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**Final Stipulations**

**KeySpan Energy Development Corporation  
Spagnoli Road Energy Center**

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NEW YORK STATE  
BOARD ON ELECTRIC GENERATION  
SITING AND THE ENVIRONMENT

IN THE MATTER

of the

Case 01-F-0761

Application by KeySpan Energy Development Corporation  
for a Certificate of Environmental Compatibility and Public Need  
to construct and operate a nominal 250-megawatt combined-cycle  
combustion turbine electric generating plant in the  
Town of Huntington, Suffolk County

THE PARTIES HERETO stipulate and agree as follows:

1. The Spagnoli Road Energy Center (“Project”) is discussed in an Article X Preliminary Scoping Statement (“PSS”) submitted to the New York State Department of Public Service (DPS) in May 2001 by KeySpan Energy Development Corporation (“KeySpan” or “Applicant”). The term “Project” as used herein includes the energy facility and all improvements, including buildings, structures, fixtures and other improvements associated with the energy facility, as well as the interconnections subject to the Siting Board’s jurisdiction. The term “interconnections” as used herein is understood to have the following specific meaning:
  - (a) Any area to be disturbed for roadway infrastructure, structures or conduits conveying water to and wastewater from the Project, structures or conduits conveying natural gas to the Project, or structures or conduits conveying the electrical output of the Project, if such a facility is proposed to be built for the Project’s exclusive use; and
  - (b) For a facility not proposed to be built for the Project’s exclusive use, any area to be disturbed for roadway infrastructure, structures or conduits conveying water to and wastewater from the Project, structures or conduits conveying natural gas to the Project, or structures or conduits conveying the electrical output of the Project, if and to the extent that such a facility requires the creation of new or expanded rights-of-way.

The extent to which the natural gas pipeline shall be addressed in the KeySpan’s Application for an Article X Certificate for the Project (“Article X Application” or “Application”) is discussed in Stipulation No. 4 (Gas Transmission Facilities). KeySpan will perform or has performed the studies, evaluations, and analyses set forth in these stipulations to satisfy the application requirements of Article X of the Public Service Law. These stipulations are governed by Section 163 of the

- Public Service Law and by any applicable requirements for federally delegated environmental permits issued by the Department of Environmental Conservation.
2. Parties hereto may limit their concurrence to one or more of the sixteen specific subject area stipulations by so indicating in a notation next to their signature. A signature without any such notation shall indicate concurrence in all sixteen of the specific subject area stipulations.
  3. Those signing these stipulations agree that, as of the date hereof, the studies outlined herein constitute all the necessary studies concerning the subject matter of these stipulations that KeySpan must provide to satisfy Section 164 of the Public Service Law. Except as provided herein, the signatories agree not to request KeySpan to provide additional studies concerning the subject matter of these stipulations in connection with the Article X proceeding.
  4. Under any of the following circumstances, KeySpan agrees to perform additional studies, evaluations or analyses:
    - (a) A new statute, regulation or final, non-reviewable judicial or federal administrative regulation, ruling or order is adopted subsequent to the date of these stipulations which necessitates such additional studies, evaluations, or analyses;
    - (b) KeySpan proposes a change in the Project or other inputs to the stipulated studies, evaluations or analyses that will affect the results of the studies, evaluations or analyses;
    - (c) New information is discovered during the conduct, or as a result of the stipulated studies, evaluations or analyses that affects the results thereof;
    - (d) The Chairman of the Siting Board, the Siting Board, or Presiding Examiner, whose ruling will be appealable to the Siting Board, or Associate Examiner presiding with respect to any proceedings with respect to federally delegated environmental permits to be issued by DEC, requires an additional study, evaluation, or analysis pursuant to 16 N.Y.C.R.R. § 1000.8; or
    - (e) The Department of Environmental Conservation determines that the Subpart 201-6 pre-construction permit and certificate to operate, or the individual State Pollution Discharge Elimination System (SPDES) permit application is incomplete pursuant to Uniform Procedures Regulations (6 NYCRR Part 621).
  5. After the Chairman of the Siting Board determines that the Application complies with Section 164 of the Public Service Law, if the signatories, in any of the circumstances listed above, reach agreement as to the implementation of any additional studies, evaluations or analyses, such agreement may be set forth in a new stipulation, which may include the agreement of KeySpan to extend the statutory deadline for completion of the certification proceeding, but only if and only to the extent necessary to provide sufficient time to permit any such studies,

evaluations or analyses to be conducted and reviewed. Any of the signatories, in the circumstances listed in paragraph 4, who do not reach such agreement, shall be free to submit the matter to the presiding examiner for resolution and shall not be restricted from pleading that KeySpan must provide additional studies, evaluations or analyses related thereto during the Article X proceeding regarding the subject matter of these stipulations.

6. The purpose of this paragraph is to coordinate NYSDEC's air permitting review with the Article X process and to that design, both the Applicant and NYSDEC mutually agree to suspend the time periods specified in section 621.5(b) of the Uniform Procedures Regulations 6 NYCRR Part 621.
  - (a) As close as possible to 60 days in advance of submitting an Application pursuant to Article X of the Public Service Law, KeySpan shall submit its application to construct and operate a new major stationary source (6 NYCRR Part 201) to NYSDEC. The information provided in the foregoing permit application (NYSDEC Air Permit Application) shall be substantially the same as the information to be included in the Article X Application relating to Stipulation 1 (Air Quality and Meteorology). The Subpart 201-6 pre-construction permit Application must contain sufficient information and materials to comply with all applicable permitting requirements. KeySpan shall also provide as Appendices to its Article X Application copies of the draft air and SPDES permits.
  - (b) Within 60 days of the date that KeySpan files the NYSDEC Air Permit Application, NYSDEC will advise KeySpan whether the application is sufficient for further review or whether additional information is necessary to both further the NYSDEC's technical review and make a completeness determination. Within 60 days of submission of the Article X Application, or 120 days after KeySpan files the NYSDEC Air Permit Application, NYSDEC shall make a determination of completeness or incompleteness with respect to the applications, and, if a completeness determination is made, issue a draft permit for the Project. KeySpan understands that the Chairman of the Siting Board will not make a determination that the Application complies with PSL Section 164 until advised by a NYSDEC attorney of NYSDEC's legal determination that the Application complies with PSL Section 164(1)(f).
  - (c) Notwithstanding the filing sequence set forth above, the Applicant shall not be precluded from or prejudiced by filing the Article X Application fewer than 60 days after filing permit applications with DEC. In the event that the applicant submits the Article X application fewer than 60 days after filing permit applications with DEC, DEC will advise of the sufficiency of the applications for further review or whether additional information is necessary to further DEC's technical review and make a

determination within 60 days after the permit applications are filed with DEC.

7. In the Article X Application, KeySpan will set forth proposed terms and conditions that it believes to be appropriate for imposition in any Certificate granted by the Siting Board.
8. KeySpan's September 18, 2001 PSS Responses to Comments (attached) is incorporated herein by reference. KeySpan will adhere to the commitments made in such document with respect to the content of the Article X Application.

## STIPULATION NO. 1: AIR QUALITY & METEOROLOGY

The Application will examine the impacts of criteria pollutants and other NYSDEC regulated pollutants (“Study”) and non-criteria pollutants (“Non-Criteria Pollutant Study”) from the Project on air quality. The components of the Study will include identification of climate and air quality conditions, an inventory of KeySpan’s proposed emission sources, and an assessment of Project technology and design, emissions, impacts, and cumulative impacts. The components of the Non-Criteria Pollutant Study will include identification of emissions constituents and an assessment of Project impacts. If required pursuant to paragraphs 3(e) and 3(f), below, the Non Criteria Pollutant Study also will include an assessment of cumulative impacts and a multi-pathway risk assessment.

1. To the extent consistent with the following paragraphs contained in this stipulation, the methodologies, standards, and definitions for assessing air quality will follow procedures outlined, and use data contained, in the following documents:

For performing air quality dispersion modeling:

New York State Department of Environmental Conservation (NYSDEC), Air Guide-26, NYSDEC Guidelines on Modeling Procedures for Source Impact Analyses (December 1996).

NYSDEC, Air Guide-36, Emission Inventory Development for Cumulative Air Quality Impacts Analysis (June 1995), if necessary.

Air Modeling Protocol to be established to the satisfaction of NYSDEC and DPS Staff specifically for this case (hereinafter Air Modeling Protocol), and once approved, to be appended hereto as Attachment I.

USEPA, Draft New Source Review Workshop Manual (October 1990).

USEPA, Guidelines on Air Quality Models, Appendix W of 40 CFR Part 51.

For determining stack height:

USEPA, Guidelines for Determination of Good Engineering Practice Stack Height (EPA Technical Support Document for the Stack Height Regulations), Document Number EPA-450/4-80-023R (June 1995).

For impacts on soils and vegetation:

USEPA, A Screening Procedure for the Impacts of Air Pollution Sources on Plants, Soils, and Animals, Document Number EPA-450/2-81-078 (1981).

For quantification and assessment of the Project's contribution to the New York State total deposition of sulfates and nitrates, in accordance with the State Acid Deposition Control Act:

Memorandum from Leon Sedefian to IAM Staff (March 4, 1993).

For performing visibility modeling:

USEPA, Workbook for Plume Visual Impact Screening and Analysis. Document Number EPA-454/R-92-023 (October 1992).

For non-criteria pollutant ambient air limitations and benchmarks:

NYSDEC.DAR-1.AGC/SGC Tables. Division of Air Resources, Bureau of Stationary Sources, July 12, 2000.

USEPA's On- Line Integrated Risk Information System (IRIS) Database.

USEPA's Annual Health Effects Assessment Summary Tables (HEAST).

USEPA's National Center for Environmental Assessment (NCEA).

US Department of Health and Human Services, Agency for Toxic Substances and Disease Registry (ATSDR).

Risk-based ambient air criteria developed by the New York State Department of Health (DOH) or other recognized organizations, such as the World Health Organization.

## CRITERIA POLLUTANTS

2. The air quality Study will include:
  - (a) An assessment of existing climate data (average and extreme conditions) for the region surrounding the Project obtained from local climatological summaries, meteorological data sets from nearby stations, and/or other sources, as described in the Air Modeling Protocol, required to determine the normals and extremes of wind speed, temperature, and precipitation. KeySpan shall obtain DEC approval for the meteorological data to be used in the air permit application. The data and their use will be described in the Modeling Protocol.
  - (b) An assessment of existing air quality levels and air quality trends for criteria pollutants in the region surrounding the Project, including air

quality levels and trends taken from regional air quality summaries and air quality trend reports, as described in the Air Modeling Protocol. Monitors in both Suffolk and Nassau counties will be used to determine background ambient air pollutant levels.

- (c) An assessment of the impacts from quantifiable criteria pollutant emissions, including those generated during construction of the Project.
- (d) A control technology assessment for pollutants subject to Non-attainment New Source Review (NNSR) promulgated under 6 NYCRR 231 to determine the lowest achievable emission rate (LAER) for the applicable pollutants. New stationary combustion turbines are subject to 40 CFR Part 63 Subpart B – Requirements for the Control Technology Determinations for Major Sources in Accordance with Clean Air Act Sections 112(g) and 112(j).
- (e) If the Project Hazardous Air Pollutant (HAP) emissions exceed the regulatory thresholds, a case-by case determination of the Maximum Achievable Control Technology (MACT) for major sources will be conducted to determine an emission limit or control technology.
- (f) The requirements of New Source Performance Standards at 40 CFR Part 60 will be addressed.
- (g) An alternative sites, sizes and control techniques analysis required under Part 231-2.4(a)(2)(ii) will be provided in support of the choice of the project site, size and control techniques.
- (h) Pursuant to Air Guide 26, an assessment of an optimal stack height taking into consideration Good Engineering Practice (GEP) stack height for the Project and air quality related values, visual impacts, and other considerations.
- (i) An assessment of stack emissions of criteria pollutants, stack emissions being provided in hourly and annual estimates based on manufacturer's data, available emission factors, design control efficiencies, and other data or regulatory specifications related to the design of the Project.
- (j) A calculation of the number of NO<sub>x</sub> and VOC emission offsets if required to be obtained at a 1.30 to 1.0 ratio and how those offsets will be obtained in accordance with 6 NYCRR 231. Also, a discussion of the applicability and requirements of the “cap and trade” program pursuant to the proposed 6 NYCRR 227-3 and the federal Title IV acid rain program. An acid rain permit application will be submitted to NYSDEC.
- (k) An assessment of the potential impacts to ambient air quality that may result from criteria pollutant emissions from the Project, the modeling to be done in accordance with the Air Modeling Protocol, and a computer input (including meteorological data) and file output of the dispersion modeling results shall to be provided to NYSDEC and DPS Staff. Concentration patterns (isopleths) of pollutant specific maximum impacts will be provided over the receptor grids modeled and superimposed on a map of the surrounding area out to a 5 mile distance. In addition, a wind rose of the meteorological data used in the analysis will be provided.

- (l) An assessment of visibility impacts from stationary combustion turbine emissions of NO<sub>x</sub> and PM<sub>10</sub> from the Project, as described in the Air Modeling Protocol.
- (m) An assessment of the impacts to soils and vegetation that may result from criteria pollutant emissions of the Project using EPA screening criteria (see also Stipulation No. 9 entitled “Terrestrial Ecology” regarding air impacts on wildlife).
- (n) An assessment of the impacts of any economic growth that may result from development of the Project in accordance with the Air Modeling Protocol.
- (o) A comparison of the predicted air quality impacts from the dispersion modeling analyses to the Significant Impact Levels (SILs) and, if required, to the prevention of significant deterioration (PSD) increments and air quality standards.
- (p) In accordance with the State Acid Deposition Control Act, an assessment of the Project's contribution to the New York State total deposition of sulfates and nitrates at defined sensitive receptors as identified in the Air Modeling Protocol.
- (q) A cumulative source impact analysis for any criteria pollutant for which the Project has impacts above SILs. The additional sources to be analyzed to determine whether the Project, in conjunction with existing and proposed major sources, will cause or contribute to exceedances of applicable national or state ambient air quality standards (NAAQS and NYAQS) or PSD increments, will include those identified as “nearby” existing sources, as defined in the EPA Modeling Guidelines and NSR Workshop Manual, and by the Air Guide 26 procedures. The proposed inventory sources also will include all other proposed major electric generating facilities in New York State for which applications have been filed with the Siting Board and will be limited to those located within a circular area defined by the Significant Impact Area (SIA) of the proposed Project, plus 50 kilometers, at the time of NYSDEC approval of the Project's cumulative source inventory per Air Guide 36 requirements. The inventory of existing major sources shall be developed using data obtained from the NYSDEC as well as New Jersey and Connecticut. The inventory, if necessary, shall be included as an appendix to the air permit application and verified by the source state or per Air Guide 36 requirements and the Air Modeling Protocol. Such air permit application would be submitted only after the inventory is approved by NYSDEC. All information submitted in support of the inventory of nearby sources, including verification worksheets per Air Guide 36 requirements will become public information.
- (r) An offsite consequence analysis for ammonia that will be stored onsite for use in the proposed selective catalytic reduction (SCR) system, including an analysis of an accidental release scenario for ammonia performed to meet the requirements of USEPA's regulations implementing section 112 (r) of the Clean Air Act.

- (s) An Environmental Justice (EJ) Analysis will be performed as part of the air permit application. The EJ analysis will be based on requirements of Presidential Order 12898 and on guidelines described in an April 3, 2000 letter from Mr. Steven Riva of USEPA Region II to Mr. Leon Sedefian of NYSDEC.
- (t) In order to address Section 168.2(b) of the Public Service Law and the Environmental Justice analysis, the Article X Application and the EJ analysis will include (in addition to the cumulative source impact analysis for any criteria pollutant for which the Project has impacts above Significant Impact Levels as described in paragraph n herein) a study of the cumulative air impacts of the Project and major emission points at the adjacent 110 Clean Fill Disposal Site and the Old Bethpage Landfill Gas Recovery Facility using the information provided in the permit conditions or regional permit files.

### NON-CRITERIA POLLUTANTS

- 3. The Non-Criteria Pollutant Study will include:
  - (a) A review of pertinent available data on non-criteria pollutants that are emitted by combustion sources at the Project, including formaldehyde, ammonia, and any other non-criteria pollutants with emission factors such as those published by USEPA that may be identified after review of available emissions data. The specific source, including publication date, of each emission factor will be clearly identified and referenced in the Application.
  - (b) An assessment of the emission rates for non-criteria pollutants that may be emitted from the combustion sources at the Project. All emission rate calculation methodologies will be described in detail, with appropriate equations and examples provided. These descriptions will either accompany or specifically be cited in, any corresponding tabulated emissions data presented in the application.
  - (c) An estimation of the maximum potential ground level and elevated receptor air concentrations (short-term and annual averages) of non-criteria pollutants for the Project, quantified using the models and approach as discussed in the Air Modeling Protocol.
  - (d) A comparison of the maximum predicted air concentrations of non-criteria pollutants to benchmark air concentrations for both short-term and long-term exposures. These benchmark air concentrations will include the most recent: (1) NYSDEC Short-term and Annual Guideline Concentrations (SGCs and AGCs); and (2) Health risk-based criteria, to include Reference Concentrations (RfCs) for non-cancer effects and air concentrations associated with an incremental lifetime risk of one-in-one million for cancer, obtained or derived from USEPA or other well-recognized organizations as summarized in item 1 of this stipulation.

- (e) If the maximum modeled air concentration of a non-criteria pollutant from the Project exceeds 10% of the corresponding health risk-based benchmark air concentration for non-cancer effects or is equal to or exceeds the corresponding benchmark air concentration for cancer risk, KeySpan will consult with the NYSDOH to determine if a cumulative air quality analysis is needed in the Application. If such an analysis is required, Applicant will perform the analysis according to an approach developed in consultation with NYSDOH and NYSDEC.
- (f) The Application will include an evaluation of the need for a multi-pathway risk assessment if (1) the maximum modeled air concentration for any non-criteria pollutant from the Project exceeds 10% of the corresponding health risk-based benchmark air concentration, or (2) the maximum modeled air concentration for any persistent, bio-accumulative and toxic non-criteria pollutant exceeds 1% of the corresponding health risk-based benchmark air concentration, and the modeled plume could impact beef or dairy farms, or an area that could reasonably support such farms. The Application will include a multi-pathway risk assessment for any pollutant that meets either of the above criteria, is persistent in the environment, has the potential to accumulate in soil, water, fish, homegrown vegetables, or beef and dairy products, and, based on the information available in the sources identified above in this stipulation, is of significant toxicological concern via the ingestion pathway relative to the inhalation pathway of exposure. If the analysis described above demonstrates that an evaluation of the need for a multi-pathway risk assessment is necessary, Applicant will perform that evaluation and, if necessary, the multi-pathway risk assessment consistent with approaches acceptable to NYSDOH.

#### OTHER ANALYSES

- 4. The Application will provide a general visibility impairment and analysis for scenic vistas using VISCREEN or other appropriate model and a stack plume visibility analysis to assess the extent and frequency of any visible condensed water vapor plumes created by the proposed Project. These analyses will be performed in accordance with procedures set forth in the Air Modeling Protocol and Stipulation No. 11 entitled “Aesthetics and Visual Resources.”
- 5. The Application will include an assessment based on publicly available information of the global warming (global climate change) issue associated with the emission of carbon dioxide and other global warming gases. The assessment will include: (1) a summary of the emission reduction goals of the Kyoto Protocols, (2) an estimate of the proposed facility's annual and life cycle emissions of carbon dioxide and/or other significant global warming gases; (3) a comparison of projected facility emissions with New York State, national and/or global emissions; and (4) a conclusion as to the probable importance of the proposed facility's emissions relevant to parts 1 and 3 above.

## STIPULATION NO. 2: CULTURAL RESOURCES

1. The Application will include a study of the impacts on cultural resources of the construction and operation of the Project (Study). To the extent consistent with the following paragraphs contained in this stipulation, the methodology for assessing the potential impacts on cultural resources will be in accordance with standards and methods contained in the following documents:

New York Archaeological Council, Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State (1994).

Stipulation No. 11 entitled “Aesthetics and Visual Resources” (established in this proceeding), which sets forth the procedures for assessing visual impacts, including impacts to cultural resources and assessing mitigation measures.

2. The Application will include a summary of the nature of the probable environmental impact on any historic and cultural resources identified and identify how those impacts will be avoided or minimized. The OPRHP Coordinator will be consulted throughout the investigation and DPS Staff will be informed of the status and results of the investigations.

## ARCHAEOLOGICAL RESOURCES

3. The Study will include:
  - (a) Phase IA studies and Phase IB studies, as determined in consultation with The New York State Office of Parks, Recreation and Historic Preservation (OPRHP) for the Area of Potential Effect (APE) for the Project site and any areas to be used for interconnections, including a description of the methodology used for such studies.
  - (b) Where warranted based on Phase I study results, Phase II intensive archaeological field investigations will be conducted to assess the boundaries, integrity and significance of cultural resources identified in Phase I studies. Phase II will be designed to obtain detailed information on the integrity, limits, structure, function, and cultural/historic context of an archaeological site, as feasible, sufficient to evaluate its potential National Register eligibility. The need for and scope of work for such investigations will be determined by the Project archaeologists in consultation with OPRHP and DPS Staff.
4. All archaeological materials recovered during the Project cultural resources investigation will be cleaned, catalogued, inventoried and curated according to New York Archaeological Council standards. To the extent possible, recovered artifacts will be identified as to material, temporal or cultural/chronological associations, style

and function. The Project archaeologists will provide temporary storage for artifacts until a permanent curatorial facility is identified.

5. The Application will include an Unanticipated Discovery Plan that will identify the actions to be taken in the unexpected event that resources of cultural, historical, or archaeological importance are encountered during the excavation process. This plan will include a provision for work stoppage upon the discovery of possible archaeological or human remains. In addition, the plan will specify that the methodology used to assess any discoveries will follow the most recent Standards for Cultural Resource Investigations and Curation of Archaeological Collections in New York State. Such an assessment, if warranted, will be conducted by a professional archaeologist, qualified according to the standards of the New York State Archaeological Council and the National Park Service (36 CFR 61).

### HISTORIC RESOURCES

6. The analysis of potential impacts to Historic Resources shall include:
  - (a) A review of the files maintained by the OPRHP and other appropriate databases to identify any sites, districts or structures listed or determined eligible for listing on the State or National Register of Historic Places within a 5-mile radius of the Project site;
  - (b) Identification of any locally designated historic sites, districts or structures within a 5-mile radius of the Project site;
  - (c) Field inspections by an architectural historian and consultation with local historic preservation groups to identify sites or structures (not otherwise identified in paragraph 4(a) and 4(b)) that are potentially eligible for listing on the State or National Register of Historic Places within the Project viewshed and within a 5-mile radius of the Project site. For the purpose of this assessment, the Project viewshed will consider the screening effects of topography and vegetation;
  - (d) An OPRHP Building Structure Inventory Form, including a photograph, will be completed for each potentially eligible property (as identified in paragraph 4(c)) and submitted to OPRHP and DPS Staff for review; documentation for individual structures within historic districts identified in paragraph 4(a) and 4(b) will not be required. KeySpan will submit its documentation regarding potentially eligible structures within the viewshed to OPRHP and DPS for their review and determination of eligibility;
  - (e) Potential visual impacts to significant historic structures within the Project viewshed that are individually listed or determined eligible for listing on the State or National Register of Historic Places, will be characterized as part of the visual resources study, as described in Stipulation No. 11, entitled “Aesthetics and Visual Resources;” and
  - (f) Potential visual impacts to historic districts within the Project viewshed will be based on potential “worst-case” views from within the district and

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KeySpan Energy Development Corporation – Spagnoli Road Energy Center

will be characterized as part of the visual resources study, as described in Stipulation No. 11, entitled “Aesthetics and Visual Resources.”

### STIPULATION NO. 3: ELECTRIC TRANSMISSION FACILITIES

1. The methodology of the studies made to support the Application, which are discussed herein, requires that they either be performed by, or under the auspices of, the New York Independent System Operator (NYISO), or be approved by the NYISO Staff.
2. The Application will include an Interconnection Study (Interconnection Study), consisting generally of a design study and system reliability impact study. The Interconnection Study will include the necessary technical analyses (Thermal, Voltage, Short Circuit and Stability) to evaluate the impact of the interconnection of the Project on the system being connected to the New York Independent System Operator (NYISO) system, the New England Independent System Operator (ISO-NE) system and Pennsylvania-Jersey-Maryland (PJM-ISO) systems. Both peak (summer and winter) and off-peak load conditions will be investigated and extreme contingency scenarios will be evaluated at various load levels in accordance with the Northeast Power Coordinating Council (NPCC) “NPCC Basic Criteria for the Design and Operation of Interconnected Power System,” the NYISO Transmission Expansion and Interconnection Manual and the interconnection criteria and planning criteria of the Transmission Owner (TO) with whose system the Project will interconnect. The analysis will include the currently available data regarding the requirements of these systems, and the study will be done in consultation with Central Hudson Gas & Electric Corporation (CHG&E), Consolidated Edison Company of New York, Inc. (ConEd), Long Island Power Authority (LIPA), New York Power Authority (NYPA), New York State Electric and Gas Corporation (NYSEG), Niagara Mohawk Power Corporation (NMPC), Orange and Rockland Utilities, Inc. (O&R), Rochester Gas & Electric Corporation (RG&E), ISO-NE, and PJM-ISO. The Interconnection Study will also include: the new facilities to be installed as part of the Project providing circuit connection between the Project site and the Ruland Road substation, as well as any other system upgrades required. The Application will include a tabulation showing compliance/non-compliance with the criteria of the following entities that are affected: CHG&E, ConEd, LIPA, NMPC, NYPA, NYSEG, O&R, RG&E, NYISO, PJM, ISO-NE, NPCC, and the North American Electric Reliability Council (NERC).
3. Thermal Analysis: The Applicant will calculate transfer limits for the base year (2003) system for the following interfaces: LIPA, ConEd cable system, Upstate New York (UPNY)-Con Ed, UPNY-Southeast New York (SENY), Central East, Total East, PJM-NY, and NE-NY. The Applicant will evaluate the thermal performance of all pertinent system components affected by the Project, such as transmission cables, transmission lines, and transformers during normal and emergency conditions established in accordance with the criteria listed in paragraph 2 above, to ensure that these components operate within their rated load capabilities.

4. Voltage Analysis: The Applicant will evaluate the voltage performance of the system during normal and emergency conditions to ensure that established voltage limits are maintained at all pertinent system buses. Winter and summer peak and off-peak system load conditions will be analyzed. Emergency conditions examined will include the most severe contingencies established in accordance with the criteria listed in paragraph 2 above. The voltage conditions will be evaluated prior to and following those contingencies.
  
5. Stability Analysis: The Applicant will evaluate the transient stability performance of the Project with the interconnected system during and after the most severe system disturbances established in accordance with the criteria listed in paragraph 2 above. Summer and winter peak and off-peak system load conditions will be demonstrated for the following contingencies including but not limited to:
  - (a) A permanent three-phase fault on any generator, transmission circuit, or bus section, with normal clearing;
  - (b) Permanent phase to ground fault on any generator, transmission circuit, transformer or bus section, with delayed fault clearing;
  - (c) Loss of any element without a fault;
  - (d) Permanent phase to ground fault on a circuit breaker, with normal fault clearing; and
  - (e) Loss of a double circuit tower.

In addition, system stability during and after the following extreme contingencies (which exceed in severity the contingencies (a) through (e) above) will be analyzed to determine that there are no effects that may cause widespread system disturbance including but not limited to:

- (f) Loss of the entire capability of a generating station;
  - (g) Loss of all lines emanating from a generating station, switching station or substation;
  - (h) A permanent three phase fault on any generator, transmission circuit, transformer or bus section, with delayed fault clearing; and
  - (i) The sudden loss of a large load or major load center.
- 
6. Short Circuit Analysis: The Applicant will evaluate the effect of interconnecting the Project on the fault duty levels of individual breakers at all 34.5 kV, 46 kV, 69 kV, 138 kV and 345 kV substations for LIPA, CHG&E, Con Ed, NYPA, NMPC, NYSEG, O&R, RG&E, PJM-ISO and NE-ISO. The analysis will be performed in accordance with the criteria listed in paragraph 2 above. Fault duties will be expressed in symmetrical interrupting values, and will include simulations for three types of faults:
    - (a) Three phase-to-ground fault;
    - (b) Two phase-to-ground fault; and
    - (c) Single phase-to-ground fault.

Where the ratings of the existing breakers are not adequate to interrupt the fault duties determined, alternate measures will be determined or those breakers will be designated to be upgraded to adequate interrupting ratings.

7. Evaluation of Protective Relays: Applicant will evaluate any protective relay changes that may be necessary and provide such proposed changes to CHG&E, ConEd, LIPA, NYPA, NMPC, NYSEG, O&R, RG&E, NYISO, PJM-ISO, and ISO-NE or provide a document reflecting the agreement with the affected TOs that such a document is not necessary at this time, and state when it will be provided.
8. Auto-Reclosing: If auto-reclosing is applicable to the proposed facility and the interconnection to the transmission system, the Applicant shall demonstrate the machines to be used will withstand high speed automatic reclosing (HSAR) and submit a report demonstrating the ability.
9. Based on the aforementioned Interconnection Study, the Application will include:
  - (a) An evaluation of the potential significant impacts of the Project and its interconnection to the New York State transmission system reliability at a level of detail that reflects the magnitude of the impacts. This evaluation shall include transmission systems under the control of the NYISO, PJM-ISO, ISO-NE and transmission systems under the control of the local utility;
  - (b) An analysis of the impacts of the Project and associated Interconnection facilities on voltage stability, thermal limitations, short circuit and transmission interface capabilities as prescribed in the NYISO or the New York State Reliability Council (NYSRC) and NPCC (as applicable) planning and operating standards;
  - (c) Discussion of the benefits and detriments of the Project on ancillary services and the electric transmission system, including impacts associated with reinforcements and new construction necessary as a result of the Project;
  - (d) An analysis of any reasonable alternatives that would mitigate adverse reliability impacts, if any, of the Project on the New York State transmission system; and maintain voltage, stability, thermal limitations, and short circuit capability at levels consistent with standards promulgated by NERC, NYISO, PJM-ISO and ISO-NE, or the NYSRC, as applicable; and
  - (e) An estimate of the increase or decrease in the total transfer capacity across each affected interface. If a forecasted reduction in transfer capability across affected interfaces violates reliability requirements, an evaluation of reasonable corrective measures that could be employed to mitigate or eliminate said reduction will be included.

### PRE-APPLICATION PROCESS

10. The draft scope of the Interconnection Study will be provided to system protection and system planning engineers of DPS staff, NYISO Staff, CHG&E, ConEd, LIPA, NYPA, NYSEG, NMPC, O&R, RG&E, PJM-ISO and NE-ISO for comments and review. Comments received within four weeks of the provision of the draft scope will be incorporated into the scope and a copy of the comments will be provided to DPS staff.
11. Upon finalization, the scope of Interconnection Study will be provided to DPS Staff, NYISO Staff, CHG&E, ConEd, LIPA, NYPA, NYSEG, NMPC, O&R, RG&E, PJM-ISO and ISO-NE. A copy of the transmittal will be provided to Staff.
12. The Applicant will periodically advise DPS Staff, NYISO Staff, PJM-ISO, ISO-NE, ConEd, CHG&E, LIPA, NYPA, NYSEG, NMPC, O&R and RG&E of the progress of the Interconnection Study.
13. DPS Staff may request technical conferences with the NYISO or its designee and the Applicant, together, from time to time to discuss the Interconnection Study as it progresses.
14. All updates and periodic draft reports will be provided concurrently to DPS Staff, New York TOs, and NYISO Staff (including computer input data and output cases that are used in performing the analysis).

### COMPLIANCE DETERMINATION REQUIREMENT

15. Upon completion, the draft Interconnection Study will be provided to system protection and system planning engineers of DPS Staff, NYISO Staff, CHG&E, ConEd, LIPA, NYPA, NYSEG, NMPC, O&R, RG&E, PJM-ISO, and ISO-NE for comments and review; the Applicant will arrange a technical conference to explain the scope, inputs, assumptions, change cases, and other relevant parameters of the Interconnection Study. Comments received within six weeks of the provision of the draft study will be incorporated into the final study and a copy of all the comments will be provided to DPS Staff.

### CONSULTATION PROCESS

16. Upon receipt, the Applicant will promptly provide to DPS Staff any response to the Interconnection Study.
17. The Applicant agrees to provide documentation demonstrating that the Project meets the New York TOs requirements and is proceeding through the NYISO Staff approval process, the Project has consulted with the ISO-NE and the PJM-ISO and that all the necessary studies (addressing comments received on the draft

studies) have been completed. Copies of such studies will be attached to the Article X application.

18. The Applicant agrees to promptly notify, or have NYISO notify, the PJM-ISO and ISO-NE about the Project and work cooperatively with those ISOs on any joint studies that are required.
19. The Applicant agrees to provide concurrently to DPS Staff copies of any draft or final studies submitted to those ISOs as well as any computer input data and output data. Comments provided by those ISOs will be provided to DPS Staff as the Applicant receives them.

#### CONFIDENTIALITY

20. If trade secret or other confidentiality protection is requested, DPS Staff will be provided access to the asserted confidential information either by receiving possession pursuant to 16 NYCRR Section 6-1.3(c)(2) or pursuant to a protective order made by the Presiding Examiner. The Applicant agrees to cooperate in seeking any necessary protective order so that DPS Staff may have such information without undue delay.

#### ELECTRIC AND MAGNETIC FIELDS

21. Applicant will provide with the Application or within 30 days after submission an engineering electric and magnetic field analysis performed by a Professional Engineer licensed and registered in New York State. The analysis, to be certified by the Professional Engineer's signature affixed over an official seal, will include all input and output data showing that operation of the proposed interconnection to the electric grid under summer normal, winter normal, and short term emergency (STE) loading conditions will comply with (a) the Public Service Commission's applicable electric field strength standards, as set forth in Opinion 78-13, and (b) the applicable provisions of the Commission's Interim Policy Statement on Magnetic Fields, dated September 11, 1990. "Input data" means a tabular listing of all the input parameters necessary to model the EMF levels in computer simulations. "Output data" means all the printed graphs and tabular data produced as a result of performing computer simulations in support of the Application.

#### STIPULATION NO. 4: FUEL FACILITIES

The Application to be submitted will describe the natural gas pipeline and associated interconnection facilities proposed for the Project.

1. The Application to be submitted will include a study of gas supply, capacity, and system impact (Study). The Study will include:
  - (a) A detailed description of the proposed gas pipeline, including interconnecting facilities, pipeline route, size, operating pressure, the need for new on-site compression, and identifying who will construct, own and operate the pipeline facilities;
  - (b) An analysis demonstrating that there will be sufficient gas supply and gas transmission capacity to support the requirements of the Project;
  - (c) An estimate of the peak hour, peak day, seasonal and annual natural gas requirements of the Project;
  - (d) An identification of the nature and extent of the natural gas capacity and transportation service as firm, interruptible, or both; and
  - (e) An evaluation of the potential impacts of the Project on the gas distribution system of the Local Distribution Company (LDC).
2. The Application shall include a letter or other documentation from the owner or developer of the natural gas pipeline to be constructed to convey natural gas to the Project, indicating that it will seek required Article VII Certificate approval for the pipeline.
3. KeySpan shall provide a map-level and literature review assessment of the probable environmental impacts and proposed mitigation to wetlands, water bodies, water resources, groundwater, soils, vegetation, cultural resources and land use along the proposed gas pipeline corridor.

## STIPULATION NO. 5: LAND USES AND LOCAL LAWS

### LAND USES

1. The Application will include a study of the land uses in the vicinity of the Project (Study). The Study will include:
  - (a) A generalized map of existing land uses within a 2-mile radius of the Project site.
  - (b) Aerial orthophotographs of the site and surrounding areas, indicating the current conditions of land uses in the area.
  - (c) A map of all properties within 1,000 feet of the Project site that shows the current land use, tax parcel number and owner of record of each property and any proposed land use plans for any of these parcels.
  - (d) A map(s) of existing zoning districts, groundwater management zones, agricultural districts, Wild, Scenic and Recreation Corridors, flood prone areas, critical environmental areas designated pursuant to the State Environmental Quality Review Act, public fire, school, sewer and water districts within a 1-mile radius of the Project site, including a description of the permitted/prohibited uses within each zone.
  - (e) A map(s) of all publicly known proposed land uses within a 2-mile radius of the Project site, as determined through consultation with state and local planning officials, from KeySpan's public involvement process, or from other sources.
  - (f) For the area within a two mile radius of the project site, a qualitative assessment of the compatibility of the Project with existing, potential and proposed land uses and local and regional land use plans, including the 1993 Town of Huntington Comprehensive Plan and the 1989 GEIS for the Melville area. The qualitative assessment shall evaluate the effects of Project-generated noise, odor, traffic and visual impacts on the use and enjoyment of those areas for the current and planned uses.
  - (g) A qualitative assessment of the compatibility of aboveground interconnections with existing, potential and proposed land uses within a 1-mile radius of such improvements. To the extent that the Project will include: (1) the use of an existing right-of-way (ROW); (2) the expansion of an existing ROW; (3) a new ROW for underground gas and electric interconnections located offsite; or (4) a new underground water or sewer lines not located in an existing ROW or street, the Application will provide a qualitative assessment of the compatibility of such interconnections with existing potential and proposed land uses within a 300-foot radius from the centerline of such improvements.
  - (h) A site plan with details of zoning requirements, setbacks, site development details and local code requirements appropriate to the zone and the type and scale of the development.

2. The Application will include a summary of KeySpan's ASTM Phase I Environmental Site Assessment for the Project site.

#### RECREATION

3. After consultation with appropriate state and local agencies, the Application shall include an identification and analysis of the recreational land uses in a 3 mile radius of the Project site (5-mile radius for resources of Statewide concern), including the nearby college campus, historic sites, state parks, county parks and nature preserves, golf courses, and town parks that might be affected by the sight or sound of the construction or operation of the Project and interconnections, including a summary describing the nature of the probable environmental impact due to facility construction and operation on recreational uses and identification of how the impact is minimized. This study will discuss the various use types, patterns and numbers of recreational users.

#### LOCAL LAWS

4. Prior to submitting the Application, a list of substantive local laws and regulations issued thereunder applicable to the Project concerning, among other matters, the environment, public health and safety, shall be compiled by the Applicant and circulated to the Town of Huntington, Suffolk County, and NYSDPS and NYSDEC Staffs. The Applicant will consult with the Town of Huntington, Suffolk County, and NYSDPS staff prior to submitting the Application to determine whether the Applicant has correctly identified all such substantive local laws and regulations issued thereunder applicable to the Project, and to determine whether any potential request by the Applicant that the Siting Board refuse to apply any such substantive local laws and regulations could be obviated by design changes to the Project. The Application to be submitted will identify and analyze all substantive local laws and regulations issued thereunder applicable to the Project concerning, among other matters, the environment, public health and safety.
  - (a) For each substantive provision identified, the Application will include a discussion or other showing demonstrating the degree of compliance with the substantive provision. In addition, the Application will include a summary comparison table in two columns listing the provisions in the first column and the degree of compliance in the second column.
  - (b) The Application will separately identify each request, if any, being made by the Applicant that the Siting Board refuse to apply a substantive local law or regulation issued thereunder applicable to the Project and its interconnections.

For each such request, the Application will identify:

- (i) whether the Applicant believes the provision to be unreasonably restrictive in view of the existing technology;

- (ii) whether the Applicant believes the provision to be unreasonably restrictive in view of the needs of ratepayers whether located inside or outside of such municipality;
  - (iii) whether the Applicant believes the provision to be unreasonably restrictive in view of the costs to ratepayers whether located inside or outside of such municipality;
  - (iv) an explanation of the basis for asserting that the provision is unreasonably restrictive in view of (i) the existing technology, (ii) the needs of the ratepayers whether located inside or outside of the subject municipality, or (iii) the costs to the ratepayers whether located inside or outside of the subject municipality, as the case may be;
  - (v) a review and analysis of reasonably related local precedents regarding the granting or denial of similar variances or exceptions;
  - (vi) a demonstration that the request could not be obviated by design changes to the proposed Project and that the request is the minimum necessary; and
  - (vii) a demonstration that the impacts of granting the request are mitigated to the maximum extent possible.
5. The Application to be submitted will identify all Federal, State and local approvals, consents, permits, certificates, or other conditions that would be required for the construction or operation of the proposed facility absent Section 172 of the Public Service Law. For each approval, consent, permit, certificate, or condition, the Application will include:
- (a) An identification of the state agency, municipality or agency thereof that typically exercises jurisdiction over such matter;
  - (b) For any request that the Siting Board authorize the appropriate state agency, municipality or agency thereof to exercise jurisdiction over such matter pursuant to Section 172(1) of the Public Service Law, an indication of the reason for each such request.

#### REAL PROPERTY

6. The Application shall include:
- (a) A demonstration that the Applicant has obtained title to the Project site (including street access) or is under binding contract or option to obtain title to the Project site (including street access).

- (b) A demonstration that the Applicant has obtained, or can obtain, such deeds, easements, leases, licenses or other real property interests as are necessary for all interconnections for the Project, except no such demonstration shall be required regarding a gas or electric transmission interconnection subject to Article VII.
  
- (c) An identification of any improvement district extensions necessary for the Project and a demonstration that the Applicant has obtained, or can obtain, such improvement district extensions.

## STIPULATION NO. 6: NOISE

The Application to be submitted will include a study of the noise impacts of the construction and operation of the Project, as described and detailed in Attachment 1, the Noise Impact Assessment Protocol, which is a part of this Stipulation.

Regarding noise impacts, KeySpan will provide:

1. A map showing the location of the nearest sound receptors in relation to the Project site, including the nearest residential, school, and public open space receptor locations;
2. An evaluation of ambient pre-construction baseline noise conditions, including pure tones, at the nearest noise receptors, using actual measurement data recorded for 20 minute durations as a function of time and frequency using a Type 1 precision sound level meter (SLM) and octave band frequency spectrum analyzer;
3. A description of the noise standards applicable to the Project and the noise design goals for the Project at the nearest noise receptors, including the nearest residential, school, and public open space receptor locations. The noise design goals shall include dBA levels, presented in octave bands and in total;
4. An evaluation of the impact of construction noise, at the nearest residential, school, and public open space receptor locations;
5. An identification and evaluation of reasonable noise abatement measures for normal as well as significant noise-producing construction activities;
6. An estimate of facility sound levels at the nearest receptors during operation of the Project;
7. An identification and evaluation of reasonable noise abatement measures, including the use of alternative technologies, for the final design and operation of the Project during all operating scenarios;
8. An evaluation of the following potential noise impacts: hearing damage; sleep interference; indoor and outdoor speech interference; use of public open space; low frequency noise annoyance; community complaint potential; and the potential for structural damage due to vibration or infrasound;
9. A ranking for the operation phase, using the Modified Composite Noise Rating (CNR) method, at the nearest residential, school, and public open space receptor locations. At a minimum, the Application will include an assessment of achieving a CNR rating of “C”;
10. A description of post-construction noise evaluation studies that will be performed to establish conformance with operational noise design goals.

Attachment 1 to Stipulation Number 6:  
NOISE IMPACT ASSESSMENT PROTOCOL

**1. INTRODUCTION**

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KeySpan is proposing to construct a 250-megawatt (MW) combined-cycle generating facility (Spagnoli Road Energy Center) at a location on Spagnoli Road in an industrial section of Huntington, New York.

This Noise Impact Assessment Protocol documents the procedures and methods to be used to perform a noise impact assessment for the Facility. The noise impact assessment will provide documentation that normal operation of the Facility will not result in significant impact to nearby residential or other sensitive areas and of the Facility's noise levels in relation to local and state noise standards. The assessment will determine the existing noise environment through a community noise monitoring program, perform computer noise modeling of the proposed Facility noise sources, and specify noise control measures required under the Huntington noise ordinance and the New York State Department of Public Service (NYSDPS) noise guidelines.

KeySpan will document the results of the noise impact assessment in the Article X Application as required under Article X of the Public Service Law (PSL), and Project Stipulations.

**2. NOISE SENSITIVE AREAS IN THE COMMUNITY**

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Topographic and other maps and aerial photography were reviewed to preliminarily identify noise sensitive land uses in the area surrounding the proposed Facility. A site reconnaissance of the area was performed in order to verify sensitive land uses and identify any other sensitive uses. Based on these efforts, the following were identified as the nearest noise sensitive receptors in the area.

- 1 – Drexel Avenue
- 2 – Point of Woods Road
- 3 – Fairway Drive
- 4 – Carnation Drive
- 5 – State University of New York (SUNY) Campus
- 6 – Ruland Road
- 7 – Bethpage State Park

The monitoring locations were chosen by evaluating the nearest noise sensitive areas in all directions around the proposed site. In this manner, noise sensitive areas in all directions will be evaluated. Only daytime impacts will be considered for Bethpage State Park. A map detailing the location of the seven sensitive land uses in relation to the proposed Facility will be provided in the Application.

Receptor locations further away from the proposed site were not evaluated since the goal of the Project will be to minimize impacts at the nearest receptors. Lesser impacts would be expected further away.

### **3. NOISE MONITORING PROGRAM**

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A leaf-off noise-monitoring program was conducted at the above locations during March and April 2001. This program included short-term (20-minute) monitoring at each location during the day and late at night (midnight to 3 am).

A Rion NA-27 precision sound level meter and octave band analyzer was utilized for the monitoring program, which included measurement of the one-third octave band levels (in order to identify any existing pure tone noises). The meter meets (ANSI) S1.4-1983 requirements for precision Type 1 sound level meters. The microphone was fitted with a windscreen to reduce wind-generated noise and mounted at a height of approximately five feet above the ground.

The meter was set to measure at the slow response speed and was calibrated in the field at the beginning and end of each monitoring period. In addition, the meter was factory calibrated within the last year. Monitoring was conducted during meteorological conditions consisting of wind speeds of less than 15 miles per hour and no precipitation.

A duplicate monitoring program was conducted at the same locations during leaf-on (summer time) conditions on June 18 and 19, 2001, during the day and late at night. The baseline data collected during the noise monitoring programs will be used in the noise impact assessment for the Project.

### **4. APPLICABLE NOISE STANDARDS**

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The following noise standards and criteria are applicable to the Facility.

#### **Town of Huntington**

The Town of Huntington has noise standards that would be applicable to the proposed Facility. The standards limit allowable noise levels from any facility by octave band levels, as measured at the facility lot line. The standards use octave band ranges that are currently obsolete; therefore, for the purposes of this assessment, the octave band ranges will be replaced by octave band center frequencies.

The standards presented below are for continuous noise emitted during the nighttime hours (10:00 p.m. to 7:00 a.m.). For noise during daytime hours, an additional 5 dB per octave band is allowed. However, since Project noise levels will not vary from daytime to nighttime hours, the more restrictive nighttime standards will be used in this assessment.

The allowable decibel levels for the Project, for both the obsolete frequency ranges and the currently used center band frequencies, are presented in Table 1 below. For reference purposes, the individual frequencies, combined into a single dBA level, correspond to 47 dBA.

Table 1 : Town of Huntington Noise Standards

Octave Band Range (obsolete)	Octave Band Center Frequency (Hz)	Sound Pressure Level (dB)
20 to 75	63	69
75 to 150	125	54
150 to 300	250	47
300 to 600	500	41
600 to 1,200	1000	37
1,200 to 2,400	2000	34
2,400 to 4,800	4000	31
4,800 to 10,000	8000	28

### **New York State Department of Public Service (NYS DPS)**

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 considers many factors including the expected sound level from the Facility, 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 Application will include, at a minimum, an assessment of achieving a rating of “C”, corresponding to “no reaction although noise is noticeable”. The measured late night L<sub>90</sub> noise levels will be used in the CNR analysis.

There are no Federal noise standards applicable to this Project.

## **5. COMPUTER NOISE MODELING METHODOLOGY**

Computer modeling of the major Facility sources will be performed in order to determine the projected contribution of the proposed Facility. A receptor grid that includes the noise sensitive areas will be prepared for inclusion to the model. Detailed noise data for each major source at the proposed Facility will be obtained from equipment vendors, or make measurements at similar facilities, or, in some cases, will be developed from reference materials. These reference materials will include, but not be limited to, the following documents:

- Empire State Electric Energy Research Corporation, *Prediction of Noise from Power Plant Construction*, Bolt, Beranek and Newman, Inc., Report No. 3321 (1977).

- Edison Electric Institute, *Electric Power Plant Environmental Noise Guide*, Volumes 1 and 2 (1984).

The source and value of all data inputs used will be provided in an Appendix to the Application.

### **Operational Noise**

The NOISECALC computer model, developed by the NYSDPS, will be used to predict noise levels expected from operation of the proposed facility. The model was developed for predicting noise levels from power plants. NOISECALC is a Hemispherical Free Field (HFF) noise prediction model.

NOISECALC accepts a variety of attenuation factors under varying meteorological conditions. The model will be configured to accept hemispherical spreading and atmospheric absorption for this analysis based on values from the above referenced *Electric Power Plant Environmental Noise Guide*. Standard conditions of 59 F and 70 percent relative humidity will be assumed. Directivity effects for noise from the stacks will also be considered. Modeling receptors will be chosen in the same locations as where background monitoring was performed. The model will account for the noise emissions from each source in each octave band that propagates to each point on a specified receptor grid.

The noise modeling will be used as a design tool in order to determine the degree of silencing required on individual noise sources within the Facility. Thus, several modeling runs will likely be made, with noise control added as required, until the required design goals are achieved. Typical noise control measures include the following:

- Tuned stack silencers;
- Enclosures on the pumps and motors;
- Acoustically treated buildings; and
- Specially designed quieted main transformers.

### **Construction Noise**

Estimated octave band noise levels for the expected construction equipment will be incorporated into the NOISECALC computer model. Modeling, using the same assumptions and receptors as for the operational noise assessment, will then be performed at the same receptor locations. As is typically done for construction noise analyses, average noise levels will be calculated for each construction phase. This will be performed by incorporating the usage factor, which is a factor of the average time a piece of construction equipment is expected to be in use for any given construction phase (Barnes, 1977).

The calculated construction noise levels will then be compared to the existing daytime equivalent noise levels ( $L_{eq}$ ). The  $L_{eq}$  level, which represents a measure of the average of

all the noise present, will be used rather than the  $L_{90}$ , because the  $L_{90}$  only represents the baseline noise levels, whereas construction noise is a combination of varying noises, more closely represented by the  $L_{eq}$ .

The evaluation will include a direct comparison of preconstruction sound levels ( $L_{eq}$ ) with estimated construction sound levels ( $L_{eq}$ ) for major construction phase of the Project, and an assessment of the potential for community complaint. For areas where estimated construction sounds levels are expected to exceed the existing background sound level by more than 10 dBA, the report will also include an evaluation of the potential for indoor and outdoor speech interference and sleep interference.

### **Cumulative Noise**

There are no other electric generating facilities proposed in the immediate vicinity of the proposed Spagnoli Road Energy Center. Therefore, a cumulative assessment is not required. However, the proposed Spagnoli Road Energy Center noise levels will be evaluated against existing ambient levels as part of the impact analysis, which considers all existing sources in the area.

The calculated Spagnoli Road Energy Center facility noise levels will be added to both daytime and late night existing ambient noise levels as part of the analysis in order to demonstrate the incremental change in noise levels.

## **6. COMPLIANCE WITH APPLICABLE LOCAL AND STATE STANDARDS**

The projected Facility noise levels at each sensitive receptor location will be evaluated against the aforementioned noise standards and criteria in order to determine compliance.

## **7. POST CONSTRUCTION COMPLIANCE MONITORING**

An ambient noise-monitoring program is proposed to be performed following commercial startup to confirm that the calculated noise levels are achieved. Any deficiencies shall be noted, and a schedule to correct them shall be developed. The monitoring program and the type of actions that would be taken if the monitoring program shows that the facility does not meet noise goals shall be described in the Application. Details of the noise monitoring program will be the subject of a compliance filing following issuance of the Certificate of Environmental Compatibility and Public Need.

## **8. REFERENCES**

Bolt, Beranek and Newman, Inc., Report No. 3321 (1977).

- Prediction of Noise from Power Plant Construction*. Prepared for Empire State Electric Energy Research Company.
- Berglund, B., and T. Lindvall. 1995. *Community Noise*. Prepared for the World Health Organization. ISSN 1400-2817. ISBN 91-887-8402-9.
- Bolt, Beranek and Newman, Inc. 1971. *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances*.
- Harris, 1991. *Handbook of Acoustical Measurement and Noise Control*, Third Edition. McGraw-Hill, Inc.
- Miller, L.N., E.W. Wood, R.M. Hoover, A.R. Thompson, and S.L. Patterson. 1984. *Electric Power Plant Environmental Noise Guide*. Prepared for Edison Electric Institute by Bolt, Beranek and Newman, Inc., Cambridge, Massachusetts.
- United States Environmental Protection Agency, 1975. *Model Community Noise Control Ordinance*. Office of Noise Abatement & Control. Report Number EPA 550/9-76-003. Washington, D. C. 20460.
- United States Environmental Protection Agency, 1978. *Protective Noise Levels*. Office of Noise Abatement & Control. Report Number EPA 550/9-79-100. Washington, D. C. 20460.

## STIPULATION NO. 7: SOCIAL AND ECONOMIC IMPLICATIONS

KeySpan will submit a study of the socioeconomic impacts of the construction and operation of the Project. Regarding socioeconomic impacts, KeySpan will provide:

1. An estimate of the number of temporary construction jobs broken down by discipline that will be created.
2. An estimate of the average construction work force for each quarter broken down by discipline, during the period of construction, and an estimate of the peak construction employment level.
3. An estimate of the annual construction payroll, by trade, for each year of construction of the Project and an estimate of annual direct non-payroll expenditures likely to be made in the vicinity of the Project (materials, services, rentals, etc.) during the period of construction.
4. An estimate of the annual on-site payroll, secondary employment and economic activity likely to be generated in the vicinity of the Project by the construction of the plant. This analysis should state the basis of any economic multiplier factor or other assumption used and should include an order of magnitude comparison of the employment and economic activity likely to be generated in the Town of Huntington, Suffolk County with recent levels of employment and economic activity.
5. An estimate of the number of jobs during a typical year once the plant is in operation and an estimate of other expenditures likely to be made in the vicinity of the Project during a typical year of operation.
6. An estimate of the annual secondary employment and economic activity likely to be generated in the vicinity of the Project by its operation.
7. A comparison of the anticipated construction work force with the construction work force available within commuting distance broken down by trade, assuming a continuation of recent construction work force employment levels, with the exception that the labor force demands of any unusually large project which has been publicly announced for construction in the vicinity of the Project site during construction of the Project shall be addressed in the analysis. With respect to other projects subject to Article X of the Public Service Law, the analyses need only address projects for which an Article X application has been filed sixty days prior to the date of submission of the Article X Application for the Project.

The following will also be included with the analysis:

- (a) An estimate of the extent and duration of temporary construction worker in-migration.

- (b) An identification of the amount and location of temporary housing expected to be used by any in-migrating construction workers.
  - (c) An estimate of incremental school operating and infrastructure costs during the construction phase of the Project, this estimate to be made after consultation with the affected school districts.
  - (d) An estimate of incremental school operating and infrastructure costs due to the permanent operation of the Project, this estimate to be made after consultation with the affected school districts.
8. An estimate of incremental municipal, public authority, or utility operating and infrastructure costs that will be incurred by the Town of Huntington, Suffolk County, and any other affected municipality, public authority, or utility for police, fire, emergency, water, sewer, solid waste disposal, highway maintenance and other municipal, public authority, or utility services during the construction phase of the Project. This estimate will be made after consultation with the affected municipalities, public authorities, and utilities.
  9. An estimate of incremental municipal, public authority, or utility operating and infrastructure costs that will be incurred by the Town of Huntington, Suffolk County, and any other affected municipality, public authority, or utility for police, fire, emergency, water, sewer, solid waste disposal, highway maintenance and other municipal, public authority or utility services due to the permanent operation of the Project. This estimate will be made after consultation with the affected municipalities, public authorities, and utilities.
  10. An identification of all jurisdictions (including benefit assessment districts and user fee jurisdictions) that levy real property taxes or benefit assessments upon the Project site, its improvements and appurtenances.
  11. For each taxing jurisdiction, an identification of the most recent tax rate (user charge or benefit assessment charge), and total tax levy for the jurisdiction.
  12. For each taxing jurisdiction, an identification of the most recent assessed value (or benefit formula) taking into account the user charge assigned to the Project site, its improvements and appurtenances.
  13. For each taxing jurisdiction, an identification of the amount of the most recent annual taxes (user charge or benefit charges) levied against the Project site, its improvements and appurtenances.
  14. A description of all on-site equipment and systems to be provided to prevent or handle fire emergencies and hazardous substance incidents.

15. A description of all contingency plans to be implemented in response to the occurrence of a fire emergency or a hazardous substance incident.
16. For each jurisdiction, an estimate of the projected post-construction assessed value (or benefit formula or user charge) that will be assigned to the Project site, its improvements and appurtenances.
17. For each jurisdiction, an estimate of the amount of annual taxes (or benefit charges or user charges) it is projected would be levied against the post-construction Project site, its improvements and appurtenances.
18. For each jurisdiction, a comparison of the fiscal costs to the jurisdiction that are expected to result from the construction and operation of the Project to the expected tax revenues (or benefit charge revenues or user charge revenues) generated by the Project.
19. Paragraphs 16 through 18 will not apply to any jurisdiction for which KeySpan is proposing to enter into a payment in lieu of taxes (PILOT) agreement pertaining to taxes or other charges levied by such jurisdiction. With respect to any proposed PILOT agreement, KeySpan will identify the entity with which it proposes to execute the PILOT agreement.
20. An analysis of whether all contingency plans to be implemented in response to the occurrence of a fire emergency or a hazardous substance incident can be fulfilled by existing local emergency response capacity, and in that regard identifying any specific equipment or training deficiencies in local emergency response capacity (this analysis to be made after consultation with the affected local emergency response organizations).
21. A description and map, as appropriate, for each census tract whose geographic center is within a one-mile radius of the Project, the following parameters: population, age distribution, sex, marital status, percent minority vs. percent non-Hispanic white, household type and size, tenure of housing units and persons per occupied housing unit (based on the latest available census counts) and place of work, educational attainment, and household income as a distribution and median (based on the latest available sample counts).
22. An identification of the current number of jobs, the on-site payroll by discipline, other expenditures made in the vicinity of the Project site, and an estimate of the annual secondary employment and economic activity currently generated in the vicinity of the Project site by the current commercial use of the Project site.

## STIPULATION NO. 8: GEOLOGY, SEISMOLOGY, AND SOILS

KeySpan will include a study of the geology, seismology, and soils impacts of the Project (Study). The components of the Study will include identification and mapping of existing conditions, impact analysis, and proposed mitigation.

1. To the extent consistent with the following paragraphs contained in this stipulation, the methodology for assessing potential impacts related to geology, seismology, and soils will follow the appropriate procedures described, or will use data provided, in the following documents:

American Society for Testing and Materials (ASTM) testing methods and standards.

Isachsen, Y.W. et al, editors. Geology of New York: A Simplified Account, New York State Museum/Geological Survey (1991).

Jacob, Klaus. Seismic Vulnerability of New York State: Code Implications for Buildings, Bridges and Municipal Landfill Facilities, National Center for Earthquake Engineering Research (NCEER), Buffalo, New York (April, 1993).

National Earthquake Information Center. Preliminary Determination of Epicenters, Monthly Listing, USGS.

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Nottis, Gary N., editor. Epicenters of Northeastern United States and Southeastern Canada, Onshore and Offshore: Time Period 1534-1980, New York State Museum Map and Chart Series Number 38 (1983).

United States Department of Agriculture, Soil Conservation Service, Soil Survey of Suffolk County, New York (1975).

2. Regarding geology, seismology, and soils the Study will include:

### GEOLOGY

- (a) A map based on the most recent 1:24000 scale USGS quadrangle maps showing topographic contours, the Project site and interconnection routes.

- (b) A proposed site plan showing existing and proposed contours at two-foot intervals, for the Project site, at a scale sufficient to show all proposed buildings, structures, paved and vegetative areas, and construction areas.
- (c) A preliminary calculation of the quantity of cut and fill necessary to construct the Project.
- (d) A description and preliminary calculation of the amount of fill material to be brought in to the Project site, if any, and a description of the contract specifications that would be implemented to assure that any fill material brought into the project site is clean.
- (e) A description and preliminary calculation of the amount of cut material or spoil to be removed from the Project site, if any. Regulatory requirements pertaining to offsite disposal will be identified, and the procedures that will be implemented to assure proper disposal of any such materials will be described.
- (f) A delineation of temporary cut or fill storage areas to be employed.
- (g) A description of foundation support techniques to be employed.
- (h) A description of and results of a geotechnical investigation of subsurface units at the site.

### BLASTING

Based on preliminary studies, KeySpan believes that no blasting will be necessary for any construction at the Project site, at any area to be disturbed for roadways to be constructed, if any, or for any construction of all electric, water, wastewater, or other types of off-site interconnections or improvements required to serve the Project. The Application will either include sufficient site-specific geotechnical evidence to demonstrate that no blasting will be necessary under any circumstances, or the three paragraphs that follow regarding blasting information to be provided in the Application will be operable.

- (i) A preliminary plan describing all blasting operations including location, blasting contractor qualifications, charge sizes and limits, quantity of discrete blasts, hours of blasting operations, estimates of amounts of rock to be blasted, warning measures, measures to ensure safe transportation, storage and handling of explosives, use of blasting mats, a plan for a pre-blasting videotape condition survey of nearby buildings and improvements, and coordination with local safety officials.
- (j) An assessment of potential impacts of blasting to environmental features, aboveground structures and belowground structures such as pipelines.

- (k) An identification and evaluation of reasonable mitigation measures regarding blasting impacts, including the use of alternative technologies and/or location of structures, and including a plan for securing compensation for damages that may occur due to blasting.

#### SEISMOLOGY

- (l) A description of the regional geology, tectonic setting and seismology of the Project vicinity.
- (m) An analysis of the expected impacts of construction and operation of the Project with respect to regional geology, if such can be determined.
- (n) An analysis of the impacts of typical seismic activity experienced in the Project area on the operation of the Project.

#### SOILS

- (o) A map delineating soil types on the Project site and interconnections.
- (p) A description of the characteristics and suitability for construction purposes of each soil type identified above, including a description of the recharge/infiltration capacity of each soil type and a discussion of any dewatering that may be necessary during construction and whether the Project will contain any facilities below grade that would require continuous dewatering.

## STIPULATION NO. 9: TERRESTRIAL ECOLOGY

KeySpan will include a study of the terrestrial resource impacts of the construction and operation of the Project.

### VEGETATION

The on-site terrestrial ecology as well as the ecological characteristics of off-site interconnection routes will be reviewed as follows:

1. To the extent consistent with the following paragraphs contained in this stipulation, the ecological communities will be described according to Reschke, Ecological Communities of New York State (1990);
2. A characterization of the type of plant communities present, the structure of these communities and the species composition of each community, based on spring and/or summer reconnaissance or systematic surveys;
3. A list of the species of flowering plants, ferns, and fern relatives and the relative abundance of each;
4. A delineation of the vegetative communities or cover type present on the basis of recent aerial photography and field observations, mapped at a scale of not more than 100 feet per inch (for the site) and 500 feet per inch (for interconnections), including an identification and delineation of any unusual habitats or natural communities which could support listed species or species of special concern;
5. Documentation of the structure of these communities (canopy, understory, and ground cover) by visual observations of either representative sample plots or sampling transects, identifying the structure and composition of the plant communities identified based on dominant species, but all species observed being recorded for the purpose of site inventory;
6. An estimate of the species and number of all trees 12 inches or greater in diameter at breast height, if any;
7. An analysis of the impact of the construction and operation of the interconnections on the vegetation identified, including a delineation of the vegetation areas to be removed or disturbed, mapped at a scale of not more than 100 feet per inch (for the site) and 500 feet per inch (for interconnections); and
8. An identification and evaluation of reasonable mitigation measures, including the use of alternative technologies, regarding vegetation impacts identified. KeySpan will work with the appropriate agencies to determine the most appropriate site conditions for the undisturbed portions of the Project site.

## WILDLIFE

9. A characterization of the Project site and interconnections as to the wildlife (including mammals, birds, amphibians, and reptiles) and wildlife habitats, that occur in, on, or in the vicinity of the Project site and interconnections, based on spring and/or summer reconnaissance or systematic surveys, supplemented by available data from the New York State (NYS) Amphibian and Reptile Atlas Project, the NYS Breeding Bird Atlas and range maps, and other similar reference sources, including an identification and delineation, upon consultation with NYS DEC and the U.S. Fish and Wildlife Service, of any unusual habitats or natural communities which could support listed species or species of special concern;
10. A list of the species of mammals, birds, amphibians, and reptiles reasonably likely to occur in, on, or in the vicinity of the Project site based on site observations and supplemented by publicly available sources;
11. An analysis of the impact of the construction and operation, including air emissions, of the Project and interconnections on the wildlife, wildlife habitats, and wildlife travel corridors identified pursuant to paragraphs 9 and 10 above; and
12. An identification and evaluation of reasonable mitigation measures, including the use of alternative technologies, regarding wildlife impacts identified pursuant to paragraph 11 above.

## STIPULATION NO. 10: TRAFFIC AND TRANSPORTATION

The Application to be submitted will include a study of the traffic and transportation impacts of the construction and operation of the Project (Study). To the extent consistent with the following paragraphs contained in this stipulation, the methodology for assessing the potential traffic and transportation impacts from traffic generated by the construction and operation of the Project will follow the instructions provided in Transportation Research Board, National Research Council, Highway Capacity Manual, Special Report 209, Third Edition 1998.

1. The Study will include a description of the pre-construction characteristics of the roadways in the vicinity of the Project, to include Spagnoli Road, Bethpage-Sweethollow Road, Old Bethpage Road, Route 110, and Round Swamp Road. The description will include:
  - (a) A review of existing data on vehicle traffic, use levels and accidents obtained from the New York State Department of Transportation, Suffolk County, Nassau County and/or the Town of Huntington and the Town of Oyster Bay;
  - (b) The results of peak turning movement counts for a typical weekday morning, weekday afternoon, and Saturdays to be conducted by KeySpan at the following intersections (including a description of the criteria used to determine what days are “typical” for the purposes of the counts):
    - (1) Spagnoli Road and Route 110;
    - (2) Round Swamp Road and Bethpage-Sweethollow Road/Old Bethpage Road.
  - (c) The results of twenty-four hour traffic volume counts to be conducted by KeySpan, including a calculation of average daily traffic (ADT) on Spagnoli Road along the site frontage;
  - (d) For each intersection listed in paragraph 1(b) above, description of intersection geometry and traffic control devices by approaches;
  - (e) A calculation of the Level of Service (LOS) for each intersection listed above, giving detail for each turning movement; and
  - (f) An estimate of the annual rate of traffic growth in the vicinity of the Project incorporating general growth and growth from planned land use changes, but not including projected traffic for the Project, including the source and manner of calculation of the estimate.
2. The Study will include an estimate of the trip generation characteristics of the Project during both construction and operation. The estimate will include:

- (a) A description of the major phases of construction, including duration of construction, daily shift periods and Project totals;
  - (b) For the major phases of construction, an estimate of the number and frequency of vehicle trips, including arrival and departure distribution, by size and type of vehicle (trucks and cars);
  - (c) An identification of approach and departure routes to and from the Project site for vehicles carrying chemicals or hazardous materials for construction of the Project;
  - (d) For cut activity (spoil removal from the Project site), an estimate of the number and frequency of vehicle trips, including arrival and departure distribution;
  - (e) For fill activity (deposition at the Project site), an estimate of the number and frequency of vehicle trips, including arrival and departure distribution;
  - (f) An estimate of the number of employees per shift for the major phase of construction;
  - (g) A description of the operation of the Project, including the number of employees per shift;
  - (h) An estimate of the number and frequency of vehicle trips generated during operation of the Project, including arrival and departure distribution, by size and type of vehicle (trucks and cars); and
  - (i) An identification of approach and departure routes to and from the Project site for vehicles carrying chemicals or hazardous materials for operation of the Project.
3. The Study will include a conceptual site plan, drawn at an appropriate scale, depicting all Project site driveway intersections with Spagnoli Road, showing horizontal and vertical geometry, the number of approach lanes, the lane widths, shoulder widths, and traffic control devices by approaches.
4. The Study will include an analysis and evaluation of the traffic and transportation impacts of the Project, including:
  - (a) A comparison of projected future traffic conditions with and without the proposed Project, including a calculation and comparison of the LOS for each intersection listed in paragraph 1(b) above as well as at the Site Driveway, giving detail for each turning movement, the analysis to be

conducted separately for the peak construction impacts of the Project and for the typical operations of the completed Project;

- (b) An evaluation of the adequacy of the road system to accommodate the projected traffic, the analysis to be conducted separately for the peak construction impacts of the Project and for the typical operations of the completed Project, including consideration of the 1989 GEIS, as it relates to traffic and transportation;
- (c) An identification and evaluation of reasonable mitigation measures regarding traffic and transportation impacts if needed, including the use of alternative technologies, the construction of physical roadway improvements, and the installation of new traffic control devices.

5. Aviation

- (a) Provide a map, at the originally published scale, of the Imaginary Surfaces Diagram for Republic Airport showing the location of the proposed location of the Spagnoli Road facility in relation to the defined approach slopes for Runways 14 and 19, including all relevant Part 77 surfaces and all existing obstructions;
- (b) Provide the most recent noise contour analysis performed by Republic Airport, including any determinations of incompatible land use in accordance with Federal Land Use Compatibility Guidelines;
- (c) Provide the NYS Department of Transportation's findings, projections, recommendations and plans as set forth in the 1997 Proposed Master Plan Update for Republic Airport together with any relevant issues of concern identified in the Scoping Document for the Generic Environmental Impact Statement (GEIS) currently in preparation for Republic Airport. The review should include the details of any Republic Airport expansion proposals and any potential effects on any land uses and building height or structure limitations in the area;
- (d) Determine and report on the presently enforced Town of Huntington, Suffolk County, NYS Department of Transportation or Federal Aviation Administration land use controls or types of permitted land uses and building height limitations expressly concerning Republic Airport operations;
- (e) Provide the results of any reports on present approach surface penetrations (including FAA Rules Part 77 and nighttime instrument approach surfaces) together with photoslope and/or detailed obstruction analysis; and

- (f) Provide an assessment of impacts (if any) caused by potential obstructions and exhaust plumes of the proposed generation facility on the landing and takeoff patterns for flights at Republic Airport including the conical surface, transitional surface and the approach zone height limitation slopes (if any) for Runways 14 and 19.
- (g) Provide with the Application or within 45 days thereafter the FAA determination in response to KeySpan's pre-construction notice to the FAA, specifically indicating whether the FAA considers the proposed facility to be an aviation hazard and indicating any lighting and marking requirements or recommendations that the FAA reports or determines necessary.
- (h) In the event the FAA determines pursuant to FAA Rules Part 77 that the proposed facility will require a change in flight patterns for aircraft approaching or taking off from Republic Airport, Applicant shall supplement the Application with information relative to the municipal, county, state and/or Federal land use controls proximate to Republic Airport affecting its operation. This information shall be sought from the Towns of Babylon, Oyster Bay, Nassau County, the NYS Department of Transportation and the FAA.

## STIPULATION NO. 11: AESTHETICS AND VISUAL RESOURCES

The Application will include a visual impact assessment (VIA) to determine the extent and assess the significance of Project visibility. The components of the VIA will include identification of visually sensitive resources, viewshed mapping, confirmatory visual assessment fieldwork, visual simulations (photographic overlays), cumulative visual impact analysis, and proposed visual impact mitigation.

1. The methodologies, standards and definitions for assessing visual resources of State concern will follow procedures outlined in the NYSDEC Program Policy:

NYSDEC, Assessing and Mitigating Visual Impacts, DEP-00-2, 7/31/2000.

For visual impacts methodology, including identification of landscape similarity zones, management classification rating, public involvement and forecasting, the visual impact assessment will follow procedures outlined in:

Smardon, R.C., et al, Visual Resources Assessment Procedure for U.S. Army Corps of Engineers, Instruction Report EL-88-1, prepared by State University of New York, Syracuse, for U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS, 1988.

2. The VIA will address the following issues:
  - (a) The character and visual quality of the existing landscape.
  - (b) Visibility of the Project, including visibility of Project operational characteristics, such as visible plumes from the exhaust stacks.
  - (c) Visibility of all aboveground interconnections.
  - (d) Appearance of the Project upon completion, including building/structure size, architectural design, facade colors, FAA lighting and marking requirements, and texture.
  - (e) Lighting and similar features.
  - (f) Representative views (photographic overlays) of the Project, including front, side and rear views, indicating proposed elevations.
  - (g) Nature and degree of visual change resulting from construction of the Project and aboveground interconnections.
  - (h) Nature and degree of visual change resulting from operation of the Project.

- (i) Proposed mitigation and mitigation alternatives based on an assessment of mitigation strategies listed in DEC's program policy noted above, including landscaping, architectural design, visual offsets, relocation or rearranging facility components, reduction of facility component profiles, facility color and design, cooling system alternatives, lighting options for work areas and safety requirements, and lighting or marking options for the stack as required by the FAA.
  - (j) A description of all visual resources listed in the NYSDEC Visual Resources Policy that would be impacted by the Project.
3. The viewshed analysis component of the VIA will be conducted as follows:
- (a) A viewshed map of the Project study area will be prepared and presented on a 1:24,000 scale recent edition topographic base map. The viewshed study area is defined as the area within a 3-mile radius of the center of the Project site. Beyond 3 miles, viewshed locations will be selected on the basis of areas that have high elevation or that are characterized by land features that appear to afford distant views. However, a line of sight profile will also be done for resources of statewide concern (as listed in the NYSDEC Policy) located within a 5-mile radius of the center of the proposed site. The 3-mile radius viewshed map(s) will provide an indication of areas of potential visibility based on topography and vegetation and the top of the Project stacks. The potential screening effects of vegetation will also be shown. Visually sensitive sites, cultural and historical resources, representative viewpoints, photograph locations, and public vantage points within the viewshed study area will be included on the map(s).
  - (b) The VIA will include a detailed description of the methodology used to develop the viewshed maps, including software, baseline information, and sources of data.
  - (c) The viewshed mapping will be used to determine the sensitive viewing areas and locations of viewer groups in the Project vicinity. These will include recreational areas (i.e., golf course, state parks, etc.), residences, businesses, institutional, historic sites (listed or eligible), and travelers (interstate and other highway users). The aesthetic resources survey will include the additional resources listed in the DEC's policy.
  - (d) KeySpan will confer with DPS Staff, NYSDEC, OPRHP, and representatives from local civic, planning, historic or recreational groups in its selection of viewpoints. Viewpoint selection is based upon the following criteria: Representative or typical views from unobstructed or direct line-of-sight views; Significance of viewpoints, especially historic sites, high public use areas, parks and scenic outlooks; Level of viewer

exposure, i.e., frequency of viewers or relative numbers, including residential areas, or high volume roadways; Proposed land uses; and Input from local public sources.

- (e) To account for vegetation, the approximate extent of forested areas will be identified from USGS color infrared digital orthophoto quads. Vegetation in rural and urban areas will be assigned a conservative height based on field assessment, and combined with the digital elevation model to create a model that accounted for both terrain and vegetation. Vegetation areas will be identified using ERDAS Image processing software. Using ERMapper, a mosaic of the aerial photos will be assembled to create a single image. Then, using ENVI, a supervised classification of the image will be performed in order to extract the "wooded" areas. The wooded areas will be made into a new layer and assigned a conservative vegetation height (e.g., 30 feet in rural areas and 20 feet in urban areas). Urban areas will be delineated using 2000 census data; tracts having population densities greater than 800 persons per square mile will be classified urban. Vegetation height modeling and screening assessment will need to include field confirmation and documentation of predicted screening of views toward facility from resources of interest to the State, such as State parks, listed or eligible historic resources, etc.
  - (f) Future conditions should be considered in impact assessment, as well as existing conditions. The proposed ACOE VIA Methodology calls for assessment of future conditions. Changes in land use, vegetation, and other features should be acknowledged and addressed in the VIA report. Any exhaust stack marking or lighting requirements as determined by FAA review should be modeled in visibility assessment and impact determination.
4. Simulations (photographic overlays) of the Project will be prepared from the representative viewpoints established pursuant to paragraph 3(d) herein to demonstrate the post-construction appearance of the Project. Representative viewpoints will be established in consultation with NYSDEC, DPS Staff and OPRHP for this assessment based on the information described in paragraph 3(d) herein. The photographic overlays from each of the viewpoints selected pursuant to paragraph 3(d) herein will be limited to the Project, as it would appear under typical operating conditions. In addition, photographic overlays from two representative viewpoints will be prepared showing a visible water vapor plume that could occur from the combustion turbine generator stacks under the typical and worst-case operating conditions, and typical and worst-case daytime temperature and humidity conditions that lead to such visible plume formation. The viewpoints for depiction of such visible plumes will be established in consultation with the DEC and DPS staff. The depiction of a water vapor plume may be based on visible water vapor plumes from other comparable plants operating under similar conditions or applicable engineering estimates.

5. Additional revised simulations illustrating mitigation will be prepared for those observation points for which mitigation is proposed in the Application.
6. Each set of existing and simulated views of the Project will be compared and the change, if any, in visual character will be identified. Based upon the likely viewers, and their likely visual sensitivity, the potential impact will be discussed. Where significant visual impacts from the proposed facility are identified, potential mitigation measures will be outlined, and the extent to which they effectively minimize such impact will be discussed.
7. An overlay of a USGS map showing the photographic view locations and the results of computer visibility potential modeling will be provided to NYSDEC, DPS Staff and OPRHP and provided in the Applications available for public review. The overlay will show the area of potential visibility as determined through terrain and vegetation modeling, and the viewpoints from which it has been determined that the Project would be visible. The viewshed map will be available for review as part of the viewpoint selection process.
8. The Application will include a summary of the nature of the probable impact on aesthetic, scenic, historic, and recreational resources due to the Project, and a description of the mitigation to minimize adverse impacts on those resources. This summary will include a description of the nature of the probable impacts on visual resources of state concern, and a description of the mitigation to minimize adverse impacts as described in the NYSDEC Program Policy.

## STIPULATION NO. 12: WATER RESOURCES

The Application to be submitted will include a study of the water resource impacts of the construction and operation of the Project. Regarding water resource impacts, KeySpan will provide:

### WATER SUPPLY

1. An estimate of the water supply needs and consumptive water losses of the Project for various operating scenarios. The flows will be broken down by daily and hourly peak and average and by domestic and power production requirements. In addition, the methodology used to determine the facility's water supply needs and minimum and maximum flow rates will be provided in the Application;
2. An estimate of the fire suppression peak flow rate needs of the Project in gallons per minute in addition to a demonstration that sufficient quantity and pressure during normal and drought periods is available to meet the Project's fire suppression needs;
3. A description of the water chemistry requirements for water to be supplied to the Project, indicating any requirements that are more stringent than NYS standards for potable water, and describing any additional water treatment that will be necessary to obtain the desired chemistry;
4. An identification of the water supply source or sources including localized well field(s) in the localized zone, proposed to be used by the Project, including:
  - (a) An assessment of available capacity of the water supply source including localized well field(s) in the localized zone, in terms of quantity, quality, and pressure for all seasons and during both normal and drought periods based on existing documentation and/or discussions with the water supply source;
  - (b) A cumulative analysis of the impacts of such usage during both normal and drought periods on other users (existing and known to be proposed) of the same water supply source, and an analysis of such impacts on surface water and groundwater including an identification and analysis of the localized well field(s);
  - (c) An identification of all infrastructure requirements necessary to serve the Project including treatment requirements;

- (d) An evaluation of the impact of the Project on excess infrastructure capacity, including distribution piping, mains, pumps, storage, or additional supply during normal and maximum demands of water supply;
  - (e) An identification and description of any Project water treatment facilities;
  - (f) The Project's water demands will be reviewed in light of other Article X Projects to determine cumulative impacts. This analysis will include projects for which Applications or Preliminary Scoping Statements have been filed up to 60 days prior to the Application filing; and
  - (g) The Project's water demands will be reviewed in light of existing and future customers of the South Huntington Water District to determine cumulative impacts. A description of the status of negotiations, and a copy of any agreements that have been executed, with municipalities, public authorities, companies or individuals for providing water to the Project, including any permitting implications/modification requirements and restrictions that may be imposed by the provider.
5. An identification and evaluation of reasonable mitigation measures, including the use of potential alternative supply sources including on-site sub-surface wells, water storage, and off-setting water conservation, regarding water supply impact, and including a contingency plan for periods of drought or water emergency describing thresholds for water use curtailment. If use of surface water or an on-site well is proposed for water supply for the Project, a qualitative analysis of the water balance and an assessment of the impacts of the removal of the maximum daily withdrawal for the facility, particularly during drought periods, on stream flows and the ecological balance of these waterbodies must be conducted as described in paragraph 18 of this Stipulation, and must include additional hydrogeological studies to clearly demonstrate the effect of this withdrawal on any contaminant plumes that have the potential to be influenced by the proposed well. These studies must state all methods used to ensure that this withdrawal would not adversely affect any public or private wells. In addition, if use of an on-site well is proposed the Article X application must supply the information and documentation specified in Article 15, Title 15, Section 1527 of the Environmental Conservation Law and 6 NYCRR Part 602; Applications for Long Island Wells. The technical feasibility of recycling boiler blowdown to reduce water supply demands will be evaluated as part of the Application; and
6. The Application will include a detailed analysis for the potential water supply options for the water supply for the Project. Separate water balance diagrams for hourly and daily peak and hourly and daily average water use will be provided. The preferred water supply will be identified and discussed, including any permitting implications.

## WASTEWATER

7. An estimate of the wastewater generated at the facility, in gallons, that will be discharged for the various operating scenarios. KeySpan will provide information on the characteristics (e.g., volume, temperature, constituent concentrations) of the water supply and discharge;
8. An identification and evaluation of reasonable mitigation measures, e.g., the use of on-site subsurface disposal, regarding wastewater generation and disposal impacts;
9. An identification and description of all preferred disposal methods for wastewater generated from the Project, including a review of all options explored for process wastewater disposal, including discharging to municipal sewer systems, aquifer recharge areas, in-ground discharges, including, as applicable, an analysis of the impacts on water quality and quantity in affected groundwater and surface water resources;
10. An identification and description, including conceptual plans and locations, for all wastewater sewer mains or other improvements, structures or means of interconnection with the Project site for the purposes of wastewater disposal, including a description of available capacity and any limitations on wastewater disposal capacity;
11. A description of the status of negotiations, or a copy of any agreements that have been executed, with municipalities, companies or individuals for receiving wastewater from the Project including any restrictions on Project wastewater disposal;
12. A demonstration that for each discharge, all of local, state and federal water quality standards will be complied with during construction and operation. If discharge to the local POTW is the preferred option, this will include a demonstration that the wastewater would not result in an exceedence of the limits for discharge to the POTW;
13. An identification and description of all Project wastewater treatment facilities and discharge structures including a demonstration that each facility is capable of meeting all applicable effluent limitations and pretreatment standards;
14. A completed application for the SPDES Permit and a demonstration that the discharge complies with all applicable technology-based and water quality-based effluent limits;

## GROUNDWATER

15. A map of the Project site showing the depth to the high groundwater table in ten-foot increments and a description of seasonal fluctuations in the Upper Glacial Aquifer;
16. A map based on publicly available information showing all areas within a 1 mile radius of the Project site delineating all groundwater aquifers and groundwater recharge areas, and identifying groundwater flow direction, groundwater quality, and the location, depth, yield and use of all public and private groundwater wells or other points of extraction of groundwater, and including delineation of wellhead water and aquifer protection zones that may be impacted by the project;
17. An analysis and evaluation of all reasonably potential impacts created by the construction or operation of the Project on groundwater quality and quantity in the Project area, including potential impacts on public and private water supplies and wellhead and aquifer protection zones;
18. An analysis and evaluation of all reasonably potential cumulative impacts created by the construction or operation of the Project and the Brookhaven Energy Project on groundwater quality and quantity in the Project area, including potential impacts on public and private water supplies and wellhead and aquifer protection zones;
19. An identification and evaluation of reasonable mitigation measures, including the use of water storage, and offsetting water conservation, to avoid or minimize groundwater impacts;
20. A description of spill prevention and control measures to be in place for oil, ammonia and other chemicals; and
21. A discussion of the current status of The Long Island Comprehensive Special Groundwater Protection Area Plan (Plan) applicable to the aquifer under and in the vicinity of the Project site and a discussion of the consistency of the Project with the Plan, including, if applicable, an identification and evaluation of reasonable mitigation measures.

## SURFACE WATERS

22. A description of the water quality, flow and other characteristics of surface water features, including intermittent streams, on or adjacent to the Project site or interconnections;
23. An identification of the extent of all Waters of the State of New York and the United States, within the Project site or interconnections;

24. A description of the characteristics of all Waters of the State of New York and the United States, identified above; in the event the Project construction requires dredging, a description of any impacts that might occur from dredging;
25. An analysis of the impact of the construction and operation of the Project and interconnections on the surface waters identified above;
26. An identification and evaluation of reasonable mitigation measures regarding impacts on Waters of the State of New York and the United States and the other surface waters identified above, including the precautions that will be taken to minimize dredging impacts (if any) and assure compliance with water quality standards; and
27. An identification of any nearby surface water drinking-water supply intakes that could potentially be impacted by the Project.

#### AQUATIC

28. A description of the aquatic resource characteristics of surface water features identified in paragraph 26, if any;
29. An analysis of the impact of the construction and operation of the Project and interconnections on the aquatic resources identified above; and
30. An identification and evaluation of reasonable mitigation measures, including the use of alternative technologies, regarding aquatic resource impacts.

#### WETLANDS

To the extent consistent with the following paragraphs contained in this stipulation, the methodology for assessing the potential impacts to wetlands will follow the procedures and use predictive data provided in the following documents:

For identifying the appropriate vegetation, hydrology, and soils criteria which would define federal-jurisdictional wetlands, the US Army Corps of Engineers Wetlands Delineation Manual (1987); and

For identifying the appropriate vegetation, hydrology, and soils criteria which would define State-jurisdictional wetlands, the NYSDEC Freshwater Wetlands Delineation Manual (July 1995).

31. An identification of the extent of all federal and state regulated wetlands within the Project site and an identification of all wetland impacts from the Project;
32. An identification of the extent of all federal and state regulated wetlands along all interconnections;

33. A description of the characteristics of all federal and state regulated wetlands identified above, including a description of the vegetation, soils, and hydrology data collected for each of wetland sites identified, based on actual on-site wetland observations;
34. An on-site identification and delineation of all federal and state regulated wetlands identified above;
35. A survey or coordinate map of the location of all on-site federal and state regulated wetland boundaries identified above;
36. An analysis of all wetlands within 200 feet of the Project site and observed in the field, where accessible, to determine their general characteristics and relationship, if any, to wetlands identified in paragraph 31 above;
37. An identification and evaluation of reasonable mitigation measures, including the use of alternative technologies and control of potential phosphorus and nitrogen sources from the Project, regarding wetlands impacts (if any); and
38. An identification of all wetlands impacts and any avoidance, minimization, and mitigation measures.

#### CONSTRUCTION/OPERATION STORMWATER RUNOFF

39. An identification of potential stormwater contaminants and a description of all techniques that will be used to prevent stormwater and spill contamination, and a conceptual site plan showing all intended structures and improvements to prevent stormwater contamination, including chemicals, fuels or other contaminants from storage facilities, product delivery, plant operation, plant maintenance, waste handling activities, and vehicles in parking lots or other areas;
40. A completed application for the SPDES Permit;
41. An identification and evaluation of reasonable mitigation measures, including the use of alternative technologies, regarding stormwater quality impacts; and
42. The development of a Pollution Prevention Plan with erosion and sediment controls designed in accordance with the New York State Erosion and Sediment Control Guidelines.

#### EROSION CONTROL

43. A preliminary plan for the collection and treatment of stormwater runoff from the site during construction and operation, including delineation of watershed boundaries and sub-basins, existing flow-paths and proposed flow path

relocations, the location, type, and size of all existing and proposed storm drainage facilities, stormwater outfall and/or subsurface disposal locations and conditions, design flows and outfall velocities, proposed method of stabilizing outfall channels, the location, size and type of nearest upstream and downstream bridge or culvert affected by the Project, location, size and structural details of stormwater detention facilities, preliminary hydraulic calculations for the 2, 10 and 100 year storm frequencies for both existing and proposed conditions, delineation of affected floodways and flood hazard areas, a description of techniques that will be used to prevent or control soil erosion, runoff and subsequent sedimentation in areas that have been cleared and graded, both during construction and operation, an analysis of related impacts, and an identification and evaluation of reasonable mitigation measures regarding related impacts, including the use of alternative technologies and subsurface disposal.

#### SPILL PREVENTION AND CONTROL PLAN

44. A description of the spill prevention, detection and control measures to be in place for ammonia storage, wastewater storage, and other hazardous substances stored on site, including an evaluation of alternatives and mitigation measures.
45. Information on whether the storage of ammonia, other chemicals, petroleum or hazardous substances on site is subject to regulation under the State of New York's chemical and petroleum bulk storage programs, and if so, a demonstration of full compliance with such regulations.
46. Information on whether the storage of ammonia, other chemicals, petroleum or hazardous substances on site is subject to regulation under local law (County or Town), and if so, a demonstration of the degree of compliance with such local laws.

## STIPULATION NO. 13: RELIABILITY AND ALTERNATIVES

The Application will contain the following assessments:

1. The Application will include an explanation of the basis for the chosen emission control systems and alternatives, including any LAER analysis, as required by 6 NYCRR 231.
2. The Application will include an evaluation and assessment of alternative cooling technologies and provide sufficient information to support KeySpan's conclusions that air-cooling is preferred and why other options are not considered reasonable alternatives.
3. The Application will include a presentation and analysis of options for stack plume mitigation. Included will be the reduction in the frequency and extent of stack plume visibility achieved by each option under worst case and average temperature and climate conditions for when stack plume would be visible. Also included for each option will be incremental costs for capital and operations and maintenance based on life-cycle costs, in tabular summary, together with the underlying assumptions with work papers. Any impact on plant efficiency and plant output (gross and net) will be provided in detail.
4. An assessment, with supporting details, of the reliability and feasibility of Applicant's preferred generation equipment. As a part of the supporting details, reliability data for the major generating components including the gas turbine, heat recovery steam generator, steam turbine, and collectively for the entire power block will be provided. To the extent available, data is to be unit specific to the Applicant's facility and not averaged with other makes and models of equipment. The reliability data to be included is as follows: capacity factor, availability, equivalent availability, forced outage rate, equivalent forced outage rate and starting reliability if available. Data for last five available years, year-by-year and cumulative, will be provided. If unit-specific reliability data is not available, the Applicant will provide a rationale for the selection of the gas turbine, steam turbine generator and heat recovery system generator vendors. This rationale will demonstrate how known industry problems would be avoided.

STIPULATION NO. 14: DECOMMISSIONING REQUIREMENTS

1. In accordance with Section 1001.7(b)(2) and (3) of the Rules of the Siting Board, the Application to be submitted will include a description of the financial resources available to restore any disturbed areas of the Project site in the event the Project is abandoned, cannot be completed, or is decommissioned. These Rules also require KeySpan to submit a plan for the decommissioning of the Project site. The Application to be submitted will include:
  - (a) A statement of the performance criteria proposed for site restoration or decommissioning;
  - (b) A discussion of why these performance criteria are appropriate;
  - (c) A demonstration that the financial resources available for restoration or decommissioning are adequate to restore the site to the condition specified in the performance criteria; and
  - (d) A description of any security fund or insurance in place or to be obtained, and the financial resources available to KeySpan in the event that either the Project cannot be completed, or that the Project must be decommissioned.

STIPULATION NO. 15: SOLID AND HAZARDOUS WASTES

1. The Application will include a summary of an assessment of contamination conducted for the Project site. If any remediation of the Project site is required for the proposed reuse of the Project site, the Application shall include a description of the remedial actions to be undertaken, an identification of any involved government agencies, a statement of the status of remediation, a report of the status of any negotiations and agreements concerning remediation, and a description of any monitoring programs to be implemented once remediation is complete.

STIPULATION NO. 16: SYSTEM PRODUCTION MODELING

1. The Application will include the following analyses, which will be developed using MAPS, PROMOD or a similar modeling tool:
  - (a) Estimated statewide levels of SO<sub>2</sub>, NO<sub>x</sub> and CO<sub>2</sub> emissions both with, and without the Spagnoli Road facility;
  - (b) Estimated minimum and average annual spot prices representative of Areas “A”, “F” and “K”, of the New York Control Area both with, and without the Spagnoli Road facility;
  - (c) Estimated capacity factor for the Spagnoli Road facility.
2. The analysis will assume that, subject to publicly announced in-service and retirement dates, the following plants are in service: all existing electric generating facilities, and those electric generating facilities that (a) have been proposed in Article X applications and (b) have received notification 30-days prior to the filing of the Spagnoli Road application that their application is in compliance with Article X, and all proposed electric generators less than 80 MW in capacity, that are currently expected to be in service on Long Island prior to the Spagnoli Road facility’s in-service date. The analysis will also reflect that the Shoreham DC Tie will be in service.
3. Applicant will consult with DPS Staff with the goal of agreeing to a mutually acceptable input data set, including modeling for Applicant’s proposed facility, to be used in the above discussed analyses.

Accepted and Agreed:

Date:

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Brian T. McCabe  
Director, Generation Development  
KeySpan Energy Development Corporation

Final Stipulations  
KeySpan Energy Development Corporation – Spagnoli Road Energy Center

Accepted and Agreed:

Date:

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Kimberly Harriman, Counsel  
New York State  
Department of Public Service

Accepted and Agreed:

Date:

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Jennifer L. Hairie, Counsel  
New York State  
Department of Environmental Conservation

Accepted and Agreed:

Date:

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David W. Quist, Counsel  
New York State  
Department of Health