NEW YORK INDEPENDENT SYSTEM OPERATOR
10 Krey Boulevard • Rensselaer, NY 12144

July 9, 2010

NYSDEC Bureau of Habitat
BTA Policy Comments
625 Broadway, Fifth Floor
Albany, New York 12233-4756

Dear Bureau of Habitat:

Enclosed please find the comments of the New York Independent System Operator concerning the Proposed Policy on Best Technology Available for Cooling Water Intake Structures, issued by the New York State Department of Environmental Conservation.

Sincerely,

Mollie Lampi
Assistant General Counsel

Comments of the

New York Independent System Operator

on

New York State Department of Environmental Conservation's Proposed Policy on Best Technology Available for Cooling Water Intake Structures

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New York Independent System Operator
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New York State Department of Environmental Conservation's Proposed Policy on Best Technology Available for Cooling Water Intake Structures

I. Introduction and Summary of Comments

A. Introduction

The New York State Department of Environmental Conservation ("DEC") has requested comment on its proposed policy establishing closed-cycle cooling or its equivalent as the performance goal for best technology available ("BTA"). The DEC has proposed this policy in order to minimize adverse environmental impacts with regard to water use by existing and proposed industrial facilities designed to withdraw 20 million gallons per day of cooling water from the waters of New York State if subject to the requirements of Section 704.5 of title 6 of the NYCRR.[1]

The DEC's Draft BTA Policy would require: (i) dry closed-cycle cooling as the performance goal for all new facilities sited in marine and coastal districts and along the Hudson River; (ii) wet closed-cycle cooling as the minimum performance goal for all new industrial facilities located along waters other than those covered by (i); (iii) wet closed-cycle cooling or its equivalent as the minimum performance goal for existing industrial facilities that operate a cooling water intake structure ("CWIS") in connection with a point source thermal discharge; and (iv) wet closed-cycle cooling as the minimum performance goal for all

[1] 6 N.Y.C.R.R.§ 704.5 (2010).

repowered industrial facilities that operate a CWIS in connection with a point source thermal discharge.[2]

If wet closed-cycle cooling is not an available technology for an existing industrial facility, the Draft BTA Policy establishes a performance goal of at least 90% or greater reduction in both entrainment and impingement mortality compared to that which would be achieved by a wet closed-cycle cooling system at that facility.[3] Facilities that cannot meet the 90% performance goal would be required to "repower, reduce operations, shut down, or otherwise meet the performance goals through a suite of operational measures . . . ."[4] The Draft BTA Policy specifically states that no variances will be allowed from the 90% goal.[5]

The NYISO is the not-for-profit corporation responsible for operating New York's bulk electricity grid, providing non-discriminatory access to transmission service and administering competitive wholesale markets for electricity and transmission products in New York. Under tariffs approved by the Federal Energy Regulatory Commission, the NYISO carries out three key responsibilities. As operator of the bulk electric system, the NYISO manages the output of hundreds of generating facilities and the operation of thousands of miles of high-voltage transmission lines to ensure that the grid operates in the most reliable and efficient manner possible. The NYISO also administers non-discriminatory open access to the electric grid to all electric suppliers and loads and operates the competitive wholesale electric market in which energy, capacity and related products are bought and sold in a transparent way. Finally, the NYISO conducts short- and long-term reliability planning with its stakeholders in a series of open forums. Its two-year planning cycle includes a Reliability Needs Assessment ("RNA") to

[2] N.Y. DEC: Best Technology Available (BTA) for Cooling Water Intake Structures: DEC Policy 1–2 (2010), http://www.dec.ny.gov/docs/fish_marine_pdf/drbtapolicy1.pdf.
[3] *Id.* at 2.
[4] *Id.* at 7.
[5] *Id.*

evaluate consumer demand over the next ten years and identify the amount and location of resources needed to reliably serve that load. After the RNA is completed, the NYISO requests and evaluates market-based solutions proposed to resolve any identified reliability needs. Regulatory backstop solutions to identified reliability needs are also evaluated so that regulated solutions can be implemented in case market solutions fail to materialize in time to meet those needs.

B. Summary

The NYISO's preliminary analysis of New York's generating facilities implicated by the proposed BTA policy indicates that fully one-third of them will need to make capital investments to meet this policy and that one/fifth of the NYCA's generation resources may face the significant risk that they have no real alternative to retirement.

Implementation of this policy across such a wide measure of the generating facilities in New York must be pursued with care and attention to the reliability impacts it could create. If implementation plans that allow for less expensive fish protection equipment or other operational measures, in lieu of closed cycle cooling retrofits, are not widely available, the DEC's BTA policy could present reliability implications which cannot be resolved in the short-term. On the other hand, allowing the widespread use of technology and operational measures that avoid entrainment and impingement mortality without the extraordinary expense of closed cycle cooling technology could avoid adverse reliability issues and achieve significant benefits in aquatic life.

The NYISO recognizes that, in some cases, closed cycle cooling may be necessary. In those instances, if implementation of DEC's proposed BTA policy leads a unit owner to propose retirement, a transition period that realistically allows for the permitting and construction of replacement facilities, could also avoid adverse reliability issues.

DEC should recognize the potential for adverse reliability impacts and acknowledge that flexible implementation approaches such as less expensive fish protection equipment or other operational measures, in lieu of closed cycle cooling retrofits, may be necessary to ameliorate the impacts of this policy on electric system reliability. Should closed cycle cooling retrofits be necessary, DEC should similarly recognize the need for sufficiently flexible implementation schedules to maintain electric system reliability in the short-term and long-term. If it does so, DEC can pursue its newly enunciated BTA policy without undue adverse electric system reliability impacts. The NYISO urges the DEC to pursue its proposed BTA policy, through the permits that emanate from it, in a manner that avoids adverse reliability impacts. The Policy, and/or the DEC implementation guidelines and processes used to implement it, should clearly indicate that electric system impacts will be considered in determining the technologies and schedules to be imposed on New York's power plants.

II. The DEC's Proposed BTA Policy Will Affect a Majority of the New York State Generation Fleet and Could Pose a Risk of Unplanned Retirements

As proposed, the DEC's BTA Policy could affect 18,924 MW or 51% of the installed generating capability in New York.[6] The widespread applicability of the proposed policy gives rise to a concern that a significant portion of the affected units could decide to retire without providing sufficient lead times. Such a scenario creates a risk of insufficient capacity to meet load. Implementation of this policy across such a wide measure of the generating facilities in New York must be pursued with care and attention to the reliability impacts it could create.

[6] Units were identified by NYSDEC; MW were tallied by the NYISO using Summer DMNC values. The NYISO is aware that some generators, representing over 6,900 MWs of capacity, may be eligible for the limited relief provided under the proposed policy.

The NYISO analyzed the reliability impacts that could result from implementation of DEC's BTA policy by identifying those generating facilities exposed to potential reinvestment as a result of BTA, categorizing affected generating facilities according to the level of technology and associated capital investment that the NYISO conservatively believes will be necessary to comply with the DEC's BTA policy, and evaluating the potential that those facility owners would conclude that reinvestment to achieve BTA compliance would be so financially unacceptable that retirement would likely be the only acceptable compliance option. Such retirements could render electric customers statewide, or in a local area, susceptible to load shedding due to lack of sufficient resources ("unplanned retirements").

Three categories of potential BTA-related impacts were identified. Facilities potentially eligible for limited relief due to low capacity factors over the last five years were assigned Impact Category 1. Generating facilities whose owners have demonstrated, through necessary biological and flow studies and engineering assessments, that the installation of fish protection equipment can meet the 90% effectiveness standard set by the policy were assigned Impact Category 2. The remaining generators may well need to retrofit closed cycle cooling systems and they were assigned to Impact Category 3. The results of this initial summary are given below in Table A.

TABLE A

BTA Effected Capacity (MW) by Assigned Impact Category				
Super Zones	**1**	**2**	**3**	**Total**
A,B,C,D,E	2,819	1,211	2,992	7,022
F,G	2,794	0	2,063	4,857
H,I,J,K	692	4,032	2,321	7,045
Total	6,305	5,243	7,376	18,924

The capacity listed in Category 2 and Category 3 from Table A identifies the relative amount of capacity that the NYISO estimates could be at risk for premature retirement.

Those units represented in categories two (2) and three (3), 12,619 MW of capacity, would likely need to make capital investments to come into compliance with this policy. Units in these two categories represent one/third of the NYCA's generation resources, which the NYISO estimates could be at risk for premature retirement. The units represented in category three, 7,376 MW of capacity, or one/fifth of the NYCA generation resources, in the NYISO's estimation, face significant risk of retirement as a result of the BTA policy.

It should be noted that while DEC has made twelve BTA determinations using what DEC describes as essentially the policy being formally proposed here, only two have required the use of closed cycle cooling systems. This may highlight the conservative approach to potential retirement that the NYISO has employed in this analysis. Nonetheless, application of the DEC's proposed BTA policy could produce reliability impacts for which its implementation plans must account.

Unless DEC implementation guidelines and the permits written under the DEC's BTA policy allow for flexible implementation of the DEC's BTA policy, it could require retirement dates that would leave insufficient time for replacement capacity to materialize. Unplanned retirements can lead directly to significant reliability risks on the New York Bulk Power System.

III. DEC Should not Proceed Without Considering the Reliability Consequences of its Policy

DEC's proposed BTA policy, as implemented in individual SEQRA and permit determinations, may require the retrofit of cooling towers for certain generating facilities in New York. Such capital reinvestment decisions are extraordinary in magnitude and, for some of these facility owners, will be uneconomic. Even if the investment is economic, it may not be

feasible for lack of capital. If a generator owner decides that retirement is the only reasonable/available compliance option, then a realistic transition period may be required to allow for the permitting and construction of replacement facilities in order to maintain a reliable electric system.

While New York currently enjoys a reliability margin of 9%,[7] the NYISO's preliminary evaluation of the DEC's proposed BTA policy indicates that the Control Area may not be able to sustain the unplanned retirement of even a small fraction of the generating capacity in Categories Two and Three without experiencing a shortage of the capacity necessary to meet resource adequacy standards and satisfy reliability planning criteria.

The NYISO performed a high-level "Zones at Risk" analysis and identified five zones in which the capacity exposed to potential BTA-related unplanned retirements exceeded the amount of capacity that could be safely removed before implicating an unacceptable loss of load probability. At a high level, the amount of capacity at risk for unplanned retirement in Zones G through K exceeds the amount of capacity that can be retired without the need for replacement facilities to avoid loss of load. The retirement of additional units could also implicate reliability if they are necessary to the maintenance of electric grid reliability, either on a statewide basis or locally, because of their size and/or location.

Loss of a facility to retirement can impose unacceptable reliability implications, even if not area-wide, in its local area. The contribution of each affected unit to zonal and local reliability is unique. In each of the super zones represented in Table A above, there are specific

[7] The reliability margin, as used here, is the different between the required installed reserve margin and the actual reserve margin, including demand resources and imported capacity with wind counted at seasonal value.

generators for which operation is necessary to support local needs and to provide protection against contingency situations.[8]

For instance, reactive power must be available in an area to which power is being imported in order to control voltage or to respond to system contingencies (unplanned outages of transmission or generation). Reactive power is generally produced by generators and is known as Volt Amp Reactive or VARs. As generation is removed from NYCA due to unplanned and premature retirements, the availability of reactive power will diminish, and the reliable and efficient use of the transmission system will be reduced.

What this means is that retiring generation or limiting seasonal operating capacity in constrained areas with insufficient generation with which to meet its own load, such as South Eastern New York (SENY), can result not only in the loss of in-state and locational capacity, but also in a reduced ability to import electricity into that area. Thus, the loss of a MW of capacity in such an area can result in the loss of more capacity to the New York system than is simply represented by the unit's nameplate MW.

The NYISO's biennial Comprehensive System Planning Process, which begins with the 2010 RNA, signals the opportunity for new resource additions (generation, transmission, and demand response resources) to respond to a NYISO-identified reliability need for additional electric capacity with market-based solutions. The process further provides for "regulated backstop solutions" to be brought forth by the responsible Transmission Operator. [9]

The minimum period of time to develop and deliver market-based, or regulated backstop, generation or transmission solutions realistically ranges from at least three to as many

[8] The manner in which the generator's support is necessary in contingency situations is established by Federal, regional, and New York State reliability standards. Should such a facility retire, its retirement must be evaluated to understand whether a replacement facility is necessary to manage contingencies.

[9] Should New York need a regulated backstop solution to manage the reliability risks caused by unplanned retirements, approvals would be necessary from the New York Public Service Commission and/or FERC.

as seven years after the existing generating facility's decision to retire. Market-based demand response resources can be developed in shorter timeframes but may not provide the necessary quantity or characteristics to satisfy reliability needs.

The length of a transition period between announced retirement and actual plant closure, and the success in realizing capacity replacement, will also be affected by the willingness of the capital markets to finance replacement facilities. The opportunity for, and time required to, secure necessary financing is difficult to predict under the best of circumstances.

The significance of the DEC's proposed BTA policy on sustained reliability in the New York Control Area cannot be overstated. DEC's permit writing process should recognize the potential any plant retirement could have on reliability. Should closed cycle cooling be necessary, the DEC should allow for reasonable flexibility in its compliance schedule to allow successful completion of the transition from the existing generator to the replacement facilities.

IV. DEC Should Be Aware of Unintended Consequences

In the simplest of scenarios, unplanned retirements could lead to the increased use of generation located elsewhere, either in-state, or out of state, provided in both instances that the transmission system can support increased transfers. To the extent the policy leads to greater use of out-of-state generation, one unintended consequence may be the impacts on New York air quality .

As the charts below indicate, the NYISO markets have brought on cleaner and more efficient generators. Figures 1, 2, and 3 show a clear and continuing trend towards lower emissions and more efficient generation in New York.

Figure 1

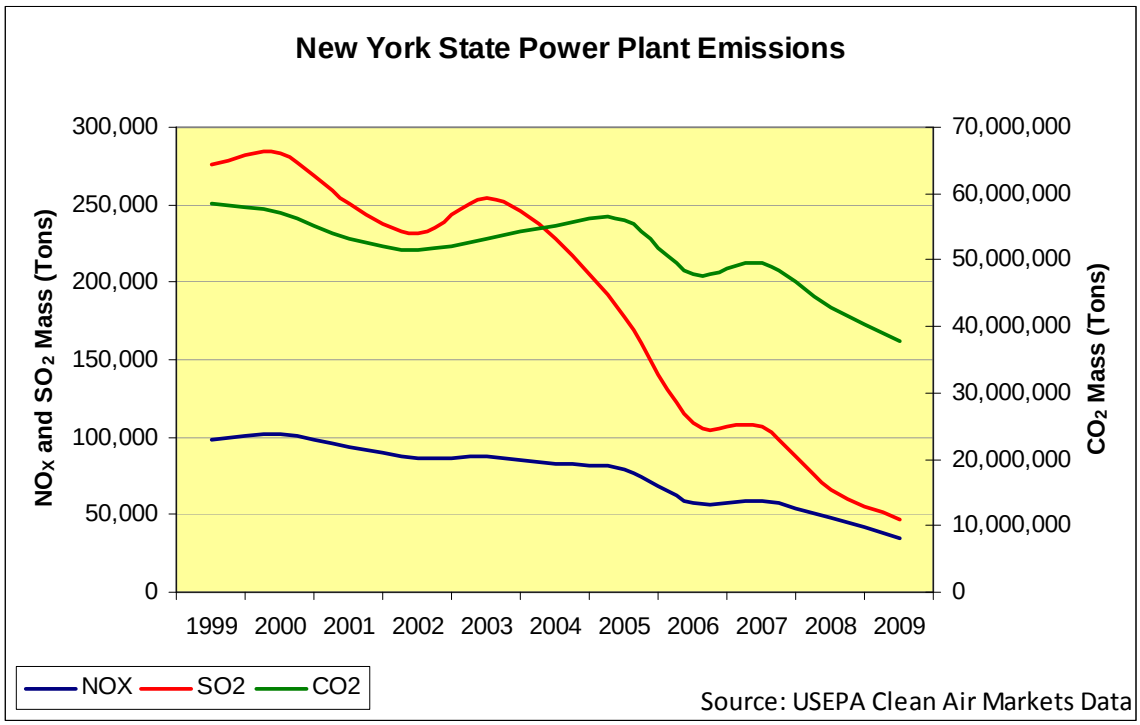


Figure 2

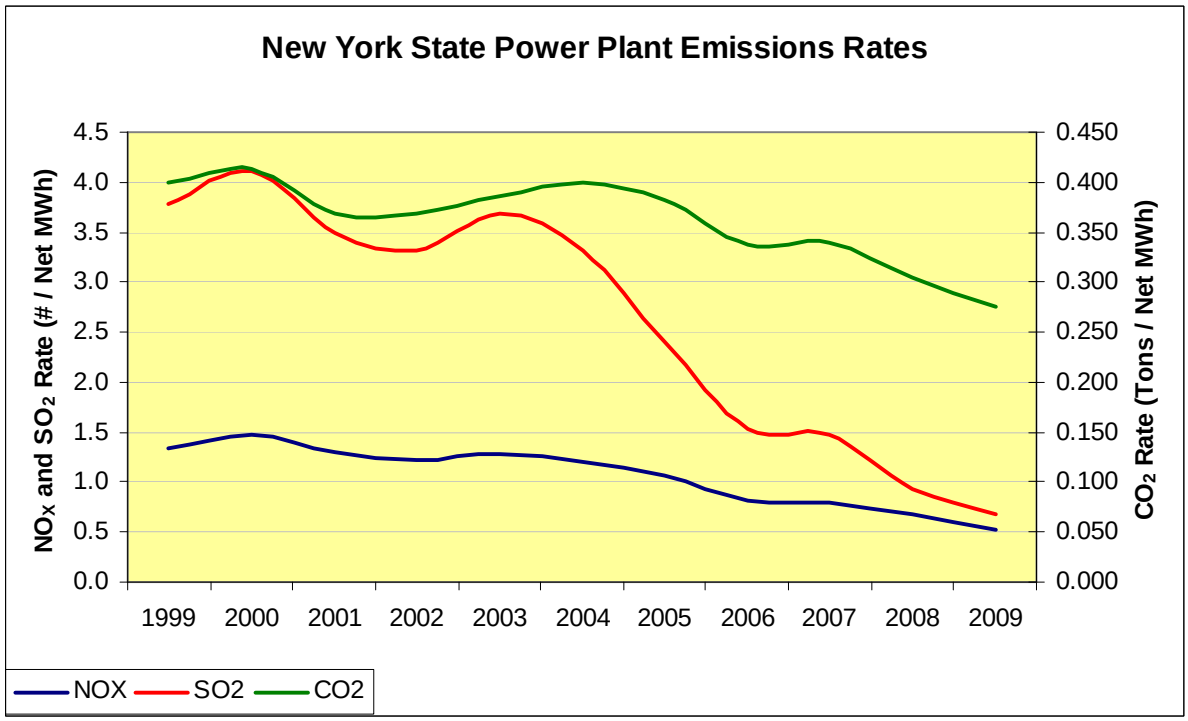
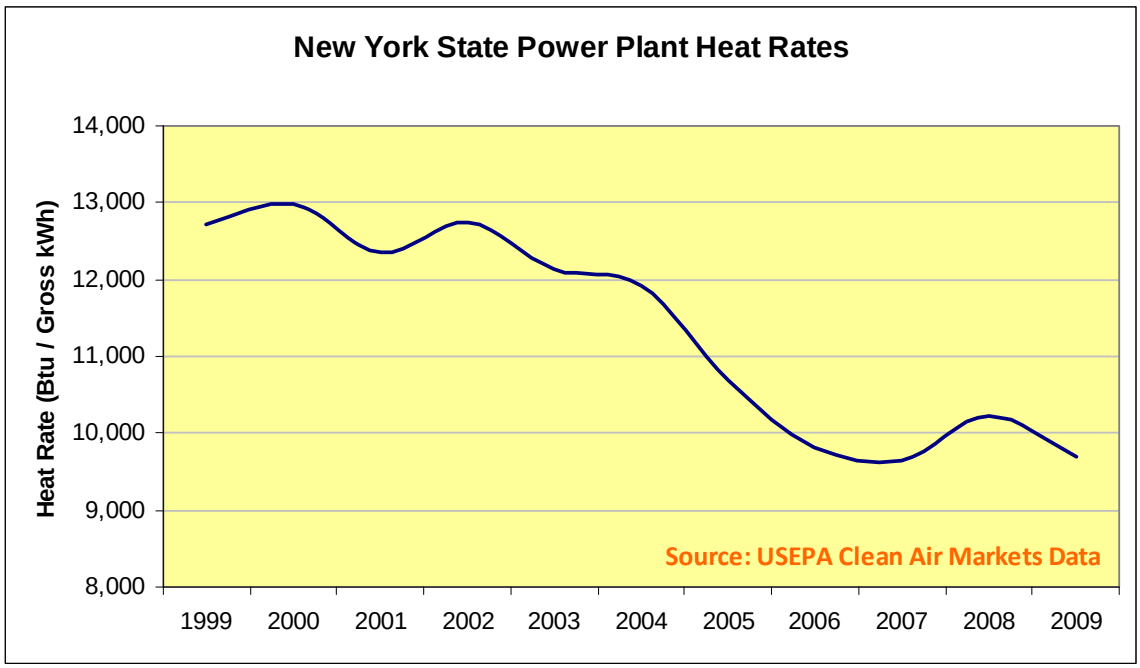
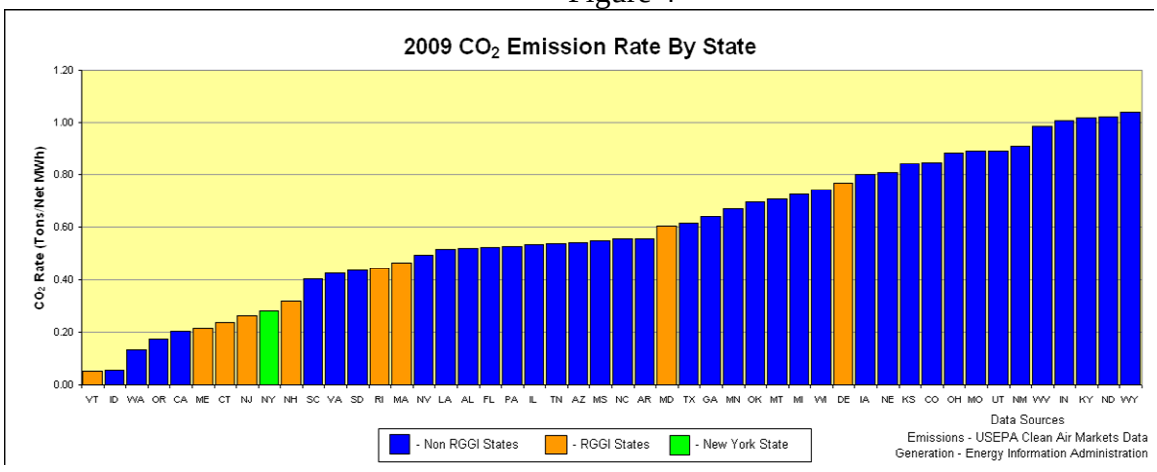


Figure 3



To the extent that replacement energy, substituting for the power that would have been generated by the unit retiring as a consequence of the DEC's proposed BTA policy, is provided by generators in neighboring states, it may likely be accompanied by significantly greater air emissions. Figure 4 below makes it apparent that where energy is available in PJM it will be produced with emission rates that are multiples of that produced in New York.

Figure 4



The potential for an increase in air emissions as a result of implementation of this proposed BTA policy should be evaluated in each SEQRA determination in order to understand the trade-offs which the DEC's proposed BTA policy may create. Sufficient flexibility should be built in to allow a permit to be designed to minimize the adverse impacts of such tradeoffs.

In addition, as mentioned in Section II., unplanned retirements may require additional transmission facilities and expanded or new Rights of Way to maintain reliability. To the extent transmission expansion increases transfer capability with PJM, the potential adverse air quality impacts to New York will increase. Moreover, such projects can cause the disruption and taking of 50 to 100 acres/mile and may span several hundred miles. Should transmission projects be determined to be necessary to replace capacity lost to unplanned retirements, the impacts and costs of such alternatives can be much more significant than a generator or demand side replacement project. The DEC's proposed BTA policy should be flexible enough to allow a sensible balance among all identified impacts.

V. Conclusion

The NYISO urges the DEC to incorporate sufficient flexibility into its BTA policy and implementation process to ensure that permits, issued under its new policy, avoid adverse reliability impacts and other unintended consequences by considering potential electric reliability consequences when establishing compliance strategies and/or transition periods. Facilities that indicate retirement is their only option, and which are necessary to preserve reliability in the New York Control Area or local Zone, must be provided adequate transition periods during which replacement generation could enter the market or alternative solutions

become available. The NYISO remains ready and willing to continue the productive dialog with DEC on these very important issues.