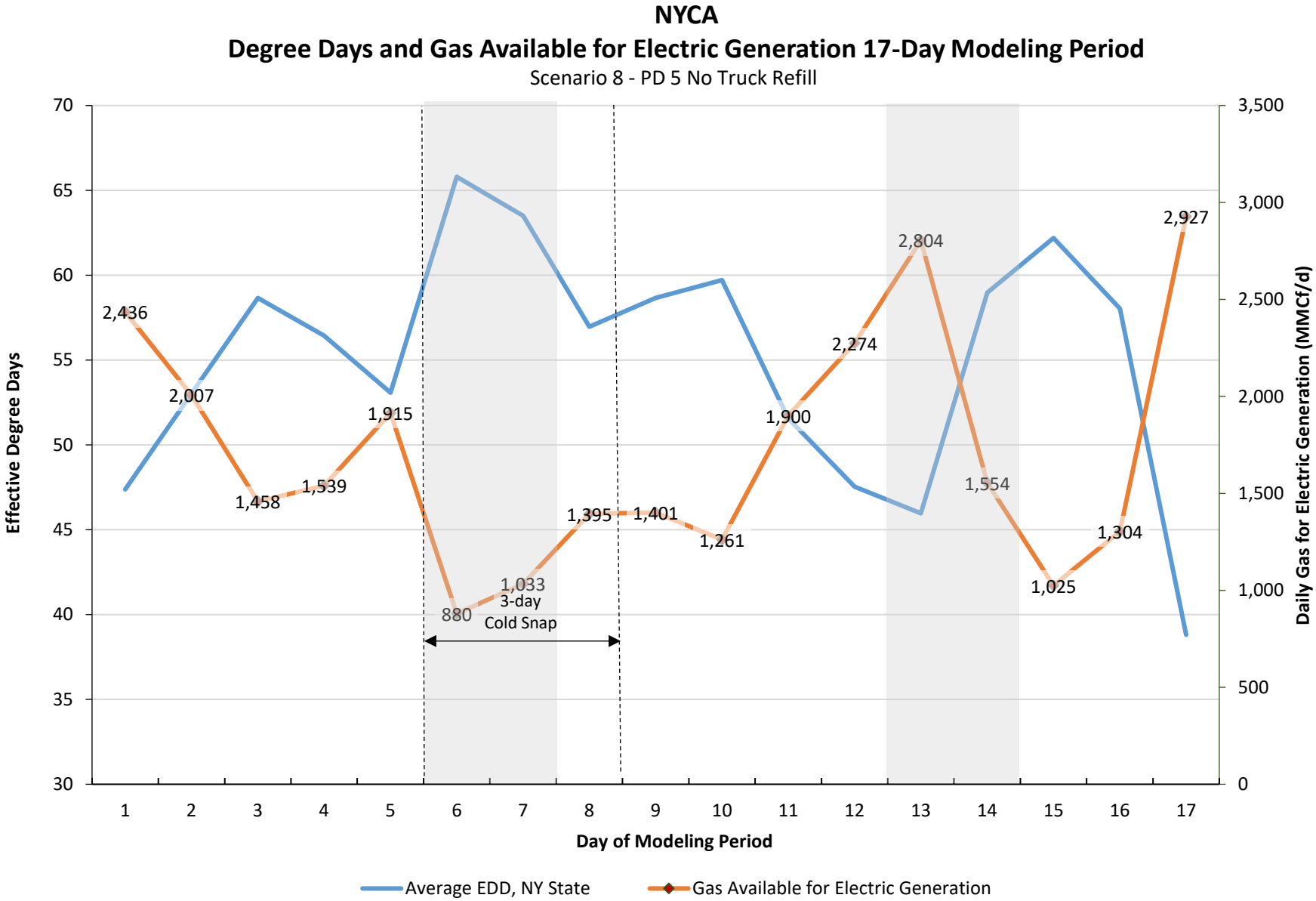


NYCA

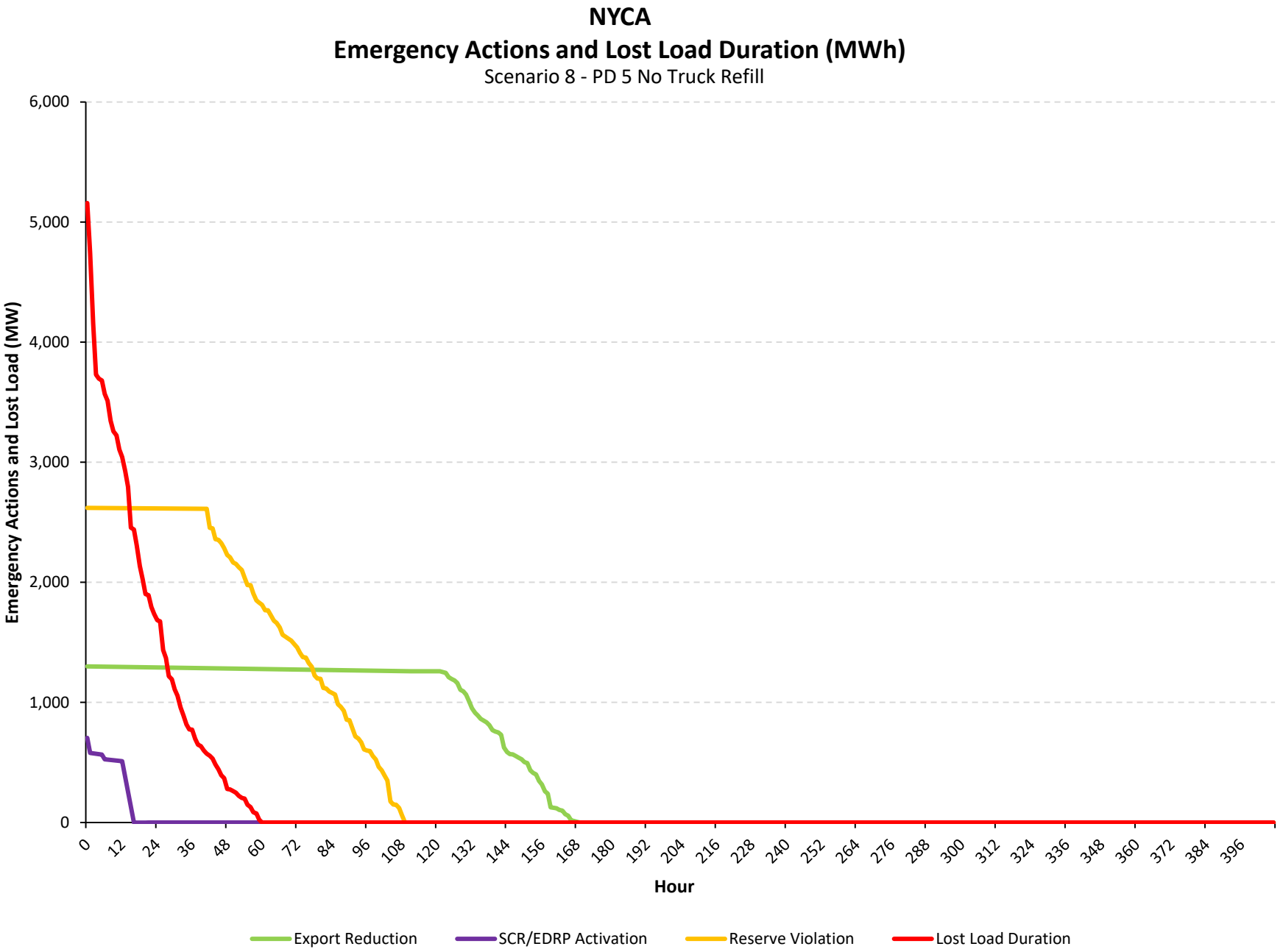
Quantity of Stored Fuel for Oil and Dual Fuel Units

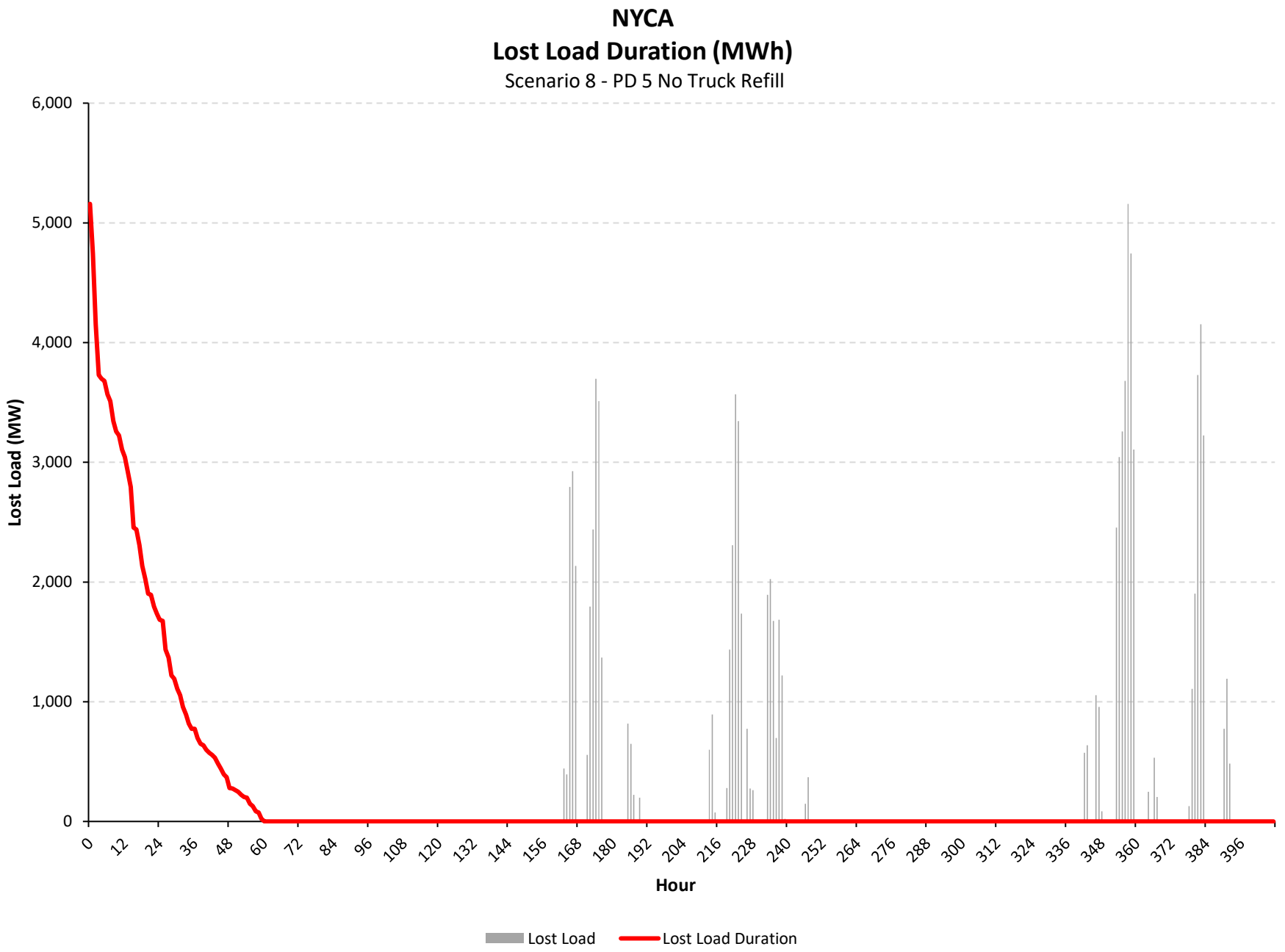
Scenario 8 - PD 5 No Truck Refill





Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 8 - PD 5 No Truck Refill
Emergency Actions and Lost Load (MW)
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 8 - PD 5 No Truck Refill
Lost Load (MW)
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

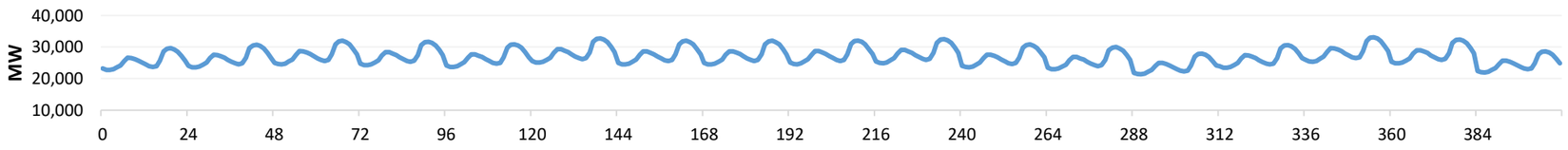
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 8 - PD 6 No Barge Refill (Winter 2030/2031)

Hourly Results Summary

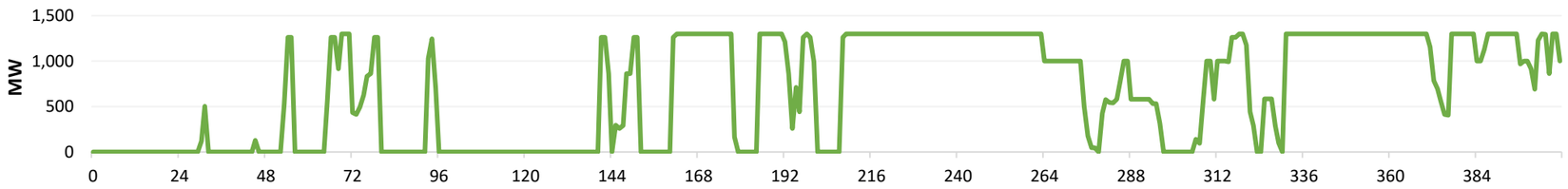
Case Name: Scenario 8 - PD 6 No Barge Refill

Load During Modeling Period



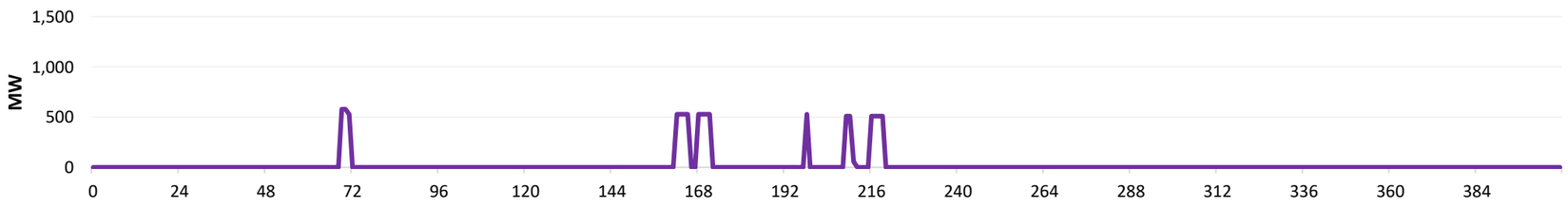
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	No Barge
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

Export to ISO-NE Reduction During Modeling Period



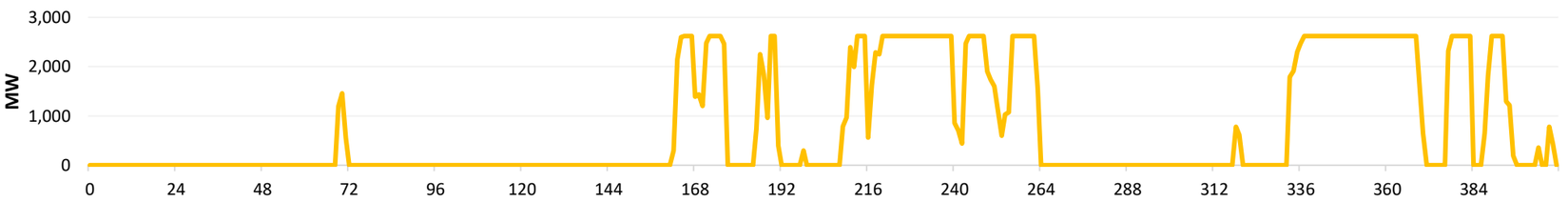
Export Reductions	
Total Hrs.	255
Total MWh	273,137
Avg. MW	669.5

SCR/EDRP Deployed During Modeling Period



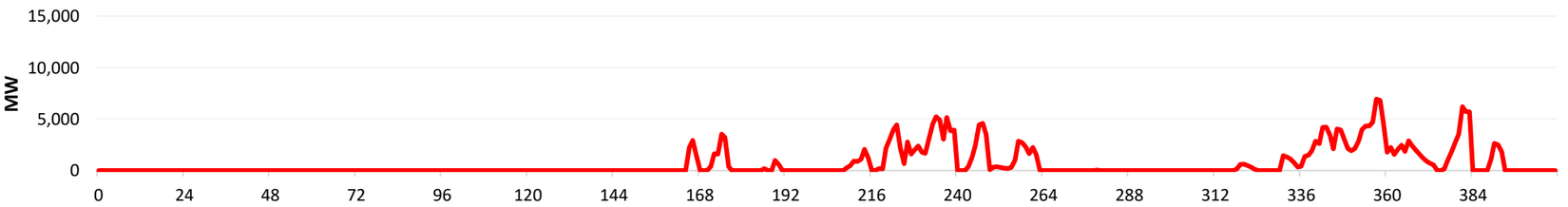
SCR Deployment	
Total Hrs.	19
Total MWh	9,542
Avg. MW	23.4

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	141
Total MWh	298,025
Avg. MW	730.5
First Hour with Viol.	69

Loss of Load During Modeling Period



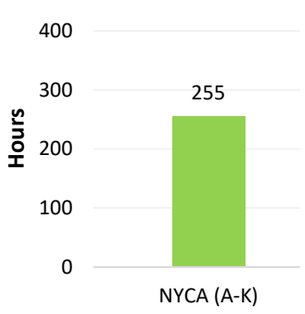
Loss of Load	
Total Hrs.	125
Total MWh	268,512
Avg. MW	658.1
First Hour with Losses	165

Full Period Results Summary

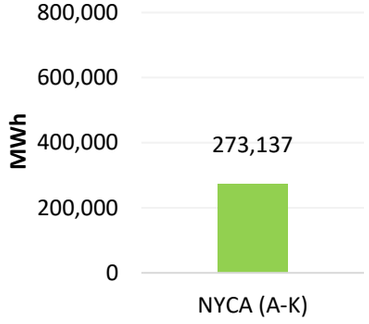
Case Name: Scenario 8 - PD 6 No Barge Refill

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	No Barge
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

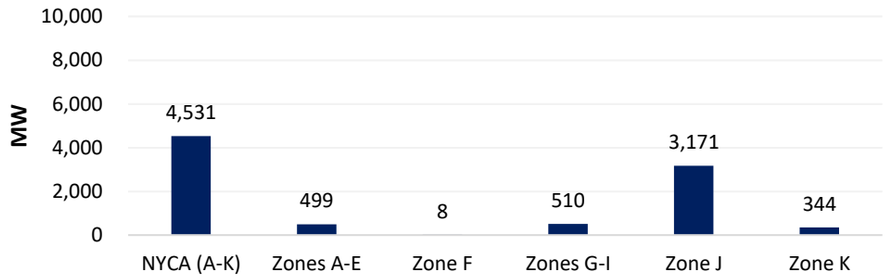
Hours Exports Reduced



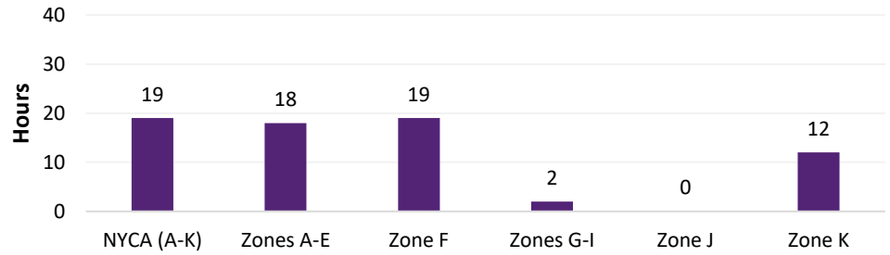
Total MWh of Exports Reduced



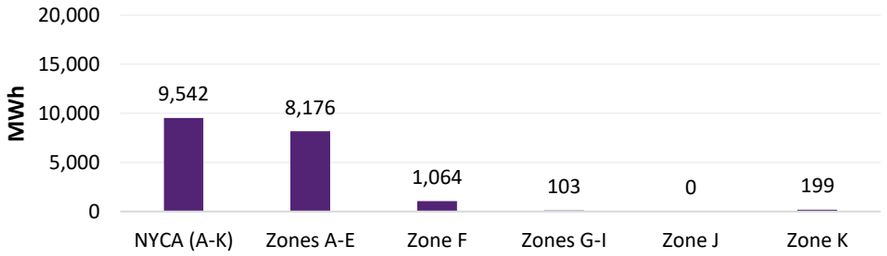
Average Capacity Not Available Due to Exhausted Fuel Inventory



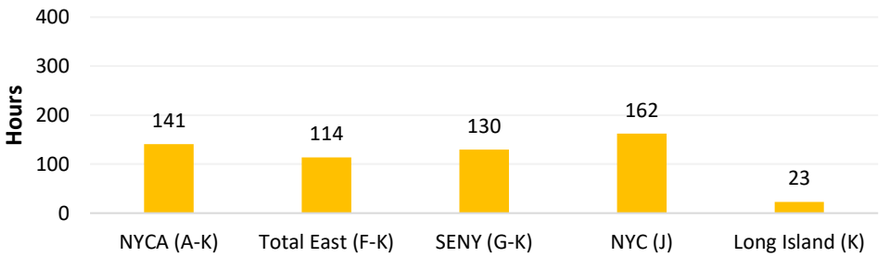
Hours SCR/EDRP Deployed



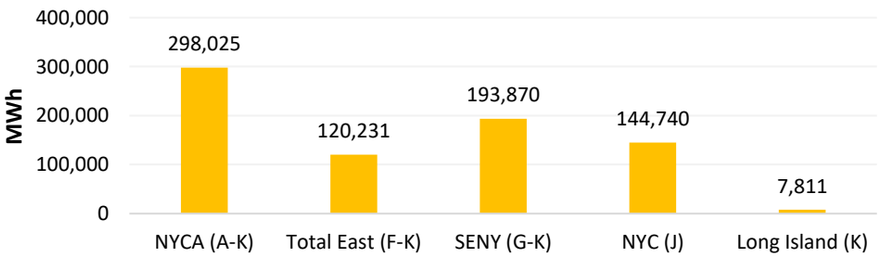
Total MWh SCR/EDRP Deployed



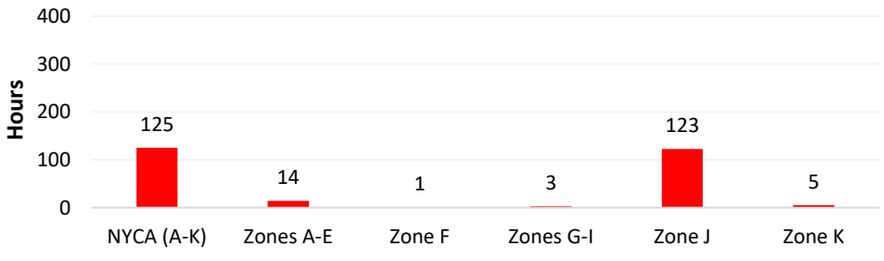
Hours with Reserve Violations



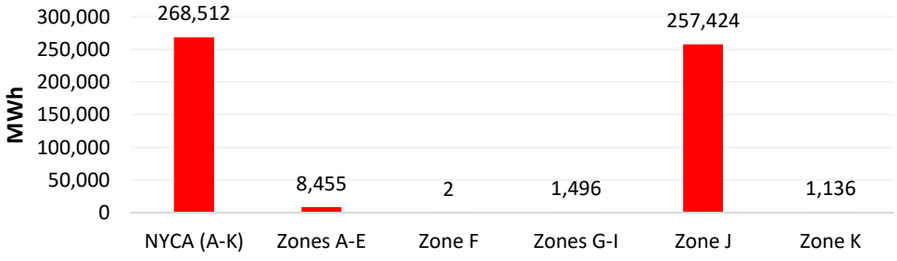
Total MWh of Reserve Violations

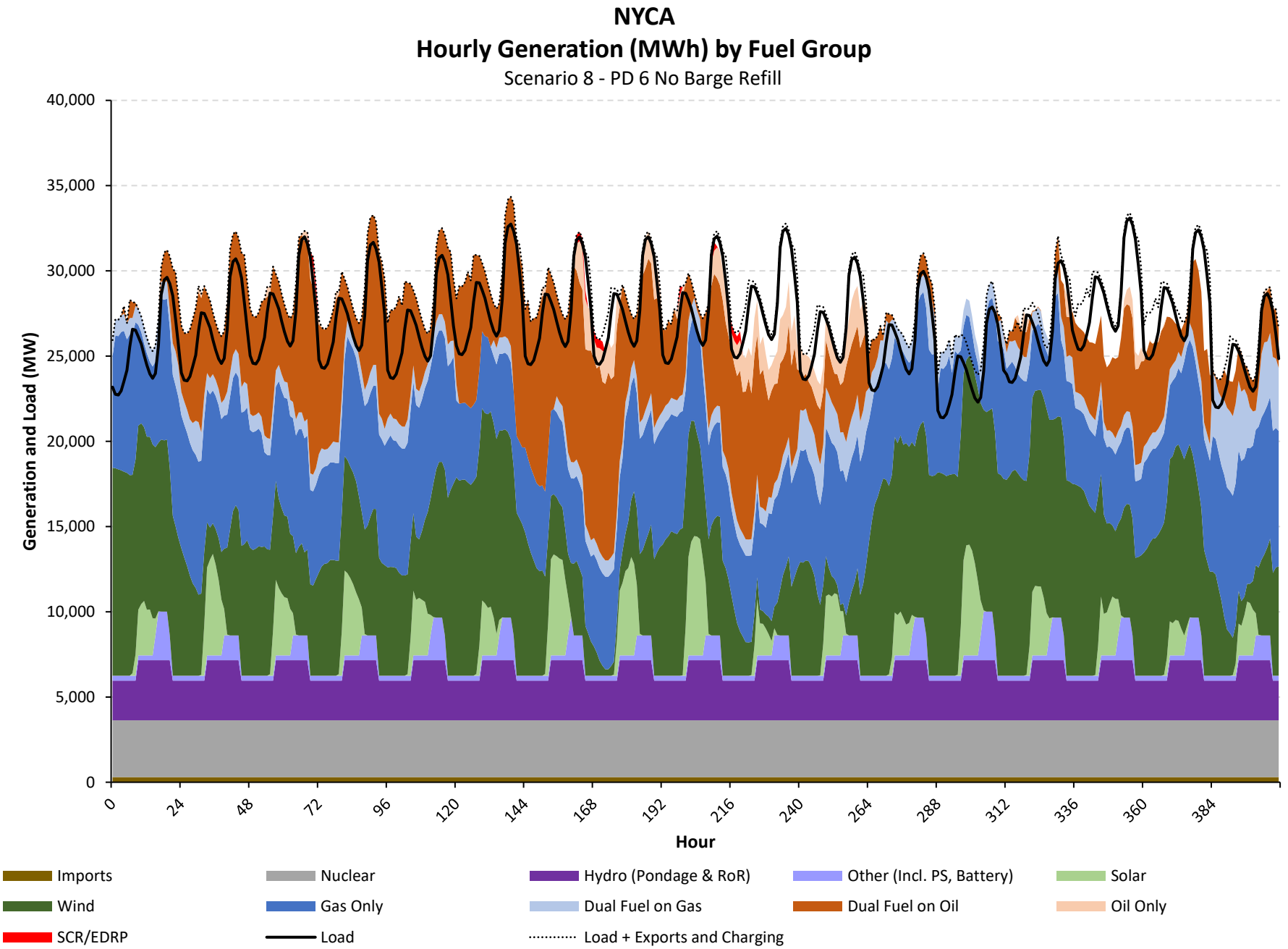


Hours with Loss of Load

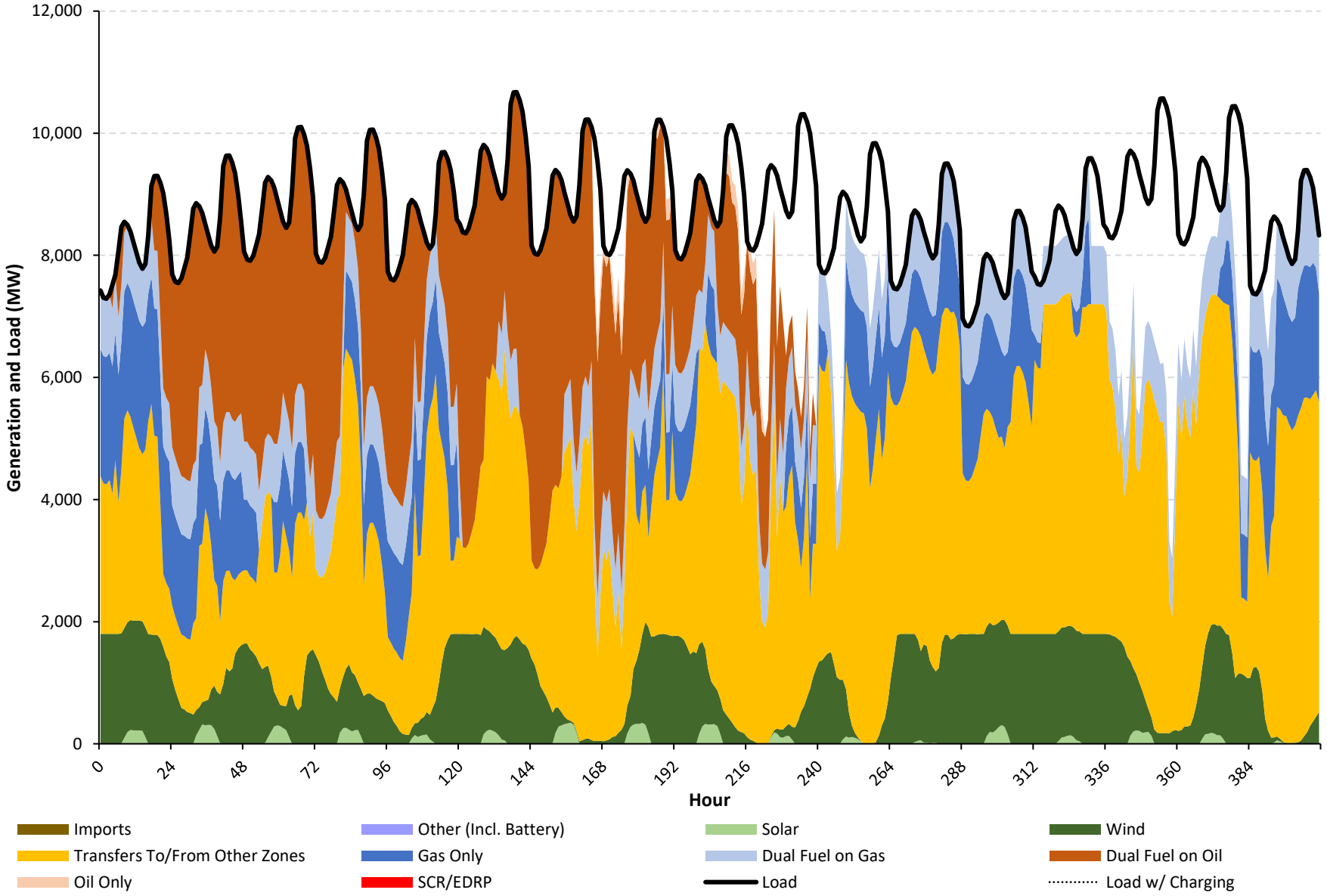


Total MWh of Lost Load

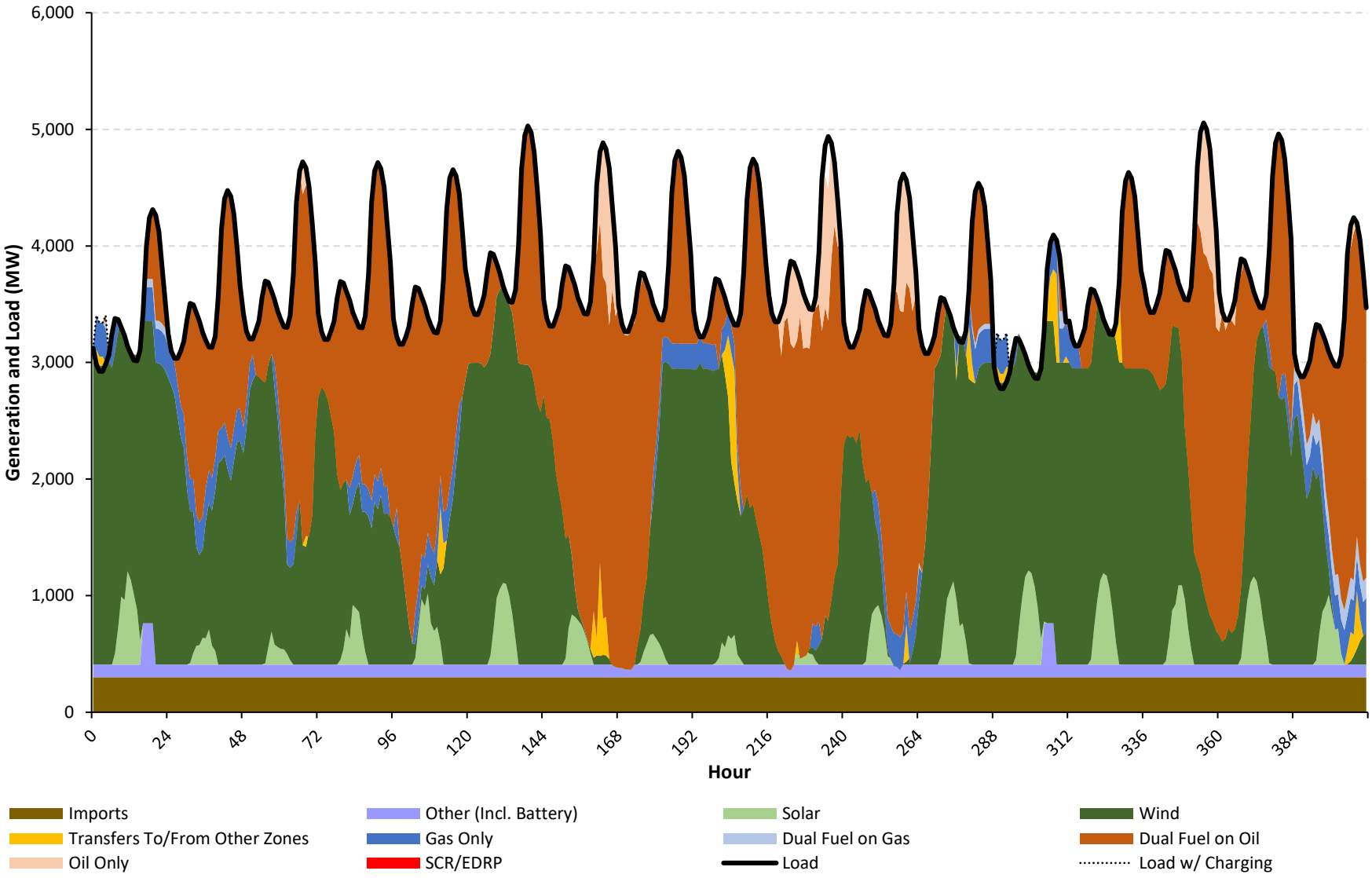


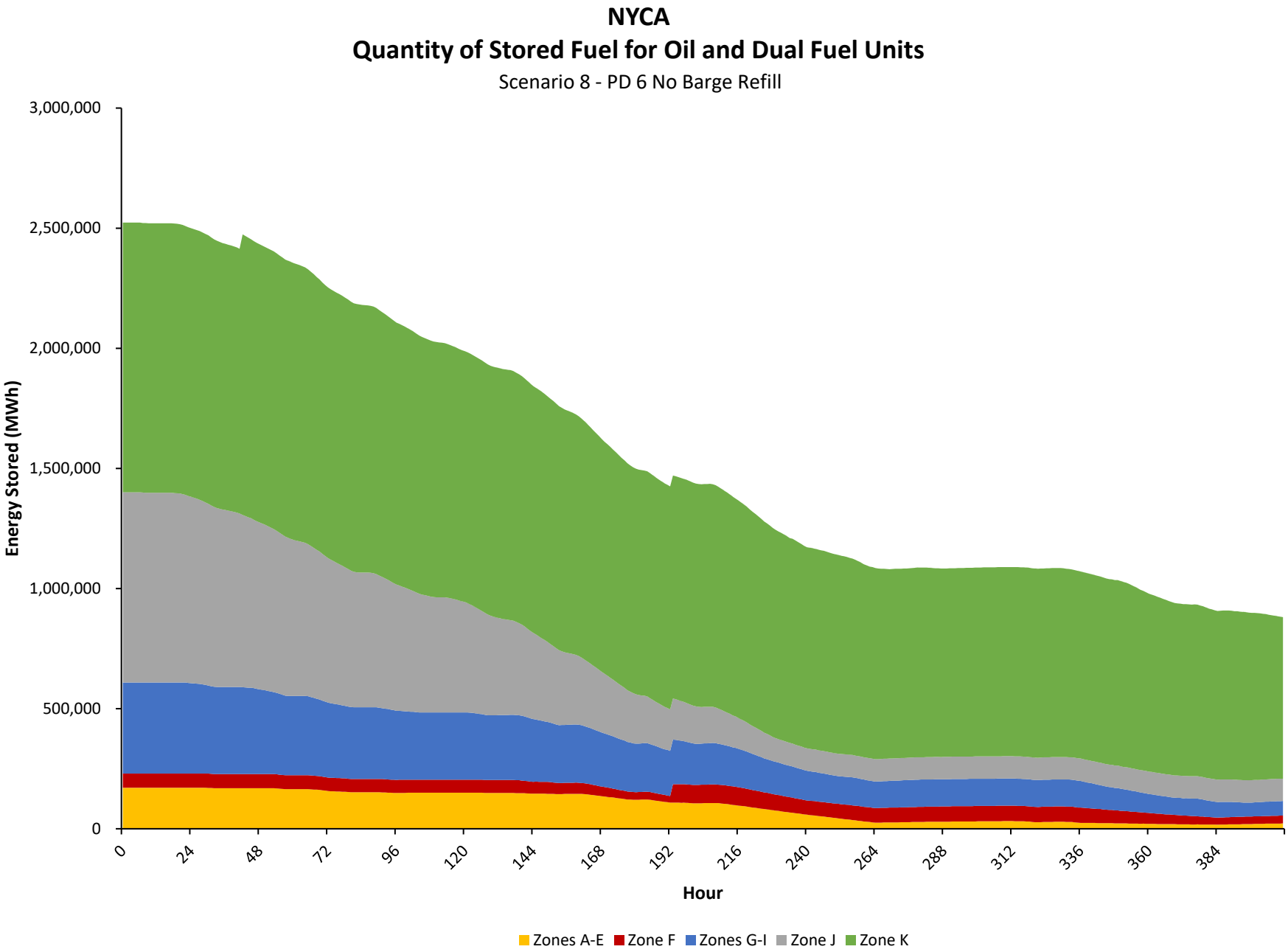

NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 8 - PD 6 No Barge Refill
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

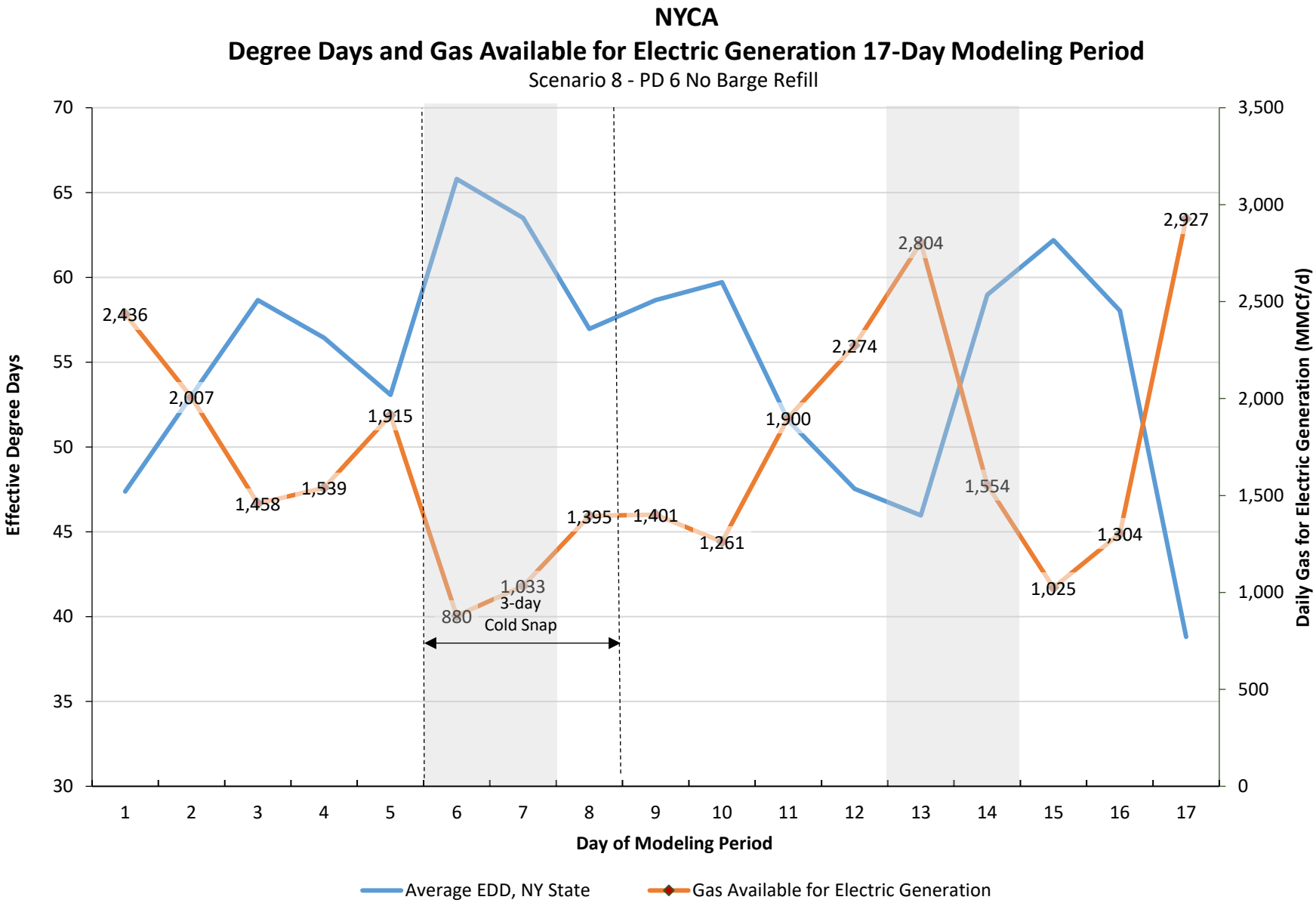
Zone J
Hourly Generation (MW) by Fuel Group
Scenario 8 - PD 6 No Barge Refill



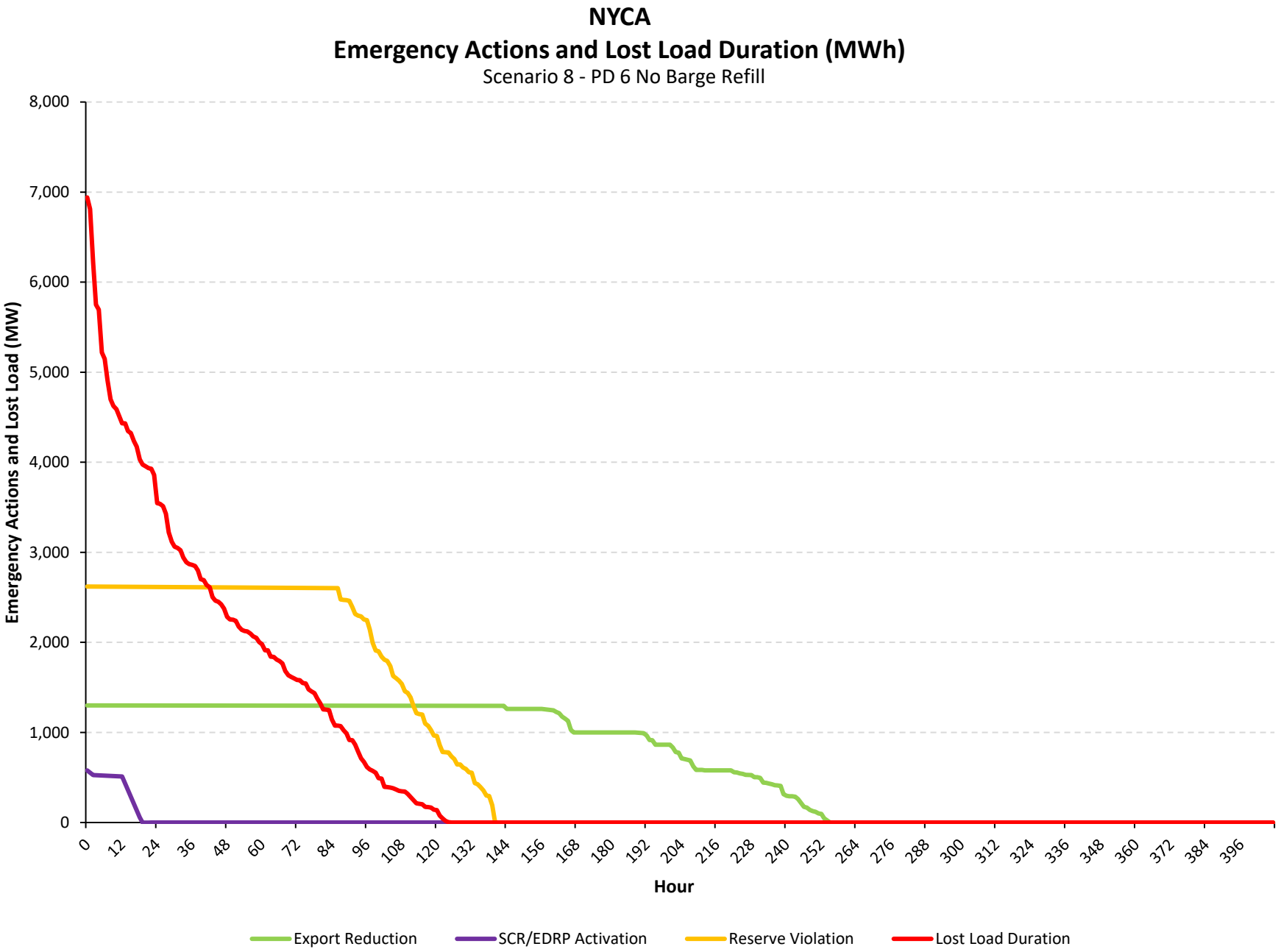
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 8 - PD 6 No Barge Refill

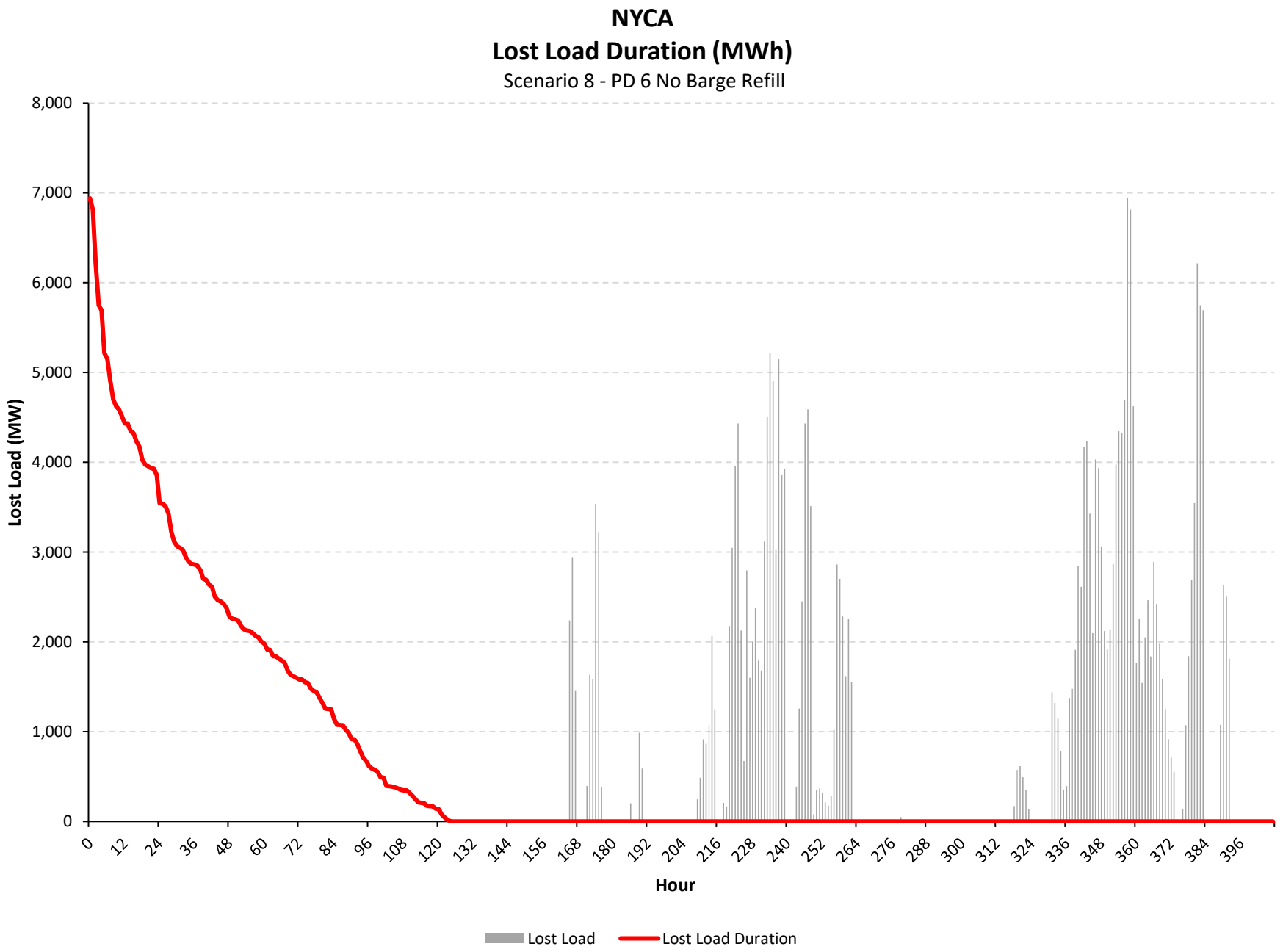



NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 8 - PD 6 No Barge Refill
Energy Stored (MWh)
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Zones A-E
Zone F
Zones G-I
Zone J
Zone K



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 8 - PD 6 No Barge Refill
Emergency Actions and Lost Load (MW)
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 8 - PD 6 No Barge Refill
Lost Load (MW)
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

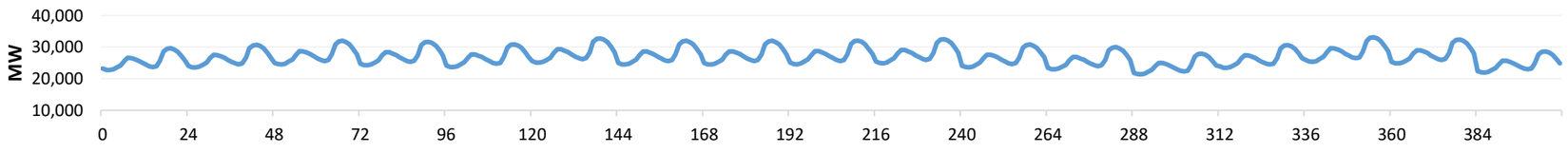
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 8 - PD 7 No Refill (Winter 2030/2031)

Hourly Results Summary

Case Name: Scenario 8 - PD 7 No Refill

Load During Modeling Period



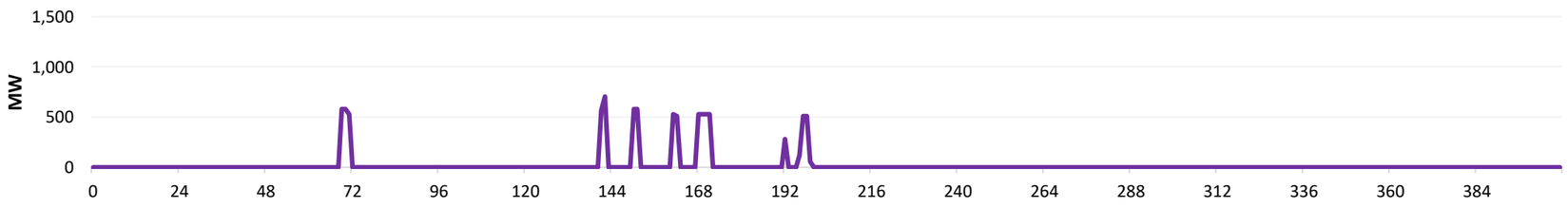
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	No Refill
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

Export to ISO-NE Reduction During Modeling Period



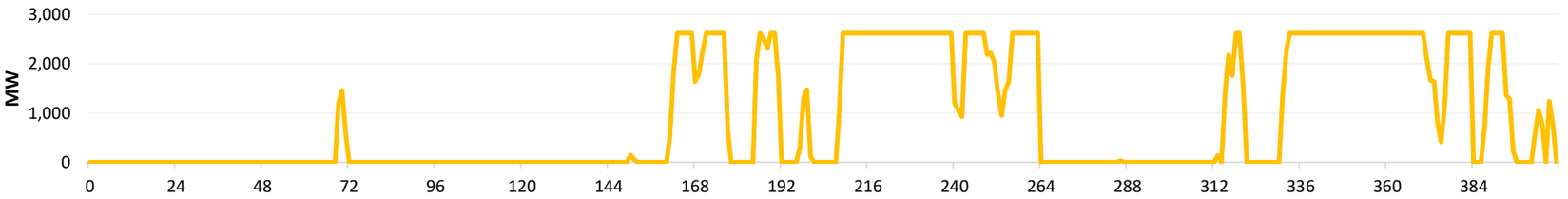
Export Reductions	
Total Hrs.	262
Total MWh	290,241
Avg. MW	711.4

SCR/EDRP Deployed During Modeling Period



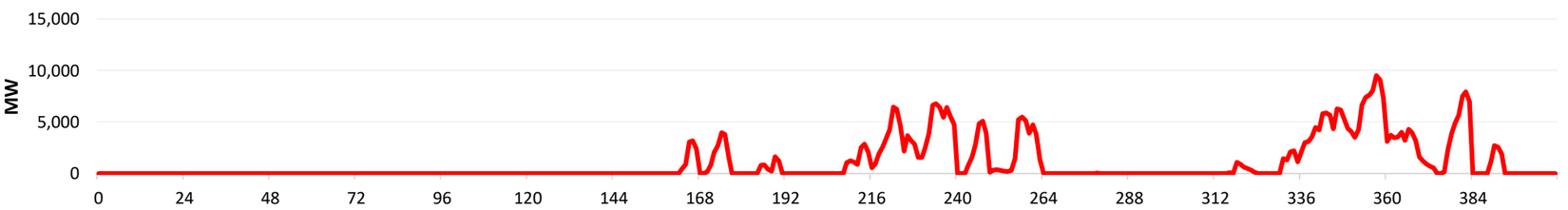
SCR Deployment	
Total Hrs.	18
Total MWh	8,731
Avg. MW	21.4

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	164
Total MWh	356,738
Avg. MW	874.4
First Hour with Viol.	69

Loss of Load During Modeling Period



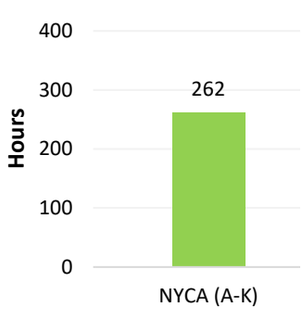
Loss of Load	
Total Hrs.	134
Total MWh	417,017
Avg. MW	1,022.1
First Hour with Losses	163

Full Period Results Summary

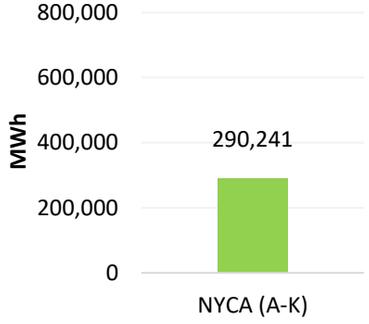
Case Name: Scenario 8 - PD 7 No Refill

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	No Refill
Loss of Gas Fired Gen.	Off
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

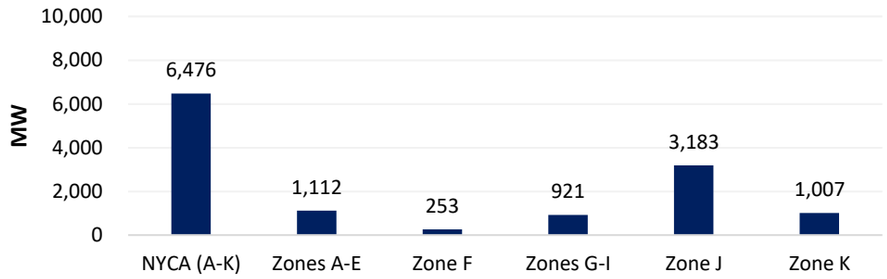
Hours Exports Reduced



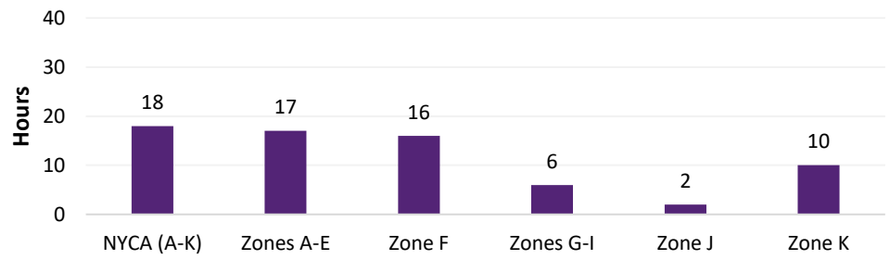
Total MWh of Exports Reduced



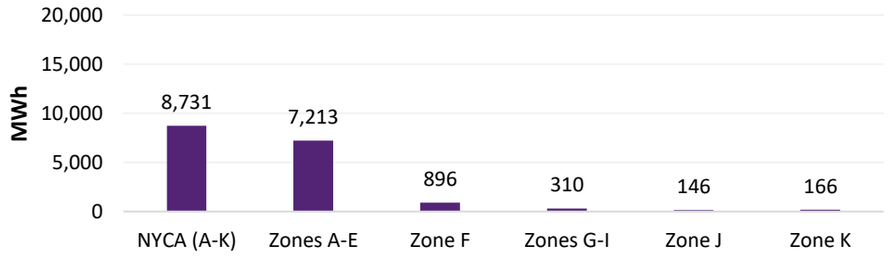
Average Capacity Not Available Due to Exhausted Fuel Inventory



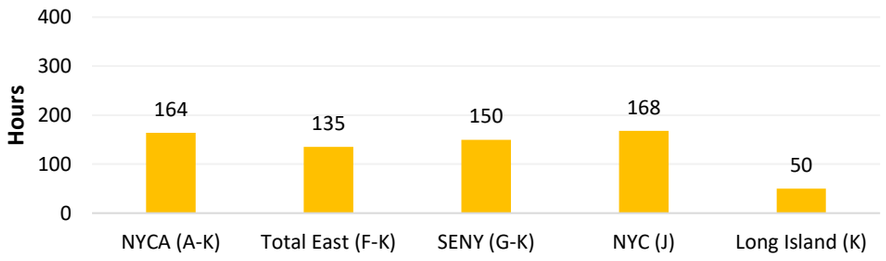
Hours SCR/EDRP Deployed



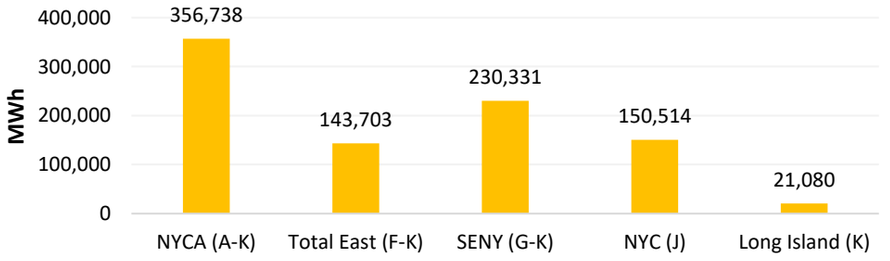
Total MWh SCR/EDRP Deployed



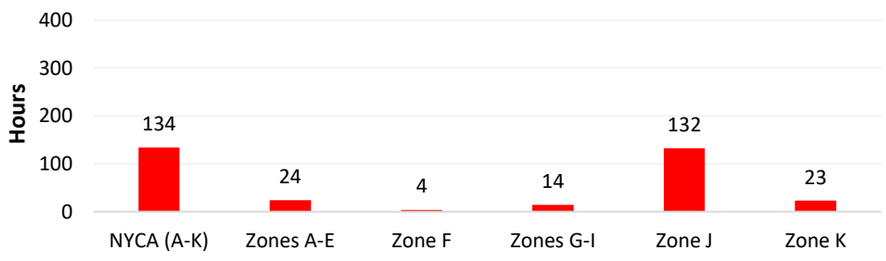
Hours with Reserve Violations



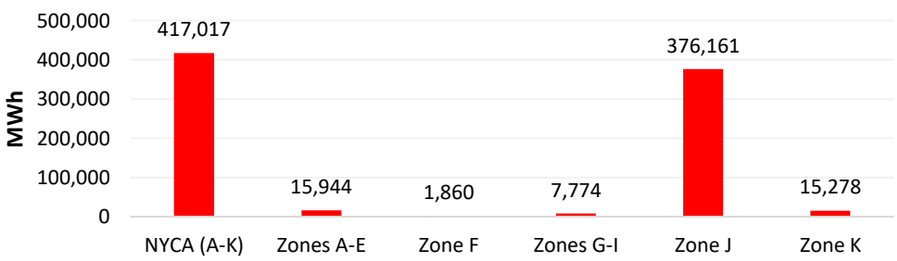
Total MWh of Reserve Violations

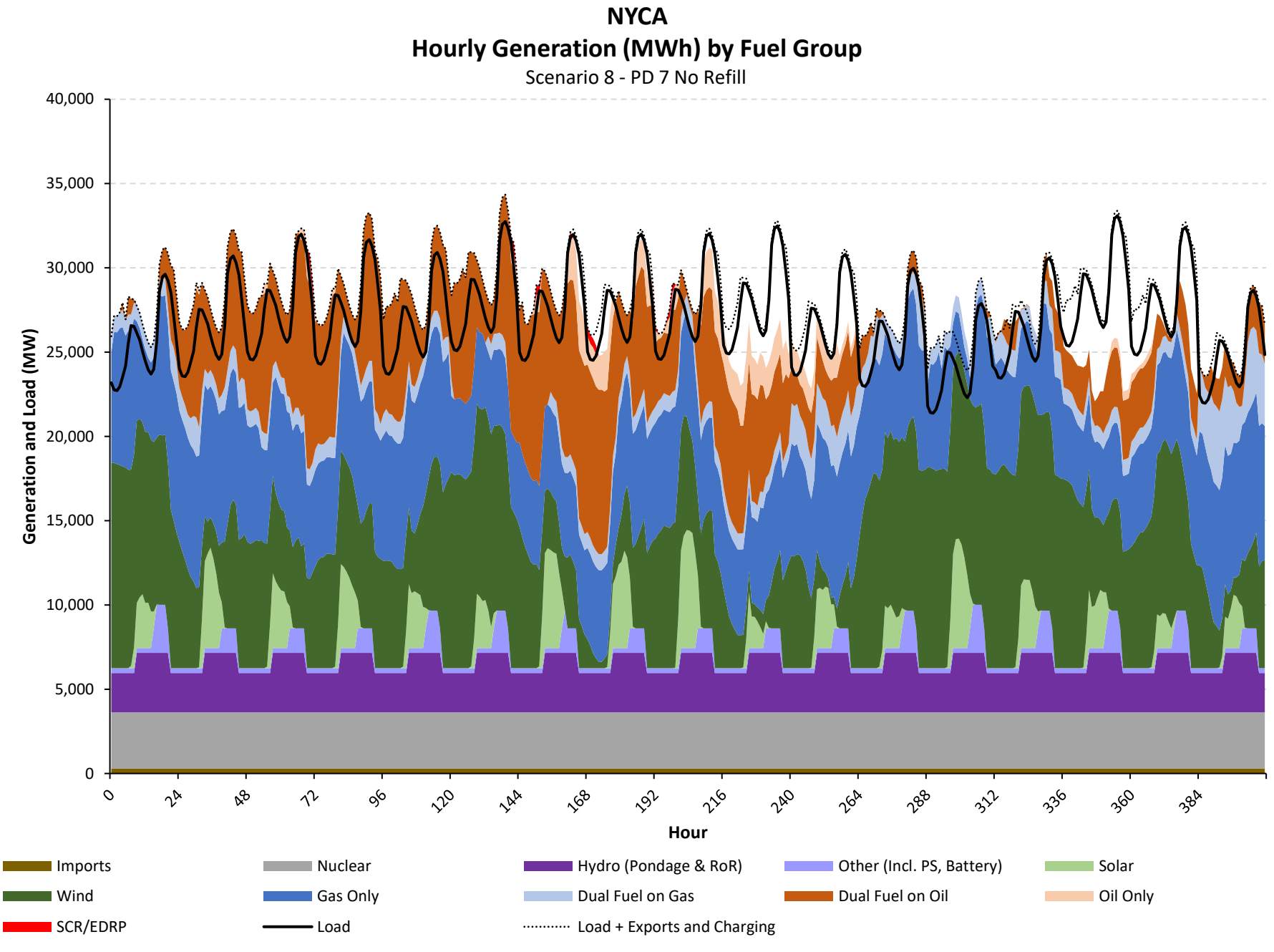


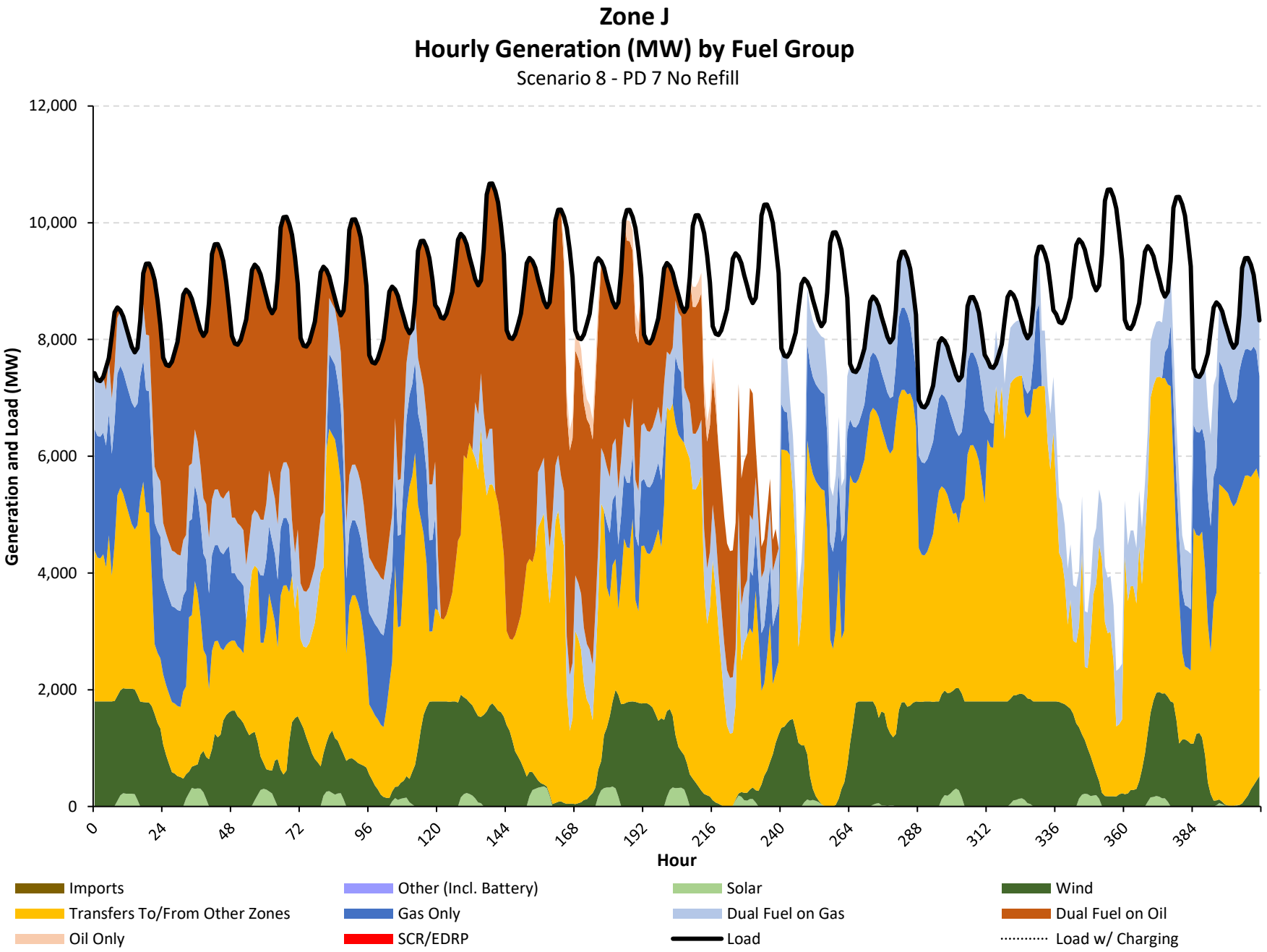
Hours with Loss of Load



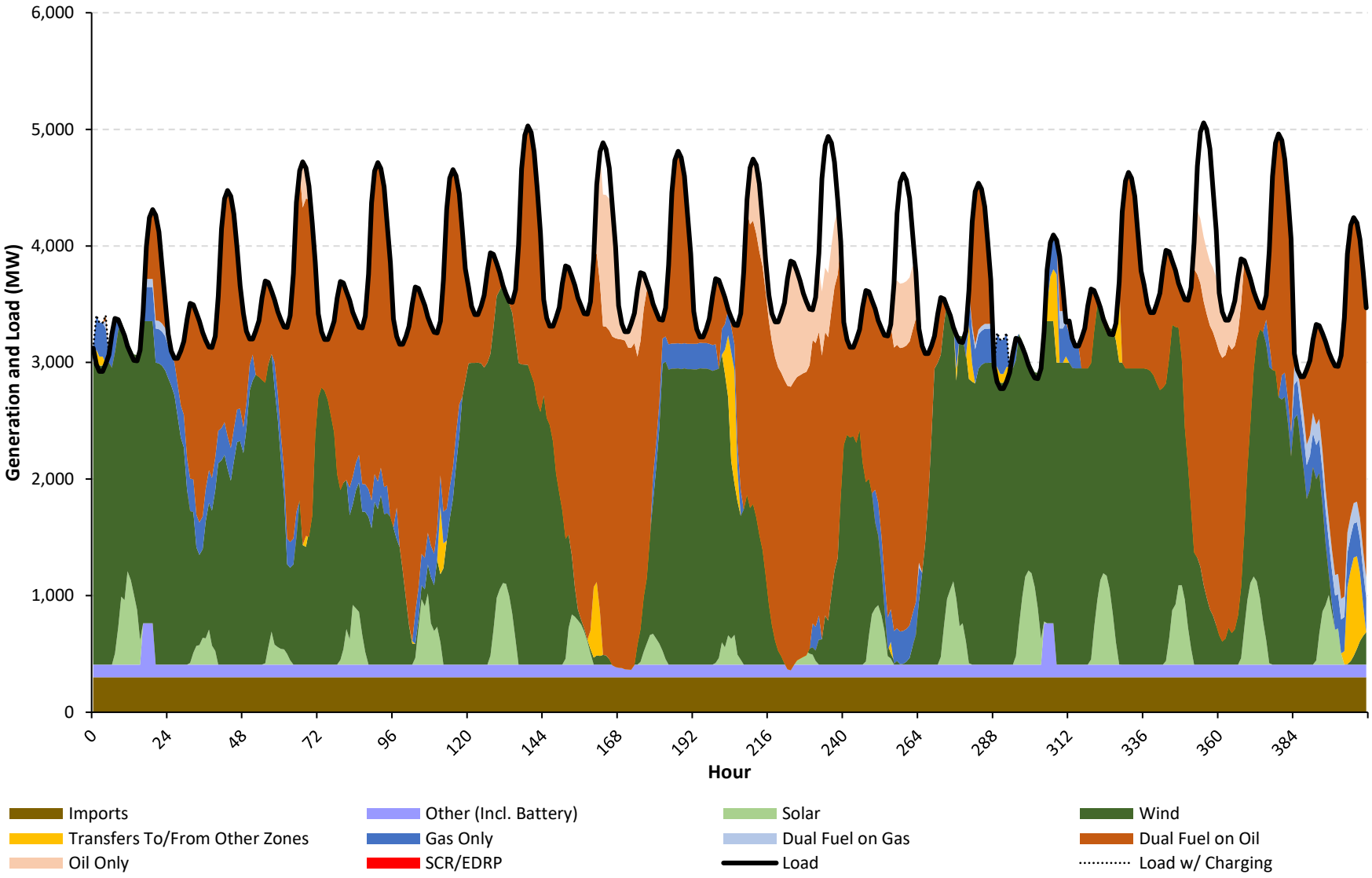
Total MWh of Lost Load




NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 8 - PD 7 No Refill
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 8 - PD 7 No Refill
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

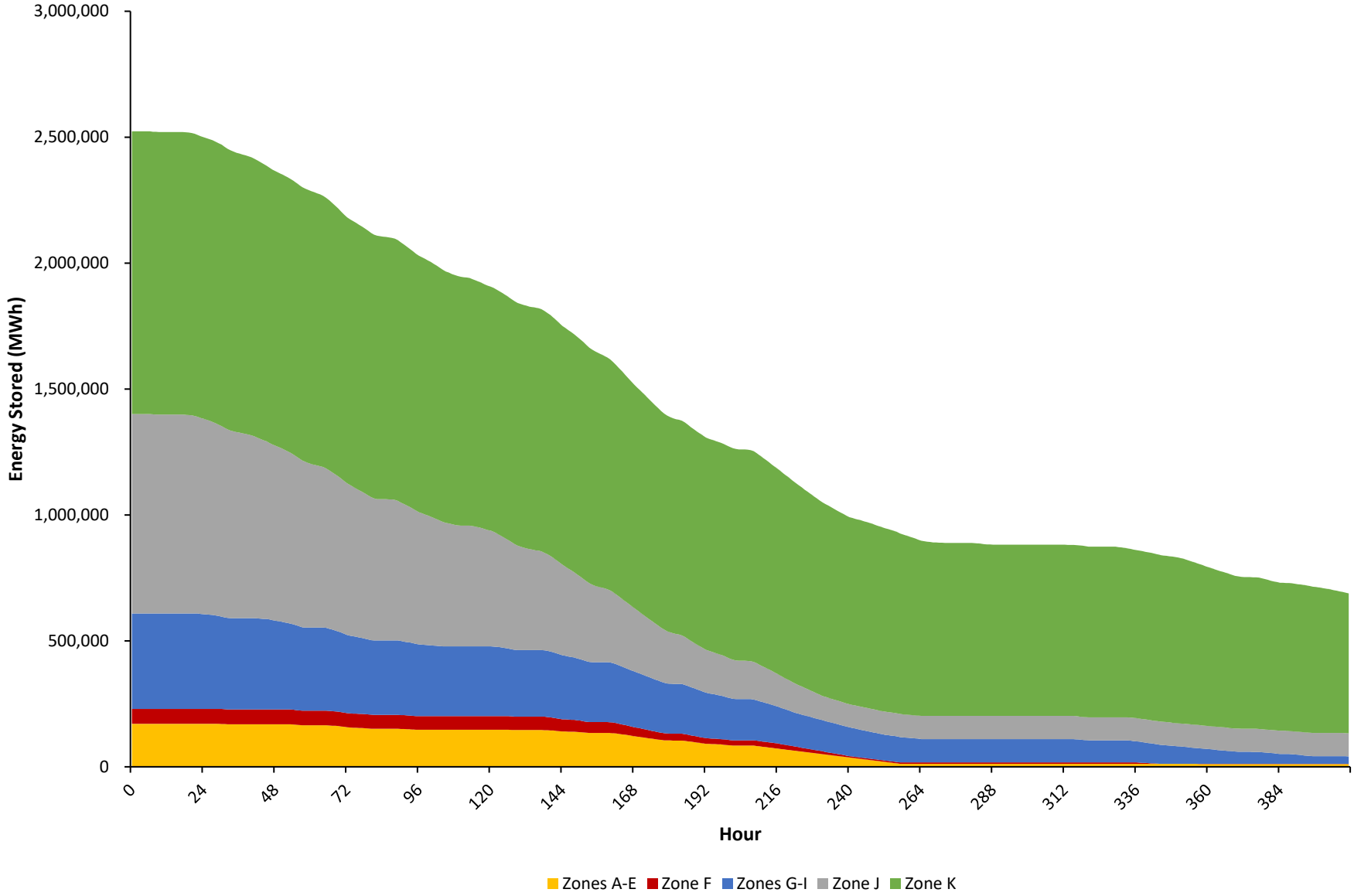
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 8 - PD 7 No Refill

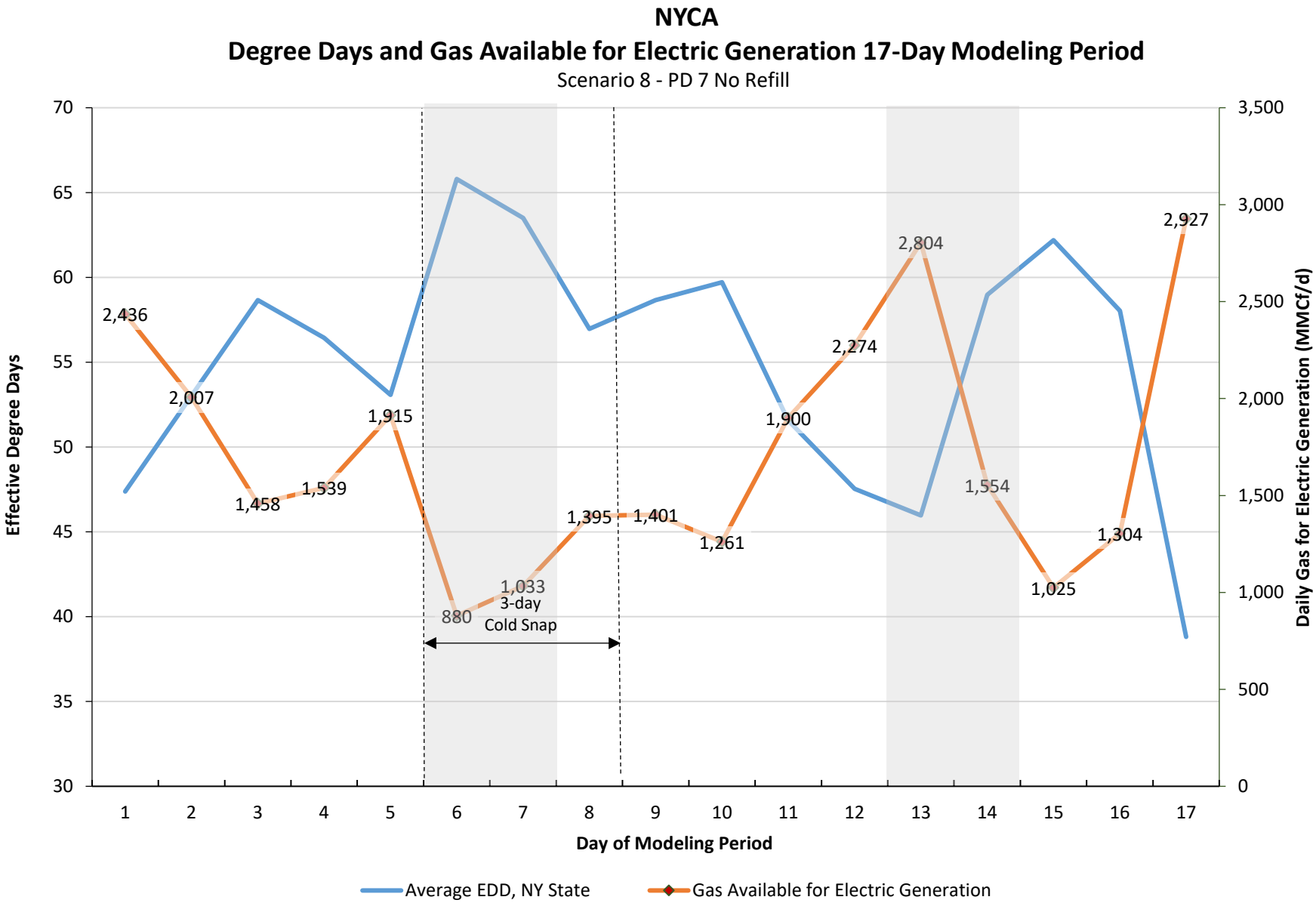


NYCA

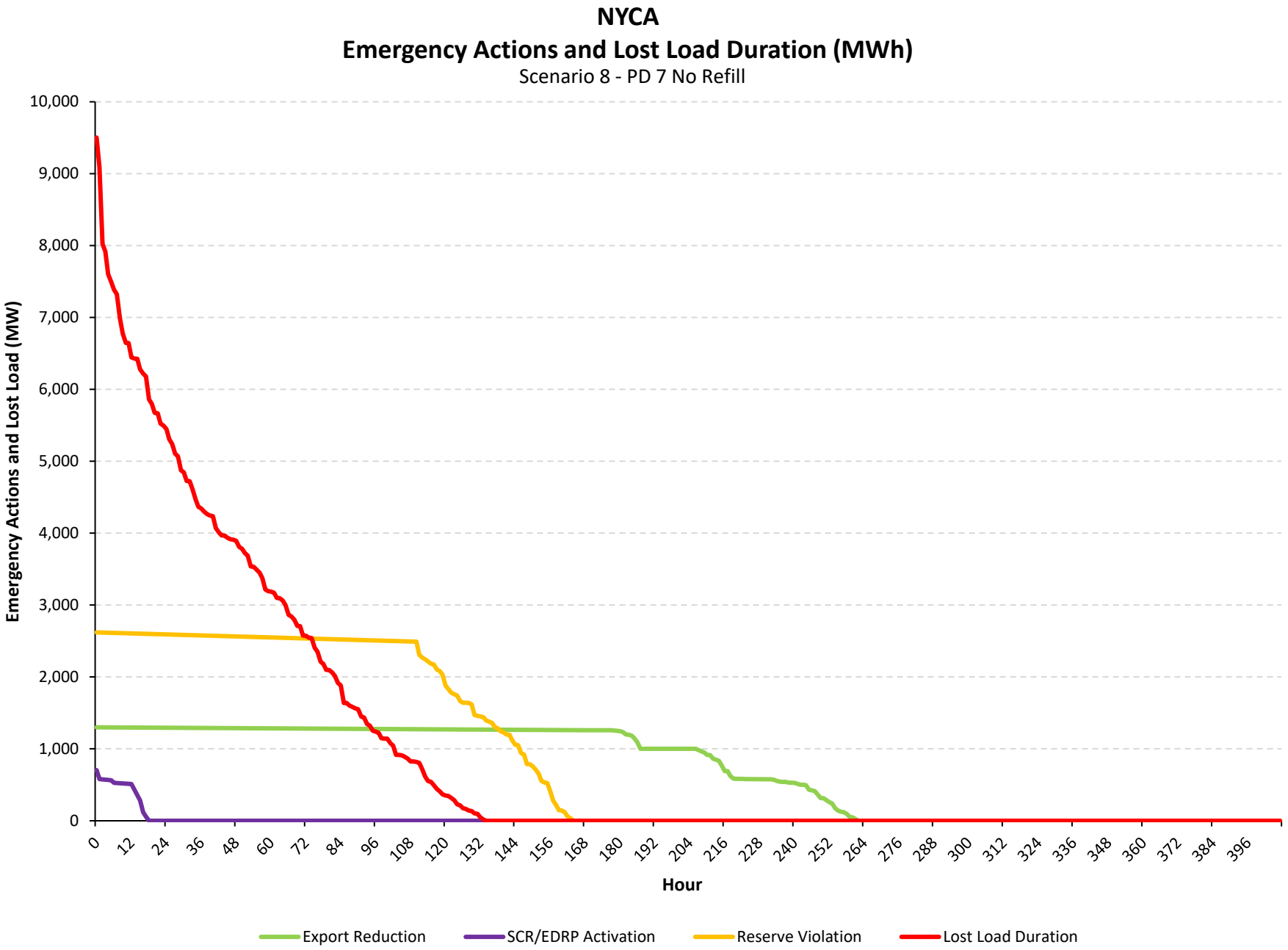
Quantity of Stored Fuel for Oil and Dual Fuel Units

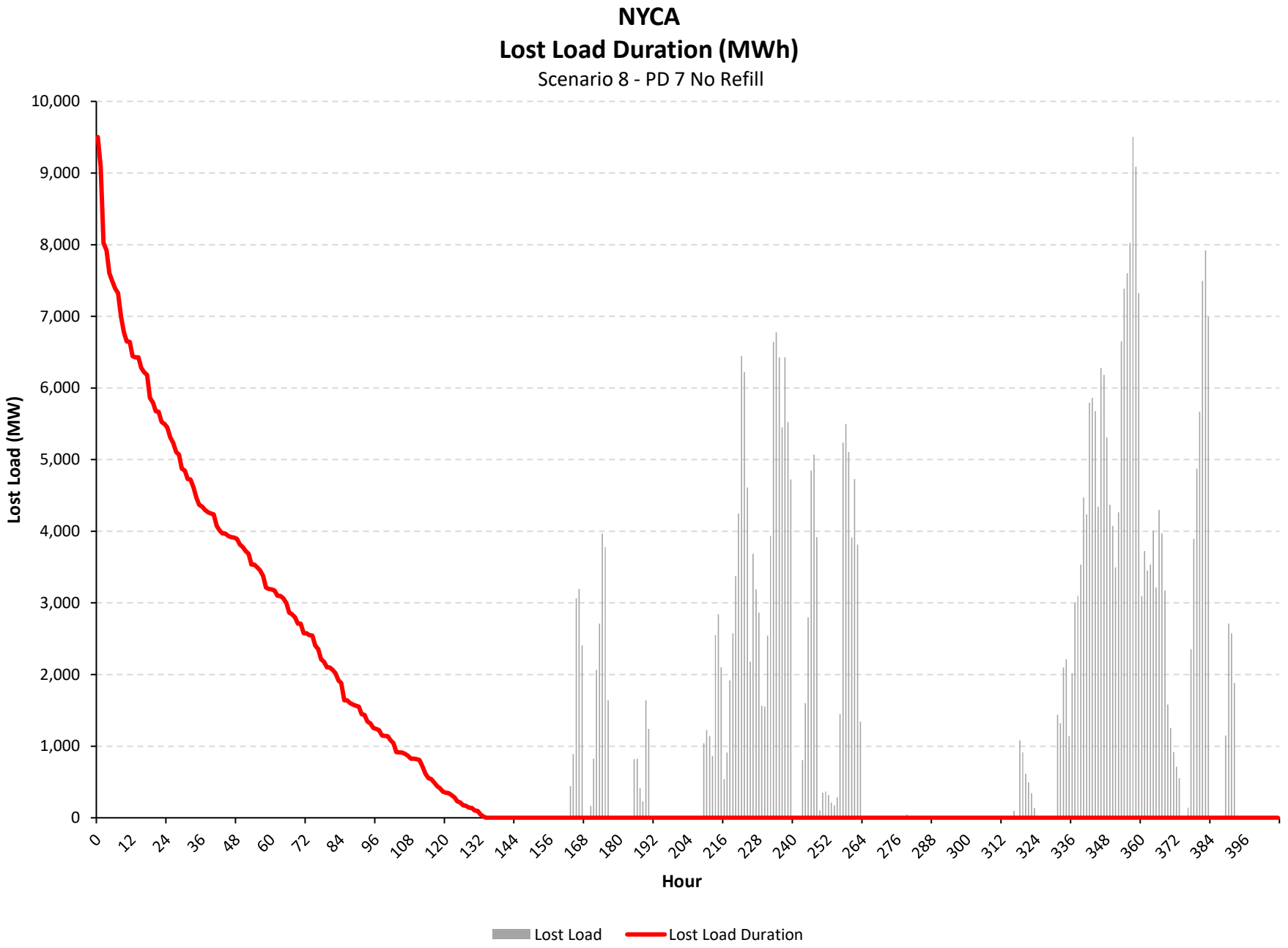
Scenario 8 - PD 7 No Refill





Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 8 - PD 7 No Refill
Emergency Actions and Lost Load (MW)
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 8 - PD 7 No Refill
Lost Load (MW)
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

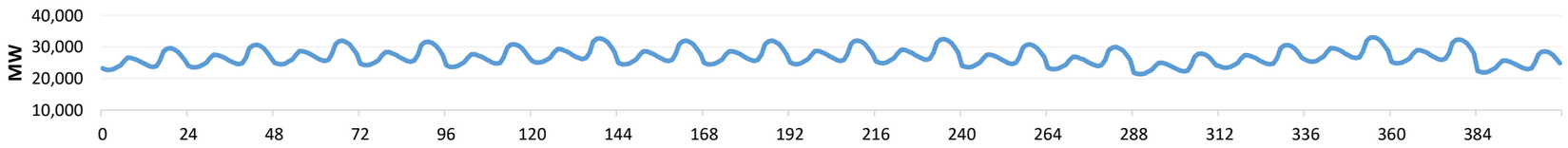
Case: Scenario 8 - PD 8 Non-Firm Gas Unavailable (F-K) (Winter 2030/2031)

Hourly Results Summary

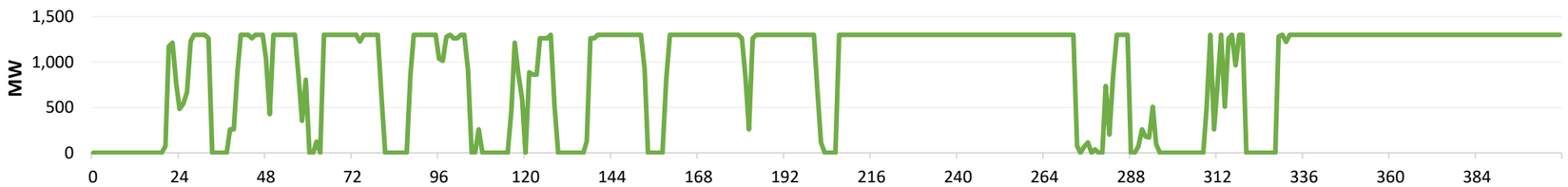
Case Name: Scenario 8 - PD 8 Non-Firm Gas Unavailable (F-K)

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	F-K
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

Load During Modeling Period

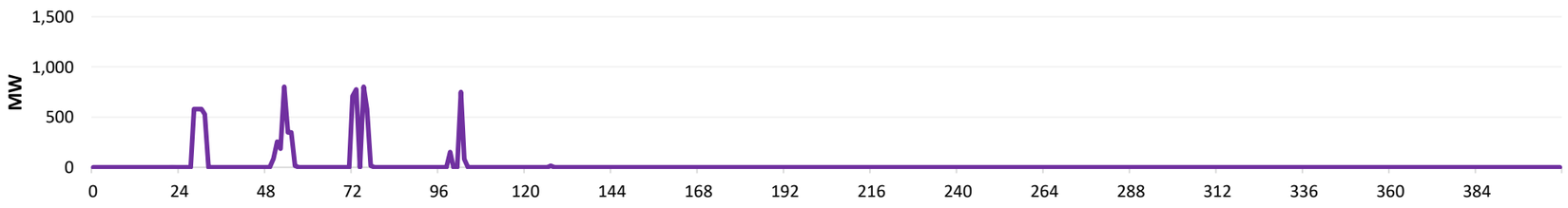


Export to ISO-NE Reduction During Modeling Period



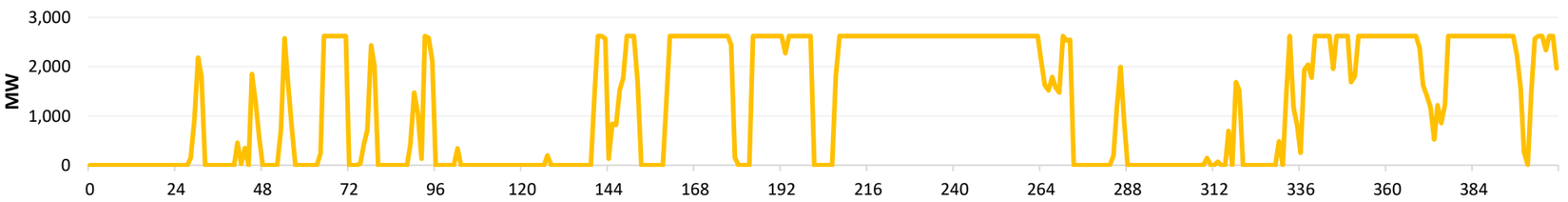
Export Reductions	
Total Hrs.	317
Total MWh	370,750
Avg. MW	908.7

SCR/EDRP Deployed During Modeling Period



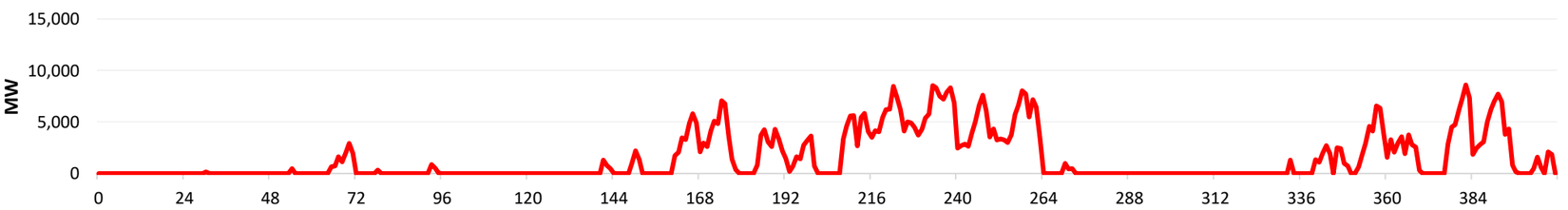
SCR Deployment	
Total Hrs.	20
Total MWh	8,185
Avg. MW	20.1

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	238
Total MWh	510,924
Avg. MW	1,252.3
First Hour with Viol.	28

Loss of Load During Modeling Period



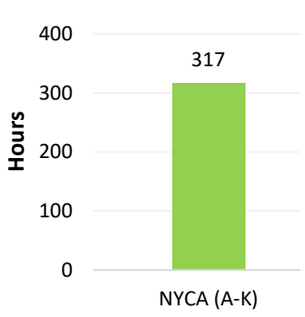
Loss of Load	
Total Hrs.	167
Total MWh	599,255
Avg. MW	1,468.8
First Hour with Losses	30

Full Period Results Summary

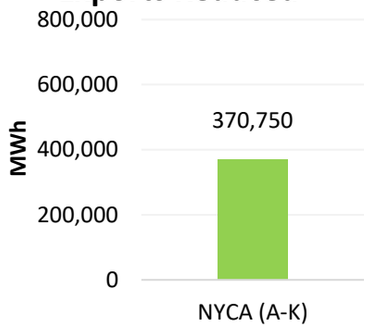
Case Name: Scenario 8 - PD 8 Non-Firm Gas Unavailable (F-K)

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	F-K
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

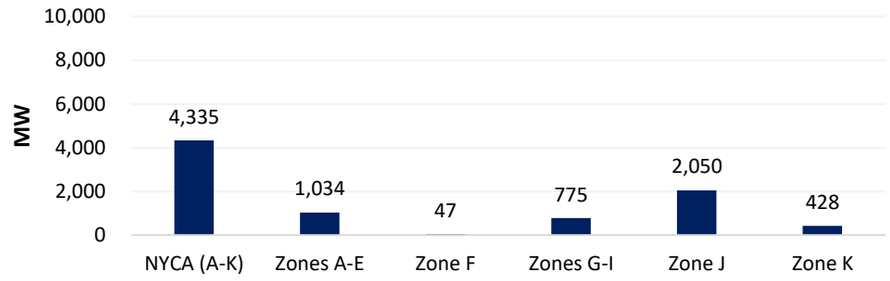
Hours Exports Reduced



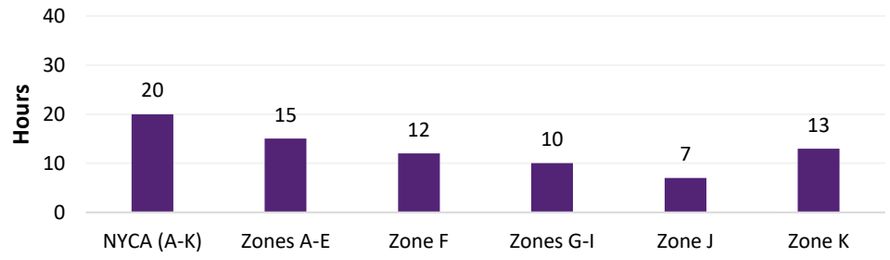
Total MWh of Exports Reduced



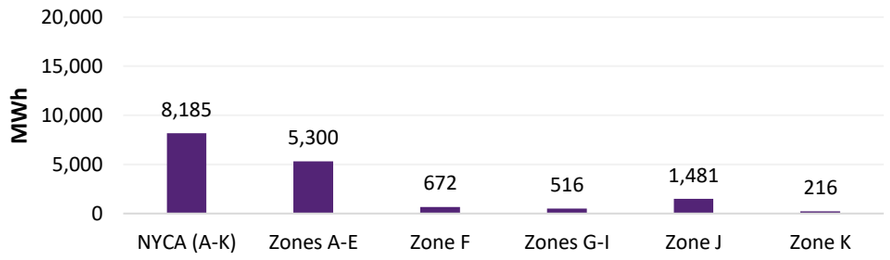
Average Capacity Not Available Due to Exhausted Fuel Inventory



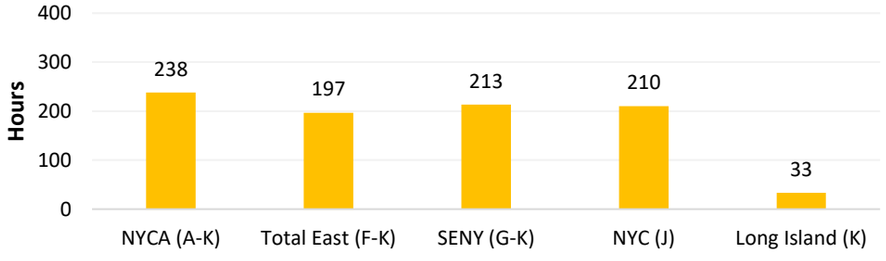
Hours SCR/EDRP Deployed



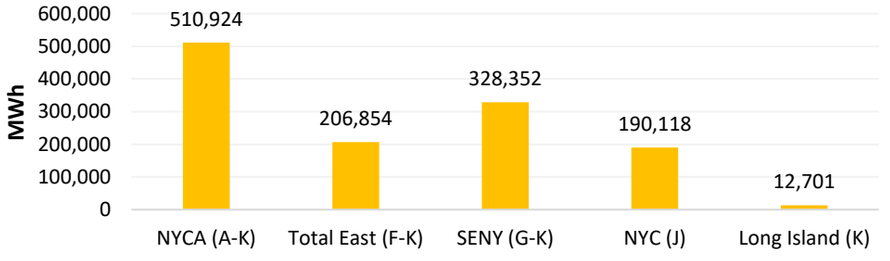
Total MWh SCR/EDRP Deployed



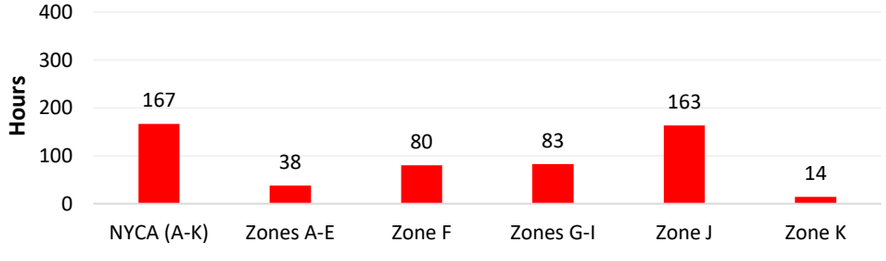
Hours with Reserve Violations



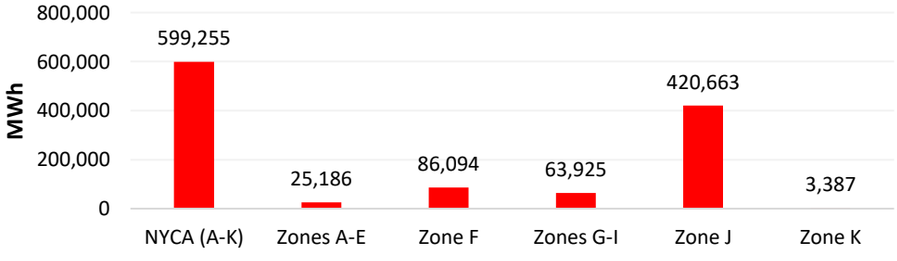
Total MWh of Reserve Violations

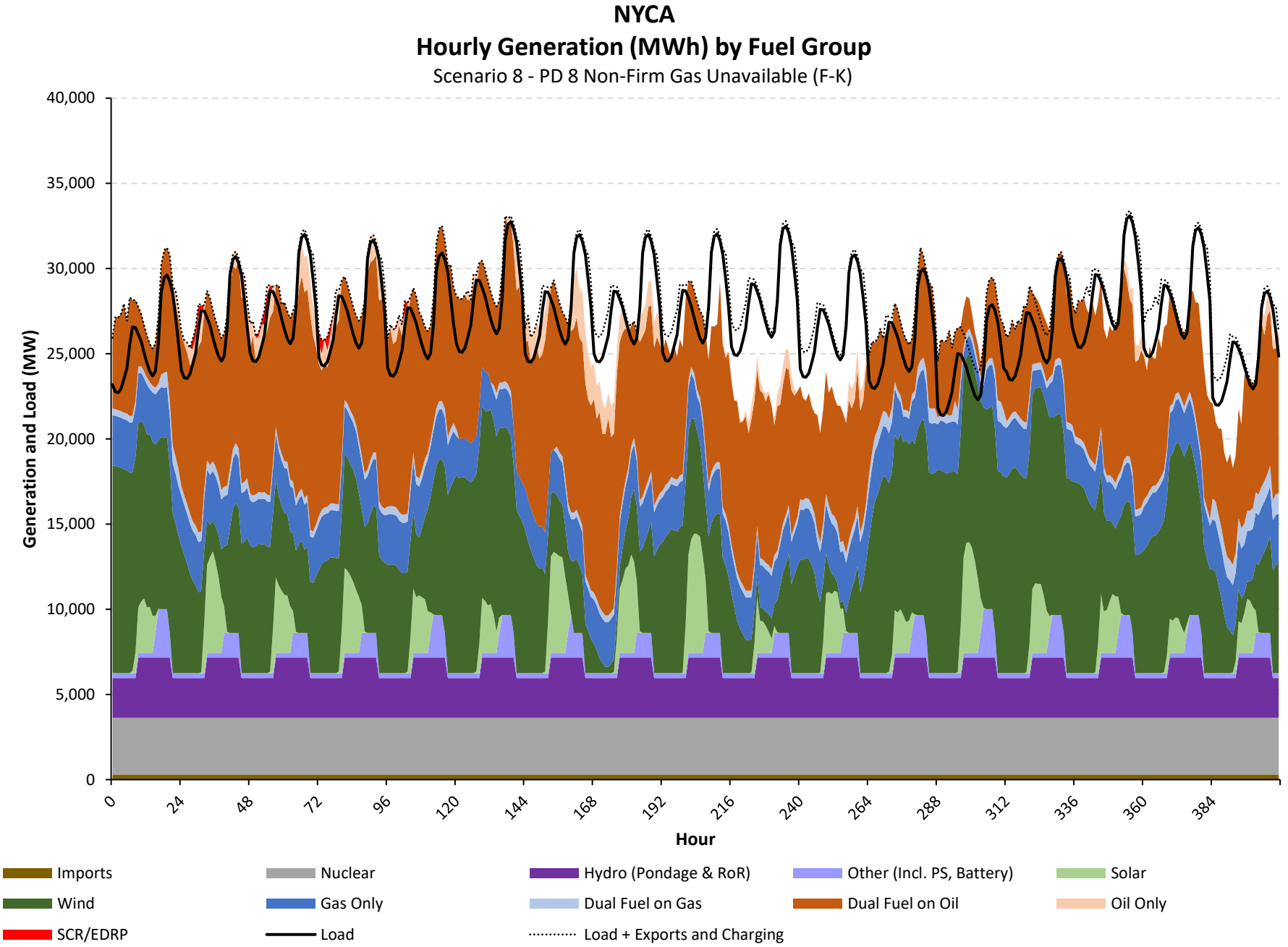


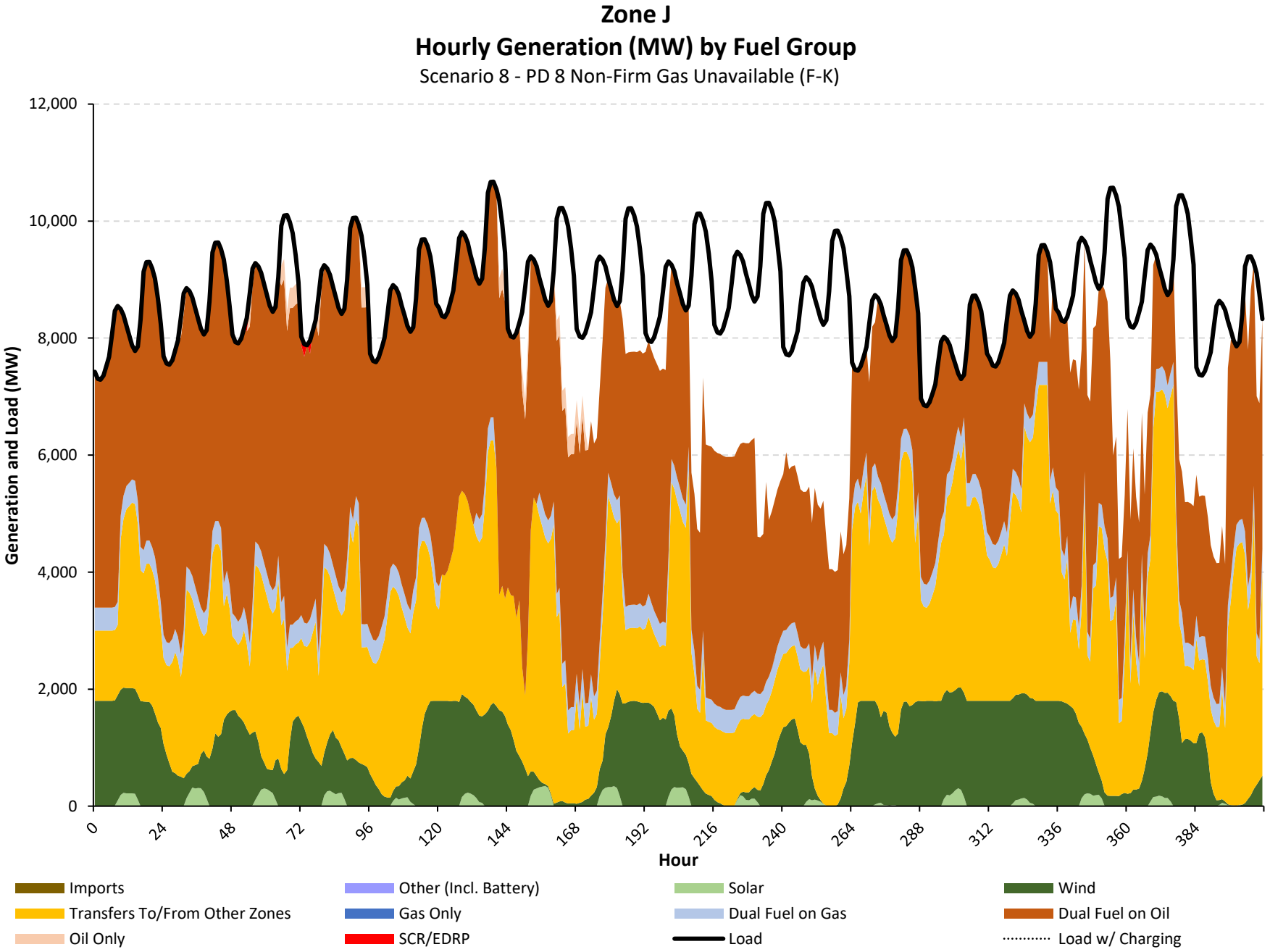
Hours with Loss of Load



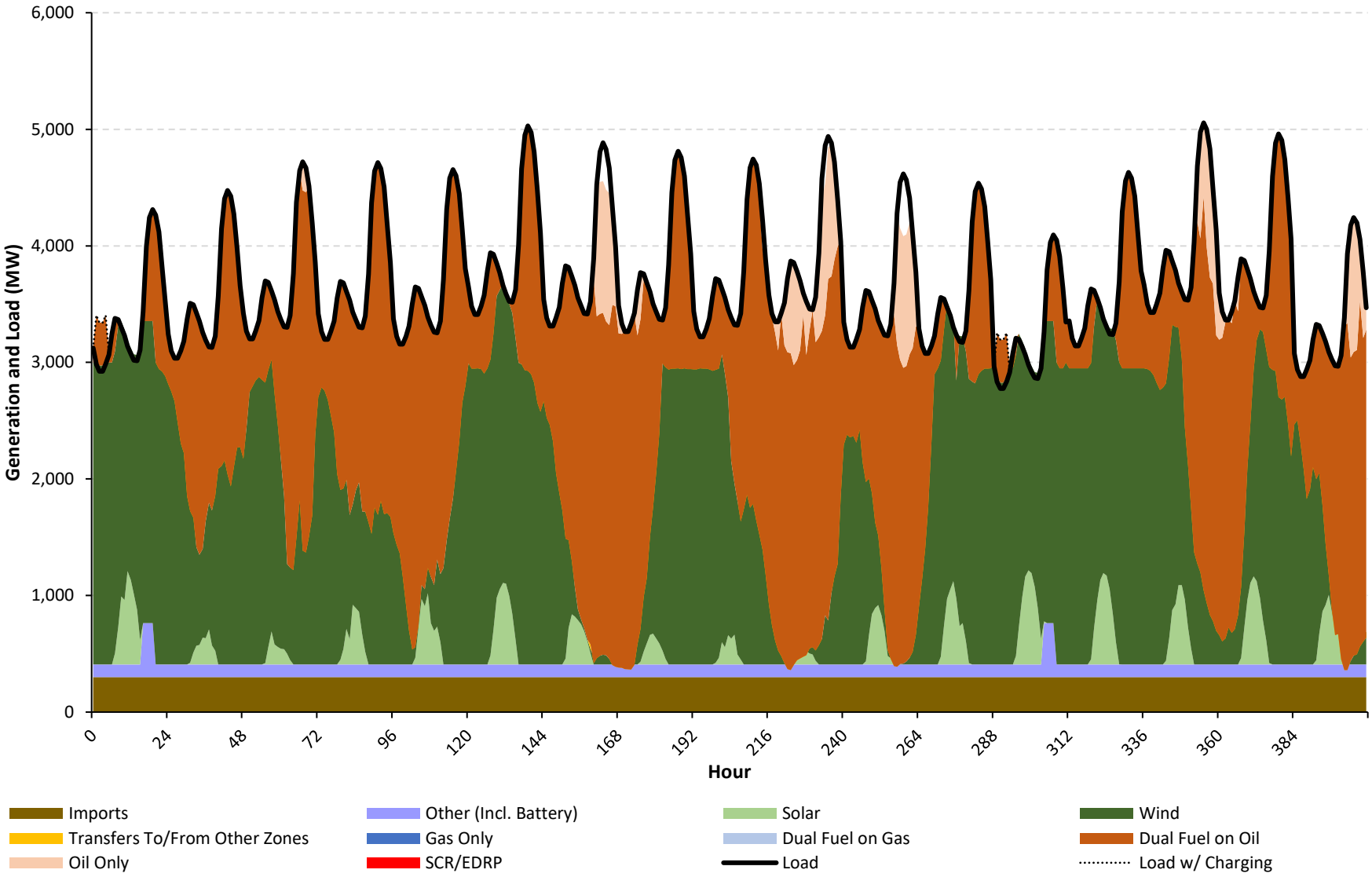
Total MWh of Lost Load

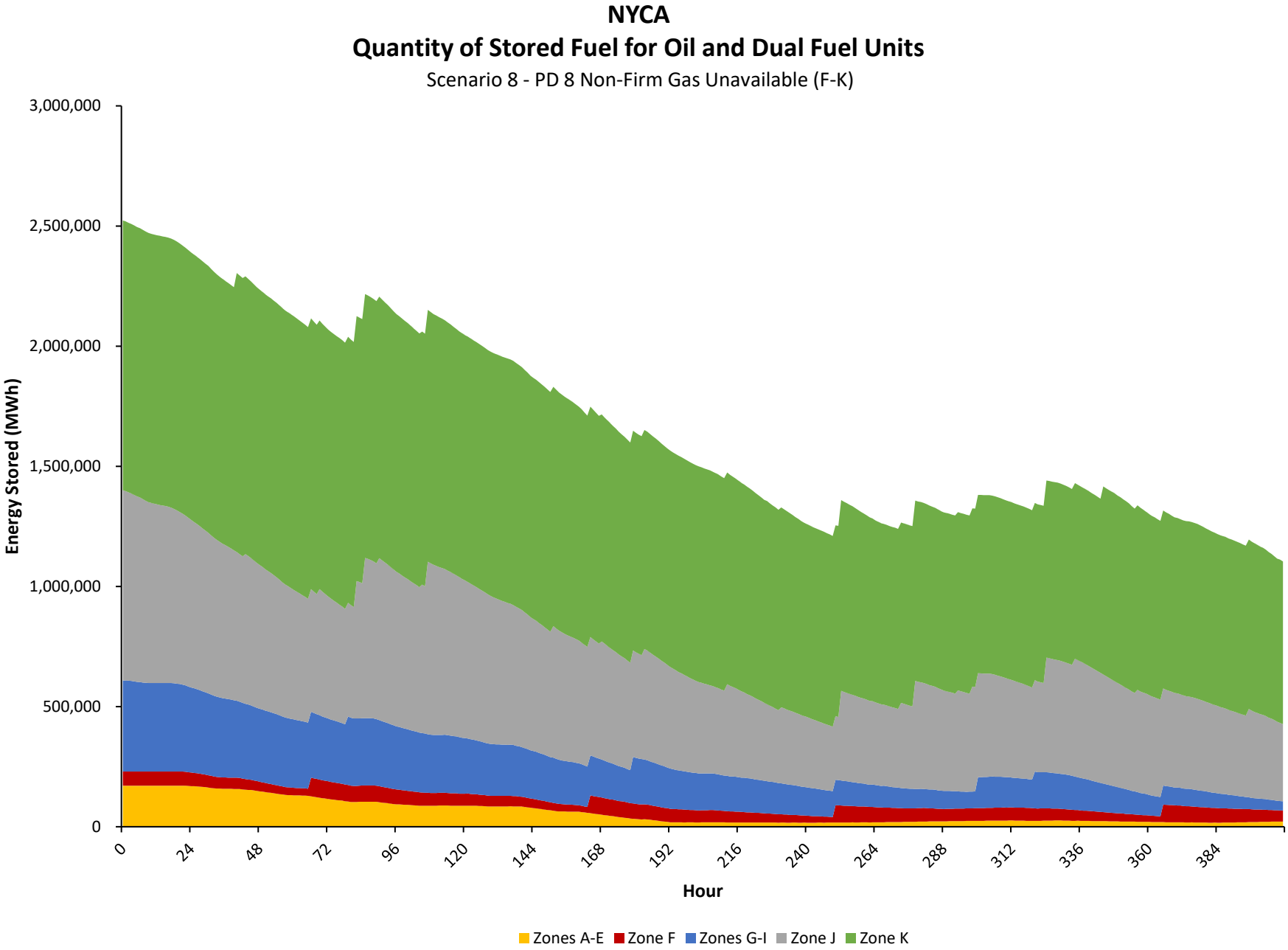



NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 8 - PD 8 Non-Firm Gas Unavailable (F-K)
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

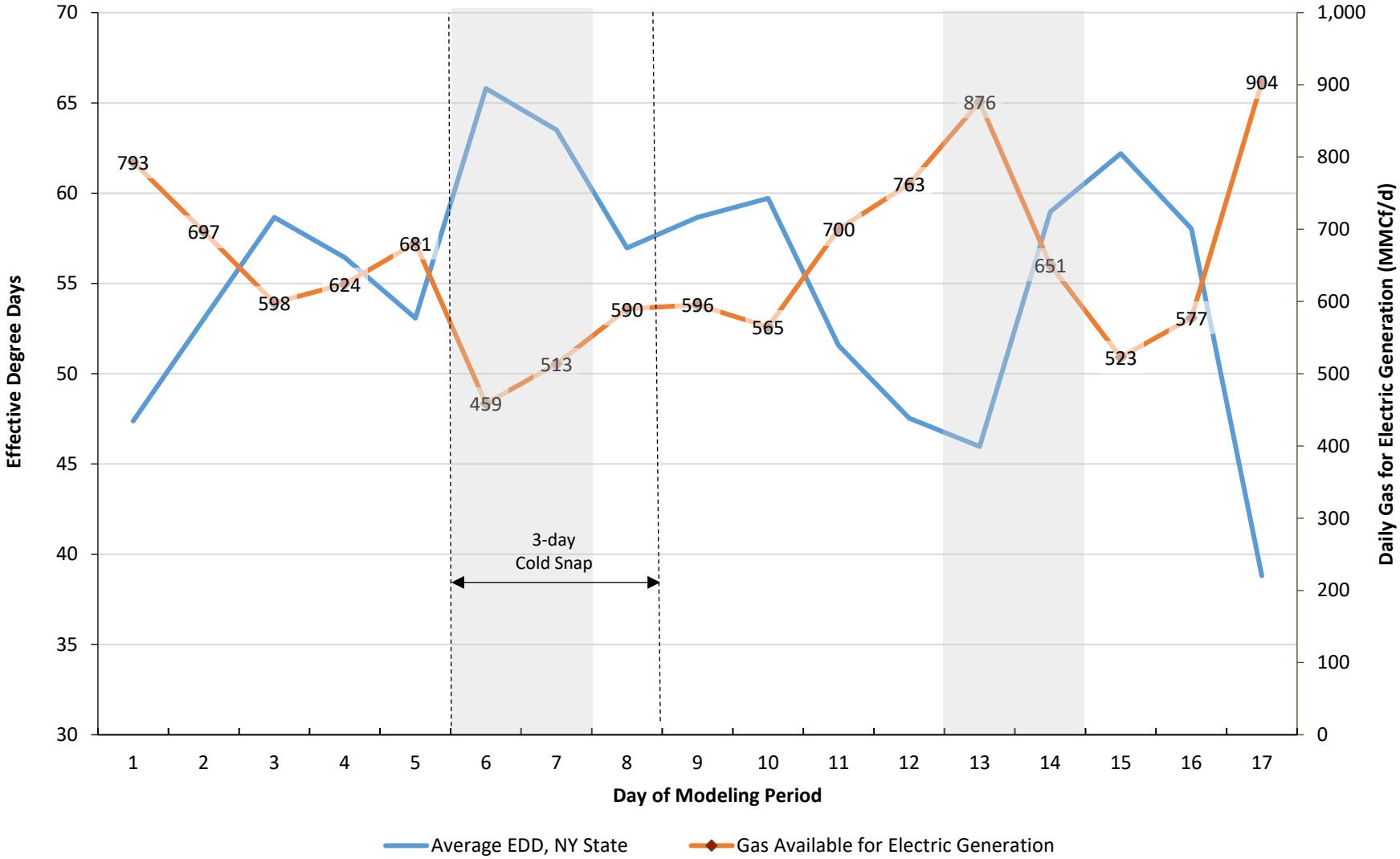

Zone J
Hourly Generation (MW) by Fuel Group
Scenario 8 - PD 8 Non-Firm Gas Unavailable (F-K)
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

Zone K
Hourly Generation (MW) by Fuel Group
Scenario 8 - PD 8 Non-Firm Gas Unavailable (F-K)

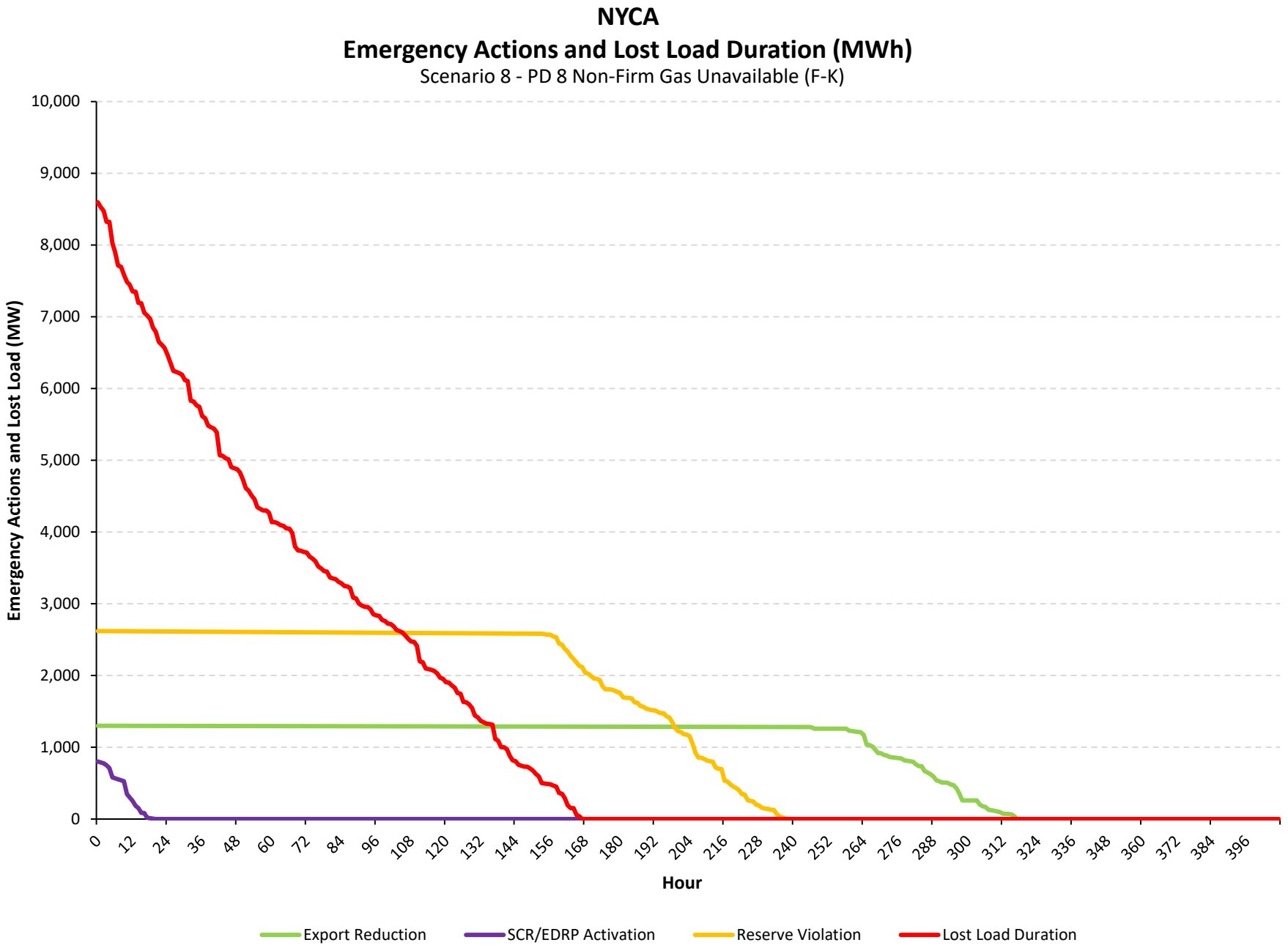


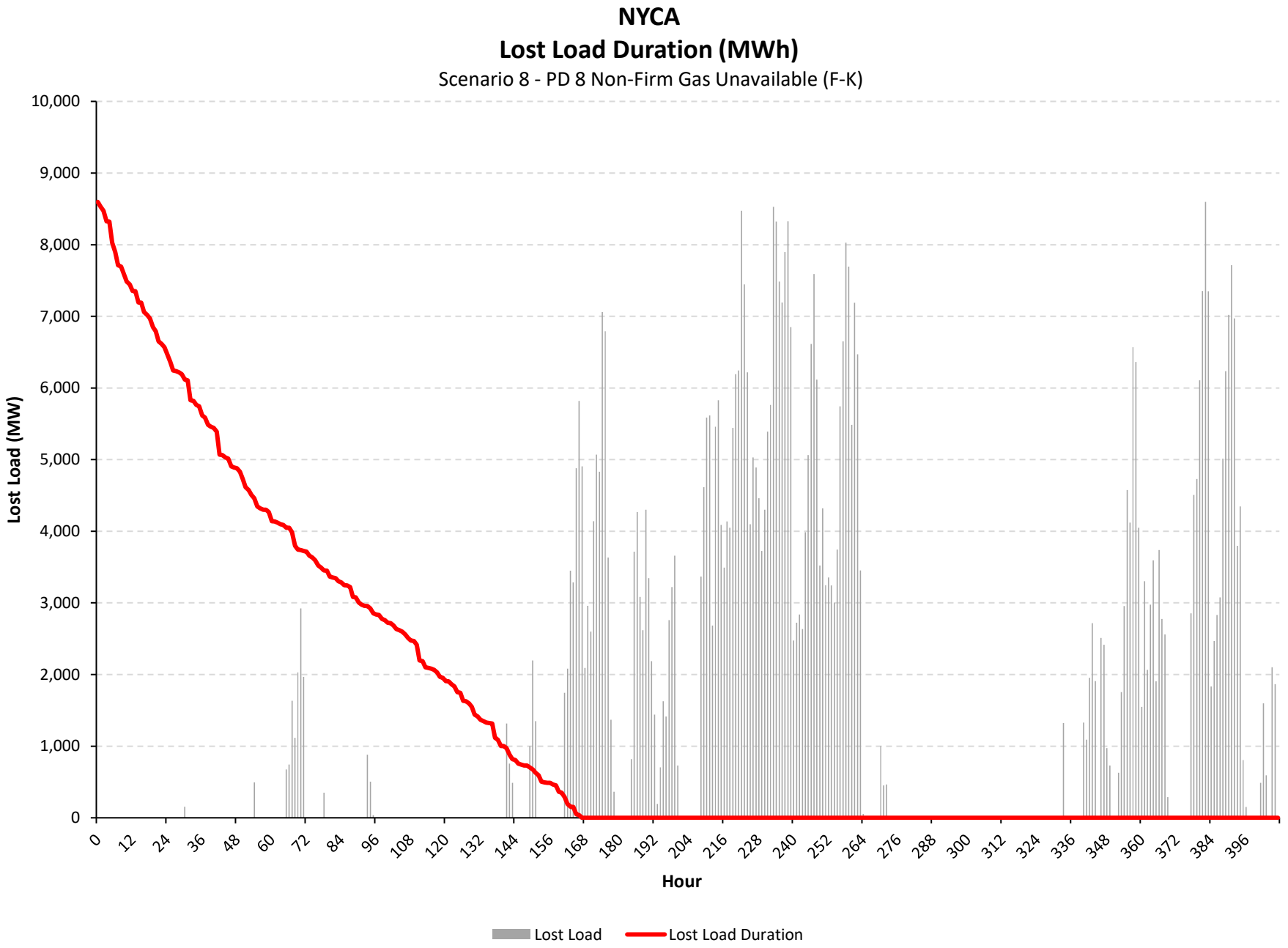

NYCA
Quantity of Stored Fuel for Oil and Dual Fuel Units
Scenario 8 - PD 8 Non-Firm Gas Unavailable (F-K)
Energy Stored (MWh)
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Zones A-E
Zone F
Zones G-I
Zone J
Zone K

NYCA
Degree Days and Gas Available for Electric Generation 17-Day Modeling Period
Scenario 8 - PD 8 Non-Firm Gas Unavailable (F-K)



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 8 - PD 8 Non-Firm Gas Unavailable (F-K)
Emergency Actions and Lost Load (MW)
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 8 - PD 8 Non-Firm Gas Unavailable (F-K)
Lost Load (MW)
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

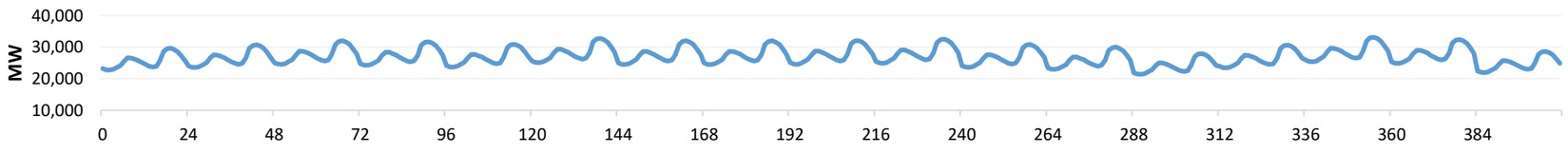
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 8 - PD 9 Non-Firm Gas Unavailable (NYCA) (Winter 2030/2031)

Hourly Results Summary

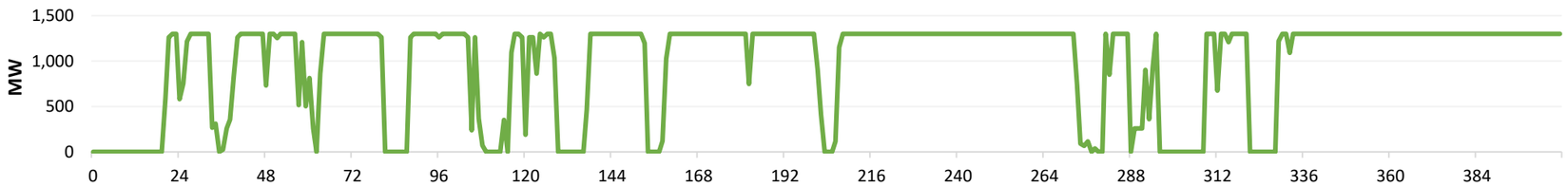
Case Name: Scenario 8 - PD 9 Non-Firm Gas Unavailable (NYCA)

Load During Modeling Period



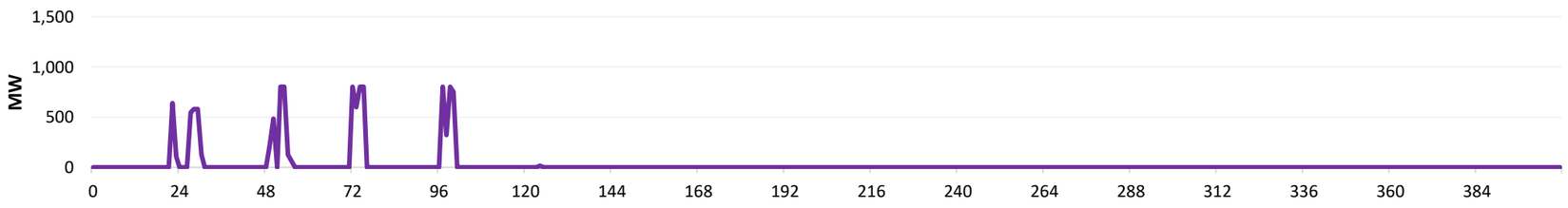
Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	NYISO
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

Export to ISO-NE Reduction During Modeling Period



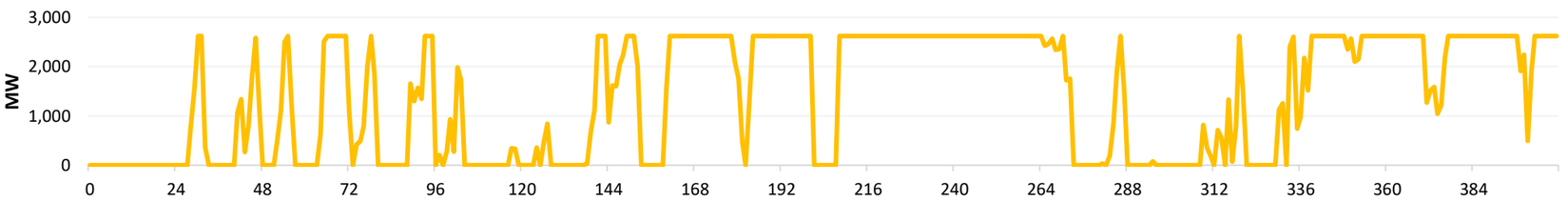
Export Reductions	
Total Hrs.	333
Total MWh	396,923
Avg. MW	972.9

SCR/EDRP Deployed During Modeling Period



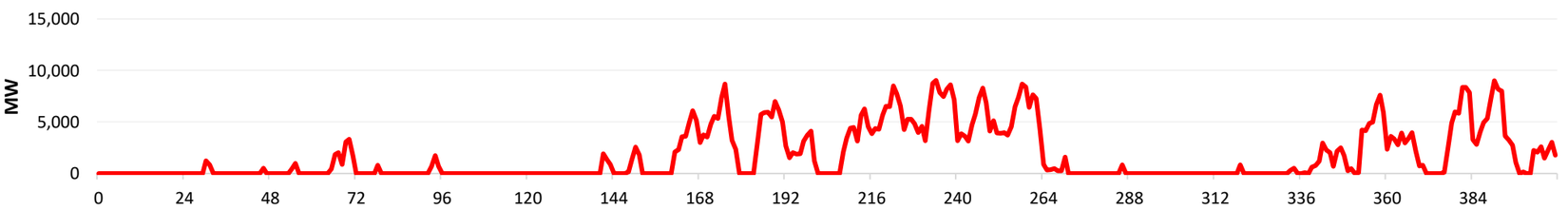
SCR Deployment	
Total Hrs.	21
Total MWh	10,775
Avg. MW	26.4

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	264
Total MWh	566,343
Avg. MW	1,388.1
First Hour with Viol.	28

Loss of Load During Modeling Period



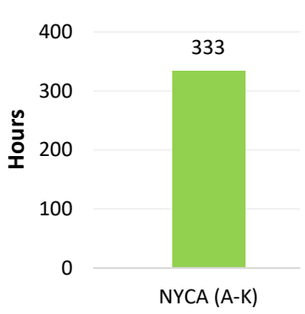
Loss of Load	
Total Hrs.	188
Total MWh	710,378
Avg. MW	1,741.1
First Hour with Losses	30

Full Period Results Summary

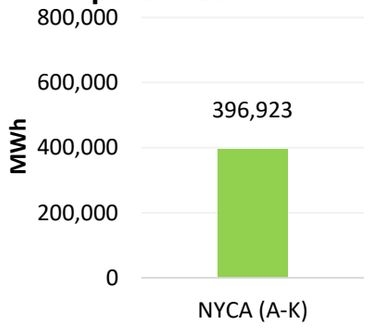
Case Name: Scenario 8 - PD 9 Non-Firm Gas Unavailable (NYCA)

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	NYISO
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

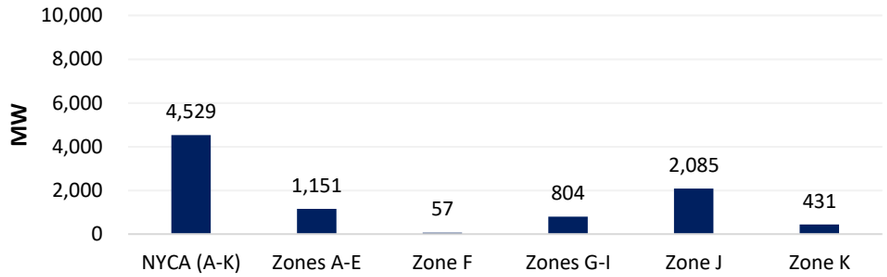
Hours Exports Reduced



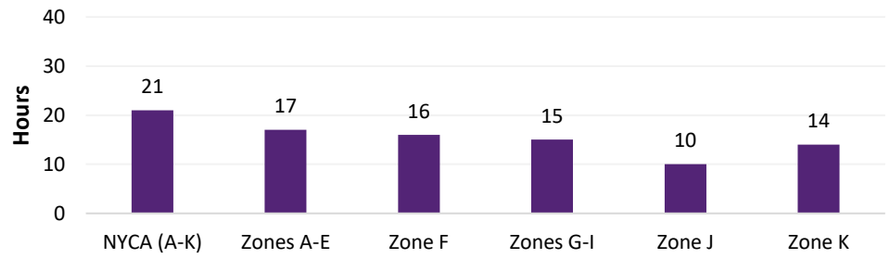
Total MWh of Exports Reduced



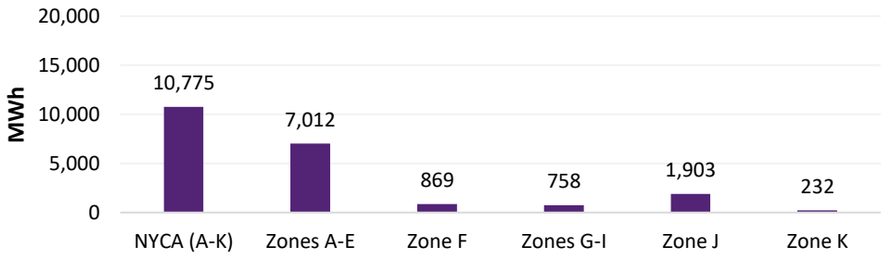
Average Capacity Not Available Due to Exhausted Fuel Inventory



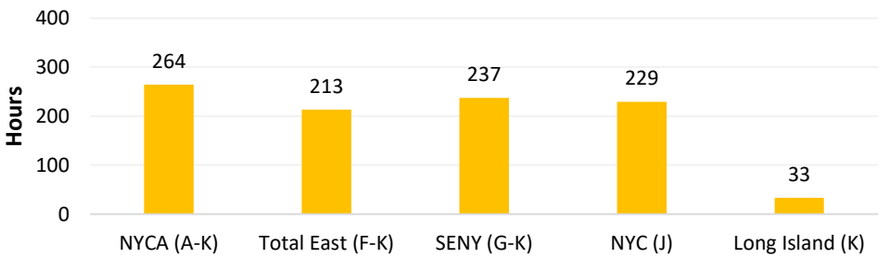
Hours SCR/EDRP Deployed



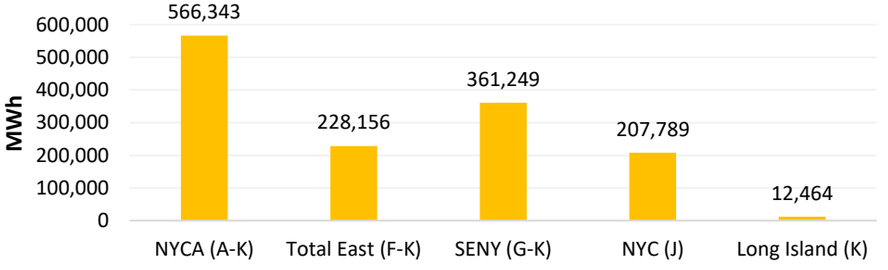
Total MWh SCR/EDRP Deployed



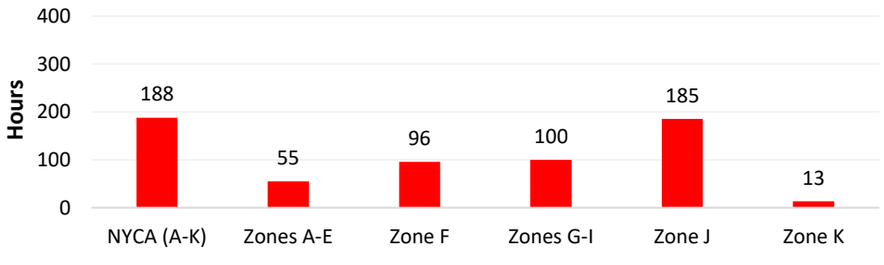
Hours with Reserve Violations



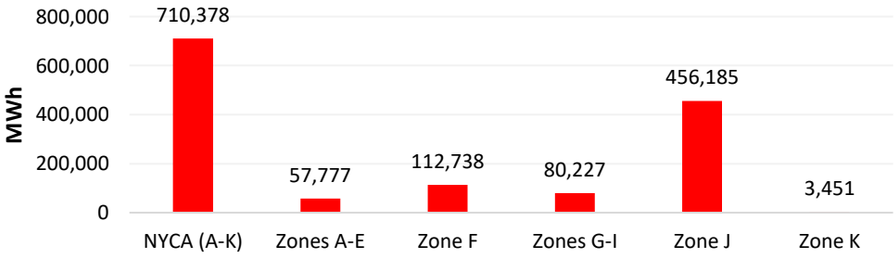
Total MWh of Reserve Violations

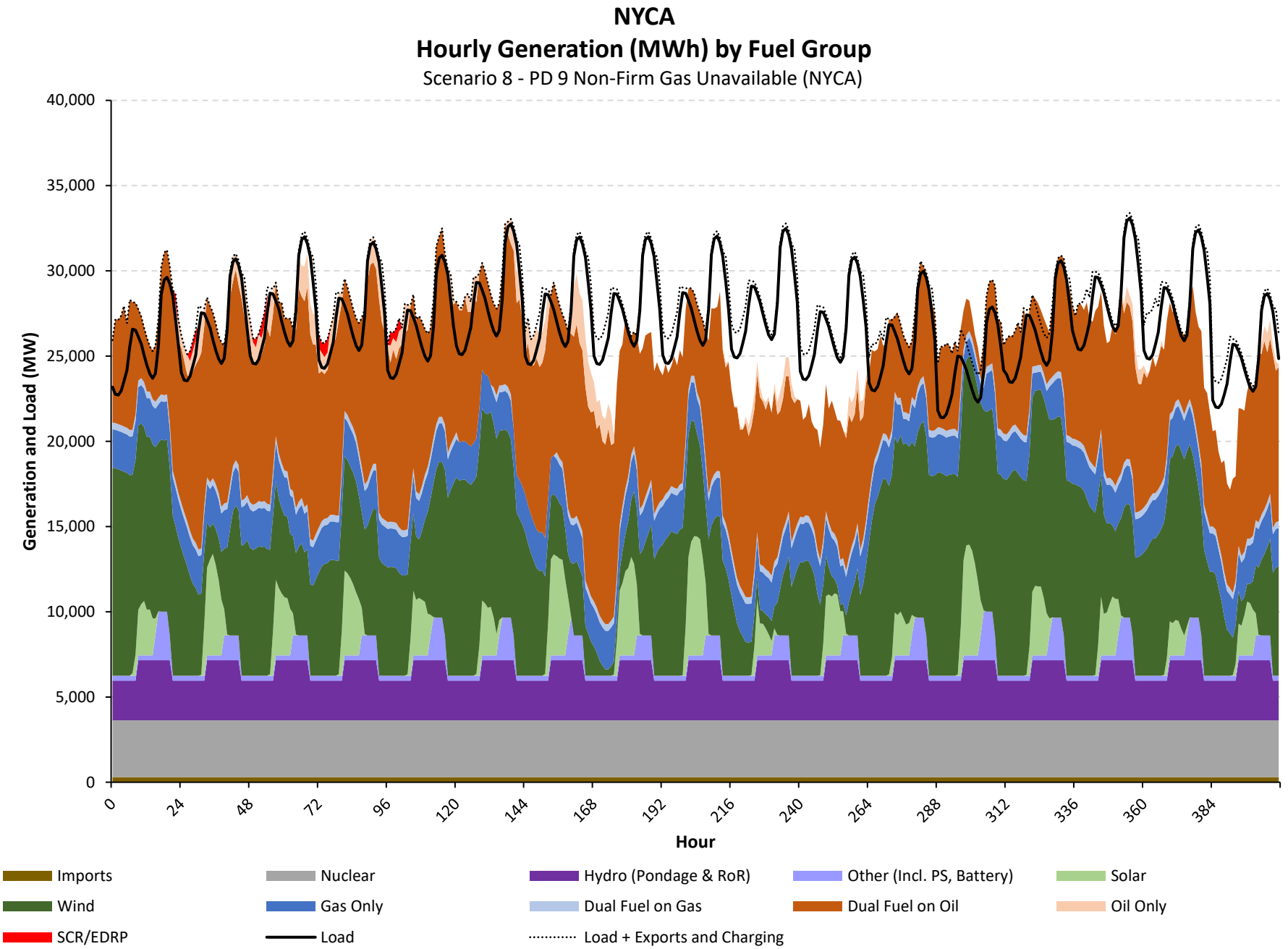


Hours with Loss of Load

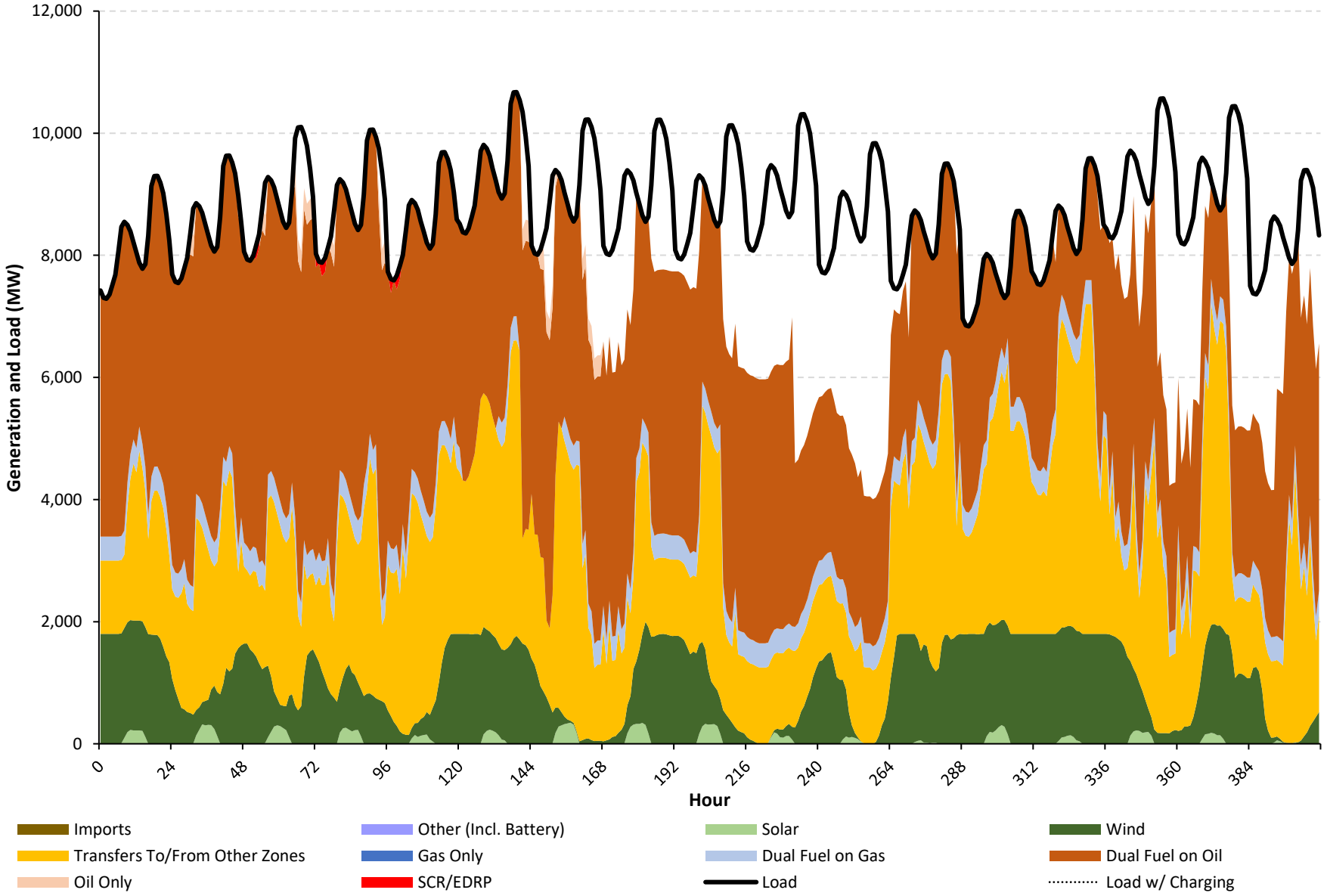


Total MWh of Lost Load

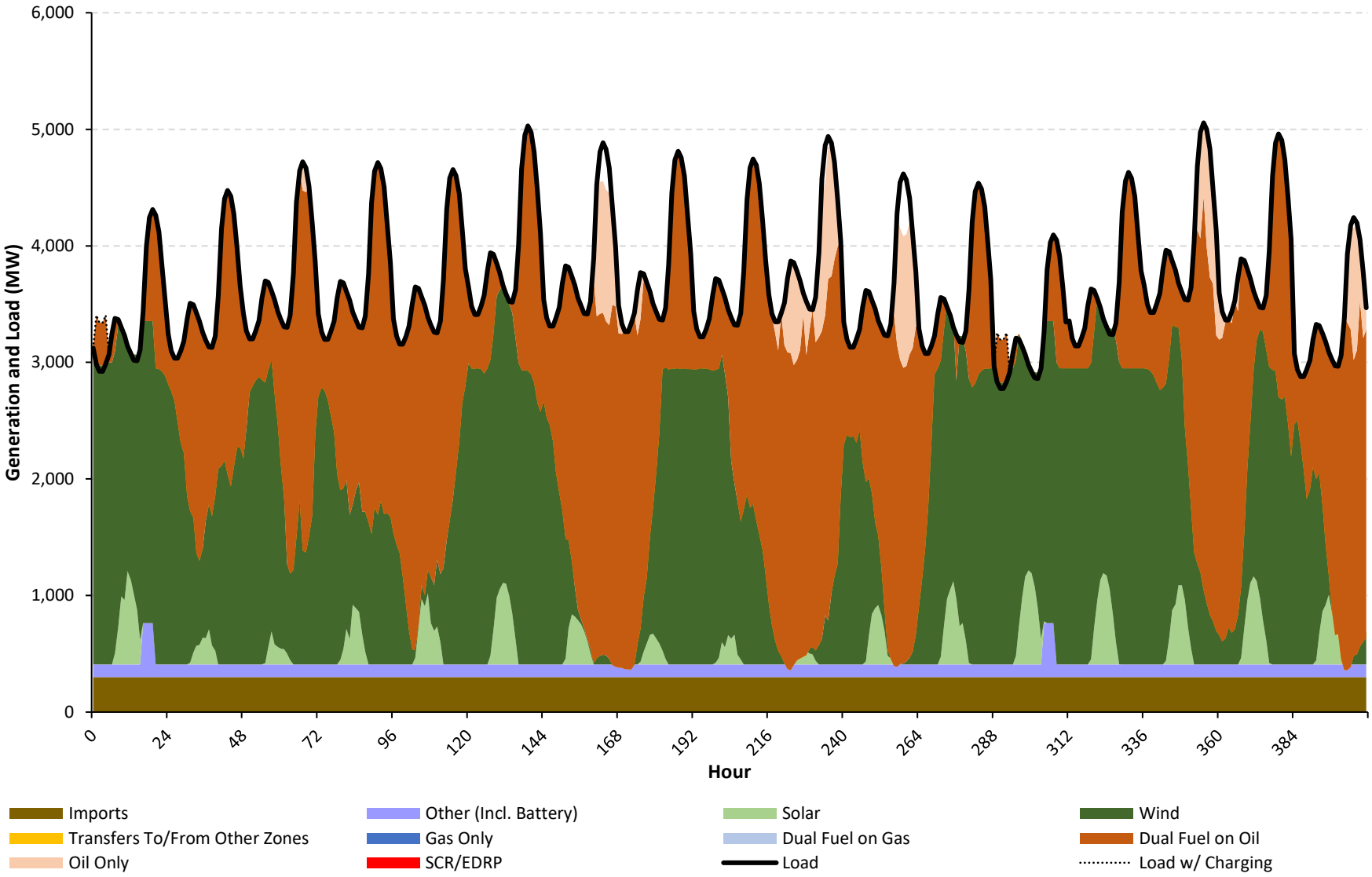



NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 8 - PD 9 Non-Firm Gas Unavailable (NYCA)
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

Zone J
Hourly Generation (MW) by Fuel Group
Scenario 8 - PD 9 Non-Firm Gas Unavailable (NYCA)



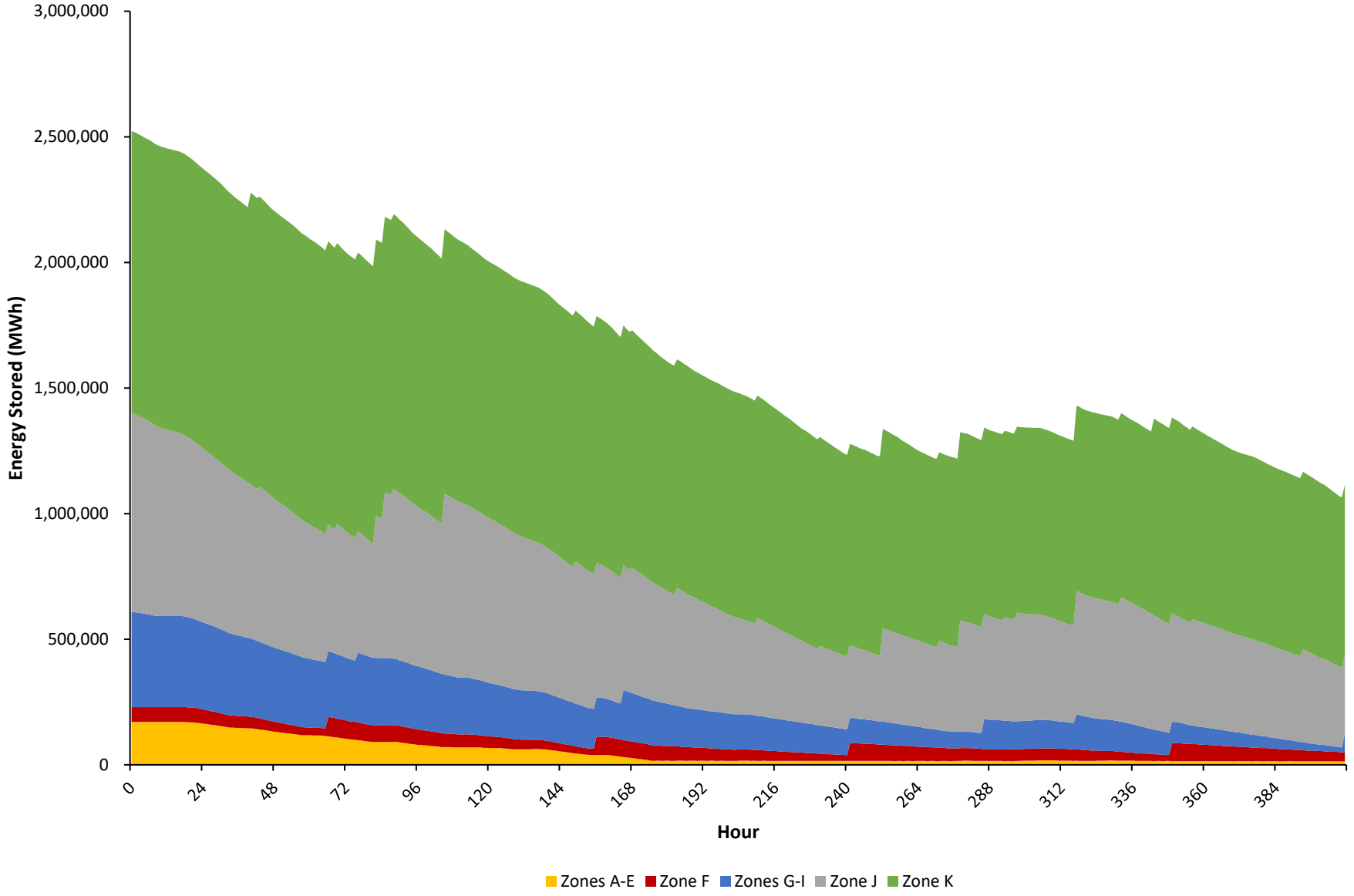
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 8 - PD 9 Non-Firm Gas Unavailable (NYCA)

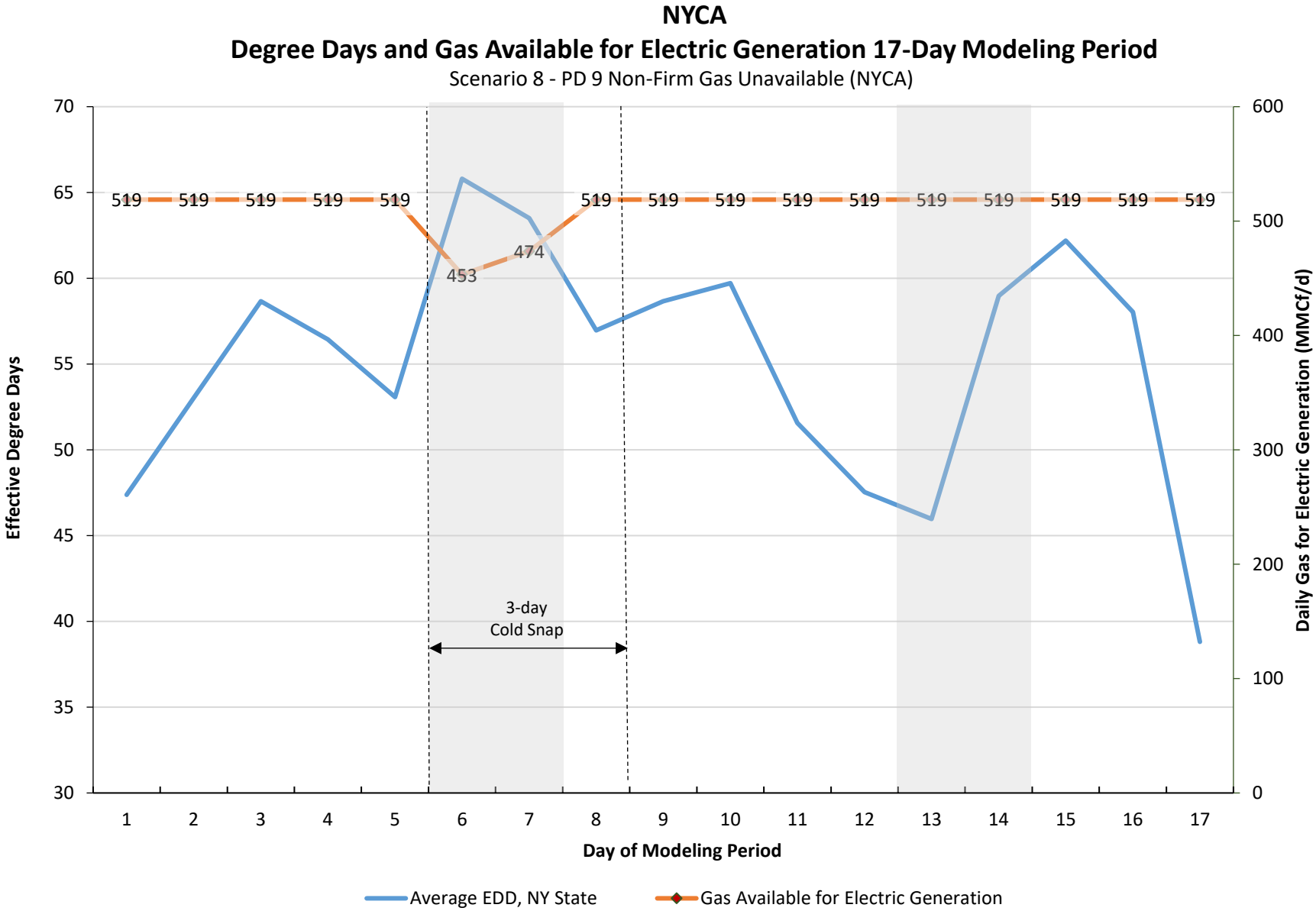


NYCA

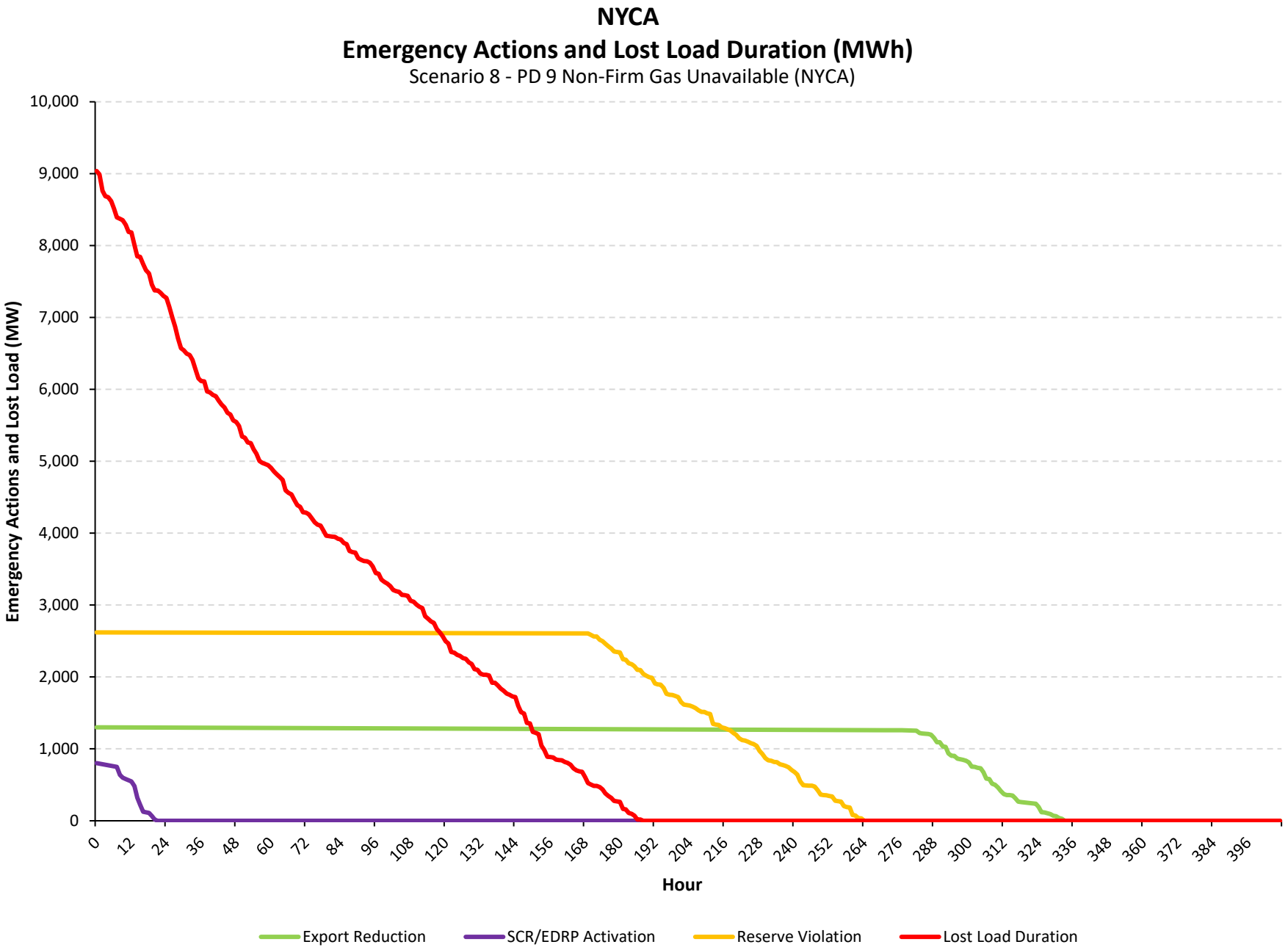
Quantity of Stored Fuel for Oil and Dual Fuel Units

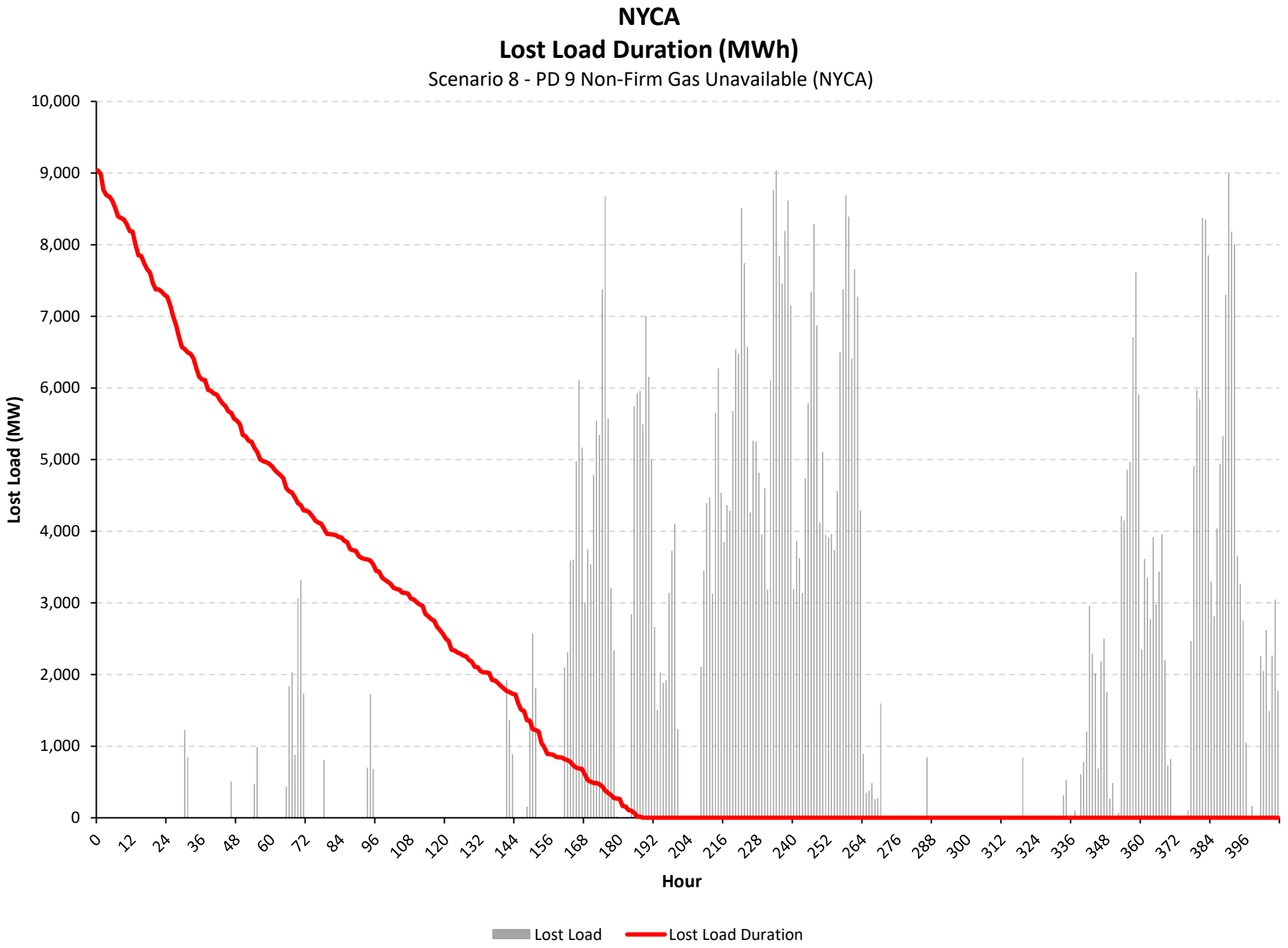
Scenario 8 - PD 9 Non-Firm Gas Unavailable (NYCA)





Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 8 - PD 9 Non-Firm Gas Unavailable (NYCA)
Emergency Actions and Lost Load (MW)
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 8 - PD 9 Non-Firm Gas Unavailable (NYCA)
Lost Load (MW)
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

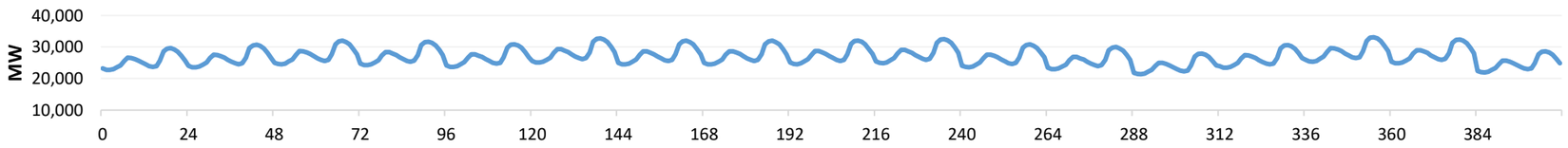
Case: Scenario 8 - PD 10 Non-Firm Gas Unavailable (4 days) (Winter 2030/2031)

Hourly Results Summary

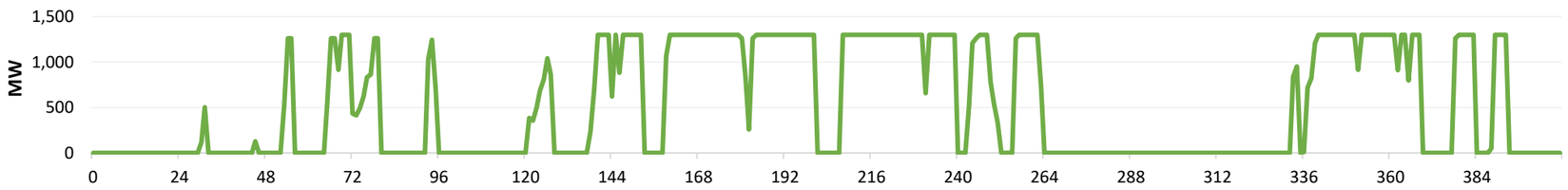
Case Name: Scenario 8 - PD 10 Non-Firm Gas Unavailable (4 days)

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	3-4 days
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

Load During Modeling Period

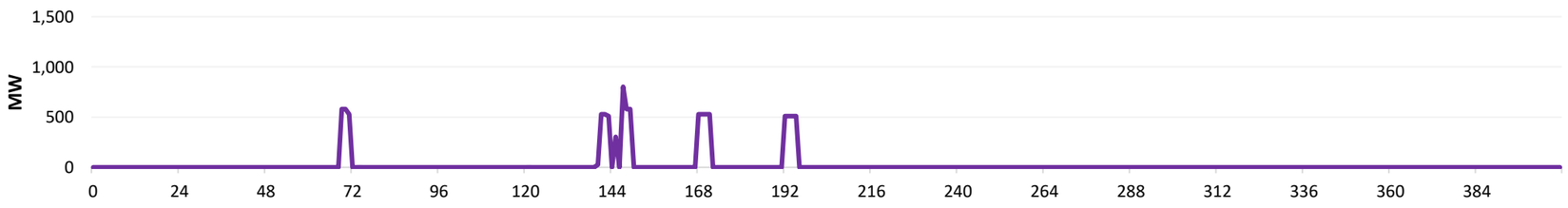


Export to ISO-NE Reduction During Modeling Period



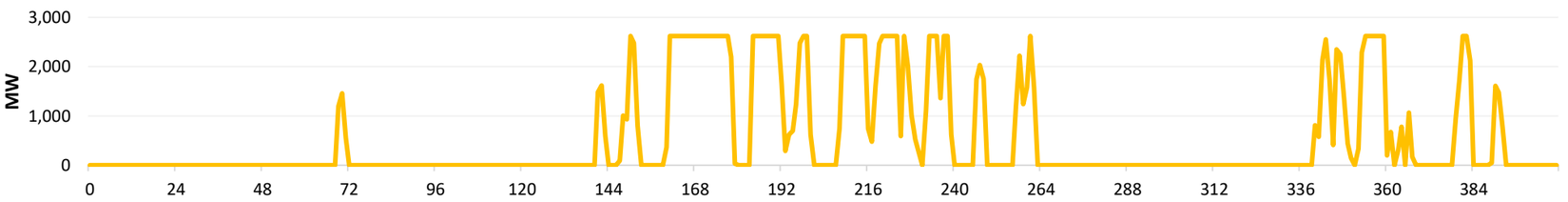
Export Reductions	
Total Hrs.	184
Total MWh	208,276
Avg. MW	510.5

SCR/EDRP Deployed During Modeling Period



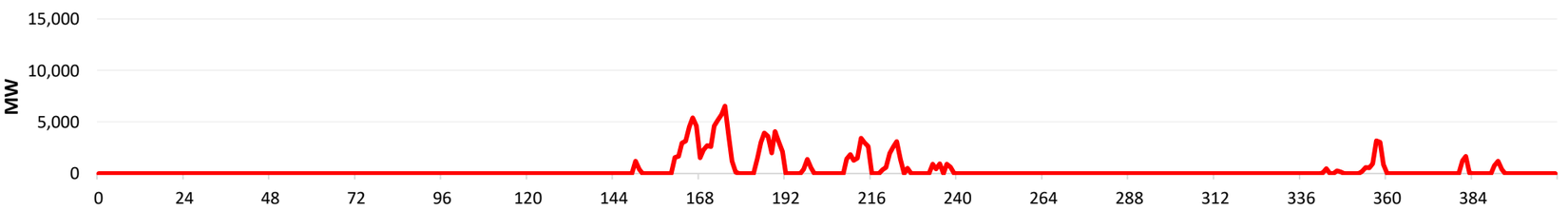
SCR Deployment	
Total Hrs.	19
Total MWh	9,684
Avg. MW	23.7

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	124
Total MWh	222,683
Avg. MW	545.8
First Hour with Viol.	69

Loss of Load During Modeling Period



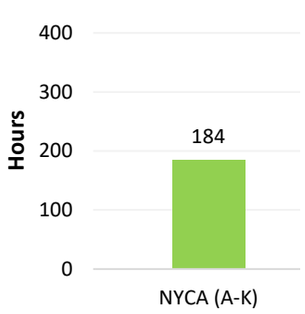
Loss of Load	
Total Hrs.	67
Total MWh	132,326
Avg. MW	324.3
First Hour with Losses	150

Full Period Results Summary

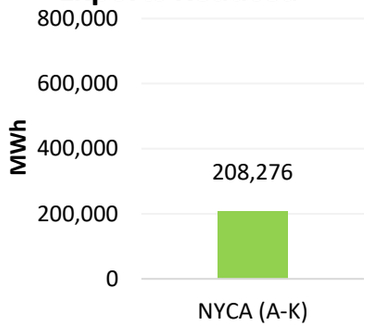
Case Name: Scenario 8 - PD 10 Non-Firm Gas Unavailable (4 days)

Case Summary	
Derate (EFORd) Increase:	Off
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	Off
Loss of Gas Fired Gen.	3-4 days
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

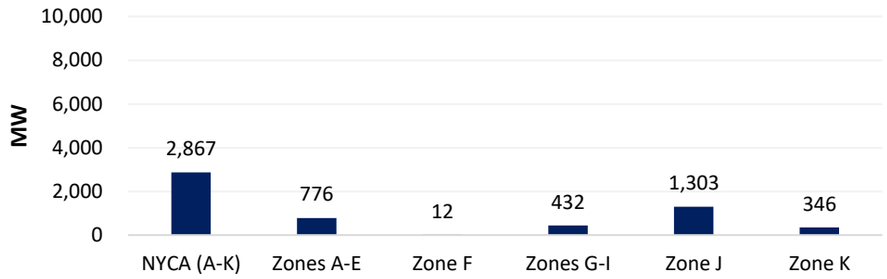
Hours Exports Reduced



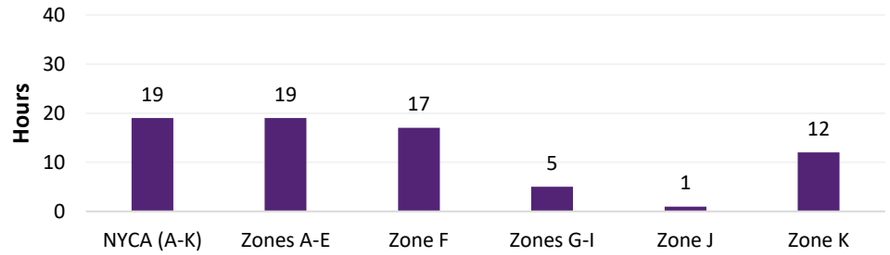
Total MWh of Exports Reduced



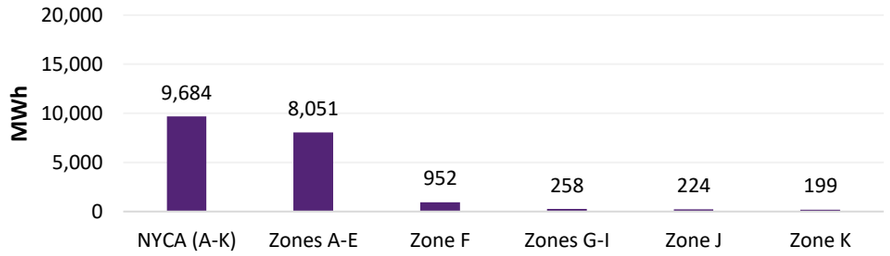
Average Capacity Not Available Due to Exhausted Fuel Inventory



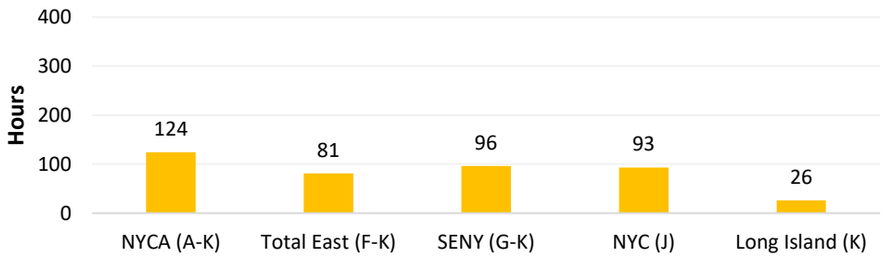
Hours SCR/EDRP Deployed



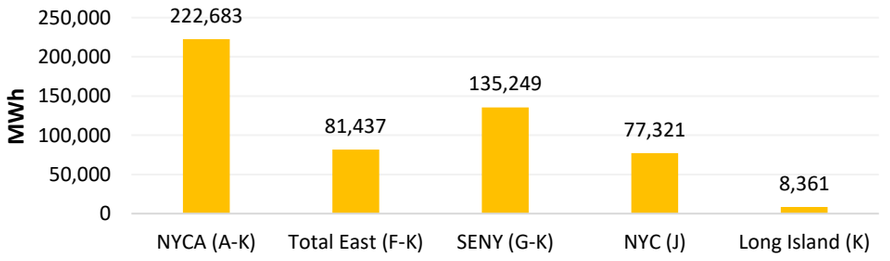
Total MWh SCR/EDRP Deployed



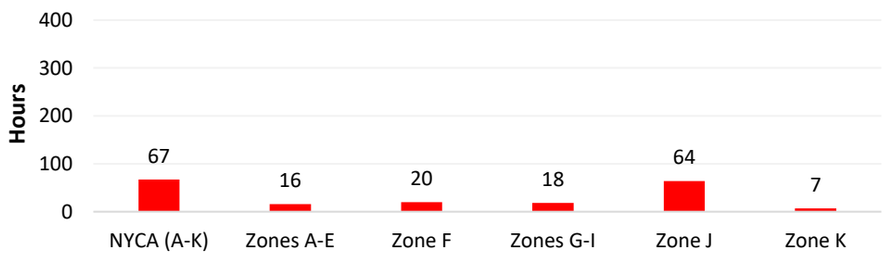
Hours with Reserve Violations



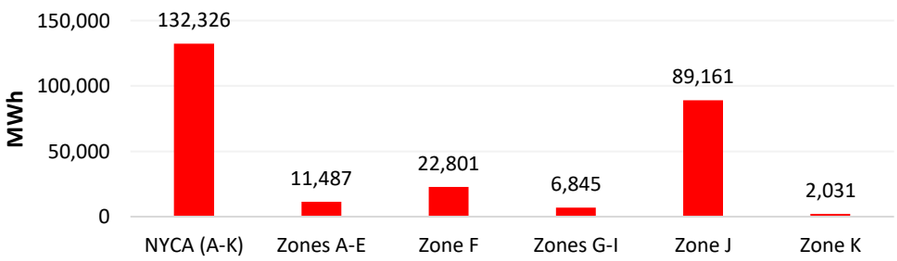
Total MWh of Reserve Violations

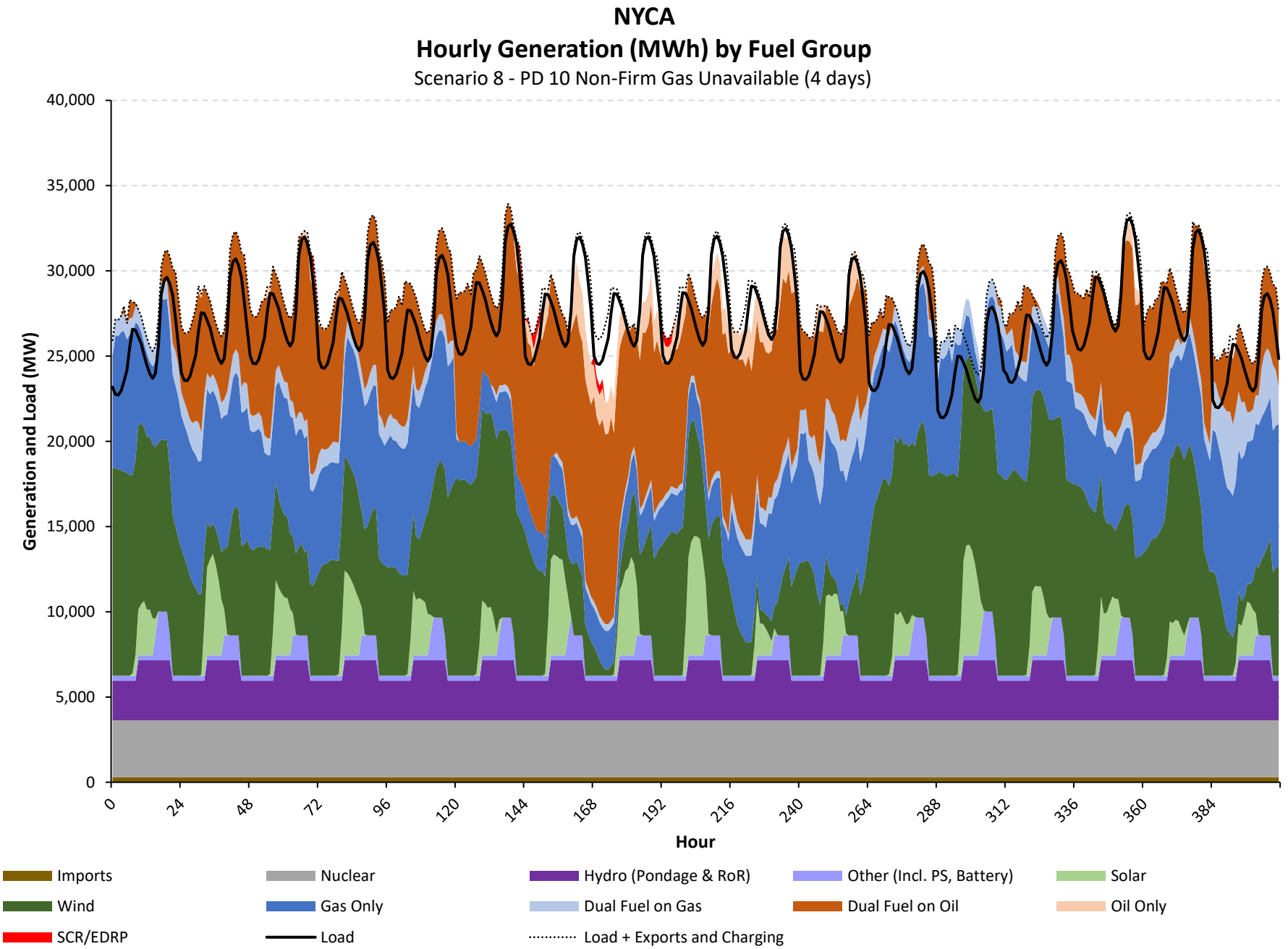


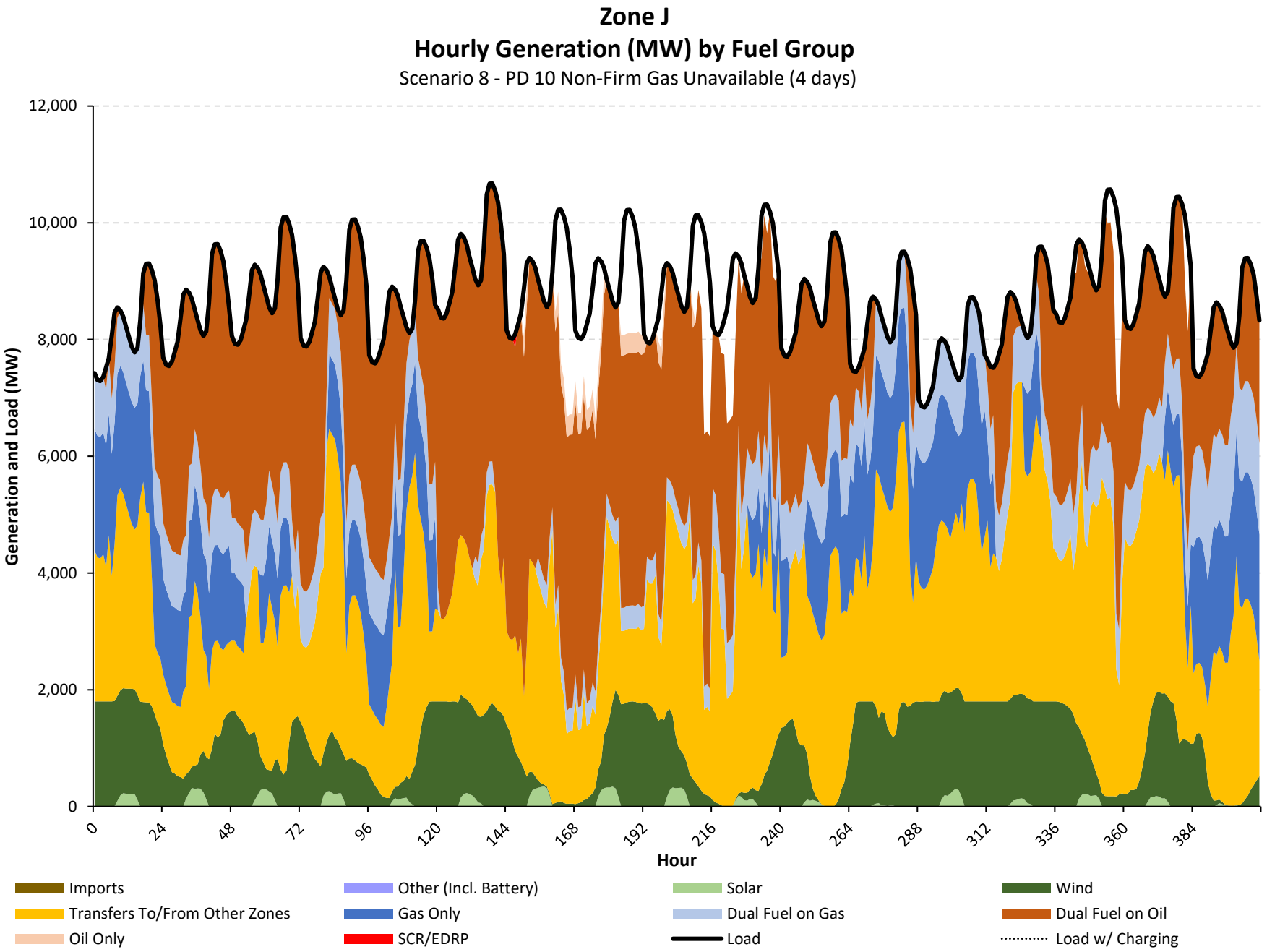
Hours with Loss of Load



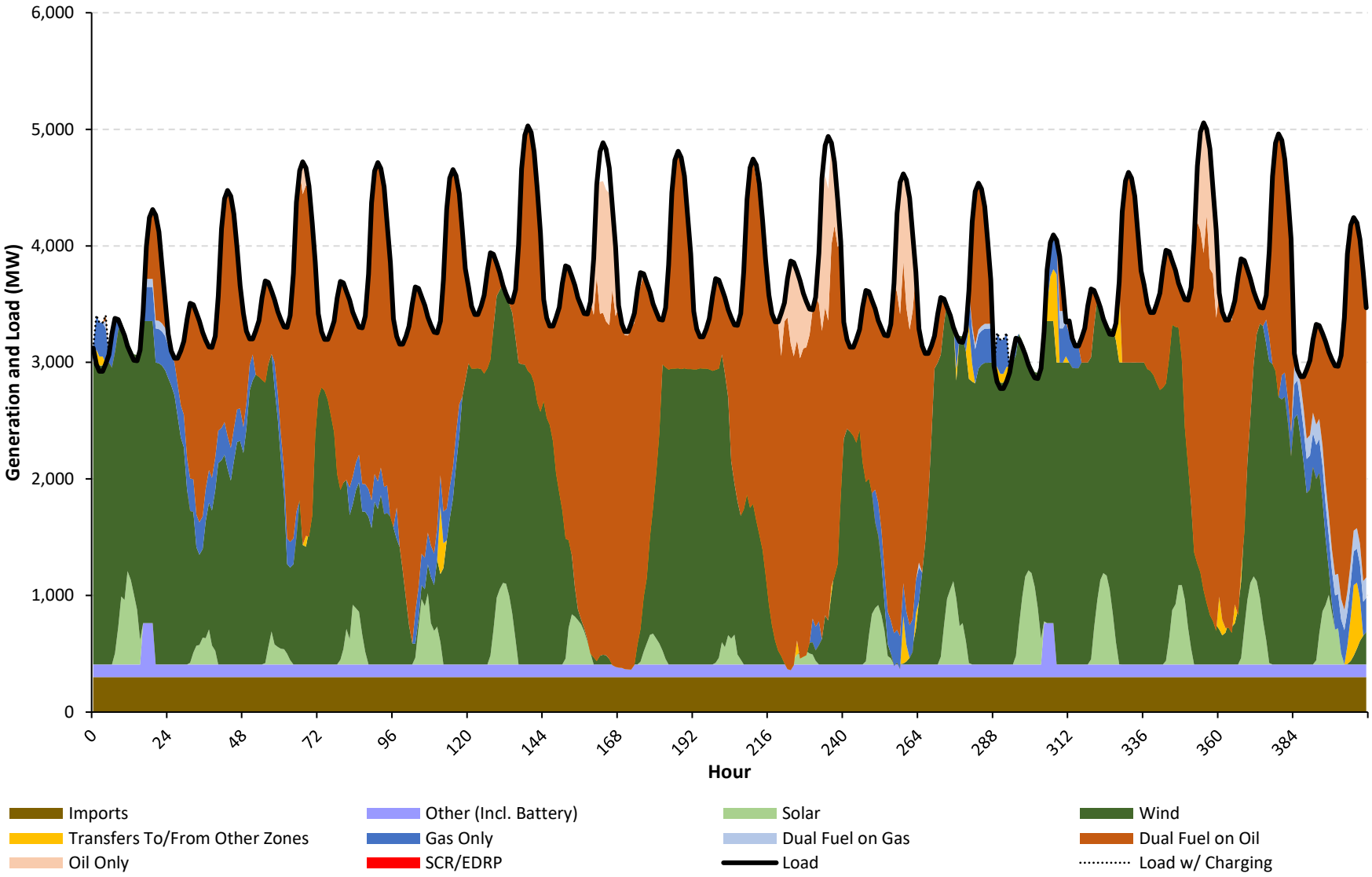
Total MWh of Lost Load




NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 8 - PD 10 Non-Firm Gas Unavailable (4 days)
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging


Zone J
Hourly Generation (MW) by Fuel Group
Scenario 8 - PD 10 Non-Firm Gas Unavailable (4 days)
Generation and Load (MW)
12,000
10,000
8,000
6,000
4,000
2,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Other (Incl. Battery)
Solar
Wind
Transfers To/From Other Zones
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load w/ Charging

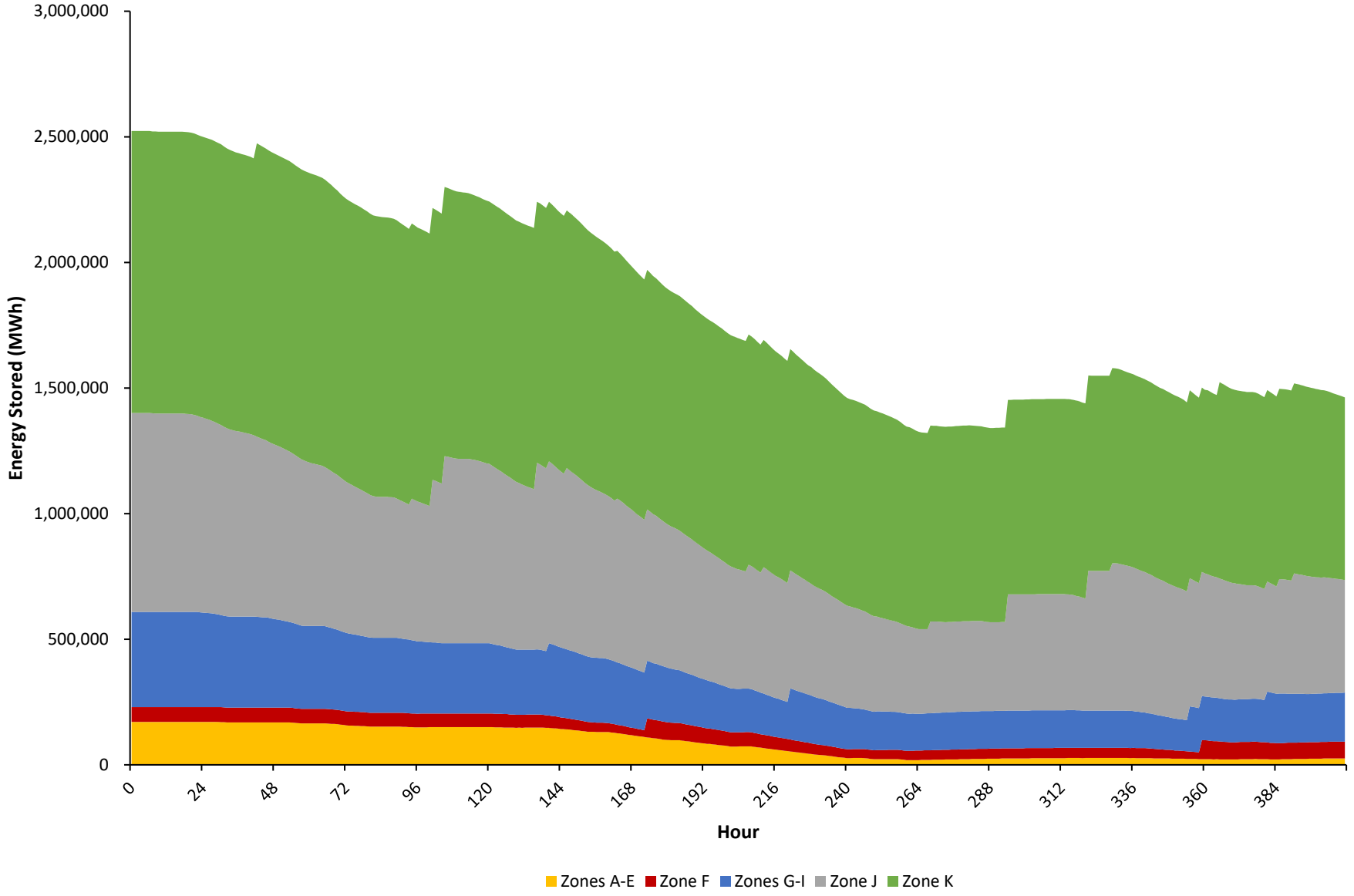
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 8 - PD 10 Non-Firm Gas Unavailable (4 days)



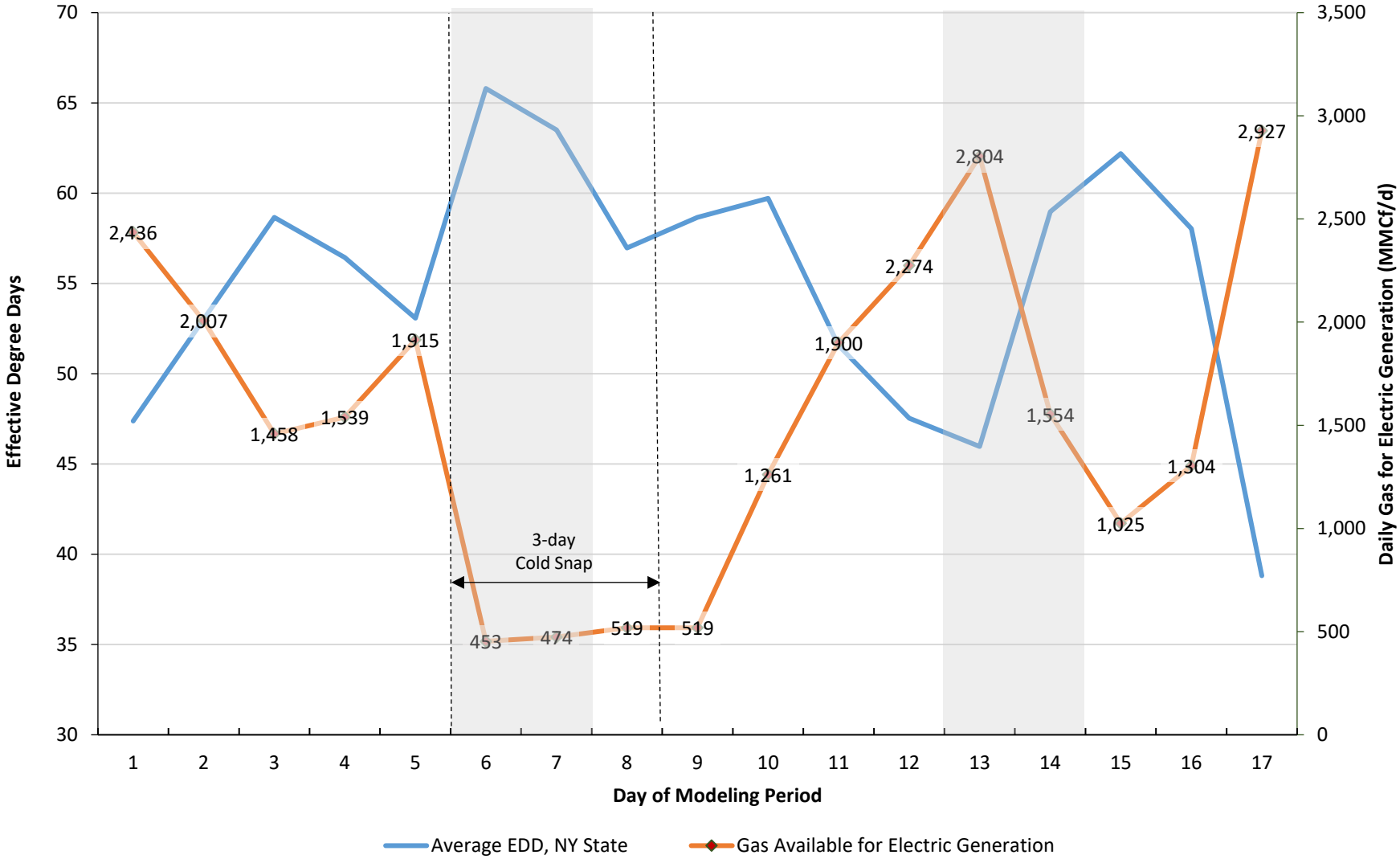
NYCA

Quantity of Stored Fuel for Oil and Dual Fuel Units

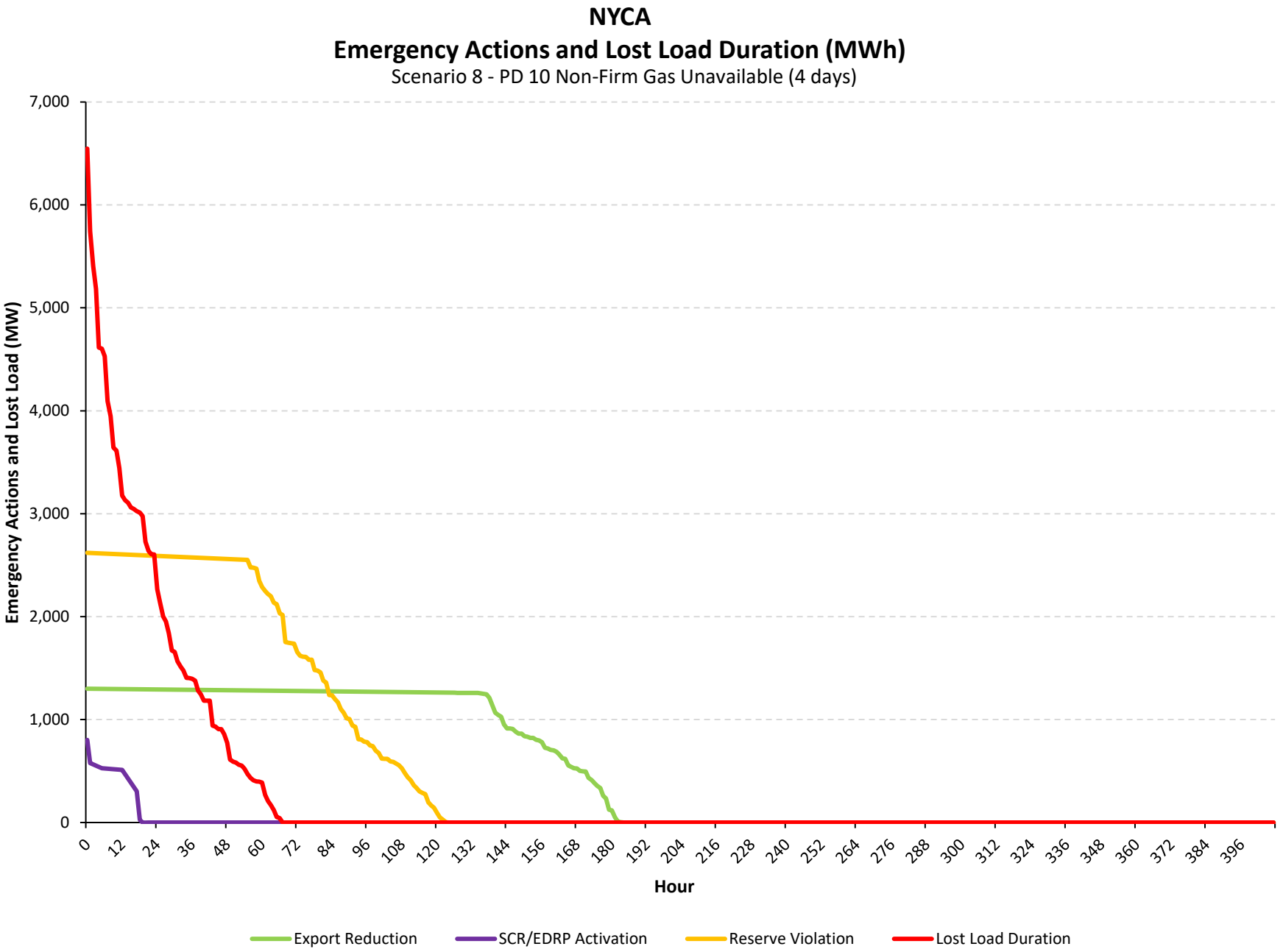
Scenario 8 - PD 10 Non-Firm Gas Unavailable (4 days)

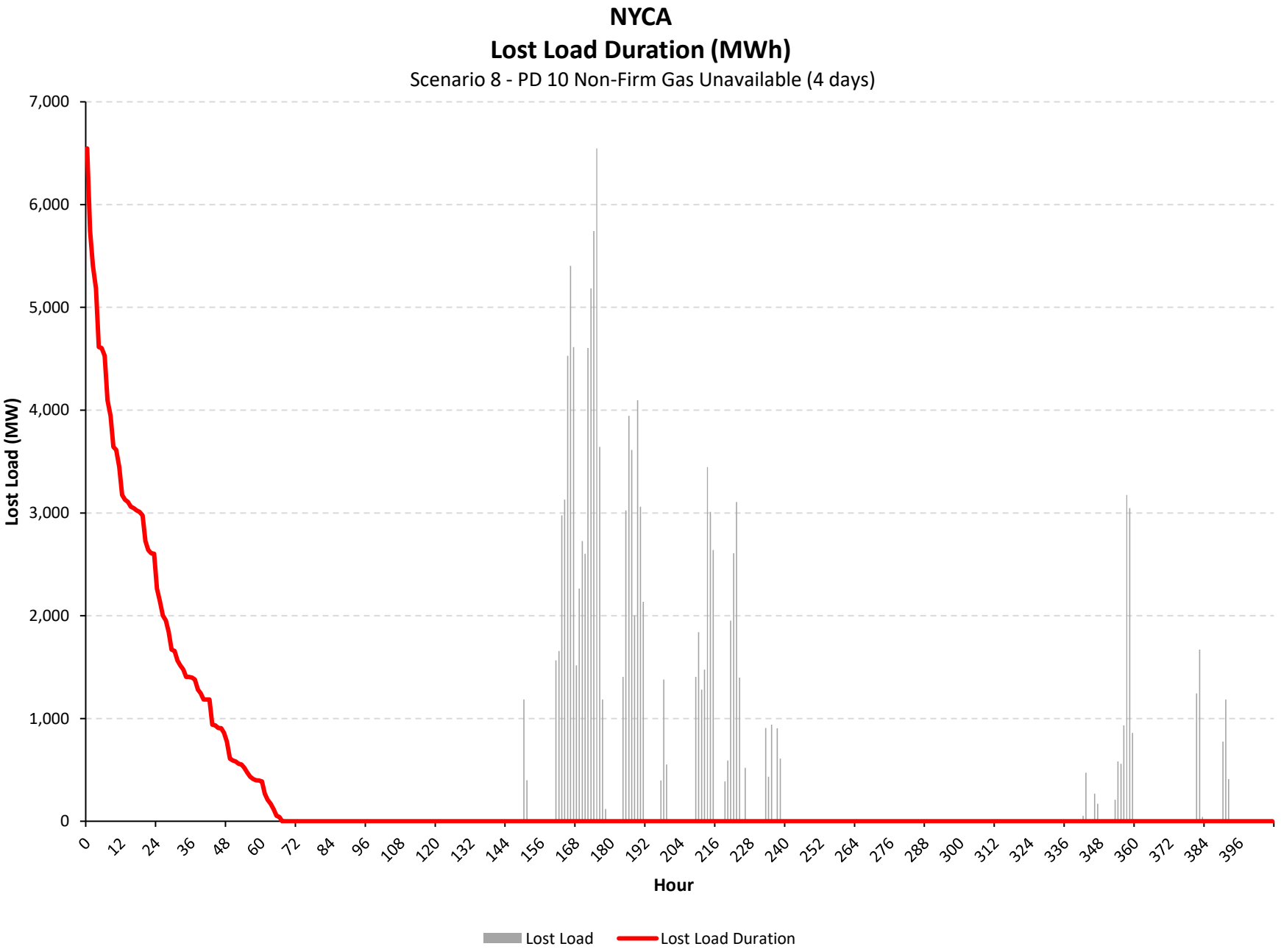


NYCA
Degree Days and Gas Available for Electric Generation 17-Day Modeling Period
Scenario 8 - PD 10 Non-Firm Gas Unavailable (4 days)



Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 8 - PD 10 Non-Firm Gas Unavailable (4 days)
Emergency Actions and Lost Load (MW)
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 8 - PD 10 Non-Firm Gas Unavailable (4 days)
Lost Load (MW)
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration

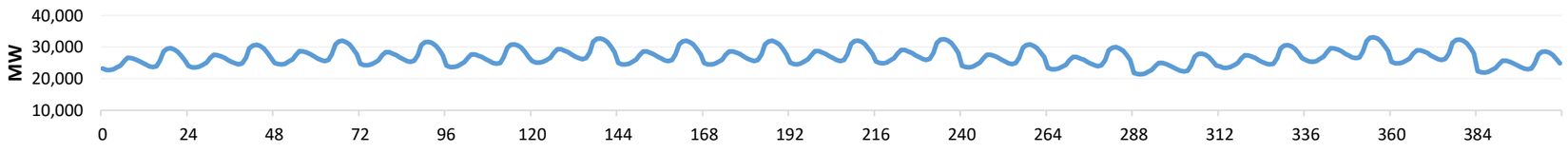
Appendix E. Diagnostic Charts for Cases with Identified Reliability Risks

Case: Scenario 8 - PD 11 Combination Disruption (Winter 2030/2031)

Hourly Results Summary

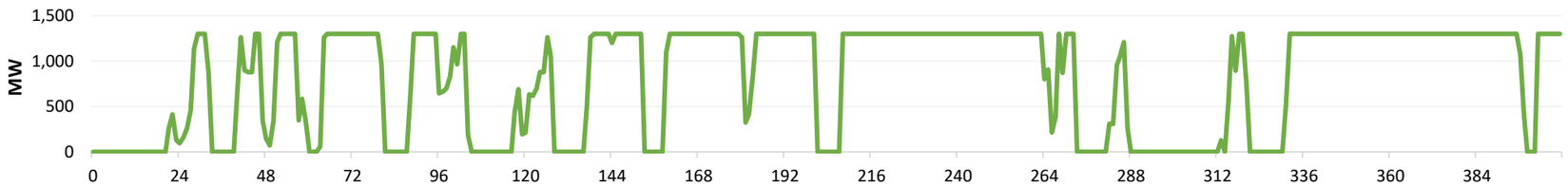
Case Name: Scenario 8 - PD 11 Combination Disruption

Load During Modeling Period



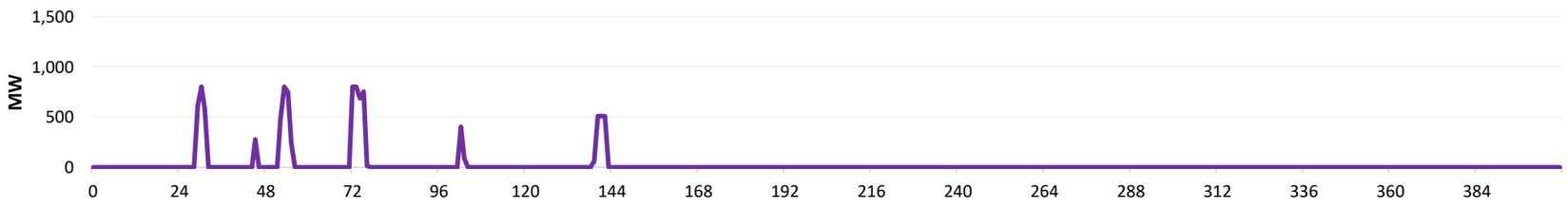
Case Summary	
Derate (EFORd) Increase:	High
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	Reduced
Loss of Gas Fired Gen.	Reduced
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

Export to ISO-NE Reduction During Modeling Period



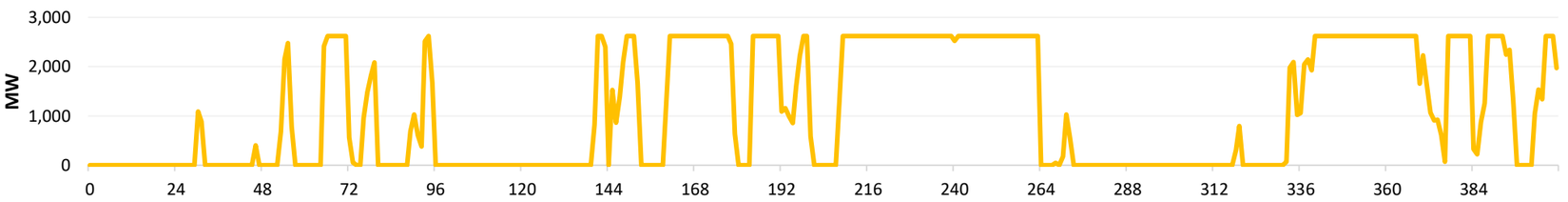
Export Reductions	
Total Hrs.	288
Total MWh	329,268
Avg. MW	807.0

SCR/EDRP Deployed During Modeling Period



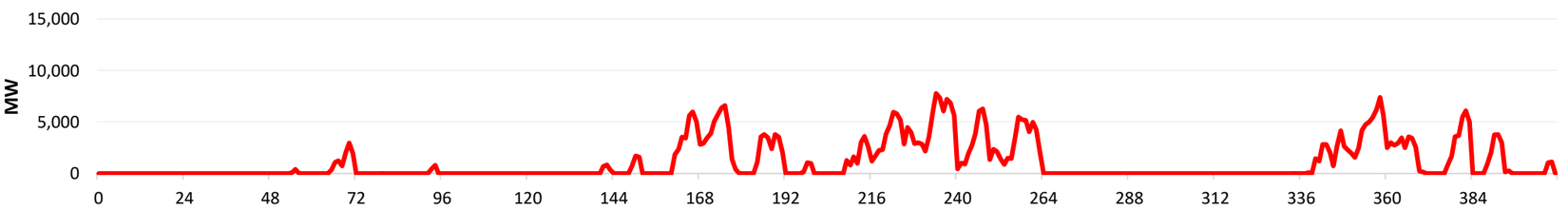
SCR Deployment	
Total Hrs.	19
Total MWh	9,688
Avg. MW	23.7

NYCA Reserve Violations During Modeling Period



Reserve Violations	
Total Hrs.	209
Total MWh	450,021
Avg. MW	1,103.0
First Hour with Viol.	30

Loss of Load During Modeling Period



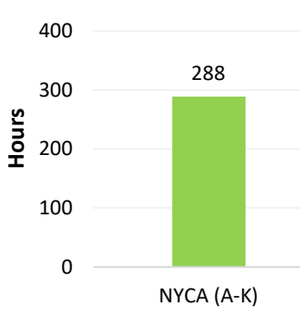
Loss of Load	
Total Hrs.	152
Total MWh	445,052
Avg. MW	1,090.8
First Hour with Losses	54

Full Period Results Summary

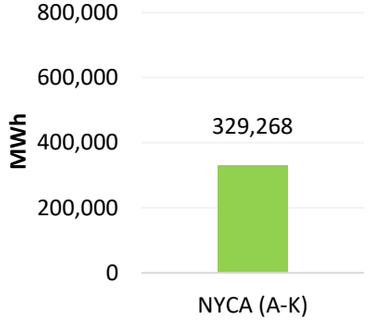
Case Name: Scenario 8 - PD 11 Combination Disruption

Case Summary	
Derate (EFORd) Increase:	High
Starting Storage:	High
Renewables:	Delayed
Refill Contingency:	Reduced
Loss of Gas Fired Gen.	Reduced
Nuclear Contingency:	Off
Plant Outage:	None
Import Scenario:	Net Zero

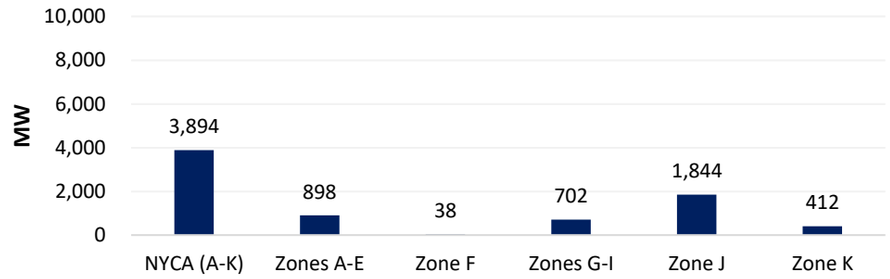
Hours Exports Reduced



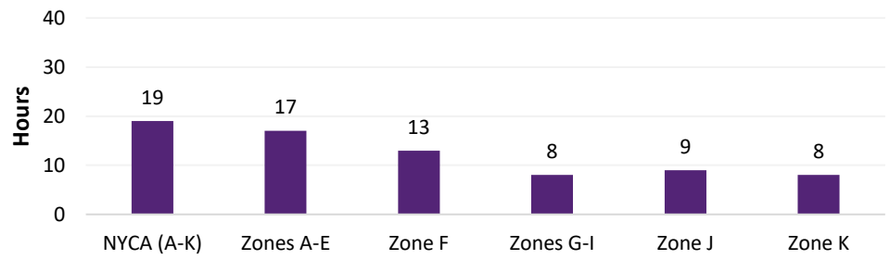
Total MWh of Exports Reduced



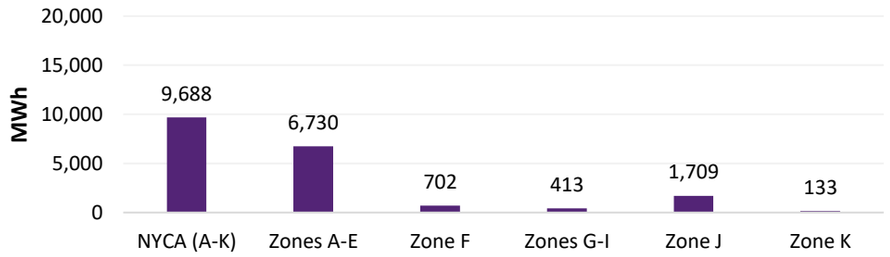
Average Capacity Not Available Due to Exhausted Fuel Inventory



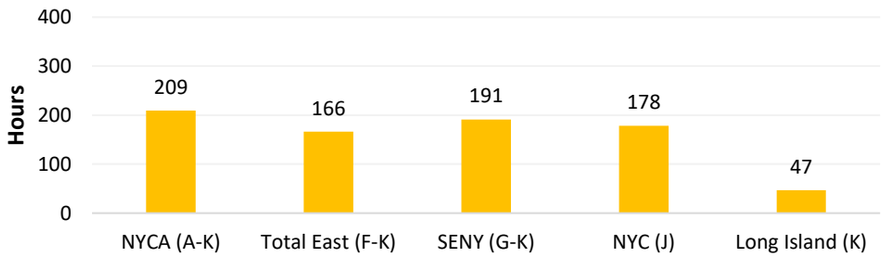
Hours SCR/EDRP Deployed



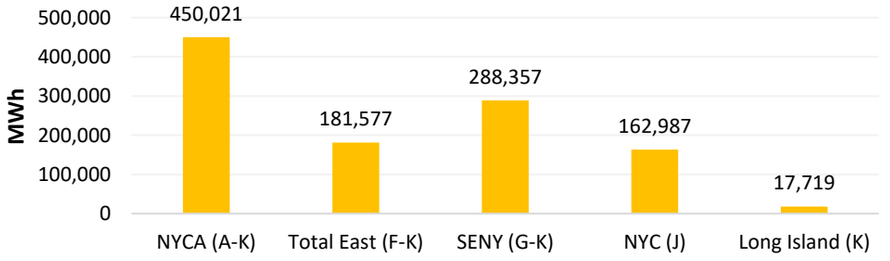
Total MWh SCR/EDRP Deployed



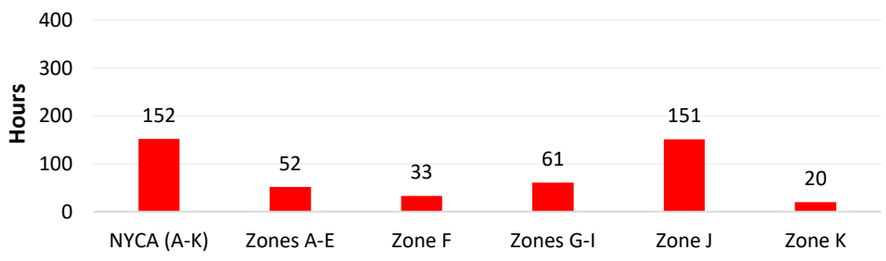
Hours with Reserve Violations



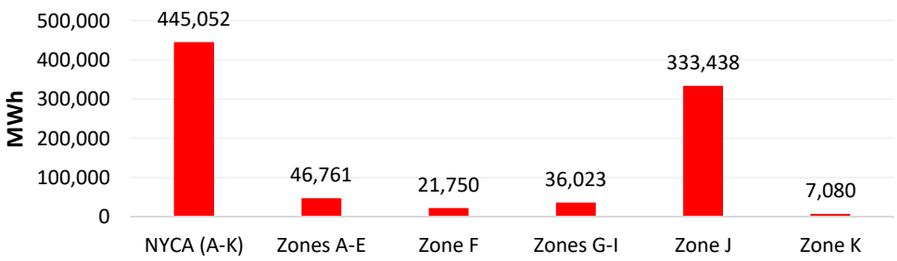
Total MWh of Reserve Violations

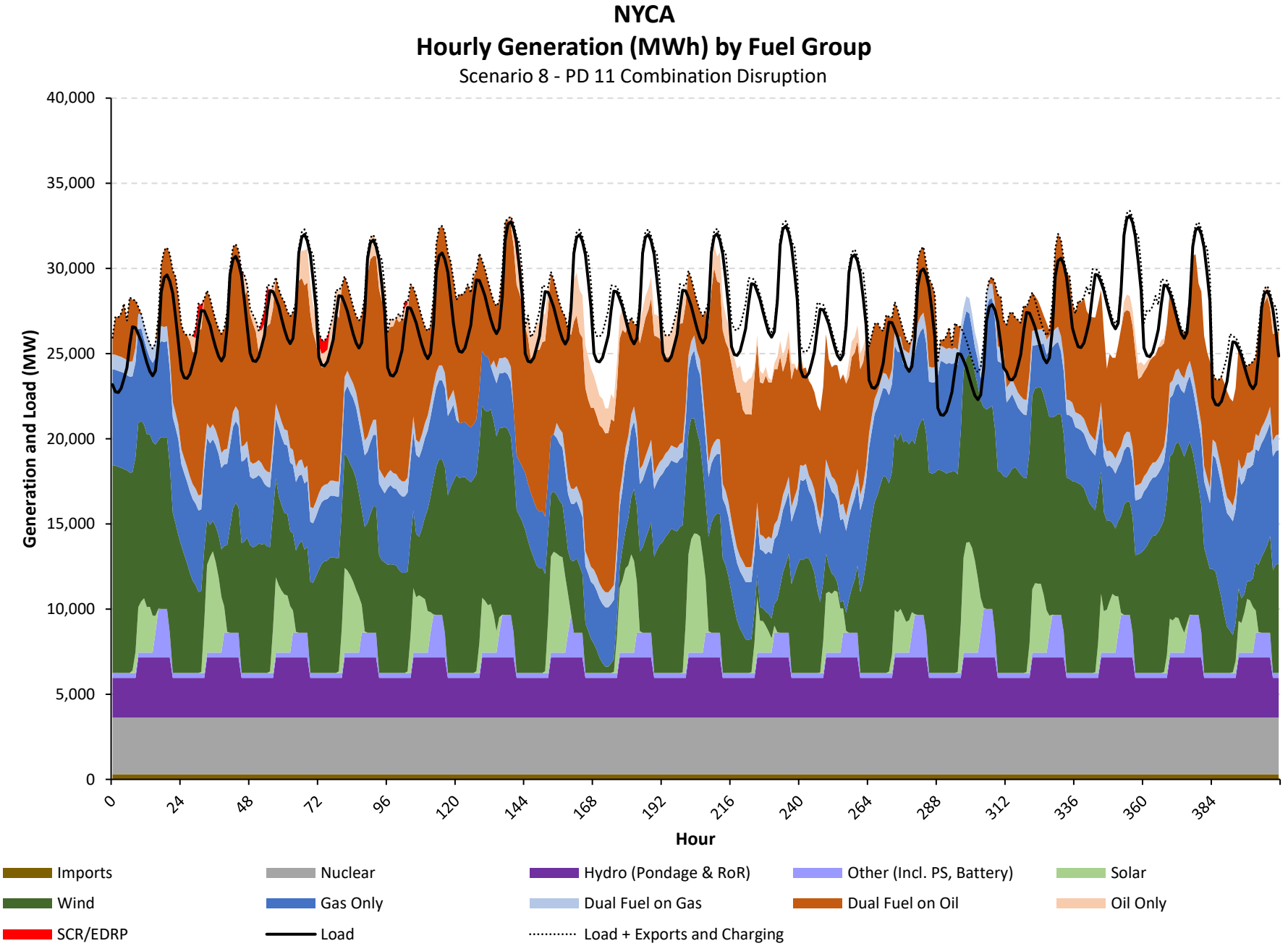


Hours with Loss of Load

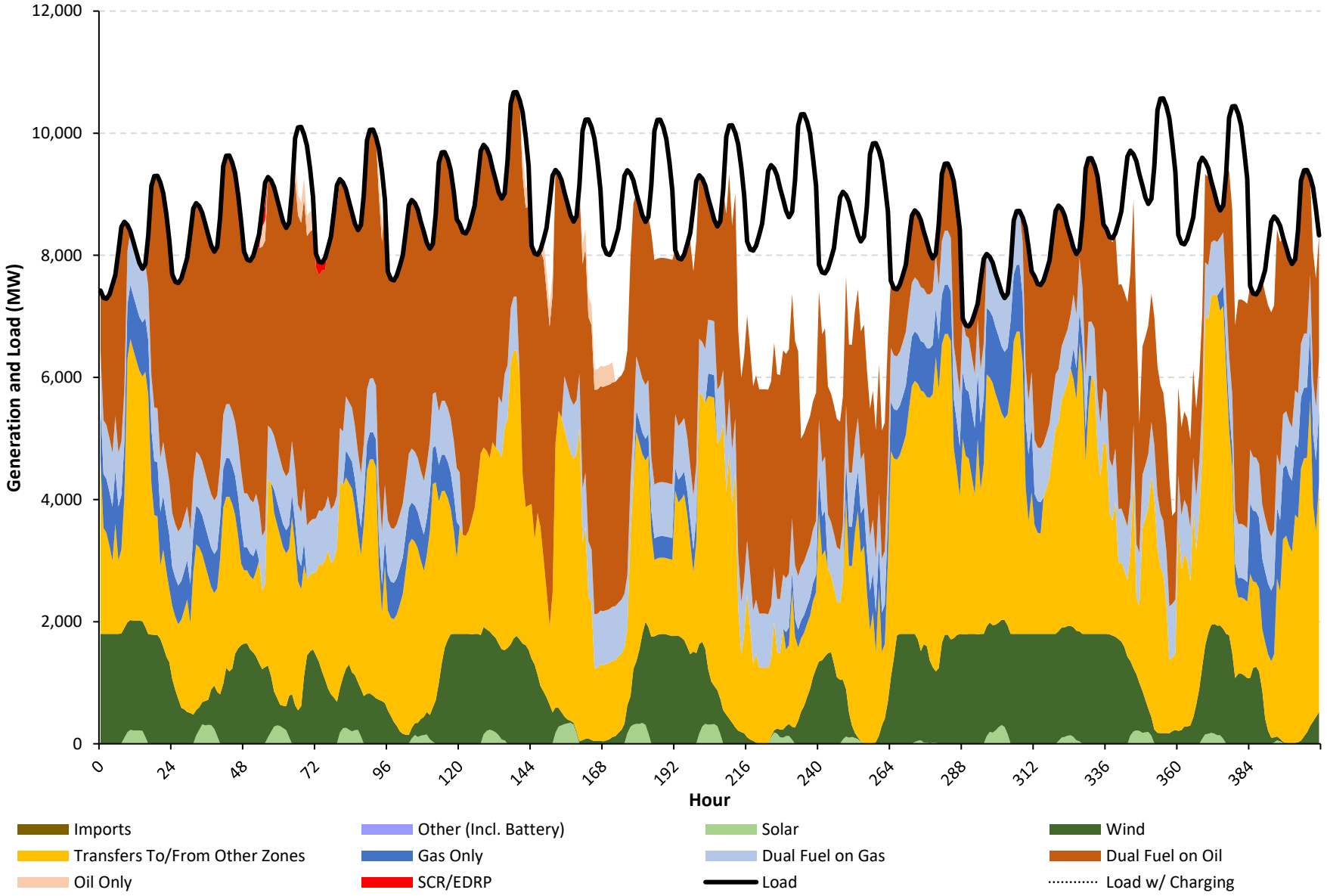


Total MWh of Lost Load

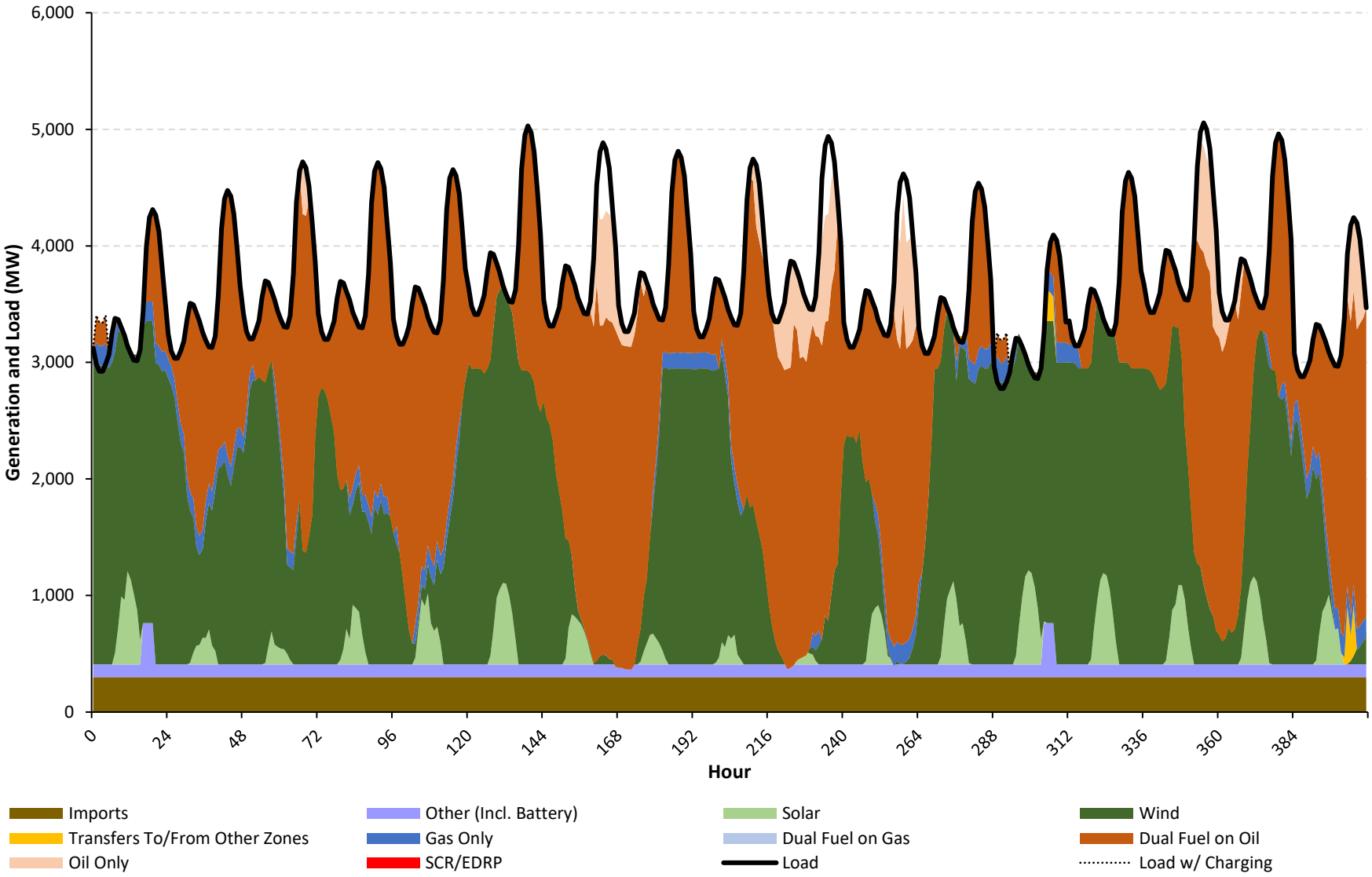



NYCA
Hourly Generation (MWh) by Fuel Group
Scenario 8 - PD 11 Combination Disruption
Generation and Load (MW)
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
0
24
48
72
96
120
144
168
192
216
240
264
288
312
336
360
384
Hour
Imports
Nuclear
Hydro (Pondage & RoR)
Other (Incl. PS, Battery)
Solar
Wind
Gas Only
Dual Fuel on Gas
Dual Fuel on Oil
Oil Only
SCR/EDRP
Load
Load + Exports and Charging

Zone J
Hourly Generation (MW) by Fuel Group
Scenario 8 - PD 11 Combination Disruption



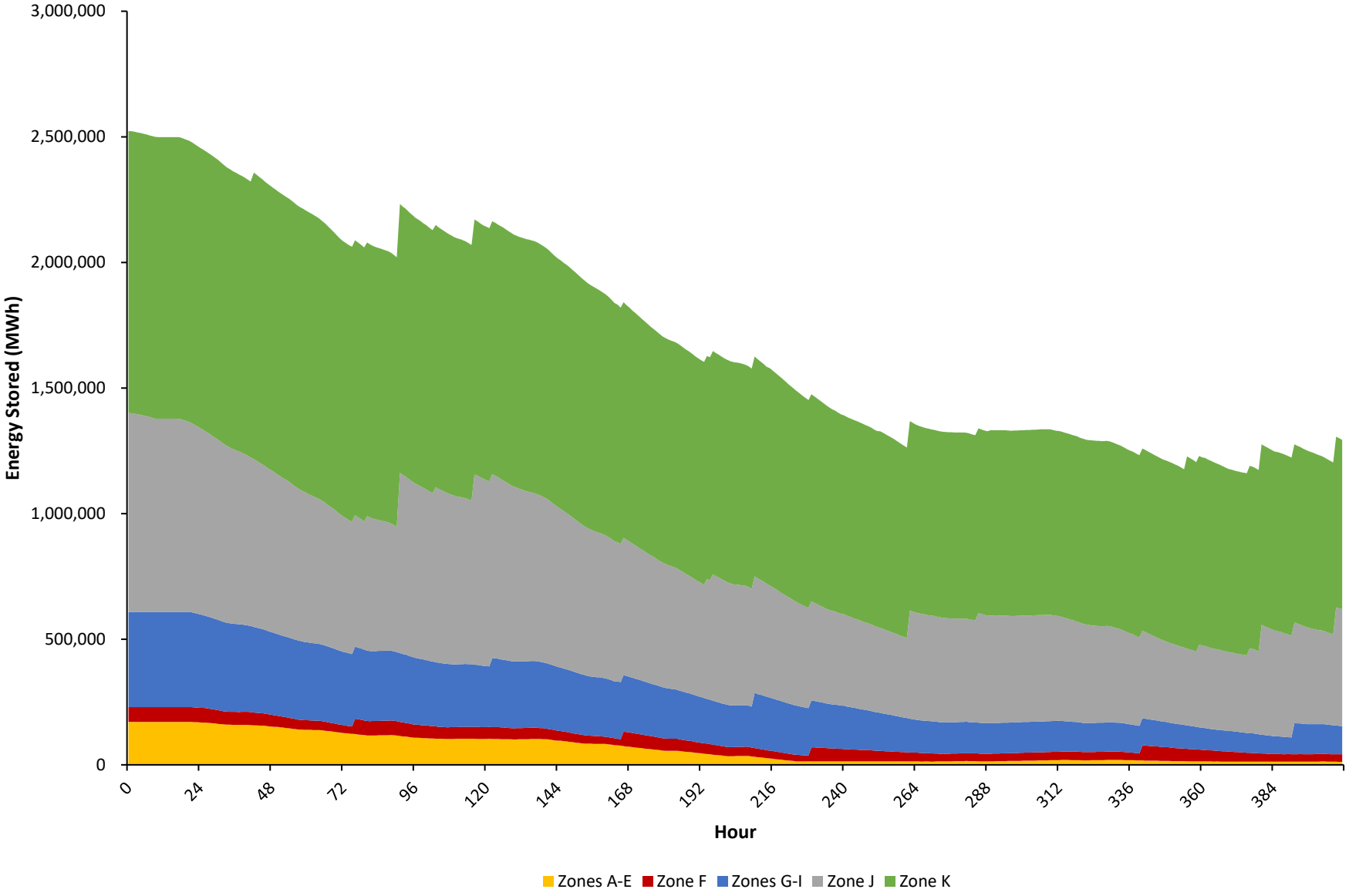
Zone K
Hourly Generation (MW) by Fuel Group
Scenario 8 - PD 11 Combination Disruption

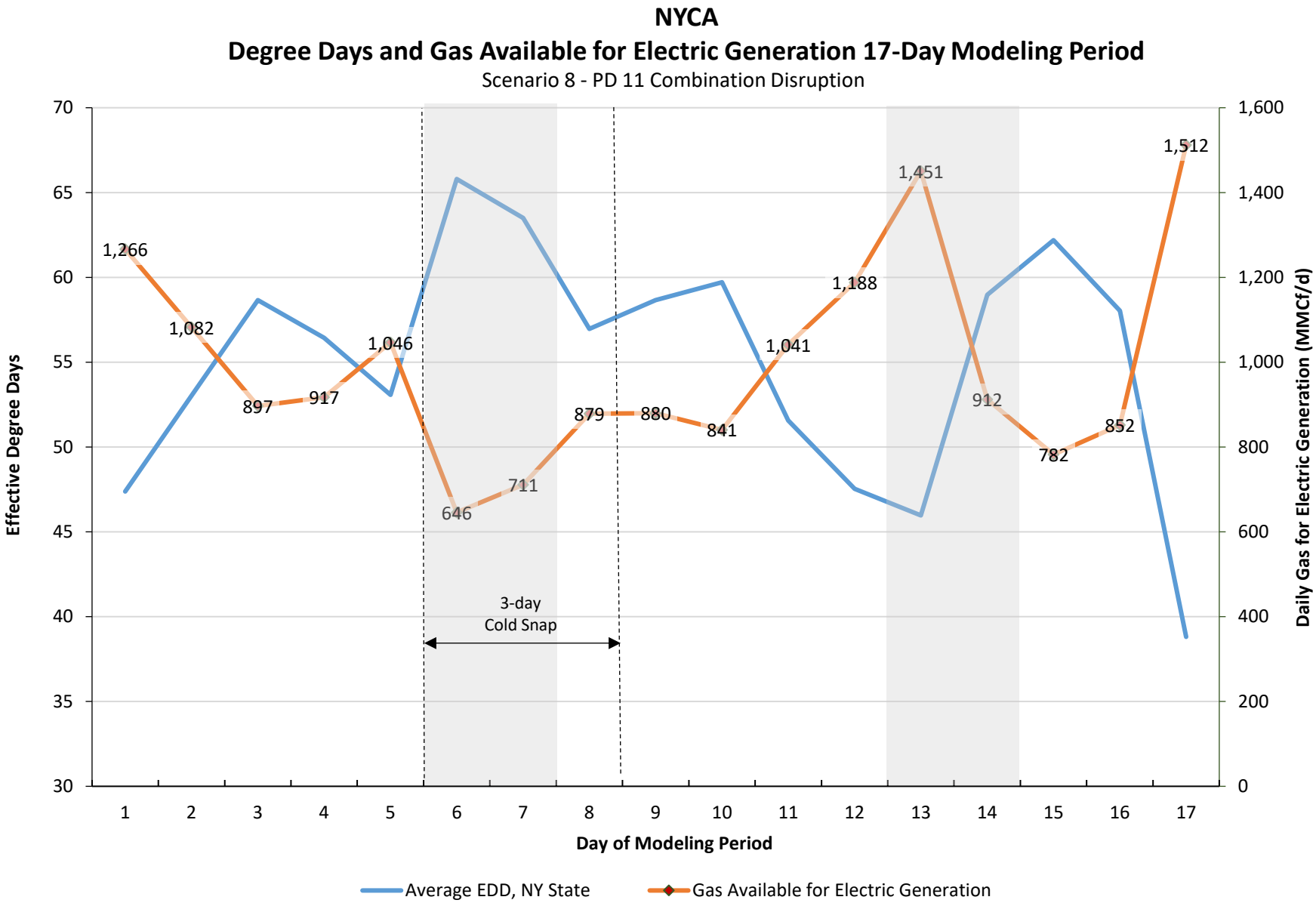


NYCA

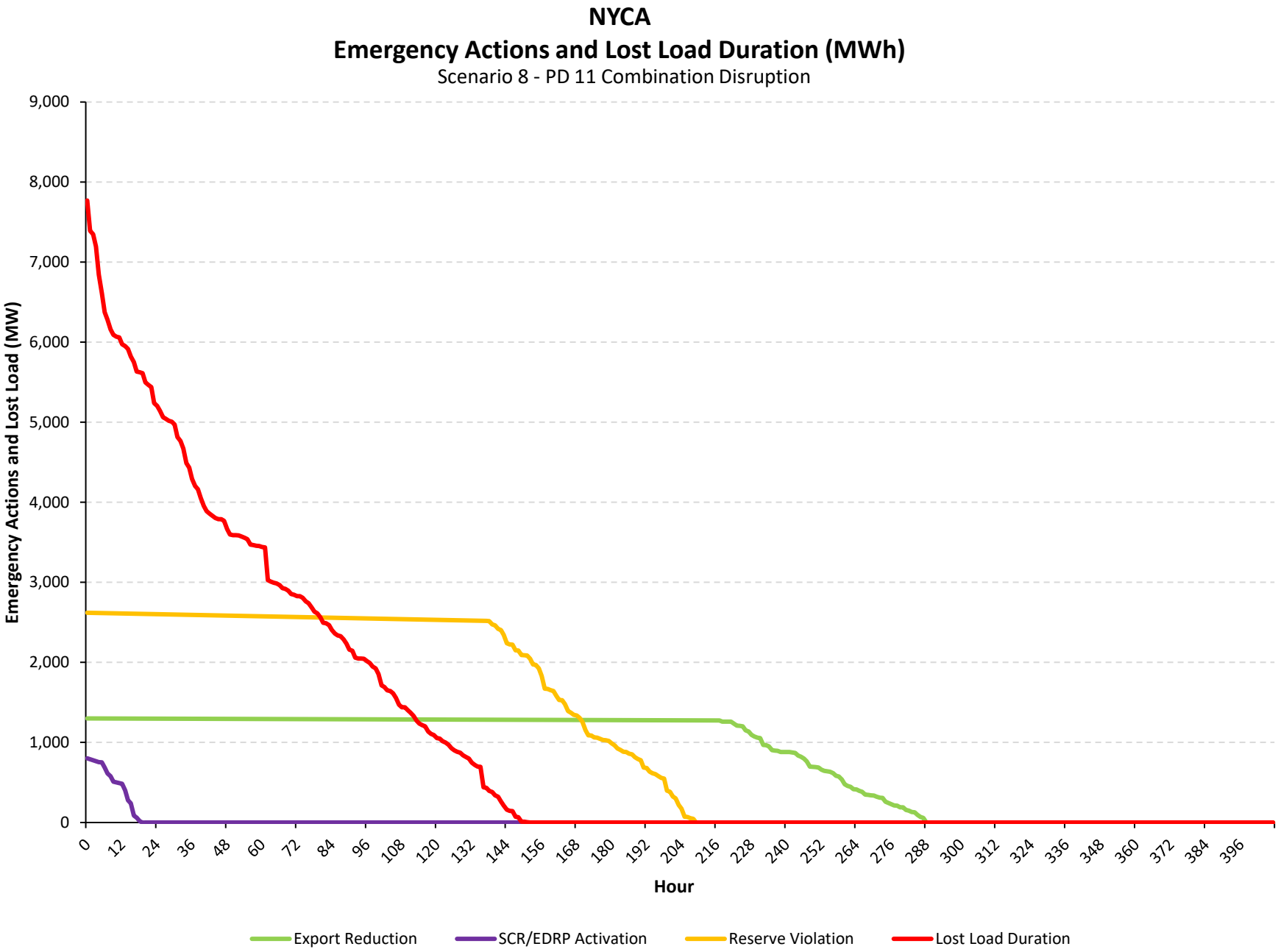
Quantity of Stored Fuel for Oil and Dual Fuel Units

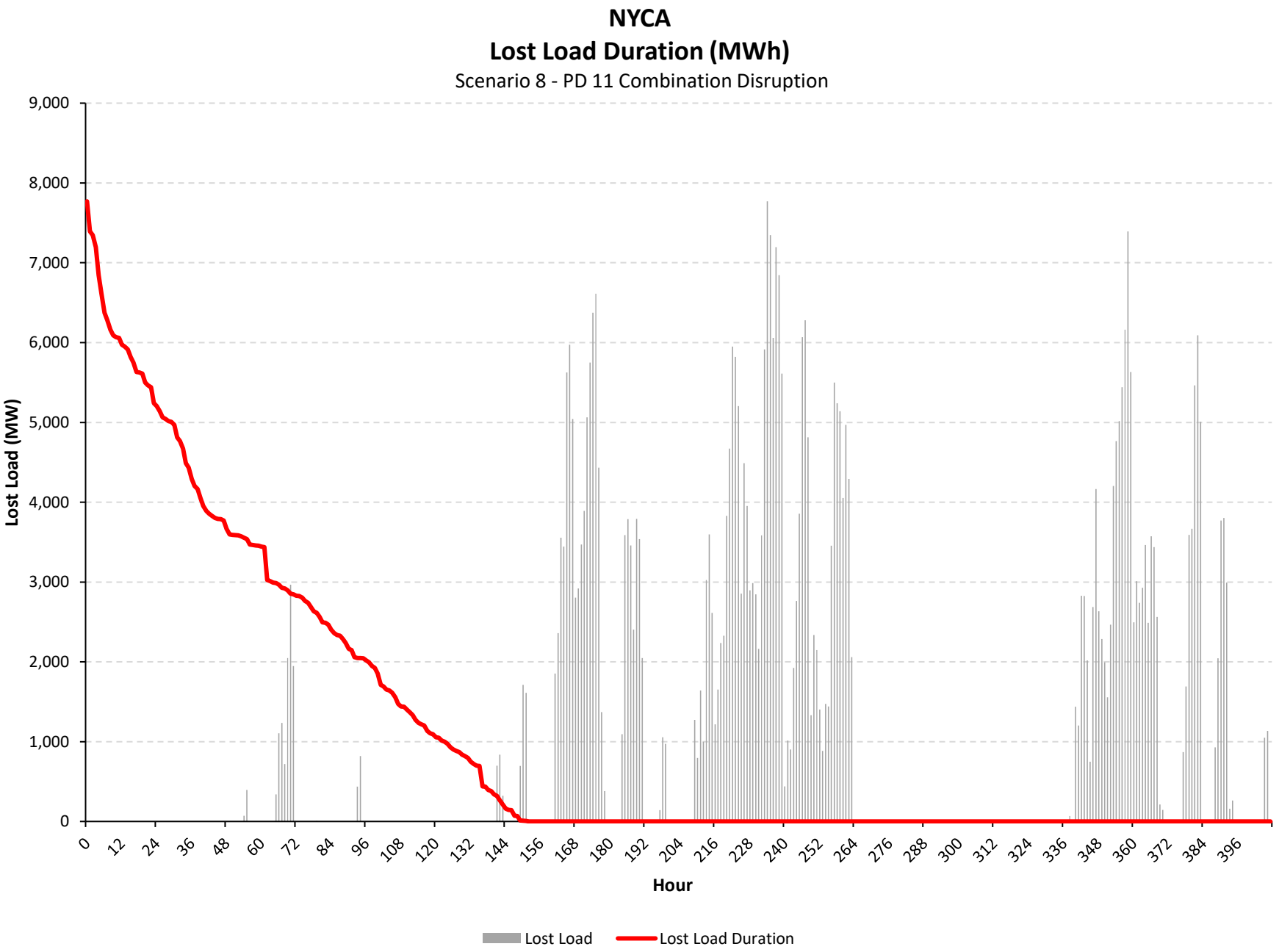
Scenario 8 - PD 11 Combination Disruption





Notes:
[1] Weekends are shaded in gray.
[2] Effective degree day is defined as 65 degrees F - Temperature.


NYCA
Emergency Actions and Lost Load Duration (MWh)
Scenario 8 - PD 11 Combination Disruption
Emergency Actions and Lost Load (MW)
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Export Reduction
SCR/EDRP Activation
Reserve Violation
Lost Load Duration


NYCA
Lost Load Duration (MWh)
Scenario 8 - PD 11 Combination Disruption
Lost Load (MW)
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240 252 264 276 288 300 312 324 336 348 360 372 384 396
Hour
Lost Load
Lost Load Duration