
Room to Breathe:
Why the Massachusetts
Department of Environmental Protection's
Proposed Air Regulations Are Compatible With
Electric System Reliability

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1. Introduction

The Massachusetts Department of Environmental Protection (“DEP”) has proposed new regulations to lower emissions of harmful pollutants from six Massachusetts electric generating facilities that so far have not been required to meet the same stringent environmental regulations as more recently permitted power plants.¹ The proposed regulations would set output-based emission limitations and emission caps for nitrogen oxides (NO_x); sulfur dioxide (SO₂) and carbon dioxide (CO₂). The regulations for NO_x and SO₂ emissions would be phased in beginning in December 2003. The regulations for CO₂ emissions would be phased in starting in December 2005. The proposed regulations also would begin regulating mercury emissions from the plants.

The regulations were initiated pursuant to a petition filed with the DEP in September of 1998 by a coalition of over 130 environmental, public health, and community organizations, concerned about the local and regional impacts of the electric generating facilities which are the largest stationary sources of air pollution in the Commonwealth. The petition sought onsite emission caps on the plants for NO_x, SO_x, fine particulate matter, mercury and CO₂ by 2003.

The six electric generating facilities that would be affected by the proposed regulations are Brayton Point (owned by PG&E); Canal Electric (Southern Energy New England), Mt. Tom (Northeast Utilities); Mystic Station (Sithe Energy), Salem Harbor Station (PG&E), and Somerset Station (NRG, Inc.). Together these six plants represent a total of approximately 4,600 Megawatts (“MW”) of electric generating capacity.

The proposed regulations are designed to lower the emissions from the affected plants to bring these emissions more into line with the environmental standards applied to newer generating facilities. The owners of the affected plants have opposed the proposed regulations, arguing that the adoption of the regulations would severely threaten the reliability of New England’s electric system.

MassPIRG and Clean Water Action asked Synapse to evaluate whether the implementation of the proposed regulations, in fact, would affect the reliability of the electric service provided to customers in New England, in general, and in the Northeastern Massachusetts/Boston transmission constrained area, in particular.

2. Executive Summary

Synapse made the following key findings:

1. None of the owners of the six facilities that would be affected by the proposed regulations have demonstrated that the proposed regulations would lead to the retirement of specific generating units and that such retirement would jeopardize system reliability.

¹ Proposed Regulation 310 CMR 7.29 – Emission Standards for Power Plants.

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2. None of the owners of the six facilities that would be affected by the proposed regulations have demonstrated that the regulations would lead to outages that would jeopardize system reliability.
 3. Any outages of units at the affected facilities to take actions to comply with the proposed regulations would be coordinated by ISO-NE.
 4. Any needed equipment retrofit outages could be scheduled for the spring and fall off-peak periods during the years 2002-2005 when significant amounts of reserve generating capacity will be available in both New England and the transmission constrained Northeastern Massachusetts/Boston region of New England.
 5. System reliability would not be jeopardized even if needed retrofit outages of the affected plants extended into the winter months of the years 2002-2005 because there will be significant electric generating reserves in both New England as a whole and in the Northeastern Massachusetts/Boston region.
 6. System reliability would not be jeopardized even if retrofit outages of one or more units at the affected facilities extended into the peak summer months because there will be significant amounts of reserve generating capacity in New England during the years 2002 through 2005.
 7. The claims by the owners of the affected plants concerning fuel diversity should not discourage the DEP from adopting the proposed regulations. The best strategies for reducing New England's dependence on natural gas and other fossil fuels should involve increasing use of renewable energy capacity and dramatic improvements in energy efficiency.
 8. The installation of air emissions controls can help to reduce volatility in electricity market prices.
 9. The DEP should not be dissuaded from adopting the proposed regulations by the fact that generating plant outage rates increased during the first twelve months following the opening of the New England wholesale electricity market on May 1, 1999.

3. Data Sources

This analysis is based on data published by the Independent System Operator of New England ("ISO-NE") and the New England Power Pool ("NEPOOL"). In particular, we have relied upon the projections of electric peak loads and generating capacity that were published in the April, 2000, NEPOOL CELT Report.² We also relied on a November 2000, "Northeastern Massachusetts (NEMA)/Boston Congestion Mitigation Study" prepared by ISO-NE, NSTAR Services Company and National Grid USA.³

² *NEPOOL Forecast Report of Capacity, Energy, Loads and Transmission, 2000-2009*, April 1, 2000.

³ *Northeastern Massachusetts (NEMA)/Boston Congestion Mitigation Study - Final Report*, dated November 16, 2000.

We looked at ISO-NE's projections of future peak loads and available capacity for both New England and the transmission constrained Northeastern Massachusetts/Boston region of New England. It is important to consider capacity and peak load projections for the Northeastern Massachusetts/Boston region because transmission constraints limit the amount of power that can be imported into this area. In addition, two of the plants that would be affected by the proposed DEP regulations, Salem Harbor and Mystic, are located within this transmission constrained area.

4. Findings

1. None of the owners of the six facilities that would be affected by the proposed regulations have demonstrated that the proposed regulations would lead to the retirement of specific generating units and that such retirement would jeopardize system reliability.

The generators have offered little or no evidence to support their claims that the adoption of the proposed regulations would hurt electric system reliability by leading to the retirement of some units. However, even if a facility owner were able to make a compelling demonstration that proposed regulations would make a specific generating facility uneconomic in electricity markets, it would be inappropriate to formulate regulations based on their impact on the competitive position of an individual unit or facility owner.⁴ In fact, the adoption of output-based emission standards that place older facilities on more equal footing with newer facilities is entirely consistent with, and supportive of, the development of competitive electricity markets. In order to justify modifying proposed regulations, a facility owner would have to demonstrate both that the proposed regulations would lead to the retirement of a specific unit *and* that such retirement would jeopardize short term or long term reliability in the region or a constrained area.⁵

In contrast, the generators' comments on the proposed DEP regulations were full of hyperbole but very short on substantive evidence of the impact that the adoption of the proposed regulations actually would have on the reliability of the region's electric system. For example, the Competitive Power Coalition of New England complained that the new regulations reflected "baseless and draconian governmental regulation" and, without any supporting analyses or evidence, also claimed that the:

proposed draft rule imposes an energy tax on Massachusetts businesses and consumers, severely threatens fuel diversity and reliability of the region's electric power grid, costs Massachusetts jobs, and fails to achieve

⁴ For example, in its order on electric industry restructuring, the Department of Telecommunications and Energy emphasized that it sought to "foster the benefits of competition itself rather than to protect the interests of individual competitors," D.P.U. 96-100, May 1999, at page 12.

⁵ To claim that regulations jeopardize long term reliability the facility owner would have to demonstrate that there are sufficient barriers to entry in the New England electricity markets that there would be no remedies for loss of capacity from a specific unit. Such a claim of long term reliability harm should trigger modifications in the electricity markets rather than modifications in environmental regulations.

its stated objectives because it is not driven by sound scientific methodology, but instead panders to the narrow political agenda of a special interest lobbying group.⁶

NRG, Inc., the owner of the affected Somerset coal plant, similarly claimed that the proposed rule:

could significantly disrupt the NEPOOL market by inflicting unrecoverable expenses on Massachusetts' conventional steam power plants required for intermediate duty during peak seasons. As a result, the rules jeopardize system reliability while fostering undue reliance on one fuel source.⁷

However, the owners presented virtually no evidence to show that the proposed regulations would have any impact on the decision to permanently retire a generating plant or on system reliability. In fact, a decision to retire a plant depends on many factors, one of which certainly could be the cost of compliance with environmental regulations. Other significant factors in such a decision would include the overall cost of operating and maintaining the plant, fuel costs, and, most importantly, the market prices at which the plant's output could be sold. All of these factors would determine the profitability of continuing to operate a generating unit.

2. None of the owners of the six facilities that would be affected by the proposed regulations have demonstrated that the regulations would lead to outages that would jeopardize system reliability.

PG&E, the owner of the affected Salem Harbor and Brayton Point plants, has argued that under DEP's proposed regulations numerous forced plant outages could occur simultaneously during 2002 and 2003:

Simply put, DEP's proposal does not account for the significant risk that forced outages over this compressed schedule will pose to system reliability and electricity prices for electric customers in NEPOOL, particularly in the northeastern Massachusetts/Boston region ("NEMA"), which has limited ability to import power from other regions other than in minimal load conditions because of transmission constraints.⁸

However, the owners of the affected facilities have not demonstrated how compliance actions, even those that include an outage for installation of pollution control equipment, would impair system reliability. They failed to provide any meaningful detail on what equipment retrofits, if any, would be required to enable each affected facility to satisfy the various provisions of the proposed regulations, what the costs of making such retrofits would be, and how long each plant would have to be out of service while each such retrofit was being implemented.

⁶ *Comments of the Competitive Power Coalition of New England, Inc.*, dated August 4, 2000,.

⁷ *NRG Comment Package Attachments*, dated August 4, 2000, at page 13.

⁸ *Comments of USGEN New England, Inc., Regarding Proposed Amendments to 310 CMR 7.29 – Emission Standards for Power Plants*, dated August 4, 2000, at pages 34-35.

In fact, it may not be necessary to shut down some units at all to reduce their SO₂ emissions. The proposed regulations provide for a variety of compliance options, including averaging the emissions over the units at an affected facility, fuel switching, allowance purchases, and installing pollution control technologies. Certain options for reducing the SO₂ emissions from the affected plants, such as switching to lower sulfur fuel oil, might raise costs for the plant owners but would not involve any significant plant downtime and, consequently, would not impair electric system reliability.

Of course, some of the facility owners may determine that the installation of pollution control technology is the most appropriate compliance course. However, as we will explain in the remainder of this report, it is reasonable to expect that outages needed to install such equipment will not jeopardize system reliability.

In any case, there is no evidence that adoption of the proposed regulations would lead to forced outages. Instead, it is far more reasonable to expect that any retrofits would be completed within planned, not forced, outages. As noted below, such planned outages would be coordinated by ISO-NE and could be scheduled so as to not jeopardize system reliability.

3. Any outages of units at the affected facilities to take actions to comply with the proposed regulations would be coordinated by ISO-NE.

NEPOOL Operating Procedure No. 5 prevents plant owners from taking generating units out of service for maintenance without approval of the Independent System Operator, unless there is a danger to personnel or a risk of equipment damage.⁹ The same Operating Procedure also establishes that plant owners must request, and the Independent System Operator must evaluate and approve or deny generator unit outage requests, taking consideration of the impact of the proposed outage on system reliability. As a result, outages to retrofit the plants affected by the proposed regulations could be carefully planned to occur during off-peak periods and could be coordinated with routine scheduled maintenance outages in order to minimize the total amount of time each unit is unavailable for service.

In fact, through modeling analysis of the NEPOOL system, ISO-NE has found that increasing power plant scheduled outages dramatically (by about a factor of four from the annual maintenance schedule figures projected for 2000 and 2001) “showed virtually no impact on reliability.”¹⁰ The nearly four-fold increase in assumed scheduled outages resulted in an increase in “objective capability” (the amount of generating capacity required to meet reliability goals) by only 50 MW. The report by ISO-NE explained that “this is because the profile of New England electrical demand is so strongly summer peaking that the amount of maintenance in the fall, winter, and spring periods is not a significant factor in setting Objective Capability.”

⁹ *NEPOOL Operating Procedure No. 5, Generation Maintenance and Outage Scheduling*, approved on July 12, 2000.

¹⁰ *Review of NEPOOL Objective Capability for Power Year 2000-2001*, prepared for NEPOOL by ISO-NE, at page 29.

4. Any needed equipment retrofit outages could be scheduled for the spring and fall off-peak periods during the years 2002-2005 when significant amounts of reserve generating capacity will be available in both New England and the transmission constrained Northeastern Massachusetts/Boston region of New England.

Because system loads are lower during the spring and fall months, electric system reserve margins are higher during these off-peak periods. For this reason, generating plant outages generally are scheduled to occur during fall and winter months in order to minimize the impact of plant unavailability on system reliability.

As shown on Figures 1 and 2, the New England electric system will have substantial capacity reserves during each of the spring and fall shoulder periods. These reserves will allow each of the affected plants to be shut down for any needed equipment retrofits without creating system reliability problems.

Figure 1.
NEPOOL Monthly Capacity Reserves (MW)
September 2001 through December 2003

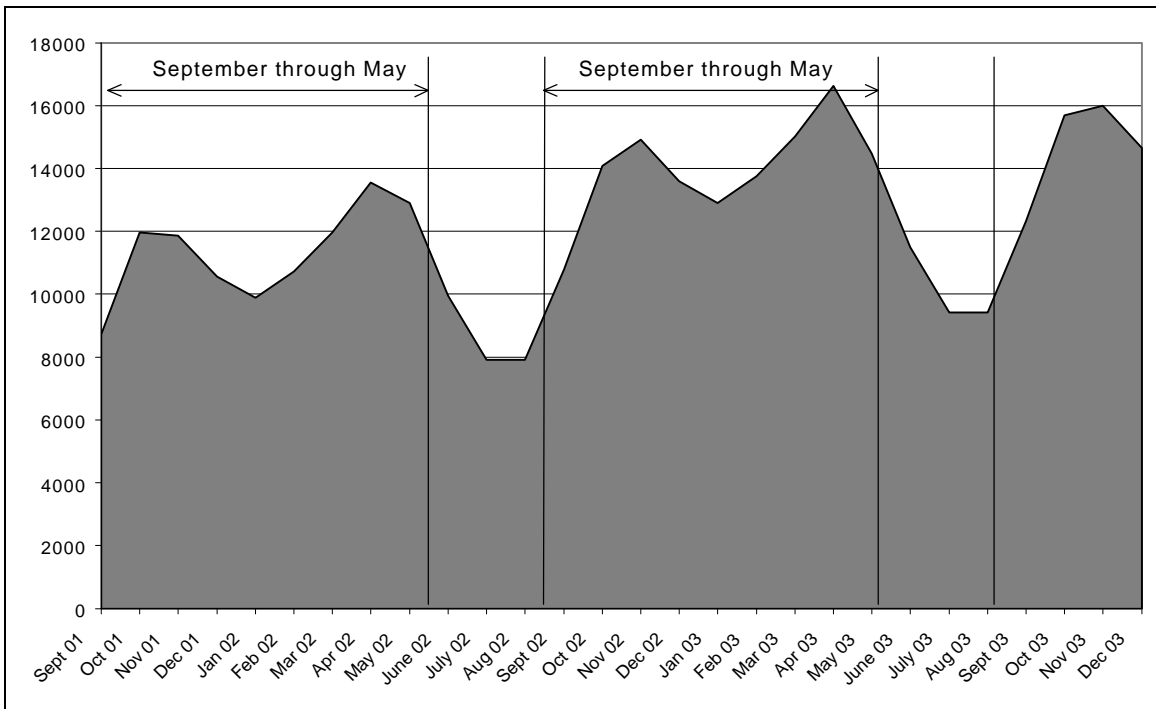
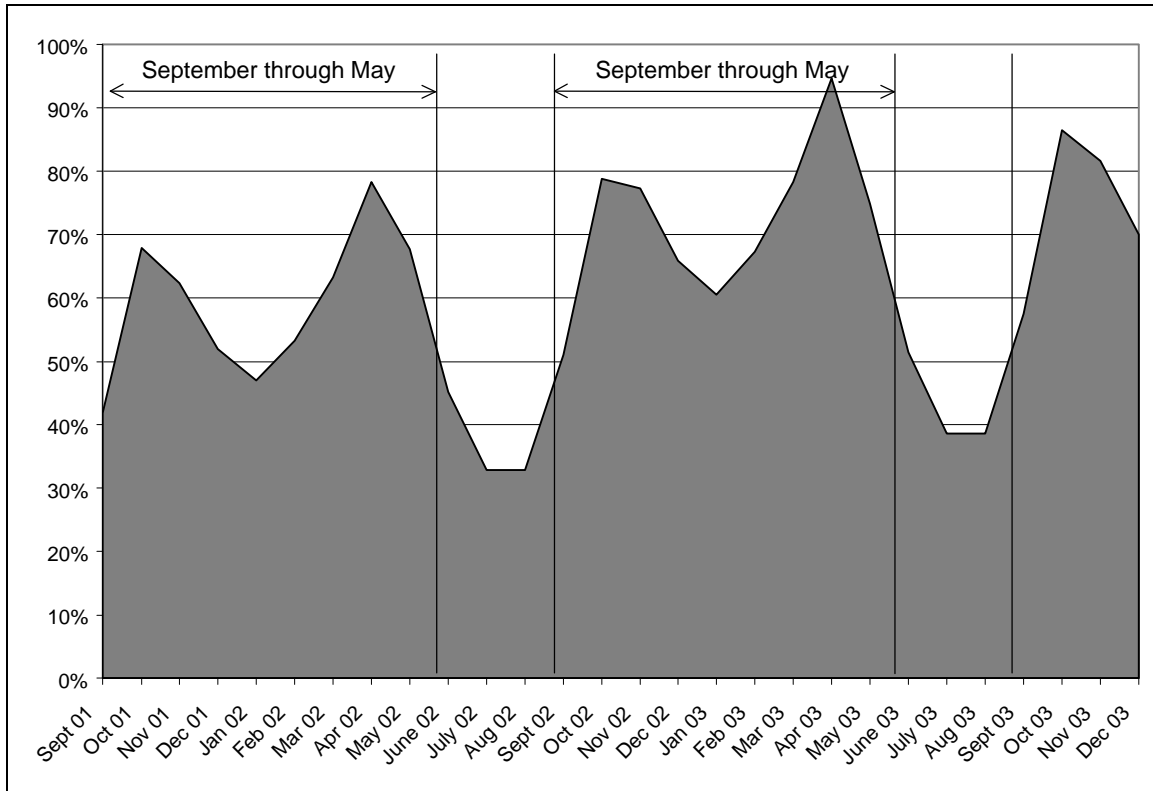


Figure 2.
NEPOOL Monthly Reserve Margins
September 2001 through December 2003



As shown on Figures 1 and 2, monthly capacity reserves in New England are projected to be between 8721 MW and 13,564 MW during the nine month window between September 1, 2001 and May 31, 2002, resulting in reserve margins of 42% to 78%. Capacity reserves are projected to be even higher during the nine month window between September 1, 2002, and May 31, 2003, ranging between 10,791 MW and 15,025 MW, and producing monthly reserve margins of between 61% and 95%. Even higher capacity reserves are projected for spring and fall peak periods in 2004 and 2005.

At the same time, as shown on Figures 3 and 4 below, there also will be substantial capacity reserves in the Northeastern Massachusetts/Boston transmission constrained area during these months.

Figure 3.
Northeastern Massachusetts/Boston
Monthly Capacity Reserves (MW)
September 2001 through December 2003

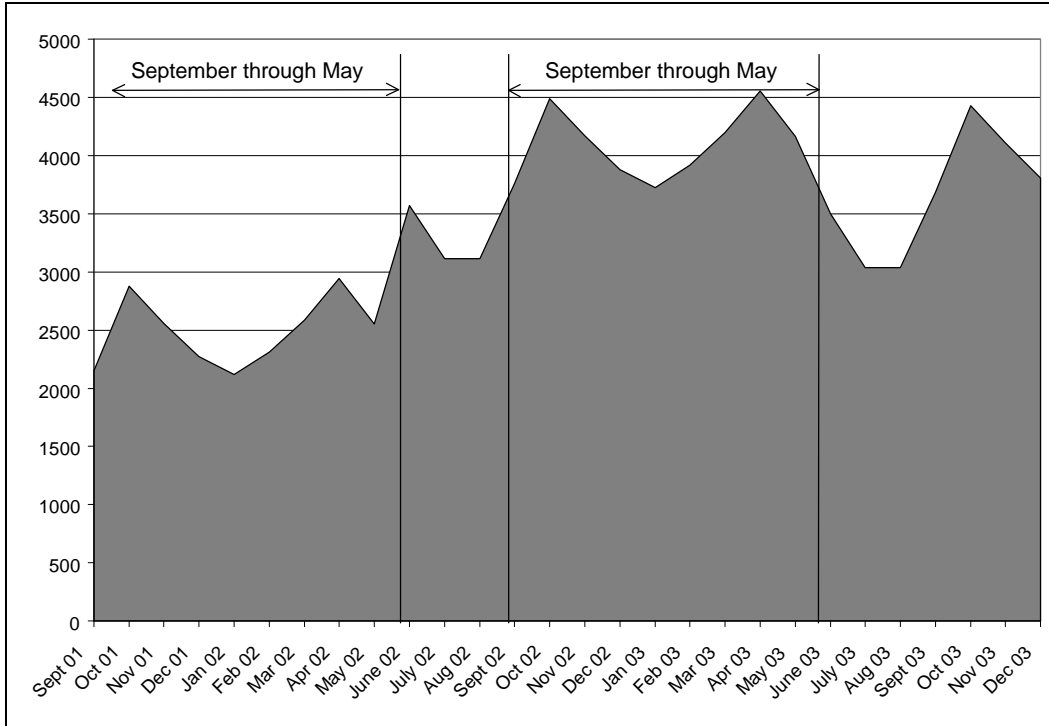
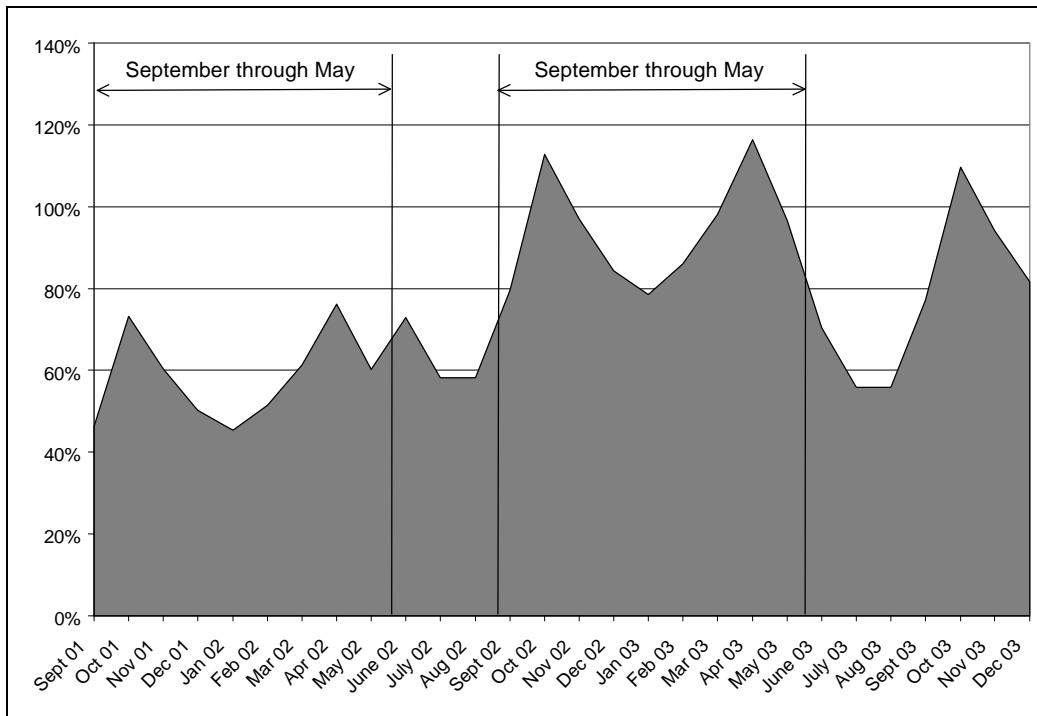


Figure 4.
Northeastern Massachusetts/Boston
Monthly Reserve Margins
September 2001 through December 2003



Consequently, monthly capacity reserves in Northeastern Massachusetts/Boston are projected to be between 2121 MW and 2941 MW during the nine month period September 1, 2001, through May 31, 2002 and between 3724 MW and 4556 MW during the nine month period from September 1, 2002, through May 31, 2003.

With such high capacity reserves in both New England and the Northeastern Massachusetts/Boston region, the planned and coordinated shutdown of even several thousand MW of capacity to tie-in NO_x or SO₂ emission control equipment would not degrade system reliability.

A 1998 report by the Ozone Attainment Coalition, whose members include PG&E and Northeast Utilities, the owners of three of the six plants that would be affected by the proposed DEP regulations, concluded that only 3 to 6 weeks of total outage time is needed to complete the installation of Selective Catalytic Reduction ("SCR") equipment to control NO_x emissions.¹¹ A study by the Reliability Assessment Subcommittee of the North American Electric Reliability Council ("NERC") assumed that the installation of SCR equipment required a 4.5 week extension in the duration of a plant's annual maintenance outage.¹² This assumption was found to be consistent with the actual experience at coal plants that had installed SCR equipment. Outages of these durations at units at any of the six affected facilities could easily be accommodated within the spring and fall shoulder periods without jeopardizing system reliability.

5. System reliability would not be jeopardized even if needed retrofit outages of the affected plants extended into the winter months of the years 2002-2005 because there will be significant electric generating reserves in both New England as a whole and in the Northeastern Massachusetts/Boston region.

Although it is reasonable to expect that any needed equipment retrofit outages would be scheduled for and could be completed within spring and fall periods, it is possible that an outage could last longer than planned. However, there will be sufficient capacity reserves so that system reliability would not be jeopardized if an equipment outage extended into the winter months.¹³

In fact, NEPOOL load and capacity forecasts project that reserve margins in New England will increase from 48% in the winter of 2001/02 to 65% in the winter of 2003/04 and 62% in the winter of 2004/05.¹⁴ Reserve margins within the Northeastern Massachusetts/Boston region are projected to be even higher, ranging from 46% in the winter of 2001/02 to 79% in the winter of 2002/03, 77% in the winter of 2003/04, and 74% in the winter of 2004/05. With such robust reserve margins, system reliability in either New England or the Northeastern Massachusetts/Boston region would not be

¹¹ *Electric System Reliability: A Red Herring to Delay Clean Air Progress*, The Ozone Attainment Coalition, September 1998, at page 3.

¹² *Reliability Impacts of the EPA NO_x SIP Call*, prepared by the Reliability Assessment Subcommittee of the North American Electric Reliability Council, dated February 2000, at page 12.

¹³ The winter season months are considered to be December, January, and February.

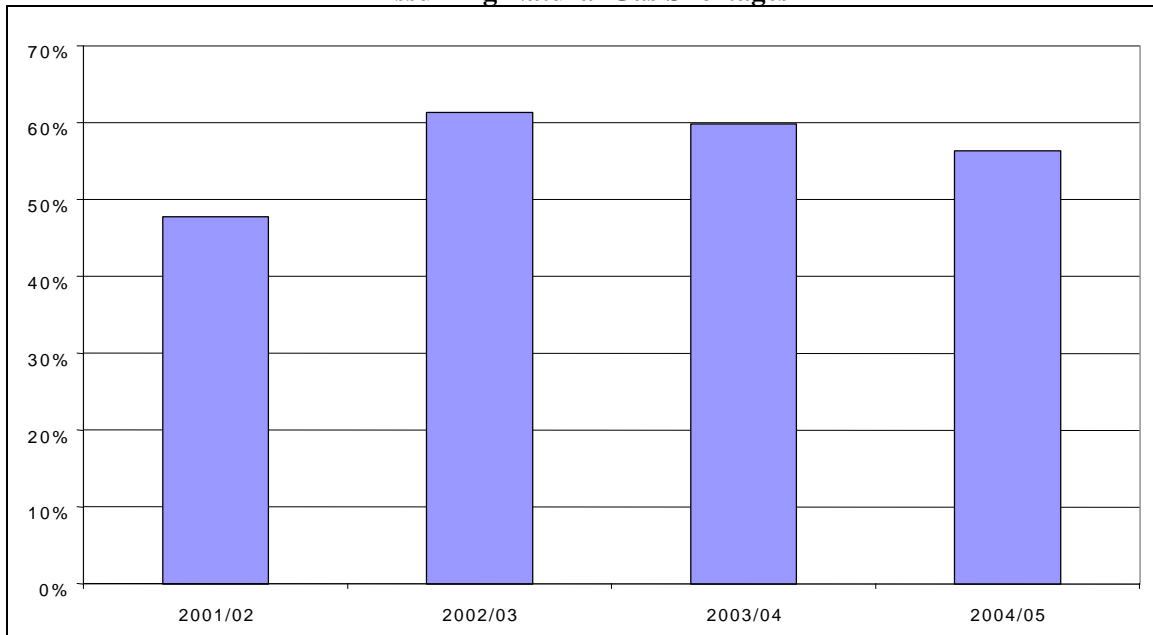
¹⁴ *NEPOOL Forecast Report of Capacity, Energy, Loads and Transmission, 2000-2009*, April 1, 2000.

threatened if an outage of one of the six affected plants were to continue into winter months.

ISO-NE has recently issued a study assessing the impact of New England's increasing reliance on natural gas for generating electricity. This study, by Levitan and Associates, Inc., found that without the construction of new gas pipeline capacity, some gas shortages might occur on peak winter days starting in the winter of 2003/04. According to this study, some of the region's new natural gas-fired electric generating facilities might be unavailable because of these shortages.¹⁵

These findings, however, should not dissuade the DEP from adopting the proposed regulations. As shown on Figure 5 below, system reserve margins in New England would still be 60% and 56% during peak months of the winters of 2003/04 and 2004/05 even without the capacity which Levitan & Associates says may not be available due to natural gas shortages.¹⁶

Figure 5.
NEPOOL Winter Reserve Margins
Assuming Natural Gas Shortages

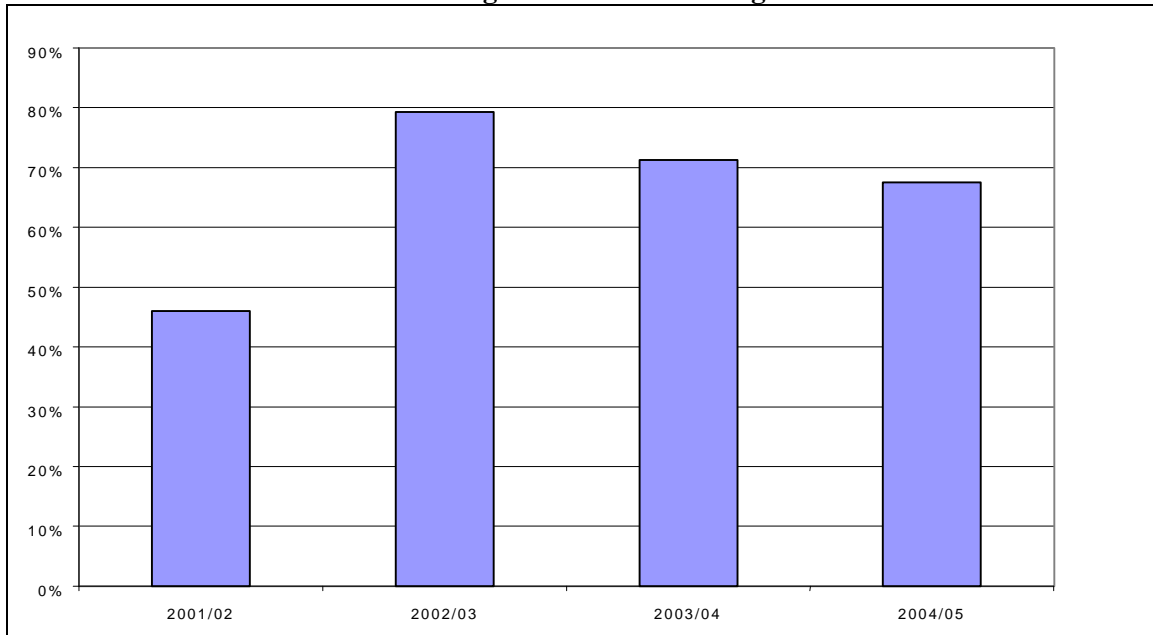


There also will be very substantial system reserves in the Northeastern Massachusetts/Boston region during the winters of 2003/04 and 2004/05 even without this unserved merchant capacity.

¹⁵ *Steady State Analysis of New England's Interstate Pipeline Delivery Capability, 2001-2005*, Levitan & Associates, Inc., dated January 2001.

¹⁶ The results for the Levitan & Associates report presented here are for the "Reference Forecast."

Figure 6.
Northeastern Massachusetts/Boston Winter Reserve Margins
Assuming Natural Gas Shortages



6. System reliability would not be jeopardized even if retrofit outages of one or more units at the affected facilities extended into the peak summer months because there will be significant amounts of reserve generating capacity in New England during the years 2002 through 2005.

Although it is reasonable to expect that any needed equipment retrofit outages would not be scheduled for or extend into summer months, system reliability would not be jeopardized even if an outage of a unit at an affected facility did last into a summer month. In fact, as shown on Figures 7 and 8 below, system reserve margins in New England will be above 32% during the years 2002 through 2005 even during the peak summer months. These capacity reserves are significantly higher than the 15-22% summer peak reserve margins that historically have been used to ensure system reliability. With such substantial capacity reserves, system reliability would not be seriously jeopardized if one or more of the units at the affected facilities were shut down for equipment retrofits at this time or even were permanently retired.

Figure 7.
NEPOOL Summer Reserve Margins

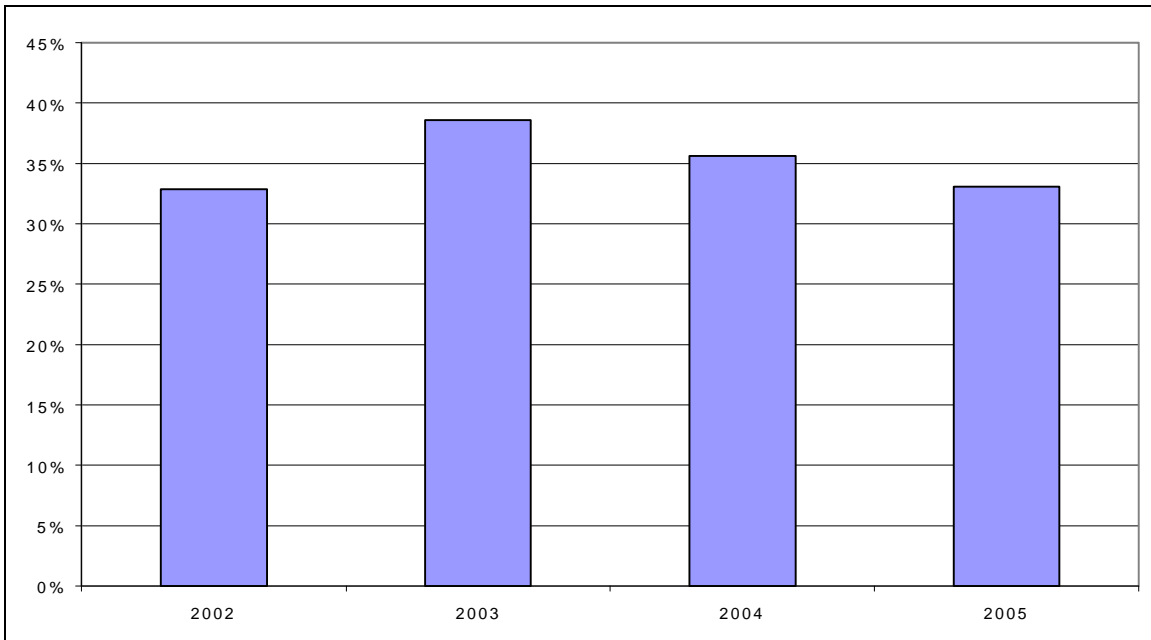
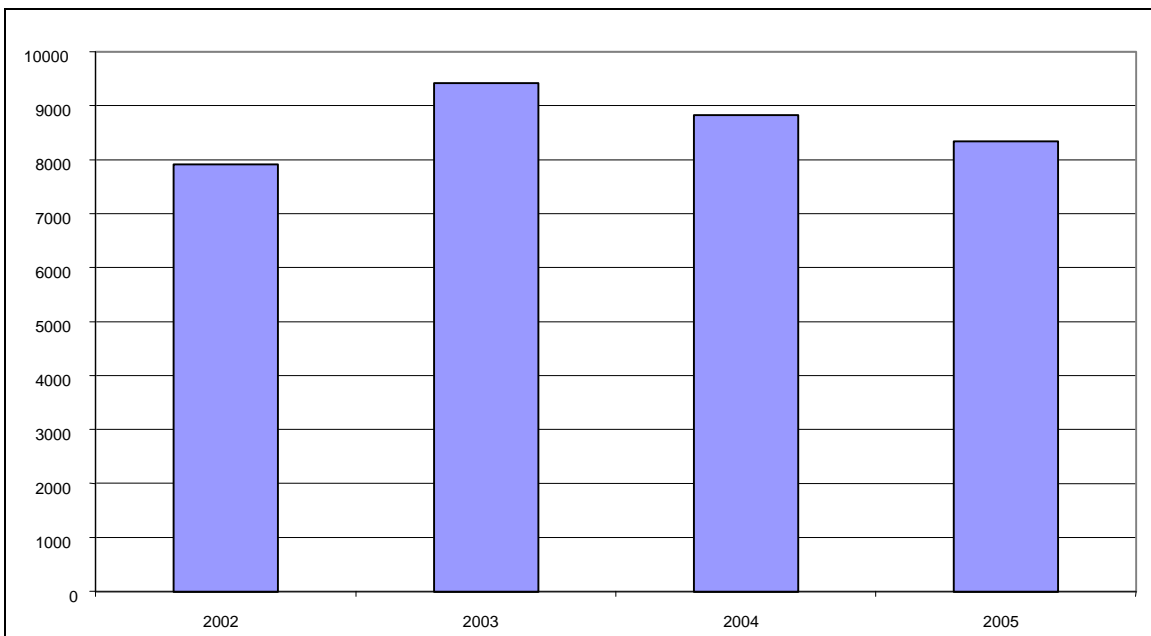


Figure 8.
NEPOOL Summer Reserve Capacity (MW)



In addition, as shown on Figures 9 and 10 below, there also will annual system reserve margins of 50% and higher in the Northeastern Massachusetts/Boston region during the summer months of 2002-2005.

Figure 9.
Northeastern Massachusetts/Boston Summer Reserve Margins

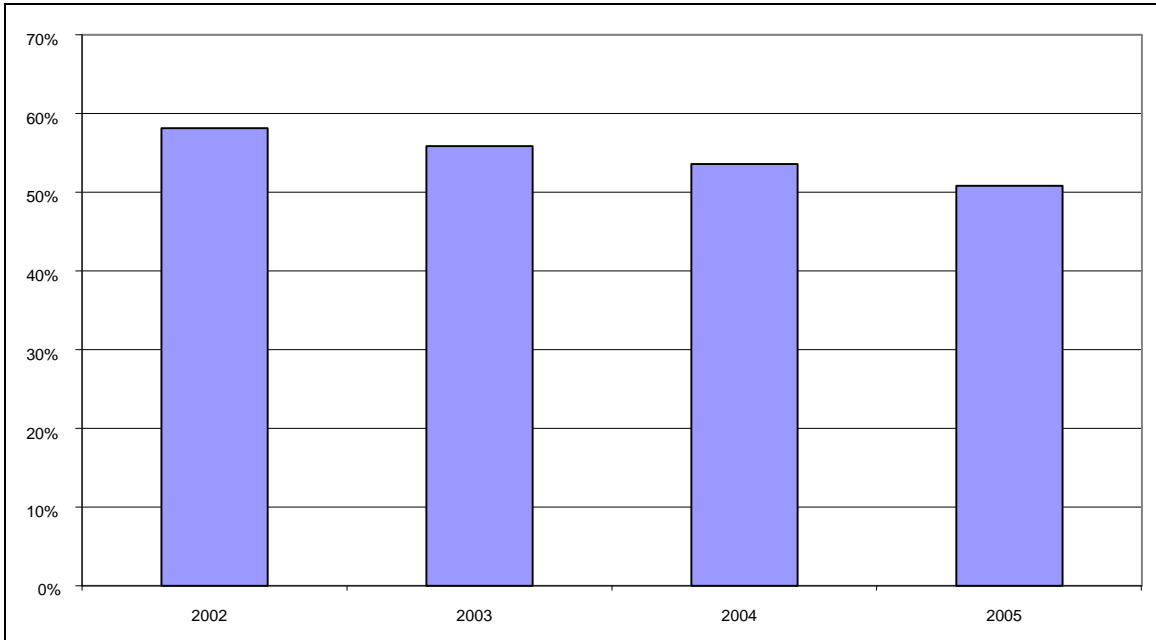
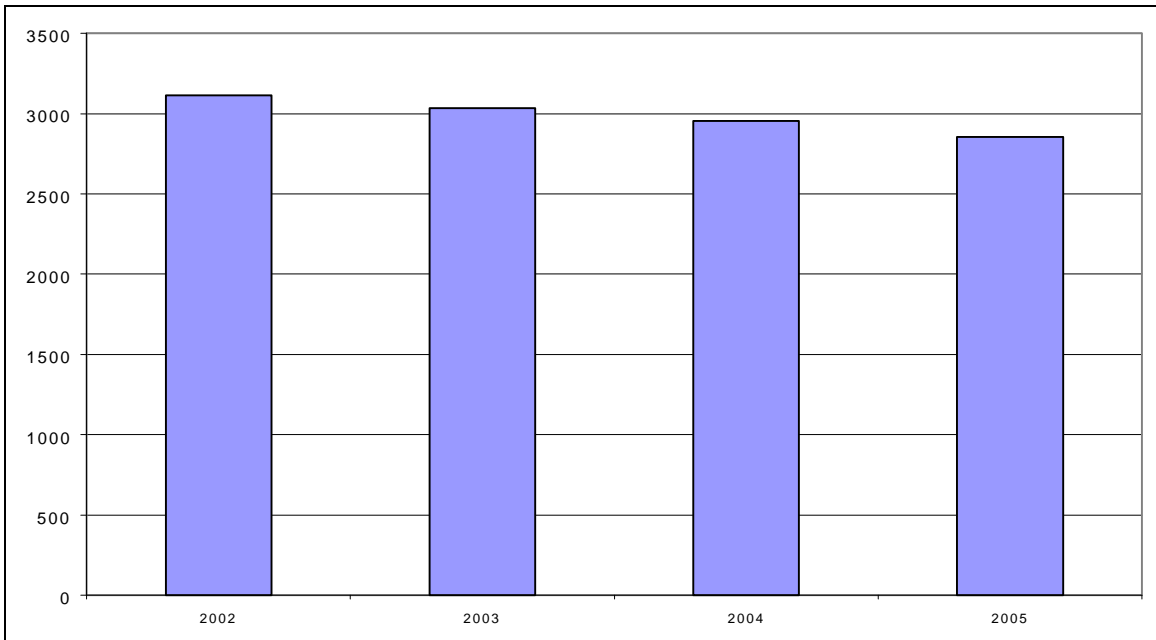


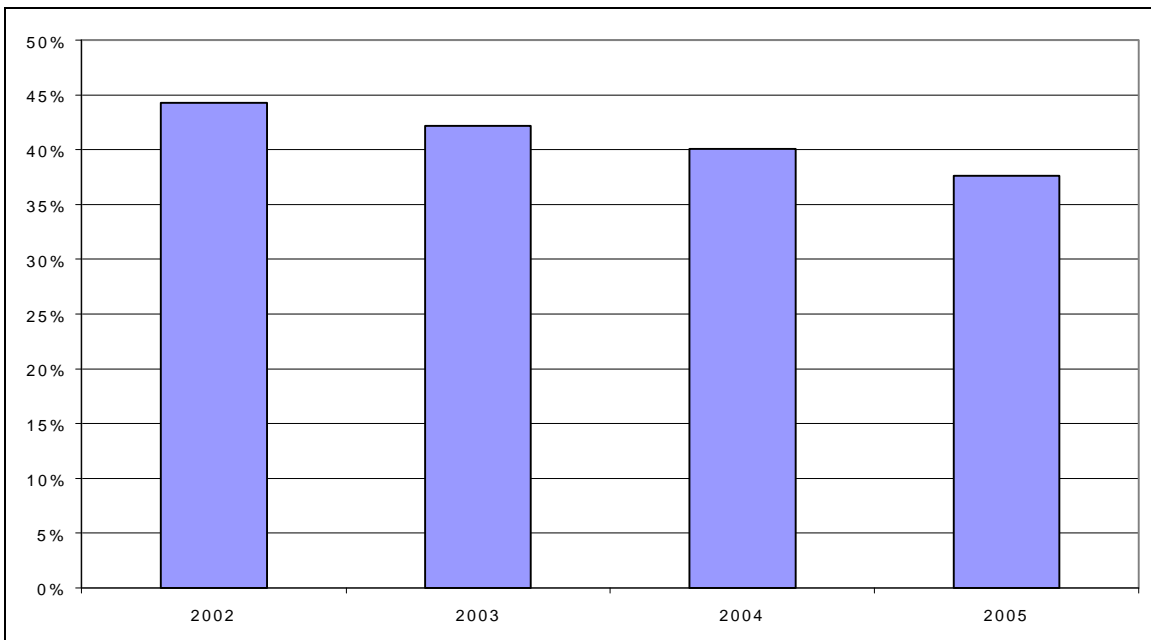
Figure 10.
Northeastern Massachusetts/Boston Summer Reserve Capacity (MW)



Like the NEPOOL reserves discussed above, these reserve margins appear to be sufficient to provide for reliable system operation. The reserves would appear to be adequate even to allow for the units at either the Salem Harbor or the Mystic plants to be shut down for equipment retrofits during any of these years or even permanently retired without seriously jeopardizing system reliability.

For example, reserve margins in the Northeastern Massachusetts/Boston region would still be above 37% in each year even if all four of the units at the Salem Harbor plant were out of service.

Figure 11.
Northeastern Massachusetts/Boston
Summer Reserve Margins Without Salem Harbor Facility



Consequently, the claim by PG&E that the Salem facility is “essential to maintaining reliability in [Northeastern Massachusetts]”¹⁷ will not be valid once the new transmission upgrades and the generating capacity currently under construction are in service.

This finding is based on the following assumptions:

- Starting in the summer of 2001, the transmission system will be able to import up to 3,500 megawatts of power into the Northeastern Massachusetts/Boston

¹⁷ Comments of USGEN New England, Inc., Regarding Proposed Amendments to 310 CMR 7.29-Emission Standards for Power Plants, August 4, 2000, at page 35.

region.¹⁸ Proposed upgrades that would enable the transmission system to import up to 4,000 MW of power have not been included in our analysis.

- At present there are approximately 3,300 MW of generating capacity within the Northeastern Massachusetts/Boston region. An additional 1,672 MW of capacity will be on line within the region by the summer of 2002.

It is also worth noting that the transmission planning process for New England will include specific attention to the Northeastern Massachusetts/Boston region. Such a focus would ensure the identification of specific capacity constraints that threaten reliability should any such threats emerge in the next few years.

7. The claims by the owners of the affected plants concerning fuel diversity should not discourage the DEP from adopting the proposed regulations. The best strategies for reducing New England's dependence on natural gas and other fossil fuels should involve increasing use of renewable energy capacity and dramatic improvements in energy efficiency.

The owners of affected facilities and their trade organization have complained that adoption of the proposed DEP regulations would severely threaten fuel diversity.¹⁹ However, none of their comments provides any credible evidence that the adoption of the proposed regulations would lead to the retirement of any substantial amount of coal-fired generating capacity or would lead to more gas-fired generation than is already planned.

In fact, the proposed regulations are unlikely to influence the amount of new gas-fired capacity that will be added to the region's generating mix. Not only is new combined-cycle gas-fired generation the least-cost new capacity option, but the fuel requirements of the currently proposed new gas-fired capacity additions appear to exceed the capacity of the regional gas pipeline infrastructure. Consequently, available gas supply rather than regulations or fuel diversity policies is likely to be the major determinant of the amount of new gas-fired capacity additions.

In addition, some of the owners of affected facilities and some of the members of the Competitive Power Coalition of New England who are warning about the New England's increasing dependence on natural gas, are the very same corporate entities that are proposing to build the new gas-fired plants that will increase the region's dependence on this fuel source.

Finally, the best strategies for reducing the region's dependence on natural gas and other fossil fuels for generating electricity would involve construction of significant renewable energy capacity and the implementation of programs to improve energy efficiency. In fact, there currently are a number of programs and policies designed to achieve these goals. For example, the renewable portfolio requirement in Massachusetts restructuring act requires that an increasing amount of new, clean, renewable energy sources be part of the energy mix (1% by 2003, 4% by 2009, and an additional 1% each year thereafter).

¹⁸ *Northeastern Massachusetts (NEMA)/Boston Congestion Mitigation Study - Final Report*, dated November 16, 2000.

¹⁹ Comments of the Competitive Power Coalition of New England, Inc., dated August 3, 2000.

The renewal energy trust fund is starting to support projects designed to reduce reliance on fossil fuels but the state has barely tapped into many opportunities for cost-effective energy efficiency measures.

8. The installation of air emissions controls can help to reduce volatility in electricity market prices.

For air emissions with credit trading systems, the market price for emission credits will generally show up in the supply bids for electricity, and therefore will have an impact on the market price for electricity. Price spikes for electricity, such as those observed in the California markets, have been caused in part by shortages and volatility in the markets for NO_x emission credits.²⁰ For example, the price of NO_x emission costs in the South Coast Air Quality Management District trading system had been under \$5 per ton for all of 1999 and the first portion of 2000, but then shot up to about \$40 per ton in the summer of 2000.²¹ This level of NO_x credit price increase would cause operating costs (and therefore bid prices) to increase by about \$80/MWH for marginal generators (those that tend to set the market price for electricity). Installing pollution controls in a timely and orderly manner can reduce exposure to this sort of volatility.

9. The DEP should not be dissuaded from adopting the proposed regulations by the fact that generating plant outage rates increased during the first twelve months following the opening of the New England wholesale electricity market on May 1, 1999.

Synapse's recent report on power plant outage trends in New England found that the amount of generating capacity out of service each weekday for both planned and forced outages increased, on average, by 47 percent during the first twelve months following the opening of the New England wholesale generation market on May 1, 1999.²² However, for the following reasons this finding should not discourage the DEP from adopting the proposed regulations out of concern for system reliability:

- Even if the increased average plant outage rates experienced since the opening of the deregulated wholesale market on May 1, 1999, continue in future years, there will be enough reserve generating capacity during the years 2002-2005 that system reliability will not be jeopardized if some of the units at facilities affected by the proposed DEP regulations also are shut down for equipment retrofits. For example, winter reserve margins in New England would range from 24% in January 2002 to above 35% in subsequent winters even if the higher average plant outage rates experienced in January 2000 were to continue into future years.

²⁰ *California power plants run out of pollution credits*, by Nigel Hunt, Reuters English News Service, November 29, 2000.

²¹ *Market Analysis Report*, Eric Hildebrandt, Manager, Market Monitoring, California Independent System Operator, Presentation at MSC Meeting, December 1, 2000.

²² *Generator Outage Increases: A Preliminary Analysis of Outage Trends in the New England Electricity Market*, Synapse Energy Economics, January 7, 2001.

Winter reserve margins in Northeastern Massachusetts/Boston would range from 23% in January 2002 to above 45% in subsequent winters.

- It is reasonable to expect that overall power plant outage rates will decrease over time as newer and more efficient units come into service.
- As we noted earlier, there is no reason to anticipate that the adoption of the proposed DEP regulations would increase power plant forced outage rates.

Finally, it is possible that the increased power plant outage rates experienced in the twelve months following May 1, 1999, were due to the generators' intentional withholding of otherwise available capacity in order to manipulate market prices. The DEP should not permit such intentional withholding to delay the implementation of beneficial emissions regulations. The appropriate regulatory response to intentional capacity withholding would be to correct the market concentration and market structure causes.

For this same reason, before the DEP adopts any procedures that would allow generators to violate emission standards on certain days because of perceived capacity shortages it should ensure that the generating companies did not contribute to those shortages by engaging in the anti-competitive withholding of capacity.

5. Conclusions

There is no evidence that the proposed regulations will jeopardize electric system reliability in New England either through the retirement of specific units or through outages in the event a facility owner decides to install pollution control equipment. Where such outages are necessary, the reliability of electricity supply can be maintained by careful planning of outages and by the development of new resources in response to market price signals. The unsubstantiated claims of the owners of the affected six facilities do not constitute a reasonable basis for delaying implementation of the proposed regulations.