Reliability Assessments Currently Conducted by the NYISO

System Planning Working Group Meeting

August 1, 2003

Types of Reliability Assessments

- Resource Adequacy Assessments
- Transmission Reliability Assessments
- Operational Assessments

Resource Adequacy Assessments

- **NPCC Area Review of Resource Adequacy**
- **NYISO Installed Capacity Market**
  - *NYSRC Installed Reserve Margin Study*
  - *Locational Capacity Requirements Study*
  - *Installed Capacity Auctions*
- **Annual Transmission Baseline Assessment (ATBA)**
- **Regional and Inter-Regional Assessments**
  - *e.g. CP-8 Multi-Area Resource Adequacy Assessments*

(Resource adequacy assessments include, or are based on, a model of transmission capability based on separately conducted transmission studies.)

Resource Adequacy

- **NPCC Area Review of Resource Adequacy**
  - *Conducted in accordance with the NPCC Guidelines for Area Review of Resource Adequacy (B-8)*
  - *Full Review conducted every 3 years (Interim Reviews are conducted in intervening years)*
  - *Covers period of next 5 years*
  - *Evaluates projected installed capacity and reserve margin against requirements on a statewide basis*
  - *Uses the GE Multi-Area Reliability Simulation (MARS) program*
  - *Includes high load forecast sensitivity*

Resource Adequacy

- **NYISO Installed Capacity Market**
  - *NYSRC Installed Reserve Margin Study*
    - Determines statewide IRM for the next year
    - Uses the GE MARS Program
    - Based on several key assumptions
    - Includes parametric sensitivities to key assumptions
  - *Locational Capacity Requirements Study*
    - Determines minimum capacity requirements for NYC and LI for the next year – also using the MARS program
  - *Installed Capacity Auctions*
    - Several types of auctions clear ICAP markets through the year
    - Uses Microsoft Excel Program

Resource Adequacy

- **Annual Transmission Baseline Assessment (ATBA)**
  - *Rule based assessment to determine Transmission Owners' share of cost of System Upgrade Facilities (SUFs) required for Interconnection Projects*
  - *Includes projects from prior Classes that have accepted cost allocation. Purposely excludes current and potential future Class Year projects.*
  - *Covers next 5 year period*
  - *Evaluates both resource and transmission adequacy*
  - *Evaluates "baseline" capacity against statewide and local capacity requirements*
  - *Uses generic generation to meet any shortfalls*

Transmission Reliability Assessments

- **NPCC Annual Area Transmission Review**
- **Annual Transmission Reliability Assessment (ATRA)**
- **System Reliability Impact Studies (SRISs)**
- **Regional and Inter-Regional Assessments**
  - *E.g. Triennial NPCC Overall Transmission Reliability Study*

Transmission Reliability Assessments

- **NPCC Annual Area Transmission Review**
  - *Conducted in accordance with the NPCC Guidelines for Area Transmission Reviews (B-4)*
  - *Full Review required at least every 5 years (Interim or Intermediate Reviews are conducted in intervening years)*
  - *Each Review covers the next 5 year period*
  - *Evaluates system performance with respect to Design Criteria*
  - *Also includes evaluations of Extreme Contingencies, Special Protections Systems (SPSs), and Dynamic Control Systems (DCSs)*
  - *Includes thermal, voltage and stability analysis (does not include short-circuit at present, but may in the future)*
  - *Rules for including future projects consistent with the NYISO's rules for conducting SRISs and the ATRA.*

Transmission Reliability Assessments

- **Annual Transmission Reliability Assessment (ATRA)**
  - *Rule based assessment to determine System Upgrade Facilities (SUFs) required for Class year Interconnection Projects and cost allocation of those SUFs*
  - *Class Year projects are projects that have met two milestones: An approved SRIS, and a Regulatory Milestone*
  - *Covers the next 5 year period*
  - *Evaluates transmission requirements to meet the NYISO Minimum Interconnection Standards (Does not address resource adequacy or deliverability)*
  - *Includes thermal, voltage, and stability analysis (in practice, this is covered by the NPCC Area Transmission Review)*
  - *Mainly addresses short circuit*

Operational Assessments

- NYISO Seasonal Operating Studies
- MEN Seasonal Operating Studies
- NYISO Annual Transmission Performance Report
- NYISO Voltage Limit Studies
- NYISO Stability Limit Studies
- NYISO Pre-Seasonal Fault-Duty Assessment *(New)*
- Other Ad Hoc Operational Assessments