CASE 17-F-0617 – Hecate Coeymans Solar Farm
Preliminary Scoping Statement
Comments of the Staff of the
New York State Department of Public Service

GENERAL COMMENTS

1. In addition to the specific comments on many topics below, DPS Staff advises that the Application must also contain all of the informational requirements included in 16 NYCRR §1001.

2. GIS shapefiles of the Facility Area, preliminary Facility locations, and related resource information should be provided to DPS Staff for review during the scoping and stipulation process.

3. DPS Staff requests that GIS shapefiles of Facility component and site locations, property lines, environmental data, visual and cultural resource locations, and related analyses derived from such data and utilized in development of the Application and mapping, be provided directly to DPS Staff at the time the Application is filed.

CONTENTS

1. The Application should make clear whether there will be one set of procedures to resolve all complaints. The procedures in the Application should also provide details on how complaints will be received and how and when these methods will be communicated to the public, the timeframe in which complaints will be responded to, steps to take when the complaints cannot be resolved by the Co-Applicants, and how complaints and resolutions will be recorded and tracked.

2. DPS Staff notes throughout the PSS under the heading "Other Material Issues Raised by the Public and Affected Agencies" there are comments and responses for the different exhibits. For ease of reference, DPS Staff suggests that all the various issues, concerns, and comments raised should also be documented in the Meeting Log and referenced appropriately in Exhibit 2 of the Application.

COVER LETTER AND AFFIDAVITS

1. The Affidavit of Service indicates that the PSS was served on the regional directors for NYS Office of Parks, Recreation and Historic Preservation and the NYS Department of Transportation. A copy of the Application should also be provided to the director/central office for both agencies.

2. The Affidavit of Mailing indicates that adjacent landowners and local residents were provided a copy of the notice regarding the filing of the PSS. However, it is unclear whether host landowners were included in the mailing since they are not identified. The Co-Applicants should verify that the host landowner(s) were provided notification of the PSS. These landowners should be included in future mailings and notifications.

EXHIBIT-SPECIFIC COMMENTS

Section 4.0 – Environmental Analysis

Section 4.2 Overview and Summary of Public Involvement – Exhibit 2

1. The issues and/or concerns raised should be documented in the Meeting Log (see comment above). The Co-Applicants should provide an estimate of the attendance at the open house held on February 20, 2016.

2. The Co-Applicants should mail notice of the Application filing to a project mailing list comprised of the updated stakeholders list, including host and adjacent landowners, and additional addresses received through public outreach. The notice will include information on the project generally and the Article 10 Application specifically. A copy of the mailing list and documentation indicating the dates and mailings that were made should be provided to the Secretary.

Section 4.4 Land Use – Exhibit 4

Subsection 4.4.2 – Land Use – Extent and Quality of Information Required

1. DPS Staff requests that the Co-Applicants provide complete copies of Town of Coeymans zoning and land use regulations, including attachments, tables, zoning and other maps, and related documents for consideration in Project Scoping.

2. The documents requested in 1. above should also be provided as Appendices to the Application.

3. DPS Staff requests that the Application identify the extent of active agricultural land that will be displaced or otherwise affected by Project development both directly and indirectly.

4. The Application should identify the extent of the Facility site enrolled in Agricultural District program, the year of enrollment, and the date such enrollment will expire if not renewed.

Subsection 4.4.5 – Proposed Studies

1. Land use at Ravena Quarry on property located west of the proposed Facility site has the potential to affect proposed Facility use, in that airborne dust from blasting or quarrying operations may settle on solar panel arrays and reduce effective production capability of the solar fields. The extent of any future expansion of the active stone quarry to life-of-mine limits should be considered in devising solar project layout and operational plans. DPS Staff recommends consulting with New York State Department of Environmental Conservation (NYSDEC) Mineral Resources bureau regarding permitted life-of-mine limits and reclamation plans for the site.

2. The Application should analyze reduction in agricultural lands associated with the Project in relation to the extent of Active Agricultural Land within the rest of the designated Agricultural District. Identify other threats of non-agricultural development within the Agricultural District, and identify cumulative impact on the Agricultural District. Consideration of impacts on local agricultural support businesses and services serving the Agricultural District should also be evaluated.

Section 4.5 Electric System Effects – Exhibit 5

Subsection 4.5.1(a) – Proposed Studies

1. The PSS states that a System Impact Study (SIS) is currently being prepared by the New York Independent System Operator (NYISO). It should be noted that 16 NYCRR §1001.5(a) requires the preparation of a system reliability impact study (SRIS), performed in accordance with the Open Access Transmission Tariff of the NYISO approved by the Federal Energy Regulatory Commission. It appears that the description provided on pages 32 and 33 contains the necessary considerations of the study as required by 16 NYCRR §1001.5 (a). However, the study is noted in the PSS as a SIS, as opposed to a SRIS as required for proposed generation plants. DPS Staff advises that the Co-Applicants provide clarification regarding the discrepancy between the terminology used in the PSS verses the requirement of 16 NYCRR §1001.5(a). Alternatively, consideration of the proper study should be pursued if the required SRIS is not currently being performed.

Section 4.9 Reasonable and Available Alternatives – Exhibit 9

Subsection 4.9.3 – Reasonable Alternatives to Proposed Facility at the Primary Proposed Location

1. The Application should address the following:

a. alternative Facility technology, scale, layout and design considerations that could enable a range of degrees of continued agricultural use of the Facility site;

b. taller rack system and pole-mounted arrays that would reduce the Facility footprint while enabling greater access within the arrays for livestock grazing, hay- or row-cropping or other agricultural uses of the ground surface;

c. alternative configurations that minimize the impact of isolated or "orphaned" field corners and edges that become un-farmable due to size and orientation; and

d. identify alternative fencing designs that would support agricultural uses such as grazing while maintaining the more traditional appearance of agricultural fencing rather than industrial-security fencing; avoid use of razor-wire-topped perimeter fencing particularly along public roads, areas of open views, and near residences.

2. The alternatives discussion should address consideration of adding energy storage capability as an ancillary feature of Project design.

Section 4.11 Preliminary Design Drawings – Exhibit 11

Subsection 4.11.1 – Overview

1. The subsection lists several categories of Facility components that will be shown on preliminary site plans. The list should be comprehensive to both Project Facilities, including all fencing and gates, and clearing associated with fencing. Site plans should provide indication of property lines and setbacks. Also, the number of circuits per proposed electric cable route should be indicated on the site plans. Site plans should also include the following features: inverters and access routes; any ancillary facilities; site security features, including perimeter fencing, site security features, closed-circuit television or similar monitoring equipment; any Operations and Maintenance (O&M) facilities including access, parking areas, site maintenance shops or equipment storage areas, and the location of any proposed water supply and septic system(s). In addition, Project Facility locations should be shown in relation to existing utility equipment locations and easement limits of those existing locations, including electric and gas transmission or distribution lines, cable and telecommunication lines, and other features should be indicated.

Subsection 4.11.2 Proposed Studies

1. This subsection lists Facility features to be indicated in design drawings. Design drawings of all items listed in the preceding comment should be

provided. Elevation figures are required for all Facility structures and buildings, including the following proposed components: collection substation and POI switchyard and interconnection equipment, and site security features, such as CCTV or other monitoring equipment support structures should be indicated, as well as, any O&M or other operational support buildings and structures, including retaining walls, and fences.

2. Page 43 of the PSS notes that overhead and underground cable routes (collection lines) will be differentiated with specific line types. Subsection 4.11.2(g)(4) the PSS notes that typical design detail drawings will include a circuit map indicating overhead and underground installations. DPS Staff advises that the circuit map should also include the number of required circuits proposed per collection line run.

3. The PSS also notes that site plans will include proposed locations of electric cable installations for crossings of streams, waterbodies, roads, etc. DPS Staff advises that the site plans should also show any proposed locations of such crossings that will utilize trenchless methods of installation, including the approximate laydown area (outline of approximate work space needed) and approximate trenchless installation distances.

4. DPS Staff recommends that the Co-Applicants provide a completed DPS Appendix 1, Maps Sizes and Scales sheet, in the response to PSS comments, regarding approximations of drawing scales to be used for Application content. This attachment contains a list of typical solar farm drawings and includes headings for anticipated corresponding extent limits, scales, and proposed drawing paper sizes.

5. DPS Staff requests that the Co-Applicants provide four, full size copies of the preliminary design drawing set (utilizing a common engineering scale) at the time of Application submittal. Additionally, DPS Staff will request that the Co-Applicants provide a CD-ROM containing AutoCAD drawings.

Section 4.12 Construction – Exhibit 12

1. The Complaint Resolution Plan should include steps for informing the public about the complaint plan and the process to file a complaint (i.e., written, electronic and oral). Complaints due to noise are an important consideration as part of an overall Complaint Resolution Plan for construction and operation of the facilities so this should also be addressed in the Plan.

Subsection 4.12.1 – Proposed Studies

1. In subsection 4.12.1(c) on page 46, it states that “the Application will include preliminary plans and descriptions indicating design, location and construction

controls to avoid interference with existing utility transmission and distribution systems, indicating locations and typical separations of proposed facilities from existing electric, gas, and communications infrastructure and measures to minimize interferences where avoidances cannot be reasonably achieved." It is noted that this section will include a discussion on the existing gas main that traverses the Facility Area, including a review of easements associated with the gas main and the Application will indicate any publicly recorded restrictions associated with the easement for crossings and setbacks. Additionally, DPS Staff advises that the Co-Applicants should consult with the owner of the gas main to obtain specific information regarding crossings of or Facility component installations nearby the existing utility. Results of this consultation should be reported in the Application. DPS Staff recommends that this section of the Application include the following additional information from consultations with the gas utility owner(s):

a. Utility owner criteria for installations of Facility components near the existing gas utility;

b. Descriptions of any potential studies required or recommended by the gas utility owner (along with an indication of timing of the studies);

c. Specific separation requirements or recommendations regarding specific Facility components (collection lines, panels, etc.) in relation to the existing gas utility;

d. Descriptions and typical details of any required or recommended protective features to be placed at crossings of or nearby the existing gas utility; and

e. communications and coordination requirements of the pipeline facility owner-operator for construction within the pipeline right-of-way.

2. Item (d)5 should be separate from the Complaint Plan and be made item (e).

Section 4.13 Real Property – Exhibit 13

1. Subsection 4.13.1(c) refers to "crossing natural gas and transmission lines." DPS Staff advises that the pipeline crossing the middle of the Facilities Site is a liquid propane line. Easement and property restrictions for any activities, including access along or within the easement, construction and operations maintenance near or within the pipeline easement should be addressed.

Section 4.16 Exhibit 16 Pollution Control Facilities – Exhibit 16

1. Subsections 4.16.1 and 4.16.2 indicate that NYSDEC will issue a Clean Water Act §401 Water Quality Certification; however, issuance of the WQC for the Project is subject to Article 10 provisions at 16 NYCRR §1000.8.

Section 4.18 Safety and Security – Exhibit 18

Subsection 4.18.1.2 – Operations Security

1. This subsection describes the potential for use of "motion lights" for security of solar arrays and inverters. DPS Staff encourages the Co-Applicants to avoid reliance on motion lights, which are subject to activation by animals and wind-blown debris or trash.

Subsection 4.18.1.3 – Emergency Response Plan and Subsection 4.18.1.8 – Review by Local Emergency First Responders

1. DPS Staff recommends identifying the first responders/emergency services that will be consulted during the development of the emergency response plan (ERP) and will receive copies of the final plan.

2. The ERP should identify specific protocols for notifying different members of the public (e.g., emergency responders, host and adjacent landowners, utilities, environmental agencies, etc.) in the event of an emergency.

3. The Co-Applicants must develop a clear plan on how it will coordinate with all pipeline operators at all phases of this project. This plan must demonstrate that all pipeline facilities within the Facility Area are protected at all times, and must be developed in coordination with the pipeline operator(s).

4. All excavation work, no matter how minimal it is, must be completed pursuant to 16 NYCCR Part 753 and be in keeping with Common Ground Alliance's Best Practices.

5. If blasting is to be required, the preliminary blasting plan must include protocols to protect all pipeline facilities potentially impacted by blasting operations. These protocols must be developed in coordination with the pipeline operator(s).

6. The Co-Applicants must present a study to determine any risk of electric current being induced or applied to pipelines in close proximity to the proposed Facility as a result of operation of the proposed Facility, including, but not limited to, normal and abnormal operating conditions, ground faults, lightning strikes and gradient study of ground bed. This study and any resulting recommendations for mitigating or eliminating the risk of electric current impact to the pipeline facility must be completed in coordination with the pipeline operator(s).

7. Transportation or use of heavy equipment within the right-of-way (ROW) of any belowground pipeline facility, must be completed in such a manner as to avoid any disturbance of the integrity of the pipeline facilities. The Co-Applicants must coordinate a crossing plan with pipeline operator(s) prior to such crossings and adhere to a crossing plan approved by the pipeline operator(s).

Section 4.19 Noise and Vibration – Exhibit 19

1. The PSS should address all the requirements of 16 NYCRR §1001.19 Exhibit 19. Please see DPS comments and recommendations in Appendix 2. The Co-Applicants should revise and expand the scope of proposed studies to address all the requirements of 16 NYCRR §1001.19 Exhibit 19. The parties will continue discussing the scope of studies during the pre-application PSS and stipulation phases.

Section 4.20 Cultural Resources – Exhibit 20

Subsections 4.20.1.1. – Archaeological Resources and 4.20.1.2. – Historic Architectural Resources:

1. For these two sections, tables are provided in the PSS, but the Archaeological Resources uses a study area of one mile, while the Historic Architectural Resources uses a study area of one-half mile. Based on the portion of Table 4.24-1 that concerns *Properties Listed in or Eligible for the National or State Register of Historic Places (NRHP)*, the Tobias Ten Eyck House and Cemeteries is another NRHP-eligible location that is within one mile of the Facility. The viewshed setting for this historic resource may be affected by the Project. DPS Staff recommends that consideration be given to expanding the Historic Architectural Resources survey to at least one mile.

Subsections 4.20.1.2 – Historic Architectural Resources and 4.20.3.2 – Historic Architectural Resources Avoidance, Minimization, and Mitigation Measures:

1. DPS Staff advises that historic resources impact evaluations should include consideration of both visual and noise impacts on resources listed or determined to be eligible for listing on the State or National Register of Historic Places, as considered by 9 NYCRR §428.4(b).

Section 4.21 Geology, Seismology and Soils – Exhibit 21

Subsection 4.21.1 – Overview

1. Subsection 4.21.1.2 – Existing Surface Slopes: The assessment of impacts to potential receptors of stormwater runoff from construction on slopes greater than 25% should include downslope and downstream drinking water resources, including public and private wells and surface water intakes, active agricultural lands, and existing dwellings and other infrastructure.

2. Subsection 4.21.1.8 – Existing Soils for Construction: The PSS states that the Application will describe the characteristics and suitability of existing soils, including soil corrosivity. DPS Staff advises that separate evaluations should be provided for the potential for corrosion of uncoated steel and the potential for corrosion and degradation of concrete.

3. Subsection 4.21.1.8 – Existing Soils for Construction: The discussion of the suitability of existing soils for construction and fill should include an evaluation of structural damage or displacement due to frost action and soil shrink/swell potential.

4. Subsection 4.21.1.13 – Impacts to Regional Geology: Site-specific karst conditions assessments should:

    a. identify how construction activities will minimize excavations in karst-prone areas where excavations may facilitate subsurface erosion;

    b. address risks and impacts to karst features and aquifers from directional drilling frac-outs and soil and bedrock displacement during excavations, boring operations, and pile driving; and

    c. if blasting is proposed, description of potential impacts to karst features from blasting operations.

Subsection 4.21.2 – Proposed Studies

1. Subsection 4.21.2(r)(1), page 82, states that the Application will provide an evaluation for determination of suitable building and equipment foundations, including a statement that all potential foundation types and installation techniques under consideration will conform to applicable building codes or industry standards. DPS Staff advises that this statement should include a reference to the Building Code of New York State: "[a]ll potential foundation types and installation techniques under consideration will conform to applicable building codes, including the Building Code of New York State, and/or industry standards."

2. Subsection 4.21.2(i) should include procedures and timeframes for notifying host communities and property owners within a one-half mile radius of the blasting site.

Section 4.22 – Terrestrial Ecology and Wetlands – Exhibit 22

Subsection 4.22.1 – Overview

1. Pursuant to 16 NYCRR §1001.22(a), the Application must contain identification and description of plant communities and, pursuant to 16 NYCRR §1001.22(b),

the Application must contain an analysis of impacts to vegetation from construction and operation. DPS Staff advises that the Application should contain the following:

a. Maps, based on aerial photography, showing approximate locations and extent of identified plant communities as classified according to *Ecological Communities of New York State* (Edinger et al., 2014); and

b. for project areas within 500 feet of disturbance areas, provide maps at a scale of 1:2000, or otherwise agreed to between Co-Applicants and DPS Staff, showing approximate locations and extent of identified plant communities as classified according to *Ecological Communities of New York State* (Edinger et al., 2014).

2. The plant community mapping referenced in §1001.22(a) above shall also depict vegetation cover types in relation to proposed limits of vegetation disturbance, and associated GIS shapefiles of all areas of disturbance shall be provided to NYSDEC and DPS Staff.

3. Pursuant to 16 NYCRR §1001.22(d), the Application must include identification and description of plant communities, species, and wildlife habitat. DPS Staff advises that the Application should contain the following:

a. A table of state and federally listed species occurring or likely to occur within the project including the following columns:

i. Species name;

ii. Federal status;

iii. NYS status;

iv. SGCN listing;

v. Habitat preference identified according to *Ecological Communities of New York State* (Edinger et al., 2014);

vi. Identify maps from 1001.22(a) that include habitat for each species;

vii. Source of information indicating potential presence of species; and,

viii. indicate if species was observed onsite.

b. A discussion that evaluates use by salamanders of habitats, including vernal pools found within the Project boundary and the potential impacts to those species and habitats resulting from the construction and operation of the proposed project.

4. Pursuant to 16 NYCRR §1001.22(f), the Application must contain an analysis of the impact of construction and operation, which shall include:

    a. A discussion of any direct and indirect construction-related impacts that may occur to wildlife and wildlife habitat, including:

        i. habitat disturbance or loss;

        ii. forest and grassland fragmentation;

        iii. wildlife displacement;

        iv. to the extent any wildlife travel corridors or winter concentration areas are identified within or adjacent to the Facility Site, direct and indirect impacts to such corridors will be addressed; and,

        v. discuss the potential impacts of perimeter fencing of the facility on wildlife movement, and options for minimizing adverse impacts.

    b. An overview of vegetation management plans for operation and construction of the Facility, including a discussion of ground cover maintenance and forest clearing and ongoing vegetation maintenance required to prevent shading of solar panels. Provide 1:250 scale maps depicting areas of vegetation clearing required for solar panel placement during construction and subsequent vegetation/shade management.

    c. A summary table quantifying anticipated temporary and permanent impacts associated with the various Facility components. in relation to vegetation cover types classified according to *Ecological Communities of New York State* (Edinger et al, 2014).

Subsection 4.22.3 – Proposed Avoidance, Minimization and Mitigation Measures

1. Subsection 4.22.3.1 provides a discussion of invasive species, but does not more broadly consider wildlife and wildlife habitats. The Application must provide a description of wildlife and wildlife habitat impact avoidance and minimization efforts used in developing the Facility. The description should include design, construction controls, and operational measures that can be reasonably implemented to avoid or minimize impacts to wildlife and wildlife habitat within the Facility site.

2. The invasive species prevention and management plan should include:

    a. A list of all invasive plant species observed during site-specific field investigations and known to occur within the Facility site. The list of invasive plant species in areas of proposed disturbance shall be based

on a qualitative survey conducted concurrent with field surveys in support of Exhibits 22 and 23.

b. As useful for management of individual invasive species, identify an area and concentration threshold that requires mapping and a treatment plan.

c. Provide maps at a scale of 1:2000, or as otherwise agreed to between Co-Applicants and DPS Staff, of any identified concentrations of non-native invasive plant species in areas of proposed disturbance.

d. A list of invasive species other than plants included in 6 NYCRR §575.3 (Prohibited Invasive species) and §575.4 (Regulated invasive species), if any, limited to those incidentally observed during field work in support of Exhibits 22 and 23.

Subsection 4.22.3.6 – Agricultural Resources

1. The analysis of impacts on agricultural resources should include a discussion of methods for identifying drainage tile lines prior to construction, along with restoration of any tile lines impacted by Facility construction activities.

2. See numerous comments above regarding Section 4 - Land Use and Agricultural considerations including Alternative design, etc.

Section 4.23 Water Resources and Aquatic Ecology – Exhibit 23

Subsection 4.23.2.1 – Groundwater

1. In addition to the NYSDEC and Albany County, the Co-Applicants should submit a Freedom of Information Law request to the New York State Department of Health (NYSDOH) for information pertaining to groundwater wells. Requests for information pertaining to existing groundwater wells should include a study area within 500 feet of the Facility Area and within one-half mile of blasting operations (if proposed).

2. The Co-Applicants should also distribute a water well survey to local residents, businesses, and property owners to identify the locations of private water supply wells within 500 feet of the Facility Area (and within one-half mile of blasting operations, if proposed) and solicit well construction details, usage patterns, and water quality data, if available.

   The locations of public and private water wells should be verified through field observations where property access rights are obtained by the Co-Applicants. Water well locations should be indicated on maps showing groundwater aquifer and recharge areas and shallow aquifer groundwater flow direction,

distinguishing whether each well location is approximate or confirmed. GIS data for the public and private well locations should be provided to DPS Staff.

3. This exhibit should include a description of the residential well survey, including details of the survey instrument. The survey should include:
    a. descriptions of the project and the Article 10 process;
    b. contact information for the Applicant;
    c. a description of where the well owner can get more information about the project (i.e. project website, document repositories, etc.); and
    d. an invitation to join the project stakeholder list.

Section 4.24 – Visual – Exhibit 24

Section 4.24.1 Overview

1. DPS Staff advises that the NYSDEC *Visual Policy* provides some useful guidance in terms of identifying classes of important resources, and listing a range of mitigation measures that warrant consideration in reducing or minimizing visual contrasts. The *Policy*, however, does not account for all requirements of the analysis required by 16 NYCRR §1001.24, including consideration of visual resources of local concern, and incorporating input from municipalities and potentially local interest groups. DPS Staff encourages the Co-Applicants to engage in an outreach effort that garners local input to identify additional resources of interest, and is available to advise the Co-Applicants in procedures.

2. DPS Staff recommends that this exhibit document the identification and outreach to visual stakeholders pursuant to §1001.24(b)(4). Any visual stakeholders identified through the Viewpoint Selection process should be provided an opportunity to be added to the master stakeholder list. In addition, the Co-Applicants should consider hosting an in-person meeting of the visual stakeholders during the viewshed analysis process.

3. For Visual Impact Assessment procedures, DPS Staff recommends also maintaining consistency with the U.S. Department of Transportation, Federal Highway Administration (FHWA) Guidelines for the Visual Impact Assessment of Highway Projects (there is a January 2015 Version as well as a 1981 Version) since major transportation corridors have potential views of the site.

Subsection 4.24.1.1 Appearance of Proposed Facilities and 4.24.3.3 Visibility of the Facility - Operational Characteristics

1. DPS Staff recommends maintaining consistency when describing Facility components. Subsection 4.24.1.1 states, *"the approximately 7-foot tall*

perimeter chain-link fence," whereas subsection 4.24.3.3 states, *"fences (anticipated to be 8-foot high chain link fence)."*

Section 4.24.1.3 – Viewshed Analysis

1. DPS Staff advises that, while the collection panel arrays will potentially have a mass appearance that warrants particular attention in visual assessment, Project visibility predictions should also consider the tallest elements of the proposed Facility, likely to be substation equipment such as lightning masts, rather than solely be limited to solar collection panels. As noted in comments on Ex. 9 above, DPS Staff recommends consideration of alternative collector panel heights and arrangements as potential land use mitigation measures.

Subsection 4.23.3.2. Visibility of the Facility – Operational Characteristics

1. DPS Staff recommends using a resolution of at least 10 Mega Pixels as the resolution to be used is not stated but instead says, "*The resolution of the photography will be suitable for use* in *small and large format page layouts."* It is very important to have high-quality photos for simulations.

Section 4.25: Effect on Transportation – Exhibit 25

Subsection 4.25.1.2 Pre-Construction Characteristics of Facility Area Roads

1. From §1001.25 (b)(2) of the Article 10 Regulations, in addition to consideration of the Ravena-Coeymans-Selkirk Central School System bus routes, DPS Staff recommends identifying and reviewing the routes of any other transit facilities (Public Transportation (CDTA Capital District Transportation Authority); Senior Citizen Transportation (Department of Aging's transportation provider is CDTA ACCESS for Albany County for seniors age 60+); Albany County ARC; etc.) in the area that may be affected.

Section 4.27 Socioeconomic Effects – Exhibit 27

1. The analysis of secondary employment and economic activity should also reflect the economic impacts associated with and changes in the retail price of electricity, as well as, the economic impacts associated with the cancellation or closure of any new or existing power plants made unnecessary by the added solar capacity of the Facility. The Co-Applicants should consult NYSERDA's 2012 New York Solar Study as a guide for estimating these economic impacts. If making such secondary employment estimates is not reasonably practicable, the Co-Applicants should nevertheless acknowledge that such secondary employment and economic activity impacts will result from the Project, even though no quantitative estimate has been made. In such a situation, and given that the net impact on secondary

employment would not be known to be positive or negative, the Co-Applicants should only include direct job estimates.

2. The Co-Applicants' direct job, expenditure, and economic activity estimates should be based on actual budgeted estimates for the Project, including contractor quotes and consultations.

Section 4.28 Environmental Justice – Exhibit 28

1. DPS Staff advises that the Application should contain a map of the environmental justice (EJ) communities in relation to the project facilities.

2. The Application should include a brief description of the specific outreach activities the Co-Applicants have taken to inform the EJ communities of the project.

Section 4.29 Site Restoration and Decommissioning – Exhibit 29

1. The Decommissioning Plan should note that the Town will be provided written notification two weeks prior to site restoration and decommissioning activities. This section should also indicate when landowners will be notified of the start of these activities.

Section 4.31 Local Laws and Ordinances – Exhibit 31

Subsection 4.31.1 through 4.31.3 – Applicable Local Laws:

1. DPS Staff advises that Co-Applicants should address potential permitting and approval authority of the Albany County Highway Department regarding access to the Facility site from County Route 101, and the use of County ROW for any addition or modification of access driveways or encroachments by the Facility's arrangement.

2. Section 4.31.3 does not specifically address land use restrictions or definitions of uses in the particular zones within which the proposed Facility would be located. DPS Staff requests that full copies of local land use and development codes be provided, including attachments of maps, tables and references as applicable, as Appendices to the Application. DPS Staff requests that Zoning maps and codes be provided as attachments to the Co-Applicants' pending response to parties' PSS comments.

4.32 State Laws and Regulations – Exhibit 32

Subsection 4.32.1 – Anticipated States Approvals, Consents, Permits, etc.

1. DPS Staff notes that Table 4.32.1 should reference 16 NYCRR §1000.8 for appropriate procedures associated with issuance of the Clean Water Act §401 Water Quality Certification. NYSDPS is responsible for consideration of issuance of the §401 Certification, rather than NYSDEC.

2. Table 4.32.1 should also provide citations to specific provisions of NYS Agriculture and Markets Agricultural Districts laws and regulations.

Figures Attachment

1. Figure 3 – Preliminary Layout: DPS Staff advises that the symbology for "Project Roads" is not appropriate as it does not correspond with proposed roadways indicated on the Figure.

APPENDIX 1

Coeymans Solar Farm 17-F-0617
Preliminarily Proposed Map Sizes and Scales for Article 10 Application for Printed Maps (for full-size copies of drawing sets)

Exhibit	Title	Format	Extents	Acres of Extents	Scale (mi/in)	Scale (ft/in)	Scale (in/in)	Size	Sheets	16 NYCRR Ref.
3	Layout	PDF	PA		0.4	2,000	24000 *	B	TBD	1001.3 (a) (1) & (4)
3	Study Area	PDF	SA		0.4	2,000	24000 *	B	TBD	1001.3 (a) (5)
3	Towns	PDF	PA		0.4	2,000	24,000	B	TBD	1001.3
3	School Districts	PDF	PA		1	5,280	63,360	B	TBD	1001.3 (b)
3	Fire Districts	PDF	PA		1	5,280	63,360	B	TBD	1001.3 (b)
3	Project Location	PDF	PA		0.4	2,000	24,000	B	TBD	1001.3 (b)
4	Land Use Map	PDF	PA		0.2	1,000	12,000	B	TBD	1001.4 (a)
4	Utility Infrastructure Map	PDF	SA		1	5,280	63,360	B	TBD	1001.4 (b)
4	Land Ownership Map	PDF	PA		0.2	1,000	12,000	B	TBD	1001.4 (c)
4	Zoning Districts (if applicable)	PDF	SA		1	5,280	63,360	B	TBD	1001.4 (d)
4	Proposed Land Uses	PDF	PA		1	5,280	63,360	B	TBD	1001.4 (f)
4	Agricultural Districts	PDF	SA		1	5,280	63,360	B	TBD	1001.4 (g)
4	Utility Infrastructure Map	PDF	SA		1	5,280	63,360	B	TBD	1001.4(h)
4	Recreation and other uses	PDF	SA		1	5,280	63,360	B	TBD	1001.4 (h)

4	Aerial Photographs and Vegetation Clearing Map	PDF	SA	0.2	1,000	12,000	B	TBD	1001.4 (m) & (n)
9	Alternative Sites	PDF	TBD	0.4	2,000	24,000	B	TBD	1001.9 (a)
9	Alternative project layout(s)	PDF	TBD	0.02	100	1,200	D2	TBD	1001.9 (c) (4)
11	Overall Site Plan for all facilities	PDF	TBD	0.02	100	1,200	D2	TBD	1001.11 (a)
11	Site Plans	PDF	PA	0.02	100	1,200	D2	TBD	1001.11 (a)
11	Site Plan for Project Substation	PDF	TBD	0.02	100	1,200	TBD	TBD	1001.11 (a)
11	Site Plan for O&M Building	PDF	TBD	0.02	100	1,200	TBD	TBD	1001.11 (a)
11	Site Plan for Laydown Yard	PDF	TBD	0.02	100	1,200	TBD	TBD	1001.11 (b)
11	Site Plan for POI Switchyard	PDF	TBD	0.02	100	1,200	TBD	TBD	1001.11 (h)
11	Transmission Line Plan and Profile, Route Plan	PDF	TBD	0.04	200	2,400	B	TBD	1001.11 (h)
13	Real Property	PDF	PA	0.2	1,000	12,000	B	TBD	1001.13 (a) & (b)
15	Public Health and Safety	PDF	SA	1	5,280	63,360	B	TBD	1001.15 (f)
18	Security Site Plan	PDF	TBD	0.02	100	1,200	TBD	TBD	1001.18 (a) (1) & (4); (b) (1) & (5)

19	Noise contour map	PDF	PA	0.2	1,000	12,000	D2	TBD	1001.19 (a)
21	Slopes	PDF	PA	1	5,280	63,360	B	TBD	1001.21 (a)
21	Soil Types	PDF	PA	0.4	2,000	24,000	B	TBD	1001.21 (o)
21	Bedrock	PDF	PA	2	10,560	126,720	B	TBD	1001.21 (q)
22	Delineated Wetlands Map	PDF	PA	0.4	2,000	24,000	B	TBD	1001.22 (i)
23	Water Resources - Groundwater	PDF	PA	0.4	2,000	24,000	B	TBD	1001.23 (a) (2)
23	Water Resources - Surface Waters	PDF	PA	0.4	2,000	24,000	B	TBD	1001.23 (b) (1)
23	SWPPP (preliminary)	PDF	PA	0.02	100	1,200	D2	TBD	1001.23 (c) (1) & (2)
24	Viewshed map(s)	PDF	SA 10mi	0.4	2,000	24,000 *	B	TBD	1001.24 (b) (1)
25	Site plan access roads	PDF	TBD	0.02	100	1,200	D2	TBD	1001.25 (a) (2)
26	Microwave Paths - Facilities near paths shown in greater detail	PDF	PA	2.6	13,750	165,000	A	TBD	1001.26 (a) (5)
28	Potential Environmental Justice Area Map	PDF	SA	2	10,560	126,720	B	TBD	1001.28 (a)
35	EMF and residences	PDF	TBD	0.02	100	1,200	D2	TBD	1001.35 (c)

Notes: PA = Project Area, SA= Study Area, Size A = 8.5”x11”, Size B = 11”x17”, Size C = 18”x24”, Size D2= 22”x34”, Size D=24”x36”
*** Denotes scale requirements of Part 1001 *Content of an Application***
All maps will be delivered in PDF format with the Article 10 application, and shape files or CAD files can be supplied where requested.
All scales above are proposed based on preliminary analysis and may need to be adjusted based on actual data.

APPENDIX 2: Comments and Recommendations on PSS for Case # 17-F-0617. June 2018

Text of 16 NYCRR §1001.19 Exhibit 19 is highlighted in red italic text. NYS-DPS recommendations are identified in black color text. Numbering of subsections may not be part of the text of the regulation.

Exhibit 19 shall contain: A study of the noise impacts of the construction and operation of the facility, related facilities and ancillary equipment. The name and qualifications to perform such analyses of the preparer of the study shall be stated. If the results of the study are certified in any manner by a member of a relevant professional society, the details of such certification shall be stated. If any noise assessment methodology standards are applied in the preparation of the study, an identification and description of such standards shall be stated.

Provide qualifications of the preparer(s) of the study and an identification and description of methodologies, standards, and guidelines as an appendix.

The study shall include:

a) A map of the study area showing

1) *the location of sensitive sound receptors in relation to the facility, related facilities and ancillary equipment (including any related substations).*
   i) The Application should include map(s) in digital format of the Sound Study area that should extend, at a minimum, as required by any law or regulation; 1,500 feet from the edge of the facility area; or until the 30-dBA noise contour is reached, whichever is greater.
   ii) Show all sensitive sound receptors and boundary lines (differentiating participating and non-participating parcels); noise sources within the Sound Study Area (including transformer(s), inverters, and other noise sources, if any).
   iii) Submit full-size hard copy maps (22"x34") in 1:12,000 scale to DPS Staff with the Application.
2) *The sensitive sound receptors shown shall including [sic] residences, outdoor public facilities and areas, hospitals, schools and other noise-sensitive receptors.*
   i) All residences should be included as sensitive sound receptors regardless of participation in the project (e.g., participating, potentially participating, and non-participating residences) or occupancy (e.g. year-round, seasonal use).
   ii) Only properties that have a signed contract with the Co-Applicants prior to the date of filing the Application should be identified as “participating.” Other properties may be designated either as “non-participating” or “potentially participating.” Updates with ID-tax numbers may be filed after the Application is filed.
   iii) Other noise sensitive receptors should include libraries, parks, camps, summer camps, places of worship, cemeteries, and Federal and State Lands.
   iv) Seasonal receptors should include, at a minimum, cabins and hunting camps, identified by property tax codes, and any other seasonal residences with septic systems/running water within the Sound Study Area.
   v) The Co-Applicants should coordinate with land owners and local authorities to identify any existing or proposed sound sensitive receptor within the Study Area.

(b) An evaluation of ambient pre-construction baseline noise conditions, including A-weighted/dBA sound levels, prominent discrete (pure) tones, at representative potentially impacted noise receptors, using actual measurement data recorded in winter and summer and during day and night as a function of time and frequency using a suitable and suitably calibrated sound level meter (SLM) and octave band frequency spectrum analyzer, or similar equipment. The ambient pre-construction baseline sound level should be filtered to exclude seasonal and intermittent noise.

Conduct sound collections by following the most relevant and applicable portions of the most recent versions of ANSI/ASA standards for measurement of sounds. For recommendations on a protocol for conducting the ambient pre-construction baseline noise conditions see Appendix 3 below.

(c) An evaluation of future noise levels during construction of the facility and related facilities including predicted A-weighted/dBA sound levels at potentially impacted and representative noise receptors, using computer noise modeling.

i) Follow, at a minimum, the guidelines and recommendations of the FHWA Highway Construction Noise Handbook (Reference 1) that are applicable to the project. Although developed mainly for roadway projects, the handbook is applicable to many construction projects and provides guidance in measuring, predicting, and mitigating construction noise and developing noise criteria.
ii) Consult the noise database for construction equipment listed in Reference 1 and determine whether those emissions or any other, resemble the noise emissions of the construction equipment that is proposed to be used for the Project.
iii) Include a discussion of time frames for construction activities indicating seasons of the year, days of the week, hours of the day, and whether construction activities will be performed during evening time (6:00 p.m. to 10 p.m.), nighttime (after 10:00 p.m. or before 7:00 a.m.), during weekends (Saturdays or Sundays), or national holidays.
iv) Use a computer noise modeling software that incorporates the ISO-9613-2 propagation standard for the main phases of construction (e.g., clearing, foundation, and installation of solar panels and transformers).
v) Recommended Outdoor Propagation Standard: See reference 2.
vi) Report construction sound level contours within the Sound Study area (graphical format) and sound levels at the most impacted receptors (in tabular format)

(d) An estimate of the noise level to be produced by operation of the facility, related facilities and ancillary equipment assuming

1) wind-induced background noise or stable atmospheric conditions, as appropriate,

i) Use the ISO-9613-2 standard along with proper assumptions for ground absorption factor (G), with no meteorological correction (Cmet).
ii) Discuss ground absorption values and sound power level assumptions for computer noise modeling (under ISO 9613-2 propagation standard) during the PSS and Stipulation phases and in the Application.

iii) Include, as part of the scope and in the Application, a discussion on the accuracy of computer noise modeling when using the ISO 9613-2 propagation standard (For a discussion about the accuracy and limitations of the ISO 9613-2 standard, consult at a minimum, section 9 of Reference 2).

iv) If any corrections are applied to any model results, both corrected and uncorrected results should be presented along with a discussion, documentation, and justification for any corrections.

2) and not assuming any attenuation of sound that transiently occurs due to weather or temperature.

Use a temperature of 10 Celsius degrees and 70% Relative Humidity. These assumptions generally yield the lowest sound absorption provided by the air.

(e) An evaluation of future noise levels during operation of the facility, related facilities and ancillary equipment including

1) predicted A- weighted/dBA sound levels,

Specify range of frequencies to be evaluated. Noise computer software typically includes full-octave band sound frequencies from 31.5 Hz up to 8,000 Hz.

2) prominent discrete (pure) tones, and

Estimate tonality values by using the simplified definition of prominent tones as recommended for Exh. 19 (b) (4).[1]

3) amplitude modulated sound, at potentially impacted and representative noise receptors,

Include this analysis only if there will be any amplitude modulated sounds.

4) using computer noise modeling, and an analysis of whether the facility will produce significant levels of low frequency noise or infrasound.

The PSS should propose a methodology for evaluation of low frequency noise, if any. (Consider using the outdoor criteria established in reference 3).

(f) A statement in tabular form of the A-weighted/dBA sound levels indicated by measurements and computer noise modeling at the representative external property boundary lines of the facility and related facilities and ancillary equipment sites, and at the representative nearest and average noise receptors, for the following scenarios:

1) Daytime ambient noise level - a single value of sound level equivalent to the level of sound exceeded for 90% of the time during the daytime hours (7 am - 10 pm) of a year (L90).

2) Summer nighttime ambient noise level - a single value of sound level equivalent to the level of sound exceeded for 90% of the time during the nighttime hours (10 pm - 7 am) during the summer (L90).

3) Winter nighttime ambient noise level - a single value of sound level equivalent to the level of sound exceeded for 90% of the time during the nighttime hours (10 pm - 7 am) during the winter (L90).

[1] Electrical tonal noise sources should be assumed audible and prominent at the closest residential receptors, unless demonstrated otherwise.

i) The PSS should specify how the information obtained from the baseline pre-construction ambient noise survey will be processed to evaluate the L90 statistical noise descriptors required by 16 NYCRR §1001.19(f).

ii) DPS Staff recommends following the provisions of reference 4 to calculate and report the L90 and Leq values. [2]

4) Worst case future noise level during the daytime period - the daytime ambient noise level (L90), plus the noise level from the proposed new sources modeled as a single value of sound level equivalent to the level of sound exceeded for 10% of the time by such sources under normal operating conditions by such sources in a year (L10).

5) Worst case future noise level during the summer nighttime period - the summer nighttime ambient noise level (L90), plus the noise level from the proposed new sources modeled as a single value of sound level equivalent to the level of sound exceeded for 10% of the time by such sources under normal operating conditions by such sources in a year (L10).

6) Worst case future noise level during the winter nighttime period - the winter nighttime ambient noise level (L90), plus the noise level from the proposed new sources modeled as a single value of sound level equivalent to the level of sound exceeded for 10% of the time by such sources under normal operating conditions by such sources in a year (L10).

7) Daytime ambient average noise level – a single value of sound level equivalent to the energy-average ambient sound levels (Leq) during daytime hours (7 am –10 pm); and

8) Typical facility noise levels - the noise level from the proposed new sources modeled as a single value of sound level equivalent to the level of the sound exceeded 50% of the time by such sources under normal operating conditions by such sources in a year (L50).

9) Typical future noise level during the daytime period - the energy- average ambient sound level during daytime hours (Leq), plus the noise level from the proposed new sources modeled as a single value of sound level equivalent to the level of the sound exceeded 50% of the time by such sources under normal operating conditions by such sources in a year (L50).

iii) Note that NYCRR §1001.19(f) requires evaluation of the L10 and L50 noise descriptors during "normal operating conditions" and for that reason DPS recommends excluding the periods of time when the facility will not be operating (typically nighttime) from calculation of the future operational noise levels L10 and L50.[3]

iv) Typically, if the noise sources operate at maximum noise conditions for 10% of the time or more, the L10 may be approximately equivalent to the maximum sound pressure levels calculated with the maximum sound power levels from the noise sources.

v) L50: Two simple approaches are proposed.[4, 5]

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[2] Alternatively, the L90 noise descriptor for the daytime, nighttime, summer, winter, and for a year (see 16 NYCRR §1001.19(f) for details) can be determined by reprocessing short time collections of the Leq noise descriptor (e.g., 1 sec.) after exclusions are applied. Although it may be conservative, the L90 can also be estimated by calculating the percentile 10 of all short-time L90 samples (e.g., Percentile 10 of all L90-10 minute samples)

[3] If the Co-Applicants believes that the inclusion of periods of time when the facility will not be operating is necessary for determination of any other descriptor needed either for the analysis of a specific topic, methodology, guideline or regulation, the issue should be discussed during the PSS and Stipulation phases.

[4] The L50 can be conservatively assumed to be equal to the L10.

[5] If sound power levels at different percentages of power load are known for the transformers, a percentile 50 of the power generation can be estimated and expressed as a percentage of the maximum power generation (e.g., 50%). The difference in sound power levels from the noise sources at the maximum power (e.g., 100%) and the L50 power generation (e.g.,

(g) A description of the noise standards applicable to the facility, including

1) *any local requirements,*

   Provide full copies of local Laws on noise during the PSS or stipulation phases and in the Application, if any.

2) *and noise design goals for the facility at representative potentially impacted noise receptors, including residences, outdoor public facilities and areas, hospitals, schools, other noise- sensitive receptors, and at representative external property boundary lines of the facility and related facilities and ancillary equipment sites.*

   i) DPS recommends consideration of the following guidelines and standards: See references 5[6], 6[7], 7[8] and 3[9]. [10]

   ii) New York State Public Service Commission (NYS PSC) standards for transmission facilities and substation generally require designs to minimize environmental impacts and not to exceed a maximum noise level of 40 dBA Leq without prominent tones, or 35-dBA if a prominent tone occurs or is likely to occur (for both daytime and nighttime).[11]

   iii) For a discussion of complaint potential criteria see section (k) (3) below.

(h) A tabular comparison of

1) *the noise standards applicable to the facility,*

   Evaluation of conformance with identified noise standards, goals, thresholds and local requirements at all sensitive receptors and boundary lines should be included in the scope. Results should be presented in tabular format (for sensitive sound receptors) and in graphical format (Sound contours for property lines).

2) *including any local requirements,*

   The PSS should specify how the degree of compliance with local laws on noise, if any, will be evaluated including noise descriptors (e.g., L10, Leq), time frame of evaluation (e.g., 10-minutes, 1-hour). This should include a discussion of the parameters, assumptions or

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50%) can be found and expressed in decibels. The L50's at all evaluated receptors can be estimated by subtracting the same number of decibels from the maximum sound pressure levels.

6 The recommendation is not to exceed a 40 dBA-Leq-1-year nighttime outdoor sound level. Solar collection facilities may typically comply with this recommendation.

7 The recommendations are: 45 dBA Leq 8-hour-nighttime maximum outdoor sound level in a year (Solar collection facilities may typically comply with this recommendation) and 35 dBA Leq-16-hour indoor daytime sound level.

8 The standard calls for an adjustment factor for tonality equivalent to 5 dB.

9 The standard states that annoyance to low frequency sounds is minimal when sound levels at the 16, 31.5 and 63 Hz. full-octave bands are lower than 65 dB (linear-unweighted).

10 Please note that under previous Article X regulations, generating facilities were designed to minimize environmental noise impacts and not to exceed an mCNR (Modified Composite Noise Rating) level of "C" that corresponds to a level of reaction between "No Reaction" and "Sporadic Complaints". This resulted in Power Generating Facilities designed for maximum noise levels of 42-dBA (daytime and nighttime) or lower at suburban and rural-residential areas. See section (k)(3) and reference 10 for details.

11 More recently electrical substations and transformers have been approved by the NYS-PSC with modeled sound levels of 35-dBA or lower at all residential receptors (See Case # 10-T-0080. Application of Niagara Mohawk Power Corporation d/b/a National Grid for a Certificate of Environmental Compatibility and Public Need Pursuant to Article VII for the Construction of a New 115 kV Electric Transmission Line from Spier Falls, Saratoga County to Rotterdam, Schenectady County - Lasher Road Substation Amendment).

corrections that should be used for sound level predictions. DPS notes that the assumptions or corrections for computer noise modeling for evaluation of local laws may be different than for other relevant criteria.

3) *and noise design goals for the facility,*

Report estimates of the number of residences (or population) that will be exposed to noise levels that exceed any identified limit, threshold, goal, guideline or recommendation in the Application. (In terms of absolute and percent values).

4) *and the degree of compliance indicated by computer noise modeling at the representative external property boundary lines of the facility and related facilities and ancillary equipment sites, and at the representative nearest and average noise receptors.*

i) Participant and non-participant boundary lines should be indicated and differentiated in the map and sound contour drawings. Degree of compliance with noise design goals at the boundary lines of the facility should be stated in the Application.

ii) Sensitive sound receptors should be identified with land/tax ID numbers in tables and on sound contour drawings.

(i) An identification and evaluation of

1) *reasonable noise abatement measures for construction activities,*

The scope and Application should list general examples of noise mitigation measures that may be applied to address reasonable complaints from construction noise.

2) *including a description of a complaint- handling procedure that shall be provided during the construction period.*

Include a Protocol to address potential complaints for construction in the Application.

(j) An identification and evaluation of

1) *reasonable noise abatement measures for the final design and operation of the facility*

The scope and Application should list general examples of reasonable noise abatement measures available for the final design and operation of the facility.

2) *including the use of alternative technologies, alternative designs, and alternative facility arrangements.*

Results of this identification and evaluation should be included in this exhibit or in 16 NYCRR §1001.9 Exhibit 9: Alternatives.

(k) An evaluation of the following potential community noise impacts:

1) *hearing damage (as addressed by applicable Occupational Safety and Health Administration standards);*

Use OSHA 29 CFR 1910.95 and WHO-1999 (Reference 6) for sensitive sound receptors.[12]

2) *indoor and outdoor speech interference; interference in the use of outdoor public facilities and areas;*

[12] WHO-1999 recommends a limit of 70 dBA Leq-24-hour for long-term operational sound levels; and 120 and 140 dB peak sound levels for impulsive sounds (e.g. blasting) for children and adults respectively.

Follow the criteria included in WHO 1999 guidelines (Reference 6) as well as the USEPA-1974 document (References 8 and 9).

3) *community complaint potential;*

Community Complaint should be evaluated by using the MCNR methodology as detailed in reference 10. Consider the discussion included in Reference 11, as well.

4) *the potential for structural damage;*

Include evaluation of the potential for some construction activities (such as blasting, excavation, horizontal directional drilling (HDD) or rock hammering, if any) to produce any cracks, settlements or structural damage on any existing proximal buildings or infrastructure, as well as any residences and historical buildings. DPS Staff also recommends using the FHWA Highway Construction Noise Handbook (Reference 1) for the discussion of noise and vibration impacts from blasting, if any.

5) *and the potential for interference with technological, industrial or medical activities that are sensitive to vibration or infrasound.*

Address the potential to create perceptible vibrations or infrasound due to construction and operation of the facilities that may affect technological, industrial or medical activities.

(l) A description of post-construction noise evaluation studies that shall be performed to establish conformance with operational noise design goals.

DPS recommends following the recommendations indicated for Exhibit 19 (b); and Reference 12.

(m) An identification of practicable post-construction operational controls and other mitigation measures that will be available to address reasonable complaints, including a description of a complaint-handling procedure that shall be provided during periods of operation. (The text is self-explanatory)

(n) The computer noise modeling values used for the major noise-producing components of the facility shall

1) *fairly match the unique operational noise characteristics of the particular equipment models and configurations proposed for the facility.*

Sound power level information from the relevant equipment manufacturers should be included in the Application. If sound power level information is not available from the manufacturers, it can be estimated using acoustical formulae. The methodologies for estimation and results should be described in the Application. If sound power level information is based on actual sound readings from a similar piece of equipment, the procedure for determination should be described along with a discussion of similarities and differences regarding the proposed equipment and whether any corrections to the input data or output results were applied and if so, provide justification.

2) *The software input parameters, assumptions, and associated data used for the computer modeling shall be provided.*

i) The Application should provide input data such as: sound power levels from the noise sources; source location coordinates, ground elevations, and heights; receptor location coordinates, ground elevations, and heights; Ground absorption factors (G); Temperature and relative humidity; and other data as included in the computer model.

ii) Scope should specify that GIS files used for computer noise modeling including noise source and receptor locations, topography, and boundary lines should be forwarded to DPS Staff in digital media, if requested.

CUMULATIVE NOISE IMPACTS

a) The analysis should include cumulative noise impacts from other existing or proposed nearby projects, may be performed in the following way:
   1) For projects that already exist and are operational, pre-construction ambient noise survey results should be analyzed to determine whether noise emissions from existing noise sources in the vicinity have any influence in existing ambient sound levels at any tested locations. This should be done by analyzing the most proximal and representative “ambient” (Existing noise sources plus background sounds) and “background” (Background sounds only) noise monitor locations. Noise level contribution from any existing noise sources may be estimated by energy based (logarithmic) subtraction of “background” L90 sound levels from the “ambient” noise levels at a broadband and fractional band basis. Should noise contributions from any existing noise sources be at a minimum 10 dB lower than any goal, limit, or identified threshold for the project, no cumulative assessment will be necessary for such goal, limit or identified threshold. Otherwise a cumulative assessment should be conducted.
   2) Projects that either exist but are not operational, are under construction, permitted, or have a stipulation submitted and approved, should be considered for cumulative impacts as follows: If noise impact studies are publicly available with sound contours or forecasted sound levels, and the sound levels from those projects are estimated/extrapolated to be at a minimum 10 dB lower than any goal, limit or identified threshold at the most proximal/critical sound sensitive locations of the proposed Project, no cumulative assessment will be necessary for such goal, limit or identified threshold. Otherwise a cumulative assessment will be conducted. If noise impact studies, sound contours, or forecasted sound levels are not publicly available, sound levels from these projects may be modeled based on publicly available project layouts and sound power levels specifications. If sound power levels specifications are not available, they can be estimated based on acoustical formulae.

b) In a cumulative noise impact analysis, any goal, limit, or identified threshold is evaluated with and without the noise contributions from other existing and proposed proximal projects.

APPENDIX 3

16 NYCRR §1001.19 Exhibit 19 (b)
Recommendations for evaluation of ambient pre-construction baseline noise conditions

1) The sound survey should follow a protocol that includes the following recommendations:
   i) Sound instrumentation: Use type 1 or type 2 sound level meters (SLM's) and type 1 acoustical calibrators (sensitivity checkers).
   ii) Sound floor should be equal to or lower than: 10-dB at 1/3 octave-bands, 12-dB at full-octave bands, and 20-dBA for broadband sounds. [13]
   iii) Wind screens: Use 7"-diameter-foam or equivalent.
   iv) Temperature of operation for SLM's: From 20 to 110 Fahrenheit degrees, at a minimum.[14]
   v) Relative humidity ranges for SLM's: from 20 to 90%, approximately.[15]
   vi) Calibration recommendations: Acoustical calibrator/sensitivity checker: 1-year; SLM's: 2-years, maximum.
   vii) Meter settings: Use "fast" response or as specified in local laws, if any.
   viii) Positions to be evaluated: Select the most representative potentially impacted receptors.
   ix) Noise descriptors to be collected: At a minimum collect L90, L50, and Leq. Lmin and Lmax may help identifying exclusions.
   x) Range of sound frequencies to be measured: 20 to 10,000 Hz. for 1/3 octave bands; 31.5 to 8,000 Hz. for full-octave bands.
   xi) Weather conditions to be tested: Test from low (2 miles per hour or lower) to average wind conditions.
   xii) Testing conditions to be excluded: periods of rain, thunderstorms, wet-road conditions, snow-fall, wind speed exceeding 5 meters per second (11 miles per hour) at the sound microphone.
   xiii) Proposed schedules and time frames: test during winter and summer, alternatively during the leaf-on and leaf-off seasons. Collect, at a minimum, 48 hours of valid data on each season (after exclusions).
   xiv) Testing methodologies, standards, and procedures: See References 13, 14, and 15.
   xv) Sounds with strong low frequency noise content: identify, if any.
   xvi) Provisions for analysis of results, reporting, and documentation: A report of ambient pre-construction baseline noise conditions can be included as an Appendix to the Application including sound instrumentation specifications, certificates of calibration, summary of weather conditions during the survey, tested locations and results.
2) A weighted sound levels: Include, at a minimum, 1/3 sound frequencies from 20 Hz. up to 10,000 Hz. and full-octave band frequencies from 31.5 Hz. up to 8,000 Hz.
3) Prominent tones: DPS Staff recommends using the simplified definition for identification of existing prominent tones, if any, as follows: A prominent discrete tone is identified as present if it is audible and the time-average sound pressure level (Leq) in the one-third-octave band of

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[13] Sound levels in rural areas in New York State can be very low (e.g., as low as 20-dBA, approximately).

[14] Air temperatures in New York State can be very low in winter (Below zero Fahrenheit degrees).

[15] Relative humidity in New York State fluctuates from very low values (e.g., 20% or lower) up to high humidity air (e.g., 95% or more).

interest exceeds the arithmetic average of the time-average sound pressure level (Leq) for the two adjacent one-third-octave bands by any of the following constant level differences: 15 dB in low-frequency one-third-octave bands (from 25 up to 125 Hz);8 dB in middle-frequency one-third-octave bands (from 160 up to 400 Hz); or, 5 dB in high-frequency one-third-octave bands (from 500 up to 10,000 Hz). See References 15 and 16.

4) Representative potentially impacted noise receptors.
   i) Include the most critical and representative locations considering proximity to the new proposed noise sources and existing soundscapes.
   ii) Residential measurement locations are preferred rather than other locations that could be affected by sound from farming, dairy, construction, industrial, commercial, or human activities.
   iii) Sound collections within wooded areas are not recommended, given the potential for contamination with leaf sounds and rustles.
   iv) Open areas, far from wind flow obstacles, are preferred for wind speed monitoring locations.
   v) Sound measurement positions should be selected to:
      (1) Minimize the influence of traffic noise from local roads: Measurement positions should be no closer than 15 meters (50 feet) from the center of any roadway;
      (2) Avoid or minimize the influence of any mechanical or electrical noise sources such as air conditioners, air condensers, heaters, boilers, fans, pumps, transformers, lighting, etc.;
      (3) Avoid or minimize the influence of sounds from flowing or moving water;
      (4) Minimize the influence of reflections of any buildings and other small reflective surfaces as follows: Sound microphones shall not be located closer than 7.5 mts. (25 ft.) from any reflective surface; Sound microphones shall not be located closer than 1.5 mts. (5 ft.) from any reflecting object with small dimensions such as small trees, posts, bushes, etc.
      (5) The sound level microphone height should be 1.5 ± 0.10 meters above ground elevation (5 feet ± 4 inches).
      (6) Report GPS or GIS coordinates of selected measurement locations, satellite pictures, and photos for all tested locations; include justifications for location selection, and specify whether selected locations are representative of potentially impacted receptors, in the Application.
5) Collection of measurement data recorded in winter and summer and during day and night as a function of time and frequency.
   ii) Collect pre-construction ambient noise levels at 1/3 octave bands from 20 to 10,000 Hz.
   iii) Broad-Band A-weighted sound levels should be reported in graphs plotted as a function of time at each evaluated position showing exclusions (due to wind speed, temperature, relative humidity, rain fall or thunderstorms/snow storms).
   iv) Plot sound levels as a function of 1/3 octave and 1/1 band frequencies for the L90 noise descriptor (for winter, summer, daytime and nighttime), including minimum, maximum and average levels for each evaluated location.
6) Suitable and suitably calibrated sound level meters (SLM's) and octave band frequency spectrum analyzer. Sound instrumentation for ambient sound surveys should at a minimum, comply with the standards at references 17, 18, and 19.

7) Filtering the ambient pre-construction baseline sound level to exclude seasonal and intermittent noise.
   i) Use of the A-Weighted noise compensated (ANS-weighted network) as recommended in reference 4 regardless of the season (for both winter and summer). Report ANS results only.
   ii) Use portable weather station(s) at sound measurement locations to continuously document, at a minimum: temperature; relative humidity; wind direction; and rain fall (precipitation). Weather information can be supplemented with information from the closest/most representative nearby airport or Mesonet station, unless the weather conditions differ substantially from those found at the site at the time of the sound surveys.
   iii) Sound data collected should be excluded if collected:
      (1) At temperature and relative humidity out of the range of operation of sound instrumentation;
      (2) at wind speed exceeding 5 m/sec. (11 m.p.h.) at the sound microphones (or at 2+/- 0.20 meters above the ground); or
      (3) under rain, thunderstorms, wet-road, and snow-fall conditions.

REFERENCES

(1) FHWA Highway Construction Noise Handbook (FHWA-HEP-06-015)
(2) ANSI/ASA S12.92-2012/ISO 9613-2:1996 (MOD) or ISO 9613-2.
(3) Annex D of ANSI Standard S12.9-2005/Part 4 for minimization of annoyance and prevention of vibrations, rumbles and rattles.
(4) ANSI/ASA S3/SC1.100-2014/ANSI/ASA S12.100-2014 (Methods to Define and Measure the Residual Sound in Protected Natural and Quiet Residential Areas);
(5) Night Noise Guidelines for Europe, World Health Organization Regional Office for Europe, Denmark, 2009. (WHO-2009
(6) Guidelines for Community Noise, World Health Organization, Geneva, 1999 (WHO-1999).
(7) Table 2 of ANSI S12.9-2005/ Part 4.
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