

**New York State Department of Environmental Conservation  
Notice of Incomplete Application - This is NOT a Permit**



*Application ID:* 2-6007-00259/00033

*Batch Number:* 829383

*Facility:* NYC-DOC - RIKERS ISLAND  
17-25 HAZEN ST  
EAST ELMHURST, NY 11370

*Applicant:* NYC DEPT OF CORRECTION  
75-20 ASTORIA BLVD  
EAST ELMHURST, NY 11370-3001

*Owner ID:* 19241

*Permit(s) Applied for:* 1 - Article 19 Air Title V Facility

*Project Location:* in BRONX in BRONX COUNTY

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**Your application for Permit is incomplete. The following items are required:**

**A. ATV Application**

1. Application and all other documents state that the cogeneration plant turbines are simple cycle turbines. This is in direct conflict with the term cogeneration. If the turbines have the capability to send their exhaust to the heat recovery steam generator and all these are not and simple cycle turbines. Therefore, the term simple cycle should be replaced with the correct term.
2. Emission Unit 00011: In addition to the annual NO<sub>x</sub> tpy limit, the facility should also propose a production or operating parameter limit (annual KW limit, fuel usage limit) to continuously demonstrate compliance.
3. Emission Unit 0001: Provide Certificate of conformity for the black start engine.
4. Emission Unit 00010: How will Rikers demonstrate the compliance of PLM engines with the proposed KW limits? Are they continuously monitoring KW?
5. The emission point info for Rikers has a couple of discrepancies: (i) for Emission Point 00013 stack height in the application is 18 ft vs 110 ft in the modeling report, and (ii) for Emission Point U0001 Stack diameter is 10.25ft vs 11.7ft in the modeling report. Please clarify.

**B. Modeling**

The receptor grid is not centered appropriately for modeling 1-hr NO<sub>2</sub>. Currently, the interior 50- meter receptor grid is too small and is centered on the western portion of the island. With the current grid spacing, the receptors adjacent and beyond the eastern shoreline (fenceline) are spaced 100 meters apart which is greater than the 70 meters which NYSDEC generally assigns as minimum spacing in the near field. Additional NYSDEC guidance on receptor grid spacing can be found in Section 2.4 here: <https://www.dec.ny.gov/chemical/119571.html>.

1. For the regional background NO<sub>2</sub> calculation, there is a discrepancy between what is written in the report and how the background NO<sub>2</sub> was actually evaluated in the AERMOD modeling. In the report, it states that the background NO<sub>2</sub> was calculated on a seasonal hour-of-day basis and was provided by the NYSDEC. However, the background NO<sub>2</sub> modeling input file that accompanied this report shows that the background NO<sub>2</sub> was paired with the modeled impacts on an hourly basis. The hourly pairing of the

regional background NO<sub>2</sub> with the modeled NO<sub>2</sub> impacts is not recommended per EPA's Appendix W Section 8.3.2(e). NYSDEC can provide you with the Queens College seasonal hour-of-day background NO<sub>2</sub> data file upon request.

2. For evaluating the 1-hr NO<sub>2</sub> impacts for comparison with the NAAQS, AERMOD should not be run one year at a time but all 5 years in one run.
3. The use of the Tier 3 PVMRM option for modeling NO<sub>2</sub> should be pre-approved by NYSDEC prior to use. In this case, it is appropriate.
4. Section 1.3.4 in the modeling report states that the Queens College monitoring site was used to represent hourly background ozone data but it does not indicate how the hours with missing ozone data were treated. The AERMOD input file that accompanied this report shows that a value of 0.100 ppm was used to substitute any hour of missing ozone data. Does this value represent the maximum hourly value at Queens College during the years 2014-2018? This particular substitution method, while not incorrect, may sometimes result in a higher NO<sub>2</sub> impact. NYSDEC generally recommends that the missing hourly ozone data at the original monitoring site be substituted with the hourly data at a nearby ozone monitoring site. There are quite a few ozone monitors in the NYC area and we can send you the hourly data for a nearby ozone site upon request.
5. Additional information is required to justify the NO<sub>2</sub> emission rates for the two Solar Taurus 70 turbines. The report states that these two turbines were modeled at 100% load and provides two emission rates; one for the "summer" months and one for "the rest of the year". The "Turbine emissions" table that was provided does not list an ambient outdoor temperature that corresponds to these two NO<sub>2</sub> emission rates. For summer, the turbine emission rate should be based on an ambient temperature of 100 degrees F, fall and spring should be around 55 degrees F and winter should be evaluated at 0 degrees F. The NO<sub>2</sub> emission rate data corresponding with 100% load at each of these three temperatures should be listed on the vendor's specification/guarantee sheets and provided to NYSDEC.
6. Section 1.3.4 mentions that the default in-stack NO<sub>2</sub> to NO<sub>x</sub> ratio of 0.5 was used for the turbines and boilers. However, the Peak Load Management engines were modeled using a non-default in-stack NO<sub>2</sub> to NO<sub>x</sub> ratio of 0.2. Additional justification is needed to support this assumption. The EPA's in-stack ratio database was referenced but no specific PLM engine brands were listed in the report.
7. In Section 1.2 and in Table 2, the facility is proposing to enroll the engines in the Peak Load Management (PLM) program according to their general location on the island and use an NO<sub>2</sub> emission rate that's averaged across all the engines in an area instead of being based on each engine's actual capacity. This methodology should not be used due to the statistical form of the 1-hour NO<sub>2</sub> NAAQS. Each PLM engine should be modeled with its own specific NO<sub>x</sub> RACT limit, at 100% of its nameplate capacity between the hours of 1:00 PM through 7:00 PM each day of the week year-round. These time periods can be customized to reflect specific hours or months of operation, but, this limitation will need to be included in the permit. The 1-hr NO<sub>2</sub> modeling impacts for each engine will then be used to determine which ones are able to operate simultaneously in the PLM program for these limited hourly time periods while still meeting both the 1-hour NO<sub>2</sub> NAAQS and the annual NO<sub>x</sub> emissions cap of 22.5 tons/year that is currently listed in the Title V permit.

### **C. Administrative Items**

1. No State Environmental Quality Review (SEQR) form was included with the application and is required. Please submit to my attention: SEQR Full Environmental Assessment Form, Part 1 only (FEAF PART 1) <https://gisservices.dec.ny.gov/eafmapper/>

Please note at the link above, the new EAF Mapper Application is an Internet-based Geographic Information System (GIS) specifically designed to facilitate the NY State Environmental Quality Review (SEQR) process by answering geographic or place-based questions on the Full Environmental Assessment Form – to help you fill out the form. If applicable, the project description should indicate the following: added/removed units, change in fuel source/type, permit limits/caps, capping equation, and if the action is subject to Federal CAA requirements, New Source Review, etc. Form space is limited, addendums as attachments to adequately describe the project are typically submitted. Please provide in the FEAF Part 1, Section B. Government Approvals, the status of any State and City Funding, permits or approvals.

2. Based on a preliminary screen of census block groups proximate to the project site, we have determined that your project may impact potential environmental justice areas (PEJAs). As defined by [NYSDEC policy "CP-29 Environmental Justice and Permitting" \(March 2003\), CP-29](#), PEJAs are "minority or low income communit(ies) that may bear a disproportionate share of negative environmental consequences..." Applications of this type are subject to specific requirements to ensure community input during the review process. A map that depicts PEJAs relative to your project site may be accessed at: [https://www.dec.ny.gov/docs/permits\\_ej\\_operations\\_pdf/bronxejdetail.pdf](https://www.dec.ny.gov/docs/permits_ej_operations_pdf/bronxejdetail.pdf)

CP-29 contains additional requirements for ATV permit applications within such PEJAs. In particular, Section V "Procedures," Subsection D, of this policy requires the submission of a written Public Participation Plan. Your Public Participation Plan must focus the community potentially affected by the proposed project, and include stakeholders interested in the proposed action.

- Please see "Tips for Preparation of a Public Participation Plan" which you can use in preparing the above requested plan (see: [https://www.dec.ny.gov/docs/permits\\_ej\\_operations\\_pdf/ppp.pdf](https://www.dec.ny.gov/docs/permits_ej_operations_pdf/ppp.pdf)).
- During the COVID-19 pandemic, please follow DEC's guidance for complying with Commissioner Policy 29 (PDF) which refers to public meetings: [https://www.dec.ny.gov/docs/permits\\_ej\\_operations\\_pdf/cp29guidance.pdf](https://www.dec.ny.gov/docs/permits_ej_operations_pdf/cp29guidance.pdf)

Submission and approval of the Plan by the DEC is a required element of completeness. For additional information please refer to the attached documents and visit:

<https://www.dec.ny.gov/public/36929.html> and <https://www.dec.ny.gov/public/333.html>

Your Air Title V permit application will remain incomplete until the above-requested information is received by the Department.

For any questions on the modeling comments, please contact Julia Stuart, Impact Assessment and Meteorology Section by email or phone ([julia.stuart@dec.ny.gov](mailto:julia.stuart@dec.ny.gov), (518) 402-8402).

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cc: **DAR: C. Nirappel, T. John, R. Bolt, S. Lieblich**

DEP: S. Watts

AKRF: S. Sharma

***Please submit requested information by \_\_\_\_\_  
No further action can be taken until all of these materials are received.***

Contact Person:

Caitlyn P Nichols  
NYSDEC  
47-40 21st St  
Long Island City, NY 11101

Telephone Number: (718) 482-4997

Signature: *Caitlyn Nichols*

Date: July 15, 2020 Updated August 19, 2020

N.Y.S. DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
NYSDEC Region 2 Headquarters  
47-40 21st St  
Long Island City NY 11101  
(718) 482-4997



SAVE THE TOP HALF OF THIS FORM FOR YOUR RECORDS AND RETURN THE BOTTOM HALF WHEN PROVIDING THE INFORMATION REQUESTED ON THE ACCOMPANYING **NOTICE OF INCOMPLETE APPLICATION.**

YOUR DOING SO WILL HELP US EXPEDITE YOUR PERMIT PROCESSING. THANK YOU.

*DEC Contact:* Caitlyn P Nichols  
*Batch ID:* 829383  
*Application ID:* 2-6007-00259/00033  
*Owner ID:* 19241  
*Date Received:* 05/22/2018  
*Date Incomplete:* 07/15/2020  
*Application Type:* RTN  
*Applicant Name:* NYC DEPT OF CORRECTION  
*Facility Name:* NYC-DOC - RIKERS ISLAND  
*Project Desc:* ATV REN 3-remove/change in caps & use of ERCs

**PLEASE PROVIDE REQUESTED INFORMATION ON OR BEFORE:**

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**DETACH**

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N.Y.S. DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
NYSDEC Region 2 Headquarters

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***Environmental, Planning, and Engineering Consultants***

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fax: 212 213-3191  
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## Memorandum

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**To:** Caitlyn P. Nichols, Julia Stuart/New York State Department of Environmental Conservation

**From:** Henry Kearney, Jennifer Franco, Sheveta Sharma/AKRF

**Date:** October 2, 2020

**Re:** Rikers Island Notice of Incomplete Application

**cc:** Cicily Nirappel, Thomas John, John Kent, Sam Lieblich, Steve Watts/NYSDEC; Alex Mahoney, Susan Yang, Blake Boyer, Hardee Saini, Keith MacCormack, Christopher Clarke, Avninder Aujla/DOC; William Plache/City Law Dept.; William Dickerson, Ke He/NYPA; James Buchok, Aneesh Karlekar/AECOM

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AKRF has reviewed the Notice of Incomplete Application (NOIA) sent by the New York State Department of Environmental Conservation in a letter dated August 19, 2020. Presented below are responses to the comments.

### A. ATV Application

**Comment 1:** Application and all other documents state that the cogeneration plant turbines are simple cycle turbines. This is in direct conflict with the term cogeneration. If the turbines have the capability to send their exhaust to the heat recovery steam generator and all these are not and simple cycle turbines. Therefore, the term simple cycle should be replaced with the correct term.

**Response:** Comment noted. The term “simple cycle” in the permit application will be replaced with the term “cogeneration”.

**Comment 2:** Emission Unit 00011: In addition to the annual NO<sub>x</sub> tpy limit, the facility should also propose a production or operating parameter limit (annual KW limit, fuel usage limit) to continuously demonstrate compliance.

**Response:** The proposed capping monitoring condition included in the permit renewal application (See Item 76.9) will be used to demonstrate compliance with the annual NO<sub>x</sub> tpy limit of 52 tpy. As specified in the capping condition, total annual NO<sub>x</sub> emissions from the two turbines, two duct burners and the black start generator will be calculated based on the

monthly fuel usage consumption, and the reports will be submitted semi-annually to demonstrate continuous compliance.

**Comment 3:** Emission Unit 0001: Provide Certificate of conformity for the black start engine.

**Response:** The certificate of conformity is provided in the backup.

**Comment 4:** Emission Unit 00010: How will Rikers demonstrate the compliance of PLM engines with the proposed KW limits? Are they continuously monitoring KW?

**Response:** During demand response events, the Department of Correction (DOC) electricians take voltage and amperage readings at 30 minute intervals to calculate the load in KW. This data is shared with the Energy Management Department.

**Comment 5:** The emission point info for Rikers has a couple of discrepancies: (i) for Emission Point 00013 stack height in the application is 18 ft vs 110 ft in the modeling report, and (ii) for Emission Point U0001 Stack diameter is 10.25ft vs 11.7ft in the modeling report. Please clarify.

**Response:** The stack height for Emission Point 00013 (110 feet) and the stack diameter for Emission Point U0001 provided in the modeling report (11.7 feet) are correct. The Title V application will be revised to reflect the correct values. Please note that the stack diameter for Emission Point U-0002 will be corrected to reflect 9 feet instead of the 10.3 feet currently listed in the application. The modeling analysis and report will also be revised to reflect the corrected diameter.

## B. Modeling

**Comment 0:** The receptor grid is not centered appropriately for modeling 1-hr NO<sub>2</sub>. Currently, the interior 50- meter receptor grid is too small and is centered on the western portion of the island. With the current grid spacing, the receptors adjacent and beyond the eastern shoreline (fenceline) are spaced 100 meters apart which is greater than the 70 meters which NYSDEC generally assigns as minimum spacing in the near field. Additional NYSDEC guidance on receptor grid spacing can be found in Section 2.4 here: <https://www.dec.ny.gov/chemical/119571.html>.

**Response:** The receptor grid will be revised to reflect current DAR-10 guidance. Four uniform ground-level Cartesian receptor grids will be utilized. Four receptor grids are proposed: 1) A coarse Cartesian receptor grid with receptor spacing of 500 meters extending out from 5 km to 10 km in all directions from center of the island; 2) an intermediate receptor grid with a 250 meter receptor spacing, extending out from 2 km to 5 km in all directions from the center of the island; 3) a fine grid with 100 meter receptor spacing, extending out from 1 km to 2 km from the center of the island; and 4) a fine Cartesian grid with 70 meter receptor spacing, extending out to 1 km from north, south, east and west boundaries of the island.

**Comment 1:** For the regional background NO<sub>2</sub> calculation, there is a discrepancy between what is written in the report and how the background NO<sub>2</sub> was actually evaluated in the AERMOD modeling. In the report, it states that the background NO<sub>2</sub> was calculated on a seasonal hour-of-day basis and was provided by the NYSDEC. However, the background NO<sub>2</sub> modeling input file that accompanied this report shows that the background NO<sub>2</sub> was paired with the modeled impacts on an hourly basis. The hourly pairing of the regional



background NO<sub>2</sub> with the modeled NO<sub>2</sub> impacts is not recommended per EPA's Appendix W Section 8.3.2(e). NYSDEC can provide you with the Queens College seasonal hour-of-day background NO<sub>2</sub> data file upon request.

**Response:** As mentioned in the report, multi-year averages of the 98th percentile value of the available background concentrations by season and hour-of-day were used in the modeling analysis. The analysis will be revised based on the data received from NYSDEC for the latest three years (2017-2019).

**Comment 2:** For evaluating the 1-hr NO<sub>2</sub> impacts for comparison with the NAAQS, AERMOD should not be run one year at a time but all 5 years in one run.

**Response:** The runs will be revised using all 5 years in one run.

**Comment 3:** The use of the Tier 3 PVMRM option for modeling NO<sub>2</sub> should be pre-approved by NYSDEC prior to use. In this case, it is appropriate.

**Response:** Comment noted.

**Comment 4:** Section 1.3.4 in the modeling report states that the Queens College monitoring site was used to represent hourly background ozone data but it does not indicate how the hours with missing ozone data were treated. The AERMOD input file that accompanied this report shows that a value of 0.100 ppm was used to substitute any hour of missing ozone data. Does this value represent the maximum hourly value at Queens College during the years 2014-2018? This particular substitution method, while not incorrect, may sometimes result in a higher NO<sub>2</sub> impact. NYSDEC generally recommends that the missing hourly ozone data at the original monitoring site be substituted with the hourly data at a nearby ozone monitoring site. There are quite a few ozone monitors in the NYC area and we can send you the hourly data for a nearby ozone site upon request.

**Response:** The ozone concentrations used in the modeling analysis were obtained from the Queens College 2 monitoring station. If the number of consecutive missing hours was six or less, linear interpolation was used to determine the ozone concentration for the missing hours, otherwise the ozone concentration was determined based on the maximum average concentration determined over the five meteorological years (2014-2018) modeled (i.e., a value of 0.1 ppm was used for these missing hours). The hourly ozone files have been revised per NYSDEC's comments using the substitution method described in DAR-10. The NO<sub>2</sub> 1-hour runs will be revised using the updated ozone files (2015-2019).

**Comment 5:** Additional information is required to justify the NO<sub>2</sub> emission rates for the two Solar Taurus 70 turbines. The report states that these two turbines were modeled at 100% load and provides two emission rates; one for the "summer" months and one for "the rest of the year". The "Turbine emissions" table that was provided does not list an ambient outdoor temperature that corresponds to these two NO<sub>2</sub> emission rates. For summer, the turbine emission rate should be based on an ambient temperature of 100 degrees F, fall and spring should be around 55 degrees F and winter should be evaluated at 0 degrees F. The NO<sub>2</sub> emission rate data corresponding with 100% load at each of these three temperatures should be listed on the vendor's specification/guarantee sheets and provided to NYSDEC.

**Response:** The analysis will be revised to reflect the worst case ambient condition year-round without varying the loads by season. In addition, the revised analysis will assume duct burner

operation year-round. The NO<sub>x</sub> emission rate will be calculated at the maximum heat input under the worst case condition using the proposed 15 ppm NO<sub>x</sub> emission concentration for the combustion turbines and duct burner.

**Comment 6:** Section 1.3.4 mentions that the default in-stack NO<sub>2</sub> to NO<sub>x</sub> ratio of 0.5 was used for the turbines and boilers. However, the Peak Load Management engines were modeled using a non-default in-stack NO<sub>2</sub> to NO<sub>x</sub> ratio of 0.2. Additional justification is needed to support this assumption. The EPA's in-stack ratio database was referenced but no specific PLM engine brands were listed in the report.

**Response:** An initial NO<sub>2</sub> to NO<sub>x</sub> ratio of 20 percent at the source exhaust stack was used for the PLM engines. A review of the EPA's<sup>1</sup> NO<sub>2</sub>/NO<sub>x</sub> In-stack Ratio (ISR) Database (NO2\_ISR\_database.xls and NO2\_ISR\_alpha\_database) shows that the values used in the analysis are more conservative than the values for similar units. The ISR database files are provided in the backup for reference.

**Comment 7:** In Section 1.2 and in Table 2, the facility is proposing to enroll the engines in the Peak Load Management (PLM) program according to their general location on the island and use an NO<sub>2</sub> emission rate that's averaged across all the engines in an area instead of being based on each engine's actual capacity. This methodology should not be used due to the statistical form of the 1-hour NO<sub>2</sub> NAAQS. Each PLM engine should be modeled with its own specific NO<sub>x</sub> RACT limit, at 100% of its nameplate capacity between the hours of 1:00 PM through 7:00 PM each day of the week year-round. These time periods can be customized to reflect specific hours or months of operation, but, this limitation will need to be included in the permit. The 1-hr NO<sub>2</sub> modeling impacts for each engine will then be used to determine which ones are able to operate simultaneously in the PLM program for these limited hourly time periods while still meeting both the 1-hour NO<sub>2</sub> NAAQS and the annual NO<sub>x</sub> emissions cap of 22.5 tons/year that is currently listed in the Title V permit.

**Response:** The analysis will be revised to model the PLM engines with their specific NO<sub>x</sub> RACT limits and individual capacities. In case the engines are modeled at lower loads than the nameplate capacities, the modeled loads will be included as new enforceable conditions limiting the KW operation of the PLM engines during the demand response event. The facility will maintain logs to demonstrate compliance with the operating limits, based on the method currently used, as described in the response to ATV Comment 4.

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<sup>1</sup> NO<sub>2</sub>/NO<sub>x</sub> In-Stack Ratio (ISR) Database. [http://www.epa.gov/ttn/scram/no2\\_isr\\_database.htm](http://www.epa.gov/ttn/scram/no2_isr_database.htm)