STATE OF NEW YORK
DEPARTMENT OF PUBLIC SERVICE

CASE 98-E-0405

NUCLEAR GENERATION AND THE COMPETITIVE ELECTRIC MARKET

INTERIM REPORT
APPENDICES

APPENDIX 1

LIST OF PARTIES

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Alliance for a Nuclear Free New York
Automated Power Exchange
Central Hudson Gas & Electric Corporation
Chenango North Energy Awareness Group
City of Oswego
City School District of Oswego
Consolidated Edison Company of New York, Inc.
CO-OP Resources
County of Oswego
County of Wayne
County of Westchester
The Energy Association of New York State
Enron Corp.
Environmental Advocates
Hendrick Hudson School District
Daniel Horan
Independent Power Producers of New York, Inc.
Local 1-2, Utility Workers Union of America AFL-CIO
Local 97, International Brotherhood of Electrical Workers
MATS, Inc.
Millennium Holdings, Inc.
Multiple Intervenors
Natural Resources Defense Council
New York City Department of Business Services
New York City Economic Development Corporation
New York Nuclear Operating Company, LLC
New York Power Authority
New York State Consumer Protection Board
New York State Department of Economic Development
New York State Department of Environmental Conservation
New York State Department of Law
New York State Department of Public Service
New York State Electric & Gas Corporation
New York State Energy Research and Development Authority
New York State Office of Real Property Services
New York State Senate Energy and Telecommunications Committee
Niagara Mohawk Power Corporation
Pace Energy Project
Rochester Gas and Electric Corporation
Sithe Energies, Inc.
Syracuse Nuclear Effort
The Syracuse Peace Council
Town of Cortlandt
Town of Ontario
Town of Scriba

APPENDIX 2

GLOSSARY

Glossary of Terms

Commission: The New York State Public Service Commission

Decommissioning: The process employed, after a nuclear plant permanently ceases to produce electricity, to remove and dispose of radioactive materials in accordance with NRC and any applicable EPA limits, to dismantle existing structures, and restore the site of the plant to an acceptable condition. The NRC defines decommissioning as the safe removal of a facility from service and the reduction of residual radioactivity to a level that permits termination of the NRC license.

Fixed Costs: Costs that do not vary with the output produced by an asset. They are not avoided if the asset is unproductive.

Investor-Owned Utility: A utility company that is controlled by its owners; the holders of the company's outstanding shares of common stock. New York State's electric and gas combination companies (Central Hudson Gas & Electric, Con Edison, New York State Electric & Gas, Niagara Mohawk, and Rochester Gas & Electric) are all investor owned utilities. Public authorities, such as the New York State Power Authority and the Long Island Power Authority, are not investor owned utilities because they have no outstanding common stock.

Independent System Operator (ISO): An entity whose responsibility is to establish, operate, and maintain New York's competitive electric generation markets.

Low Level Nuclear Waste: As used here, low-level waste (LLW) is any radioactive waste that is not classified high-level waste or spent nuclear fuel. LLW often contains small amounts of radioactivity dispersed in large amounts of material, but may also have radioactivity levels requiring shielding and remote handling. LLW is generated by reactor

operation and can be found in the form of contaminated materials such as rags, papers, clothing, filters, ion-exchange resins, tools, dirt, construction rubble, concrete and piping.

Not To Go Costs: Costs related to nuclear plants that are not avoided when a nuclear plant permanently ceases to generate electricity.

Regulated Affiliate: A company controlled by or associated with the utility that is subject to the Commission's regulation.

Segment 1: The phase of this ongoing nuclear proceeding that considers methods of administratively subjecting nuclear power to competitive market generation prices.

Segment 2: The phase of this ongoing nuclear proceeding that considers the implications of various structural alternatives (continued utility ownership versus sale) for subjecting nuclear power to competitive market generation prices.

Segment 3: The phase of this ongoing nuclear proceeding that considers societal, operational and other implications of various approaches that subject nuclear power to competitive market prices.

Settlement Period: The period of time for which rate and restructuring agreements established pursuant to the Commission's Order in are in effect for New York's combination utilities.

Shutdown: The permanent cessation of electric production at a utility generation plant.

Spent Nuclear Fuel: Spent nuclear fuel is uranium-bearing fuel elements that have been used at commercial nuclear power reactors. The spent (used) fuel contains radioactive material resulting from the fission process that occurred in the reactor to make power. The radioactive material is formed within the original ceramic fuel pellets which are contained within sealed metal tubes called fuel rods. The rods are arrayed to form a fuel assembly.

When spent fuel is removed from the reactor the fission process has stopped; however, spent fuel assemblies continue to generate significant radiation and heat due to radioactive decay. The heat and radioactivity generated by spent fuel require it to be handled carefully. The terms "spent fuel" and "high-level waste" are often used interchangeably.

Strandable Costs: Costs that a utility has an obligation to pay (*e.g.*, long-term contracts or payments for the capital supporting a generation plant) but may not be able to recover from customers during the transition period from regulation to a competitive market for electricity.

Stranded Costs: Stranded costs occur when the utility actually is unable to fully recover the costs associated with its obligations. Stranded costs can generally be measured by the difference between the total cost to the utility of providing a service and the competitive market price for that service.

Sunk Costs: Costs for which the utility has an obligation to pay that has not been recovered.

To Go Costs: Costs related to nuclear plants that are avoided when a nuclear plant permanently ceases to produce electricity.

Variable Costs: Costs that vary with the level of output produced by an asset. They can be avoided if the asset is not productive.

Wires Charge: A charge on a utility bill designed to recoup certain costs

APPENDIX 3

COLLABORATIVE PROCESS GROUNDRULES

CASE 98-E-0405
COLLABORATIVE PROCESS
GROUND RULES

PERSONAL COMFORT

1. Participants should dress comfortably:

   -Casual attire is permissible
   -Business attire is optional

2. Participants should introduce themselves to one another:

   -Consider wearing name tags w/affiliation

ROOM REQUIREMENTS

3. Comfortable chairs help participants endure long meetings.

4. Chairs should be arranged so participants face each other.

LOCATIONAL REQUIREMENTS

5. Better parking arrangements are needed for Albany meetings:

   -Consider locations not downtown
   -Identify convenient lots for out-of-town participants

6. Select convenient locations for group meetings.

MEETING REQUIREMENTS

7. All meetings must serve a useful purpose:

   -Agendas must be provided in advance
   -Agendas and notes must be available to all participants
   -Lists of attendees should be made available
   -Minimize the number of meetings

8. Participants should commit themselves to the collaborative process by:

    -Volunteering to serve on working groups
    -Honoring work schedules and meeting deadlines
    -Attending meetings and being timely

9. Meetings should be coordinated with participants' other responsibilities:

    -Avoid PSC/DPS conflicts
    -Avoid due dates for legal briefs
    -Permit teleconference participation when possible

COLLABORATIVE PRINCIPLES

10. We should strive to make our interests (rather than our positions) known to other participants.

11. We will strive to be honest and candid with one another.

12. We will explore facts together.

DISCUSSION DOCUMENTS

13. Documents for group discussion should be provided in advance to everyone involved in the group's activity.

APPENDIX 4

INTEREST STATEMENTS

INTEREST STATEMENTS

LOCAL GOVERNMENT AND SCHOOL DISTRICTS

Westchester County

Indian Point No. 2, a nuclear power plant located in Westchester County and a subject of this proceeding, employed approximately 658 full time personnel and paid approximately $24 million in local property taxes in 1998.

The County of Westchester is interested in the Public Service Commission's approach to the regulation and pricing of nuclear power because of the impact it may have on the health and safety of local residents, the tax base and economy of the local communities, including the workers employed at that facility, and on the ratepayers in Con Edison's distribution area.

Both the federal and state governments made a commitment to the local host communities when they first sited Indian Point at its present location. Though intervening events have occurred, specifically the desire to subject nuclear power generating facilities to market conditions, the State of New York should not lose sight of the commitment that was made to the local host communities and their residents.

Indian Point Power Station provides approximately eighty (80%) of the taxes for the Village of Buchanan, approximately fifty (50%) percent of the taxes in the Hendrick Hudson School District and approximately twenty-five (25%) percent of the taxes in the Town of Cortlandt.

Nuclear power plants have unique characteristics requiring careful consideration when evaluating whether or how to subject the output from these facilities to competitive market forces.

A methodology must be developed that will prevent any private entity from unjustly capitalizing on the transfer of these facilities from a regulated structure to competitive market pricing at the expense of the ratepayers, local communities, residents, and employees. At the same time, the County is concerned about providing a smooth transition to the day the plant is eventually closed at the end of its license and the property restored to a condition allowing unrestricted use.

Hendrick Hudson School District

Hendrick Hudson Central School District is interested in the State's approach to nuclear power because of the impact it may have on the health and safety of district residents, the tax base, the impact upon the mobility of our residents, and the local economy.

The health and safety of the residents and the District's school population is our primary concern. Con Edison has run a safe plant in the current regulated environment. If the plant is owned by another entity or the current framework is restructured to bring pressure on an operator to pursue profit driven strategies, the health and safety of the residents may be impacted.

The Indian Point units owned by Con Edison approximate one half of the School District's property tax levy. A change in the valuation of the plant would have a detrimental impact upon the School District's ability to pay for and finance its programs. Revenues would have to be derived from other taxpayers, or programs cut dramatically. The ability of our residents to attract buyers for their homes would be adversely impacted by either the higher tax bills that would have to be paid by residents of the District or by the impact on the education of their children.

Finally, job losses at the plant will impact the local economy. Fewer employees will patronize local vendors less often, thus exacerbating the adverse impacts on the economy created by deregulation.

Town of Ontario and Wayne County

The Town of Ontario has an agreement with RG&E which provides for a proportionate annual decrease in the Ginna Plant's tax assessment until the expiration of the Plant's license in 2008. The Plant presently contributes a large portion of Town, County, and school taxes. A sudden decrease in the assessment would have a profound effect on all taxpayers. However, the detrimental effect would be compounded dramatically if the equalization rate as set by the Office of Real Property Tax Services did not immediately decrease as well. Equalization rates are based upon property values set by O.R.P.S. and when these values exceed the assessed value of property, Town taxpayers pay a falsely inflated share of both school and county taxes. For that reason, the Town considers it extremely important that equalization rates be considered an issue in any decision to change the way in which nuclear power is regulated or delivered in New York State. The Town also feels strongly that safety is an important issue in considering deregulation and that, to date, RG&E's operation of the Plant has insured safety.

Oswego County and the Oswego City School District

Oswego County and the Oswego City School District believe that the investor-owned utility nuclear plants located in Oswego County, Nine Mile I and Nine Mile II, must be maintained as competitively viable plants in the future while, at the same time, ensuring that a fair level of tax revenues are paid to the communities that host nuclear facilities. To the extent that the foregoing results in tax reductions, these reductions must be implemented gradually on a phased-in basis and other measures must be adopted to mitigate these impacts to the communities to the maximum degree practicable.

City of Oswego and Town of Cortlandt

The interests of the City of Oswego and Town of Cortlandt include:

- the definition and allocation of "to go" and "sunk" costs;
- effective mitigation of the impact of lost tax revenues on the host community, surrounding region, school district, and county;
- the impact on labor and related changes in disposable income from changes in the ownership/operation of the nuclear plants;
- ensuring that there are no increases in commercial or residential electric rates;
- the impact on development of the Oswego Steam Station as a merchant facility due to changes in the ownership/operation of the nuclear plants (Oswego only).

STATE AGENCIES AND AUTHORITIES

CPB

The New York State Consumer Protection Board (CPB) wishes to maximize the economic benefits for residential and small business consumers as a result of the transition to market pricing as a result of this case. Such a goal should be achieved with appropriate regard for all necessary consumer protections and safety measures as well as being consistent with the protection of the environment.

DOL

The New York State Department of Law (DOL) believes that residential and small business ratepayers should receive the maximum benefit from electric competition, without paying an unfair share of the costs of the move to a competitive marketplace. The output of nuclear electric generating plants belonging to investor-owned combination utilities should be priced as close to the market as is consistent with safety, reliability, and environmental protection. To the greatest extent feasible, customers should not pay the above-market capital and operating costs associated with nuclear generation.

NYSERDA

The President of the New York State Energy and Development Authority (NYSERDA) chairs the State's Energy Planning Board. The 1998 State Energy Plan encourages the PSC to continue to investigate nuclear energy's role in a restructured electricity industry. Moreover, NYSERDA is concerned with the transition to a more competitive electricity industry,

the operational and long-term reliability of New York's electricity system, fuel diversity, air quality, alternatives to nuclear power, and the competitive position of the State's electricity industry.

DPS Staff

The Department of Public Service Staff's (Staff's) interest is to make recommendations to the Commission regarding the applicability of its Competitive Opportunities Bypass proceeding to the nuclear power industry. These recommendations must ensure that ratepayers continue to receive maximum benefits from the move to a competitive marketplace. Such benefits should incorporate the State's needs for safety, system reliability, fuel diversity, and protection of the environment. Consideration should also be given to the needs of the employees of nuclear plants and the local communities in which they are situated.

PUBLIC UTILITIES

Con Edison

Consolidated Edison Company of New York, Inc.'s (Con Edison's) interest in this proceeding is the development of a workable methodology for determining and allocating nuclear production and post-retirement costs that will: take effect after a reasonable transition period; be consistent with the deregulation of generation and the related decisions and orders previously issued by the Commission; and produce clear and predictable outcomes on nuclear economic issues. Such a methodology should facilitate informed long-range planning and decisionmaking regarding Con Edison's nuclear assets.

Central Hudson

Central Hudson Gas & Electric Corporation's (Central Hudson's) Nuclear power plants have unique characteristics requiring careful consideration in evaluating the desirability of and potential methodologies for subjecting the output from the facilities in New York State to market forces. Implementation of any market mechanism should recognize that the benefits of nuclear plants can be maximized through operating the facilities at fairly uniform, high rates of production.

Central Hudson's ownership participation in nuclear power (Nine Mile Point 2) has uniquely been subject to extensive regulatory reviews including, most recently, in its rate restructuring settlement and represents significant capital concentration.

NYSEG

In its restructuring settlement with the PSC, New York State Electric & Gas Corporation (NYSEG) agreed to advance the Commission's goal of separating the generation of electricity from the distribution of electricity by supporting the sale of the Nine Mile 2 Nuclear Generating Station. NYSEG believes its customers and its shareholders would be best served by having NYSEG sell its interest in Nine Mile 2, and that the Commission should process promptly any application under PSL Section 70 for approval of the sale of a nuclear plant. This collaborative should not recommend that the Commission hinder the sale of nuclear plants.

The collaborative must not suggest that the Commission violate the orders it issued when it reached final conclusion on the amount of utility investment in Nine Mile 2 that would be considered prudent and when it approved the provisions relating to the recovery of that investment in the settlement agreement in NYSEG's restructuring proceeding.

Niagara Mohawk

Niagara Mohawk Power Corporation's (Niagara Mohawk's) interest is to assure that the mandate of the PSC is carried out in a manner which is timely and which considers the unique characteristics of nuclear power plants; assures the flexibility to pursue business solutions that will increase value to shareholders, including recovery of investments; and considers the needs of its customers, employees and the communities in which the facilities are located.

RG&E

Rochester Gas and Electric Corporation (RG&E) has very significant investments in nuclear generation which it believes are recoverable from its customers under Commission determinations. RG&E is interested in the recovery of those investments and in ensuring that its customers receive the benefits of competition in the electricity markets consistent with the rights of shareholders. Under current conditions, RG&E believes these goals can best be achieved through continued operation by regulated entities, with its customers receiving an appropriate share of the resulting benefits, rather than by sale to third parties who would then enjoy such benefits at the expense of RG&E's customers.

NYNOC

New York Nuclear Operating Company, L.L.C.'s (NYNOC's) interest is to assure that the option of consolidated operations remains viable. NYNOC would make available reasonable opportunities for mitigation of stranded costs. NYNOC would capture synergisms and reduce business risks in ways that would be difficult to accomplish under existing structural

arrangements. Clarification of the regulatory treatment of nuclear generation ownership is necessary before the utilities can proceed further with NYNOC.

EMPLOYEE UNIONS

Local 1-2, Utility Workers Union of America, AFL-CIO, and International Brotherhood of Electrical Workers, Local 97

The UWUA and IBEW are interested in all issues as they potentially impact: (a) the approximately 1,600 utility workers directly and indirectly involved in operating the nuclear power plants at Indian Point and Nine Mile Point; and (b) the local communities in which the facilities are located. Union members at these nuclear facilities perform their functions in an extremely competent, safe, and cost-effective manner. The maintenance of jobs, worker health/safety, public health/safety, potential for stranded investment, and the vibrance of local economies of which the nuclear facilities are a part, are primary concerns of the Unions.

CUSTOMER AND CITIZEN GROUPS

Multiple Intervenors

Multiple Intervenors is an association of over 60 large commercial and industrial energy customers located throughout New York State. Consistent with Opinion No. 96-12, Multiple Intervenors interest in this case is to ensure that the treatment of nuclear generation in a competitive electric market will promote economic development throughout New York State through lower energy rates. Accordingly, Multiple Intervenors will oppose any treatment of nuclear generation that results in increased rates for New York consumers.

Syracuse Anti-Nuclear Effort

The Syracuse Anti-Nuclear Effort (SANE) has public safety as its primary interest. The General Accounting Office, the Union of Concerned Scientists, among others, have assessed the performance of the NRC and found it seriously lacking; in general they found it to be more accommodating to industry interests than to the public's safety. SANE wants the PSC to acknowledge and take into account the substantial erosion of safety margins in aging nuclear plants and as the NRC practices inconsistent regulatory enforcement. SANE is concerned that safety will receive still less attention in a cost competitive environment.

Chenango North Energy Awareness Group

The interest of the Chenango North Energy Awareness Group is to shut down all nuclear generation of electricity in order to safeguard NYS residents from radioactive emissions and the risk of nuclear accident. Onondaga, Cayuga, Seneca, and Madison Counties have the highest infant mortality rates, according to NTS statistics. Dr. Alice Stewart proved radiation affects fetuses. Classify this as "to go cost," to be avoided by closing the plants. Aging plants and cracked core shrouds risk lives against the will of the people. NYS should provide an on-going benefit package to communities who would suffer loss of employment and taxes from the closing of the plants, because they will have them forever.

ENVIRONMENTAL GROUPS

Environmental Advocates

Historically, the traditional electric utility market price has failed to account for various social, public health, economic, and ecological external costs associated with power generation and the entire nuclear fuel cycle. But that does not mean these costs should be overlooked in a deregulated marketplace and for that matter within the framework of this proceeding. As the electric utility market restructures and moves toward competition, external costs must be addressed within the context of stranded costs, not to go costs, and to go (forward going) costs. It is important to note that these external costs are not limited to within the boundaries of New York State and they are certainly not confined to Scriba, Cortlandt, Ontario and their respective counties.

Natural Resources Defense Council

Natural Resources Defense Council's (NRDC's) stake in this proceeding arises form its strong interest in creating a fair competitive market for electricity in which cleaner renewable technologies can flourish. To achieve this, nuclear generation, like all other electric generation, must be required to compete without subsidies in a competitive market for electricity. If nuclear power plants are shielded from market forces by being allowed to remain with the regulated utility and exempted from divestiture requirements, fair electric competition will not exist. The adverse economic and environmental impacts of nuclear power, which too often is internalized, should be recognized and factored into the decisionmaking process.

Pace Energy Project

The Pace Energy Project, an environmental advocacy organization, is interested in assuring that in the transition to competitive markets in New York is completed as expeditiously

as possible. To accomplish that goal it is essential that nuclear generation be required to compete with all other sources of power generation on a going-forward basis. Continued subsidization of nuclear generation will distort wholesale and retail electricity markets and delay the introduction of new technologies that have the potential to improve the state's environmental quality.

ELECTRIC INDUSTRY AND ENTREPRENEURS

Independent Power Producers of New York, Inc.

Independent Power Producers of New York, Inc.'s (IPPNY's) interest in this proceeding is to advance as rapidly as possible, the exposure of all "going forward" or "to go" costs of the state's investor owned nuclear power plants to market forces. IPPNY believes that this can be best accomplished by separation of the nuclear units from the regulated transmission and distribution entities. This could be done through divestiture or transfer to a structurally separate subsidiary that is responsible for all direct and indirect costs of nuclear generation.

IPPNY is a not-for-profit trade association representing over 100 companies involved in the development, operation and marketing of electric generation.

John Schnebly

The Commission requested that the nuclear collaborative proceeding address issues that relate to the cost of going forward with nuclear power or its alternatives. This depends on offers to buy plants from the utilities. These costs depend on waste disposal costs to be determined by the DOE. Until these issues are resolved, all offers to purchase the plants are contingent and all "to go" costs are based on current assumptions of the costs per kWh of disposal.

I would like to see the report to the Commission advocate that any relief from the costs of waste disposal go to support ESCO activities that support the NYS Energy Plan. This means utilities should offer energy performance contracts and stimulate the manufacture and installation of energy efficient equipment and decentralized energy alternatives such as fuel cells, microturbines, and the like. Such work could offset the loss of power from nuclear facilities with the efficient use of the remaining generation options.

APPENDIX 5

PUBLIC OUTREACH REPORT

INTRODUCTION

This document provides a summary of the comments and themes presented at the public information meetings held in the nuclear issues proceeding in Peekskill, Oswego, and Ontario on February 4, 8, and 9, 1999, respectively.

PEEKSKILL

On February 4, 1999 about 200 people attended a meeting at the Peekskill Armory to learn about the Commission's nuclear issues proceeding and to discuss the potential impacts related to the Indian Point No. 2 Nuclear Generating Station (IP2). Attendees included the Superintendent and President of the Board of the Hendrik Hudson School District, the Mayor and Deputy Mayor of the Village of Buchanan, the Town Supervisor of the Town of Cortlandt, State Assemblywoman Sandra Galef; representatives from the Westchester County Public Utility Services Agency, County Executive Andrew Spano's office, State Senator Vincent Liebell's office, United Taxpayers for Tax Decrease, Verplanck Fire Department, Con Edison, and Safe Legacy. The meeting started at 7:35 p.m. and continued until 9:30 p.m.. Media covering the event included The Journal News, Empire State Reports, The Cortlandt Observer, The Westchester Business Journal, and News 12 Yonkers.

Themes

The primary themes raised at the Peekskill meeting were property taxes, nuclear safety, a potential sale of IP2, restructuring and the nature of the proceeding.

Generally, the attendees were opposed to higher property taxes resulting from the sale or early shutdown of IP2, or using taxes to pay for decommissioning. However, one speaker concerned about safety said that slightly higher taxes would be all right if the plant were shut down. Other speakers requested special consideration for host communities because of the inducements of potential benefits originally offered by Con Edison when the plants were sited there. These speakers went on to say that some of those benefits never materialized, were withdrawn, or may be withdrawn as a result of restructuring. They asserted that nuclear power benefits all New Yorkers, and all New Yorkers (not just the host communities) should continue to absorb the costs, including property taxes, associated with the operation of the nuclear plants.

Some speakers dwelt on their distrust of the PSC and this proceeding, worrying that decisions had already been made, for instance, to sell IP2. Others raised concerns that the process would be moving too quickly to adequately address safety considerations and host community concerns, to educate residents on the issues, or to avoid adverse tax consequences. Moreover, there was a general belief that divestiture could significantly impact both the safety and property tax concerns already faced by the community. The attendees also wanted to know who would ensure safety in a restructured environment, especially if IP2 was sold.

The attendees also expressed a common opposition to the sale of IP2. On the topic of a sale, they asked whether and what conditions would be placed on new owners and whether their voices would be heard in the process. Some stated opposition to electric restructuring generally, citing lowered safety, lack of savings on utility bills, higher taxes, and job losses at the expense of the community. Calls were also made for the immediate shutdown of IP2.

OSWEGO

Approximately 100 people attended the February 8, 1999 meeting at SUNY Oswego. The focus of this meeting was the nuclear proceeding and its impact on the Nine Mile Point 1 and 2 Nuclear Generating Stations (NMP 1/2). Attendees included the Superintendent and President of the Board of Oswego City School District, County Executive Jack Tierney, representatives of the City of Oswego, the Oswego County Legislature, Niagara Mohawk, and three of the anti-nuclear groups. The meeting started at 7:00 p.m. and continued until 9:15 p.m. Media covering the event included The Palladium Times of Oswego, WRVO, and Channel 9 WIXT.

Themes

The primary concerns voiced at the Oswego meeting pertained to the impacts of the possible sale of NMP 1/2; property taxes, rates, and nuclear safety. General opposition to nuclear power and concerns about electric restructuring were also expressed.

Speakers recounted the history of promises of lower taxes and the resulting economic draw to the area -- a draw that some claimed never happened--that induced the area to accept the nuclear plant despite concerns about radiation, fears for nearby residents, and drops in property values. People said stranded costs, as well as "stranded taxes," should be spread fairly among all ratepayers and that the utilities should pay them. People were concerned about decommissioning's safety and unknown costs.

One speaker said the ISO should be established before studying the economics of nuclear plants or considering their divestiture. The attendees also raised concerns regarding divestiture and monopoly market power, foreign ownership, the need for the PSC to hear and address public input before a sale, the need to ensure the financial security of new owners, and the impact of a low purchase price on property taxes. There was a common view that restructuring of the nuclear industry was unwise and could lead to reductions in safety considerations at the plants. One speaker mentioned the cutbacks at the Nuclear Regulatory Commission and how market forces could pressure plant operators to cut corners.

Speakers thought that the PSC was moving too fast and should be holding a meeting where more ratepayers were located. One speaker said radioactive waste should be treated in an environmentally just manner and not dumped in low income or racial minority

neighborhoods. The anti-nuclear groups opposed nuclear power on general safety grounds and for how long waste remained radioactive, and the fallacy of it being environmentally friendly.

ONTARIO

About 55 people attended the Ontario meeting on February 9, 1999 at the Firemen's Exempt Hall in Ontario. Attendees included the Supervisors of the Towns of Ontario and the surrounding communities in Wayne County, representatives of Ontario County, RG&E, and the Superintendent of the Wayne Central School District. The meeting started at 7:00 p.m. and continued until 9:15 p.m. Media covering the event included The Wayne County Mail, The Williamson Sun, The Sodus Record, WGRC, and Wayne County Channel 9.

Themes

The primary themes presented at the Ontario meeting were stranded costs, rates, and property taxes, followed by nuclear safety, and concerns about electric restructuring, especially divestiture, and the PSC decision-making process. On the issue of property taxes, primary concern was related to the Office of Real Property Services and its determination of the Town of Ontario's equalization rate.

As at the earlier meetings, concerns over divestiture unknowns were frequently expressed. In addition to safety and property taxes, these concerns included who the potential purchasers are and the PSC decision-making process. Commenters feared low sales prices could increase property taxes and increase rates by increasing stranded costs. One speaker urged the PSC to take action to continue downward rates. People wanted to know whether ratepayers or shareholders would pay stranded costs, with at least one person favoring each outcome.

Speakers expressed concerns regarding the financial security of the potential buyers and whether one company could become a monopoly owner of all New York State nuclear power plants. People wondered if the PSC could force divestiture and whether they would have an opportunity to provide comments prior to a sale. Some attendees expressed concerns regarding reliability and spent nuclear fuel storage on the shores of Lake Ontario. Others claimed the PSC was moving the process along too quickly and has already made a decision. Several questions were presented about the PSC and its decision-making process: could the PSC force divestiture, how can a PSC decision be undone, how can the PSC be held accountable?

EXAMPLES OF PARTICIPANTS' TYPICAL CONCERNS

Property taxes

"Approximately twenty years ago at the instigation of the Public Service Commission, Con Edison sought and received tax reductions. Now, you are again pressuring ConEd to seek a seventy percent reduction in its tax liability. Our tax base has been sacrificed on the altar of deregulation."

"It's interesting that now that the politicians have stopped speaking and that people seem to be much more interested in nuclear safety. . . . I'm concerned about taxes, ... I would really like to see the nuclear power plants closed down, not sold to a private interest, just closed down. . . . I would certainly pay a little more in taxes to not have an active nuclear plant in the vicinity."

Need participation of NYS Office of Real Property Services.

Tax equalization as important as tax base.

"A sale would affect assessments. You need to get the NYS Office of Real Property Services equalization rates in lockstep. This is a more devastating, more important issue than assessment."

Special considerations should be made for host communities.

"[I]n our square mile we produce ten percent of the electricity for one of the top fifteen economies in the world, we're not looking for a handout, we're looking for some equity. And we're looking at the Public Service Commission to take all of our residents' comments tonight and all of our questions, and to say that, yes, there is a bigger picture for New York State. But the biggest picture is what we've already given to New York State . . . by putting two nuclear power plants in our community."

Consider community responsibilities for emergency response and financial burden that causes.

A social contract was made with host communities when plants were built to have lower taxes to offset costs and lowered property values and economic growth attendant in hosting nuclear plant.

"When we agreed to site the plants here in return for hosting the plants with the radiation, fears, negative impact on property values, we were promised that we would get increased tax revenues. But taxes were not so

low that they were a magnet to people to move here. . . . Prices paid for nuclear plants scare me, they are a fraction of what the plants are worth. . . . There should be alternate taxes . . ., all plants including PASNY should distribute back to the counties adversely affected by the nuclear plants."

"When this community agreed to host a nuclear power plant they were assured, and we continue to be assured, that we could count on tax assistance throughout the life of the plant. . . . You are now telling us . . . that the rules are changing. Nuclear power plants will remain in our community, but the promised tax revenues will not be. . . . [C]an we expect that the collaborative process can address and will address the issue of tax mitigation in this host community and recommend viable solutions?"

Uniqueness of Indian Point calls for it to be considered separately from other sites.

Restructuring Concerns

"Deregulation hasn't brought about anything good in the electrical industry. You broke up the monopolies in New York and took them from everywhere else in the country and brought them in here. . . . [T]here is no money to be saved by selling these plants. The only thing that you're selling them to is another corporation that then you're going to have to worry about safety concerns. . . . [W]hen you buy a plant you have to make back money. There is only a few ways to do it, you cut the manpower and you cut what you did for safety. . . . So, when you start losing some of these good paying jobs and your neighbor . . . you're going to have that problem. . . . [S]o eventually you would have nobody working, because these plants won't be running, because the NRC will end up shutting them down."

Competition is unsafe.

"If the plants are to be competitive, will they cut corners that will affect the safety of our children and all of us? This is a major issue for this community and we strongly suggest that the collaborative look at how deregulation will affect the safety of this area."

Nuclear's importance to the grid.
Con Ed service quality declining.
Effects on reliability.
ESCOs will provide fewer consumer protections.
Effect on demand metering.

Adequacy of generation reserves.
Not a level playing field for cogenerators, Niagara Mohawk rates for backup power.

PSC Concerns

Rely on Department of Public Service/Office of Consumer Education and Advocacy to represent interests.
PSC should address safety

Collaborative process:
Explain more.
Approve its use.
Moving too fast.

"The time line you have set does not allow the County, the Town, the Village and the school district, who will all be participating in the collaborative, enough time to educate our communities on the issues being discussed. . . . We urge you to re-think the time line and to give us an opportunity to clearly understand all of the issues and then inform our community."

Divestiture Concerns

Public input should be obtained before sales approved.

"You will devastate this entire area if you allow this to be sold. . . ."

Concerns over horizontal market power and the potential concentration of ownership in few hands.
Conditions should be imposed on sales.
There should be financial scrutiny of new owners and assurances of security.
Confidence was expressed in present owners' operation of plants.

Safety Concerns

Safety is a concern.

"[W]hatever the case may be, the issue for me is safety. There is no long term storage for nuclear waste, none at all. . . . All the taxes that you do or don't pay, . . . they're not going to matter if

something goes wrong with whoever becomes the steward of that site. . . . [T]axes don't mean anything if our safety is not protected."

Opposition to Nuclear Plants

Plants should be shutdown.
There are many dangers associated with spent nuclear fuel and radiation.

"It's a fallacy that nuclear power is clean especially with respect to carbon dioxide and global warming. The mining, refining, transportation and disposal of nuclear fuel are all high producers of carbon dioxide. Who would want Nine Mile Point 1, I'm fearful of the type of company that would look to buy these plants."

"There are no benefits we can't get more safely and cheaply from other sources than nuclear power. The cheapest is energy efficiency. . . . Decommissioning costs are enormous, principal source of uncertainty, is there any way of knowing decommissioning costs and how will that play into our discussions. There is a 45% percent chance of a core meltdown in the next 20 years. I'm concerned over lack of NRC oversight. Nuclear waste is being produced at 30 tons a year, the radioactivity half life is 240,000 years."

Public Involvement Process/Logistics

Not enough seats in Peekskill.
Want more information.
Want to give input.

Public information meetings should be held at ratepayer population centers such as Monroe County (RG&E) and Syracuse (NMPC).

Meetings regarding nuclear plants should be held in the host community. This method of public involvement will not bring in all parties.

Decommissioning Concerns

Costs are unknown.

"One of the issues that should be addressed by the collaborative is who will be paying for decommissioning."

Rates

Should go downward.
Who will set rates after sales?
Prudence should be examined.

Stranded Costs

Utilities should pay.
Stranded costs should be spread among all ratepayers, not only on low income customers.

Environmental Justice

Radioactive materials should not be disposed of in low-income areas.

APPENDIX 6

"To Go" Costs"

Consolidated Edison Company of New York, Inc.

June 1, 1998

APPENDIX 6

“To Go” Costs

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APPENDIX 6

Table of Contents

1.0 Introduction

Consolidated Edison Company of New York, Inc. ("the Company") is submitting this report on its "to go" costs to the Staff of the New York State Public Service Commission (PSC) in accordance with the September 19, 1997 Amended and Restated Agreement and Settlement ("Settlement Agreement") in Case 96-E-0897, approved by the PSC by order issued September 23, 1997. This submission fulfills the requirements of the Settlement Agreement, Section III, paragraphs 11(iv) and (v), and will facilitate Staff's review of the appropriateness of the Company's energy and capacity bids pending the sale or transfer to affiliates of the Company's fossil electric generation. As to the nuclear "to go" costs discussed in this submission, the Company expects that its proposals will be incorporated in the PSC's determination as to the treatment of nuclear generation following the transition to a competitive electric market (Case 94-E-0952, Opinion and Order Instituting Further Inquiry, Opinion No. 98-7, issued March 20, 1998).

This filing will:

- Identify all types of costs associated with electric generation and categorize them in terms of "to go", unavoidable and sunk.
- Establish the economic basis for the use of "to go" costs.
- Discuss the different types of "to go" costs.

- Discuss how "to go" costs differ among fossil-fueled reheat, gas turbines and nuclear generation.
- Describe the process that the Company determines "to go" costs.
- Discuss how “to go” costs will be used in the development of capacity, energy and ancillary services bids once the ISO assumes control of energy dispatch in New York State.

Because of the differences in operating characteristics and cost structures among generation types (fossil-fueled reheat, gas turbine and nuclear), this filing discusses the “to go” costs for each type under separate sections.

2.0 Electric Generation Costs

The cost of owning and operating an electric generating unit consists of the recovery of its net utility plant (i.e., depreciation and return on remaining book) and continued cash costs. Net utility plant is the unrecovered portion of the investments that were made prior to the current point in time, i.e., sunk costs. Continued cash costs are current and future outlays that include fuel, operating and maintenance (O&M) expenses, capital additions, plant property tax, administrative and general (A&G) expenses and other common costs.

Fuel costs include boiler startup fuel, fuel for the minimum load portion (e.g., fossil-fueled reheat units have minimum loading levels other than zero) and the fuel for the dispatchable

portion (i.e., the unit loading above minimum). O&M expenses include a base, cycling, usage and incremental component[1]. The base O&M does not vary with unit operation and includes all related expenses that are a direct result of operating and maintaining the unit on an annual basis – an example would be the plant staffing requirements to keep the unit available to operate. The cycling O&M varies with the frequency of unit shutdown and startup for the next operating cycle – an example would be deterioration of the superheater tubes with number of operating cycles. The usage O&M is measured in dollars per operating hour and is independent of loading level – an example would be maintenance expenses associated with the operation of centrifugal pumps. The incremental O&M is measured in dollars per megawatthour – an example would be the use of feedwater chemical treatment being proportional to the amount of generation.

However, not all cash costs are discretionary in the sense that they could be avoided based on a change in status of the unit. For example, when a generating unit is retired, some of the cash costs would still remain – these unavoidable costs consist of allocated corporate A&G expenses, common costs such as the cost of the Company's headquarters, and plant property tax. Plant property tax is categorized as unavoidable, because the timing and

[1] Based on the testimony of Douglas R. Kiviat in Case 93-E-0912 / Case 93-E-1075 (Fuel Targets and Buy-Back Rates), in which the term "fixed plant cost" there means the same as the term "base O&M" used herein, the term "startup/shutdown cost" there is equivalent to "cycling O&M" here, the term "operating cost" there is the same as " usage O&M" here and the term "incremental cost" there is equivalent to "incremental O&M" here.

extent that retirement of a generating unit (especially in multiple-unit plants) would result in a permanent reduction in plant property tax is uncertain and any reduction from unit retirement would be subject to negotiations with local authorities. At minimum, disablement of the unit may be required to realize any reduction in plant property tax. Even the retirement of a whole plant like the Indian Point Station would not guarantee an immediate property tax reduction given the post-operational status of the plant and given the dependence of local school district, Village of Buchanan and the Town of Cortlandt on the property tax payments. The remaining operating costs are "to go" from the perspective that they are avoidable at the unit level. "To go" costs include fuel, O&M expenses, capital additions and the plant labor related A&G expenses, such as payroll taxes and fringe benefits. Exhibit 1 summarizes the generation costs by type (i.e., "to go", unavoidable and sunk).

Exhibit 1[2]
Generation Costs

Cost Description	Cost Classification
Net Utility Plant[3]	Sunk
Fuel[4]	"To Go"
O&M[5]	"To Go"
Property Tax	Unavoidable
Capital Additions[6]	"To Go"
Fringe Benefits & Payroll Taxes[7]	"To Go"
Common Costs[8]	Unavoidable

[2] Exhibit 1 breaks out the operating costs into "to go" and unavoidable on the basis of unit retirement. Breakdown of operating costs using bases other than retirement would result in less "to go" and more unavoidable.
[3] In terms of cost recovery, net utility plant consists of depreciation and return on remaining book.
[4] Except in nuclear where fuel in reactor and fuel in inventory are sunk costs.
[5] Except in nuclear where most of the O&M in the initial years after unit retirement are unavoidable costs.
[6] Once the capital addition is made, it becomes a sunk cost. Only capital additions that have not been made are "to go".
[7] Except in nuclear where most of the labor and related costs in the initial years after unit retirement are unavoidable costs.
[8] Costs that are common among generating units at the same site and at the corporate level, such as corporate administrative & general expenses, including corporate officers.

3.0 Definition Of "To Go" Cost

Section III, paragraphs 11(iv) of the Settlement Agreement refers to "to go" costs as costs that would be avoided as a result of a generating unit being backed down, taken off line, placed on cold standby or retired. Actions of backing down a generating unit or taking it off line are short term in nature and are economically justified as long as the avoided costs from such actions are greater than the revenues it would have received on energy and ancillary services. Longer term actions of placing a generating unit on cold standby (e.g., yearly reserve shutdown) or unit retirement would be economically justified if the long term avoided costs are greater than the long term revenues that it would have received from the capacity, energy and ancillary services markets. In other words, "to go" costs are avoidable costs when related to the alternative action that the generating unit would take if its bid does not clear the market. As an illustration, consider a fictitious unit "A" and unit "A" expects to spend $50 million if it were to operate for the year. However, if unit "A" were to be placed on reserve shutdown for the year, it expects to spend only $10 million for the year. Therefore, relative to the annual reserve shutdown alternative, the "to go" cost of unit "A" would be $40 million for the year, which is $50 million if operated less $10 million if shut down.

4.0 "To Go" Cost Development

The process of quantifying "to go" costs starts with the Company's current fuel, O&M and capital budgets, which are based on pre-ISO operation. Without a history of post-

ISO operation and for the purpose of estimating "to go" costs, it is therefore assumed that the operation of the Company's generating units would not differ from pre-ISO to post-ISO environment. "To go" costs for the same generating unit differ depending on the state of reduced operation, e.g., reduced output, weekend shutdown, year long shutdown and retirement. Exhibit 2 provides a general comparison between the "to go" costs of these four states, showing what costs are avoided by reduced operation of a fossil-fueled reheat unit. As shown on Exhibit 2, reduced output would avoid the least amount of costs and retirement would avoid the most. Exhibit 2 shows in a reduced output state, only the incremental O&M and the cost of the dispatchable portion of the fuel burn would be avoided – this is typical for a fossil-fueled reheat unit.[9] In a weekend shutdown, a generating unit going from on-line to off-line would avoid the fuel costs from the dispatchable portion, the minimum load fuel costs and the incremental and usage O&M; however, if the unit is already off-line for the weekend, the avoided costs from not operating would also include startup fuel and cycling O&M. In a year long shutdown, the avoided costs will include all unit-specific fuel costs, all unit-specific O&M costs, all unit-specific deferred capital additions and the unit-specific labor related A&G expenses. For fossil-fueled reheat units, there is no significant distinction in terms of "to go" costs between year long shutdown and unit retirement.[10]

[9] Unlike fossil-fueled reheat units, gas turbines and nuclear units are expected to either be offline or run at full output.

[10] This is also true for gas turbines. However, for the nuclear unit, Indian Point 2, the "to go" costs in a year long shutdown are significantly less than the "to go" costs under unit retirement – in fact, there are no "to go" costs if the unit were to be on reserve shutdown for the year.

Exhibit 2

Comparison Of "To Go" Costs[11]

	"To Go" Costs As Unit-Specific Costs Avoided By:		
Cost Description	Reduced Output	Weekend Shutdown	Year Long Shutdown[12]
Fuel	Dispatchable Portion Only	Minimum Load Portion[13]	All
O&M	Incremental Portion Only	Operating & Incremental Portion	All
Capital Additions	None	None	All
Fringe Benefits & Payroll Taxes	None	None	All

[11] "To go" cost comparison shown in Exhibit 2 are for fossil reheat units.

[12] For fossil generating units, over a one-year period and assuming flexibility with the disposition of labor resources to achieve maximum avoided costs, there is no significant distinction in "to go" costs of between a one-year reserve shutdown and unit retirement. This also reflects the assumption, as stated herein, that property tax is an unavoidable cost.

[13] Weekend shutdown would avoid the minimum load fuel costs and perhaps the dispatchable fuel portion as well if the unit, had it run, would have operated at above minimum load.

Appendices A, B and C discuss and demonstrate how "to go" costs would be developed for a fossil-fueled reheat unit, gas turbine and Indian Point Unit 2, respectively.

5.0 Bidding "To Go" Costs

5.1 Economic Significance

In a competitive environment where no generator is allowed to have market power, a generator would bid its "to go" costs into the market, because if the bid were successful, it would be paid a market clearing price that would be equal to or greater than its "to go" costs. If the bid were not successful, the generator could avoid its "to go" costs that would be higher than what the market would have paid. The generator has no incentive to bid different from its "to go" costs – if it bids lower, it could be selected and be paid less than its "to go" costs and if it bids higher, it may not be selected and would have lost the opportunity to earn more than the "to go" costs. The result is that the generator's net cash flow from operation would be maximized by consistently bidding in its "to go" costs.

5.2 ISO (Independent System Operator) Rules

The New York State ISO tariff (rules), as filed on December 19, 1997, is currently expected to become effective November 1, 1998[14]. The ISO rules would result in

[14] See the ISO tariff for complete discussion of the generator bid requirements for each market.

separate markets for capacity, energy and ancillary services. The capacity market is expected to be conducted once to at most twice a year to ensure that LSEs (Load Serving Entities) could meet the applicable annual and seasonal installed capacity requirements. The ISO rules establish two separate energy markets: day ahead and real-time hourly. In the energy market, each generator would have to submit multiple bids: startup bid price, minimum generation bid price and quantity, and dispatchable energy bid price and quantity[15]. The energy bid information will also include operating constraints, such as minimum down time - the Company intends to continue with its current operating guidelines of not shutting down its fossil-fueled reheat units for periods of shorter than 72 hours[16]. Generators could also bid into the ancillary service market that includes separate markets for generator regulation (frequency control) and operating reserves (10 minute spinning reserve, 10 minute non-synchronized and 30 minute non-synchronized)[17]. Payments to generators for other ancillary services, such as voltage support and black start capability, will be calculated by the ISO.

[15] See December 19, 1997 New York State ISO Tariff, Tables E-1 through E-4 for description of data requirements for energy bids.
[16] For reference, see Testimony of John J. Mucci in Case 92-E-0814 / Case 88-E-081 (Curtailment Procedures). Gas turbine operation is not restricted by the 72 hour minimum down time guideline and nuclear (Indian Point 2) operation is baseloaded.
[17] See December 19, 1997 New York State ISO Tariff, Tables E-5 and E-6.

5.3 Bid Determination Process

The Company's regulated generating units will bid their "to go" costs into various generation markets[18]. Because of the intertwined nature between capacity, energy and ancillary services markets, a process is needed to guide the bid determinations. This process is described below, which assumes an annual capacity auction.

Prior to the capacity auction each year, the Company would estimate the yearly "to go" costs of each of its regulated electric generating unit and would also estimate their energy revenues and ancillary services revenues based on their projected generation output.[19] Any part of the "to go" costs not expected to be covered by the energy revenues and ancillary services revenues would be bid into the capacity market. The energy and ancillary services bids would be developed using the "to go" O&M and fuel costs – the other "to go" costs would already have been accounted for in the capacity bids. As a result, for each generating unit, the sum of its capacity, energy and ancillary services revenues over the full year would be expected to be at least equal to its yearly "to go" costs. Appendix D illustrates through the use of sample calculations the development of the capacity, energy and ancillary services bids.

[18] An exception to this would be in the case of the Company's steam/electric cogenerating units, which are operated for the purpose of serving steam load and maintaining steam system reliability. As a result, the steam/electric cogenerating units would be producing electric as a byproduct and would therefore be price takers in the electric generation markets to reduce as much as possible their costs to the steam system.
[19] The projected generation output would be consistent with the Company's fuel budget.

6.0 Conclusions

The Company believes that this submission would be limited by two events: (a) the Company's planned divestiture or transfer of its fossil electric generation and (b) the nuclear generation inquiry established by the PSC in Opinion No. 98-7. As the Company divests or transfers its fossil electric generation, this submission would no longer apply to the divested or transferred plant. In addition, the PSC's nuclear generation inquiry is expected to resolve matters related to the nuclear plant divestiture, nuclear "to go" costs, rate treatment and incentive mechanism tied to nuclear operation. The Company expects that its proposals relating to nuclear "to go" costs will be incorporated into the PSC's determination.

Appendix A Fossil-Fueled Reheat "To Go" Cost Determination

The estimate of "to go" costs of the Company's fossil-fueled reheat units would be based on the current fuel, O&M and capital budgets. Because the "to go" costs would be estimated at the unit level, the "to go" cost determination would be made from the perspective of how a reduction in each unit's operation from expected level would affect its operating costs, i.e., the unit's avoidable costs from reduced output, weekend shutdown, year long shutdown and retirement.

In a reduction in unit output, the dispatchable fuel and incremental O&M costs would be avoided. The dispatchable fuel costs (in terms of $/MWh) is the product of the marginal heat rate of the unit at its current loading level and the price of fuel (either gas or oil). The following example illustrates the calculation of the "to go" costs related to reduced output.

Example Of "To Go" Costs From Reduced Output

"To Go" Cost = (Marginal Heat Rate x Price Of Fuel) + Incremental O&M where

Marginal Heat Rate = 9,500 Btu/kWh or 9.5 MMBtu/MWh

Price Of Fuel = $2.50/MMBtu

Incremental O&M = $0.50/MWh

Therefore

"To Go" Cost = (9.5 MMBtu/MWh x $2.50/MMBtu) + $0.50/MWh

"To Go" Cost = $24.25/MWh

In a weekend shutdown, the fuel and O&M costs related to the operation of the minimum load block and the dispatchable portion are avoided. The following example illustrates the calculation of the "to go" costs related to a 72-hour weekend shutdown relative to running at minimum load for the period if unit were not shut down.

Example Of "To Go" Costs From A 72-Hour Weekend Shutdown

"To Go" Cost = {(Min. Load MW x [(Avg. Heat Rate x Price Of Fuel) + Incremental O&M] + Operating O&M} times Duration Of Shutdown

where

Minimum Load = 75 MW

Average Heat Rate of Minimum Load Block = 13,000 Btu/kWh or 13 MMBtu/MWh

Price Of Fuel = $2.50/MMBtu

Incremental O&M = $0.50/MWh

Operating O&M = $500/hr

Duration Of Shutdown = 72 hours

Therefore

"To Go" Cost = {(75 MW x [(13 MMBtu/MWh x $2.50/MMBtu) + $0.50/MWh]
+ $500/hr} times 72 hours

"To Go" Cost = $214,200

In a year long shutdown, all fuel expenses associated with the unit are "to go". With regard to capital additions, O&M (labor and materials) and plant labor related payroll taxes and fringe benefits, only the cash costs directly attributable to one single specific unit are "to go" – common expenses among multiple units at the same facility are not "to go" at the unit level, because such costs are not avoidable by shutting down a single unit. The following example illustrates the calculation of the "to go" costs related to a year long shutdown.

Example Of "To Go" Costs From A Year Long Shutdown

"To Go" Cost = Annual Fuel Expenses + Annual O&M + Capital Addition For Year
+ Annual Payroll Taxes & Fringe Benefits

where

Annual Fuel Expenses = $60,000,000

Annual O&M = $5,000,000

Capital Addition For Year = $2,000,000

Annual Payroll Taxes & Fringe Benefits = $1,000,000

Therefore

"To Go" Cost = $60,000,000 + $5,000,000 + $2,000,000 + $1,000,000

"To Go" Cost = $68,000,000

With regard to retirement of fossil-fueled reheat units, there is no distinction in "to go" costs between year long shutdown and unit retirement as discussed in Section 4.0.

Appendix B Gas Turbine "To Go" Cost Determination

Like the fossil-fueled reheat units, the estimate of "to go" costs of the Company's gas turbines would also be based on the current fuel, O&M and capital budgets. Unlike the fossil-fueled reheat units that could run at various loading levels, gas turbines would either not run (shutdown) or run at its base rating or run at its maximum output.[20] Furthermore, the Company's gas turbines have very low capacity factors and are used primarily as peaking resources. Therefore, among the scenarios (reduced output, weekend shutdown, year long shutdown and retirement), the year long shutdown scenario is emphasized, because it is more representative of their operations, that is, most of the times during the year the gas turbines do not run. The year long shutdown calculations of the fossil-fueled reheat units in Appendix A are illustrative of similar calculations for the gas turbine "to go" costs. Also like the fossil-fueled reheat units, there is no distinction in "to go" costs between year long shutdown and unit retirement as discussed in Section 4.0.

[20] In the current pre-ISO environment, the Company generally sets aside the gas turbine's incremental MW from its base rating to its maximum output as operating reserve. In the post-ISO environment, the Company could bid this incremental MW as either energy or as operating reserve.

Appendix C Indian Point 2 "To Go" Cost Determination

The Company's nuclear unit, Indian Point 2, would not avoid any ongoing costs through actions other than permanent retirement. For example, fuel in the reactor is a sunk cost and therefore, Indian Point 2 would not avoid any fuel costs by generating anything less than maximum output or through a short term (weekend) shutdown.[21] Even in a yearly shutdown of Indian Point 2, there would not be any avoided cost savings net of the cost to lay up the unit. In a permanent retirement scenario, not all ongoing costs could be avoided in the immediate year. As discussed in Section 2.0, property tax is regarded as unavoidable, because any savings from unit retirement is not immediate and is subject to negotiations with the local authority. However, the remaining ongoing costs under the retirement scenario would decrease to a steady-state level over time, as the retired nuclear unit would undergo either safe shutdown with decommissioning at a later date or immediate decommissioning.

Because of the long ramp down in costs from permanent retirement of a nuclear plant, the "to go" costs of the Indian Point Unit 2 relative to retirement cannot be taken as the difference between one year's ongoing costs and what that year's costs would have been

[21] In current practice, an amortized fuel cost in $/MWh is used in the dispatch cost for Indian Point 2, which is much lower than the dispatch costs of fossil generation. Indian Point 2's dispatch cost supports its operation as a baseloaded unit.

under the retirement scenario. Instead, the "to go" costs of the Indian Point Unit 2 would have to be the difference between (a) the ongoing costs under normal operation through the end of its operating license in 2013 and through the end of decommissioning and (b) the ongoing costs under retirement scenario through the end of the decommissioning process that starts in 2013. The following example illustrates this calculation.

Example Of "To Go" Costs Relative To Permanent Shutdown

Net Present Value Of "To Go" Cost =

(Net Present Value Of Ongoing Costs Under Normal Operation Through 2013 And All Ongoing Costs Beyond 2013, Including Decommissioning Costs, Through The End Of Decommissioning)

- (Net Present Value Of Ongoing Costs Under Retirement Scenario, Including Decommissioning Costs Starting In 2013, Through The End Of Decommissioning)

The following numerical assumptions are used in this example to illustrate "to go" cost calculation:

- Discount rate used in net present value calculations = 10%
- Average annual generation over the 1999-2013 period under normal operation = 6,000 GWh

- 1999 net present value of ongoing costs under normal operation through 2013 and beyond through end of decommissioning process = $1,700 million
- 1999 net present value of decommissioning costs under normal operation = $700 million
- 1999 net present value of ongoing costs under retirement scenario = $500 million
- 1999 net present value of decommissioning costs under retirement scenario = $600 million

Net present value of "to go" costs = ($1,700 million + $700 million) – ($500 million + $600 million)

Net present value of "to go" costs = $1,300 million

At 10% discount rate, the levelized "to go" costs over the 1999-2013 period, yielding the same $1,300 million NPV (net present value) is calculated to be $170 million per year. In terms of $/MWh, the "to go" costs could be viewed as $170 million divided by the 6,000 GWh annual generation, which equals $28.33/MWh. However, to make a comparable comparison of the levelized "to go" costs against market price, the NPV of the expected market revenues over the 1999-2013 period would also have to be levelized at 10% discount rate. For example, if market price were $27.00/MWh (capacity and energy) in 1999 and were to escalate at 2.6% per year through 2013, Indian Point 2 generation of 6,000 GWh per year would yield a net present value of $1,420 million – in terms of

levelized market revenues, this would be equivalent to $187 million per year and at 6,000 GWh per year generation, equivalent to $31.09/MWh.

However, in terms of bidding, levelized "to go" costs would not and should not be used. In the example above, if the levelized "to go" costs of $28.33/MWh were used in 1999 against a 1999 market price of $27.00/MWh, then the unit would not run. However, a comparable comparison of the levelized "to go" costs of $28.33/MWh against the levelized market revenues of $31.09/MWh shows that the unit is economical to run. A solution to this problem would be to solve for an average "to go" costs stream over the 1999-2013 period with the same 2.6% per year escalation as the market price – this would show a 1999 average "to go" costs of $24.73/MWh.[22] Therefore, by placing the "to go" costs on a comparable basis as the market price, a $24.73/MWh bid based on "to go" costs against a 1999 market price of $27.00/MWh would demonstrate the proper action in 1999 (to operate) that is consistent with the economics over the unit's expected remaining life (expiration of its operating license in 2013).

[22] In other words, $24.73/MWh in 1999, escalated at 2.6% per year through 2013 and at 6,000 GWh per year, would yield the same net present value of $1,300 million as would $28.33/MWh levelized or constant over the 1999 through 2013 period at 6,000 GWh per year. Discount factor used is 10% per year.

Appendix D Illustrations of Bid Determination

D.1 Capacity Bid Sample Calculation

Example: Generator unit "A" has maximum capacity of 300 MW and projected annual generation of 1,300 GWh for 1998. Projected "to go" costs for generator unit "A" for 1998 are (in million dollars):

Annual "To Go" Costs	
Fuel	30
O&M	20
Capital	5
Plant Labor Related Payroll Taxes & Fringe Benefits	5
	60
Estimated Energy Revenues	40
Estimated Ancillary Services Revenues	5
	45
Capacity Bid	
Annual "To Go" Costs	60
Less: Revenues From Energy &	
Ancillary Services Sales	(45)

Remaining "To Go" Costs	15

Capacity Bid = Remaining "To Go" Costs Divided By Maximum Capacity Of Unit

Capacity Bid = $15 million / 300 MW

Capacity Bid = $50,000 / MW per year or $50/kW-year

D.2 Energy Bid Sample Calculations

Example: Fuel cost is $2.50/MMBtu and generator unit "A" has the following characteristics:

Startup Costs

Startup Fuel	4,000 MMBtu
Cycling O&M	$10,000/startup

Minimum Load Costs

Minimum Load Block	75 MW
Average Heat Rate of Minimum Load Block	13,000 Btu/kWh
Operating O&M	$500/hour

APPENDIX 6

Dispatchable Costs

Dispatchable Load Block[23]	175 MW
Heat Rate of Dispatchable Block	9,000 Btu/kWh
Incremental O&M	$0.50/MWh

Bid Calculations

Startup (Commitment) Bid = (Startup Fuel x Fuel Cost) + Cycling O&M

Startup Bid = (4,000 MMBtu x $2.50/MMBtu) + 10,000

Startup Bid = $20,000

Minimum Load Bid = {(Min. Load MW x [(Avg. Heat Rate x Fuel Cost) + Incremental O&M] + Operating O&M} divided by Minimum Load MW

Minimum Load Bid = {(75 MW x [(13 MMBtu/MWh x $2.50/MMBtu) + $0.50/MWh] + $500/hr} divided by 75 MW

Minimum Load Bid = $39.67/MWh

Dispatchable Energy Bid = (Heat Rate Of Dispatchable Block x Fuel Cost) + Incremental O&M

Dispatchable Energy Bid = (9 MMBtu/MWh x $2.50/MMBtu) + $0.50/MWh

Dispatchable Energy Bid = $23.00/MWh

D.3 Ancillary Services Bid Sample Calculations

Unlike energy bids, bidding ancillary services on the basis of marginal costs would be difficult, if not impossible, because the cost of providing ancillary services is generally a lost opportunity from sales into energy market. The sample calculations provided below will illustrate the use of both marginal cost and lost opportunity to arrive at bids for generator regulation (frequency control), spinning reserve and non-synchronized operating reserve.

Regulation Bid Example: Generator unit "A" has a marginal cost (fuel and O&M) of $23.00/MWh to produce energy.

Regulation Bid = $23.00/MWh, because the generator should be indifferent from recovering its marginal cost from either the regulation market or the energy market.

Spinning Reserve Example: Generator unit "A" has a marginal cost (fuel and O&M) of $23.00/MWh to produce energy and the market price for energy is estimated to be $28.00/MWh.

[23] For illustration purpose, only one dispatchable energy block is considered. In actuality, either multiple

Spinning Reserve Bid = Lost Opportunity = $28.00/MWh - $23.00/MWh

Spinning Reserve Bid = $5.00/MW/hour

Non-Synchronized Operating Reserve Example: Reserve of this type is generally provided by a gas turbine. Fuel cost is $4.00/MMBtu and generator unit "B" is a 100 MW gas turbine, which has a minimum run time of 1 hour when turned on. Unit only has 0 MW and 100 MW as possible loading states. Other characteristics of generator unit "B" are described below. Estimated market price for energy is $90.00/MWh.

Startup Costs

Startup Fuel	10 MMBtu
Cycling O&M	$2,000/startup

Startup Cost = ($4.00/MMBtu x 10 MMBtu) + $2,000

Startup Cost = $2,040

Running Costs

Capacity Block	100 MW
Heat Rate	15,000 Btu/kWh
Operating O&M	$500/hour

dispatchable energy blocks or a price curve as a function of unit loading could be bid in.

Running Cost = {(100 MW x $4.00/MMBtu x 15 MMBtu/MWh) + $500/hour}

divided by 100 MW

Running Cost = $65.00/MWh

Operating Reserve Bid = Lost Opportunity

Operating Reserve Bid = $90.00/MWh market price for energy -

{$2,040 for startup / (100 MW x 1 hour minimum run time)

+ $65.00/MWh for running cost}

Operating Reserve Bid = $4.60/MW/hour

APPENDIX 7

REPRESENTIVE FIGURES FOR NEW YORK NUCLEAR UNITS

The figures presented in this appendix are representative of the four investor-owned utility (IOU) nuclear units in New York State. These figures were developed using data from the utilities' 1996 and 1997 FERC Form 1 and using data from "Plants at a Glance," Appendix 9.

The representative nuclear unit is an 800 MW unit, which is the average of the four IOU nuclear units. The first table shows the operational characteristics (e.g., fuel cycle period, outage rates and capacity factor) and financial assumptions (e.g., capitalization structure). The second table shows the cost components of revenue requirements of the representative nuclear unit at 76% capacity factor, which is the average of the four IOU nuclear units during the two-year period 1996-97. The third table shows the revenue requirements of the representative nuclear unit for various capacity factors.

Representative Figures of the New York IOU Nuclear Units

All costs in $000

Line #				Notes
1	Capacity (MW)		800	(1)
2	Generation (MWh)	at 76% capacity factor:	5,333,200	(2)
3				
4	Ongoing Cash Costs			
5	Capital Additions		$30,500	(3)
6	Fuel		$26,700	(2)
7	Non-Fuel Operating and Maintenance Expenses:			(4)
7A	Labor	$38,100		
7B	Materials & Services (M&S)	$44,200		
7C	Random Drug Testing & Resp. Exams	$200		
7D	Research & Development (R&D)	$1,500		
7E	NRC Fees	$2,800		
7F	Environmental Affairs	$800		
7G	FEMA Fees (Emergency Planning)	$100		
7H	Outage Accounting	$800		
7I	Rents	$200		
7J	All Other - Net	$1,100		
7	Total Non-Fuel Operating and Maintenance Expenses		$89,800	(2)
8	A&G (per Staff's allocation)		$25,600	(5)
9	Property Tax		$18,500	(5)
10				
11	Recovery of and on Remaining Book (see line 26 below)			
12	Annual Depreciation		$55,400	(2)
13	After-Tax Return on Equity Portion of Existing Book		$37,300	(2)
14	Interest Expense Portion of Existing Book		$32,600	(2)
15	Federal Income Tax on Equity Portion of Existing Book		$20,100	(2)
16				
17	Annual Decommissioning Cost in Rates		$20,100	(5)
18				
19				
20	Revenue Requirements			
21	in $000 per year		$326,100	(6)
22	in $ per kW plant capacity per year		$407.63	(7)
23	in cent per kWh plant generation per year		6.11	(8)
24				
25				
26	2-yr Average Remaining Book (Sunk Cost)		$876,000	(2)
27				
28				
29	Ongoing Cash Costs Plus Interest Expense Portion of Existing Book			(9)
30	in $000 per year		$223,700	(10)
31	in $ per kW plant capacity per year		$279.63	(11)
32	in cent per kWh plant generation per year		4.19	(12)

Notes:

1. Average of the New York IOU nuclear units
2. Based on average of the New York IOU nuclear units in 1996-1997
3. Based on 1994-97 average (covers 2 fuel cycles) from "Plants at a Glance"
4. Typical breakdown of the non-fuel operating and maintenance expenses.
5. Based on 1993-97 average from PSC Staff's "Plants at a Glance"
6. Sum of lines 6 though 17
7. Line 21 divided by line 1
8. Line 21 divided by line 2 and then multipled by 100 to get c/kWh
9. Not all these costs are "to go" costs, defined as the net costs avoided by permanent shutdown.
10. Sum of lines 5 though 9 and line 14
11. Line 30 divided by line 1
12. Line 30 divided by line 2 and then multipled by 100 to get c/kWh

APPENDIX 8

PLANT ADDITIONS

CAPITAL ADDITION REQUIRED TO OPERATE A PLANT

- Replacement of instrumentation used to monitor temperature in the reactor.

  This instrumentation will not be used during decommissioning and is therefore a "to go" cost.

CAPITAL ADDITION TO SUPPORT SHUTDOWN AND DECOMMISSIONING ACTIVITIES

- Installation of a fuel transfer facility.

  This may be installed during operation of the plant as it is required to move spent fuel into transportation casks and will be needed when the DOE starts accepting fuel. This is a "not to go" cost.

- Construction of an Independent Spent Fuel Storage Installation (ISFSI).

  ISFSIs provide cost-effective reductions in decommissioning costs since they accelerate the date by which wet storage can be terminated and spent fuel pool decommissioning can be accomplished. ISFSIs also reduce lead-times required for off-site shipment of spent fuel when such shipments commence. This is a "not to go" cost.

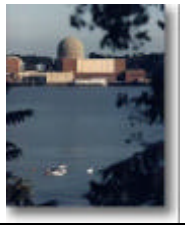
CAPITAL ADDITIONS REQUIRED TO SUPPORT BOTH OPERATIONS AND DECOMMISSIONING

- Replacement of a pump in a system required during operation where the system is also needed to support storage of spent fuel.

  This capital addition is in part a "to go" and in part a "not to go."

APPENDIX 9

PLANTS AT A GLANCE

Plants At A Glance	Ginna	Indian Point 2	Nine Mile Point 1	Nine Mile Point 2
PLANT SITE				
Owner(s):	Rochester Gas & Electric (RG&E)	Consolidated Edison (ConEd)	Niagara Mohawk (NiMo)	NiMo (41%) NYSE&G (18%) LILCo (18%) RG&E (14%) CHG&E (9%)
Location: *County* *Town* *City/Village* *School District*	 *Wayne* *Ontario* *Wayne Central*	 *Westchester* *Cortlandt* *Buchanan* *Hendrick Hudson*	 *Oswego* *Scriba* *Oswego City*	 *Oswego* *Scriba* *Oswego City*
Taxes Paid $M /% Levy: *County* *Town* *City/Village* *School District*	***1998*** $ .71/36.0% $ 1.49/ 6.5% $ 3.03/27.0%	***1998*** $ 4.22/ 1.2% $ 2.05/28.1% $ 1.89/76.9% $15.75/51.2%	***1998*** $ 2.71/ 5.7% $ .32/13.2% $ 3.81/ 8.9%	***1998*** $15.95/33.3% $ 1.88/79.8% $22.20/51.6%
Type:	Pressurized Water Reactor	Pressurized Water Reactor	Boiling Water Reactor	Boiling Water Reactor
Licenses: *Construction Permit Issued* *Oper. Lic. Issued (Full Power)* *Commercial Operation* *Expiration*	 *04/25/1966* *12/10/1984* *07/01/1970* *09/18/2009*	 *10/14/1966* *09/28/1973* *08/01/1974* *09/28/2013*	 *04/12/1965* *12/26/1974* *12/01/1969* *08/12/2009*	 *06/24/1974* *07/02/1987* *03/11/1988* *10/31/2026*
Capacity:	485 MW	986 MW	613 MW	1,134 MW
Avg. Capacity Factor 1992-97	83.8%	75.5%	79.6%	82.1%
# Employees	540	658	531	768
Book Value YE 1997	$312.4 M	$480.0 M	$354.0 M	$2,837.0 M
Assessed Value (1998)	$206.5 M	$ 40.4 M	$ 31.3 M	$ 182.4 M
Indicated Market Value (based on assessed value)	$206.5 M	$997.5 M	$321.7 M	$1,874.6 M
Avg. Prod. Costs-1993-97 ***Fuel*** ***Operating Expenses*** ***Maintenance Expenses*** ***A&G (per staff allocation)*** ***Property Taxes*** ***Total***	**($000)/(¢/kWh** $15,188/0.44¢ $46,612/1.35¢ $15,823/0.46¢ $22,078/0.64¢ $ 5,682/0.16¢ $105,383/3.05¢	**($000)/(¢/kWh** $28,125/0.48¢ $69,642/1.19¢ $49,723/0.85¢ $22,734/0.39¢ $22,875/0.39¢ $193,099/3.29¢	**($000)/(¢/kWh** $25,739/0.61¢ $53,871/1.29¢ $19,233/0.46¢ $19,693/0.47¢ $ 8,149/0.19¢ $126,687/3.02¢	**($000)/(¢/kWh** $42,638/0.53¢ $78,660/0.97¢ $34,957/0.43¢ $30,195/0.37¢ $49,590/0.61¢ $236,040/2.92¢
Decommissioning Statistics: ***Est. decommissioning cost*** ***Total collected as of 12/31/97*** ***Current annual funding***	 $296,300,000 (1995$) $116,775,328 $ 18,653,500	 $427,000,000 (1994$) $141,168,634 $ 14,602,000	 $626,000,000 (1995$) $164,694,368 $ 20,865,000	 $806,220,000 (1996$) $124,334,137 $ 14,314,197
Nuclear Plant ***Original Plant Cost*** ***Avg. Plant Adds. 1994-1997*** (covers 2 fuel cycles)	 $82.3 million (1970) $36,338,333	 $29,031,366	 $5,013,893	 $44,089,807