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212 468.6000

New York Power Authority

November 16, 1999

Ms. Debra Renner
Acting Secretary
NYS Public Service Commission
3 Empire State Plaza, 14th Floor
Albany, NY 12223

Subject: Pre-Application Report
Proposed Combined Cycle Facility
New York Power Authority

Dear Ms. Renner:

The New York Power Authority, which supplies low cost electricity for the subways, schools, hospitals and other public facilities in New York City as well as for businesses throughout the metropolitan area, has filed a Pre-Application Report with the New York State Public Service Commission (NYSPSC).

Enclosed for your review and comment is a copy of the Pre-Application Report. This is the first step in the permitting process for a proposed combined cycle facility in Astoria, Queens. The purpose of the report is to initiate formal consultation as described in Section 163 of the Public Service Law and Section 1000.4 of the Public Service Commission's Regulations (6NYCRR, Section 1000.4) with the New York State Department of Public Service, the New York State Department of Environmental Conservation, other involved agencies and the public regarding the scope of studies to be conducted in support of a future application by the New York Power Authority to the Siting Board on Electic Generation Siting and the Environment in accordance with Article X of the New York State Public Service Law.

If you have any comments on the Pre-Application Report you are requested to submit them in writing within thirty days (date) to:

Ms. Ellen Koivisto
Licensing Manager
New York Power Authority
1633 Broadway
New York, NY 10019

If you have any questions on the attached, please contact me at 212-468-6751.

Sincerely,

Ellen Koivisto
Licensing Manager

99 NOV 19 P4:23

NEW YORK STATE
PUBLIC SERVICE COMMISSION

New York Power Authority) Case No._____

CERTIFICATE OF SERVICE

I hereby certify that I have this 16th day of November, 1999, served the Pre-Application Report by first class mail, postage prepaid upon the following persons.

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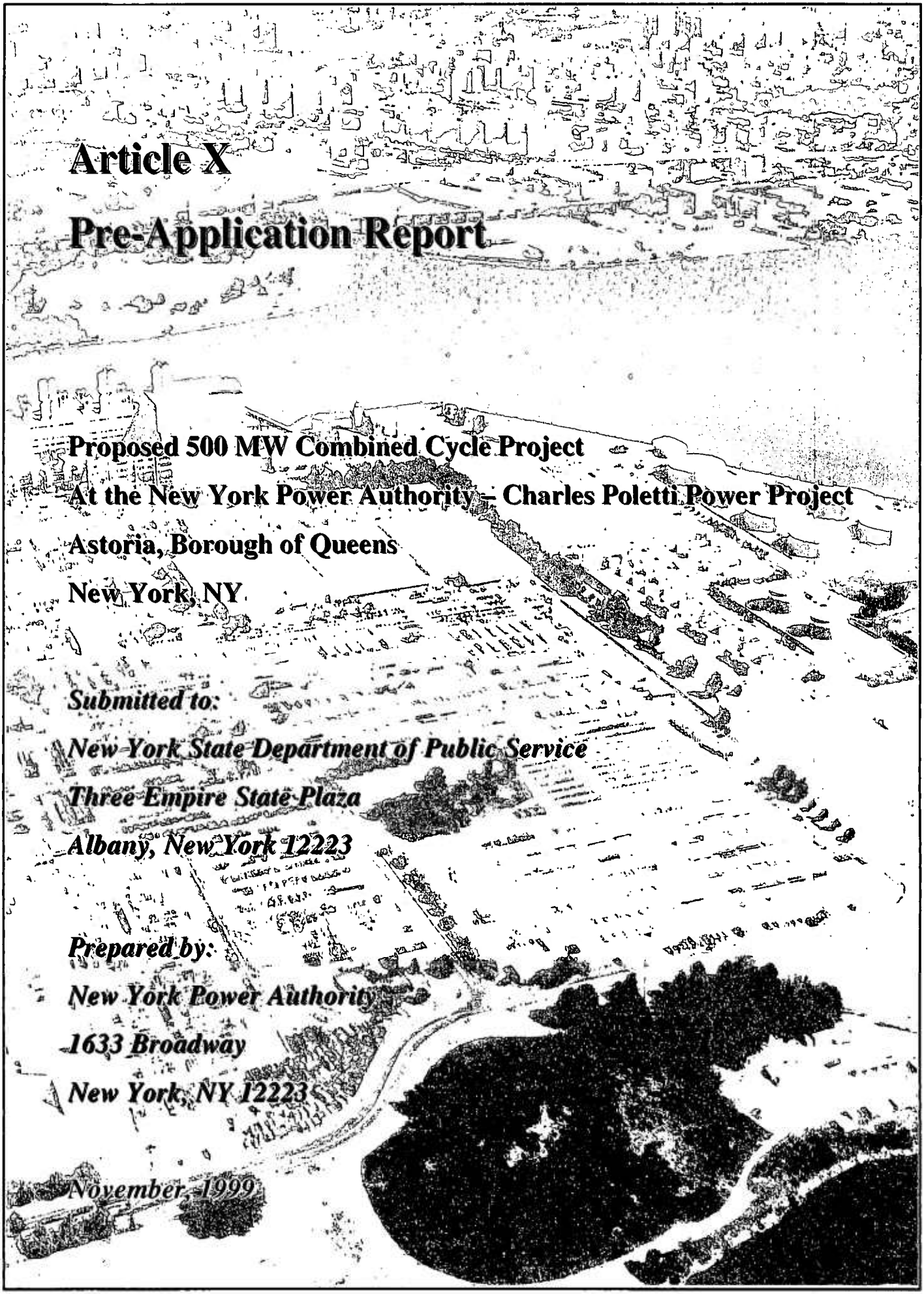

Article X

Pre-Application Report

Proposed 500 MW Combined Cycle Project

At the New York Power Authority – Charles Poletti Power Project

Astoria, Borough of Queens

New York, NY

Submitted to:

New York State Department of Public Service

Three Empire State Plaza

Albany, New York 12223

Prepared by:

New York Power Authority

1633 Broadway

New York, NY 12223

November 1999

Article X

Pre-Application Report

Proposed 500 MW Combined Cycle Project

At the New York Power Authority – Charles Poletti Power Project

Astoria, Borough of Queens

New York, NY

Submitted to:

New York State Department of Public Service

Three Empire State Plaza

Albany, New York 12223

Prepared by:

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1633 Broadway

New York, NY 12223

November, 1999

Article X

Pre-Application Report

Proposed 500 MW Combined-cycle Project

At the New York Power Authority - Charles Poletti Power Project

Astoria, Borough of Queens

New York, NY

Submitted to:

New York State Department of Public Service

Three Empire State Plaza

Albany, New York 12223

Prepared by:

New York Power Authority

1633 Broadway

New York, NY 10019

Submitted:

November, 1999

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1.0 INTRODUCTION

The project discussed in this Pre-Application Report is a proposed 500 megawatt (MW), combined-cycle, combustion turbine electric generating facility to be developed by the New York Power Authority (NYPA) on a four-acre parcel of land at its existing Charles Poletti Power Project in Astoria, Queens. (see Figure 1-1). This Pre-Application Report initiates formal consultation with the New York State Department of Public Service (NYSDPS), the New York State Department of Environmental Conservation (NYSDEC), and other involved agencies regarding the scope of studies to be conducted in support of a future application by NYPA to the Siting Board on Electric Generation Siting and the Environment in accordance with Article X of the New York State Public Service Law.

1.1 Project Purpose, Need and Benefits

NYPA's proposed combined-cycle project will:

- ***Allow NYPA to meet an in-city installed capacity requirement if one is mandated by the New York Independent System Operator (NYISO)***

If an in-city installed capacity requirement is ultimately adopted by the NYISO, NYPA will be required to have as much as 80 percent of its in-city load served from generating capacity within New York City. NYPA's current in-city capacity covers about 50 percent of its in-city load. NYPA's low-cost electricity is currently provided to a number of businesses and all of the non-federal government load in New York City including the City of New York, the Metropolitan Transportation Authority, the New York City Housing Authority, the Port Authority of New York and New Jersey, and the State of New York.

- ***Provide for a net annual reduction in air emissions from the New York Power Authority's site in Astoria***

The proposed combined-cycle project will be one of the cleanest power plants in New York City's history. The availability of the proposed project will actually reduce the nitrogen oxide (NO_x), sulfur dioxide (SO_2), and particulate emissions in the New York City airshed on an annual basis by allowing NYPA to reduce operations of the existing Poletti Project, but still meet their responsibility to provide adequate and reliable electricity. The actual reductions will be quantified through air quality modeling and presented in the Article X application.

- ***Provide for the continuation of the benefits to Queens and New York City from NYPA's provision of low cost electricity and related programs***

In New York City, NYPA's low-cost power lights the streets, runs the subways and commuter rail lines and serves schools, hospitals and other public facilities. Government customers obtain additional savings through NYPA's wide-ranging energy-efficiency programs. NYPA supplies economical electricity that saves government customers – and taxpayers – an estimated $250 million a year. NYPA also provides economic development power that helps to protect 144,000 jobs in New York City, including more than 23,500 in Queens.

- ***Improve the efficiency of the State and City's electricity supply***

The proposed plant would use a combined-cycle process, incorporating two combustion turbine generators operating in conjunction with two heat recovery steam generators and a steam turbine generator. By using the waste heat from the combustion turbines to produce steam and generate additional electricity, the plant would operate with a higher thermal efficiency than other types of generating facilities.

- ***Result in an overall net air quality benefit through use of Lowest Achievable Emission Rate (LAER) control techniques, the procurement of emission offsets, and the use of clean burning fuels***

The Clean Air Act Amendments of 1990 imposed stringent air quality requirements on electric generating facilities, particularly in areas such as New York City where ambient air quality standards for ozone (O_3) and carbon monoxide (CO) are not being met. As a result, to address the ozone problem in New York and the Northeast, the proposed project will be required to incorporate LAER technology to reduce the emissions of volatile organic compounds (VOCs). In addition, NYPA will obtain emission offsets (reductions) equal to 1.3 times the facility's maximum permitted annual VOC emissions. If required, LAER technology will also be used to control CO emissions. Emissions of sulfur dioxide (SO_2) and particulate matter (PM) will be controlled through the use of clean fuels, primarily natural gas and low sulfur (0.05%) distillate as backup fuel when natural gas is not available.

1

- ***Optimize the use of existing NYPA property and available infrastructure and interconnections***

The proposed project site is a four-acre, undeveloped parcel of land located next to NYPA's existing Charles Poletti Power Project. The proposed site is located within NYPA's 47 acres of property, which is part of a 291-acre parcel formerly shared with Con Edison. This property has been used since 1905 for the generation of electricity, first by the Astoria Light, Heat and Power Company and later by Con Edison. NYPA acquired the partially completed Astoria #6 unit from Con Edison in 1975 and renamed it the Charles Poletti Power Project; the remaining Con Edison generating facilities were recently sold to NRG Energy (NRG) and Orion Power Holdings (Orion). The proposed project will take advantage of the unique opportunities provided by the existing facilities and interconnections at the Poletti Project including natural gas supply, electric transmission, fuel storage, and water discharge facilities.

- ***Provide direct economic benefits to Queens and New York City***

During construction, 200 to 250 local construction jobs, on average, will be created, and the local economy will accrue secondary benefits from the purchase of construction materials and other supplies. Construction of the proposed 500 MW combined-cycle project will take approximately 24 months.

1.2 Project Location and Site History

The site for the proposed combined-cycle project is located near NYPA's Charles Poletti Power Project in Queens, New York. The proposed project will occupy four acres of the 47-acre parcel presently owned by NYPA along the north shore of Queens, at Lawrence Point on the East River. According to historical maps, the actual project site was located beyond the natural shoreline prior to 1898. The coastline in this area was modified by construction of a pier and bulkheads, approved in the early 1900s, and the former Berrians Island became obscured by the filling of Berrian's Creek, which connected the island to mainland Astoria.

Shortly after 1900, the Astoria Light, Heat and Power Company located in Astoria at Lawrence Point. This was the first central plant located off Manhattan to supply New York City with gas and later electricity. The original 1905 powerhouse building remains near the proposed project site. According to historical Sanborn maps from 1915, a gas manufacturing plant was developed in the area south of the proposed plant site; this area is currently occupied by the Astoria West 138 kV substation, an extensive maintenance

supply warehouse, and outdoor storage and parking areas. The proposed combined-cycle plant area was used for coal storage for the gas manufacturing plant.

Between 1936 and 1948, portions of the gas plant (i.e., inclined retort house and horizontal retort house) were demolished. A new coal-fired Astoria generating station was constructed in 1953 along the East River shoreline, west of the area formerly occupied by the gas plant, and additional units added between 1958 and 1960. The Astoria generating station was operated by Consolidated Edison. The original 1905 powerhouse was idled in the 1950s, and modifications were undertaken around 1960 to reuse the building as a sintering plant. This process used the coal ash by-product from the coal burned at the power plant to manufacture porous cellular nodules for concrete.

In 1975, NYPA acquired the partially built Astoria Plant # 6 from Con Edison and formally renamed it the Charles Poletti Power Project. This 825 MW plant remains operational. The proposed combined-cycle project site is currently paved and is used for contractor parking and outdoor storage for miscellaneous equipment and materials.

1.3 Public Involvement Plan Overview

The New York Power Authority will encourage all stakeholders, including interested agencies and the local community, to participate in a Public Involvement Program so that their input can be considered in the licensing, design and construction of the proposed project. Public participation has been actively sought during the project's planning phase and will continue to be actively sought throughout the Article X process.

1.3.1 Planning Phase

In December 1998, NYPA met with NYSDEC staff to introduce the project and discuss air permitting requirements. Following the New York Power Authority Trustees' approval of funding for work related to licensing, NYPA conducted briefings during the month of February 1999 with key staff in the offices of several public officials representing the project area, including:

- State Senator George Onorato
- Assemblyman Denis Butler
- New York City Council Speaker Peter Vallone
- Queens Borough President Claire Shulman
- Community Board #1

On March 1, 1999, a meeting was held with representatives from the New York City Department of Infrastructure.

On April 9, 1999, a site walkover tour was conducted with representatives from the NYSDPS and NYSDEC.

The consultations that took place during this phase consisted primarily of introductory briefings, and no substantive comments were raised or presented. All parties expressed a desire to be kept informed as the project progressed.

During this phase, a Project Mailing List was developed which includes: elected and appointed officials, agency representatives (local, state and federal), civic and business organizations, public interest groups, and environmental organizations. This mailing list will be periodically updated throughout the licensing process to provide for the dissemination of project information, the solicitation of comments, and the formal filing of project documents.

1.3.2 Pre-Application Phase

On June 21, 1999, NYPA advertised for the engineering services related to a new 500 MW combined-cycle power plant at the site of the Charles Poletti Power Project. Following this milestone, briefings were again held with the offices that were met with in February. No concerns or negative reactions were expressed. On July 7, 1999, a follow-up meeting was held at the request of the Queens Deputy Borough President. Points of discussion included the potential construction schedule, deregulation of the utility industry and the role of the Independent System Operator.

On July 27, 1999, a formal presentation was made to representatives of the New York City Mayor's Community Assistance Unit; Comissioner RoseMary O'Keefe, Deputy Comissioner Brian Thompson and Chief of Staff Dorcella Johnson. Mr. Benjamin Yarrow attended the presentation representing Deputy Mayor Rudy Washington. Following the presentation, few questions were raised about the actual combined-cycle proposal. General questions focused on NYPA serving NYC governmental customers vs. Con Edison, specific questions about Con Edison (including concerns over the then-recent blackout in Washington Heights), and the proximity of the Poletti project to Con Edison's Astoria project. A question was also raised expressing concern about the proximity of the proposed project to residential homes; it was noted that the distance from the neighborhood to the proposed project would be greater than the distance to the existing plants.

On August 20, 1999, a formal meeting was held at NYPA's office at the Poletti Project with 34 invited representatives of various elected officials, civic associations, and Community Board #1. The invited individuals were identified by NYPA's Public Affairs Department based on their long-standing and ongoing community relations efforts regarding the Charles Poletti Power Project. Following a presentation regarding the proposed combined-cycle project, a general discussion was encouraged through a question and answer format. Questions and issues that were raised and/or comments that were made are summarized as follows:

- Where does Astoria stand or rank in terms of federal clean air standards and what will be the effect of the proposed project?
- Quantify the emissions reductions for the proposed project.
- What are the emissions and negative issues associated with burning natural gas?
- Will the new plant meet the increase in electricity demand?
- Health effects of existing and proposed plants, particularly regarding asthma and emphysema.
- Why are so many plants needed and/or proposed for this area of Queens?
- Is there a limit to the number of licenses granted to a given area?
- Are there any plans to increase solar generation?
- NYPA should expand the use of their energy efficiency programs.

On September 21, 1999, NYPA made a formal presentation before Community Board # 1 at their regularly scheduled monthly meeting. Information packets containing the project fact sheet, the open house meeting announcement, and information regarding NYPA's operations and programs in Queens and throughout the state were distributed to all Community Board members and meeting attendees from the general public. Following a brief presentation by NYPA staff, the meeting was open for questions and comments from the Board members and public. General comments and questions that were raised included the following:

- What will be the height of the project stacks?
- Will the power generated be specifically for New York City?
- Under what circumstances will oil be burned at the proposed project?
- What would happen to plant operations if cold weather exceeded the allowable 60-day period for oil firing?
- Will studies of air quality impacts be provided in the Article X application?
- Will toxic wastewater or wastes be discharged by the proposed project?
- Waterfront access is important to the community; underutilized land should be considered for community facilities or waterfront access.

- Astoria is the site of several proposed power projects; Astoria should not become the site for the generation of power for all of New York City.

On September 23, 1999, a Public Open House meeting was held at Astoria World Manor on Astoria Boulevard in Queens (the same location as the monthly Community Board meetings). The meeting included an afternoon session from 3:00-5:00 p.m. and an evening session from 7:00-9:00 p.m. Legal and display ads providing notice of the meeting were published in local newspapers including the Queens Tribune and Newsday (see Appendix A). The meeting was attended by various technical specialists from NYPA and supporting consultants to provide detailed technical responses to public comments and questions. Following a presentation regarding the proposed project and NYPA's past and ongoing involvement in the Queens community, comments and questions were solicited from the audience in attendance. General comments and questions that were raised included the following:

- The community is concerned about the multiple plants proposed in Queens.
- Are any of the Power Authority's other projects located in residential areas?
- What is the percentage reduction of the emissions from the site with the proposed project?
- Can the existing Poletti project be reconstructed to be as efficient as the proposed project?
- To what extent can the Power Authority influence the actions of the other power producers in Queens?

On September 28, 1999, a presentation was made to the 114th Precinct Community Council in Astoria. Approximately 85 people attended the meeting including community leaders, representatives of state and local elected officials, and one weekly newspaper. General comments and questions that were raised included the following:

- Will the new, low emissions add to Con Edison's emissions in the area?
- How much oil will be stored at the site as a back-up?
- Address water quality and impacts to fish.
- Will allowing NYPA to build in the area permit others to do the same?
- Is there a law that states how many power plants could be built in the area?
- How will the existing and proposed NYPA plants affect property taxes?
- Does NYPA sell directly to consumers?
- Are the new gas turbines going to be similar to the existing ones?

On October 7, 1999, a presentation was made to the United Community Civic Association in Astoria. Approximately 90 people attended the meeting to listen to

presentations from NYPA as well as the proposed Astoria West power project that would be located at the Castle Oil terminal in Astoria.

NYPA intends to continue its public outreach program and to meet with civic, fraternal, and service organizations to provide information about the Project. The information that has been gathered to date has been incorporated in this Pre-Application Report. In some cases, project design alternatives have been incorporated to address community or agency concerns raised during the planning phase. In other instances, NYPA has identified that additional information needs to be obtained or that studies need to be completed to satisfactorily address expressed issues and/or concerns. Plans for these studies are outlined in this report.

The Pre-Application Report will serve as the basis for continued discussions with agency and municipal representatives, stakeholders and interested citizens regarding the scope and content of the Article X Application for the Project. NYPA will initiate and respond to requests for meetings with agency staffs, local government officials, community-based advisory and interest groups and interested citizens. A list of those entities and individuals who will receive a copy of the Pre-Application Report is provided in Section 1.3.6.

NYPA has also developed and is implementing additional measures to assure continued public communication and feedback regarding the proposed project. NYPA developed a project fact sheet and information package that was widely distributed at each of the public meetings identified above. This fact sheet (see Appendix A) was mailed to 145 individuals on the project mailing list on October 15, 1999. A periodic newsletter will also be produced for distribution to individuals and groups on the project mailing list. A toll-free telephone number (1-888-NYPA-332) has been established to allow members of the general public to leave messages requesting information and to make inquiries regarding any aspect of the project. Questions received via the toll-free line will be forwarded to the appropriate technical specialists for response, and responses will be returned to the individuals; questions of general interest may be responded to in the periodic newsletters.

NYPA is also in the process of developing a web site to disseminate information regarding NYPA, the proposed project and the Article X process. The web site will provide an opportunity for individuals to be added to the project mailing list. Scheduled public meetings and document availability will also be announced on the web site.

1.3.3 Study and Application Preparation Phase

During the preparation of the Article X application and related studies, NYPA will continue to consult with agency representatives and others through meetings, correspondence and other methods that facilitate consultation, including field visits and telephone conferences. NYPA will continue to schedule and respond to requests for meetings and presentations from local government officials, interest groups, stakeholders and interested citizens. This activity during the preparation of the studies and the Application will continue to provide information about the proposed project and facilitate the receipt of comments and suggestions from interested parties.

1.3.4 Application and Certification Phase

Filing of the Application with the Siting Board and with parties that have indicated an interest in receiving the Application will begin the formal application review process. The review process will include formal notification, opportunities for parties to formally exchange information and public hearing sessions to receive comments, statements and testimony about the Project. NYPA will ensure that all notice and filing requirements are complied with. Through the submittal of its application fee, NYPA will provide financial resources to be allocated by the presiding examiner designated by the Board to municipal and local parties to review and understand the studies, information and issues addressed in the Application. These activities will ensure that effective public involvement continues throughout the Application review and certification process.

1.3.5 Compliance and Implementation Phase

During the construction, commissioning and operation of the plant, NYPA will continue to maintain relationships established with regulatory agency staff, local officials, stakeholders, and interested citizens, just as it has been doing since commencing operations at the site in 1975. During construction and commissioning, NYPA will schedule meetings to report on the Project's status, and NYPA representatives will be available to attend meetings, give presentations, and answer questions as requested. NYPA will continue to participate and support community activities during the life of the facility.

Agency consultations and updates will continue throughout start-up operations and testing. During construction and commissioning, there will be meetings and filings with agencies to document the completion of mitigation projects and the certification of equipment. Compliance filings and reports will be filed and noticed to all parties to the

certification proceedings for subsequent approval by the Siting Board. These compliance filings will provide formal documentation and verification that the requirements imposed by the Article X certificate are adhered to and implemented through the course of the design, construction and operation of the project.

1.3.6 Notices and Filing

This Pre-Application Report contains the elements described in the regulations implementing Article X to facilitate understanding and discussion about the proposed Project. The elements are:

- information about the Project;
- information about the environmental setting at the Project site;
- identification of potential significant adverse impacts of the Project;
- information and background studies needed;
- anticipated mitigation measures;
- summary of public involvement efforts; and
- issues raised during informal consultations and responses to those issues.

The Pre-Application Report will be provided to the following entities and to others who have expressed an interest in the Project:

- New York State Board on Electric Generation Siting and the Environment
- New York State Public Service Commission
- New York State Department of Agriculture and Markets
- New York State Department of Environmental Conservation
- New York State Department of Health
- New York State Energy Research and Development Authority
- New York State Department of Transportation
- Empire State Development Corporation
- New York State Attorney General Eliot L. Spitzer
- New York State Secretary of State Alexander F. Treadwell
- United States Senator Daniel Patrick Moynihan

- United States Senator Charles E. Schumer
- Members of Congress from Congressional Districts including all or portions of Queens County
- Members of New York State Assembly and Senate from Queens County
- Community Board No. 1, Borough of Queens
- New York City Council and Mayor's Office
- New York City Department of Environmental Protection
- U. S. Environmental Protection Agency Region II
- U. S. Army Corps of Engineers, New York District

The completed Application, when filed, will be sent to the same service list plus any parties that participated in the pre-application consultation process and who requested copies of the Application. In addition, notice of the Article X application will be published in newspapers in accordance with the regulations implementing Article X. Copies of the Application will be provided to area libraries for review by the general public. The Application package will include the Application, pre-filed testimony supporting the Application, the notice, the service list, affidavits of service and other relevant information.

1.3.7 Issues Raised During Informal Consultation with Agencies

On August 5, 1999, pre-application meetings were held in Albany with representatives from the NYSDEC and NYSDPS to discuss issues related to air quality and water resources. These technical discussions focused on the required information and modeling methodologies to be used in preparing the PSD permit and SPDES permit applications. Minutes of the meetings were prepared and distributed to meeting participants.

Comments and issues that were raised at the meeting regarding the PSD permit are summarized as follows:

- The Article X application should be based on equipment from a particular vendor or at least a vendor should be selected in order to move forward with the hearings. If an "envelope approach" must be used to prepare the Article X application, then a statement should be included to make it clear that a conservative approach was used for modeling purposes.

- Elevated receptors need to be addressed in accordance with U.S. EPA requirements. It is not necessary to evaluate the impact on PSD increments at elevated receptors.
- The SACTI model with LaGuardia Airport meteorological data was acceptable for evaluating potential cooling tower impacts. If a wet/dry tower is evaluated, the heat dissipation input to the model should be adjusted to simulate the reduced evaporative cooling.
- Feedback should be obtained from U.S. EPA and/or NJDEP regarding recommendations for at least a screening-level analysis for Class I visibility.
- NYSDEC's position (which has not been disputed by U.S. EPA) is that cooling tower particulates are larger than PM-10 and therefore do not need to be modeled for air quality impacts.
- Department of Health should be consulted regarding the required analyses to address health-related concerns related to HAPs (hazardous air pollutants) from the cooling tower's air emissions.
- Offsets need to be identified at the time the draft PSD permit is issued for review and prior to issuance of the Article X certificate. The Article X application should explain the offset program as well as the NOx allowance program in plain language for the benefit of the public.
- The Article X application should include an impact assessment for acid rain following the NYSDEC protocol. The acid rain program should also be explained in the application.
- Part 75 (40 CFR 75) CEM requirements would apply to the project since it is subject to the Acid Rain program.
- Diesel engines on site must be modeled for significant impacts and impacts on NAAQS, reflecting the fact that under normal operating conditions, the engines will only run ½ hour per month.

Comments and issues that were raised at the meeting regarding the SPDES permit are summarized as follows:

- Since the present SPDES permit limits BTU output, the new project will trigger the need to modify the existing permit.
- Use of the existing intake for the new facility will require a new BTA (Best Technology Available) decision; NYPA is currently reviewing BTA for the existing facility.
- The Article X application needs to address cumulative impacts of other projects (i.e., Ravenswood, Astoria, East River and the existing Poletti unit).
- As set forth in NYSDEC's brief in the Athens proceeding, dry cooling (i.e., air-cooled condensers) will be considered BTA, and NYPA will need to look at techniques to approach that level of protection.

- The evaluation of the thermal mixing zone for the new facility will need to include the existing facility.

The issues raised during the pre-application meetings with NYSDEC and NYSDPS staff are reflected in the technical discussions presented in this Pre-Application Report and will be addressed in the Article X application.

1.4 Description of Pre-Application Report Format

This Pre-Application Report is organized as follows:

Section 1.0 is the Introduction which contains an overview of the project's purpose, needs, and benefits; an overview of the proposed Public Involvement Program; a brief description of the proposed project location and site history; and this description of the Pre-Application Report format.

Section 2.0 is the Project Description which provides a more detailed site description, including a discussion of the site's existing character, natural features, and the nature of the surrounding area. The major project features are also described in this section of the report.

Section 3.0 is the Environmental Setting and Potential Impacts and Mitigation that provides a discussion of specific environmental study areas (e.g. Air Quality, Water Resources, Noise, Cultural Resources, etc.). Each environmental resource area will be addressed with a discussion of existing conditions; a preliminary identification of potential impacts; study methodologies necessary for impact evaluations; and identification of potential mitigation measures.

Section 4.0 is the Alternatives Evaluation which contains a discussion of reasonable alternatives to the proposed combined-cycle project. Alternatives addressed include the No Action alternative, an alternative site layout, alternate site(s), and alternate technologies.

2.0 PROJECT DESCRIPTION

2.1 Poletti Project Property Description

NYPA's Charles Poletti Power Project occupies approximately 47 acres adjacent to the Astoria Generating Station formerly owned by Con Edison. NYPA's existing facilities include the 825 MW Poletti Generating Station, an adjacent administration and warehouse building, an intake structure and discharge canal along the East River, a 1.0 million gallon water storage tank, and miscellaneous ancillary facilities (i.e., foam pump house, underground piping, etc.). NYPA's facilities also include a fuel oil tank farm consisting of six, 6.0 million gallon oil storage tanks, located at the eastern end of NYPA's property. A large portion of the NYPA property appears open and either grassed or paved; but, in fact, portions of these areas are occupied by various underground piping. The paved area is fenced and is used for outdoor storage of miscellaneous equipment. The location and layout of NYPA's existing facilities are shown on Figure 2-1.

The Charles Poletti Power Project began commercial operation in 1977 and is capable of burning fuel oil or natural gas. Electricity generated by the Poletti Project is transmitted to Con Edison's 345 kV system.

2.2 Proposed Facility Location

The location and general layout of the proposed 500 MW combined-cycle plant is also shown on Figure 2-1. The proposed site for the new plant is paved and was previously used for contractor parking. The area is now used for outdoor storage of miscellaneous equipment and materials. The approximately 4-acre site is south of and adjacent to NYPA's existing oil storage tanks and west of an area occupied by several simple cycle combustion turbines recently acquired from Con Edison by NRG. The proposed site is shown in several photographs provided as Figures 2-2 and 2-3.

2.3 Primary Components of the Proposed Combined-cycle Project

The proposed power plant is a nominal 500 MW combined-cycle natural gas fired facility with low sulfur (0.05%) distillate as a backup fuel. The major components of the plant include two combustion turbine generators (CTG), two heat recovery steam generators (HRSG), one steam turbine generator (STG) with condenser, and the cooling system that

includes a mechanical draft cooling tower and a water treatment facility with associated storage tanks.

The two combustion turbine generators produce electricity and exhaust hot gas into the two heat recovery steam generators. The steam that is produced in the two heat recovery steam generators is used to drive the steam turbine generator to produce additional electricity. Steam that exhausts the steam turbine generator flows into the condenser with a circulating cooling water loop that is cooled by the mechanical draft cooling tower. The overall thermal efficiency of the system approaches 56 percent compared to approximately 35 percent for a conventional fossil fuel fired plant or a common simple cycle combustion turbine alone (without the HRSG and steam turbine).

The facility support systems and equipment will include the following:

- Water cooled condenser
- Circulating cooling water system using wet cooling towers with plume abatement
- East River intake fitted with a wedge wire screen
- Water treatment system including storage tank
- Selective catalytic reduction system
- Chemical storage and injection system
- Sanitary waste collection and discharge system
- Fire protection system
- Fire detection and alarm system
- Permanent plant communications system
- Domestic (potable) water system
- Wastewater collection, treatment and discharge systems, including neutralization tank
- Plant electrical distribution system

NYPA is currently evaluating bids for plant equipment and an Engineering and Procurement contract. After the award of the contract, specific equipment vendors will be identified and actual performance characteristics will be known. This information will be reflected in the Article X application. The following description of the proposed plant components is contained in the bid specification documents.

2.3.1 Combined-cycle Overall Characteristics

The plant basis will be two F-type combustion turbines (or equivalents) with a nominal net power output of approximately 170 MW each. The CTGs will utilize dry low NOx technology with water injection for NOx control when firing distillate fuel. Each turbine

will exhaust to a HRSG, and the HRSGs will exhaust gases into individual stacks. A selective catalytic reduction (SCR) system will be installed in each of the HRSGs to further reduce NOx emissions. The SCR system will use aqueous ammonia for NOx reduction. An aqueous ammonia storage tank will be installed for on-site storage.

2.3.2 Fuel System

The combustion turbines will be designed for natural gas firing as the primary fuel and low sulfur (0.05%) distillate as backup fuel. Natural gas will be supplied to the power plant through interconnection to an existing natural gas pipeline. Distillate will be stored on-site in one or two (out of the total six) existing 6.0 million gallon storage tanks that will be cleaned and refurbished for use for the proposed combined-cycle plant. Presently, these tanks store No. 6 fuel oil.

2.3.3 Facility Water Use / Wastewater Generation

Water will be required for several functions associated with the generation of electricity. Figure 2-4 shows a preliminary water balance diagram illustrating principal water supply and wastewater effluent pathways through the facility.

Process, fire protection, and potable water requirements will be met through interconnections to the New York City municipal water distribution system. Process water includes inlet to the demineralization system, service water for miscellaneous uses throughout the facility, and makeup to the evaporative inlet air cooling system.

Makeup water to the cooling tower, which serves the steam turbine condenser, will be supplied from a proposed new intake on the East River fitted with a wedge wire screen. Modification of the existing intake, service water pumps or circulating water pumps is not planned. To minimize the total water demand of the facility, HRSG blowdown, neutralized regenerant waste water, ultrafiltration reject water, and evaporative condenser cooling system blowdown will be recycled and reused in the cooling water system for the steam turbine condenser. A pretreatment system will be provided to remove suspended solids from the recirculating cooling water makeup, and thereby minimize the formation of deposits in the condenser and cooling tower.

Figure 2-4: Preliminary Water Balance Diagram (Cont'd)

Number	Description	Flow (gas firing)	Flow (oil firing)
1	New York City municipal water supply	366	841
2	Potable water use	2	2
3	Miscellaneous service water uses	30	30
4	Inlet to demineralization system	94	569
5	Outlet from demineralization system	75	462
6	Water injection to combustion turbines	0	387
7	HRSG feedwater makeup	75	75
8	Ion exchange regeneration waste water	7	39
9	Ultrafiltration system reject and waste	9	51
10	Outlet from neutralization tank	16	90
11	Granular filter backwash	3	17
12	Water to fire protection	0	0
13	Storm water from yard transformer and oil storage areas	20	20
14	Discharge to sewer	52	52
15	Intake from East River	3487	3399
16	Makeup to evaporative condenser system	240	240
17	Evaporation from evaporative condenser system	192	192
18	Blowdown from evaporative condenser system	48	48
19	Cooling tower makeup	3554	3554
20	Evaporation from cooling tower	1777	1777
21	Cooling tower drift	39	39
22	Cooling tower blowdown - Discharge to East River	1738	1738
23	Total evaporation losses	1969	2356

Notes: 1. All flows are average gallons per minute and are preliminary estimates.
2. Evaporative condenser operation is from May to November and is based on 5 cycles of concentration.

3

A chemical storage and feed system will be provided to prevent scaling and deposition in the cooling tower and condenser. The feed system will include storage and feed equipment for sodium hypochlorite, sulfuric acid, and corrosion inhibitor/dispersant.

Demineralized water will be used for HRSG feedwater makeup, water injection to the combustion turbines for NOx control, and compressor cleaning.

Building floor drains and storm water drains from potentially oil contaminated areas such as the yard transformer area and the fuel oil storage tank will be treated in oil/water separators to reduce the free oil concentration to 10 mg/liter or less. Building floor drains in chemical areas will be sent to the neutralization tank.

2.3.4 Main Cooling Water System

The main cooling water system will be used to remove heat from the turbine condenser and the auxiliary cooling water heat exchangers connected to the auxiliary cooling water cooling loop. This loop will be used to remove heat from miscellaneous plant equipment such as combustion turbine coolers, generator coolers, lube oil coolers, vacuum pump condenser and boiler feed pump coolers.

The main cooling water system will be designed as a circulating type system using wet cooling towers with plume abatement. The water source will be the East River. Water will be supplied to the condenser and the auxiliary water cooling loop from a proposed new water intake located adjacent to the existing intake structure. Water return will be discharged back to the East River by connecting the proposed facility's discharge pipe to the existing discharge canal. The existing discharge structure is described in further detail in Section 2.4.

2.3.5 Exhaust Stacks

The exhaust gas from each combustion turbine will flow to the HRSG, through the SCR (located in the high-pressure evaporator), and out the stack. There will be one stack for each turbine train. The stack height will be determined based on the height of the turbine building using GEP (Good Engineering Practice). Each stack will be equipped with a Continuous Emissions Monitoring System (CEMS) to monitor the concentrations of NOx, O_2, CO, and ammonia (NH_3). Each stack will be equipped with an access platform to the monitoring equipment.

2.3.6 Turbine Generator Building

The two combustion turbine generators and the steam turbine generator will be housed in an industrial type metal building. The building dimensions will be defined during final design of the facility. The building will also house other plant equipment such as pumps, motors and other electrical equipment. A control and administration area will be on the second floor. The two HRSGs attached to the turbine generator building will not be enclosed.

2.3.7 Electrical Interconnection

The integration of the new plant into the Con Edison/NYPA 138 kV system network will be via new 138 kV circuits connected to Con Edison's Astoria East-West 138 kV substation located near the proposed project site. The required electrical interconnection will be approximately 4,000 feet long.

2.3.8 Air Emissions

The proposed plant will minimize oxides of nitrogen (NOx) emissions by the use of dry low NOx combustion technology in the combustion turbines while firing natural gas. The NOx emissions, while burning No. 2 fuel oil, will be reduced by steam or water injection.

NOx emissions will be further reduced by post combustion treatment with selective catalytic reduction (SCR) systems. The SCR consists of a catalyst bed installed in the HRSG. Aqueous ammonia will be injected into the flue gas stream, and react with the NOx in the presence of the catalyst to form benign nitrogen and water.

Natural gas does not contain appreciable amounts of sulfur, so sulfur dioxide (SO_2) emissions will be minimal when firing natural gas. When burning oil, low sulfur (0.05%) distillate will be used to minimize SO_2 emissions.

Control of carbon monoxide (CO) and volatile organic compounds (VOC) will be achieved through combustion controls in the combustion turbine, while particulate emissions will be minimized through the use of clean burning fuels (i.e. natural gas and low sulfur distillate oil).

2.3.9 Gas Turbine Inlet Air Cooling System

NYPA is evaluating the installation of an inlet air cooling system for the proposed combined-cycle project to improve system performance and plant output during periods of high ambient air temperature (i.e., primarily summer months). During the warmer months, the inlet air cooling system will control the inlet air temperature to the combustion turbine, allowing the turbine to operate at a constant firing temperature and increasing plant output. Further details regarding the inlet air cooling system will be provided in the Article X application.

2.4 Existing Discharge Structure

The proposed combined-cycle plant will use the existing Poletti Project discharge structure located west of the proposed plant site on the East River. No major modification of this facility is planned to accommodate the new plant. Figure 2-5 shows photographs of the existing discharge canal.

The discharge structure is constructed of sheet piling braced by steel walls and steel soldier beams concreted into drilled rock sockets. The structure is open at the top, is approximately 460 feet in length running parallel to the U.S. Pierhead and Bulkhead Line, extends 35 feet into the River, and has an elevation of about 5.2 feet above mean high water.

Water enters the structure through a 12-foot-diameter conduit at the southern end of the structure and discharges through 30 discharge ports located 1.5 feet below mean low water. The southern end of the discharge structure is approximately 250 feet north of the centerline of the intake structure.

3.0 ENVIRONMENTAL SETTING, POTENTIAL IMPACTS AND MITIGATION

The proposed combined-cycle project will be located in the middle of a complex of existing power generating and support facilities on property that has been used for the generation of electric power for nearly a century. As such, the proposed project is a continuation of the historical use of this area. In addition, because of the extent of the property controlled by Con Edison, Orion, NRG and NYPA, the proposed project site is isolated from the adjacent community. Accordingly, the siting of the proposed project is expected to have minimal environmental impacts of the kind that are typically associated with industrial facilities on greenfield sites. Any environmental concerns are expected to be associated with the operation of the facility: air emissions; noise; water use; and wastewater discharge.

As part of the Article X licensing process, NYPA will undertake a comprehensive review of the environmental setting to thoroughly evaluate the potential impacts of the proposed project. The studies that will be undertaken will be designed to meet the substantive requirements of Article X and will also provide the detailed information for specific permit applications to be submitted to the U.S. Environmental Protection Agency (U.S. EPA) and the NYSDEC.

The studies that will be conducted will:

- Characterize the existing environmental setting and resources;
- Identify and assess potential impacts on the natural and built environment that would result from the construction and operation of the project;
- Identify and implement specific mitigation measures to minimize potential adverse environmental impacts; and
- Provide the various regulatory agencies and the general public with the information necessary to reach informed decisions regarding the required permits.

3.1 Air Resources

This section identifies the air quality regulatory framework that applies to the project and the general air resources, which may be affected by the proposed action. These regulations include the determination of the applicable air quality requirements and consequent actions required of the project (i.e. the regulatory framework for obtaining project approval, the need to apply pollution control and the need to perform modeling impact assessments). The air resources include existing air quality within the study area,

existing climatic conditions (i.e., meteorological means and extremes) and other elements (i.e., topography).

3.1.1 Ambient Air Quality, Topography and Meteorology

Existing Air Quality

The proposed project site is located in Queens County, NYSDEC Region 2, New York-New Jersey-Connecticut Air Quality Control Region (AQCR). The NYSDEC Bureau of Air Surveillance operates various air quality monitors for sulfur dioxide (SO_2), nitrogen dioxide (NO_2), carbon monoxide (CO), inhalable particulates (PM-10; particulate matter with a mean diameter less than 10 micrometers), total suspended particulates (PM), ozone (O_3), lead (Pb), nitric oxides (NO_x), sulfates and nitrates. According to 40 CFR 81.333 (updated June 13, 1998) Queens County is "attainment" or "unclassified" for all criteria pollutants, except for ozone for which it is designated as severe non-attainment and CO for which it is designated as moderate non-attainment. New York County is a designated PM-10 non-attainment area, and as such, facility PM-10 impacts to this area can not exceed significant levels.

In approving the proposed revisions to New Jersey's State Implementation Plan (SIP) to eliminate the use of oxygenated fuel, the U.S. EPA has indicated that "the New York-Northern New Jersey-Long Island carbon monoxide non-attainment area has attained the carbon monoxide National Ambient Air Quality Standards." Although the approval of the New Jersey SIP revision must undergo additional public comment, the data supporting the request shows no violations of the CO standard within the New York-Northern New Jersey-Long Island area since 1994 (64 FR 48970). Given this, it is highly likely that U.S. EPA will approve NYSDEC's proposed CO "Re-designation Request" and subsequent revisions to the New York State SIP. Recent conversation with U.S. EPA Region II staff indicates that formal re-designation and revision to the New York State SIP will not be finalized until early in the year 2000, considering the requisite public review/public comment periods (TRC, 1999). Revision to New York State's Part 200 rules to formally codify the re-designation may take a considerably longer amount of time. Because of this potential delay, the project will be developed following two regulatory scenarios for CO: 1) re-designation occurs and BACT need only be considered, and 2) re-designation does not occur and non-attainment review needs to be considered.

The following paragraphs discuss background air quality for the criteria pollutants, including trends and percentage of concentration as compared to air quality standards, on a pollutant-specific basis.

Table 3-1 presents 1996-1998 background concentration data for SO_2, PM-10, and NO_2. Data for O_3, CO, PM and lead are presented in Table 3-2. The ambient air quality data presented herein has been converted from parts per million (ppm) values, as reported by NYSDEC, to micrograms per cubic meter ($\mu g/m^3$) concentration values to coincide with the modeling output (except for PM/PM-10 and lead, which are reported by NYSDEC in $\mu g/m^3$). Text following these tables provides more detailed information for these pollutants, including trends and concentrations specific to air quality standards. For those pollutants with short-term standards (i.e., 1-hour, 3-hour, 8-hour and 24-hour), second highest recorded concentrations are presented since one exceedence of each respective standard is allowed each year.

Table 3-1: 1996-1998 Background Concentrations for SO_2, PM-10, and NO_2.

Pollutant	Averaging Period	NAAQS ($\mu g/m^3$)	Background Concentration[a] ($\mu g/m^3$) 1996	1997	1998	Monitor Location
SO_2	3-Hour	1,300	**286**	194	165	IS 155 Bronx County Located 2.5 km north of project site
	24-Hour	365	**157**	113	97	
	Annual	80	**24**	21	**24**	
PM-10	24-Hour	150	45	**75**	50	
	Annual	50	23	**25**	23	
NO_2	Annual	100	**79**	75	75	PS 59 Manhattan County Located 6 km southwest of project site

[a]Highest-second highest short-term (1-, 3-, 8-, and 24-hour) and maximum annual average concentrations presented.

Bold font identifies the greatest value over the three-year period.

Source: NYSDEC, 1996b.

Table 3-2: 1996-1998 Background Concentrations for O_3, CO, PM, and Pb.

Pollutant	Averaging Period	NAAQS ($\mu g/m^3$)	Background Concentration[a] ($\mu g/m^3$) 1996	1997	1998	Monitor Location
O_3	1-Hour	235	206	**226**	186	Morrisania Located 5.4 km N of project site
CO	1-Hour	40,000	**5,840**	5,150	5,040	PS 59 New York County Located 6 km SW of project site
	8-Hour	10,000	**4,465**	3,665	**4,465**	
PM	24-Hour	260[b]	95	98	**111**	Greenpoint Sewage Treatment Plant Located 7.1 km SSW of project site
	Annual	75	**57**	58[c]	50	
Pb	3-month	1.5	**0.16**	**0.16**	0.14	

[a]Highest-second highest short-term (1-, 3-, 8-, and 24-hour) and maximum annual average and 3-month concentrations presented.

[b]Corresponding New York State standard is 250 ($\mu g/m^3$)

[c]Value based on less than 75 percent of data - not used for compliance purposes.

Bold font identifies the greatest value over the three-year period.

Source: NYSDEC, 1999b (except 1998 data, – see reference for details).

Sulfur Dioxide (SO_2)

The closest, representative NYSDEC monitor for SO_2 is located approximately 2.5 km north of the project site at IS 115 in Bronx County. This monitor is located in a residential area in a center city location and is similar to the Astoria site for this reason. Since 1997, 3-hour and 24-hour SO_2 concentrations have decreased approximately 40 percent; annual concentrations have not shown any real trend. Data collected in 1998 shows the highest-second highest 3-hour concentration at 13 percent of the National Ambient Air Quality Standards (NAAQS), the highest-second highest 24-hour concentration at 27 percent of the NAAQS, and the maximum annual concentration at 30 percent of the NAAQS.

Inhalable Particulates (PM-10)

PM-10 is also recorded at the IS 115 in Bronx County. A review of the data indicates that PM-10 concentrations have not shown any specific trend. The highest-second highest

24-hour values have varied from 45 to 75 $\mu g/m^3$ and the maximum annual values have changed little, ranging from 23 to 25 $\mu g/m^3$. Data from 1998 shows the highest-second highest 24-hour PM-10 level at 33 percent of the NAAQS and the maximum annual concentration at 46 percent of the NAAQS.

Nitrogen Dioxide (NO_2)

The nearest, representative NO_2 monitor to the site is located at PS 59 in Manhattan County, approximately 6 km to the southwest of the project site. Over the past three years, maximum annual NO_2 concentrations have shown a slight decline from the first to second year (79 $\mu g/m^3$ to 75 $\mu g/m^3$) and no change from the second to third year. The 75 $\mu g/m^3$ value recorded in 1998 is 75 percent of the 100 $\mu g/m^3$ ambient air quality standard.

Ozone (O_3)

The closest representative ozone monitor to the proposed project site is the Morrisania Station in Bronx County. This station is located in a center city, commercial district and was sited to assess population exposure. NYSDEC notes that the monitor serves a representation of regional ozone levels. Another ozone monitor was once located in Queens College (Queens County), but sampling at this station was terminated in August of 1997. The Morrisania monitor is located approximately 5.4 km to the north of the project site. The maximum annual averages for the period 1996 through 1998 range from 37 to 41 $\mu g/m^3$. However, there is no applicable annual standard for ozone.

The highest-second highest hourly concentration in 1998 was recorded to be 186 $\mu g/m^3$, which is under the federal standard of 235 $\mu g/m^3$. Since 1996 there have been no cases where the hourly ozone standard was exceeded more than once in Morrisania, although other monitors located in the city have measured such exceedances.

It is difficult to infer pollution trends from ozone data since the occurrence of this pollutant depends not only on a source of the precursor pollutants (NO_x and VOC), but also the driving mechanism (sunlight) that accelerates ozone formation. Relative consistency in regional NO_x and VOC concentrations may result in different resultant ozone concentration depending on the particular meteorological pattern that was established during the May 1 through September 30 ozone season. A hot, dry, stagnant summer is likely to produce significantly more ozone than a cool, cloudy, wet summer.

Carbon Monoxide (CO)

The nearest, representative CO monitor to the site is located at PS 59 in New York County, approximately 6 km to the southwest of the project site. CO is more of a concern from mobile sources than from stationary combustion sources, as such, monitors are often located at busy traffic intersections (known as CO "hot-spots"). The annual averages for the period 1996 through 1998 decreased from 1,260 to 1,145 $\mu g/m^3$. However, there is no applicable annual standard for CO. Annual data collected from the period 1989 through 1998 show a gradual lessening of CO concentrations, which at PS 59 ranged from 1,947 $\mu g/m^3$ in 1989 to 1,145 $\mu g/m^3$ in 1998.

CO concentrations are monitored for comparison against a one-hour and an eight-hour standard. The highest-second highest hourly concentration in 1998 was recorded to be 5,040 $\mu g/m^3$, which is well under the standard of 40,000 $\mu g/m^3$. The maximum eight-hour concentration in 1998 was 4,465 $\mu g/m^3$, equal to that recorded in 1996, but both well under the 10,000 $\mu g/m^3$ standard.

Total Suspended Particulate Matter (PM)

The nearest representative total suspended particulate matter (PM) sampler is located at the Greenpoint Sewage Treatment Plant in the Greenpoint section of Brooklyn. The sampler location is approximately 7.1 km south-southwest of the project site. The Greenpoint sampler is located in a center city, industrial location and NYSDEC indicates that it is operated to assess population exposure. Another PM sampling station is located in mid-town Manhattan. However, that site is not considered representative of the project area due to its location in a highly trafficked area (Madison Avenue between 47th and 48th Streets). PM impacts from mobile sources, including diesel-fueled buses and trucks, make the data not representative for the project site. The Greenpoint site, on the other hand, is similar to the project site; both are close to the East River, both are located in an industrial setting and both are adjacent to a residential neighborhood.

Annual PM concentration since 1987 at the Greenpoint site have not shown any trend and have ranged from 49 $\mu g/m^3$ to 70 $\mu g/m^3$. These values are all below the 75 $\mu g/m^3$ ambient air quality standard. Highest-second highest 24-hour average values at the Greenpoint site have remained well below the New York State standard of 250 $\mu g/m^3$. During 1997, the highest-second highest 24-hour PM value was 98 $\mu g/m^3$ and in 1996 the highest-second highest value was 95 $\mu g/m^3$. In 1998, the highest-second highest value increased to 111 $\mu g/m^3$.

Lead (Pb)

With the phase-out of leaded motor vehicle fuels in the 1980s, the issue of ambient lead has remained only at locations proximate to certain industries (i.e., lead smelters). The Greenpoint Sewage Treatment Plant monitor is the closest, representative location where particulate filters are analyzed for lead. Since 1987, annual ambient lead levels have showed a decline from the 0.11 to 0.13 $\mu g/m^3$ range in the late 1980s to the 0.07 to 0.08 $\mu g/m^3$ range in the late 1990s. There is no annual standard for lead; the not-to-exceed ambient air quality standard for lead is 1.5 $\mu g/m^3$ on a quarterly basis. At Greenpoint, the maximum quarterly values recorded in 1996 and 1997 were 0.16 $\mu g/m^3$; in 1998, the maximum quarterly value dropped to 0.14 $\mu g/m^3$. These values are all well below the ambient standard. Lead emissions are not expected to be a concern from the facility due to the use of natural gas as the primary fuel and light distillate oil as a back-up fuel.

Topography

The project site is located along the East River in the Astoria section of Queens Borough. The site is immediately adjacent to the river and only a few feet above sea level. To the west, across the Hell Gate channel, are Wards Island and then Manhattan Island. To the north are the south reaches of Bronx Borough. To the east are Rikers Island and LaGuardia Airport. Queens Borough lies to the east, southeast and south. Terrain within 6 kilometers of the site is generally rolling with elevations limited to 80 feet or less, with the exception of several higher hills to 140 feet in northern Manhattan. Beyond 6 kilometers, terrain remains below stack top (approximately 245 feet above sea level) throughout Brooklyn and Queens Counties. It is not until the Hudson River is crossed that elevated terrain (above stack top) is first encountered in the Palisades region of New Jersey. Elevated terrain is first reached in the Palisades approximately 7.5 kilometers to the northwest of the project site. Thereafter, only in a 2-kilometer-wide band of terrain that is the Palisades does the terrain consistently exceed stack top. This band stretches from the west through north portions of the area at distances ranging from approximately 9 kilometers west of the site to 16 kilometers and beyond to the north. Peak terrain in this area reaches over 400 feet above sea level in an area approximately 23 kilometers north-northwest of the site. Another area of elevated terrain is noted 16 kilometers and beyond to the north and northeast in the areas of Mount Vernon, Yonkers and the northern Bronx.

Meteorology

The climate at NYPA's Polletti Project site is influenced by the nearby Atlantic Ocean and is classified as "modified continental". The site location, both in terms of latitude and

proximity to the ocean, allows for a variety of weather extremes (temperature, precipitation, wind) and weather events (thunderstorms, hurricanes, blizzards) to be experienced.

The nearest National Weather Service (NWS) meteorological monitoring station is LaGuardia Airport, located approximately 1.5 miles east of the project site. This station is classified as Class I, meaning it functions around the clock and collects all parameters of interest to the NWS. Of the various parameters collected, several are important in assessing the proposed project impacts. Specifically, wind speed and direction are necessary for the prediction of the location and magnitude of facility pollutant impacts (a third parameter, stability is calculated from several other parameters). Since combustion turbine performance (and consequently emissions) is affected by inlet air temperature, average, maximum and minimum ambient temperature values are also important.

Wind speed and direction data covering a five-year period (1991 through 1995) has been plotted graphically as a "wind rose" in Figure 3-1. A wind rose depicts the various frequencies and intensities of wind direction and speed. Figure 3-1 shows the predominating wind flow from the northeast (in excess of 12 percent of the time) northwest (approximately 12 percent of the time) and the south (9 percent of the time). This distribution is consistent with the variety of weather to which the site is exposed: warm/hot summertime winds from the south, cold winds from the northwest in the winter, and northeast winds from coastal storms. At the project location, terrain has little effect on wind direction, unlike a mountainous region where valley channeling of wind would strongly influence a wind rose distribution.

The mean recorded temperature at LaGuardia Airport is 54.6 degrees Fahrenheit (° F) (2.5°C). The minimum and maximum mean monthly temperatures are 31°F (0°C) in January and 76°F (24.4°C) in July. The lowest temperature ever recorded at LaGuardia was -3°F (-9.4°C) and the warmest temperature ever recorded was 107°F (41.6°C). The NYSDEC Bureau of Technical Services has formulated guidance specific to the selection of appropriate maximum, minimum and average annual temperatures for modeling turbine performance. For this project, a minimum temperature of -5°F (-20.6°C) will be used, 100°F (37.8°C) will be used for the maximum and the previously mentioned average annual value will be used.

3.1.2 Regulatory Framework for Project Approval

The proposed Facility will potentially emit one or more regulated air pollutants that may exceed "major source" criteria. As such, the Facility will be subject to pre-construction new source review under the federal Prevention of Significant Deterioration (PSD)

Regulations and the state Non-Attainment New Source Review (NSR) Regulations under 6 NYCRR Part 231-2. The Facility will comply with the requirements and procedures for major new source review permitting in New York State, as outlined in NYSDEC's Air Guide 12.

A facility permit application for the Facility will also be required. This will contain all necessary information for NYSDEC to generate a draft Title V permit in accordance with 6 NYCRR Part 201, and when approved, will authorize both construction and operation in accordance with all applicable state and federal requirements.

Demonstration of compliance with all applicable PSD, NSR, and other state and local requirements will support the Siting Board's issuance of a Certificate of Environmental Compatibility and Public Need. Following construction of the Facility, a state operating permit will be obtained pursuant to Title V of the CAA Amendments of 1990, as regulated under 6 NYCRR Subpart 201-6. This permit will consolidate all Facility design and operating requirements of the Siting Board Certificate.

The following section discusses the various federal and state air quality regulations that pertain to the proposed combined-cycle project.

3.1.2.1 Standards

New Source Performance Standards

The New Source Performance Standards (NSPS) have been developed by U.S. EPA and codified in 40 CFR 60 for industrial process and combustion related sources. Combustion turbine emission standards are specified in Subpart GG, Standards for Stationary Gas Turbines. The regulations identified in Subpart GG specify emission limits and continuous or surrogate monitoring requirements for NO_x and SO_2. The SO_2 standard (40 CFR 60.333) requires that either the flue gas SO_2 concentration be less than 150 ppmvd @ 15% O_2 or that the fuel contain less than 0.8% sulfur. Since each turbine will have a maximum heat input rate greater than 100 mmBtu/hr (million British thermal units per hour), the air pollution control standards (40 CFR 60.332(a)) limit flue gas concentrations of NO_x to a value of no more than 75 ppm (based on turbine heat rate and fuel bound nitrogen). The use of natural gas as the primary fuel and low sulfur (0.05%) distillate as the back-up fuel will result in anticipated permissible emission limits for SO_2 that are expected to be well below the applicable NSPS emission limits. In addition, the use of Selective Catalytic Reduction (SCR) will result in NO_x emissions that will be far below the applicable NSPS emission limit.

National and New York State Air Quality Standards

The proposed location of the combined-cycle project is an area currently designated as attainment for SO_2, NO_2 and PM-10. Therefore, for these pollutants the facility is required to demonstrate that the impact on air quality does not cause or contribute to a violation of the National Ambient Air Quality Standards (NAAQS) or the New York Ambient Air Quality Standards (NYAAQS). The NAAQS and NYAAQS for the criteria pollutants are shown in Table 3-3.

Under 6 NYCRR, Subpart 257, the NYSDEC has promulgated ambient air quality standards (AAQS) for the NAAQS criteria pollutants, as well as certain other contaminants. It will be necessary to demonstrate through air quality dispersion modeling that the Facility will comply with all applicable ambient limits for the criteria pollutants, as well as for potentially emitted trace constituents such as fluorides, beryllium, and hydrogen sulfide. Standards for these pollutants are listed in Table 3-4.

In addition, the proposed Facility air quality impact in terms of other non-criteria pollutants will be evaluated for compliance with health risk criteria, upon request of the New York State Department of Health (NYSDOH).

The Environmental Conservation Law, Article 19, Title 9 (pursuant to the State Acid Deposition Control Act) will require that the Facility's contribution of sulfate and nitrate deposition on each of eighteen sensitive New York, nearby state, and Canadian receptors be estimated. Procedures implemented by NYSDEC for quantifying proposed sources relative contributions to the total acidic deposition will be utilized. This is provided in the NYSDEC guidance memorandum, Source Specific Acidic Deposition Impacts for Permits Application (L. Sedefian to IAM Staff; March 4, 1993).

3.1.2.2 Prevention of Significant Deterioration Permit

The PSD program in New York State is the administration of the federal rule by direct delegation from the U.S. EPA. Modifications to existing, major PSD sources (such as the existing Poletti Project) that result in potential-to-emit increases exceeding PSD "significant emission rates" (SERs) are subject to PSD review for those pollutants for which the area is in attainment. The SERs are listed in Table 3-5. PSD applicability is determined by estimating the permitted emissions increases and decreases during the contemporaneous (i.e., previous five-year) period. The applicability determination, also called a "PSD netting analysis", considers pollutant-specific annual emissions to determine whether the pollutant is subject to PSD review. The proposed combined-cycle

Table 3-3: Ambient Air Quality Standards for Criteria Pollutant s

		New York State Standards			Corresponding Federal Standards					
					Primary Standard			Secondary Standard		
Pollutant (1)	Avg. Period	Conc.	Units	Statistic (2)	Conc.	Units (3)	Statistic	Conc.	Units	Statistic
Sulfur Dioxide	12 consecutive months	0.03	ppm	Arithmetic Mean (A.M.)	80	µg/m³	A.M.			
	24-hour	0.14	ppm	Maximum	365	µg/m³	Maximum			
	3-hour	0.5	ppm	Maximum				1,300	µg/m³	Maximum
Carbon Monoxide	8-hour	9	ppm	Maximum	10	µg/m³	Maximum	10	µg/m³	Maximum
	1-hour	35	ppm	Maximum	40	µg/m³	Maximum	40	µg/m³	Maximum
Ozone (4)	1-hour	0.12	ppm	Maximum	235	µg/m³	Maximum	235	µg/m³	Maximum
Hydrocarbons (non-methane)	3-hour (6-9 am)	0.24	ppm	Maximum						
Nitrogen Dioxide	12 consecutive months	0.05	ppm	Arithmetic Mean (A.M.)	100	µg/m³	A.M.	100	µg/m³	A.M.
Lead (5)	3 consecutive months				1.5	µg/m³	Maximum			
Inhalable Particulates (PM-10) (6)	12 consecutive months				50	µg/m³	A.M.	50	µg/m³	A.M.
	24-hours				150	µg/m³	Maximum	150	µg/m³	Maximum
Total Suspended Particulates (PM) (7)	12 consecutive months	75	µg/m³	Geometric Mean (G.M.)						
	24-hours	250	µg/m³	Maximum	260	µg/m³	Maximum	150	µg/m³	Maximum

NOTES:

(1) New York State also has standards for beryllium, fluorides, hydrogen sulfide, and settleable particulates (dustfall). Ambient monitoring for these pollutants is not currently conducted.

(2) All maximum values are concentrations not to be exceeded more than once per calendar year. (Federal Ozone Standard not to be exceeded more than three days in three calendar years).

(3) Gaseous concentrations for Federal standards are corrected to a reference temperature of 25°C and to a reference pressure of 760 millimeters of mercury.

(4) Former NYS Standard for ozone of 0.08 ppm was not officially revised via regulatory process to coincide with the Federal standard of 0.12 ppm which is currently being applied by NYS to determine compliance status.

(5) Federal standard for lead not yet officially adopted by NYS, but is currently being applied to determine compliance status.

(6) Federal standard for PM-10 not yet officially adopted by NYS, but is currently being applied to determine compliance status.

(7) New York State also has 30, 60, and 90-day standards as well as geometric mean standards of 45, 55, and 65 µg/m³ in Part 257 of NYCRR. While these PM standards have been superseded by the above PM-10 standards, PM measurements may still serve as surrogates to PM-10 measurements in the determination of compliance status.

Source: NYSDEC, 1993.

Table 3-4: - New York State Ambient Air Quality Standards for Non-Criteria Pollutants

Pollutant (1)	Averaging Period	Concentration	Units	Statistic
Fluorides	1-month	1.0	ppb	Not to exceed values referenced to 25 degrees Celsius and 760 mm Hg
	1-week	2.0	ppb	
	24-hour	3.5	ppb	
	1-hour	4.5	ppb	
Beryllium	1-month	0.01	µg/m³	Maximum
Hydrogen Sulfide	1-hour	0.01	ppm	Not to exceed values referenced to 25 degrees Celsius and 760 mm Hg
Settleable Particulates (Dustfall) (2)	12 Consecutive months	0.60	mg/cm³/mo	50 percent of the values of the 30-day average shall not exceed standard
	12 Consecutive months	0.90	mg/cm³/mo	84 percent of the values of the 30-day average shall not exceed standard

(1) Ambient monitoring for these pollutants is not currently conducted.

(2) Ambient standards for dustfall represents New York City Level IV classification.

Source: 6 NYCRR 257 and 6 NYCRR 288.

plant will displace a portion of the required annual operation from NYPA's existing Poletti Project. As such, the reduction in annual emissions from the existing unit will result in a net decrease in emissions of certain pollutants. A netting analysis will be performed to quantify the emissions reductions due the change in operations at the existing Poletti Project in conjunction with the emissions from the proposed combined-cycle project.

Under the PSD regulations, the following must be demonstrated for each PSD-affected pollutant:

- Compliance with the NAAQS is maintained, including:
  - impact area determination;
  - milti-source modeling;
  - increment analysis;
  - ambient air quality monitoring.
- Additional impact analysis
- Class I area impacts
- Best Available control Technology demonstration

Based upon expected facility emissions and the netting analysis, an air quality impact analysis will be required for CO and PM/PM-10 (the Facility will net out of PSD requirements for SO_2 based on the preliminary netting analysis). A BACT demonstration will be required for PM/PM-10, H_2SO_4 and possibly CO. As was discussed in Section 3.1.1, two scenarios are possible specific to the CO re-designation effort. CO is discussed in this section assuming the Queens County CO non-attainment area is re-designated as attainment. The following sections discuss modeling requirements.

Table 3-5: PSD Significant Emission Rates

Pollutant	Significant Emissions Rates (TPY)
Carbon Monoxide (CO)	100 [(a)]
Sulfur Dioxide (SO_2)	40
Total Suspended Particulate (PM)	25
PM-10	15
Nitrogen Oxides (NO_x)	- [(b)]
Ozone (measured as VOC)	- [(c)]
Lead	0.6
Fluorides	3
Sulfuric Acid Mist	7
Total Reduced Sulfur Compounds	10

(a) Included as a PSD pollutant if Queens County is re-designated as attainment for CO
(b) Not applicable to PSD since NOx is an ozone non-attainment (NSR) precursor pollutant. Based on preliminary netting analysis, there will be a net decrease in NOx emissions.
(c) Not applicable to PSD since VOC is an ozone non-attainment (NSR) precursor pollutant.

Source: U.S. EPA 1990, Table A-4.

Compliance with the NAAQS

Compliance with the NAAQS will be demonstrated for each PSD-affected pollutant. A key element in this demonstration will be the determination of whether any of the PSD-affected pollutants has significant impacts. For any pollutants with significant impacts, multi-source and increment consumption modeling will be performed. Impacts will then be added to background air quality levels to assess whether compliance with the NAAQS is maintained. These steps are discussed in further detail below.

Impact Area Determination

The first step of the ambient air quality analysis is to perform atmospheric dispersion modeling to determine if the facility will have significant impacts for those pollutants that did not net out of major source requirements and also have impacts standards (i.e., there are no standards for VOC). Impacts for these pollutants are compared to the U.S. EPA Signigicant Impact Concentrations (SIC's). These concentrations are presented in Table 3-6.

Table 3-6: U.S. EPA Significant Impact Concentrations

Pollutant	Averaging Period	Significant Impact Concentration (µg/m3)
Sulfur Dioxide (SO_2)	3-hour	25
	24-hour	5
	Annual	1
Nitrogen Dioxide (NO_2)	Annual	1
Carbon Monoxide (CO)	1-hour	2,000
	8-hour	500
Particulates (as PM & PM-10)	24-hour	5
	Annual	1

Source: U.S. EPA, 1990, Table C-4

Multi-Source Modeling

Facilities for which predicted significant impact concentrations are below the levels shown in Table 3-6 need not be evaluated further. Those for which predicted impacts exceed these values for one or more pollutants are considered to have an "area of impact" (which is defined as the area to the distance at which predicted air quality impacts fall below the SIC's). Those facilities must undergo further evaluation, including additional modeling in combination with existing major sources within 50 km of the proposed source's area of impact to evaluate compliance with NAAQS and NYAAQS. These compliance analyses will be performed using NYSDEC-recommended EPA guideline dispersion models and modeling methodologies. The technical guidance for the Facility

NAAQS compliance demonstration will be the NYSDEC Air Guide 26: NYSDEC Guidelines on Modeling Procedures for Source Impact Analysis (NYSDEC, 1996), and Air Guide 36: Emission Inventory Development for Cumulative Air Quality Impact Analysis (NYSDEC, 1995). Each of these guidelines were developed consistent with the U.S. EPA New Source Review Workshop Manual (U.S. EPA, 1990), and the U.S. EPA Guidelines on Air Quality Models (Revised), and incorporated in Appendix W of 40 CFR Part 51

New York County (Manhattan) is currently designated as a non-attainment area for PM-10 (40 CFR Part 81). Although the proposed project will be located in Queens County, which is an attainment area for this pollutant, the facility will be required to demonstrate that its emissions of PM-10 will not result in a significant impact on PM-10 levels in the New York County non-attainment area (6 NYCRR Part 231-2).

Increment Analysis

Additional modeling with other PSD sources, within 50 km of the proposed source's area of impact, to evaluate compliance with PSD increments, which define the maximum allowed incremental air quality impacts for all existing and proposed PSD sources. There are 3 classes of PSD increments, with the most stringent, identified as Class I, for pristine areas and the most lenient, Class III, reserved for the most polluted areas. The majority of the country, including the site area, is designated as Class II. The closest Class I areas are in Vermont and southern New Jersey. The PSD increments are presented in Table 3-7.

Ambient Air Quality Monitoring

Proposed facilities subject to PSD review may have to perform up to one year of preconstruction ambient air quality monitoring for those pollutants emitted in amounts exceeding the significant emission rates shown in Table 3-5, unless granted an exemption by the reviewing agency. U.S. EPA Region II can grant an exemption from the monitoring if: 1) the proposed source demonstrates that it will have maximum impacts below the pollutant specific significant monitoring concentrations (SMC's), which are presented in Table 3-8, or 2) representative, quality assured air quality data exists for those pollutants for which impacts are predicted to exceeds the SMC's. Accordingly, NYPA submitted to U.S. EPA a request for exemption from pre-construction ambient air quality monitoring (request dated July 26, 1999 from Ms. Ellen Koivisto-Fletcher of NYPA to Mr. Steven Riva of U.S. EPA). The U.S. EPA responded and agreed that representative data are available from any of several nearby state-run monitors and that NYPA did not need to implement a monitoring program. However, such approval came

Table 3-7: PSD Increments (μg/m3)

Pollutant[a]	Class I Increment	Class II Increment	Class III Increment
SO_2			
Annual [b]	2	20	40
24-Hour [c]	5	91	182
3-Hour [c]	25	512	700
PM-10			
Annual [b]	4	17	34
24-Hour [c]	8	30	60
NO_2			
Annual [b]	2.5	25	50

(a) There are no PSD increments established for CO

(b) Never to be exceeded

(c) Not to be exceeded more than once per year

Source: U.S. EPA, 1990; Table C-2.

Table 3-8: U.S. EPA Significant Monitoring Concentrations

Pollutant	Averaging Period	Significant Monitoring Concentration (ug/m^3)
Carbon Monoxide	8-hour	575
Nitrogen Dioxide	Annual	14
Sulfur Dioxide	24-hour	13
Particulate Matter (PM/ PM-10)	24-hour	10
Beryllium	24-hour	0.001
Fluorides	24-hour	0.25
Lead	3-month	0.1
Sulfuric Acid Mist, Total Reduced Sulfur, Reduced Sulfur	-	(a)

(a) Acceptable monitoring techniques not available

Source: U.S. EPA, 1990; Table C-3.

with a caveat that a record of all quality assurance and quality control measures must be provided for the monitoring site(s) selected as representative of the project site. U.S. EPA additionally requested that the record must demonstrate a minimum of 75 percent data capture and that the station had passed all audits.

A response letter was sent by NYPA to U.S. EPA on October 8, 1999 that identified the Intermediate School (IS) 155 monitor in Bronx County as representative for SO_2 and PM-10 and the Public School (PS) 59 monitor in Manhattan County as representative for NO_2. Included in the response letter, as an Attachment, was a letter from Mr. Leon Sedefian of NYSDEC to Ms. Annamaria Collechia of U.S. EPA, Region II that provided documentation acknowledging that the quality of the monitoring data met U.S. EPA quality assurance and quality control and capture requirements.

Additional Impact Analyses

The major source status of the proposed combined-cycle project means that certain additional analyses are required as part of the modeling assessment. These include modeling to assess potential for impacts to soils and vegetation, and visibility in the area surrounding the proposed plant.

Class I Area Impacts

Proposed major sources within 100 km of a Class I area must perform an assessment of potential impacts in this area. This includes the additional impact analyses described above as well as impacts on PSD increment, regional haze and deposition. The nearest Class I areas to the proposed project are the Lye Brook National Wilderness Area, in Vermont and the Edwin B. Forsythe National Wildlife Refuge at Brigantine, New Jersey located approximately 275 kilometers to the north/northeast and approximately 120 kilometers to the south, respectively. Since the proposed project is located well over 100 kilometers from the nearest Class I areas, the proposed project will not be required to assess air quality impacts at these sensitive air quality areas.

Best Available Control Technology Demonstration

Facilities subject to PSD must perform a BACT demonstration for those pollutants for which emissions are expected to exceed the SER's. A BACT demonstration consists of identifying all technically feasible emission control measures for each pollutant for the proposed size and type of combustion source (i.e. large, stationary combustion turbine). These control technologies are then rated according to their effectiveness from the most

to least effective (so-called top down approach) and then evaluated for their economic, environmental, and energy impacts. Environmental benefits are then related to cost effectiveness on a dollars (cost) per ton (of pollutant removed) basis and the technology with the optimal, incremental cost effectiveness selected as BACT for each pollutant. A BACT analysis will be required for PM-10, CO (if the CO non-attainment area in the New York Metropolitan Area is redesignated as attainment) and H_2SO_4. Although potential SO_2 emissions from the new facility exceed the PSD threshold, credits from the existing unit modification will offset these new emissions.

3.1.2.3 Non-Attainment New Source Review Requirements

In areas classified as non-attainment of the NAAQS for a given pollutant, the NSR (rather than PSD) permitting requirements of 6 NYCRR Subpart 231-2 are applicable to major new emission sources of that pollutant. Queens (Queens County), New York is designated as "severe non-attainment" for ozone (O_3), and is currently designated "moderate non-attainment" for carbon monoxide (CO) (40 CFR 81). NSR includes the need to apply LAER and obtain emission offsets.

For any given source, LAER is defined as the more stringent of the following criteria.

- The most stringent emission limitation contained in any state implementation plan for the subject class or category of source, unless the owner or operator of the proposed source demonstrates that such limitations are not achievable; or
- The most stringent emission limitation which is achieved in practice.

Pollutant specific LAER requirments are discussed below.

Major new sources of CO in a moderate non-attainment area are also subject to LAER control and emission offsets requirements at a 1.15 to 1 ratio (i.e., 1.15 tpy offset for every ton of potential Facility emissions), as well as demonstrating "net air quality benefit". However, the NYSDEC exempts otherwise subject sources from these requirements if potential CO emissions are below 100 tons per year (tpy) and the ambient air quality impact is insignificant. As previously noted, the U.S. EPA has initiated the process to re-designate the New York City Metropolitan area as in attainment for CO. As was discussed in Section 3.1.1, two permitting scenarios for CO will be considered to cover either outcome of the re-designation effort.

The preliminary netting analysis shows that the proposed project will net out of NSR requirements for NO_x.

Ozone

Since the proposed Facility will have the potential to emit 25 tpy or more of VOC it will be a major source of VOC, and LAER control will be required. A demonstration for the Facility will be made to establish the proposed LAER for VOC emissions. The U.S. EPA RACT/BACT/LAER Clearinghouse database will be reviewed to identify the approved LAER and supporting justification for recently permitted combustion turbine installations. Other information sources (e.g., state agency permit files) will also be reviewed to identify applicable case information to be incorporated into the LAER analysis. This analysis will entail a "top-down" approach akin to the BACT demonstration, but will be based on the above LAER criteria. It must be shown that any methods of potentially greater control than the proposed LAER are not appropriate or have not been adequately demonstrated.

Emission offsets for the potential annual VOC emissions of the Facility will be acquired at the ratio of 1.3:1 (i.e., 1.3 tpy offset for every ton per year of potential Facility emissions). These offsets, identified as NYSDEC-certified emission reduction credits (ERC), will be secured in conformance with 6 NYCRR Subpart 231-2 and the NYSDEC Air Guide 26 Appendix D, Interpretation of Subpart 231-2 Provisions on Emission Offset Source Location and Net Air Quality Benefit Analysis.

In addition, 6 NYCRR Subpart 231-2 requires an analysis of alternative sites, sizes, production processes, and environmental control techniques to be performed which demonstrates that the benefits of the proposed Facility outweigh the environmental and social costs imposed as a result of its location and construction in New York State.

3.1.2.4 Other Regulatory Requirements

NO_x Budget Program

As an electric generating unit with a capacity greater than 15 MW and a seller of electricity, the proposed combined-cycle project will be subject to NO_x budget requirements.

On September 27, 1994 the Ozone Transport Commission (OTC) adopted a Memorandum of Understanding (MOU) committing the signatory states to develop and propose region-wide NO_x emission reductions in 1999 (Phase 2) and 2003 (Phase 3) (NESCAUM-OTC, 1994). The NO_x Budget Model Rule implements the OTC MOU NO_x emission reduction requirement through a market-based "cap and trade" program.

This type of program sets a regulatory limit on mass emissions during the "ozone season" (May 1 through September 30) from a discrete group of sources, allocates allowances to the sources authorizing emissions up to the regulatory limit, and permits trading of allowances in order to effect cost efficient compliance with the cap on the state's emissions. The number of allowances allocated is limited by the cap on the state's emissions, and is not considered surplus in the same manner as emission reductions in an emission reduction-trading program.

To implement Phase 2 of the OTC MOU, the required emission reductions are applied to a 1990 baseline for NO_x emissions in the OTR to create a "cap", or emissions budget for each ozone season from 1999 through 2002. The budget would then be allocated as "allowances" to the emission units subject to the program (budget sources). Budget sources are defined as fossil fuel fired boilers and indirect heat exchangers of 250 mmBtu or greater, and electric generating units of 15 MW, or greater. Budget sources are defined on a unit level, meaning that each boiler or utility generator is considered a separate budget source. Beginning in 1999, the sum of NO_x emissions from all budget sources during the May through September control period can not exceed the aggregate number of allowances allocated to the state. An allowance is equal to one ton of NO_x emissions. The budget sources are allowed to buy, sell, or trade allowances to meet their needs.

Although the Phase 3 program elements are still being drafted among the participating OTC members, the allocation process will likely change and become "self-adjusting". Draft regulations being proposed for New York State will be codified as 6 NYCRR Part 204 (Proposed rules published in the New York State Register, June 30, 1999). Basically, allowances for an affected unit will be based on actual operations during specific, preceding control periods. For the 2003 control period (a control period represents each ozone season running form May 1 through September 30), the allocation formula will consider the greatest heat input experienced by an affected unit during the 1995 through 1998 control periods. Starting with the 2004 control period (and for each control period thereafter), the allocation formula will consider an affected units' greatest heat input during any single control period from the preceding three control periods.

Quantities of NO_x allowances will be set aside for new sources and to reward energy efficiency measures. The allowances that have been set aside will be provided to new sources to cover actual NO_x emissions; new sources will continue to have these allowances provided until the new facility is able to establish a three-year baseline of operations. At this point, the new facility is entered into the Phase 3 budget pool and will have allowances allocated to it following the formula applied to all other existing sources. U.S. EPA has published notice of proposed rulemaking which would approve the New York SIP for NO_x budget and allowance trading (64 FR 55667, October 14, 1999)

A facility subject to the provisions of the NO_x Budget Program must identify an Authorized Account Representative (AAR) and establish a NO_x Allowance Trading Account. The AAR is responsible for maintaining the facility account, including ensuring that enough allowances are in place in time to meet the regulatory deadline. Shortfalls in the account can be made up in several ways: transferring allowances from another facility account or outright purchase of the needed allowances. Sufficient quantities of allowances are available through NYSDEC new source set-aside allowances or through environmental brokerage firms.

In order to ensure that NO_x emissions do not exceed allowances, budget sources are required to monitor and report NO_x emissions during the control period of each year. The preferred method of emissions monitoring includes utilization of a sophisticated Continuous Emissions Monitoring (CEM) system, as approved under 40 CFR Part 75 (the Acid Rain Program). Although Part 75 need not be followed for the NO_x Budget program (the program allows for monitoring at a "near Part 75" level of effort), the proposed project will need to comply with Part 75 under the Acid Rain program. Any budget source currently subject to Part 75 monitoring must maintain and use that monitoring for emissions tracking under the NO_x Budget Program.

Acid Rain Program

Title IV of the CAAA required U.S. EPA to establish a program to reduce emissions of acid rain forming pollutants, called the Acid Rain Program. The overall goal of the Acid Rain Program is to achieve significant environmental benefits through reductions in SO_2 and NO_x emissions (the NO_x element of the program is only applicable to coal-fired utility units and will not be considered further in discussion since the proposed project will not fire solid fuels). To achieve this goal the program employs both traditional and market-based approaches for controlling air pollution. Under the program, existing units are allocated SO_2 allowances by the U.S. EPA. Once allowances are allocated, affected facilities may use their allowances to cover emissions, or may trade their allowances to other units under a market allowance program. In addition, applicable facilities are required to install and operate a CEM system. The CEM requirements (Part 75) of the Acid Rain Program include: an SO_2 concentration monitor or alternative surrogate method; a NO_x concentration monitor; a volumetric flow monitor; an opacity monitor; a diluent gas (O_2 or CO_2) monitor; and a computer-based data acquisition and handling system for recording and performing calculations.

Implementation of the Acid Rain Program by the U.S. EPA has been broken into two phases. Phase I of the program required 110 sources identified in the CAAA to operate

in compliance by January 1, 1995. Facilities identified in Phase II of the program are required to operate in compliance by January 1, 2000. Additionally, existing Phase II facilities were required to install and operate a certified CEM system after January 1, 1995. The proposed combined-cycle project is subject to the Acid Rain Program based upon the provisions of 40 CFR 72.6(a)(3) since the turbines are considered utility units under the program definition and do not meet the exemptions listed under paragraph (b) of this Section. The proposed facility will be subject to Phase II Acid Rain requirements and will be required to submit an acid rain permit application 24 months prior to the date on which the unit expects to begin service as a generator.

State Emission Limits

The sulfur content of the fuel is limited under 6 NYCRR, Subpart 225-1.2. The Facility is subject to the limit of 0.20% sulfur content designated for distillate oil in New York City. It is anticipated, however, that 0.05% sulfur distillate oil will be used by the Facility.

The particulate emissions for a stationary combustion installation firing oil, and with maximum heat input exceeding 250 mmBtu/hr, such as the proposed Facility, is limited by 6 NYCCRR Subpart 227-1.2 to 0.10 lb/mmBtu heat input. The PSD BACT requirement will result in a more stringent limitation.

Subpart 211.3 of 6 NYCRR will limit the opacity of Facility stack emissions to not greater than 20% (6-minute average), except for one 6-minute period per hour of not greater than 57%. Opacity is also regulated by 6 NYCRR, Subpart 227-1.3. Under 227-1.3, opacity is limited to not greater than 20% (6-minute average), except for one 6-minute period per hour of not greater than 27%.

State Reasonably Available Control Technology Requirements

Pursuant to 6 NYCRR Subpart 227-2, "reasonably available control technology" (RACT) requirements have been imposed on all stationary sources of NO_x. Although the facility will be subject to the requirements of Subpart 227-2, proposed use of SCR for NO_x control in conjunction with evolving low-NO_x turbine technology will result in NO_x emissions that will be below those required under RACT. In addition, specific Part 227-2 requirements related to recordkeeping and reporting will apply.

Risk Management Program

Accident and risk management regulations pursuant to Title III of the CAAA (40 CFR Part 68, section 112r) require a subject facility to develop a risk management program (RMP). The RMP requirement is triggered for each regulated toxic and flammable substance present on-site in greater quantity than its specified regulatory threshold. Each regulated toxic substance anticipated to be present at the Facility will be accounted for and quantified with respect to its respective threshold.

The facility may be designed to accommodate a dedicated aqueous ammonia storage tank for each combustion turbine, minimizing any consequence of accidental releases. If technically feasible, the Facility design and maintenance plan will ensure that the risk of potential impacts on the public is de minimis, triggering no more than minimal requirements under 40 CFR Part 68.

New York City Department of Environmental Protection (NYCDEP) Requirements

Local permitting and regulatory issues are subsumed in the Article X review process. Title 15 RCNY, Chapters 2 and 9 require that owners of gas- and oil-burning installations acquire a Certificate of Operation from the NYCDEP Bureau of Air Resources. The Facility will comply with all applicable NYCDEP requirements found in 15 RCNY Chapter 2 and 9. Discussions will be held with the NYCDEP Bureau of Air Resources to ensure that all necessary and applicable standards are met.

Title 15 RCNY, Chapter 41 requires a responsible party involved in the processing, storage, handling or use of regulated toxic substances to participate in a detailed facility reporting program with NYCDEP. Due to the proposed SCR NO_x control technology, the Facility may be subject to Chapter 41 requirements for aqueous ammonia (NH_3). (See also the discussions related to the Risk Management Program.)

Good Engineering Practice Stack Height

Section 123 of the CAAA required U.S. EPA to promulgate regulations to assure that the control of any air pollutant under an applicable State Implementation Plan (SIP) was not affected by: 1) stack heights that exceed Good Engineering Practice (GEP), or 2) any other dispersion technique. The U.S. EPA provides specific guidance for determining GEP stack height and for determining whether building downwash will occur in the Guidance for Determination of Good Engineering Practice Stack Height (Technical Support Document for the Stack Height Regulations), (U.S. EPA, 1985). GEP is defined

as "the height necessary to ensure that emissions from the stack do not result in excessive concentrations of any air pollutant in the immediate vicinity of the source as a result of atmospheric downwash, eddies, and wakes that may be created by the source itself, nearby structures, or nearby terrain "obstacles".

The GEP definition is based on the observed phenomena of atmospheric flow in the immediate vicinity of a structure. It identifies the minimum stack height at which significant adverse aerodynamics (downwash) is avoided.

The U.S. EPA GEP stack height regulations specify that the GEP stack height is calculated in the following manner:

GEP = HB + 1.5L

where: HB = the height of adjacent or nearby structures, and

L = the lesser dimension (height or projected width of the adjacent or nearby structures)

NYPA's combined-cycle project is proposed to be designed with two single flue exhaust stacks. Preliminary site layout indicates that the stacks will be located outside of the downwash zones caused by the existing power plant structures at the Charles Polletti Power Project (and at the adjacent Orion facility as well). The controlling structure for the proposed stack will be the new turbine building. For example, a turbine building that is designed to have a height of approximately 110 feet above grade level would result in a GEP stack height of approximately 275 feet above grade level.

3.1.3 Potential Emissions and Air Quality Impacts

Potential Impacts on Air Quality

The proposed facility turbines will be required to employ very efficient emission control technology and will primarily operate on clean burning natural gas; low sulfur distillate oil will be used only as a backup fuel. Preliminary studies have suggested that the emission impacts from the proposed facility will result in air quality concentrations that will meet applicable New York and Federal ambient air quality standards. A full air quality modeling analysis will be used to demonstrate the proposed facility meets the applicable air quality standards; the models and procedures to be used in the full analysis are discussed in Section 3.1.4.

Proposed Plant Emissions

The proposed combined-cycle project will result in emissions of several regulated air pollutants. Specifically, these pollutants include nitrogen oxides (NO_x), sulfur dioxide (SO_2), inhalable particulate matter (PM-10), total suspended particulate matter (PM), carbon monoxide (CO), and volatile organic compounds (VOC). Minute quantities of trace elements are in distillate oil, and these elements, specifically lead, will also be emitted. Selective Catalytic Reduction (SCR) using ammonia injection will be employed to reduce emissions of NO_x. A small quantity of un-reacted ammonia may also be emitted. This amount is likely not to exceed 10 ppm in-stack concentration. The following discusses the specific emissions expected from the proposed project.

Nitrogen oxides

NO_x forms as a result of fuel bound nitrogen and as a by-product of the combustion process itself. Typically, higher peak combustion temperatures result in higher NO_x emissions. The combustion gas turbines proposed for the project will utilize dry low-NO_x technology in which the peak flame temperature is reduced by increasing the size and duration of the flame front in the combustion chamber when firing natural gas. During distillate oil firing, steam or water is injected into the combustion chamber to act as a heat sink to lower the peak flame temperature. NO_x emissions are further reduced using SCR in which ammonia reacts with NO_x to form diatomic nitrogen (elemental) and water vapor. This process will significantly reduce NO_x emissions. NO_x emissions will be somewhat higher during periods of startup, fuel transfer, and off-peak loads, when the SCR may be not be operating at maximum efficiency.

Sulfur Dioxide

SO_2 is formed by the reaction of sulfur in the fuel and oxygen. Sulfur is present in trace amounts in natural gas as an odorant (methyl/ethyl mercaptan) and in light distillate fuel oil. Distillate oil usually has a minimum of about 0.05% sulfur by weight. The new turbines are expected to be permitted to allow the firing of fuel with sulfur contents similar to these quantities.

Particulate Matter (PM-10 and PM)

Particulate matter is present in exhaust gas as both unburned fuel carbon compounds and from trace mineral matter in distillate fuel oil. Additionally, the PM-10 component (that is, particulate matter with a mean diameter less than 10 micrometers) also includes those

compounds that are considered to condense from the hot exhaust gas to form small particles. This fraction is called condensible particulates and may represent a large fraction of the particulate emission during natural gas firing. Additionally, the condensible fraction may include ammonia compounds resulting from a reaction with sulfur trioxide and ammonia. The PM-10 emissions from the proposed project will include and account for both forms of particulate emissions.

The facility will utilize mechanical draft, wet cooling towers for condensing steam from the combined-cycle process. Particulate emissions result when escaping water droplets, known as cooling tower "drift", evaporate, leaving a mineral or salt particle behind. The facility will utilize high efficiency drift eliminators to minimize the quantity of escaping water droplets. Nevertheless, the resultant particulate emissions will be quantified and added to the total facility particulate emissions when considering regulatory applicability.

Carbon Monoxide

CO formation is typically the result of incomplete combustion of fuel within the turbine. Incomplete combustion typically occurs under start-up and low-load operating conditions. Since the project is located in an area that is currently designated as moderate non-attainment for CO, CO emissions may need to be controlled to LAER levels. As was previously noted, the need to consider LAER may be dependent on the Federal actions to re-designate the project area as in attainment for CO.

Volatile Organic Compounds

VOC emissions occur under the same conditions that form carbon monoxide. The combination of high efficiency turbine combustors, clean fuels and good operational practices will serve to minimize emissions of VOCs.

Ammonia

As previously discussed, ammonia is injected into the exhaust gas stream in order to react with nitrogen oxides to reduce the NO_x emissions. A small quantity of ammonia will remain un-reacted in the exhaust stream resulting in emissions of typically less than 10 ppm.

Hazardous Air Pollutants (HAPs)

It was previously noted that the use of distillate oil as a back-up fuel may result in the release of trace elements, specifically lead. Another source of hazardous air pollutant

(HAPs) emissions may be the facility's cooling tower. As was previously discussed, cooling tower operations will result in the release of "drift" water droplets that eventually evaporate, leaving behind a particulate. The cooling tower will use East River water for cooling. Trace elements in the cooling tower may end up being emitted in minute quantities as HAPs.

Fugitive Dust

The construction of the proposed project may result in sort-term and temporary fugitive dust emissions. While clearing and grading activities will be limited since the proposed site is paved, the transport and staging of the construction components on the site may generate fugitive particulate emissions. Where feasible, dust screens and water sprays will be used to minimize fugitive particulate emissions. The construction process is transient and is anticipated to last approximately 24 months. After which time all construction access roads will be paved or restored and all open soil areas will be covered with grass and plantings. Fugitive particulate emissions after construction are expected to be minimal.

3.1.4 Proposed Air Quality Modeling

Meteorological Data

A five-year surface and upper air meteorological database (1991 to 1995) will be used in the atmospheric modeling assessment. National Weather Service (NWS) surface data collected at LaGuardia Airport, located approximately 1.2 miles east of the project site will be used. This five-year period (1991 to 1995) represents the last period when surface data were manually collected at LaGuardia Airport; data is currently collected using automated means and does not allow for the proper calculation of atmospheric stability. LaGuardia Airport data is representative of site conditions as terrain features and proximity to major water bodies (which influence local climate) are nearly identical. Upper air data collected from the U.S. Department of Energy's Brookhaven National Laboratory site (NWS Station 94703) and Atlantic City Airport (NWS Station 93755) will also be used in the modeling assessment. Two stations are required to complete the five-year record as data collection at Atlantic City, located 103 miles south-southwest of the project site, was terminated in August, 1994 with the Brookhaven Laboratory site assuming responsibility at that time. The Brookhaven Laboratory site is located approximately 55 miles to the east, near the Twin Forks area of Long Island and midway between the north and south shores of Long Island. Brookhaven is the nearest location where upper air data is currently collected relative to the project site and is very much

representative of upper air conditions at the project site as both are influenced by the same continental/coastal features.

Atmospheric Dispersion Modeling

Standard U.S. EPA dispersion models will be utilized for the dispersion modeling studies. These models will include ISCST3 and SCREEN3 for simple terrain areas and ISCST3/COMPLEX 1, RTDM or CTSCREEN for complex (elevated) terrain areas.

Cooling Tower Fogging and Icing

The proposed facility steam turbine will use a closed loop circulating water condenser to condense spent steam and return the condensate for reuse. The circulating water in the condenser will be cooled using an evaporative (wet) cooling tower with plume abatement. An analysis of the cooling tower plume will be performed using the EPRI Seasonal Annual Cooling Tower Impacts (SACTI) Model to determine the frequency of occurrence of ground fog and/or ice formation (EPRI, 1984).

Cooling Tower HAPs

Pursuant to the requests of the New York State Department of Health (NYSDOH) made on similar projects, East River make-up water will be analyzed for the purpose of identifying and quantifying HAPs. Using mass balance, the HAPs will be assumed to be emitted from the cooling tower. Acceptable air concentration levels developed by NYSDOH or listed in NYSDEC's Air Guide-1 "Guidelines for the Control of Toxic Ambient Air Concentrations" (NYSDEC, 1991), will be used in assessing impacts from these HAPs as required. Specific analytical procedures proposed to be followed are detailed in Section 5.7 "Toxic Air Pollutant Analysis" of the Air Quality Modeling Protocol submitted to the NYSDEC in October, 1999.

Basically, the procedures for performing an impact analysis are well defined for those HAPs that are listed in Appendix C of Air Guide-1. For pollutants that are not listed in Air Guide-1 or that do have assigned concentration levels from the NYSDOH, pollutant-specific impact thresholds will need to be developed. The development of such impact thresholds will utilize toxicity information contained in Material Safety Data Sheets or the Merck Index and recommended exposure limits provided by the National Institute of Occupational Safety and Health (NIOSH) and/or the American Conference of Governmental Industrial Hygienists (ACGIH). This information will allow for the calculation of the impact thresholds, known otherwise in Air Guide-1 as short-term and annual guideline concentrations (SGCs and AGCs, respectively). For unlisted pollutants

that are classified as "High Toxicity", NYSDEC will be contacted to confirm specific procedures.

Modeling Protocol

The air quality assessment that will be reflected in the Article X application will be performed in accordance with a modeling protocol developed for and approved by the NYSDEC and U.S. EPA Region II. The modeling protocol will identify the modeling procedures and applicable models proposed for use in assessing the air quality impacts from the proposed facility. The protocol will be developed following guidance outlined in the following:

- U.S. EPA's "Guideline on Air Quality Models" (U.S. EPA, 1999, plus supplements);
- U.S. EPA's "Screening Procedures for Estimating Air Quality Impact of Stationary Sources, Revised" (U.S. EPA, 1992);
- NYSDEC's Air Guide 26 "NYSDEC Guidelines on Modeling Procedures for Source Impact Analyses" (NYSDEC, 1992);
- NYSDEC's Air Guide 1 "Guidelines for the Control of Toxic Ambient Air Contaminants" (NYSDEC, 1991, plus revisions); and

The protocol will determine the methodology to be used for the new source modeling study and for the cooling tower fogging and icing study. Should the results of the single source modeling study indicate impacts greater than the Significant Impact Concentrations, a multi-source modeling study will be required. In this case, a separate protocol for the multi-source modeling approach and source inventory verification procedure will be developed and submitted to NYSDEC for their review and approval. Procedures for verifying sources that need to be included in the multi-source modeling will follow NYSDEC's Air Guide 36 "Emission Inventory Development for Cumulative Air Quality Impacts Analysis" (NYSDEC, 1995).

3.1.5 Proposed Mitigation

The proposed combined-cycle plant will displace a portion of the required annual operation from NYPA's existing Poletti Project. As such, the reduction in annual emissions from the existing unit may result in a net decrease in emissions of certain pollutants. As necessary, an air quality analysis will be performed to quantify the emissions reductions due to the change in operations at the Poletti Project in conjunction with the emissions from the proposed combined-cycle project for those pollutants subject to PSD review.

The proposed cooling towers will incorporate plume abatement components to minimize the occurrence of visible plumes.

The construction of the proposed project may result in short-term and temporary fugitive dust emissions. Where feasible, dust screens and water sprays will be used to minimize fugitive particulate emissions. Following construction, all temporary access roads will be paved or restored, and all open soil areas will be covered with grass and plantings.

3.2 Land Use, Public Policy and Zoning

3.2.1 Land Use

Existing Conditions

Land use characteristics for the Queens Community District 1 and for the Borough of Queens are found in Table 3-9. Queens constitutes an urban land area with 64.3% of the 112.2 square miles of the borough consisting of residential uses and approximately 13% commercial/industrial/utility uses. When compared to the borough, Community District 1 is more industrial than the rest of Queens with only 39% of the 5.8 square mile district dedicated to residential uses and 30% commercial/industrial/utilities uses. The land uses adjacent to the NYPA/Con Edison site include residential (on the opposite side of 20th Street), commercial (interspersed along 20th Street and on 37th Street), and industrial (along 37th Street).

The area within one mile of the proposed project site also includes North Brother Island, South Brother Island, and portions of Wards Island, Rikers Island and the Bronx. North and South Brother Islands are small, uninhabited islands that provide habitat for various shorebirds (see section 3.5.3). Wards Island, located within Manhattan Community District 8, is occupied by various municipal facilities including the Wards Island Water Pollution Control Plant, Manhattan Psychiatric Center, Downing Stadium, Wards Island Park and the Triborough Bridge. Rikers Island is occupied by a prison managed by the New York City Department of Corrections. The area of the Bronx within one-mile of the proposed project site is predominantly industrial waterfront located in Bronx Community District 1. Major land uses within one mile of the proposed project site are shown in Figure 3-2.

Table 3-9: Land Use Characteristics

Land Use, 1998 - Queens Community District 1 **Total Land Area: 3,702 Acres, 5.8 Square Miles**			
	Lots	**Acres**	**%**
1-2 Family Residential	8,927	481	18.0
Multi-Family Residential	5,884	559	21.0
Mixed Residential/Commercial	1,410	107	4.0
Commercial/Office	709	136	5.0
Industrial/Manufacturing	934	338	13.0
Transportation/Utility	279	225	8.0
Public Facilities/Institutions	186	520	19.0
Open Space/Outdoor Recreation	33	169	6.0
Parking Facilities	465	74	3.0
Vacant Land	453	68	3.0
Joint Interest Areas			
Total	19,280	2,677	100.0
Land Use, 1998 – Borough of Queens **Total Land Area: 71,780 Acres, 112.2 Square Miles**			
	Lots	**Acres**	**%**
1-2 Family Residential	242,868	19,064	50.1
Multi-Family Residential	31,733	5,394	14.2
Mixed Residential/Commercial	10,498	822	2.2
Commercial/Office	6,442	1,503	4.0
Industrial/Manufacturing	4,116	2,070	5.4
Transportation/Utility	2,193	1,389	3.7
Public Facilities/Institutions	2,462	2,702	7.1
Open Space/Outdoor Recreation	423	4,323	11.4
Parking Facilities	3,706	571	1.5
Vacant Land	11,709	2,076	5.5
Joint Interest Areas	65	2,305	6.1
Total	316,215	42,219	100.0

Source: New York City Department of City Planning, Community District Needs, Queens, Fiscal Year 2000.

The NYPA/Con Edison site is bordered by the East River and Rikers Island Channel to the north and west, Steinway Creek and the Bowery Bay Water Pollution Control Plant to the east, and residential areas to the south (see Figure 1-1, Site Location Map). NYPA's Charles Poletti Power Project occupies a portion of the approximately 47 acres of NYPA's property, which is part of a 291-acre parcel shared with Con Edison. NYPA's existing facilities include the 825-MW Poletti Generating Station, an adjacent administration and warehouse building, an intake structure and discharge canal along the East River, a million gallon water storage tank, a switchyard, and miscellaneous ancillary facilities (i.e., foam pump house, underground piping, etc.). NYPA's facilities also include a fuel oil tank farm consisting of six oil storage tanks, located at the eastern end of NYPA's property. The Astoria Light, Heat and Power Company's original powerhouse building remains near the proposed project site. A large portion of the NYPA property is open and either grassed or paved; the paved area is used for outdoor storage of miscellaneous equipment. The location and layout of NYPA's existing facilities are shown on Figure 2-1.

The proposed project site is a four-acre, undeveloped parcel of land located adjacent to NYPA's existing tank farm and an area occupied by several simple cycle combustion turbines operated by Con Edison. The proposed facility site is presently a paved parking lot and was previously used for contractor parking. The area is now used for outdoor storage of miscellaneous equipment and materials. The location and general layout of the proposed 500 MW combined-cycle plant is shown on Figure 2.1.

Land Use Changes and Potential Impacts

NYPA's proposed combined-cycle project will be located in the middle of a complex of existing power generating and support facilities on property that has been used for the generation of electric power for nearly a century. As such, the proposed project can be viewed as a continuation and expansion of the current land use of this area. In addition, because of the extent of the property controlled by Con Edison and NYPA, the proposed project site is isolated from the adjacent residential community. Accordingly, the siting of the proposed project is expected to have minimal land use impacts of the kind that are typically associated with industrial facilities on greenfield sites.

Temporary construction impacts, such as increases in ambient noise levels from construction vehicles, may be experienced in the nearby neighborhood. However, these potential impacts are not anticipated to be significant due to their temporary nature. All proposed construction will be in accordance with applicable local construction standards and conditions of the regulatory approvals to be obtained for the proposed project.

Proposed Studies

The assessment of potential land use impacts will take into consideration existing land uses and development plans in the vicinity of the site. Proposed studies to assess potential land use impacts in the project vicinity will involve the documentation of existing and proposed land uses surrounding all elements of the proposed project. Future land use plans for the surrounding neighborhoods, including any proposed large-scale developments, will be determined through conversations with city planning officials, the review of published planning documents, and feedback/information obtained through public outreach efforts with potentially affected stakeholders. Sensitive receptors will be identified by consulting with community/city officials, and the significance of potential impacts to these receptors assessed. The Article X Application will discuss the proposed project's consistency with local plans and land use policy.

Potential Mitigation

The need for mitigation to address issues associated with land use is not anticipated. The potential for significant land use impacts has been greatly reduced through the siting of the proposed project in an industrial zone on a site located within the middle of a complex of existing power generating facilities.

3.2.2 Zoning and Public Policy

Existing NYC Zoning

The New York City Zoning Map of the Project area can be found in Figure 3-3. The proposed site is in the M3-1 zone, a zone established for heavy industries which generate noise, traffic and pollutants. Power plants are a permitted use in the M3-1 Industrial Zone. All uses in this zone must meet performance standards which establish limits on the amount and types of industrial nuisances which may be created.

The maximum floor area ratio in the M3-1 zone is 2.00. Floor area ratios have been established to control both building size and the level of activity and congestion in manufacturing districts. Parking is required for facilities permitted in the M3-1 zone.

New York State Coastal Zone Management Program

The NYPA/Con Edison site is located within the coastal zone of the State of New York. Accordingly, NYPA's proposed project will need to be reviewed for consistency with the

New York State Coastal Zone Management Program, which was established in 1981 by the Waterfront Revitalization and Coastal Resources Act and is administered by the New York State Department of State (NYSDOS). The Coastal Management Program is based on 44 policies covering waterfront revitalization, public access, water quality, fish and wildlife habitats, navigable waterways, and coastal erosion.

A Plan for the Queens Waterfront (New York City Department of City Planning, 1993) was prepared as part of New York City's Comprehensive Waterfront Plan (NYCDCP, 1992). The City's Comprehensive Waterfront Plan presents a long-range vision and practical strategies to guide land use and development. The Plan recognizes four principal functions of the waterfront : the Natural Waterfront, the Public Waterfront, the Working Waterfront, and the Redeveloping Waterfront. According to the Queens Waterfront Plan, the NYPA/Con Edison site is part of the Upper East River Reach (Reach 11); the Plan recognizes that Reach 11 is dominated by major working waterfront facilities of citywide significance, including LaGuardia Airport, Rikers Island, the generating facilities of Con Edison and NYPA, and municipal facilities such as the Bowery Bay Water Pollution Control Plant.

Project Conformance with Plans and Zoning

Since the site is zoned and used for heavy industrial uses, the project is consistent with existing land uses and the designated zoning. The redevelopment of this industrial site is consistent with New York City's objective to locate heavy industrial uses within existing brownfield sites. The reuse of an existing industrial site also contributes to the minimization of environmental impacts.

Proposed Studies

The proposed project will be reviewed for compliance with applicable zoning standards in the M3-1 zone. Additional discussion with local planning officials will be conducted to assess the proposed project's compliance with applicable zoning and development standards.

The proposed project will also be reviewed for consistency with the coastal zone management policies of New York State and consistency with the Plan for the Queens Waterfront. A coastal zone consistency certification will be prepared and submitted to the NYSDOS for their concurrence.

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Potential mitigation

No mitigation is anticipated to be required to address potential zoning impacts. The proposed construction and operation of all project components will be designed to be consistent with applicable local zoning requirements to the maximum extent practicable. Should there be any areas where zoning requirements are unreasonably restrictive in view of existing technology, the Article X Application will seek the necessary findings and determinations from the Board to allow for construction and operation of the proposed facility.

3.3 Soils, Geology, and Hydrogeology

Existing Conditions

The proposed site is relatively flat with a general elevation of approximately 15 feet above mean sea level (msl). Most of the adjacent area in Astoria is also relatively level with elevations ranging up to 50 feet above msl. No significant natural topographic features are found in the project vicinity or surrounding area of Queens. In general, Queens County constitutes an urban land area where the soils have been so mixed, excavated or covered with fill that no attempt has been made to identify the different kinds (Cline and Marshall, 1977).

A subsurface investigation and foundation report was prepared for the nearby administration and warehouse building by Stetson-Harza in 1988. Based on this report, existing topsoil in grassed areas near the warehouse site was found to be up to one-foot-thick. Paved areas had up to two feet in thickness of asphalt and gravel. The proposed warehouse site was overlain by a 3-foot-thick to 9-foot-thick layer of apparent fill material consisting of gravel, silty sand, cinders, and brick. Soils below the fill consisted of gray and brown sand. The sand was widely graded from fine to coarse with gravel and occasional boulders and varied in density ranging from very compact to loose. Bedrock consisted of a gray mica schist with an upper decomposed layer. The decomposed layer varied from zero to 4 feet in thickness. The depth to bedrock varied from approximately 16 feet to 26 feet. At the existing adjacent warehouse location, bedrock was found at a depth of approximately 33 feet and 46 feet (referenced from finished first floor datum (elevation16.0 feet)). These same general conditions are expected to be found at the proposed combined-cycle plant site.

According to the seismic zone map published in the Uniform Building Code of the United States, the proposed site is located in Zone 1, which denotes areas which may

sustain minor damage in a future earthquake event, corresponding to intensities V and VI of the MM Scale (Modified Mercalli Intensity Scale of 1931).

Four groundwater monitoring wells were installed in 1992 at the perimeter of the existing oil storage tank farm to comply with NYSDEC regulations for bulk storage of petroleum. The following information was provided in a report regarding the installation of those wells, prepared by Mid-Hudson Geosciences dated April 8, 1992.

Depth to groundwater ranged from less than 10 feet at the well south of the tank farm to 12 feet near the shoreline, north of the tank farm. Groundwater elevations and hydraulic gradient were estimated from the individual wells. As expected, groundwater flow is towards the East River. (Based on the earlier subsurface investigation at the administration and warehouse building, depth to groundwater in that area, which is approximately 1,000 feet southwest of the tank farm, was between 5 feet and 8 feet below the ground surface elevation).

Potential Impacts

The soil and subsurface conditions at the project site will have a direct bearing on the foundation requirements for the proposed plant. The previous subsurface investigation for the warehouse building concluded that the subsurface soils were unfavorable to provide adequate support for the administration and warehouse building. However, the relatively shallow underlying bedrock was determined to be fully capable of providing support using a pile foundation system.

Proposed Studies

A geotechnical investigation of the proposed project site is planned to gather site specific information regarding subsurface conditions, depth to bedrock, and depth to groundwater. The proposed program consists of about 27 borings; about 23 in the main plant area and 2 in each of the cooling tower areas. The results of this geotechnical investigation program will be used to develop the foundation design and will be summarized in the Article X Application.

In conjunction with the geotechnical investigation program, a preliminary site assessment (PSA) will be conducted in accordance with NYSDEC guidelines. The purpose of this (PSA) is to assess the subsurface soil and groundwater conditions beneath the site prior to construction of the proposed project and to identify whether any subsurface contamination remains from past industrial activities or adjacent sites. To meet these objectives, representative soil samples will be collected from soil borings advanced

during the geotechnical investigation, and groundwater samples will be analyzed from two proposed monitoring points and four existing groundwater monitoring wells. Results from this program will be reported to the NYSDEC and summarized in the Article X application.

3.4 Surface Water and Aquatic Resources

This section provides an overview of the surface water resources in the vicinity of the proposed combined-cycle project. Included is a description of the physical and hydrodynamic characteristics of the East River, an overview of the operational characteristics of the existing Charles Poletti Power Project cooling and makeup water systems, and an overview of aquatic and ecological resource data and information. The baseline sources of environmental information identified will be used to assess the water resource related impacts of the proposed project. The projected water supply requirements for the proposed project were described in Section 2.3.3. A preliminary water balance diagram is presented as Figure 2-4.

3.4.1 Physical and Hydrodynamic Characteristics of the East River

The East River is a tidal straight that connects New York Harbor to Long Island Sound. The New York Harbor (Upper Bay) entrance is between the Battery and Governors Island while the sound entrance is between the Throgs Neck and Willets Point. The East River's width varies from approximately 0.25 miles to 0.6 miles and acts as a physical boundary separating the western portion of Long Island and Queens from Manhattan. Tributaries to the East River include the Harlem, Bronx and Flushing Rivers.

Typically, two ebb tides and two flood tides occur every 24.83 hours in the East River. The mean tide range in the East River is 7.1 feet at Willets Point, 5.1 feet at Hell Gate and 4.6 feet at the Battery. Table 3-10 summarizes tidal amplitudes in the East River from Tallman Island to the Queensboro Bridge.

Maximum current velocity in the East River exceeds 5 knots at Hell's Gate, 3 knots at the Brooklyn Bridge and 1.5 knots north of Governors Island. The current past the intake of the existing station typically ranges between 2.75 and 3.4 knots (4.5 to 5.7 feet/second) on a flood tide and 2.0 to 2.5 knots (3.4 to 4.2 feet/second) on an ebb tide.

The strong tidal currents noted above result from differences in both amplitude (tidal stage) and phase (timing) of the tides experienced in New York Harbor and Long Island Sound. During each tidal cycle the water surface in Long Island Sound alternately rises

Table 3-10: East River Tidal Amplitudes*

Location	Mean Higher High Water	Mean High Water	Mean Low Water	Extreme Low Water
North Boulevard Bridge, Flushing	7.4	7.1	0.3	-4.0
North Brother Island	7.2	6.9	0.3	-4.0
Hell Gate, Hallets Point	5.7	5.4	0.3	-4.0

*Elevations in feet above or below Mean Lower Low Water

Source: NOAA Navigational Chart No. 12339, East River – Tallman Island to Queensboro Bridge

above and falls below the level in New York Harbor at the Battery. In addition, high tide in New York Harbor typically occurs from 1.5 to 3 hours before high tide in Long Island Sound. As a result, current reversals are generally offset from the time of high or low tide throughout most reaches along the river. Tidal characteristics in the East River are also influenced by channel geometry, winds, and fresh water inflow. Variations in channel geometry include changes in width, depth, cross sectional area, slope and the presence or absence of obstructions (islands).

Existing documentation (tide stage and current measurements from prior studies) coupled with data available from the National Oceanic and Atmospheric Administration (NOAA) and the United States Geological Survey (USGS) provide a foundation for characterizing the tidal dynamics of the East River.

Upper East River Reach

NYPA's proposed combined-cycle project site is located in the Upper East River Reach (Reach 11) of northwestern Queens. Reach 11 stretches from Orion's Astoria power plant to the Flushing River, east of LaGuardia Airport. The curving shoreline of the reach borders Steinway Creek, Bowery Bay, and the western side of Flushing Bay and the Flushing River. The reach encompasses parts of Queens Community Districts 1, 3, and 7 and adjoins the neighborhoods of Astoria, Jackson Heights, East Elmhurst and Flushing (See Figure 3-4).

The shoreline of Reach 11 was greatly altered by fill used to create the major working waterfront facilities, notably the LaGuardia Airport, the Astoria power plant and the Rikers Island Correctional Facility. Despite the widespread alteration, some original and

re-emerging natural areas are found along Flushing Bay and the Flushing River. The water quality goal for this part of the East River is rated "I" by the New York State Department of Environmental Conservation, which means that it is not swimmable and that recreational uses such as fishing and boating are the best intended uses.

The reach is zoned primarily for heavy and light industrial use. Upland residential areas are primarily zoned for low density residential uses, with medium-density and residential zones located within the commercial district in Downtown Flushing Queens. Two wastewater treatment plants are located within Reach 11 of the East River. The Bowery Bay Water Pollution Control Plant (WPCP) is located between the Castle Oil facility and Bowery Bay, approximately 4,500 feet southeast from the proposed project site. The Bowery Bay WPCP effluent is discharged directly into the East River. The Bowery Bay WPCP was built in 1939 by the Department of Public Works on 45 acres and treats an average of 105-110 million gallons of wastewater per day. The plant has a NYSDEC-permitted capacity of 150 million gallons per day.

The second wastewater treatment plant is the Tallman Island WPCP, located approximately 3.6 miles east of the proposed project site. The Tallman Island WPCP discharges to the Flushing River. It has been noted that the Flushing River has long been polluted by runoff from uses near the river and by the untreated effluent that enters the Flushing River during heavy rains when the Tallman Island plant is unable to handle the combined storm water and sanitary sewage. Water quality in the Flushing River and Flushing Bay are anticipated to improve as a result of the construction of a 40 million gallon Combined Sewer Overflow (CSO) tank which is scheduled to be operational in 2001. This tank will retain the untreated effluent that would have been discharged into the Flushing River during periods of heavy rain, and the effluent will then be treated at the Tallman Island plant during dry weather when capacity is available.

West Queens Reach

The West Queens reach (Reach 12) stretches six miles along the East River from the Astoria Con Edison power plant at 20th Avenue south to Newtown Creek and the border of Brooklyn. The reach encompasses parts of Queens Community Districts 1 and 2 and includes the waterfront portions of Astoria (20th Avenue and Broadway), Ravenswood (from Broadway to 37th Avenue) and the Hunters Point section of Long Island City (See Figure 3-5).

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This section of the Queens coastline was created by fill, and the edge is either bulkhead or riprap. There are no significant natural areas or wildlife habitats in Reach 12, although

the East River is an important fish migration route and some shallow, protected areas (e.g., Pot Cove and Hallets Cove) provide calm waters for fish nesting and feeding.

Similar to Reach 11, the waters of Reach 12 are rated "I" by the New York State Department of Environmental Conservation, meaning that their best intended uses is for recreational activities such as fishing or boating. This standard is usually met at the surface, but levels of dissolved oxygen can occasionally fall below the Class I standard at lower depths.

There is a general distinction in the reach's zoning and land use between the waterfront north of the Queensboro Bridge (Astoria and Ravenswood) and the area to the south (northern Hunters Point). Land use in the northern section of the reach consists of a mix of parkland, residential, public utility and light industrial uses along the water, and residential or mixed residential/industrial communities upland. In the southern section, large vacant waterfront sites contrast with a busy upland industrial area and the mixed-use community of Hunters Point. There are few industries located along the southern section of the waterfront and no heavy industrial uses, despite the area's M3 zoning.

3.4.2 Water Quality in the East River

Water quality data provided in this section (temperature, DO, salinity and pH) were taken from an impingement and entrainment study conducted by Consolidated Edison at the Astoria Generating Station. This study was performed for a one-year period that began in January 1993.

pH

The average daily pH values observed at the Astoria Generating Station intake during the 1993 Con Edison Entrainment and Impingement Study varied over the sampling year, from a low of 6.9 to a high of 8.2. The pH values were slightly higher in the spring.

Water Temperature

Water temperature is an important environmental factor affecting aquatic biota. The temperature of the surrounding environment influences the physiologic processes of most aquatic organisms. Within aquatic ecosystems, temperature varies both temporally (seasonally and daily) and spatially across the length, width and depth of the estuary.

The daily water temperatures observed at the intake structure of the Astoria Generating Station during the 1993 entrainment and impingement study followed a typical seasonal

pattern. Water temperatures ranged from 2.0°C to 6.0°C from January through March. Average intake temperature then rose steadily throughout the spring and summer, reaching a high of 25°C at the end of August. Water temperature then declined the remainder of the sample year.

Temperature data collected at the Poletti Project intake in 1999 and 2000 will be used along with temperature data from the Astoria Generating Station, the USGS and NOAA to evaluate the thermal impacts of the proposed combined-cycle project.

Salinity

Salinity has a major role in determining and understanding the distribution and abundance of marine life within the East River. Knowledge of the salinity and temperature distributions can also provide considerable insight toward understanding its hydrodynamic and mixing characteristics. Salinity also influences other water quality characteristics. For example, both temperature and salinity impact the saturation concentration of dissolved oxygen. Similarly, salinity variations can alter the species composition of dissolved anions and cations.

The salinity range observed at the Astoria Generating Station intake structure during the 1993 entrainment and impingement study reflected the characteristics of a tidal strait. The average intake salinity levels fluctuated between 20 and 24 parts per thousand (ppt) for most of the year. From mid-March to early May salinity levels declined to 17 to 20 ppt, reflecting increases in freshwater flow during spring runoff.

Salinity data collected at the Poletti Project intake in 1999 and 2000, along with other relevant information, will be used in assessing potential impacts from the proposed project.

Dissolved Oxygen

Dissolved oxygen (DO) is one of the most important constituents of natural water systems. Fish and other aquatic animal species require oxygen to live. A minimum of 2 mg/L of dissolved oxygen is required to maintain higher life forms, although some species require more. In addition to this life sustaining aspect, oxygen is important because the end products of chemical and biochemical reactions in anaerobic (i.e., oxygen poor environment) systems often produce aesthetically displeasing colors, tastes and odors.

The DO observed at the Astoria Generating Station intake structure during the 1993 entrainment and impingement study exhibited seasonal patterns. DO concentrations averaged 10.1 mg/l during January 1993 and the concentrations rose slightly as water temperatures dropped in February/March. A high of 11.9 mg/l was recorded at the intake on March 18, 1993. The DO concentration then fell through the spring and summer, reaching a low of 2.8 mg/l in mid-August.

Dissolved oxygen data collected at the Poletti Project intake in 1999 and 2000, along with other relevant information, will be used in assessing potential impacts from the proposed project.

Toxins

Toxic substances believed to pose the greatest risk to the East River fall into three major categories: pesticides and herbicides; heavy metals; and organic contaminants including polychlorinated biphenyl (PCBs) and polynuclear aromatic hydrocarbons (PAHs). These contaminants may be acutely toxic or occur at levels that cause chronic or sublethal effects in organisms. Certain toxins can also bioaccumulate, concentrating in tissues of organisms higher in the food web.

Trace concentrations of metals are a natural component of the aquatic ecosystem, but can result in acute or chronic effects at elevated concentrations. Metals data available from the EPA STORET database indicate that most metals concentrations in the East River are within water quality standards.

Although data on toxic substances are available for the East River, additional samples will be collected at the existing intake structure to confirm current concentrations and supplement the existing database. Three sets of samples will be obtained and analyzed for the constituents listed in Table 3-11.

3.4.3 Fisheries

Fisheries studies conducted by Lawler, Matusky and Skelly, Inc. (LMS) just north of Newtown Creek on both the east and west shore of the East River during the 1980s showed a diverse assemblage of fish species (LMS 1986 and 1989). Fifty-four species of fish were found in the East River in the vicinity of Newtown Creek. Winter flounder, striped bass, Atlantic tomcod, grubby, bay anchovy, white perch, American shad, and northern pipefish comprised 95% of the fish collected during these studies.

Table 3-11: List of Chemical Constituents to be Sampled at the Existing Intake

Constituent	Sample Type
Total Suspended Solids (TSS)	Grab
Total Organic Carbon (TOC)	Grab
Biochemical Oxygen Demand (BOD)	Grab
Ammonia	Grab
Nitrate/Nitrite	Grab
Phosphate (as PO_4)	Grab
Total Dissolved Solids (TDS)	Grab
Salinity	Grab
Conductance	Grab *
Hydrogen ion concentration (pH)	Grab *
Chloride	Grab
Magnesium	Grab
Alkalinity	Grab
Iron	Grab
Silica (SiO_2)	Grab
Manganese	Grab
Sulfate	Grab
Polynuclear Aromatic Hydrocarbons (PAHs)	Grab
Pesticides/Herbicides	Grab
Polychlorinated biphenols (PCBs)	Grab
Priority Pollutant Metals (13)	Grab

*Field determination

Data were collected on the number of fish and invertebrates entrained and impinged at the Astoria Generating Station and the Ravenswood Generating Station during the early 1990's. Sixty-one species were collected in the Astoria Generating Station and Ravenswood Generating Station impingement studies. Forty-six species were marine fish with the remainder either freshwater, estuarine, catadromous, or anadromous.

The five most abundant species found during the studies were Atlantic herring, bay anchovy, conger eel, winter flounder and Atlantic tomcod at Astoria and winder flounder, grubby, northern pipefish, Atlantic silversides and Atlantic herring at Ravenswood.

Impingement data were collected at the Astoria Generating Station from November 1977 through November 1978. The predominant species found during that monitoring program included striped sea robin, blueback herring, winter flounder, striped bass and the grubby.

The number of species found during the 1977-1978 study period is considerably less than the number of species (61 species) found in the Astoria and Ravenswood studies in the early 1990's. The increase in species found between 1978 and 1993 occurred concomitant with improvement in water quality in the East River, such as increased DO levels, following implementation of the Clean Water Act.

Data and information collected during the 1999 and 2000 impingement and entrainment studies at NYPA's Poletti Project will be used in conjunction with past studies conducted along the East River to characterize potential fisheries impacts associated with the proposed combined-cycle project.

3.4.4 Proposed Water Requirements and Wastewater Generation

Projected circulating water supply requirements for the proposed project are estimated to range from 6 to 10 million gallons per day (mgd). This water will be obtained through a new intake structure located adjacent to the existing Poletti Project intake on the East River.

The proposed facility's wastewater effluent volume is projected to be considerably less than the facility's water demands, averaging less than 4 mgd, because of evaporative loss within the cooling tower system. The wastewater will consist primarily of naturally occurring dissolved salts and minerals (i.e., those present in the river water supply) which have been concentrated through evaporation in the cooling tower. Additional wastewater will be added by the demineralizer system. Demineralization and discharge of cooling tower blowdown are both critical operational processes to prevent the buildup of scale and protect internal components.

The proposed project has three features that will markedly reduce water requirements and thus, entrainment and impingement of aquatic life, compared with conventional generating stations.

Feature 1: The proposed facility will utilize combined-cycle technology. With this technology, only 1/3 of the electrical output from the proposed project will rely on the steam cycle, the remaining 2/3 will be generated by combustion turbines. This is important because the need to condense steam when using the steam cycle is directly related to the cooling water requirements of the facility. Compared with simple cycle steam-electric power plants, the excess heat generated (i.e., heat energy requiring cooling) for the proposed facility per MW of power output is only about 33% of the excess heat generated in simple cycle plants. Because less excess heat is generated,

combined-cycle technology is more than twice as efficient with respect to water use than facilities using simple cycle steam-electric technology.

Feature 2: The proposed project will use mechanical draft cooling towers to dissipate excess heat rather than relying on a conventional "once-through" cooling water system. The once-through cooling water requirements for a 500 MW combined-cycle facility are estimated to range between 100 and 150 million gallons per day (mgd). In contrast, using cooling towers will limit cooling water makeup requirements at the proposed project to less than 10 mgd for the proposed design. This represents a reduction in cooling water of about 90% compared with a once-through cooling water system.

Feature 3: Operation of the proposed project will maximize reuse/recycle of internally generated low volume waste streams such as boiler blowdown. This will further reduce the volume of cooling water used by the proposed project from about 90% to about 95% compared to once-through cooling.

Cooling Tower System

After steam passes through a turbine generator, it must be condensed prior to reuse. This is accomplished through heat exchange in a condenser. In the condenser, residual heat from the steam turbine exhaust is transferred to the circulating water. The loss of heat energy condenses the residual steam and increases the temperature of the circulating water (the medium to which the heat is transferred). Circulating water pumps then move the heated water from the basin of a mechanical draft cooling tower to the condenser. From the condenser the circulating water flows to the top of a mechanical draft evaporative cooling tower. In the cooling tower, this water will be cooled by evaporation as it falls through baffles in the upward flowing air stream induced by the cooling tower fans. After the addition of makeup water to replace that portion lost to evaporation, drift and blowdown, the cooled water is pumped back to the basin.

Chemical additives are required to ensure proper cooling tower operation. The chemicals likely to be used in the cooling towers of the proposed project are listed in Table 3-12. The table also identifies why each chemical is required.

The volume of cooling tower blowdown will vary depending on the allowable cycles of concentration required to control scale formation and prevent excessive corrosion. An engineering review of water quality data suggests that using water from the existing intake will enable the system to operate at 1.5 to 2 cycles of concentration. The corresponding blowdown volume is expected to range from 1,800 to 2,800 gpm.

Other Water Sources and Waste Streams

Potable water for the facility will be obtained from the municipal distribution system. This source will satisfy demineralizer makeup water requirements and meet miscellaneous plant maintenance needs.

Table 3-12 Cooling Tower Chemical Additive Program

Chemical	Dose	Purpose
Sulfuric Acid	As required (approximately 100 gallons/day)	Maintain proper pH range for discharge; Limit potential for scale formation; Control corrosion
Sodium hypochlorite	In accordance with NSPS dosing requirements (approximately 15 gal/day)	Prevent biofouling of tower
Corrosion Inhibitor (phosphonate)	Vendor Specific	Control corrosion
Dispersant	Vendor Specific	Limit deposition
Bromine	Vendor Specific	Alternative biocide
Non-oxidizing Biocide	Vendor Specific	Periodic treatment for slime formation

High purity demineralized water is required for HRSG boiler feedwater makeup, water or steam injection for NO_x control under oil firing and compressor cleaning. The high purity demineralized water is used to prevent scale formation and minimize corrosion of internal components. The treatment train will consist of multimedia filtration followed by cation/anion exchange and ultrafiltration units.

Multimedia filtration will be used as a preliminary treatment step to remove any suspended matter in the potable water supply that could damage pumps or downstream treatment equipment. Given the high quality makeup supply, backwashing of the multimedia filters should only be necessary on an infrequent basis. When required,

backwash water will be pumped through the multimedia filter. Effluent will be pumped to the cooling tower pretreatment system.

The cation/anion exchange units will be regenerated on-site. Regeneration consists of dosing the units using sulfuric acid and/or sodium hydroxide to restore the cation/anion exchange capacity of the synthetic resins. The regenerant waste stream and subsequent rinse waters will be routed to a neutralization tank for pH adjustment and then pumped to the cooling tower basin. The regenerant and rinse water from the neutralization tank are expected to have a lower total dissolved solids concentration than the cooling tower circulating water. Therefore, recycling this waste stream represents an ideal source for offsetting cooling tower makeup requirements.

Process waste streams targeted for internal recyle/reuse include boiler blowdown, demineralizer rinse water, neutralized regenerant water, and clarified backwash water from multimedia filtration. Nevertheless, some blowdown of the cooling tower is required to prevent excessive buildup of dissolved solids. Buildup results primarily from the concentration of dissolved salts and minerals contained in the cooling tower makeup water due to evaporative water loss.

Low Volume Waste Streams

Other sources of process wastewater include plant floor drains, boiler blowdown, and offline compressor cleaning wastewater, stormwater runoff. A description of these wastewater streams follows.

Floor Drains

Individual floor drain collection systems will be provided for the turbine building, the boiler building, and the water treatment building. All floor drains located in areas of the plant where oil is used, stored or handled will be directed to an oil water separator prior to discharge to the sewer. Floor drains serving areas of the proposed facility where routine maintenance will be limited to periodic washdown will be routed directly to the sewer.

HRSG Blowdown

Periodic blowdown of the boiler is required in order to protect against scale formation and internal corrosion. The typical blowdown rate for each HRSG is estimated to range between 10 and 20 gpm. Chemical conditioners added to the boiler include ammonia to control pH; hydrazine as an oxygen scavenger; and trisodium phosphate as a scale

inhibitor. The corresponding feed rates are estimated to be 1 gallon/day for ammonia, 0.5 gallons per day for hydrazine, and 5 pounds per day for trisodium phosphate.

Compressor Cleaning

Both on-line and off-line washing is required for the combustion turbine compressor. During an on-line wash, demineralized wash water will be evaporated in the combustion turbine exhaust stream. During an off-line wash, demineralized water will be collected for off-site disposal. The periodic off-line wash rate is about 80 gpm for 20 minutes.

Stormwater Runoff

Impervious surfaces will be added to the site as a result of the proposed project. To mitigate potential increases in peak runoff flows and to control stormwater quality, a stormwater management system will be developed and implemented. A description of stormwater management techniques currently under consideration is included in Section 3.6 – Stormwater Management.

Pollutants Contained in Low Volume Waste Streams

In accordance with New Source Perfromance Standards (NSPS) criteria, the quantity of pollutants discharged from low volume waste sources will not exceed the following concentration based limits:

Constituent	Maximum for any one (1) day	30 day average
Total Suspended Solids (TSS)	100.0 mg/l	30.0 mg/l
Oil & Grease	20.0 mg/l	15.0 mg/l

Based on operating experience oil and grease are not expected to be contained in the low volume waste streams discharged to the cooling tower. Waste streams potentially containing oil and grease will be collected in a separate system, routed to an oil water separator and discharged to the sewer following treatment.

Hydrogen Ion Concentration

NSPS criteria (40 CFR 423.15) require that the pH of all discharges, except cooling tower blowdown, must be within the range from 6.0 to 9.0 standard units. The pH of cooling tower blowdown from the facility will also be maintained within the allowable range for Class SB waters.

To accomplish this the cooling tower will be equipped with a continuous recording pH meter and sulfuric acid feed system. The acid feed system will be calibrated to maintain the pH of the circulating water within the allowable discharge range at all times. The pH of all low volume waste streams discharged to the cooling tower basin will be maintained with the range from 6.0 to 9.0 standard units (40 CFR 423).

Metal Cleaning Wastes

NSPS criteria (40 CFR 423) require that the quantity of pollutants discharged in chemical metal cleaning waste streams not exceed the following concentration based limits:

Constituent	Maximum for any one (1) day	30 day average
Total Suspended Solids (TSS)	100.0 mg/l	30.0 mg/l
Oil & Grease	20.0 mg/l	15.0 mg/l
Copper, total	1.0	1.0
Iron, total	1.0	1.0

Metal cleaning wastes will be generated during acid cleaning of the HRSGs and during off-line compressor cleaning operations. Both of these waste streams will be collected for off-site disposal at an appropriately licensed facility. As such, there will be no discharge of metal cleaning waste streams from the facility.

The quantity of pollutants discharged in cooling tower blowdown cannot exceed the following concentration based limits:

Constituent	Maximum for any one (1) day	30 day average
Free Available Chlorine	0.5 mg/l	0.20 mg/l
126 priority pollutants	No detectable amount	No detectable amount
Zinc, total	1.0	1.0
Chromium, total	0.2	0.2

In addition, neither free available nor total residual chlorine may be discharged from any unit for more than 2 hours per day and not more than one unit may discharge free available or total residual chlorine at any one time.
The proposed combined-cycle project will comply with the above limitations. For heavy metals, neither zinc based additives nor chromium based additives will be used in the cooling tower or for treatment or conditioning of any low volume waste streams discharged to the cooling tower.

Thermal/Water Quality Assessment

During the summer the thermal component of the proposed discharge will vary as a function of ambient wet bulb temperature. Under typical operating conditions the cooling tower will operate at a temperature approximately 15° F above ambient wet bulb temperature. Under unusual conditions, the cooling tower will operate at a temperature approximately 20° F above ambient wet bulb temperature.

Ambient wet bulb temperature is generally correlated to ambient dry bulb temperature and atmospheric moisture (i.e., relative humidity). Within a fairly constant humidity range during the winter when ambient air temperature (i.e., dry bulb temperature) is generally less than 32° F, the corresponding wet bulb temperature is typically 2 to 3 degrees below ambient air temperature. When ambient air temperature ranges between 35 and 65 degrees wet bulb temperature is typically 5 degrees below ambient air temperature. Above 70° F the observed difference between ambient air temperature and ambient wet bulb temperature generally increases with increasing temperature.

The temperature of cooling tower blowdown during the summer, and fall seasons can be estimated assuming a 15 to 20 degree increase above ambient wet bulb temperature will occur. During the winter and early spring, discharge temperatures are expected to range between 60° and 70° F.

SPDES Permitting Requirements

Waste streams requiring a State Pollutant Discharge Elimination System Permit (SPDES discharge permit) or authorization under Article X include cooling tower blowdown and site stormwater runoff. These waste streams are also subject to NSPS in 40 CFR 423.15 pertaining to the Steam Electric Generating point source category. Process waste streams discharged to the regional wastewater treatment facility are subject to Pretreatment Standards for New Sources contained in 40 CFR 423.17.

Operation of the intake and discharge structures is also subject to review under Section 316 of the Clean Water Act (CWA) which is administered under the SPDES permitting process. Section 316(a) of the CWA authorizes the permit granting authority to impose alternative effluent limitations relative to the thermal component of any discharge. Section 316(b) grants the Administrator the authority to determine if the location, design, construction and capacity of the cooling water intake structure reflect the Best Technology Available (BTA) based on site-specific conditions.

3.4.5 Proposed Water-Related Studies

The project team will continue its review of available baseline data and information relative to both water supply and wastewater disposal. This will include a review of relevant permit application requirements (NYSDEC), review of existing 316(a) and 316(b) documentation, and water supply and/or wastewater disposal issues. Baseline data will be supplemented, when possible, with information available through the U.S. Army Corps of Engineers (ACOE), the National Oceanic and Atmospheric Administration (NOAA), the United States Geological Survey (USGS), the U.S. Environmental Protection Agency (EPA), the National Marine Fisheries Service (NMFS), and the NYS Department of Environmental Conservation (DEC).

The project team will maintain contact with local, regional and agency personnel to confirm facility permitting requirements; identify additional sources of data and information; and solicit comments and suggestions relative to alternative water supply and wastewater disposal options. As part of this effort, the team has held a pre-application conference with NYSDEC and NYSDPS representatives to discuss the proposed project and solicit initial agency feedback regarding the permitting approach. Additional meetings with regulatory agency personnel as well as community groups or interested stakeholders are also anticipated.

NYPA is currently conducting a two-year impingement and entrainment study at the Poletti Project, which was initiated in January 1999. The primary objective of the study is to describe the seasonal and diel patterns in the abundance of fish and blue crabs impinged and ichthyoplankton entrained.

Results from this study will be used to evaluate the potential for biological impacts associated with impingement and entrainment for the proposed project and to assure compliance with Section 316(b) of the Clean Water Act.

The potential for thermal and water quality impacts on the East River from the proposed project's discharge will be evaluated using the U.S. EPA CORMIX model or an equivalent methodology. CORMIX was developed by EPA as a screening level model to evaluate the near-field mixing characteristics (of various outfall configurations) under steady-state and tidally reversing conditions. It has also been accepted for use by the NYSDEC under the SPDES permitting program. However, CORMIX is not generally applicable to all discharge/outfall configurations. Alternative modeling strategies will be investigated if CORMIX cannot be used for the existing outfall.

NYPA will work closely with the New York City Bureau of Water Supply and Wastewater to verify that adequate potable water will be available to meet process makeup water requirements for the new unit. Requirements associated with establishing an interconnection to the municipal distribution system will also be evaluated. A backflow prevention device will be required for an industrial hookup to the distribution system.

The existing Poletti Project currently discharges process wastewater generated during demineralization to a pretreatment system operated by Orion at the Astoria Generating Station. If any low volume process waste stream for the proposed combined-cycle project is determined to be unacceptable for discharge to the cooling tower or discharge canal, NYPA will work with staff at Orion to verify that adequate wastewater disposal capacity is available to accommodate the needs of the proposed facility.

3.4.6 Potential Mitigation

The proposed facility will operate in accordance with the terms and conditions of a state pollutant discharge elimination system (SPDES) permit, as applicable. This will ensure that the designated uses of the receiving waters (East River) will be maintained. Adverse environmental impacct due to impingement and entrainment at the proposed project will be minimized through the use of three features identified earlier and by:

- locating the intake outside of critical spawning areas for recreation or commercially important fish species;
- maintaining an approach velocity of 0.5 feet per second (fps), and
- placing a wedge-wire screen on the intake of the proposed project.

3.5 Vegetation, Wetlands and Wildlife

The proposed project site has been extensively altered by prior electric generating station development activities and, as such, is characterized by limited natural habitat. Currently, the proposed site for the new plant is paved and is used for outdoor storage of miscellaneous equipment and materials. The site was previously used for contractor parking. On-site vegetation is limited to landscaped areas primarily consisting of lawn interspersed with various ornamental trees. No protected plant species are known to exist on site. Photographs of the proposed development site are included as previous Figures 2-2 and 2-3. An investigation was performed to evaluate the ecological resources of the site. Existing ecological resources under evaluation include wetlands, threatened and endangered species and areas of ecological significance within the project area.

Several visits were conducted during the spring and summer of 1999 to characterize terrestrial biological resources at the site and confirm the absence of wetlands on the property. Results of these site inspections are briefly discussed below.

3.5.1 Wetlands

Existing Conditions

Wetlands regulated under the New York State Freshwater and Tidal Wetlands Acts have been mapped and classified by the NYSDEC. No state-regulated freshwater wetlands are present on the site or within the vicinity of the site based on the NYSDEC map of the area. The potential for tidal wetlands on site is precluded by existing bulkheads and rip rap along the shoreline in the vicinity of the project site. However, tidal wetland resources associated with the East River and Steinway Creek are located approximately 3,000 feet southeast of the proposed project site, as shown on the NYSDEC Tidal Wetland Map. The East River and Steinway Creek are identified as Littoral Zone while an area of Coastal Shoal, Bar and Flat is identified along the western shoreline of Steinway Creek.

A wetlands reconnaissance survey was conducted in the spring of 1999 to confirm the absence of wetlands as defined by the U.S. Army Corps of Engineers (1987 Wetlands Delineation Manual). The U.S. Army Corps of Engineers (ACOE) regulates the discharge of dredged or fill material into wetlands under Section 404 of the Clean Water Act. The ACOE defines wetlands as:

> Areas that are periodically or permanently inundated or saturated by surface or ground water and support vegetation adapted for life in saturated soil. Wetlands include swamps, marshes, bogs, and similar areas... Wetland boundaries are determined using a three parameter approach described in the current accepted Corps Manual for identifying and delineating jurisdictional wetlands.

The site survey conducted included areas proposed for construction, equipment laydown, and construction worker parking. No federally regulated wetlands were encountered on site.

Potential Impacts and Proposed Studies

No wetlands are present at the proposed development site, therefore, no wetland impacts are anticipated and no further studies are proposed.

3.5.2 Threatened and Endangered Species

Existing Conditions

The New York State Department of Environmental Conservation (NYSDEC) Natural Heritage Program, the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) were recently contacted regarding the potential presence of state-listed or federally listed threatened and/or endangered species or potential habitat on the proposed project site or in the vicinity of the site. To date, responses have been received from the NYSDEC and the USFWS. Copies of this correspondence are included in Appendix B.

The correspondence from the NYSDEC, dated September 21, 1999, indicated that there are no records of known occurrences of rare or state-listed animals and plants, or significant natural communities, or of other significant habitats, on or in the immediate vicinity of the proposed project site. Similar correspondence from the USFWS, dated October 4, 1999, stated that except occasional transient individuals, no federally listed or proposed endangered or threatened species are known to exist in the immediate area.

Potential Impacts and Mitigation

No state or federally listed threatened or endangered wildlife species or potential habitat are known to occur on the site. Accordingly, no impact to protected species or their habitat is anticipated, and no further mitigation is required or planned.

Proposed Studies

A list of wildlife that has been noted to occur on the site will be developed as part of the future ecological studies proposed for the site. This list will be developed based on direct observations of wildlife (and signs) during site investigations.

3.5.3 Areas of Ecological Significance

Existing Conditions

North Brother Island and South Brother Island, located approximately 4,000 feet northeast from the proposed project site, are designated as New York State Significant Coastal Habitats. The islands consist of rare, undisturbed upland environments which provide productive breeding areas for birds, especially colonial waterbirds. Together, these islands comprise one of the three largest waterbird rookeries in the region.

North Brother Island is a 15-acre island with a mix of abandoned buildings and deciduous woods. Birds commonly found on the island are egrets, black-crowned night herons, herring gulls, great black-backed gulls, and Canada geese.

South Brother Island is a 10-acre island with rocky and wooded areas. This island is a principle nesting site for herring gulls and great black-backed gulls. Other birds found on this island are black-crowned night herons, great egrets, snowy egrets, cattle egrets, double-crested cormorants, and Canada geese.

Potential Impacts and Proposed Studies

Considering the relative isolation of North Brother and South Brother Islands and the distance from the proposed project, no impacts are anticipated and no further studies are proposed.

3.6 Stormwater Management

Existing Conditions

The topography at the proposed site is relatively flat with an average elevation approximately 15.0 feet above mean sea level. The predevelopment drainage consists of both sheet flow (the existing parking lot area) and overland flow with direct discharges from ditches and culverts to the discharge canal located on the East River. This drainage system is currently part of the 825 MW Poletti Project Stormwater Pollution Prevention Plan.

Potential Impacts

Because nearly all of the proposed project site is currently paved and used for material storage and parking, the increase in impervious coverage is expected to be minimal with the proposed construction of the generation facility building, cooling tower, and associated site access drives. Nevertheless, stormwater management techniques, as described in the following section, will be implemented for the proposed facility to ensure that the amount and peak rate of runoff is no greater than current site conditions.

Proposed Studies

A detailed stormwater management plan will be prepared for the proposed facility. The management of stormwater at the proposed facility will comply with the regulations of the NYSDEC and the NYCDEP.

Potential Mitigation

A conceptual drainage plan will be prepared for the proposed facility and presented in the Article X application. In keeping with existing stormwater management practices at the site, stormwater from roofs, roads, parking lots and general site areas will most likely be directed to the discharge canal and released to the East River.

During construction, appropriate sediment and erosion control measures, including silt fences and hay bale barriers, will be implemented to ensure that runoff from construction areas is minimized and does not leave the project site or impact the East River.

The existing Charles Poletti Project has the following plans in place to mitigate impacts to the environment: Storm Water Pollution Prevention Plan; Spill Prevention, Control, Countermeasure (SPCC) Plan; Groundwater Petroleum Spill Contingency Plan; Facility Response Plan; and a Hazardous Waste Contingency Plan. The proposed 500 MW power plant will be designed in conformance with current regulatory guidelines and in conformance with the goals and objectives of the existing plans. These plans will be revised or supplemented to incorporate the proposed project prior to operation. In addition, plant personnel will be trained in the areas of plant safety, environmental systems and controls, security procedures, emergency response to hazardous materials and appropriate spill response procedures including initial containment and notification requirements.

To the maximum extent practicable, all areas of the proposed plant in which oil or hazardous substances are routinely stored, processed or transferred will be constructed to

prevent the largest probable spill from flowing, draining, or leaching into the lands and waters of the State of New York. Secondary containment structures at the facility will include curbs, drip pans and sumps that lead to the oily waste compartment of the contaminated drain pit, where oil and water are separated with the oil skimmed and removed. Plant personnel will also perform daily inspections of the equipment serviced by lube-oil reservoirs to detect leaks. If an equipment leak is detected, the leaking material will be captured and contained using drip pans, sorbent materials or pads and the leaking equipment, where practical, will be promptly repaired, replaced or taken out of service.

3.7 Visual Resources

Existing Conditions

The proposed project site is an approximately four-acre parcel near the center of a 290-acre tract currently occupied by electric generating facilities operated by Orion, NRG and NYPA. Prominent visual features surrounding the site include the existing power houses, stacks, coal conveyor and the oil storage tank farm. Figure 3-6 shows an oblique aerial photograph of the proposed site, illustrating the visual context of the area. Figure 3-7 provides an artist's rendering of the proposed facility.

The area surrounding the proposed site can be characterized as an urban coastal setting with limited topographic relief; elevations within one mile of the project site are generally less than 50 feet above msl. The few visual vantage points in the area are provided by high rise buildings and elevated roadways and bridges such as the Triborough Bridge.

A preliminary inventory of visually sensitive resources in the vicinity of the proposed project is provided in Table 3-13. Visually sensitive resources are defined as identifiable sites where visual quality and aesthetics are important to the use and enjoyment of the site. Visually sensitive resources include: historic buildings and sites; parks and other public recreation areas; designated scenic districts and roads; and scenic vistas and overlooks.

Potential Impacts

Due to the height and bulk of the existing facilities at the NYPA/Con Edison site, only intermittent views of the proposed project are anticipated from the surrounding neighborhood. Visibility alone, however, does not necessarily constitute an adverse aesthetic impact. Other factors, such as viewer context, the visual absorption capacity of

Table 3-13
Visually Sensitive and Historic Resources With the Study Area*

Site Name	Location	Remarks
Woodtree Playground	20th Ave., 37th and 38th streets	1.03 acre playground
Astoria Park	19th St., south of Ditmars Blvd.	61.24 acre park with ballfields, 14 tennis courts, pool, playgrounds, summer concerts, track
Ralph DeMarco Park	Shore Blvd., 20th Ave.	6.2 acre park
Columbus Square	Hoyt Ave., 31st St.	0.1 acre siting area
Ditmars Park	23rd Ave., Steinway St.	.92 acre park
Hoyt Playground	Hoyt Ave., 29-31 streets	2.2 acre playground
Peter Chappetto Memorial Sq.	Hoyt Ave., north from 21st -23rd streets	1.23 acre park
Sitting area	Hoyt Ave., 19th , 21st streets	1.16 acre sitting area
Steinway Playground	47th Road, 48th St. 20th Ave.	1.31 acre playground
Triborough Bridge Playground A	Hoyt Ave., 19th, 21st streets	4.54 acre recreation area
Triborough Bridge Playground B	Hoyt Ave., 21st, 23rd streets	1.3 acre playground
Triborough Bridge Playground C	Hoyt Ave., 23rd, 24th streets	.46 acre playground
Triborough Bridge Playground D	Hoyt Ave., Crescent St., 24th St.	.46 acre recreation area
Triborough Bridge Playground E	Hoyt Ave., Crescent St., 26th St.	.46 acre recreation area
Mamie Fay (PS122)	21-21 Ditmars Blvd	Elementary school
Steinway (JHS 141)	37-11 21st Ave.	Humanities magnet school
Alfred Zimberg (PS 2)	75-10 21st Ave.	Elementary school
Steinway (PS 84)	22-45 41st St.	Elementary school
Judge Vallone (PS 85)	23-70 31st St.	Elementary school
St. Francis	46th St. and 21st Ave.	School
St. John's Prep	21st Ave., and 26th St.	High school
Immaculate Conception	30th St. and Ditmars Blvd.	School
William Steinway House	18-33 41st St.	NYC Landmark
Lawrence Family Cemetery	Astoria	NYC Landmark
Bowery Bay Yacht Club	Bowey Bay, end of Steinway	Marina and floating docks
Abraham Lent House	19th Road	NYC Landmark
Marine Air Terminal	LaGuardia Airport	NYC Landmark
Sintering Building	Adjacent to site	Historic building

* Study Area: Community District 1 north of Astoria Boulevard/Grand Central Parkway, west of LaGuardia Airport and south and east of the East River.

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the surrounding landscape, and the activities of potential viewers are important in establishing the proposed facility as a significant visual point of interest. These factors will be especially important in evaluating the aesthetic impact of the proposed facility, considering the highly industrial nature of the surrounding waterfront area and the dense development of the adjacent residential neighborhood. In this context, the potential visual impact of the proposed facility is expected to be very limited and insignificant considering the location of the site in the middle of an existing power plant complex and limited views afforded by the dense development in the surrounding area.

Proposed Studies

Visually sensitive resources will be identified within a one-mile radius of the proposed project site using existing maps and other published sources, including the National and State Registers of Historic Places. The one-mile radius will encompass the nearby Astoria neighborhood as well as the adjacent shoreline areas of the Bronx and Wards Island. Beyond one mile, potential visual impacts are expected to be insignificant considering the existing urban/industrial context within which the plant will be located. Visually sensitive resources will be mapped at an appropriate scale for presentation in the Article X Application.

Identified visually sensitive resources will be evaluated in the field to determine if the proposed project will be visible and to assess the relative importance of views which may include the proposed plant. The field investigations will make note of viewer context, existing landscape quality, and the extent of potential project visibility (i.e., partial or full view). The existing stacks at the Astoria and Poletti projects will be used to determine the potential project views. If necessary, photographs will be taken to document the existing views toward the proposed project.

Based on the results of the inventory and field investigations, a visual and aesthetic impact assessment will be prepared for incorporation in the Article X Application. This assessment will be based on the major physical features of the plant (i.e., turbine building, stack and cooling towers) as well as the potential for a visible plume. Since visibility alone does not constitute a visual or aesthetic impact, the assessment will rely on the results of the field investigation as opposed to the mechanical construction of a viewshed map. A viewshed map, typically developed on the basis of topography alone, is not considered appropriate for this analysis due to the urban nature of the project location and the limitations created by the dense urban development.

Potential Mitigation

The design of the proposed facility will consider the visual appearance of the plant in the selection of the building materials and colors. The objective will be to create a visually attractive project within the limitations of the proposed technology.

3.8 Cultural Resources

3.8.1 Archaeological Resources

In December 1987, a literature review and cultural resource inventory (i.e., Phase 1A report) was prepared for the Poletti Power Project by Hartgen Archeological Associates, Inc. This report presents prehistoric and historic overviews of the Poletti Project site along with an assessment of archeological sensitivity. While the report identified a moderate sensitivity for intact prehistoric cultural resources within the project area, historic maps indicate that the area proposed for the 500 MW combined-cycle plant consists of made land that was beyond the natural shoreline prior to 1891. A high sensitivity exists for the presence of historic industrial archeological resources associated with the Electric Power Station Building (i.e., the sintering building).

Since the proposed project site was created by the placement of fill around the turn of the century, the site is considered to have no potential for prehistoric archeological resources. Historic archeological resources are also unlikely to be found at the proposed project site considering the distance from the sintering building and the absence of any documentation in the 1987 report to indicate prior use of the proposed site.

To supplement the 1987 report and verify the absence of any significant historic use of the proposed project site, historic Sanborn Fire Insurance Maps were obtained for the years 1898, 1915, 1936, 1948, 1967, 1976, 1985, and 1990. These maps indicated that extensive development of the NYPA/Con Edison parcel occurred between 1898 and 1915 with the construction of the sintering building and facilities associated with a manufactured gas plant during that time. The area of the proposed combined-cycle project is clearly shown up through 1948 as being used for coal storage associated with the gas plant. By 1967, most of the facilities associated with the manufactured gas plant had been removed and the present facilities associated with Orion's Astoria project has been constructed. The proposed project site remained unoccupied by any structures throughout this period.

On September 30, 1999, a meeting was held with representatives from the Office of Parks, Recreation and Historic Preservation to review the information known about the proposed project site and determine the need for any additional archeological investigations. At that meeting, it was agreed that the potential for any significant archeological resources was unlikely. It was requested that an addendum to the 1987 report be prepared to document the results of the planned geotechnical investigation and to summarize the additional mapped information. Accordingly, no further archeological investigations are warranted or planned.

3.8.2 Historic Architectural Resources

In April 1986, an Appraisal of Significance was prepared for the original Electric Power Station Building of the Astoria Light, Heat and Power Company (circa 1905), leading to a Determination of Eligibility by the State Historic Preservation Officer (SHPO) in August 1986. This building, identified as the sintering building on Figure 2.1, is located approximately 600 feet west of the proposed plant site. This building is currently in a poor state of repair and is unused. The proposed project is not expected to have any effect on the historic sintering building; accordingly, no mitigation is warranted or proposed.

Other historic properties in the vicinity of the project include the Steinway Mansion and manufacturing plant, LaGuardia Airport's Marine Air Terminal, the Abraham Lent House, and the Lawrence Family cemetery.

The Steinway Mansion is located at 18-22 41st Street just south of the Bowery Bay Water Pollution Control Plant, approximately 4,500 feet southeast from the proposed project site. The Steinway Piano manufacturing plant, located on the northwest corner of 19th Avenue and 38th Street, approximately 3,500 feet southeast from the proposed project site, consists of buildings which may be eligible for listing. The piano factory was opened in 1910.

The Marine Air Terminal at LaGuardia Airport, which was the original airport terminal building constructed in 1939, was designated a New York City landmark in 1995. The Marine Air Terminal was built near the bay to serve the flying boats that dominated international air travel in the 1930s and 1940s. The Terminal is a two-story structure with an interior rotunda.. James Brooks' mural entitled "Flight" (originally completed in 1942) is located at the Marine Air Terminal, helping to earn the terminal's designation as an historical landmark. Presently, the terminal is used by commuter airlines, air taxis, private aircraft, Signature Flight Support and a private weather service.

The Abraham Lent House, also known as the Lent/Rapelea House, was established in 1729. The house, located on 19th Avenue and 78th Street, is a New York City landmark.

The Lawrence Family Cemetery, established in Astoria in 1703, became a landmark in 1966. The cemetery consists of 93 graves with burial dates from 1703 to 1956 and the grounds keeper's house.

Potential Impacts and Proposed Studies

The proposed project will not result in any direct impacts on the historic architectural resources located throughout Queens. Potential visual impacts to these identified resources will be evaluated as part of the visual impact assessment for the proposed project (see section 3.7). Considering the industrial nature of the property surrounding the proposed project and the small incremental change in the aesthetics of the area, the Office of Parks, Recreation and Historic Preservation has agreed that an assessment of known historic architectural resources was reasonable, but that further efforts to inventory potentially eligible historic architectural resources was not warranted.

3.9 Traffic and Transportation

3.9.1 Roadway Network

Existing Conditions

The Charles Poletti Power Project is located approximately one mile north of the intersection of the Queens ramp to the Triborough Bridge with the Brooklyn Queens Expressway and the Grand Central Parkway, approximately 1.5 miles northeast of La Guardia Airport. Significant roadways within the project area include The Brooklyn Queens Expressway, the Grand Central Parkway, 31st Street, 21st Street, Ditmars Boulevard, Astoria Boulevard, and the Triborough Bridge. The Triborough Bridge and the Brooklyn Queens Expressway serve as Interstate Route 278 within the project area. The existing roadway network in the vicinity of the project site is indicated in Figure 3-8.

The Grand Central Parkway is the major east-west, limited-access highway through the project area serving the Astoria, East Elmhurst and the Jackson Heights neighborhoods of Queens and La Guardia Airport. Traveling east along the highway, destinations within Flushing Meadows and Jamaica, Queens can be reached as well as Nassau County, Long Island. The Parkway also provides access to Interstate Route 678 (the Van Wyck and Whitestone Expressways) and Interstate Route 495 (Long Island Expressway).

Interstate Route 278, comprising the Brooklyn Queens Expressway and Triborough Bridge in the project area, is the major north-south limited access highway serving the project site. Traveling north on the Triborough Bridge, access is provided to destinations within Manhattan and the Bronx. Traveling south on the Brooklyn Queens Expressway local destinations within Queens and Brooklyn can be reached as well as Manhattan via the Williamsburg, Manhattan, and Brooklyn Bridges or the Brooklyn Battery Tunnel.

The study area immediately adjacent to the project site includes 19th through 49th Streets, 20th through 24th Avenues, Ditmars Boulevard, Astoria Boulevard and Steinway Street.

The main gate of the project site is located at the end of 31st Street, which is a major north-south thoroughfare in Astoria. Additional north-south thoroughfares in the area include 21st and Steinway Streets. Ditmars and Astoria Boulevard provide primary east-west access in the vicinity of the project site.

Potential Impacts

Primary access to the proposed NYPA combined-cycle facility will be from the existing main entrance at the end of 31st Street. As such, existing traffic patterns will not be altered by the proposed project.

During the 24-month proposed construction period of the project, there will be an increase in the use of local roadways due to the ingress and egress from the project site of construction equipment and workmen vehicles and deliveries of building materials. It is anticipated that project generated traffic during construction would utilize regional highways to gain access to the project area. Ditmars Boulevard, 31st Street and Astoria Boulevard would most likely be used locally to access the project site.

To minimize conflicts with existing utility operations and to reduce traffic impacts to the local roadway network during construction, the delivery of larger system equipment by barge is being evaluated.

Significant impacts to the local transportation network as a result of the operation of NYPA Combined-Cycle Facility are not anticipated. As future activities at the site will not vary greatly from those currently occurring, local roadways are expected to operate similar to existing conditions. During operations, project related traffic will involve a limited number of service vehicles, tank trucks, and employee vehicles. Future employees responsible for the operation of proposed facility will continue to use the

primary entrance gate. Parking for future project employees will be provided on the existing station property, proximate to the proposed facility.

Proposed Studies

A traffic study will be conducted to evaluate existing traffic volumes and assess roadway operating conditions in the vicinity of the project. Existing information available from the New York State Department of Transportation, the New York City Department of Planning, and the New York Metropolitan Transportation Council will be reviewed to examine existing operating conditions and physical characteristics for the primary access roadways and regional highways. Trip generation estimates will be developed for both future construction and operation conditions. These will include estimates for both peak trip generation during construction and times of normal operation. The likely hours of travel to and from the project site and the number and type of equipment deliveries will also be presented. The potential project-related impacts will then be assessed by evaluating estimated project generated vehicle trips and likely routes of travel in light of existing traffic conditions within the proposed project area.

Potential Mitigation

Significant impacts to the local roadway network are not anticipated as a result of the operation of the proposed facility. Several mitigation measures, however, are available to minimize potential transportation impacts during construction of the proposed facility.

- Scheduling of construction shifts so that the majority of construction related project traffic occurs outside of peak commuting hours.
- Staggering of construction shifts start and finish times by trade.
- Scheduling, to the maximum extent possible, delivery of construction materials outside of peak commuting hours.
- Delivery of large project components/equipment by barge, should this be determined to be possible.
- Development of carpooling programs, if determined to be feasible.

3.9.2 Mass Transit

Existing Conditions

There are a number of mass transit opportunities within the project area. A station for the Metropolitan Transit Authority (MTA) New York City Subway "N – Broadway Local" line is located at Ditmars Boulevard and 31st street approximately one mile south of the project site. The subway line originates at Ditmars Boulevard and serves the Astoria and Long Island City sections of Queens, southern Manhattan and Brooklyn, terminating at Stillwell Avenue, Coney Island. Numerous opportunities for bus and rail transfers exist along the line.

MTA Bus service within the project area includes the M60 line, which runs along Astoria Boulevard and provides service between Manhattan's Upper West Side and LaGuardia Airport, and the 19A line, which runs along Ditmars Boulevard and provides service between Queensboro Plaza subway station and Astoria Boulevard at 82nd Street. No bus service operates along 20th Avenue serving the proposed project site.

Potential Impacts and Proposed Studies

No significant impacts to the operation of mass transit systems are anticipated as a result of the proposed facility. As such, no further studies are proposed.

3.9.3 Aviation

LaGuardia Airport is located in the Borough of Queens approximately 1.3 miles east of the proposed project site. LaGuardia Airport has been operated by the Port Authority of New York and New Jersey under a lease with New York City since June 1, 1947. The airport consists of 680 acres and 72 aircraft gates. There are two main runways (4-22 and 13-31) each measuring 7,000 feet long by 150 feet wide. Five hangars are located at LaGuardia with space for the following airlines: Delta, United, TWA, Northwest and American. LaGuardia Airport is one of three major airports in the New York metropolitan region, serving more than 22 million air travelers annually.

Considering the location and height of the existing facilities at the NYPA/Con Edison site, the proposed project is not expected to have any impact on the operations at LaGuardia Airport. Nevertheless, the project will require completion of a Notification of Construction or Alteration for submittal to and review and approval by the Federal Aviation Administration.

3.10 Community Facilities and Services

3.10.1 Police, Fire, and Emergency Services

The proposed project site is located within the New York Police Department's 114th Precinct's jurisdiction.

The site is also located within Fire Engine Company #312's district. The NYCFD will annually inspect the facility and test the site's fire suppression system. The fire protection system for the facility will include automatic fire detection and alarm systems that will also activate fire suppression systems and provide warning to on-site personnel. In the event of a fire, the NYCFD and local officials will implement any community emergency plans.

In the event of an emergency, the facility's response plan will be consulted. The proposed facility's response plan will be similar to the existing Poletti Facility Response Plan Anyone injured will be transported by EMS workers to Astoria General Hospital located on 30th Avenue and Crescent Street or Elmhurst Hospital located on Broadway and Baxter Avenue.

The proposed project will not result in any increased demand or requirements for the local police and fire departments, therefore, no impacts on these services are anticipated and no further studies are proposed.

3.10.2 Solid Waste

Existing Conditions

The Final Scoping Document for the Comprehensive Solid Waste Management Plan DEIS dated May 28, 1999, states that all waste generated by the City's commercial businesses and industries is currently managed by private companies and exported out of the City through existing private transfer facilities and by direct hauls in collection vehicles. The waste generated by the proposed facility will also be handled by an independent hauler.

Potential Impact

Solid waste will be generated during construction as well as operation of the proposed facility. All wastes will be handled and disposed of by licensed haulers in accordance

with all applicable state and city laws and regulations, similar to the handling and disposal of wastes generated at the existing Poletti generating station.

Proposed Studies/Data Collection

The Article X Application will characterize and quantify the various anticipated solid waste streams anticipated from construction of the proposed facility. Generation of solid waste during facility operation will be minimal and will be handled through the existing disposal contractor.

Potential Mitigation

NYPA will integrate the proposed project into the existing Poletti Project with regard to recycling programs for selected wastes such as paper, plastic and aluminum cans in order to minimize the amount of solid waste generated. Since all solid wastes generated at the proposed facility will be handled and disposed of in accordance with applicable laws and regulations, no specific mitigation is warranted or proposed.

3.10.3 Recreational and Educational Facilities

Existing Conditions

Table 3-13 identifies the existing recreational and educational facilities located in the section of Community District 1 north of Astoria Boulevard and west of LaGuardia Airport. According to the Plan for the Queens Waterfront, Community District 1 is the second most underserved district in Queens in terms of parkland, with most of the major public open spaces located in the western part of the district along the East River.

Potential Impact

Direct impacts to recreational areas and educational facilities, such as limiting access or creating additional demand, will not occur during construction or operation of the facility. It is anticipated that any impacts to the resources identified in Table 3-13 during the construction and operation of the proposed project will overlap concerns and studies discussed in the noise and visual impact sections of this report.

Proposed Studies/Data Collection

The Article X application will identify the recreational and educational facilities in Queens (if any) that have the potential for experiencing increased noise or visual impacts.

Potential impacts to these facilities will be evaluated in accordance with the methodologies outlined in sections 3.12 (Noise) and 3.7 (Visual Resources) of this Pre-Application report.

The issue of increased public access to the waterfront areas of NYPA's property was raised at the Community Board meeting on September 21, 1999. While it may appear that there are open areas on NYPA's property that may be suitable for providing public use or access, extensive underground facilities are located throughout the area, precluding the dedication of these areas to alternative public use. In addition, issues of plant security and public safety place further limitations on allowing increased public access to NYPA property. Nevertheless, the Article X application will evaluate the potential for increased public use and access to the waterfront areas of NYPA's property.

Potential Mitigation

Potential mitigation with regard to recreational and educational facilities will be addressed, as appropriate, in terms of noise and visual impacts.

3.11 Socioeconomics

Projects similar to the proposed facility typically create a social and economic impact to an area during construction as well as during operation of the project. Impacts to the socioeconomic environment due to construction of a facility are shorter in term, but typically have a greater impact than the impacts due to operation. This is primarily due to the influx of construction personnel. Socioeconomic impacts of the proposed project will be evaluated in terms of demographics, economic status (i.e., income levels) and employment.

3.11.1 Demographics

Existing Demographic Characteristics

Existing data sources, such as the Community District Needs FY 2000 and U.S. Census data, were reviewed to assist in identifying the socioeconomic characteristics of the area. The proposed project is located within the boundaries of Community District 1 in Queens, New York. Generally, the demographic characteristics and trends in Community District 1 are similar to those in the remainder of Queens and those in the city as a whole. Demographic data for the District is found in Table 3-14.

The population trends in New York City, Queens and Community District 1 have followed the same patterns since 1970. All three regions experienced a decline in total population between 1970 and 1980 and an increase in population between 1980 and 1990. Even with the increases in population between 1980 and 1990, none of the areas have reached the total population levels recorded in 1970.

Table 3-14: 1990 Population by Race and Hispanic Origin

Race	New York City		Queens Borough		Community District 1	
	Number	%	Number	%	Number	%
Total	7,322,564	100	1,951,598	100	188,549	100
White Non-Hispanic	3,163,125	43	937,557	48	101,934	54
Black Non-Hispanic	1,847,049	25	390,842	20	20,223	11
Hispanic Origin	1,783,511	24	381,120	19	48,797	26
Asian, Pacific Non-Hispanic	489,851	7	229,830	12	16,176	8
American Indian, Non-Hispanic	17,871	0.2	5,606	0.3	437	0.2
Other Non-Hispanic	21,157	0.3	6,643	0.3	982	0.5
Under 18 years	1,686,718	23	408,627	21	33,802	18
18 years and older	5,635,846	77	1,542,971	79	154,747	82

Source: New York City Department of City Planning, December 1998

The percentage of the 1998 population residing within the boundaries of Community District 1 receiving public assistance (15%) is basically the same as the percentages for Queens (14.5%). Both areas have lower percentages of the population receiving public assistance than New York City as a whole (21.7%).

Potential Impacts

The proposed project will not have any direct impact on population or income levels, and the proposed project will not result in any displacements. There may be concerns, however, that the proposed project could result in disproportionately high and adverse human health or environmental effects on minority populations and low income populations.

Proposed Studies

The documentation of the socioeconomic conditions of the community surrounding the proposed project site will be used to demonstrate that the siting and operation of the

proposed project will not unfairly impact or disadvantage any minority or low-income groups. To ensure that the concerns of all members of the community are identified and addressed, NYPA is implementing an aggressive public involvement program to inform the public and solicit comments.

Existing data sources will be reviewed to identify the socioeconomic characteristics of Community District 1 and the neighborhoods near the Poletti Project. Specific characteristics will include: total population; population by age and sex; racial and ethnic background; number of persons below poverty level; and household income. For comparative purposes, similar statistics will be obtained for the Borough of Queens and the City of New York. Data sources will include: the Queens Borough Community District Needs, Fiscal Year 1999; the NYC Department of City Planning; and the U.S. Bureau of the Census.

The environmental justice evaluation will take into consideration the demographic and socioeconomic characteristics of the nearby neighborhoods as well as the area of potential direct and indirect impacts from the proposed project, most notably air quality and noise impacts. The U.S. EPA environmental justice strategy will be reviewed to ensure that the proposed project and the evaluation of potential impacts adequately demonstrate the lack of environmental justice concerns.

3.11.2 Employment

Direct socioeconomic benefits will be associated with construction and operation of the proposed facility. During construction, approximately 200 to 250 local union jobs will be created, resulting in the employment of specialized craftspersons. Employment benefits will continue throughout the 24-month construction period. The local economy will also benefit from the purchase of construction materials from local suppliers. Additional, although modest, employment gains will also be realized during operation of the proposed facility. The Article X application will quantify the employment benefits of the proposed project.

3.12 Noise

Existing Conditions

The existing noise environment in Astoria is typical of urban areas, dominated by traffic and transit noise. The proximity of LaGuardia Airport also contributes significantly to the

ambient noise levels. Existing ambient noise levels will be determined through the performance of a community noise monitoring program.

Potential Impacts

Construction of the proposed facility may result in some short-term, temporary noise impacts for the most proximate residential locations. Actual noise levels during construction will vary with the construction activity and distance to the receptors.

During operation of the proposed facility, noise will be generated by a variety of sources. These include the gas turbines (casing, air inlet and exhaust), steam turbine, HRSG casing and stacks, cooling towers, main transformers and a variety of pumps. Noise levels produced by these sources will be a function of the control measures used and the distance to the noise sensitive receptors.

Proposed Studies

Existing ambient noise levels will be determined through the performance of a community noise monitoring program. Monitoring will be conducted at the nearest identified noise sensitive receptors (residential areas). The noise sensitive receptors will be identified through a review of area maps and a site reconnaissance. Measurements of the total and octave band L_{90} noise levels will be made for a duration of 15-minutes at each identified location during the evening hours. These baseline data will be used in the impact assessment for the project.

Computer noise modeling of the major facility sources will be prepared. Noise level data for each of the major facility noise sources will be obtained from equipment vendors. In cases where these data are not available, octave band spectra will be developed following accepted industry procedures such as those found in Edison Electric Institute's "Electric Power Plant Environmental Noise Guide".

The modeling will consider hemispherical spreading and atmospheric absorption for this analysis. Standard conditions of 59^0 F and 70 percent relative humidity will be assumed, as well as wind parameters indicated in Figure 3-1. Modeling receptors will be chosen in the same residential locations as where background monitoring is performed.

The noise modeling will be used as a design tool in order to determine the degree of abatement or mitigation (if any) required on individual noise sources. Modeling runs will be made, with noise control added as required, until the required noise limitations are achieved. In accordance with NYSDPS requirements, the modified Composite Noise

Rating Method (CNR) will be used to assess potential noise impacts associated with facility operation.

Composite Noise Rating is a widely accepted method to assess community reaction to new noise sources. It takes into account the other influencing factors besides the intensity of the new noise source. These factors include existing background noise and the existence of tonal characteristics in the new noise source. The expected community response to the new noise source is judged based on weighting these components. It is expected that the facility operation will result in the lowest rating "no observed reaction."

Compliance With Applicable Standards

An electric generating facility located in New York City must comply with the most restrictive of three separate noise standards/criteria as follows:

New York City Noise Code. The New York City noise code regulates noise levels based on "noise quality zones", which are essentially different land use zones. Subchapter 6 of the code provides the allowable noise levels by noise quality zone. The residential receptors which could potentially be impacted by the project are located in a high density residential zone. This being the case, noise levels from the proposed project would be limited to no greater than 55 dBA at night and 65 dBA during the day. Because the proposed project has the capability to operate 24 hours a day, the facility must comply with the 55 dBA level. Note that this level is the allowable facility contribution, and does not include extraneous sounds such as traffic and other industrial sources.

New York CEQR. This CEQR requirement limits increases in noise to no greater than three dBA above the minimum late night background L_{90} noise levels at any residential receptors. In practice then, noise generated by the proposed facility would be limited to the same level as the minimum late night background L_{90} level. For example, if the minimum ambient late night L_{90} were 50 dBA, the proposed facility would be limited to 50 dBA, resulting in a net ambient level of 53 dBA, and an increase of three dBA.

New York State Department of Public Service (NYSDPS). In accordance with NYSDPS requirements, the modified Composite Noise Rating Method (CNR) must be used to assess potential noise impacts associated with facility operation. This methodology takes into account many factors including the expected sound level from the plant, the existing sound levels, character of the noise (e.g., tonal, impulsive), duration, time of day and year, and subjective factors such as community attitude and history of previous exposure. The NYSDPS has historically accepted a rating of "D", corresponding to a response of "sporadic complaints", although is currently requesting

for new projects that a more stringent rating of "C", corresponding to "no reaction although noise is noticeable" be achieved.

There are no Federal noise standards applicable to this project.

Potential Mitigation

Short-term, temporary noise impacts may occur during construction activities. These impacts may occur when activities, such as pile driving and excavating take place. Impacts could also occur during plant operation if the proper noise control measures are not implemented. Several mitigation measures are available to minimize these potential impacts.

Potential noise mitigation measures during construction include:

- Requiring functional mufflers on all equipment.
- Limiting construction hours to daytime only, weekday and Saturdays.
- Staggering the noisiest construction activities such that they do not occur simultaneously.
- Requiring silencers for boiler steam blows.

A variety of noise control measures are also available for operation of this type of facility. Where practical, the selection of low-noise design equipment will be made. In addition, potential mitigation measures include:

- Enclosing sources in buildings.
- Installing tuned HRSG stack silencers.
- Arranging equipment on-site to take advantage of shielding provided by facility buildings.
- Barrier walls.
- Inlet silencers on the gas turbine air inlets.

Recommended noise mitigation measures for the project will be determined following completion of the noise modeling and noise impact assessment are completed. The actual measures implemented, which could differ from those specified during the impact assessment due to changes in plant layout or final equipment vendors, will be determined during final facility design.

4.0 ALTERNATIVES

According to Section 164(1)(b) of Article X, an application for a certificate must include a description and evaluation of reasonable alternative locations to the proposed facility, if any; a description and evaluation of reasonable energy supply source alternatives; and demand reducing measures (i.e., demand side management). The range of alternatives must include the no-action alternative in addition to alternative sites, technologies, scale or magnitude, design timing, use and types of action.

The principal reasons for pursuing the development of the proposed 500 MW combined-cycle project are to meet the 80% in-city generation requirements that may be established by the New York Independent System Operator (NYISO) and to continue to meet NYPA's current customer requirements for a reliable and cost-effective supply of electricity. The need for the proposed project will be presented as a yardstick for evaluating the acceptability of the various alternatives.

The following presents the alternatives that will be evaluated in the Article X application.

4.1 No Build Alternative

The evaluation of the No Build Alternative will address the implementation of additional conservation measures and demand side management. The purchase of needed energy from other sources will also be evaluated as a potential No Build Alternative.

4.2 Acquisition of Existing Generation Assets

Con Edison has recently completed its divestiture of generation assets in New York City, including the following:

- 1,090 MW Astoria Generating Station (Orion Power Holdings)
- 494 MW Gowanus complex of 32 gas turbines in Brooklyn (Orion)
- 271 MW complex of 16 gas turbines at the Narrows in Brooklyn (Orion)
- 614 MW complex of 20 gas turbines at Astoria (NRG Energy)
- 842 MW Aurthur Kill Generating Station (NRG Energy)
- 1,753 MW Ravenswood Generating Station (KeySpan Energy)
- 415 MW complex of 17 gas turbines at Ravenswood (KeySpan Energy)

In light of the recent sale of these generating assets, the acquisition of existing generating assets by NYPA is not considered a reasonable alternative to the proposed project. This alternative will be further discussed in the Article X application.

4.3 Alternative Facility Designs

NYPA prepared an in-house generation study in January 1998 that identified and evaluated several options for providing the projected 500 MW shortfall in capacity. These options included the following:

- Repower the existing Poletti facility with three gas turbine/HRSG modules
- Repower the existing Poletti facility with hot windbox technology by using two gas turbines
- Construct two stand-along 252 MW combined-cycle units, each with their own HRSG and steam turbine
- Add three 168 MW simple cycle gas turbines and purchase energy from the spot market or generate as economics dictate

The results of this study will be further discussed in the Article X application.

4.4 Alternative Design Options

The Article X application will identify and evaluate various design options for selected plant components. These will include alternative cooling systems (i.e., once-through cooling; air-cooled condensers) and stack design (multi-flue vs. single stacks).

4.5 Acquisition and Development of Alternative Sites in New York City

Previous siting studies for power plants in New York City prepared by Con Edison or others will be reviewed and potential alternative sites will be identified and evaluated in the Article X application. The relative advantages and disadvantages of developing a new power plant at these sites will be identified and discussed. Principal disadvantages of the development of a power plant by NYPA at any of these sites will include: 1) the inability of NYPA to purchase these sites to commence licensing in a timely manner; 2) the need for NYPA to acquire and possibly clean-up/remediate these sites prior to development; and 3) overcoming likely public opposition to developing a new power plant at any of the potential sites where old power plants were recently removed. The analysis of these alternative sites will be qualitative and will focus on factors such as: site limitations;

proximity to incompatible land uses; and the need for additional infrastructure such as water intake and discharge facilities, electric transmission, gas supply and fuel storage.

The planned auction of Con Edison sites in New York City (Global Power Report, May 14, 1999) will also be discussed. These sites include:

- Sherman Creek, a vacant 2.2-acre site on the Harlem River in upper Manhattan that had a power plant that was retired and removed;
- Hell Gate Yard, a vacant 4.4-acre parcel on the East River in the Bronx, which also had a plant that has been removed;
- 500 Kent Avenue, a 3.96-acre parcel on the Wallabout Channel of the East River in Brooklyn, which also contained a plant;
- Victory Boulevard, a 45-acre unimproved parcel adjacent to the Arthur Kill Generating Station on Staten Island; and
- North First Street Oil Terminal, a 9.18-acre parcel used as an oil terminal facility, located on the East River north of the Williamsburg Bridge in Brooklyn.

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Appendix A

Public Involvement Program

NYPA and Queens
Combined-Cycle Facility

NYPA BENEFITS TO NEW YORK CITY

In New York City, NYPA's low-cost power lights the streets, runs the subways and commuter rail lines and serves schools, hospitals and other public facilities. Government customers obtain additional savings through the NYPA's wide-ranging energy-efficiency programs. NYPA:

- supplies economical electricity that saves government customers—and taxpayers—an estimated $250 million a year;
- provides economic development power that helps to protect 144,000 jobs in New York City, including more than 23,500 in Queens;
- provides energy-efficient lighting for government facilities (46 in Queens);
- replaces coal furnaces in public schools (11 in Queens);
- supplies high-efficiency refrigerators for public housing (5,000 in Queens);
- installs energy-efficient traffic signals (18,000 in Queens);
- provides electric vehicles to its government customers to help promote clean air.

PROJECT OVERVIEW

NYPA is planning to build a highly efficient combined-cycle power-generating facility next to its Charles Poletti Power Project, in Astoria, Queens. The proposed plant will provide New York City with adequate, reliable power supplies in the new era of electricity-industry deregulation. Approximately 200 to 250 local union jobs will be created during construction.

NEED FOR A NEW POWER PLANT

NYPA is exploring construction of a new power plant to meet proposed federal and state requirements for the deregulation of New York's electricity industry. To continue serving its New York City customers in the new era, NYPA may be required to create additional generating capacity within the city. To that end, it has approved funding for preliminary engineering and environmental work related to the licensing of the facility at the Poletti project site.

ENVIRONMENTAL BENEFITS

The combined-cycle plant will be one of the cleanest power plants in New York City's history. The new plant will:

- **actually reduce the nitrogen oxide (NOx), sulfur dioxide (SO_2), and particulate emissions in the New York City airshed on an annual basis by allowing us to reduce operations of the existing Poletti plant, but still meet our responsibility to provide adequate and reliable electricity;**
- burn fuel more efficiently than do plants of earlier designs. Clean-burning natural gas would be the primary fuel, with low sulfur oil as the backup fuel;
- meet Lowest Achievable Emission Rate (LAER) requirements.

COMBINED-CYCLE GENERATION

The proposed plant will use a combined-cycle process, in which two combustion turbine-generators would operate in conjunction with two heat-recovery steam generators and a steam turbine-generator. Combustion gases from the burning of natural gas or low sulfur oil would drive the two combustion turbine-generators to produce electricity. The two heat-recovery steam generators would capture waste heat from the first cycle to create steam to spin the steam turbine-generator, producing additional electricity. The steam turbine-generator would discharge the steam into a condenser to return the steam to its liquid state for recycling.

PROJECT SITE

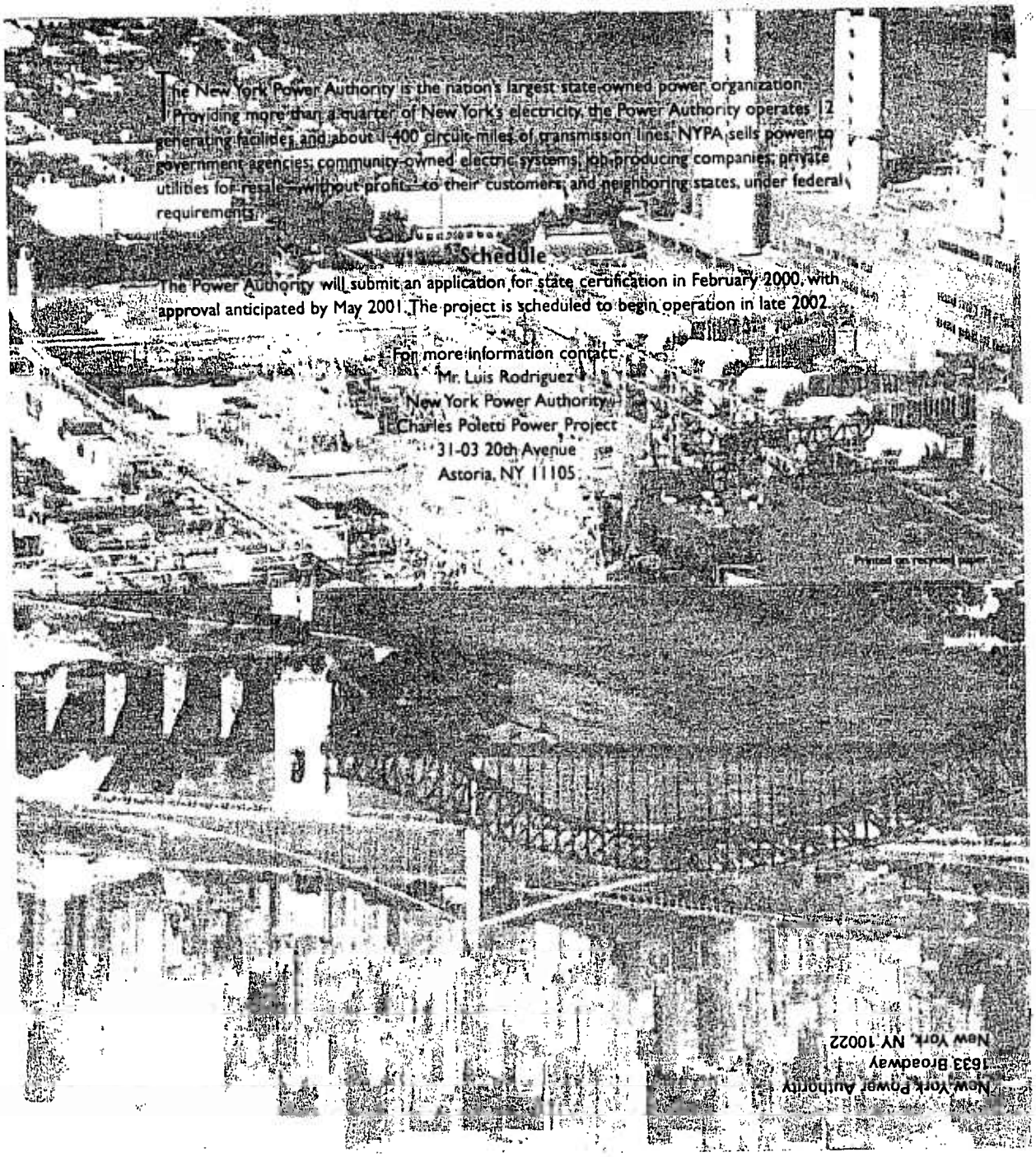
The proposed site is an undeveloped four-acre parcel next to the Poletti project. This site has been used since 1953 for the generation of electricity, fuel storage and associated purposes. The proposed project would take advantage of the unique opportunities provided by the existing facilities and interconnections, with a natural gas supply, electric transmission, fuel storage, and water intake and discharge facilities.

REQUIRED APPROVALS

NYPA may be required to obtain approval for the project from the New York State Siting Board, the New York State Department of Environmental Conservation and the U.S. Environmental Protection Agency. NYPA is working with those agencies to develop a unified permitting process, providing opportunities for public participation.

To assess potential project impacts and support the required permit applications, detailed studies in areas such as air quality, water quality, aquatic ecology, and noise will be completed.

New York Power Authority



The New York Power Authority is the nation's largest state-owned power organization. Providing more than a quarter of New York's electricity, the Power Authority operates 12 generating facilities and about 1,400 circuit-miles of transmission lines. NYPA sells power to government agencies; community-owned electric systems; job-producing companies; private utilities for resale—without profit—to their customers; and neighboring states, under federal requirements.

Schedule

The Power Authority will submit an application for state certification in February 2000, with approval anticipated by May 2001. The project is scheduled to begin operation in late 2002.

For more information contact:
Mr. Luis Rodriguez
New York Power Authority
Charles Poletti Power Project
31-03 20th Avenue
Astoria, NY 11105

Printed on recycled paper

New York Power Authority
1633 Broadway
New York, NY 10022

New York Power Authority · COMBINED CYCLE · FACILITY

NYPA and Queens

THE POWER OF PARTNERSHIPS

Combined-Cycle Facility

New York Power Authority

Open House

The New York Power Authority, which supplies low-cost electricity for the subways, schools, hospitals and other public facilities in New York City as well as for businesses throughout the metropolitan area, will hold an open house on September 23 to discuss its plan to build a combined-cycle generating plant next to its Charles Poletti Power Project, in Astoria.

The new facility may be required to meet proposed state and federal requirements for new generating capacity in the city. If built, the plant will be one of the city's cleanest power plants, resulting in a reduction in NYPA's annual air emissions.

The purpose of the open house is to provide information about the project and solicit comments from the community.

September 23, 1999
3-5 p.m. and 7-9 p.m.
Astoria World Manor
25-22 Astoria Blvd., Queens, N.Y.

For information call, Luis Rodriguez at 718-626-8239.

NewYorkPower Authority

NEWSDAY

AFFIDAVIT OF PUBLICATION

NEW YORK POWER AUTHORITY NY POWER
31-03 20TH AVENUE
ASTORIA NY 11105-

7331

STATE OF NEW YORK)
:SS.:
COUNTY OF SUFFOLK)

Madeline Johansen

of Newsday, Inc., Suffolk County, N.Y., being duly sworn, says that such person is, and at the time of publication of the annexed Notice was a duly authorized custodian of records of Newsday, Inc., the publisher of NEWSDAY, a newspaper published in the County of Suffolk, County of Nassau, County of Queens, and elsewhere in the State of New York and other places, and that the Notice of which the annexed is a true copy, was published in the following editions/ counties of said newspaper on the following dates:

September 15, 1999 QUEENS

Sworn To Before Me This
15 day of September 1999
Notary Public

Legal Notice 7331
POWER AUTHORITY
OF THE
STATE OF NEW YORK
NOTICE OF OPEN HOUSE
The Power Authority of the State of New York will hold an open house on September 23, 1999, from 1:00 p.m. to 5:00 p.m. and from 7:00 p.m. to 9:00 p.m. at the Astoria World Manor, 25-22 Astoria Boulevard, Astoria, New York, 11102, to discuss its plans to construct a combined cycle facility adjacent to the existing Poletti Project. The new facility may be required if the state's Independent System Operator rules that more of New York City's electricity be provided by power plants within the five boroughs. The purpose of the open house is to solicit comments from the community at large on the proposal. The Power Authority intends to file permit applications early next year, with the new plant generating first power by late 2002.
For further information contact,
Luis Rodriguez
Charles Poletti Power Project
31-03 20th Avenue
Astoria, New York 11105-2014
718-626-8239

CATHERINE PIZZO
Notary Public, State of New York
No. 5004975
Qualified in Nassau County
Commission Expires November 30, 2000

HOUSI

Barbara Boy

My new landlord is ignoring my requests to apartment and the building itself is not beir require the landlord to correct the problems

In 1975, the New York State Legislature er Property Law (RPL), known as the "Warrar residential tenants. The Warranty of Habita keeping habitable the public areas of resid hallways, etc.), as well as the tenant's apa accompanying services.

Tenants have a right to expect not only sh vices, including adequate heat, hot water, windows, doors, ceilings and walls, prope can legally expect the premises and the a habitable at all times during the term of th

The following are some examples of a bre

- Vermin and/or rodent infestation;
- Failure to provide heat and hot wate
- Hazardous conditions caused by co or from unreasonable neighbors;
- Failure to secure a premises from tl front door and working intercom);
- Water leaks in ceilings, defective ce
- Deprivation of janitorial services;
- Defective appliances, such as stov

Rather than verbal communication, tena landlord and management in writing and return receipt. Whenever possible, take p of conditions. Lastly, document heat con throughout the day, both inside and outs

ADV

am Exchanges Parts Of Boro

require hundreds of hours of special training and drills throughout the year. These locations include subway lines, Rikers Island, LaGuardia and [John F.] Kennedy [International] Airports, Elmhurst Hospital Center and other hospitals, the Consolidated Edison utility plants and housing, to name a few.

"All of these specialty locations, coupled with the wide variety of buildings in the borough, many of which have alterations only local fire companies would recognize through familiarity and drills, make this an especially difficult locale for fire and emergency activity. Seconds count and the time for familiarization is not at the scene. Indeed, it takes years to be properly prepared to do the best job possible in a fire emergency."

Although he acknowledged that the Fire Department is "widely recognized as the very best in the world," he said that "each company would compromise its effectiveness in an unfamiliar locale."

The veteran cleric also criticized the department for not consulting with community officials and residents before initiating the program.

Tenant Pleads Guilty In Gardens Murder

Queens District Attorney Richard Brown announced recently that a 25-year-old woman who rented a room from a Kew Gardens Hills man pleaded guilty Sept. 9th to first degree manslaughter in connection with his death and to tampering with physical evidence by placing his body in a bathtub and pouring acid into the tub.

Brown identified the defendant as Bernadette Staubitz, a boarder in the apartment at the deceased Anthony Pickens, at 153 31 73rd Ave., Kew Gardens Hills. The crime occurred during the early morning hours of Jan. 25, 1997. Two other defendants, Eric Williams, 24, of 140-71 Ash Ave., Flushing, and Guy Daquin, 21, of 92-35 214th Pl., Jamaica, are awaiting trial in the case.

The defendant entered her guilty plea before Supreme Court Justice Robert Hanophy, who indicated that he would sentence her to 12 and one-half to 25 years on the manslaughter charge and an additional one-and-one-third to four years on the tampering with physical evidence charge. Hanophy will impose sentence on Sept. 30th.

Brown said, "Based on all of the evidence available, including the medical examiner's findings with regard to cause of death, this was a good and fair disposition. It assures certain justice."

According to the charges, the defendants repeatedly punched, kicked, choked and cut the deceased about the head and body after a dispute arose between the deceased and Staubitz. In order to conceal the killing, Staubitz, and allegedly Williams, placed Pickens' body in a bathtub and poured muriatic acid into the tub. Pickens' body was discovered on Jan. 28, 1997.

City of New York
Community Board #1,
Borough of Queens

c/o American Museum Of The Moving Image
36-01 35th Avenue
Astoria, N.Y. 11106

(718) 786-3335
FAX: (718) 786-3368

QUEENS COMMUNITY BOARD 1
REGULAR MONTHLY MEETING & PUBLIC HEARING

TUESDAY, SEPTEMBER 21. 1999 6:30 PM
ASTORIA WORLD MANOR, 25-22 ASTORIA BLVD., ASTORIA

****

AGENDA

*PUBLIC HEARING ITEMS:

NYS Office of Mental Retardation & Developmental Disabilities

1)Establishment of group home for 6 autistic young adults (23-28 years of age) at 25-53 14 St.

City Planning Commission

2) #C000020PQQ & C000021PPQ Acquisition of property located on the east side of 36 St. betw. 34 & 35Aves. (Bl. 644, Lots 15, 17, 43 & 49) AND Disposition to Economic Development Corp. of property located betw. 35 & 37 Sts. and 34 & 36 Aves. (Bl. 639, Lot 16, Bl. 640, Lot 24, Bl. 643, Lot 1 & Bl. 644 Lots 1,15,17,43 &49).

Board of Standards & Appeals

3) #139-99\ BZ-- Premises 38-29 31 St. (St. George Coptic Church). Change in use of a funeral parlor, chapel (Use Group 7) to a community facility, church (Use Group 4) in an M1-3D zoning district in an existing building.

4) #173-99-BZ Premises 43-02 Ditmars Blvd. (Matrix Fitness Club) An application for a special permit to permit a physical culture establishment in an M1 zoning district in the cellar of an existing building.

5) #319-79-BZ, Premises 25-50 31 St. (Greek Music & Video)., An application, previously granted, for an extension of the term of variance, for a change of use in the same Use Group 6 (grocery store to record store) with minor floor plan change.

6) #66-90-BZ, Premises 43-07 Astoria Blvd.. Installation of 80' x 30' canopy over gasoline dispensers.

*GENERAL DISCUSSION: Guest Speaker
Luis Rodriguez, Regional Manager Community Relations, NYS Power Authority, Presentation of the Power Authority's proposal to build a Combined-Cycle Plant to meet Federa & State regualtions)

**BUSINESS/VOTING SESSION:

A) Approval of Minutes
B) Public Hearing Items
C) Chairperson's Report: Vinicio Donato
D) District Manager's Report: George Delis
E) Committee Reports: Mark Scott, BPO, Penny Lee/Francis Grunow DCP
F) New/Old Business
G) Adjournment

* Public comments are permitted during this part of meeting up to 3 minutes.
** Part of meeting that is open to the public for observation, only Board members are permitted to speak on issues before the Board.

THE NEXT REGULARLY SCHEDULED BOARD MEETING WILL BE
OCTOBER 19, 1999

Appendix B

Agency Correspondence

1633 Broadway
New York, New York 10019
212 468.6000

New York Power Authority

August 2, 1999

Mr. Robert Kuhn, Ph. D.
New York State Office of Parks, Recreation
and Historic Preservation
Field Services Bureau
Peebles Island, PO Box 189
Waterford, New York 12188-0189

SUBJECT: New York Power Authority
Charles B. Poletti Power Project
Astoria, Queens County, New York
Combined Cycle Facility

Dear Dr. Kuhn:

The New York Power Authority (Authority) is proposing to expand the electric generation capacity of the Poletti site by adding an additional 500-megawatt (MW) combined cycle power facility. The new facility will be licensed under the New York State Article X process and will require air quality permits from the United States Environmental Protection Agency.

The Authority has previously filed with your office a document dated December 1987 and entitled *Literature Review and Cultural Resource Inventory of the Charles B. Poletti Power Project* (hereinafter, "the cultural resources report"). This document was prepared by Hartgen Archeological Associates of Troy, New York under contract to the Authority in order to assist the Authority in meeting its responsibilities under the State Historic Preservation Act.

The cultural resource report indicates that the site has a high sensitivity for the presence of historic industrial resources associated with the Astoria Light, Heat and Power Plant, an early 20th century structure extant on the site that your office has previously determined to be eligible for the National Register of Historic Places [page 15]. The attached drawing showing the proposed layout of the new expansion indicates that the historic structure will most likely not be impacted by construction of the expansion facility.

The cultural resources report also indicates that there is a moderate sensitivity for intact prehistoric cultural resources within the project area. This sensitivity derives from file evidence that a shell midden may be located within the project area, but is reduced by the fact that "...the industrial development of the area and associated landfilling undoubtedly destroyed much of the fragile archeological record" [page 14].

The Authority wishes to meet with you and appropriate members of your staff to discuss the means by which the Authority can address cultural resource issues associated with the expansion of the Poletti site generation capacity, as outlined above. The Authority wishes to learn how your office participates in the Article X process, and whether or not the Authority will need to support the EPA in addressing Federal agency mandates associated with Section 106 of the National Historic Preservation Act. Of significant interest to the Authority will be whether or not your office believes, based on a preliminary analysis, that additional field studies may be required to answer pertinent research questions associated with the Poletti site.

The Authority would be represented by Mr. William Slade (the Authority's Agency Preservation Officer), a representative of TRC (the Authority's licensing consultant) and me; a member of our Law Department may also be in attendance. It is my expectation that we would meet in your offices at a time convenient to you.

Please call me at 212/468-6751 at your earliest convenience to establish a time for a meeting. If you or your staff have any questions about the cultural resources report, please contact Mr. William Slade at 914/681-6405.

Very truly yours,

Ellen Koivisto-Fletcher
Licensing Manager

Attch.

1633 Broadway
New York, New York 10019
212 468.6000

New York Power Authority

September 9, 1999

Mr. Stanley Gorski
National Marine Fisheries Service
Habitat and Protected Resources Division
James J. Howard Marine Sciences Laboratories
74 Magruder Road
Highlands, NJ 07732

Subject: **Proposed NYPA Combined Cycle Electric Generating Facility Astoria, Queens, New York**

Dear Mr. Gorski:

The New York Power Authority (NYPA) proposes to construct a 500 MW combined-cycle, electric generating facility (NYPA Combined Cycle Facility) on approximately four acres of NYPA's existing Charles Poletti Generating Station located in Astoria, Queens. The Poletti Generating Station occupies approximately 47 acres adjacent to Con Edison's Astoria Generating Station. The Power Authority hereby requests the input of the National Marine Fisheries Service regarding potential impacts on any ecologically significant areas and/or federal or state species of concern known to exist within the project area. The requested information is for environmental review in accordance with Article X of the NYS Public Service Law.

The location of the existing Poletti Station and proposed development site is indicated in the attached Figure 1. The proposed NYPA Combined Cycle Facility will be located south of and adjacent to NYPA's existing oil storage tanks and west of an area occupied by several Con Edison simple cycle combustion turbines, approximately 600 feet from the East River.

Site Photographs illustrating existing conditions at the proposed development site are attached as Figures 2a and 2b. The proposed site for the new plant is paved and was previously used for contractor parking. The area is now used for outdoor storage of miscellaneous equipment and materials.

If you have any questions concerning this request, please contact me at 212-468-6751.

Sincerely,

Ellen Koivisto
Licensing Manager

Enclosures

New York State Department of Environmental Conservation
Division of Fish, Wildlife & Marine Resources
Wildlife Resources Center - New York Natural Heritage Program
700 Troy-Schenectady Road, Latham, New York 12110-2400
Phone: (518) 783-3932 FAX: (518) 783-3916

John P. Cahill
Commissioner

September 21, 1999

Ellen Koivisto
New York Power Authority
1633 Broadway
New York, NY 10019

Dear Ms. Koivisto:

In response to your recent request, we have reviewed the New York Natural Heritage Program databases with respect to the proposed NYPA Generating Facility, site as indicated on the map you provided, located in Astoria, Queens, New York City.

Enclosed is a report of rare or state-listed animals and plants, of significant natural communities, and of other significant habitats, which our databases indicate occur, or may occur, on your site or in the immediate vicinity of your site. The information contained in this report is considered sensitive and may not be released to the public without permission from the New York Natural Heritage Program.

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our databases. We cannot provide a definitive statement on the presence or absence of all rare or state-listed species or significant natural communities. This information should not be substituted for on-site surveys that may be required for environmental impact assessment.

Our databases are continually growing as records are added and updated. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information.

This response applies only to known occurrences of rare or state-listed animals and plants, of significant natural communities, and of other significant habitats. For information regarding regulated areas or permits that may be required under state law (e.g., regulated wetlands), please contact the appropriate NYS DEC Regional Office, Division of Environmental Permits, at the enclosed address.

Sincerely,

Betty A. Ketchum, Information Services
NY Natural Heritage Program

Encs
cc: Reg. 2, Wildlife Mgr.
Peter Nye, Endangered Species Unit, Delmar

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
3817 Luker Road
Cortland, NY 13045

October 4, 1999

Ms. Ellen Koivisto
Licensing Manager
New York Power Authority
1633 Broadway
New York, NY 10019

Dear Ms. Koivisto:

This responds to your letter of September 9, 1999, requesting information on the presence of Federally listed or proposed endangered or threatened species in the vicinity of the proposed construction of a 500 MW combined-cycle electric generating facility on 4 acres of the existing Charles Poletti Generating Station in Astoria, Borough of Queens, Queens County, New York.

Except for occasional transient individuals, no Federally listed or proposed endangered or threatened species under our jurisdiction are known to exist in the project impact area. Therefore, no Biological Assessment or further Section 7 consultation under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) is required with the U.S. Fish and Wildlife Service (Service). Should project plans change, or if additional information on listed or proposed species becomes available, this determination may be reconsidered. A compilation of Federally listed and proposed endangered and threatened species in New York is enclosed for your information.

The above comments pertaining to endangered species under our jurisdiction are provided pursuant to the Endangered Species Act. This response does not preclude additional Service comments under the Fish and Wildlife Coordination Act or other legislation.

Federally listed endangered and threatened marine species may be found near the project area. These species are under the jurisdiction of the National Marine Fisheries Service. You should contact Mr. Stanley Gorski, Habitat and Protected Resources Division, Area Coordinator, National Marine Fisheries Service, James J. Howard Marine Sciences Laboratory, 74 Magruder Road, Highlands, NJ 07732, for additional information (telephone: [908] 872-3037).

For additional information on fish and wildlife resources or State-listed species, we suggest you contact:

New York State Department
of Environmental Conservation
Region 2
47-40 21st Street
Long Island City, NY 11101
(718) 482-4900

New York State Department
of Environmental Conservation
Wildlife Resources Center - Information Services
New York Natural Heritage Program
700 Troy-Schenectady Road
Latham, NY 12110-2400
(518) 783-3932

National Wetlands Inventory (NWI) maps may or may not be available for the project area. However, while the NWI maps are reasonably accurate, they should not be used in lieu of field surveys for determining the presence of wetlands or delineating wetland boundaries for Federal regulatory purposes. Copies of specific NWI maps can be obtained from:

Cornell Institute for Resource Information Systems
302 Rice Hall
Cornell University
Ithaca, NY 14853
(607) 255-4864

Work in certain waters and wetlands of the United States may require a permit from the U.S. Army Corps of Engineers (Corps). If a permit is required, in reviewing the application pursuant to the Fish and Wildlife Coordination Act, the Service may concur, with or without stipulations, or recommend denial of the permit depending upon the potential adverse impacts on fish and wildlife resources associated with project implementation. The need for a Corps permit may be determined by contacting Mr. Joseph Seebode, Chief, Regulatory Branch, U.S. Army Corps of Engineers, 26 Federal Plaza, New York, NY 10278 (telephone: [212] 264-3996).

If you require additional information please contact Michael Stoll at (607) 753-9334.

Sincerely,

Anne d. Secord

for David A. Stilwell
Field Supervisor

Enclosure

cc: NYSDEC, Long Island City, NY (Environmental Permits)
NYSDEC, Latham, NY
NMFS, Highlands, NJ (Attn: S. Gorski)
NMFS, Milford, CT (Attn: M. Ludwig)
COE, New York, NY

1633 Broadway
New York, New York 10019
212 468.6000

New York Power Authority

October 13, 1999

Ms. Robin Levine
NYC Department of Environmental Protection
59-17 Junction Boulevard
Corona, NY 11368-5107

Subject: Proposed 500 MW Combined Cycle Facility
Astoria, Queens

Dear Ms. Levine:

Enclosed are six information packets on a project the New York Power Authority is proposing to construct in Astoria, Queens. As discussed with you last week on the telephone, the Authority would like to arrange two meetings with the NYC Department of Environmental Protection. The first meeting would be a technical meeting at your office to discuss issues related to air impacts and our proposed air-modeling program. The second would be a more general meeting on the project with a tour of the proposed site. Richard Miller, NYC Economic Development Corporation and staff from the NYS Department of Public Service and the NYS Department of Environmental Conservation have expressed an interest in attending the second meeting.

The purpose of this letter is to suggest potential dates for the two meetings. The air meeting could be scheduled anytime between October 18 and November 5 and the general meeting could be scheduled anytime from November 8 to December 3 except Mondays and Tuesday mornings and November 11, 25 and 26.

Please get back to me at 212-468-6751 regarding your availability to attend these meetings. Thank you.

Sincerely,

Ellen Koivisto-Fletcher
Licensing Manager

Cc: Richard Miller, NYC-EDC
Alan Domaracki, NYS-DPS
Orest LeWinter, NYS-DEC