STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

Niagara Mohawk Power Corporation Petition for Approval of Curtailment Procedures.	Case Nos. 92-E-0814
Proceeding on Motion of the Commission to Establish Conditions Governing Curtailment Clauses in Contracts for On-Site Generation.	Case Nos. 88-E-081

BEFORE THE NEW YORK STATE PUBLIC SERVICE COMMISSION:

TESTIMONY AND EXHIBITS OF

E. JOHN TOMPKINS, P.E.

On Behalf of the

Consolidated Waste-to-Energy Group

February 24, 1993

Q. What is your name and address?

A. I am E. John Tompkins; I am president of Tompkins Research and Management Consulting, 203 Redstone Hill, Plainville, Connecticut 06062.

Q. On whose behalf are you testifying?

A. I am testifying for a consolidated group representing owners, operators and developers of municipal solid waste-to-energy facilities. This "Consolidated Waste-To-Energy Group" includes American Ref-Fuel Company, Energy Answers Corporation, Foster Wheeler Power Systems, Inc., Occidental Chemical Corporation, Wheelabrator Technologies, Inc., the Town of Babylon and the Islip Resource Recovery Agency.

Q. What is the business of the members of the Consolidated W-T-E Group?

A. Each member is involved in the ownership, operation and/or development of municipal solid waste-to-energy facilities ("W-T-E" facilities). Certain members own and operate existing W-T-E facilities in New York State, others are developing facilities and some are involved in both activities. The municipal members also are involved with collecting waste for disposal at W-T-E facilities.

Q. What is the purpose and scope of your testimony?

A. To discuss the special problems which would result if the utilities were granted authority to curtail purchases of electricity from W-T-E facilities and the reasons why W-T-E facilities should be excluded from any such authorization. My testimony will not address the merits of the utilities' petitions in general, or whether they have met their burden under the Federal Energy Regulatory Commission ("FERC") "operational circumstances" rule.

Q. What are the qualifications of you and Tompkins Research and Management Consulting to provide expert testimony on these topics?

A. Both Tompkins Research and Management Consulting ("TR&MC") and I have extensive experience working with companies in the W-T-E industry. In addition, prior to TR&MC, I had 15 years of experience working for electric utilities. As a

result of my work for the W-T-E and utility industries, I have extensive experience providing expert testimony on power supply matters. Since 1986, I have worked with numerous W-T-E facilities or projects for Wheelabrator Technologies, Inc. and Kuhr Technologies, Inc. I have previously testified on behalf of the W-T-E industry in several state regulatory proceedings, including testimony before the Maine Public Utilities Commission in utilities' avoided costs and power acquisition and non-utility contract approval cases. I have also supplied comments to the FERC on qualifying facility rulemakings.

During my employment at Green Mountain Power Corporation ("GMP"), I was the Senior Officer in charge of power supply and planning for that utility. At GMP, I testified in rate and power supply cases before the Vermont Public Service Board and transmission cases before the FERC. I also had overall responsibility for all power contracts. A complete copy of my curriculum vitae is included as an exhibit to my testimony (Exhibit ____, EJT-1).

Q. Please summarize the position of the W-T-E Group on the curtailment of the electrical production of W-T-E facilities.

A. First, although I am not addressing in this testimony the basis of the utilities' claims in this proceeding, we believe they have a formidable burden to meet in order to demonstrate that "operational circumstances" have occurred or are likely to occur. I wish to emphasize in particular that if the Commission and its Staff want to keep retail rates to a minimum, it is critical that they carefully evaluate the utilities' position in this case, especially in the areas of must-run generation and minimum load operation, and that they scrutinize the functioning of the New York Power Pool.

However, regardless of whether the Commission ultimately makes a finding that some curtailment is required on certain utilities' systems at this time or not, the Commission should examine whether curtailment of W-T-E facilities is consistent with the policies of the State and the unique aspects of W-T-E facilities. Having

made such an examination, I believe that the Commission will conclude that W-T-E facilities should be excluded from any exercise of utility curtailment rights. W-T-E facilities possess a number of unique features, enumerated and discussed below, that make curtailment of W-T-E facilities burdensome and costly to society and to the W-T-E facilities. I will first briefly summarize those reasons:

1. It is the policy of this State to recover useable energy from the solid waste that cannot be economically reused or recycled. Unlike any other electric generating plant, the primary mission or goal of a W-T-E facility is to solve an environmental problem (i.e., disposal of municipal solid waste) by burning the waste.

2. The energy potential in municipal solid waste is a valuable renewable resource which should not be lost to society in general or to New York State, specifically. Curtailment of W-T-E facilities' electric generation would create a permanent loss of that energy resource, because curtailment would force W-T-E facility operators to either divert waste to landfills or to dump the steam produced from waste combustion.

3. W-T-E facilities are unique because they are paid to dispose of waste. As a consequence, W-T-E facilities cannot reduce costs by not operating or by reducing operation during a curtailment. In fact, W-T-E facilities would experience increased costs to accommodate curtailment. Therefore, W-T-E facilities have negative variable costs. Because of their net, negative variable costs in a curtailment situation, in addition to the irretrievable loss of potential energy of the waste, society would incur higher costs to curtail W-T-E facilities, than to not curtail.

4. W-T-E facilities are capital intensive plants. Because of their high fixed costs, W-T-E facilities require both the tipping and electric sales revenue streams. Curtailment of W-T-E facilities as proposed in this case would result in the loss of electric revenues, and, as a result, would disrupt the ability of W-T-E facilities to achieve their solid waste management function. This disruption would run counter to the State's goal of reducing reliance on landfills, and adversely affect the local communities who have relied on W-T-E facilities in their solid waste management strategies, which could harm economic development.

For these reasons, W-T-E facilities are very poor candidates for responding to any need which the utilities might demonstrate for curtailment, scheduling or dispatch rights.

Q. How do W-T-E facilities operate?

A. Because of their design, function and, most importantly, their fuel, W-T-E facilities operate as base-load electric generators. W-T-E facilities are first and foremost, a means of disposing of waste, and secondarily, a producer of electricity. W-T-E facilities receive a continuous supply of waste for disposal. The rate of waste flow and its character, in terms of its make-up, moisture content and heating value, varies seasonally. The size of the supply of waste and the rate of flow is a function of the population of the community which the facility was built to serve. The size of the waste supply and the rate of flow are unrelated to the demand for electricity.

The waste is received at the W-T-E facility and stored for a minimal period in storage bunkers designed to match both the expected flow and the boiler capacity. The amount of waste which can be stored and the maximum period for which it can be stored could not be changed without major revisions to the facility, its operating procedures and its permits.

From the storage bunker, the waste goes into the boilers and is combusted on moving grates. The waste takes up to 45 minutes or more to be completely combusted. Combustion occurs at high temperatures, in some plants in excess of 1500°F. Because of the generally low and always variable Btu and moisture content of municipal solid waste, the boilers have greater volume in comparison to fossil fuel-fired boilers as well as other design features, such as variable speed moving grates. There is a larger surface area in the boiler walls, which therefore takes longer to heat up and cool down relative to fossil-fired units of comparable electrical capability.

These features of the boilers are evidence that W-T-E facilities are primarily designed to facilitate the disposal of the waste, not to respond to changes in demand for electricity. These features dictate continuous, round-the-clock operation at or near maximum sustainable capacities in terms of waste input and steam flows.

Q. What would the options be for operating a W-T-E facility during an electric curtailment?

A. First, let me distinguish the term "curtailment" from a more limited reduction in output. A W-T-E facility has some ability to throttle back its waste input for short periods and, therefore, to reduce its electric production to a minimal extent, so long as the facility is meeting its solid waste disposal obligation. This level of reduction occurs in the course of responding to changes in waste flow or, when necessary, to stay within the maximum tonnage of waste for which the facility is permitted. This ability, however, is severely constrained by the need to manage the waste flow so as not to create a storage problem, a public health hazard or a waste by-pass problem. To the extent W-T-E facility operators can match such reductions to periods of low electricity demand, they are not adverse to doing so when waste disposal needs will allow it; in fact, certain facilities are already coordinating their output to the utility's needs, as allowed by their waste disposal

requirements. However, this ability will vary from facility to facility and from time to time, depending on waste flow, the operating capacity of the facility and storage capabilities.

At issue in this proceeding, however, are proposals to impose far more severe curtailments. Accordingly, I will use the term "curtailment" to mean a situation in which the ability to deliver electricity into the transmission system is totally or significantly reduced for a period of several hours or more.

In such a curtailment situation, W-T-E facilities have two options: (1) shut down one or more boilers and divert waste deliveries ("the waste by-pass option"), or (2) continue to process waste, but divert steam from the turbine and dump the steam so as to cease electric production ("the dump steam option"). For several reasons, in nearly all circumstances W-T-E facilities would have to choose the second option during a curtailment.

Q. What would the consequences be of choosing the waste by-pass option?

A. Negative consequences would occur in two areas, boiler operations and waste disposal: first, the boiler or boilers which are shut down would be subjected to thermal stresses which would reduce their life. As the boilers are ramped up and down more often, they would be subjected to operating conditions which would increase operating and maintenance problems and costs. While these factors are relevant to all thermal units, because of the nature of the fuel and the associated boiler design features, these problems are compounded for W-T-E facilities. For example, the high temperature requirements, the variable nature of the fuel and the large size of boilers mean that operation at less than design conditions will result in significant slagging and the consequent increase in maintenance.

Second, under the waste by-pass option, the amount of waste being processed would fall. This could result in breaching contracts with the local communities to dispose of waste and the diversion of waste to alternative disposal modes which are less desirable and more costly. In fact, most diverted waste

would wind up in landfills, directly contravening the State policies to use waste efficiently and to use renewable resources for the generation of electricity. This in turn would mean that: the energy potential of the waste would be irretrievably lost; the facility's waste disposal capacity, for which it was primarily designed, would be underutilized; tipping fee revenues as well as electric sales revenues to the facility would fall; and increased costs -- due to added O&M efforts and use of alternative disposal methods -- would be incurred. In short, society would pay more to waste a resource.

Q. What are the consequences of the dump steam option?

A. Under this scenario the dumping of steam would result in: a permanent loss of the energy potential of the waste (with no drop in air emissions); increased operation and maintenance costs incurred to condense or vent steam; for some facilities, a significant increase in the consumption of costly boiler or cooling water; and a loss of electric sales revenue with no savings in variable costs. Again, society would pay more to waste a resource. Thus, this option creates more negative consequences than spilling water at a hydroelectric facility.

In other words, under both scenarios, a W-T-E facility would incur negative variable costs and a resource would be wasted. Although neither option is at all desirable, the dump steam option would be less detrimental, and therefore the most likely mode in which W-T-E facilities would have to operate. This is largely because the facility's primary function of waste disposal is maintained under the dump steam option, while it would be eliminated under the waste by-pass option. However, the negative consequences of the dump steam option are very serious for society as a whole, for the community being served by the facility and for the operator.

Q. Please discuss each of the negative consequences you identified as resulting from the dump steam option.

A. 1. Permanent loss of energy By venting or condensing steam without generating electricity, society as a whole, New York State as a whole, and the local community would have failed to conserve resources by making full use of the energy they produce. Taken alone, vented or dumped steam is the same as "water over a dam." (In fact, the total consequences are worse than spilling water, as I will explain). Whether the electricity potential is made up by burning coal, oil or gas (depending on which resource is on the margin), the State and region will export dollars out of State while tossing away an indigenous, renewable energy resource. These reasons underpin the placement of W-T-E technology in the State Solid Waste Management hierarchy as codified in the Environmental Conservation Law. Section 27-0106 of the Environmental Conservation Law (enacted in 1988) provides:

The following are the solid waste management priorities in this state:

(a) first, to reduce the amount of solid waste generated;

(b) second, to reuse material for the purpose for which it was originally intended or to recycle material that cannot be reused;

(c) third, to recover, in an environmentally acceptable manner, energy from solid waste that can not be economically and technically reused or recycled; and

(d) fourth, to dispose of solid waste that is not being reused, recycled or from which energy is not being recovered, by land burial or other methods approved by the department.

The statute goes on to provide that the decisions of the State, and all of its agencies, are to be guided by this hierarchy and the promotion of "environmentally, economically and technically viable solid waste management programs."

In light of the Legislature's explicit codification of these policy goals into law, forcing W-T-E facilities to adopt either of the waste by-pass or dump steam options would violate the letter of the law. Given the Legislature's explicit intent to encourage energy production from waste, I think it is fair to say that the negative consequences of interfering with the functioning or economics of W-T-E facilities are beyond debate.

2. Increased O&M costs The operator of a W-T-E facility ordered to curtail electricity deliveries will have to: bring the turbine off-line in a controlled fashion, operate steam valves to divert steam to a vent or condenser, and, when available, bring a dump condenser on-line. Additional efforts would be required to monitor and properly maintain these atypical operating conditions experienced during the curtailment and the transition to and from the curtailment. The same steps would be required to reverse this process. These efforts will place increased wear on the affected components, including the turbine. As the number of stops and starts is increased, the interval between turbine outages must be shortened. Similarly, increased use of the dump condenser will result in increased maintenance efforts. Moreover, because W-T-E facilities are not designed to cycle, these changes in operating modes require manual operation,

imposing added labor costs. Although fossil-fired units also experience similar increases in O&M costs due to curtailment or cycling, W-T-E facilities are far more susceptible to operating problems and increased costs due to their large boiler size and the variable nature of the fuel. Moreover, W-T-E facilities are unique in that they experience no reduction in costs.

3. Increased use of water Particularly for those facilities designed to vent steam directly, curtailment will result in an immediate and significant increase in the use of water, which will be lost to the atmosphere rather than circulated. (In fact, for a 50-60 MW facility that is directed to dump steam, approximately 64,000 gallons of water would be lost per hour). Even for facilities with dump condensers and water-efficient cooling towers, the use of water will increase as the cooling process is more heavily burdened with the need to cool and condense quantities of high pressure steam which otherwise would be sent through the turbine.

4. Loss of revenues The loss of revenues due to extended or repeated curtailments could require these highly capital intensive facilities to increase their other revenue source in order to continue to maintain adequate debt coverage. These facilities were built and financed on the assumption that two revenue sources would exist. The loss of electric revenues and the added costs imposed by curtailment typically would mean that eventually the tipping fees would have to be increased for the facility to operate, undermining the reliance by the local community on the facility and disrupting local finances. Moreover, in some cases, W-T-E facilities have been constructed with public financing. A loss of a significant revenue stream could in the worst case result in a default under such financing, jeopardizing the credit rating of the public entity involved in the financing.

Q. Are you testifying that during a curtailment, W-T-E facilities would face increased costs over what would be faced during normal operation?

A. Yes. By their nature, these facilities are designed to operate continuously and the increased O&M and water costs I have described are examples of negative variable costs. This is in contrast to other electric production technologies which have positive avoided costs (i.e., cost savings) during periods when not producing electricity.

Q. With respect to the loss of electric revenues, isn't that problem the same as experienced by any non-utility generator faced with curtailment? In fact, aren't W-T-E facilities unique in that they would continue to receive some revenues?

A. When generators which burn gas, oil or coal are curtailed, at least there exists the potential to save some costs by not purchasing fuel. In contrast, faced with a loss of significant electric revenues, W-T-E facilities would have to keep processing waste, but unless tipping fees can be increased to cover the loss, they will not be able to make up the difference, thus diminishing their ability to cover fixed costs. With a loss of electric revenues, W-T-E facilities would need to dispose of as much waste as possible. However, W-T-E facilities are usually fully, or nearly fully, used and therefore cannot increase waste throughput. The tipping fees, unless significantly increased, could not adequately stem the financial losses due to the absence of electric revenues. There is no advantage to having the ability to keep earning revenues which are inadequate.

Q. Essentially, aren't you arguing that electric ratepayers should subsidize the ongoing use of W-T-E facilities?

A. No. First, it must be recognized that power sales contracts have been negotiated based on Commission approved estimates of avoided costs. W-T-E facilities have been planned, designed, financed and built based on expected revenue streams, which in turn were based on the best available evidence of what these streams would be. All parties knew that both revenue streams were needed to support

these facilities. The communities in need of waste disposal services were able to rely on the fact that the by-product electricity had a value defined by law and by Commission-determined estimates of avoided cost. The price terms these facilities received for electricity in long term contracts were no different than the prices other facilities were receiving.

Second, the utilities have received a real benefit which in large part is being paid for by the local community through tipping fees. The W-T-E facilities have received no premium in their price from the utilities to reflect that they use a reliable, indigenous fuel, more reliable and stable in many respects than the fuel sources used in other technologies. Thus, the utilities ratepayers receive a benefit -- a very reliable source of power -- without additional compensation.

Just as the utilities would not expect to increase their payments for electricity to compensate for a drop in tipping revenues, the local communities do not expect to have their tipping fees increased to account for a desire of the utilities to reduce their purchase of electricity. In large measure, this simply underscores the very special nature of W-T-E facilities.

Moreover, because of their public purpose, the disruption stemming from the loss of electric revenues could have graver implications. Uncertainty over the operation or cost of a W-T-E facility could hamper a local community's efforts to pursue other goals like economic development. The lack of adequate waste disposal can contribute to restricted economic development.

Q. Why is the waste disposal function of W-T-E facilities more deserving of an exemption from curtailment than the thermal energy production function of cogeneration facilities? In other words, can't some of the same claims you make for W-T-E facilities be made for any energy production process with a by-product such as steam or hot water used for industrial purposes?

A. It is the nature of waste as a fuel which underlies the need for an exemption from curtailment. In contrast, other fuels are more conducive to generator designs

which can more flexibly respond to both their thermal host needs and the electric utility's needs. While in some circumstances, it may be true that at some lower rate of electrical output, a gas-fired cogenerator would operate less efficiently in serving its thermal host than at a higher electrical output, this efficiency loss is a matter of degree. As I have explained, for W-T-E facilities, aside from some possible modest and temporary ability to reduce electrical output, a reduction in electrical output interferes so substantially with the facility's primary function that the operator would simply keep processing the waste and would dump the steam. In contrast, during a curtailment the operator of a gas-fired cogenerator will certainly not keep operating at a higher rate just to maintain a higher efficiency level. Thus, it is the difference between losing some efficiency and losing the total value of an energy resource.

Another way to examine this distinction is to examine the facilities' comparative abilities to save costs. Whereas a gas-fired cogenerator can (assuming gas purchase arrangements allow) reduce its costs in a curtailment, a W-T-E facility cannot reduce its costs, and, in fact, will experience increased costs for the reasons I have explained.

Q. Your testimony in support of an exemption seems particularly applicable to existing but not necessarily to future W-T-E facilities. Would it be reasonable for the Commission to distinguish between existing W-T-E facilities and future facilities? In other words, couldn't developers take the utilities' curtailment and scheduling needs into account in designing and permitting new facilities?

A. While certainly it is true that the existing W-T-E facilities were premised on being able to operate as base-load generators, any such distinction would ignore that it is the very nature of the fuel that requires that the W-T-E facility be base-loaded and continuously operated. I believe that a responsible utility planning to employ W-T-E facilities in its generation mix and seeking to minimize its production costs would treat W-T-E facilities as base load, must-run units. To secure load

following and peaking capacity, a utility planner would not look to W-T-E technology but to other fuels which can better serve those needs. In fact, on a scale with base load, must-run technology at one end and peaking technology at the other, W-T-E would be at the farthest reaches of the base-load end of the spectrum, before other solid fuels. Again, this is due to both the physical and technical constraints of the fuel and boilers and the fact that the plants are designed primarily to dispose of an inexorable flow of waste. In contrast, it is clear that the primary function of electric generating units is not to "dispose of" coal, oil or gas.

Q. Are you testifying that future W-T-E facilities cannot be designed to be responsive to load charges?

A. No. It may be possible to design and engineer future W-T-E facilities to be more responsive, and the fuel could even be processed to make it more like other solid fuels. However, all of these efforts would require significant additional capital investment and higher operating costs which I do not believe are warranted, especially given the relatively small proportion of total installed capacity W-T-E facilities will represent. For example, because waste flow is an uncontrolled factor, to make future mass burn W-T-E technology more electrically flexible, one would need additional storage capacity. Assuming away, for the moment, the permitting and local health and safety concerns associated with waste storage, additional investment and O&M costs would be required to construct larger storage pits and to manage the stored waste.

Q. Are there alternative technologies where the waste for future facilities could be processed to solve these limitations?

A. One possible way to solve the storage problem of future W-T-E facilities is to process the waste into stabilized, pelletized refuse-derived-fuel (RDF). But, the production, conditioning and combustion of pelletized RDF has limited commercial operating experience and, in any event, is a very costly process. Moreover, it would not solve the waste flow problem. In addition to the increased storage

capacity and storage costs required to make future RDF W-T-E facilities more responsive to electric load, because the same amount of waste will need to be disposed of, the entire facility would still have to be oversized, again requiring greater investment and O&M expenditures. This simply illustrates that waste readily lends itself to base load applications, but is a poor choice for load following, or scheduable applications. Under any scenario a W-T-E facility will always be a high fixed cost, negative variable cost facility.

Q. What is the scope of the exemption the W-T-E Group is seeking?

A. We believe that the extent of the exemption should be dictated by the scope of New York State's solid waste problem as overseen and managed by the Department of Environmental Conservation ("DEC"). Accordingly, all existing W-T-E facilities and all future W-T-E facilities built pursuant to DEC permit should be exempted. As I discussed before, New York State's solid waste policy assigns W-T-E facilities a specific role in the State's solid waste management strategy. Specific W-T-E facilities now in operation are designed and permitted to meet specific regional or local solid waste disposal needs. W-T-E facilities will be built in the future only to the extent the State determines that they are needed by local communities and they meet all other permit requirements. Fundamentally, the number, size and location of these facilities will be driven by the need for waste disposal capacity. That need, in turn, will be dictated by the residual amount of waste generated in the State after efforts are undertaken to reduce, reuse and recycle such waste (the solid waste management strategies ahead of W-T-E in the State's hierarchy).

Q. How does the State ensure that W-T-E facilities are not built unnecessarily?

A. W-T-E facilities require solid waste management facility permits under Part 360 of DEC's regulations. These regulations provide for a full-fledged siting process and require that the applicant demonstrate a need for the W-T-E facility, based on local waste flow, and consistency with both the State and local solid waste management plans. The exemption from curtailment would not create any incentive to build W-T-E facilities that are not otherwise needed and capable of obtaining a permit.

Q. Is there information available from which the utilities can estimate the possible total number and size of W-T-E facilities?

A. The Draft 1991-1992 Update of the Solid Waste Management Plan provides sufficient guidance to provide probable low and high end points to the range of W-T-E facility capacity in New York State. In DEC's "Summary of Major Developments In Solid Waste Management In New York State: January 1992 Through September 1992," DEC reports that during 1991, the State generated 22,800,000 tons of waste which was managed as follows:

Recycling	-	21%
Shipped out-of-State	-	15%
Resource recovery (W-T-E)	-	12%
Incineration	-	3%
Landfill	-	49%

In DEC's Draft Update, DEC reports that on a design capacity basis currently there are sufficient W-T-E facilities in operation to handle about 4,000,000 tons annually and sufficient W-T-E facilities in planning and permitting stages to handle up to another 6 million tons. The total, 10 million tons of disposal capacity, could produce about 700 MW of electric generating capacity and could

dispose of about 43% of the 1991 waste total. This, of course, presumes that all capacity not presently permitted will in fact be built.

In the past, DEC has supported a goal of reducing waste to be disposed of by 50% through reduction, reuse and recycling. If we assume that landfills, incineration without energy recovery and out-of-state export will not be available options indefinitely, based on the 1991 waste production, the waste available for W-T-E would be 11.4 million tons, sufficient to support about 800 MW of electric generating capacity.

Q. Are you proposing a finite limit to the exemption you are proposing?

A. No. Too many parameters in the implementation of solid waste management strategy remain unknown and subject to changes. However, these numbers provide good indications of the likely extent to which W-T-E could provide electric generation. Most significantly, the State needs to continue to rely on W-T-E facilities. Without an exemption, the ability of local communities to effectively rely on W-T-E technology in their waste disposal strategies will be jeopardized and economic development could be restricted.

Q. Can the Consolidated W-T-E Group undertake any efforts to assist the utilities in balancing load and generation?

A. Yes. First, let me observe that our arguments for exemption from curtailment are driven by our fuel and technology and public purpose, not by a simple desire to avoid economic hardship. Like utilities who are charged with serving the public interest, our existence is due to the public's need for waste disposal.

But we are also mindful that we derive significant revenues from electric sales. The members of the Consolidated Waste-To-Energy Group are willing to work with the utilities within the constraints of their individual circumstances, to sensibly integrate their facilities into their electric system operations. For example, as I indicated earlier, to the extent normal variations in waste flow allow W-T-E facilities to schedule changes in electrical output, individual operators will work

with their utilities. However, reciprocity in this regard is important. Just as we will respect the utilities' electrical system needs, utilities must, of course, respect the needs of the W-T-E facilities in disposing of waste. Also, we are ready to coordinate our regularly scheduled maintenance with the utilities so that maintenance outages are timed as much as possible to match utility needs, consistent with our obligation as waste disposal facilities, and to keep the utilities informed as to expected maintenance schedules and outage durations. Because these are plant-specific matters, they are best left to individual negotiations to implement. In the long run, we expect the utilities will recognize the reliability of W-T-E facilities and view them as equivalent to a utility-owned base load resource.

Q. Does this complete your testimony?

A. I just want to reiterate that the exemption we seek is a logical reflection of the unique aspects of the fuel used in W-T-E facilities and the unique function W-T-E facilities serve.

CASE NOS. 88 - E - 081 AND 92 E - 0814

E. JOHN TOMPKINS

NEW YORK STATE WASTE-TO-ENERGY FACILTIES

Developer / Operator	Location	Nominal Solid Waste Capacity (TPD)	Nominal Electrical Capacity	Startup Year
American Ref-Fuel	Hempstead	2,319	60 Mw	1989
	Albany/Bethlehem	1,512	40 Mw	1997
Energy Answers	Albany	1,500	50 Mw	1997
Foster Wheeler	Hudson Falls	450	11 Mw	1992
Occidental Chemical	Niagara Falls	2,000	42 Mw	1981
Wheelabrator	Peekskill	2,250	60 Mw	1984
	Alabama	1,500	45 Mw	1997
Town of Babylon	Babylon	750	17 Mw	1989
Islip Resource Recovery	Islip	850	00 Mw	1990

February 24, 1993

Summary of Curriculum Vitae

The qualifications of myself as President of Tompkins Research and Management Consulting ("TR&MC") to provide this expert testimony stems from the extensive experience of TR&MC, its employees and associates in working with the companies in the Waste to Energy ("WTE") Industry and my 15 years of experience working for electric utilities. TR&MC provides services of the following professionals: myself as President, an environmental associate Chuck Gilbert, a development associate Brain Chernack, and a computer analyst Mark Mainetti.

Since 1986 I have worked with numerous WTE facilities or projects for Wheelabrator Technologies Inc. and Kuhr Technologies Inc.. TR&MC has also worked for various other clients with facilities fueled by mill waste, waste forest products and PEAT. The technologies for these facilities include Mass Burn and RDF for WTE facilities, and fluidized bed technology for Babcock-Ultrapower's facility.

In addition to this experience with the non-utility industry, I also have 15 years experience working for utilities in the area of power supply. While at Northeast Utilities ("NU") I was in charge of the Special Studies Section which was responsible for auditing NU's NEPOOL transactions and increasing the efficiency of the company's own load dispatch and generation operations. During the 1970's when NU was adding large amounts of Nuclear capacity it became necessary to increase the operational efficiency of the fossil fired system by reducing the must run and minimum load operation of fossil fired units to avoid dump energy.

During my subsequent employment at Green Mountain Power Corporation ("GMP"), I was the Senior Officer in charge of power supply and planning for that utility. At GMP I had overall responsibility for all power contracts. The short term (daily) contracts were managed to buy or sell power as needed in order to match generation with customer loads.

Additionally from my work for utilities I have considerable experience related to computer modeling of utility system dispatch. While at NU I was responsible for testing and validating actual billing computer programs and planning production cost simulators. At GMP I was a member of the EPRI advisory structure and involved with a project which reviewed and evaluated several production cost simulation programs.