



NIXON PEABODY LLP  
ATTORNEYS AT LAW

NIXONPEABODY.COM  
@NIXONPEABODYLLP

**Peter C. Trimarchi**  
*Counsel*  
T 518-427-2671  
ptrimarchi@nixonpeabody.com

677 Broadway, 10th Floor  
Albany, NY 12207-2996  
518-427-2650

November 9, 2016

Hon. Kathleen H. Burgess  
Secretary to the Commission  
New York State Public Service Commission  
Empire State Plaza  
Agency Building 3  
Albany, NY 12223-1350

**RE: Modification of Certificate of Environmental Compatibility and Public Need  
for the Bethlehem Energy Center, Case No. 15-F-0040**

Dear Secretary Burgess:

On behalf of PSEG Power New York LLC ("PSEG"), we are enclosing a supplement to the above-referenced petition.

Respectfully submitted,



Peter C. Trimarchi  
Counsel

PCT/kmp  
Enclosures

cc: Attached service list



**PSEG – BETHLEHEM ENERGY CENTER  
SERVICE LIST**

**COPIES REQUIRED BY 16 NYCRR §1000.16**

Name/Address	Number of Copies
Hon. Kathleen H. Burgess, Secretary to the Commission New York State Public Service Commission Empire State Plaza - Agency Building 3 Albany, NY 12223-1350 Phone: (518) 474-6530	10 paper copies, 1 electronic copy (on CD)
Basil Seggos, Commissioner NYS Department of Environmental Conservation 625 Broadway Albany, NY 12233-1010 Phone: (518) 402-8545	4
Keith Goertz, Acting Regional Director, Region 4 NYS Department of Environmental Conservation 1130 North Westcott Road Schenectady, NY 12306-2014 Phone: (518) 357-2068	3
Howard A. Zucker, M.D., J.D., Acting Commissioner NYS Department of Health Corning Tower - Empire State Plaza Albany, NY 12237 Phone: (518) 474-2011	2
Hon. Richard L. Kauffman, Chairman NYS Energy Research and Development Authority 17 Columbia Circle Albany, NY 12203-6399 Phone: (518) 862-1090	2
Jerry Boone, Commissioner Empire State Development Corporation 625 Broadway Albany, NY 12207 Phone: (518) 292-5100	2

**PSEG – BETHLEHEM ENERGY CENTER  
SERVICE LIST**

**ACTIVE PARTY LIST**

Name/Address	Number of Copies
William Bouteiller or Chief Administrative Law Judge Presiding Examiner New York State Public Service Commission Empire State Plaza - Agency Building 3 Albany, NY 12223-1350	1
P. Nicholas Garlick, or Chief Administrative Law Judge Office of Hearings and Mediation Services NYS Department of Environmental Conservation 625 Broadway Albany, NY 12233-1550 Phone: (518) 402-9003	1
Robert Garlin, Chief Administrative Law Judge New York State Public Service Commission Empire State Plaza - Agency Building 3 Albany, NY 12223-1350	1
David Van Ort, Esq., Staff Counsel New York State Public Service Commission Empire State Plaza - Agency Building 3 Albany, NY 12223-1350 Phone: (518) 474-6530	1
William G. Little, Associate Counsel NYS Department of Environmental Conservation 625 Broadway, 14 <sup>th</sup> Floor Albany, NY 12233-1500	1
Chris Hogan NYS Department of Environmental Conservation Division of Environmental Permits 625 Broadway, 4 <sup>th</sup> Floor Albany, NY 12233-1750 Phone: (518) 402-9251	1
Daniel Luttinger, Ph.D., Director Bureau of Toxic Substance Assessment NYS Department of Health Corning Tower, Room 1743 - Empire State Plaza Albany, NY 12237 Phone: (518) 402-7800	1
David W. Quist, Esq. NYS Department of Health Corning Tower, Room 2421 - Empire State Plaza Albany, NY 12237	1

**PSEG – BETHLEHEM ENERGY CENTER  
SERVICE LIST**

Name/Address	Number of Copies
Michael Hughes, M.S. Exposure Characterization & Response Section Bureau of Toxic Substance Assessment NYS Department of Health Corning Tower, Room 1743, Empire State Plaza Albany, NY 12237 Phone: (518) 402-7800	1
Regional Permit Administrator NYS Department of Environmental Conservation, Region 4 625 Broadway Albany, NY 12233-1750	1
Jeffrey L. Gerber NYS Energy Research and Development Authority 17 Columbia Circle Albany, NY 12203-6399	1
John Clarkson, Supervisor Town of Bethlehem 445 Delaware Avenue, Room 106 Delmar, NY 12054 Phone: (518) 439-4955, ext. 1164	1
James T. Potter, Town Attorney Town of Bethlehem c/o Hinman Straub 121 State Street Albany, New York 12207 Phone: (518) 320-7408	1
Anthony Corellis, Commissioner Public Works Department Town of East Greenbush 225 Columbia Turnpike Rensselaer, NY 12144 Phone: (518) 477-4775	1
Alex Shannon, Chair Rensselaer County Environmental Management Council Rensselaer County Government Center 1600 Seventh Avenue, Third Floor Troy, NY 12180 Phone: (518) 270-2880	1
Victor Tafur-Dominguez, Esq. or General Counsel Pace Energy and Climate Center 78 North Broadway, E-House White Plains, NY 10603 Phone: (914) 422-4141	1

**PSEG – BETHLEHEM ENERGY CENTER  
SERVICE LIST**

Name/Address	Number of Copies
General Counsel Riverkeeper 20 Secor Road Ossining, New York 10562 Phone: 800-21-RIVER	1
Katherine Kennedy, Esq. Natural Resources Defense Council 40 West 20 <sup>th</sup> Street New York, NY 10011 Phone: (212) 727-2700	1
Uriel Oko, Ph.D., P.E. Consulting Engineer 11 York Road Glenmont, NY 12077-3241 Phone: (518) 439-7880	1
A. Scott Cauger, Esq. or General Counsel National Grid 300 Erie Boulevard West Law Department A-3 Syracuse, NY 13206 Phone: (315) 428-5418	1
John T. Evers The Business Council of New York State, Inc. 152 Washington Avenue Albany, NY 12210-2289 Phone: (518) 465-7511	1
General Counsel or Executive Director Scenic Hudson, Inc. One Civic Center Plaza - Suite 200 Poughkeepsie, NY 12601 Phone: (845) 473-4440	1
Robert J. Glasser, Esq. Robert J. Glasser, P.C. 248 South Avenue Poughkeepsie, NY 12601 Phone (845) 486-5292	1

**PSEG – BETHLEHEM ENERGY CENTER  
SERVICE LIST**

**OTHER RECIPIENTS**

Name/Address	Number of Copies
Thomas S. Berkman, Esq., Office of General Counsel NYS Department of Environmental Conservation 625 Broadway, 14th Floor Albany, NY 12233-1500 Phone: (518) 402-9185	1
Hon. Audrey Zibelman, Chair NYS Board on Electric Generation Siting and the Environment Empire State Plaza - Agency Building 3 Albany, NY 12223	1
Richard L. Kauffman NYS Board on Electric Generation Siting and the Environment Empire State Plaza - Agency Building 3 Albany, NY 12223	1
Jerry Boone NYS Board on Electric Generation Siting and the Environment Empire State Plaza - Agency Building 3 Albany, NY 12223	1
Howard A. Zucker, M.D., J.D. NYS Board on Electric Generation Siting and the Environment Empire State Plaza – Agency Building 3 Albany, NY 12223	1
Basil Seggos NYS Board on Electric Generation Siting and the Environment Empire State Plaza - Agency Building 3 Albany, NY 12223	1
James Bays, Commissioner NYS Department of Agriculture and Markets 10B Airline Drive Albany, New York 12235 Phone: (518) 457-8876	1
Cesar A. Perales, Secretary of State One Commerce Plaza - 99 Washington Avenue Albany, NY 12231-0001 Phone: (518) 474-0050	1
Hon. Eric T. Schneiderman NYS Attorney General The Capitol Albany, NY 12224-0341 Phone: (518) 776-2000	1

**PSEG – BETHLEHEM ENERGY CENTER  
SERVICE LIST**

Name/Address	Number of Copies
Joan McDonald, Commissioner NYS Department of Transportation 50 Wolf Road Albany, NY 12232 Phone: (518) 457-4422	1
Alison Lovely, Secretary Planning Board of the Town of East Greenbush 225 Columbia Turnpike Rensselaer, NY 12144 Phone: (518) 477-4775	1
Rose Harvey, Commissioner NYS Office of Parks, Recreation and Historic Preservation 625 Broadway Albany, NY 12238 Phone: (518) 474-0443	1
Director Albany County Department of Economic Development, Conservation and Planning 112 State Street, Room 720 Albany, NY 12207 Phone: (518) 447-5670	1
Daniel P. McCoy, Albany County Executive Albany County Executive Harold L. Joyce Albany County Office Building 112 State Street, Room 900 Albany, NY 12207 Phone: (518) 447-7040	1
Keith Langley, Town Supervisor Town of East Greenbush 225 Columbia Turnpike Rensselaer, NY 12144 Phone: (518) 477-4775	1
Bethlehem Public Library 445 Delaware Avenue Delmar, NY 12054	1
Assemblywoman Patricia Fahy 109th Assembly District - NYS Assembly 452 Legislative Office Building Albany, NY 12248	1



**PSEG – BETHLEHEM ENERGY CENTER  
SERVICE LIST**

Name/Address	Number of Copies
State Senator Neil D. Breslin 44 <sup>th</sup> Senatorial District 172 State Street Room 414 The Capitol Albany, NY 12247	1
Troy Public Library 100 Second Street Troy, NY 12180	1
East Greenbush Community Library 10 Community Way East Greenbush, NY 12061	1
Frank S. Venezia, Chair Town of Bethlehem Industrial Development Agency 445 Delaware Avenue Delmar, NY 12054 Phone: (518) 439-4955	1
Dr. Thomas J. Douglas, Superintendent Bethlehem Central School District 700 Delaware Avenue Delmar, NY 12054 Phone: (518) 439-7098	1
Judith Enck, Regional Administrator U.S. EPA, Region 2 290 Broadway New York, NY 10007-1866	1
George Nieves, Chief, Western Permits Section U.S. Army Corps of Engineers 26 Federal Street, Room 2109 New York, NY 10278-0090	1
Ralph E. Huddleston, Jr., Senior Vice President Carpenter Environmental Associates, Inc. 610 County Route 1, Unit 2F Pine Island, NY 10969 Phone: (845) 781-4844	1
Mr. James D. Austin Chief, Environmental Certification and Compliance Office of Electric, Gas and Water New York State Public Service Commission 3 Empire State Plaza – 8 <sup>th</sup> Floor Albany, NY 12223-1350	1

**PSEG – BETHLEHEM ENERGY CENTER  
SERVICE LIST**

Name/Address	Number of Copies
Kevin Gleason Director, Environmental Health Assessment NYS Department of Health Corning Tower, Room 1619 Empire State Plaza Albany, NY 12237	1
Lorna Gillings New York State Public Service Commission Empire State Plaza - Agency Building 3 Albany, NY 12223-1350	1
Nancy Burt U.S. Forest Service 231 North Main Street Rutland, VT 05701	1
John Williams, Esq. or General Counsel Pace Energy Project 78 North Broadway White Plains, NY 10603	1
Art Fossa, Consultant Spectra Environmental 19 British American Blvd. Latham, New York 12110 Phone: (518) 782-0882	1
Kenneth Mennerich, Service Manager Central Hudson Gas & Electric Corp. 284 South Avenue Poughkeepsie, NY 12601	1
Brian Ossias, Esq., Managing Attorney New York State Public Service Commission Empire State Plaza - Agency Building 3 Albany, NY 12223-1350	1
Paul A. Colbert Associate General Counsel, Regulatory Affairs Central Hudson 284 South Avenue Poughkeepsie, NY 12601	1
Facility Manager Air Products & Chemicals 461 River Road Glenmont, NY 12077	1

**PSEG – BETHLEHEM ENERGY CENTER  
SERVICE LIST**

<b>Name/Address</b>	<b>Number of Copies</b>
Mark Poole or General Manager Innovative Surface Solutions 454 River Road Glenmont, NY 12077	1
Norman J. Morrison or Director Office of Energy Efficiency and the Environment New York State Public Service Commission Empire State Plaza - Agency Building 3 Albany, NY 12223-1350	1
Director American Lung Association of New York 418 Broadway, 1 <sup>st</sup> Floor Albany, NY 12207	1
Todd H. Vandervort, President & CEO The Vandervort Group, LLC 194 Washington Avenue, Suite 610 Albany, NY 12210 Phone (518) 463-3202	1

**NEW YORK STATE  
BOARD ON ELECTRIC GENERATION SITING AND THE ENVIRONMENT**

**Petition of PSEG Power New York LLC,  
for a Modification of its Certificate of  
Environmental Compatibility and Public  
Need for the Bethlehem Energy Center,  
dated February 28, 2002**

**Case No. 15-F-0040**

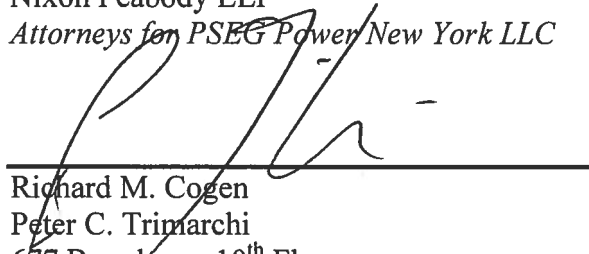
**SECOND SUPPLEMENT TO PETITION**

In response to requests made by staff of the Department of Public Service, PSEG Power New York LLC hereby submits the following materials as a second supplement to its Petition for Amendment of its Article X Certificate for the Bethlehem Energy Center (“BEC”), dated January 16, 2015:

1. Tab 1: Advanced Gas Path Upgrade Nearfield Sound Level Measurement Protocol, dated November 9, 2016.
2. Tab 2: Email communication between BEC Plant Manager William Clancy and a neighbor of the BEC, regarding noise in the vicinity of the facility (ultimately determined to be caused by ship traffic on the Hudson River). To the best knowledge of the current staff of the BEC, no other noise complaints have been brought to the attention of BEC personnel since the facility was repowered in the mid-2000’s.
3. Tab 3: The noise testing protocol used as the Compliance Filing for Certificate Condition VI.G. in 2005. The protocol is dated August 10, 2005, as updated by letter from Nixon Peabody LLP to David Van Ort, dated September 13, 2005.
4. Tab 4: Plant operating data (plant output and cooling fan operating status) during the facility noise testing performed in 2006.

Dated: November 9, 2016

Nixon Peabody LLP  
*Attorneys for PSEG Power New York LLC*

A handwritten signature in black ink, appearing to read 'R. Cogen', is written over a solid horizontal line. The signature is stylized and partially overlaps the text below.

Richard M. Cogen  
Peter C. Trimarchi  
677 Broadway, 10<sup>th</sup> Floor  
Albany, New York 12207  
Tel: (518) 427-2650  
Email: [rcogen@nixonpeabody.com](mailto:rcogen@nixonpeabody.com)

# **Exhibit 1**

## **The Bethlehem Energy Center**

# **ADVANCED GAS PATH UPGRADE NEARFIELD SOUND LEVEL MEASUREMENT PROTOCOL**

**November 9, 2016**

**Prepared by Innova Global, Inc.  
(Formerly ATCO Emissions Management)**

## **INTRODUCTION**

This Sound Level Measurement Protocol (Protocol) has been prepared in response to a request from the New York State Department of Public Service (NYSDPS).

Petitioner PSEG Power New York LLC (PSEG or Petitioner) is seeking to perform GE Advanced Gas Path (AGP) upgrades at the three (3) GE 7FA gas turbines at the Bethlehem Energy Center (BEC) over the coming years. If approved, the units would be upgraded sequentially per year, starting in 2017, by the BEC owner.

Staff at the NYSDPS (DPS-Staff) have requested a sound measurement survey, so as to determine whether the upgrades result in any measureable changes in noise emissions attributable to the gas turbine inlets and/or the Heat Recovery Steam Generator (HRSG) exhaust outlets. Sound measurements will be conducted at a minimum before and after the first upgrade.

This Protocol defines the methodology and locations that will be utilized to conduct the sound measurement program that has been requested. At this time, it is assumed that this Protocol will apply only to the first upgrade. In the event that the findings or results from the first upgrade comparison demonstrate that there will be no increase in measured sound levels or changes as specified in section 5.0 of this protocol, additional noise measurements will not be necessary for the subsequent upgrades (2nd and 3rd AGP upgrades)<sup>1</sup>.

### **1. INSTRUMENTATION**

#### **1.1 Sound Level Meters (SLMs)**

All sound level measurements shall be conducted using Type 1 integrating sound level meters that meet ANSI S1.43-1997 (R2007) “Specifications for Integrating Averaging Sound Level Meters”. The Type 1 instruments will have 1/3 octave-band analyzers that meet ANSI/ASA S1.11-2004 Part 1, “Electroacoustics - Octave-Band and Fractional-Octave-Band Filters – Part 1: Specifications” or ANSI S1.11-2004 (R2009), “Specification for Octave-Band and Fractional-Octave-Band Analog and Digital Filters.”

SLMs will have operating temperature and relative humidity ranges that are expected to cover the estimated temperature and relative humidity conditions of the site during testing. When this is not possible, testing times with forecasted temperature and relative humidity values within the

---

<sup>1</sup> The Siting Board and the New York State Public Service Commission (through the NYSDPS) shall nevertheless retain all legal authority to require any action necessary to ensure the BEC continues to comply with the conditions of its Certificate of Environmental Compatibility and Public Need.



range of the SLMs may be selected. SLMs temperature and humidity ranges as reported by the manufacturer will be documented.

## **1.2 Windscreens**

The microphones shall be equipped with windscreens provided by or recommended by the sound level meter manufacturers, or that are appropriate to minimize wind noise and insertion loss on the sound microphones.

The insertion loss caused by the windscreen as stated by the manufacturer shall not exceed 2 dB at any frequency of interest specified in section 1.3 of this protocol for free-field sound incidence angles from 0° to ±180°. SLMs with auto-detection and/or auto-correction windscreen systems can be used. Measured sound levels will be automatically corrected by the SLMs or manually corrected as relevant for the insertion loss caused by the windscreen as specified in section 4.5.b. of this protocol. Insertion losses for windscreens will be documented and included as an appendix to the report as specified in section 4.5 of this protocol. Sound incidence angles for sound microphones at the inlet and outlet sound measurement positions will be reported.

## **1.3 Frequency Range**

Frequency range of collection shall include the 1/3 octave bands from 12.5 Hz to 16,000 Hz (16 Hz to 8,000 Hz full octave bands).

## **1.4 Field Calibration**

All sound level meters shall be field calibrated immediately before and after the measurement series. Field calibration shall be conducted using a precision calibrator which complies with the Class 1 accuracy of ANSI S1.40 -2006 (R2011) "Specifications and Verification Procedures for Sound Calibrators" or IEC 60942.

Any difference between the acoustical calibrator reference sound level and the SLM reading will be reduced to zero by adjusting the SLM sensitivity in the field, prior to each measurement. If the final calibration level for a sound measuring system differs from the initial calibration level by 1 dB or less, all measurements made with that system shall be considered valid, but shall be adjusted by one-half of the difference. Data collected with differences in calibration lower than or equal to 0.3 dB do not need to be adjusted. Collected data with a difference between the initial and the final calibration sound level exceeding 1 dB are not acceptable, and measurements collected under those circumstances should be repeated.

## **1.5 Laboratory Calibration Certification**

All sound measurement equipment and calibrators used during the survey shall be laboratory calibrated within the previous 12 months. Copies of all equipment calibration certificates shall be included with the survey reports.

## **1.6 Dynamic Range**

The dynamic range of SLMs will be properly selected (manually or automatically) to avoid any noise floor and overload issues.

## **2. GENERAL MEASUREMENT CONDITIONS**

### **2.1 Operation of Facility**

Operating conditions of the power plant (i.e. megawatt load, inlet/outlet air flows, turbine speeds), including each turbine and the cooling towers, shall be documented for the entire measurement period. Measurements will occur at three different load ranges on the gas turbine – minimum, moderate, and full power. (The exact power output for each of these load ranges will be dependent upon ambient conditions at the time of the test). For each load range, measurements will occur during three separate tests lasting between 15 and 30 minutes each. Sound levels due to off-normal plant operation, such as Start-up, Bypass, or Emergency Shutdown shall not be included in the analysis.

### **2.2 Atmospheric and Weather Conditions**

Sound data collected during periods when winds speeds range from 0 (zero) to 11 miles per hour as recorded at the location indicated below, shall be considered useable for analysis.

Meteorological conditions of wind speed, wind direction, temperature, relative humidity, and atmospheric pressure (optional) will be measured and recorded utilizing a portable meteorological monitoring station. The meteorological station will be installed on plant property, atop the gas turbine building. The meteorological station will be sited, as possible, in an area that is free from wind obstructions and far from HVAC components that may affect the weather measurements. Additionally, rain fall during the survey will be documented with data from a close meteorological station.

The sound survey will be scheduled and performed for a period of time that is forecasted for not having adverse weather conditions such as wind speeds and gusts exceeding 11 mph, rain, thunderstorms in the vicinity or snow fall. However, sound data will be excluded from the analysis if adverse weather conditions occur during testing days that have been selected based upon acceptable forecasted weather conditions.

### **3. SOUND LEVEL MEASUREMENTS**

The following section describes the measurement locations and sound measurement parameters.

#### **3.1 General**

Each survey (Pre- and Post-Upgrade) will entail continuous measurements over three separate tests of between 15 and 30 minutes each, as described in Section 2.1. The internal clocks of all sound level meters and the meteorological station will be synchronized with the Operational time of the Facility, prior to the onset of data collection. Any difference between the operational time of the facility and the official Eastern Standard Time will be noted and reported.

#### **3.2 Measurement Locations and Procedures**

Two measurement locations will be used.

- A microphone will be placed at the outer edge of the exhaust stack outlet/exit catwalk of the first turbine to be upgraded. To the extent practical, the microphone will be oriented towards the stack end at a 90-degree angle with respect to the vertical axis and the direction of exhaust flow at the stack outlet. The microphone will be secured to the railing on the uppermost catwalk of the stack. To the extent practical, the sound microphone will preferably be located at a position where the influence of other noise sources (such as adjacent stack ends and the cooling towers) is minimal, if any.
- PSEG Technical staff (PSEG-Staff) will confirm that the air temperatures at the microphone locations are within the recommended temperature range for proper operation of the microphones. PSEG Staff will also report diameter of stacks. Air temperatures at the stack catwalks are not expected to exceed 122 degrees Fahrenheit, which is the upper limit for operation of the sound level meter.
- A microphone will be placed approximately 5 feet in front of the gas turbine inlet filterhouse at the horizontal centerline. The microphone location will be extended vertically using a pole or conduit, so that it is situated as close to the vertical centerline of the filterhouse as conditions allow. The pole will be attached to the railing between the front of the filter house and the parapet wall. To the extent practical, the sound microphone will be facing the turbine inlet with a zero-degree angle in reference to the inlet center axis or direction of the air flow. The final location, relative to the filterhouse, will be measured and documented in the summary report.
- To avoid sound interruptions during testing, Staff members and personnel will take proper

actions to ensure that other sounds within the facility (transportation, etc.) will not affect the sound collections.

- GPS coordinates for all measurement locations will be reported as well as ground and microphone elevations.

### 3.3 Measurement Parameters and Data Logging

The measurement duration for each survey (Pre- and Post-Upgrade) shall be as described in Section 2.1. The continuous measurements data shall be collected and logged in 1-minute intervals.

The continuous 1-minute broadband A-weighted (dBA) ( $L_{eq}$ ,  $L_{10}$ ,  $L_{50}$ ,  $L_{90}$ ,  $L_{max}$ , and  $L_{min}$ .) and 1-minute broadband Linear (dB) sound pressure levels ( $L_{eq}$ ,  $L_{10}$ ,  $L_{50}$ ,  $L_{90}$ ,  $L_{max}$ , and  $L_{min}$ ) at full octave bands of interest (and one-third fractional bands, as needed) will be presented on time history plots indicating the periods of time that were excluded from the analysis along with a justification for exclusion (e.g. wind speed, rain, startup, shutdown, etc.). Separate plots will be used to present the stack outlet levels and the gas turbine inlet levels. Each plot will also present the turbine outputs (MW) using a separate vertical axis.

Reported measurement data shall include the one-third octave band parameters  $L_{eq}$ ,  $L_{10}$ ,  $L_{50}$ ,  $L_{90}$ ,  $L_{max}$ , and  $L_{min}$ . Reported A-Weighted (dBA) and Linear (dB) broad band descriptors shall include  $L_{eq}$ ,  $L_{10}$ ,  $L_{50}$ ,  $L_{90}$ ,  $L_{max}$ , and  $L_{min}$ . Logged data will be provided in an appendix to the report and in worksheet or data-base format to the Secretary to the New York State Public Service Commission (Commission) and to DPS-Staff by electronic means.

The measurements shall be conducted, as possible, during periods of minimal influence from extraneous sources of sound. Audible sound sources shall be identified using the sound level meter audio-recording feature. If any particularly brief, loud extraneous events occur during the survey period, these events will be documented and may be excluded during post-processing.

Weighting: Broadband sound levels shall be reported by using the A-weighting scale in the frequency range of interest. Full Octave Bands and One-third Octave Band levels shall be reported by using the Z, Linear or un-weighted scale.

Response: SLMs will be set to fast response (100 or 125 milliseconds time weighting).

Averaging: the averaging for determination of the  $L_{10}$ ,  $L_{50}$  and  $L_{90}$  statistical noise descriptors will be set to linear, rather than exponential.

Settings: All SLM settings will be reported.

### **3.4 Post-Upgrade Locations**

The post-upgrade (Advanced Gas Path) measurements shall utilize the same locations as the pre-upgrade measurements, with the same type of data to be reported. The type of windscreens used before and after the upgrades will be the same. SLMs used before and after the upgrades will be the same, if possible.

## **4. DOCUMENTATION**

The results of the measurements will be filed with the Secretary to the New York State Public Service Commission (Commission) with a copy to the NYSDPS in a report from an independent Acoustical consultant.

The survey shall be documented as follows:

### **4.1 Instrumentation and Personnel**

The documentation shall include a list of all test equipment and the corresponding serial number(s) as well as copies of all laboratory calibration certificates along with statements about whether the SLMs and calibrators had undergone laboratory calibration within one year prior to its use in the test. SLMs specifications including type, sound floors, humidity and temperature ranges and settings will be included in the report.

Additionally, the final report shall include the names of all personnel who conducted and witnessed the testing.

### **4.2 Description of the Measurement Locations**

Conditions at the measurement locations shall be noted, and photographs shall be taken at each measurement location.

### **4.3 Data and Calculations**

All data shall be reported in tabular and graphical form identifying the measured sound levels. Calculations of sound levels shall be reported to the nearest 1/10 of a decibel. Post-processing of the data may remove extraneous sounds, such as bird noise, aircraft, vehicular traffic, train passbys, etc. as applicable and/or required. The sound level meters to be used will have the ability to record audio, making playback of the data possible during the analysis. When post-processing data is applied, both, raw and processed data will be provided. At a minimum, the 1-minute Linear (Un-Weighted) one-third octave band and full octave band parameters  $L_{eq}$ ,  $L_{10}$ ,  $L_{50}$ ,  $L_{90}$ ,  $L_{max}$ , and  $L_{min}$  shall be presented. 1-minute A-Weighted (dBA) broad band data including  $L_{eq}$ ,  $L_{10}$ ,  $L_{50}$ ,  $L_{90}$ ,  $L_{max}$ , and  $L_{min}$  values shall also be presented.

### **4.4 Description of Weather Conditions**

Meteorological conditions during testing: The report shall include the continuous log of all

measurements of meteorological conditions collected by the portable weather station during the entire testing period consisting of average wind speed, average wind direction, ambient air temperature, relative humidity, and barometric pressure (Optional). Periods that should be excluded because of weather conditions, will be identified.

Using data collected with the portable weather station, the recorded atmospheric conditions of wind speed and direction; average temperature; relative humidity; and barometric pressure (optional) shall be reported, preferably in 1 minute intervals, for the entire measurement period.

Accuracy (or maximum margin of error) for the meteorological sensors will be:

Anemometer/Wind Speed: +/- 2.4 mph or  $\pm 4\%$  of reading; Thermometer: +/- 1 deg F (from 32 deg F to 122 deg F);

Wind Direction Sensor: +/- 5 degrees (0 to 355 degrees)

Hygrometer/Humidity: +/- 3.0 % (from 10% to 90% Relative Humidity), to a maximum of +/- 5 % RH

Barometric Pressure: +/- 0.088 in.Hg) over full pressure range at 77°F; maximum error of +/- 0.148 in. Hg (-40° to 140 °F)

Rain fall from the closest meteorological station will be reported.

Accuracy for portable weather stations, hand held meters and/or anemometers will be documented with information from the manufacturers along with a statement about whether the portable weather station and the hand-held meters or anemometers used for the tests comply with the accuracy requirements specified in this protocol.

#### **4.5 Miscellaneous**

The report will also include:

- a. The insertion loss of the windscreen as stated by the manufacturer, accredited independent laboratory or publicly available data, for the fractional bands of interest specified in section 1.3 of this protocol.
- b. Statements about whether or not the insertion loss values (in dB) have been automatically or manually applied to the reported data. If the same type of windscreens are used before and after the upgrades, no corrections for insertion loss are necessary when



- analyzing changes in noise levels. Corrections may be necessary if windscreens are different or for sound power level determination, computer noise modeling or extrapolation purposes;
- c. Field data sheets and notes.
  - d. Collected data will be filed with the Secretary to the Commission with a copy to DPS-Staff in storage media or by electronic means. Post-processed data, if any transient sound data was excluded by post-processing, will also be filed with the Secretary to the Commission, along with sound recordings (with the sounds that were excluded or removed by post-processing).
  - e. Broadband and fractional band results and corresponding wind data identifying exclusions, if any.
  - f. Evaluated sound monitor positions with GPS coordinates along with photos.
  - g. Figures depicting the sound testing positions in relation to the Facility components and main roads.
  - h. A log of the operational conditions of the Facility. Statements about whether the operational conditions during testing comply with the requirements of section 2.1 of this protocol will be included.
  - i. Any difference between Facility's and Eastern standard time will be reported.
  - j. An analysis of results.

## 5. ANALYSIS

For each full-octave-band frequency from 31.5 Hertz up to 8000 Hertz, data will be presented on nine (9) separate graphs (One per full octave band) showing all data points with the Leq-1 min (in the vertical axis) as a function of turbine power output (in the horizontal axis) identifying the data values that were excluded from the analysis (e.g. because of wind speed, etc.). These plots will be later updated once the upgrades are performed, to also include the data points that will be collected after the upgrades. Graphs, trends and correlations will be analyzed, identified and discussed.

In addition, graphs will be presented showing data points for the worst operational noise conditions (including max, min and average levels) with the Leq-1 min (in the vertical axis) as a function of one-third octave bands from 25 Hz. up to 16,000 Hz. (in the horizontal axis). These plots will be later updated once the upgrades are performed, to also include the data points that will be collected after the upgrades. If the information shows that:

- a. the difference between the post-upgrade and pre-upgrade full-octave band Leq sound levels at the worst operational noise conditions are equal to or lower than the values shown on Table 1 at all full-octave frequency bands and;
- b. prominent tones as defined in Section 5.4 that did not exist before the upgrade still do not occur at near-field positions after the upgrade, or prominent tones that existed prior to the upgrade have not increased in magnitude,

then the Facility may proceed with additional upgrades without further noise impact analysis.

31.5	63	125	250	500	1000	2000	4000	8000
Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz	Hz
3 dB	3 dB	2 dB	0 dB	0 dB	1 dB	1 dB	1 dB	1 dB

- c. If the difference between the post-upgrade and pre-upgrade full-octave band Leq sound levels at the worst noise operational conditions exceed the values in Table 1 at any full-octave frequency band, Petitioner shall provide additional analysis and reporting to investigate whether the increase in noise levels at close in positions, in combination with tonality and low frequency noise corrections as specified in section 5.4. are sufficient to cause modified Composite Noise Rating (mCNR) to exceed a final level of “C” at any originally evaluated receptors. For this evaluation,

preconstruction ambient noise levels (and therefore background noise corrections under the mCNR methodology as shown on table 2) will be assumed to be the same as presented in the Application Supplement as required by certificate condition VII.F.

- d. If prominent tones as defined in Section 5.4 were not present before the upgrades but occur after the upgrades, or tones were present before and after the upgrades but are exacerbated (higher in magnitude (dB) than before the upgrades at any frequency band(s) of interest), Petitioner shall also determine if prominent tones at near-field positions after the upgrades will be perceived as prominent tone(s) at any previously evaluated receptors as well so that tonality corrections are warranted. The analysis will include any corrections to the modified Composite Noise Rating (mCNR) at any originally evaluated receptors as specified in section 5.c. above and other relevant sections of this protocol. Post-construction tonal corrections as included in the Feb. 7, 2006 Environmental Noise Evaluation for each previously evaluated receptor are reproduced on Table 2 of this Protocol for informative purposes.

Depending on test results Petitioner may or may not need to use sound propagation modeling for the additional analysis indicated in sections 5.c and 5.d. above, as specified in section 6.c. of this protocol.

## **5.1 COMPUTER NOISE MODELING**

Any sound propagation software model used by Petitioner shall be designed to represent noise emissions from the most relevant noise sources in the facility, including the HRSG stack outlets, the GT-inlets, and the cooling tower. The model input would use the post-upgrade near-field (Leq) sound levels measured during the sound survey at the worst noise operational conditions, in order to calculate sound power levels for each noise source (3 stack outlets, 3 GT inlets) and sound power levels from the cooling towers. The plant will be modeled with and without duct burning.

Existing buildings within the facility site that may act as sound barriers and topography between sound sources and sensitive receptors will be included in the model. Vegetation will be excluded. Additional sound measurements on BEC's property will be needed for validation and calibration of the computer model, including sound readings at approximately 400 ft. from the envelope of noise sources as specified in ASME Standard B133.8-2011 – Gas Turbine Installation Sound Emissions-

## **5.2 MODELING PROTOCOL**

A protocol for the sound propagation modeling shall be drafted and filed with the Secretary to the Commission for review by the NYSDPS within the time frames listed in Section 6 of this protocol

(Schedules). The protocol should include modeling specifications, inputs and values, noise descriptors to be used, calibration provisions, ground and air absorption, propagation standards and variables, audibility and human hearing thresholds along with any other relevant computer noise modeling considerations.

### **5.3 ADDITIONAL ANALYSIS**

If the modeling demonstrates that calculated/forecasted facility sound levels at any previously evaluated six (6) receptor locations (listed on Table 2) after the first, second and third upgrades are equal or lower than the applicable mCNR Noise Level Rank Curve limits (“b” or “c”, as shown on Table 2), with no pure or prominent tones and no excessive low frequency noise as defined in this protocol, the Petitioner may proceed with additional upgrades without further noise impact analysis.

If the modeling indicates that the contribution from the stacks, inlets, cooling tower, or other relevant noise sources within the facility, if any, exceeds or will exceed the applicable mCNR Noise Level Rank Curve limits; generates or will generate pure or prominent tones or excessive low-frequency noise as defined in this protocol; or could create indoor perceptible vibration or rumbles at any of the six (6) receptor locations (shown on Table 2); then PSEG will present to NYSDPS alternatives to mitigate and resolve such sound impacts. In considering such alternatives and other measures, the Siting Board and NYSDPS shall retain all legal authority to require any additional sampling or mitigation as may be necessary. Further Siting Board authorization shall be warranted if any of these conditions occur or are expected to occur and mitigation measures are not feasible to bring the Facility to a mCNR rating of C or lower at any previously evaluated receptors as specified in this protocol.

### **5.4 DEFINITIONS FOR PROMINENT TONES AND EXCESSIVE LOW-FREQUENCY NOISE**

- a. Initially, any near-field or far-field evaluation will be performed in a full octave band basis. A sound will be considered tonal if an octave band center frequency sound pressure level exceeds the two adjacent center frequency sound pressure levels by more than 3 decibels. Should this initial evaluation identify a potential tone at any previously evaluated receptor, the correction for the mCNR rating will be +1. However, PSEG may also present a supplemental, more refined, prominent-tone analysis based on one-third octave-band data. For this supplemental analysis a pure or prominent tone will be identified as present if the time-average sound pressure level ( $L_{eq}$ ) in the one-third-octave band of interest exceeds the arithmetic average of the time-average sound pressure level ( $L_{eq}$ ) for the two adjacent one-third-octave bands by any of the

following constant level differences: 15 dB in low-frequency one-third-octave bands (from 25 up to 125 Hz), 8 dB in middle-frequency one-third-octave bands (from 160 up to 400 Hz); or 5 dB in high-frequency one-third-octave bands (from 500 up to 10,000 Hz). Should a one-third octave band supplemental analysis confirm that, after any upgrade, an audible tone occurred or is expected to occur and be perceived as prominent at any previously evaluated residential receptor, a +1 mCNR tonal correction will be included in the analysis. (Under the mCNR methodology an adjustment of +1 is applied to the mCNR rating if a pure or prominent tone occurs.)

- b. Excessive low frequency noise (pulsating) under the mCNR methodology is defined as the sound level that exceeds 75 dB in or below the 31.5 Hz full octave band frequency. Under the mCNR methodology an adjustment of +1 is applied to the mCNR rating if this occurs.

Although not used for calculation of mCNR ratings, a Supplemental analysis of excessive low frequency noise will also report whether:

- c. Noise levels from the facility after any upgrade are expected to exceed 65 dB at any of the 16, 31.5 and 63 Hz full-octave bands at any previously evaluated receptors (see table 2); and/or
- d. Noise-induced vibrations, rattles or rumbles are expected to be produced by low frequency noise levels from the facility after the upgrades.

Should any estimated mCNR ratings exceed a level of “C” at any previously evaluated receptors or vibrations, rattles or rumbles on sensitive receptor buildings occur or be expected to occur after any upgrade, PSEG will present a plan to mitigate such impacts before continuing with any additional upgrades. Further Siting Board authorization shall be warranted if any of these conditions occurs or is expected to occur, and mitigation measures are not feasible, not provided, not expected to bring or cannot bring the Facility under acceptable conditions.

## **6. SCHEDULES**

- a. Results of the first test will be submitted to the Secretary to the Commission with a copy to the DPS-Staff at least 30 days before the starting date of the upgrades on the first turbine.
- b. Results of the second test (after the upgrade on the first turbine), and, if applicable, a description of any mitigation measures taken by PSEG to reduce post-upgrade noise level to values below those in Table 1 or otherwise address prominent tones, will be submitted to the Secretary to the Commission with a copy to the DPS-Staff no later than 60 days after the post-AGP test.
- c. Should PSEG or DPS-Staff review of the pre-/post-AGP test reports determine that a sound propagation model is warranted, PSEG shall provide a modeling Protocol to the Secretary to the Commission for DPS-Staff review no later than 30 days after such determination.
- d. Results of sound propagation modeling, if any, will be submitted to the Secretary to the Commission with a copy to DPS-Staff no later than 60 days after approval of the sound propagation modeling Protocol.
- e. If computer sound modeling based on near field testing results shows that an exceedance of the applicable mCNR limits described in this protocol may have occurred after the first upgrade or may occur after the second or third upgrades, mitigation measures options will be filed with the Secretary to the Commission and presented to DPS-Staff no later than 90 days after receiving comments on the results of the noise modeling report from DPS-Staff. Further Siting Board authorization shall be warranted if any of the conditions as listed in Section 5.3 occur or are expected to occur, and mitigation measures are not feasible, not provided, not expected to bring or cannot bring the Facility within applicable Certificate conditions.

## **7. WITNESSING AND NOTIFICATIONS**

- a. At the discretion of NYSDPS, DPS-Staff representatives may be assigned to witness any sound test.
- b. At the discretion of the NYSDPS, sound collections can be performed by DPS-Staff with NYSDPS instrumentation.
- c. This Sound Testing Compliance Protocol reflects the minimum requirements for these sound tests. NYSDPS at its discretion can collect any information related to noise from the facility and the environment and weather conditions including, but not limited to, any noise levels by using any metric or noise descriptor, at any public or Facility location.
- d. If DPS-Staff desires to conduct testing of the facility with any Station equipment offline or at any specific operational condition, DPS-Staff will coordinate with BEC Staff at least five (5) business days in advance, and make reasonable accommodations for market conditions and ISO dispatch instructions to the Facility in the performance of any such testing. Otherwise, previous notice will not be necessary.
- e. BEC Staff will coordinate with DPS-Staff at least five (5) office days in advance of a tentative date for the noise tests.
- f. BEC Staff will coordinate with DPS-Staff on a final date at least two (2) office days prior to the noise tests.

## **8. REFERENCES**

- a. ANSI/ASA S1.11-2004 (R 2009) American National Standard Specification for Octave-
- b. Band and Fractional-Octave-Band Analog and Digital Filters
- c. ANSI/ASA S1.40-2006 (R 2011) American National Standard Specifications and Verification Procedures for Sound Calibrators
- d. ANSI/ASA S1.43-1997 (R 2012) American National Standard Specifications for Integrating-Averaging Sound Level Meters
- e. ANSI/ASA S12.9-2013/Part 3 (Quantities and Procedures for Description and Measurement of Environmental Sound. Part 3: Short-Term Measurements with an Observer Present)
- f. ANSI/ASA S12.9-2005/Part 4 (Quantities and Procedures for Description and Measurement of Environmental Sound – Part 4: Noise Assessment and Prediction of Long-term Community Response).
- g. The Edison Electric Institute. 1984. Electric Power Plant Environmental Noise Guide. Bolt Beranek and Newman Inc. Volume 1, 2<sup>nd</sup> Edition.
- h. United States Environmental Protection Agency (USEPA). September 1975. Model Community Noise Control Ordinance. USEPA Report EPA 550/9-76-003



## 9. TABLES

Table 2 - Summary of Modified CNR Ranking of Sound Measurements (From Feb. 7, 2006 Environmental Noise Evaluation)							
Location	Address	Initial ranking	Background correction	Temporal Seasonal	Tonal Impulsive Low Freq.	Previous Exposure	Final Rank
1	11 Anders Lane	c	0	0	0	0	C
2	74 Hartman Road	c	0	0	0	0	C
3	115 Van Wies Point Rd	b	1	0	0	0	C
4	3346 River Rd	b	1	0	0	0	C
5	54 Halter Rd.	c	0	0	0	0	C
9	North Picnic Area Papscaanee Island Nature Preserve	c	1	-1	0	0	C

# **Exhibit 2**

File Message Adobe PDF

Ignore X Meeting  
Junk Delete Reply Reply Forward IM More  
Delete Respond Quick Steps Move Move OneNote Mark Categorize Follow Translate Find Related Select Zoom Report Phishing PhishMe

From: Charlotte Buchanan <charlotte.buchanan@gmail.com> Sent: Thu 10/20/2016 2:18 PM  
To: Clancy, William S.  
Cc:  
Subject: Re: Noise Concern

**Email sent from outside of PSEG. Use caution before using links/attachments.**

---

Dear Bill,

Yes, it was I to whom you spoke in the summer about noise. It was a constant noise for a long period, and the periods of noise were and are intermittent. As we discussed, the noise likely seems to be when a barge or tanker is unloading, most likely at Innovative Surface Solutions. I live at 115 Van Wies Point Road, Glenmont, and that is where I hear the noise.


Sincerely, Charlotte





On Oct 20, 2016, at 10:27 AM, Clancy, William S. <[William.Clancy@pseg.com](mailto:William.Clancy@pseg.com)> wrote:

Hi Charlotte. I'm hoping you can help me out with something. I have to provide some data to the DPS regarding noise concerns, if any, in our neighborhood. I'm not sure but I believe we ended up talking early this summer about some "flow noise" that you were experiencing. In the end it appeared to us to be related to an ocean going tanker discharging product at the dock south of us

Can you please verify that it was you I spoke with and what the address was where you experienced the noise? I'd like to follow up if I can. Thanks in advance

Bill Clancy  
Plant Manager BEC-PSEG  
380 River Road  
Albany NY 12077  
518-436-5027 (O)  
518-598-6722 ©  
518-462-2130 (F)

 **PSEG**  
We make things work for you.

# **Exhibit 3**



# NIXON PEABODY LLP

ATTORNEYS AT LAW

Omni Plaza, Suite 900  
30 South Pearl Street  
Albany, New York 12207-3497  
(518) 427-2650  
Fax: (518) 427-2666

Richard M. Cogen  
Direct Dial: (518) 427-2665  
E-Mail: rcogen@nixonpeabody.com

August 10, 2005

## HAND DELIVERY

Hon. Jaclyn A. Brillling, Secretary  
New York State Public Service Commission  
Three Empire State Plaza  
Albany, New York 12223

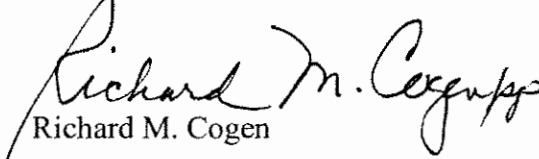
**Re: Case 97-F-2162 – Application by PSEG Power New York, Inc. for a Certificate of Environmental Compatibility and Public Need to Construct and Operate a 750 Megawatt Natural Gas-Fired Combined Cycle, Combustion Turbine Generating Facility in the Town of Bethlehem, Albany County**

Dear Secretary Brillling:

Pursuant to 16 NYCRR Part 1003, and the Opinion and Order Granting Certificate of Environmental Compatibility and Public Need in the referenced case, PSEG Power New York Inc. ("PSEGNYS") hereby files its revised Compliance Filing for Certificate Condition No. VI.G, Noise Testing Protocol. This revised filing supercedes filings previously made. Seven copies of the filing are provided for your use.

The specified number of copies have been served upon the Distribution List by mail today.

Respectfully submitted,

  
Richard M. Cogen

RMC:kp  
Enclosures

A50987.1

RECEIVED  
PUBLIC SERVICE  
COMMISSION  
FILES-ALBANY  
05SEC-  
2005 AUG 10 AM 10:23

NIXON PEABODY LLP

Hon. Jaclyn A. Brillling, Secretary

August 10, 2005

Page 2

**Distribution List:**

N. Morrison, NYS Department of Public Service (five copies)

D. Van Ort, NYS Department of Public Service (one copy)

K. Kispert, NYS Department of Environmental Conservation (five copies)

T. Egan, Town of Bethlehem (one copy)

R. Ansaldo, NYS Department of Public Service (one copy)

**Bethlehem Energy Center**  
**Compliance Filing**  
**for**  
**Certificate Condition No. VI.G**  
**and for**

**Town of Bethlehem Noise Ordinance**

**Noise Testing Protocol**

**April 5, 2005**

**Revised August 10, 2005**



**PSEG Power New York Inc.**

2005 AUG 10 AM 10:23

RECEIVED  
PUBLIC SERVICE  
COMMISSION  
PSEG-FILES-ALBANY

## **1. Introduction**

PSEG Power New York Inc. ("PSEGNYS") has redeveloped the 400 megawatt (MW) Albany Steam Station into a 750 MW combined cycle electric generating facility called the Bethlehem Energy Center (BEC). The New York State Board on Electric Generation Siting and the Environment issued a Certificate of Environmental Compatibility and Public Need for the BEC on February 28, 2002.

This Noise Testing Protocol is being filed in accordance with Certificate Condition VI.G. which is as follows:

*The Certificate Holder shall conduct a post-construction ambient noise monitoring program within six months of the starting of commercial operation to demonstrate that, based on noise measurements and acoustic observations, the operating plant complies with the acoustic design goal of CNR ranking of C. The CNR analysis, as described in the Application Supplement, will include the ambient noise data presented in the Application Supplement and the sound monitoring data of the operating plant. Prior to conducting the noise monitoring program, a protocol will be developed and submitted for approval as a Compliance Filing subsequent to the issuance of the Certificate.*

PSEGNYS expects to conduct the noise monitoring program during the second quarter of 2005. PSEGNYS will provide NYSDPS with an advance notice of the time and date of initiating the monitoring program.

## **2. Sound Measurement Program**

### **2.1 Sound Level Meter and Octave Band Filters**

All sound measurements shall be conducted using a sound level meter equipped with a windscreen that meets the requirements of ANSI S1.4-1983 Type 1 instrumentation. For frequency analysis, octave band filters shall conform to ANSI S1.11-1986.

### **2.2 Field Calibration**

The sound level meter shall be field calibrated immediately before and after each measurement series, and after any change in equipment conditions such as a battery replacement. Calibration shall be conducted using an acoustic calibrator that is recommended by the sound level meter manufacturer, and conforms to ANSI S1.40-1984.



### **3. General Measurement Conditions**

#### **3.1 Facility Operation**

During all operational measurements, all three combustion turbines should be operating at full rated load with duct burning. All cooling tower cells and building ventilation equipment should be operated at maximum capacity. All permanent equipment enclosures shall be installed, and all building access doors shall be closed. Any ventilation openings that will be open during normal warm weather operation shall be open during the measurements.

#### **3.2 Atmospheric Conditions**

Environmental sound measurement shall not be conducted during adverse weather conditions. Measurements should be avoided during periods when the average wind speed exceeds 6 meters per second (13 mph). Measurements during excessive wind speeds shall be noted accordingly on data sheets and their validity reviewed as necessary. Measurements shall not be conducted during periods of precipitation or wet surface road conditions. Weather conditions shall be noted on measurement data sheets.

### **4. Sound Level Measurement**

#### **4.1 Measurement Locations**

Sound level measurements shall be conducted once at each of the six (6) receptor locations listed in Table 4.6.2-4 of the Article X application. These locations are listed below, and are indicated in Figure 1 that is provided at the end of this document. Measurements at receptor #9 (North Picnic Area at the Papscanee Island Nature Preserve) will be taken during daylight hours, consistent with the planned use of that location. Measurements at all other locations will be taken during the late night hours when background sound produced local traffic is at a minimum. If changes in local conditions such as new sources of background noise, accessibility, reflecting surfaces, screens, or other restrictions preclude meaningful measurements at the prescribed locations, alternate locations may be selected provided proper corrections are applied.

- Location 1 – 11 Anders Lane
- Location 2 – Hartman Road
- Location 3 – 115 Van Wies Point Road
- Location 4 – 3346 River Road

- Location 5 – 54 Halter Road
- Location 9 – North Picnic Area at the Papscaanee Island Nature Preserve

#### **4.2 Operational Sound Level Measurements**

Operational measurements shall include A-weighted sound level ( $L_{90}$ ) and octave band spectra ( $L_{90}$ ). The microphone shall be positioned approximately 1.5 meters (5 ft) above the ground for all measurements. The measurement interval shall be a minimum of 10-minutes performed consecutively at each location. All significant sound sources shall be identified, and significant transient sounds shall be noted.

#### **4.3 Operational Sound Level Limits**

Certificate Condition VI.E states:

*The Facility shall be designed to meet the CNR rankings listed in Table 4.6.2-4 of the Application Supplement and shall meet a CNR ranking of C at the subject receptors.*

The Modified Composite Noise Ranking (CNR) method is a six-step process for evaluating community response to environmental sound. The CNR rank of C indicates that, at worst, the source of noise would produce a community response falling between “no observed reaction” and “sporadic complaints.” The process for determining the Modified CNR rank for the BEC is described below.

##### **Step 1: Initial Ranking**

The first step involves measuring an octave band spectrum of the environmental sound levels with the power plant operating. To obtain the octave band spectrum requires measuring the environmental sound in each of 9 separate octave bands (31.5 Hz to 8000 Hz). The measured octave band spectrum is then plotted over the CNR ranking curves. Figure 2 is an example spectrum plotted with these curves. The initial (unadjusted) ranking for the measured sound is the highest zone into which the spectrum penetrates. In the example (shown in Figure 2), the initial ranking is B. Steps 2 through 5 are adjustments to account for a variety of effects and are as follows:

##### **Step 2: Background Sound**

To account for pre-existing background sound levels, an adjustment to the initial ranking is applied. This adjustment requires measuring an octave band spectrum of environmental sound that is obtained without the presence of the sound source that is being evaluated. These corrections are determined by plotting measured octave band sound levels over the CNR

“Background Noise Curves”. Figure 3 is an example background spectrum that applies a +1 correction to the final CNR ranking. A +1 correction applies because the majority of the curve falls within the +1 band. As can be seen in Figure 3, background adjustments can range between +2 for very quiet areas to –4 for noisy areas.

In support of the BEC Article X Application Supplement a comprehensive measurement program was conducted to determine appropriate pre-existing background sound corrections at each of the receptor locations. These corrections are summarized below and documented in the Application:

<b>Location</b>	<b>Background Adjustment</b>
1. 11 Anders Lane	0
2. Hartman Road	0
3. 115 Van Wies Point Road	+1
4. River Road	+1
5. Halter Road	0
9. North Picnic Area at the Papscanee Island Nature Preserve	+1

As shown in the above table, Locations 3, 4, and 9 have background adjustment values of +1, which is indicative of quiet areas.

**Step 3: Temporal and Seasonal Effects**

These adjustments are always less than zero and account for seasonal and intermittent operation of the plant. For example if the plant is only operated during the winter months or during daytime hours (periods when the sound is expected to be less intrusive) adjustments of –1 or –2 are applied. Similarly, if the plant is only operated for short periods during a day, additional negative corrections can be applied. The BEC facility will operate 24-hours per day; therefore, its Step 3 correction with respect to residential land uses is 0. For the Papscanee Island Nature Preserve, however, which is a daytime use only, the Step 3 day/night adjustment is –1. Since there is no seasonal variation or intermittency of sound, the remaining Step 3 ratings are both 0 at all locations.

**Step 4: Tonal, Low frequency, or Impulsive Character of Noise**

These adjustments are made in order to compensate for potentially undesirable characteristics of a sound. If the sound is tonal, contains significant low frequency components, or is impulsive then +1 adjustments for each feature can be applied. These adjustments will be determined based on the spectral and temporal characteristics of the sound that is measured

in Step 1. Sound will be considered tonal if an octave band center frequency sound pressure level exceeds the two adjacent center frequency sound pressure levels by more than 3 decibels. A correction for low frequency sound will be applied if the sound level in the 31.5 Hz frequency band exceeds 75 dB.

**Step 5: Previous Exposure**

This correction is either 0 or -1 to compensate for a communities attitude towards the project. Since the community has had some prior experience with power plant sound and there have been no registered complaints related to power plant sound in the area, it would be reasonable to take a -1 correction. However, in the Article X Application Supplement the project conservatively selected to use a 0 ranking adjustment.

**Step 6 Final Ranking**

This step sums the adjustments of steps 2, 3, 4, and 5; and applies them to the ranking of Step 1 to determine the final modified CNR ranking (i.e.  $B + 1 = C$  or  $E - 2 = C$ ).

To confirm compliance with Certificate Condition VI.E, sound measurements will be conducted with the plant operating at full capacity (as described in Section 3.1). The measurement results will be compared to CNR ranking curves and the above adjustments will be applied. Since the results of the measurements include both plant and non-plant components, achieving a modified CNR ranking of C or better at all receptors will demonstrate compliance with the certificate condition and no further analysis will be necessary. For example, in order to comply with the requirement of meeting a modified CNR rank of C or better at River Road, the measured sound levels must result in an initial ranking of B or A at that location (based on an adjustment to pre-existing background of +1 at that location and assuming no Step 4 adjustments are required).

If, however, there are one or more receptors where the modified CNR rank is D or worse, then additional noise sampling at these locations will need to be conducted. These measurements will be performed with the Bethlehem Energy Facility not operating, and should be conducted as soon as possible after the initial sampling in order to minimize the differences in background noise. If these measurements indicate that background sound levels associated with non-BEC sources have increased since the original studies conducted in October 1997 and March 1998, then final CNR rankings can be based on new Step 2 adjustments that are derived from the newly acquired background sound level measurements.

## **5. Data Reporting**

A final report shall be prepared as a compliance filing and shall include the following information:

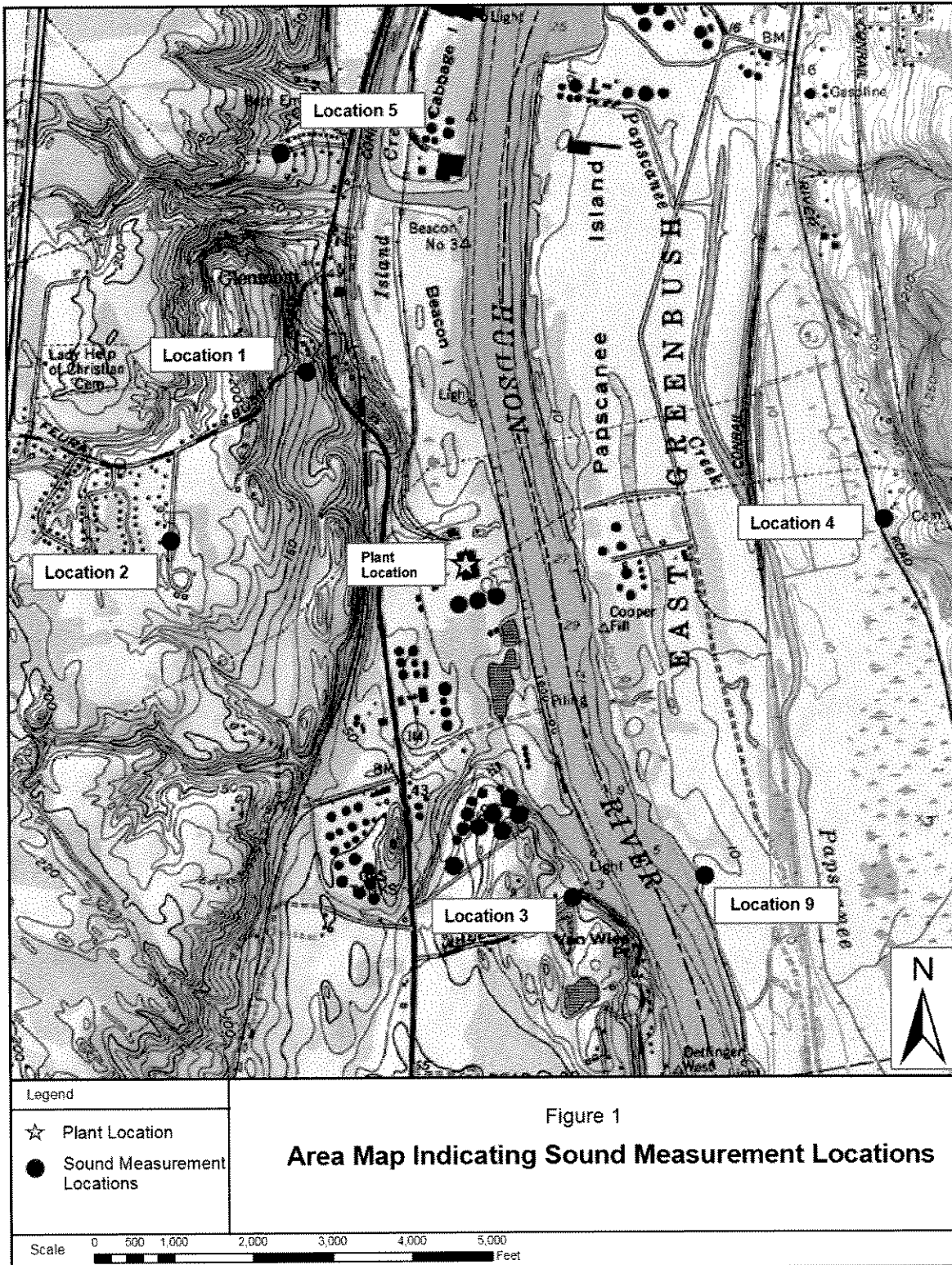
- A list of all sound measurement equipment used in the study.
- A description of the sound measurement locations.
- A description of the weather conditions that occurred during the sound measurements.
- Documentation confirming facility operating conditions.
- Ambient noise data presented in the Application Supplement.
- Graphical comparison of CNR curves with sound data gathered with the power plant operating. A separate comparison for each measurement location is required.
- Graphical comparison of measured background sound levels with Step 2 CNR background adjustment curves (if corrections to previously determined background corrections are required).

## **6. Contingency Plan for Not Meeting the Acoustic Design Goal**

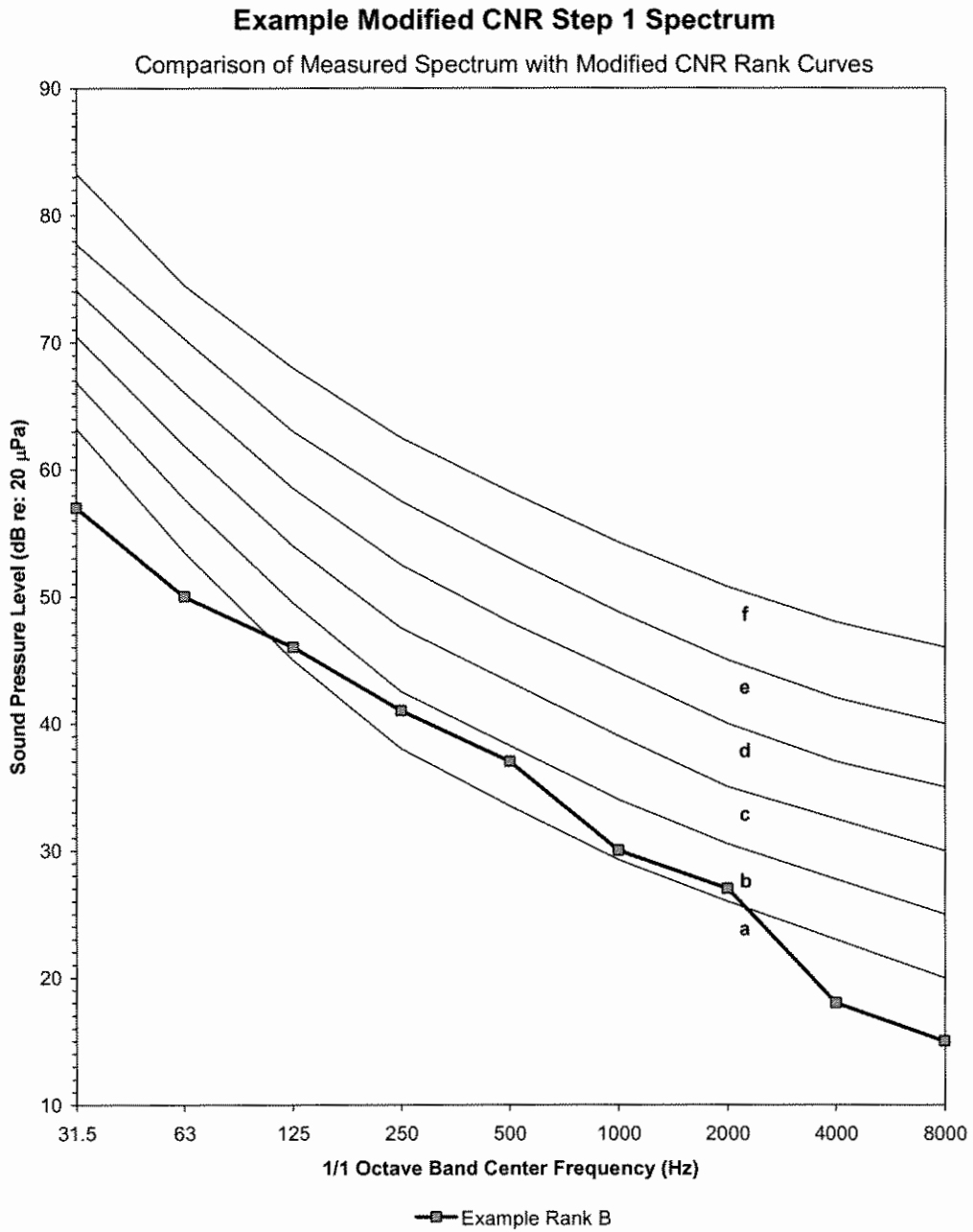
The BEC has been designed to meet the acoustic design goal of final Modified CNR ranking of C at all of the six receptor locations. In the unlikely event that PSEGNY is not able to demonstrate that this goal can be met at one or more of the receptors by the end of the six-month period referenced in Certificate Condition VI.G, PSEGNY will develop a noise control strategy. In developing this strategy, PSEGNY will conduct additional studies, including additional noise sampling, to identify the principal sources of noise contributing to the higher than expected sound levels at those receptors not meeting the acoustic design goal. Potential noise mitigation measures to reduce the impact of noise emissions from these sources will be evaluated. PSEGNY will then select the optimal approach for meeting the acoustic design goal. This approach, including schedule for implementation, will be included in the final report described in Section 5.

PSEGNY will review the noise control strategy with the NYSDPS prior to implementation. The ambient sound measurement program described in Sections 2, 3, and 4 of this document will be conducted as soon as practical but no later than six months after implementation of the noise control strategy.

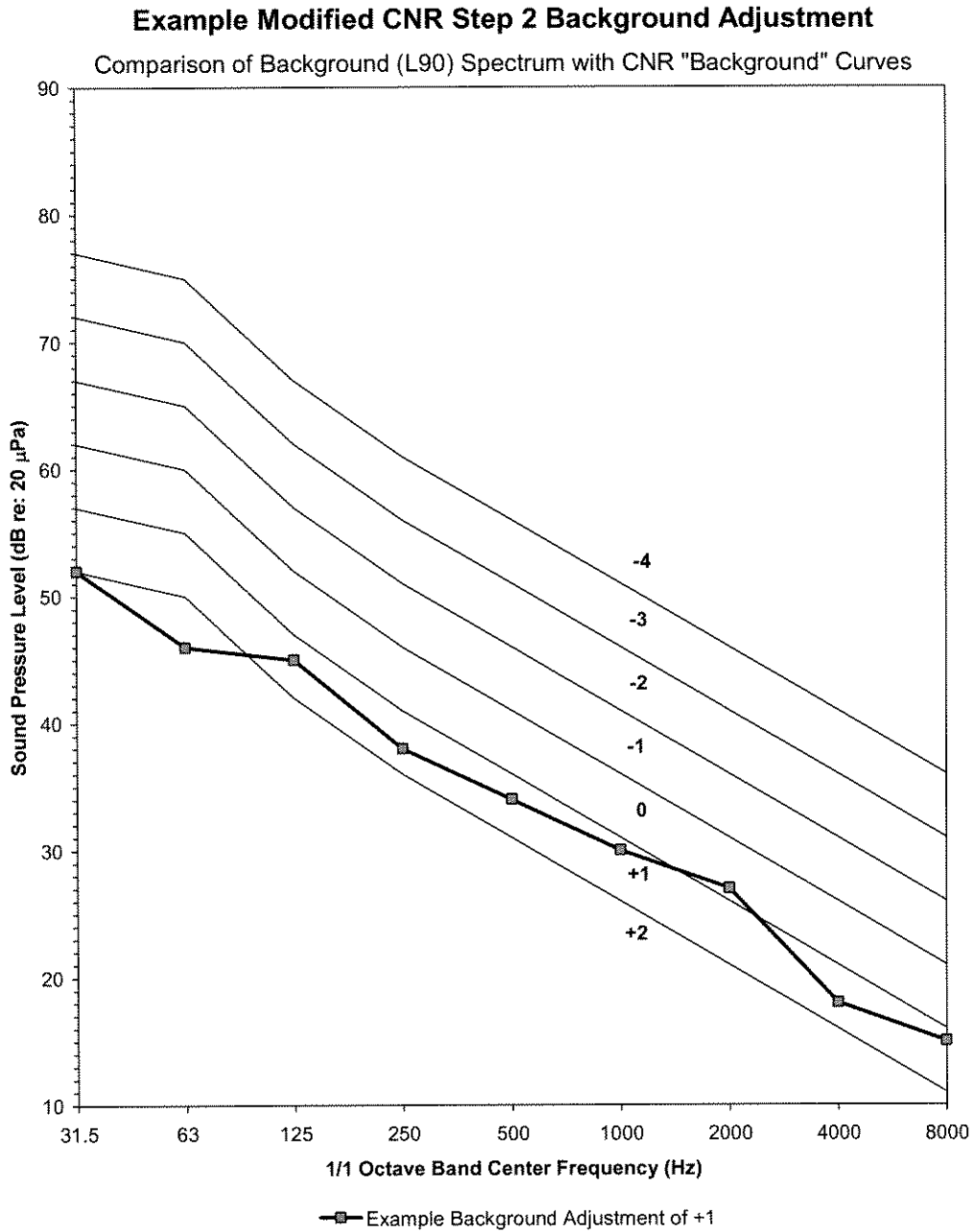
Figure 1 Noise Measurement Locations



**Figure 2 Example Modified CNR Step 1: Initial Ranking**



**Figure 3 Example Modified CNR Step 2: Background Sound Adjustment**





## **1. Introduction**

PSEG Power New York Inc. (“PSEGENY”) has redeveloped the 400 megawatt (MW) Albany Steam Station into a 750 MW combined cycle electric generating facility called the Bethlehem Energy Center (BEC). The New York State Board on Electric Generation Siting and the Environment issued a Certificate of Environmental Compatibility and Public Need for the BEC on February 28, 2002.

PSEGENY has developed a Noise Testing Protocol in accordance with Certificate Condition VI.G (refer to Part 1 of this document). That certificate condition requires PSEGENY to conduct a post-construction ambient noise monitoring program within six months of the starting of commercial operation to demonstrate that, based on noise measurements and acoustic observations, the operating plant complies with the acoustic design goal of CNR ranking of C.

The staff of the New York State Public Service Commission has requested that PSEGENY conduct additional noise monitoring to demonstrate that the BEC will comply with the Town of Bethlehem noise ordinance. Chapter 128, Section 24 C of the Code of the Town of Bethlehem provides performance standards for sound produced by the BEC. Paragraph 4 of Section 24 C states:

- (4) Noise. The maximum noise level at the property line applicable to the use involved shall not exceed seventy (70) dBA as measured in accordance with the procedure specified by the American National Standards Institute.*

This limit applies at all PSEGENY property lines except at the south property line. At the south property line, PSEGENY has been granted a non-exclusive permanent sound easement (LIBER 2655 Pages 890-896) to emit noise in excess of 70 dBA within the area shown in Figure 1.

A separate protocol has been developed for the property line sound measurements because the Town of Bethlehem noise ordinance is based on A-weighted sound levels as opposed to a CNR ranking. However, both noise monitoring programs will be conducted consecutively. PSEGENY will provide NYS DPS with an advance notice of the time and date of initiating the monitoring programs.

## **2. Sound Measurement Program**

### **2.1 Sound Level Meter**

All sound measurements shall be conducted using a sound level meter equipped with a windscreen that meets the requirements of ANSI S1.4-1983 Type 1 instrumentation.

## **2.2 Field Calibration**

The sound level meter shall be field calibrated immediately before and after each measurement series, and after any change in equipment conditions such as a battery replacement. Calibration shall be conducted using an acoustic calibrator that is recommended by the sound level meter manufacturer, and conforms to ANSI S1.40-1984.

## **3. General Measurement Conditions**

### **3.1 Facility Operation**

During all operational measurements, all three combustion turbines should be operating at full rated load with duct burning. All cooling tower cells and building ventilation equipment should be operated at maximum capacity. All permanent equipment enclosures shall be installed, and all building access doors shall be closed. Any ventilation openings that will be open during normal warm weather operation shall be open during the measurements.

### **3.2 Atmospheric Conditions**

Environmental sound measurement shall not be conducted during adverse weather conditions. Measurements should be avoided during periods when the average wind speed exceeds 6 meters per second (13 mph). Measurements during excessive wind speeds shall be noted accordingly on data sheets and their validity reviewed as necessary. Measurements shall not be conducted during periods of precipitation or wet surface road conditions. Weather conditions shall be noted on measurement data sheets.

## **4. Sound Level Measurement**

### **4.1 Measurement Locations**

Sound level measurements shall be conducted once at each of the following locations:

- [Why do this? I would suggest deleting: at PSEGN Y's southern property line, directly south of the combustion turbine/heat recovery steam generator building;]
- at the noise easement boundary, directly south of the cooling towers; and
- at the western property line, directly west of the cooling tower midpoint.

#### **4.2 Operational Sound Level Measurements**

Since power plant sound emissions are steady-state, the appropriate metric for quantifying power plant sound is the A-weighted  $L_{90}$  sound level. The microphone shall be positioned approximately 1.5 meters (5 ft) above the ground for all measurements. The measurement interval shall be a minimum of 10-minutes performed consecutively at each location. All significant sound sources shall be identified, and significant transient sounds shall be noted.

#### **5. Data Reporting**

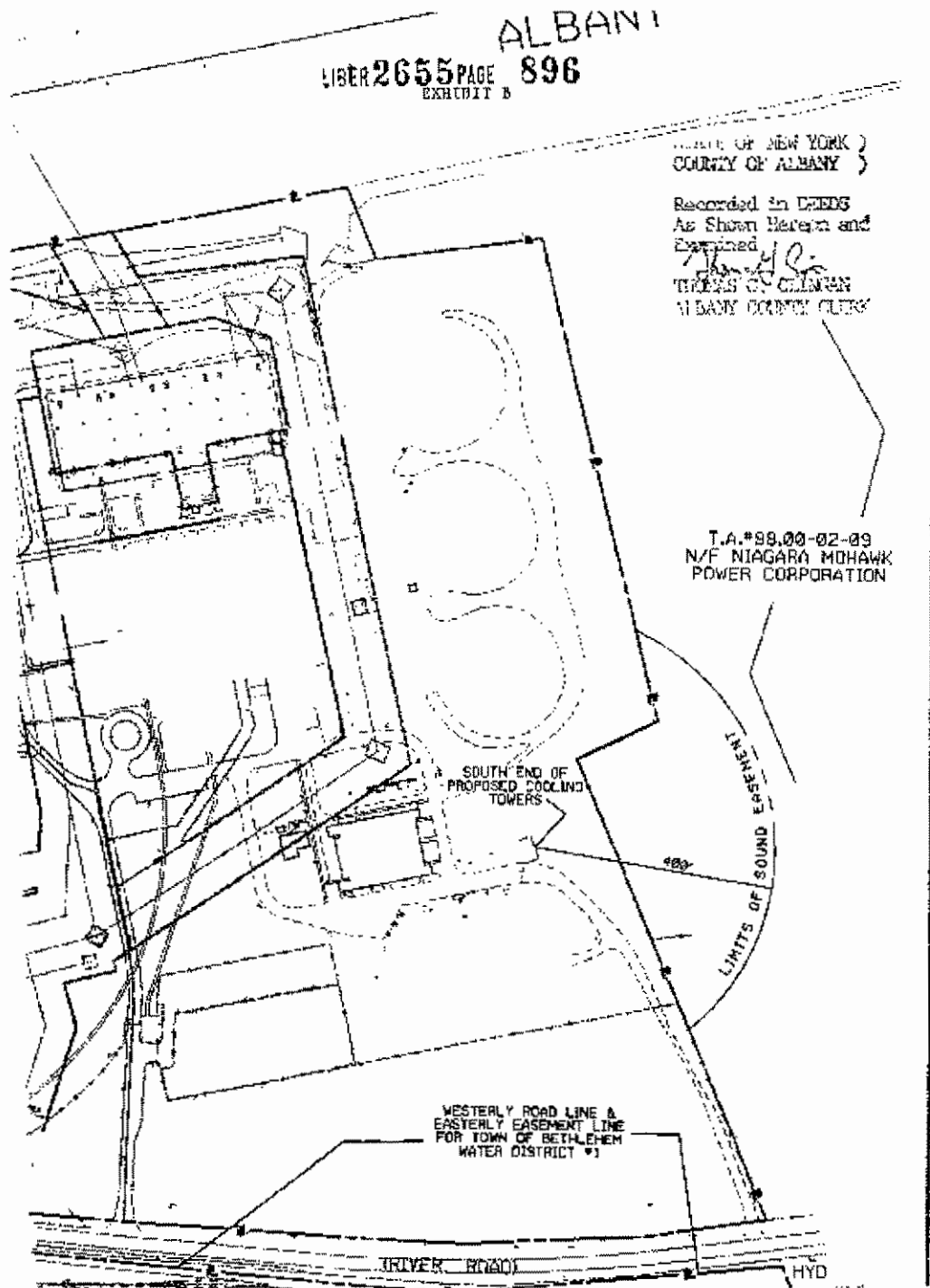
A final report shall be prepared as a licensing package and shall include the following information:

- A list of all sound measurement equipment used in the study.
- A description of the sound measurement locations.
- A description of the weather conditions that occurred during the sound measurements.
- Documentation confirming facility operating conditions.
- Time history A-weighted sound levels and the  $L_{90}$  sound level measured at each location.

#### **6. Contingency Plan for Not Meeting the Town of Bethlehem Noise Ordinance**

The BEC has been designed to meet the Town of Bethlehem noise limit of 70 dBA at all property line locations (including the southern property noise easement boundary). In the unlikely event that PSEGNY is not able to demonstrate that this limit can be met at one or more of the receptors, PSEGNY will consult with NYSDPS to determine the appropriate response taking into account both the results of the testing with respect to the Town Noise Ordinance and the modified CNR ranking at the Locations 2 and 3 as identified in Part 1, section 4.1. Possible responses could include development of an additional noise control strategy, or application for a waiver of the applicable limits in the Town Code based upon the modified CNR ranking. This selected approach, including schedule for implementation, will be included in the final report described in Section 5.

Figure 1 South Property Line Noise Easement







**NIXON PEABODY LLP**

ATTORNEYS AT LAW  
Omni Plaza, Suite 900  
30 South Pearl Street  
Albany, NY 12207-3497  
(518) 427-2650  
Fax: (518) 427-2666

Richard M. Cogen  
Direct Dial: (518) 426-2665  
E-Mail: rcogen@nixonpeabody.com

September 13, 2005

David Van Ort, Esq.  
NYS Department of Public Service  
3 Empire State Plaza  
Albany, New York 12223-1350

**Re: Compliance Filing for Certificate Condition VI. G and for Town of Bethlehem Noise Ordinance - Noise Testing Protocol,**

Dear Mr. Van Ort:

This letter responds to your request that PSEG Power New York, Inc. ("PSEGNYS") clarify two sentences in its "Compliance Filing for Certificate Condition VI. G and for Town of Bethlehem Noise Ordinance - Noise Testing Protocol," which was filed on August 10, 2005 ("Protocol").

First, the word "consecutively" in the second-to-last line of the introduction to Section 1 of Part 2 of the Protocol is intended to signify that the testing described in Part 2 will be done as part of the same testing event as the testing described in Part 1, but after the testing described in Part 1 is completed.

Second, PSEGNYS hereby agrees that the word "should" in the first line of Part 2 of Section 3.1 of the Protocol should be changed to "will".

Based upon our conversation, we trust that these clarifications will enable Staff to recommend approval of the Protocol without further changes.

Thank you for your cooperation.

Very truly yours,

Richard M. Cogen

RMC:kp

# **Exhibit 4**

## **Plant Operating Data During 2006 Noise Sampling**

January 10, 2006 from 0001 to 0200

GT1 - ~180mw

GT2 - ~180mw

GT3 - ~180mw

STG - ~280mw

Station Gross – 820mw

11 of 12 Cooling Tower Fans were in service. All in Fast Speed. “F” fan was out of service  
All building ventilation fans were in service.

January 10, 2006 from 1100 to 1130

GT1 - ~195mw

GT2 - ~182mw

GT3 - ~182mw

STG - ~270mw

Station Gross – 830mw

11 of 12 Cooling Tower Fans were in service. All in Fast Speed. “F” fan was out of service  
All building ventilation fans were in service.