

TDX North Slope Generating, LLC
3601 C. Street. Ste 1000-50
Anchorage, AK 99503
Tel 907-762-8450 Fax 907-562-0387
business@tdxpower.com
www.tdxpower.com



October 22, 2021

Alaska Department of Environmental Conservation
Air Permit Program
Attention: Permit Intake Clerk
555 Cordova Street
Anchorage, Alaska 99501

**Subject: Application for an ORL to Avoid HAP-Major, Title V Major, and
Title I Minor Source Classification
TDX North Slope Generating – South Power Plant**

Dear Sir or Madam,

TDX North Slope Generating, LLC (TNSG), formerly known as TDX North Slope Generating, Inc., is submitting the enclosed application for an Owner Requested Limit (ORL) under 18 Alaska Administrative Code (AAC) 50.225 for the TDX North Slope Generating – South Power Plant. This application is submitted for the existing stationary source to limit its potential to emit (PTE) criteria and Hazardous Air Pollutant (HAP) emissions to avoid classification as a Title V major source under 18 AAC 50.326. In addition, the ORL will also limit PTE criteria pollutant emissions to avoid classification as a minor source under 18 AAC 50.502(c)(1).

Upon issuance of this ORL, a Title V operating permit will no longer be required for the South Power Plant under 40 Code of Federal Regulations (CFR) 71. Therefore, TNSG requests that the existing Title V Operating Permit No. AQ1401TVP01 be terminated upon issuance of the ORL.

In addition, upon issuance of the ORL, TNSG will no longer be required to obtain a minor air permit under 18 AAC 50.502 for the stationary source. Therefore, TNSG respectfully requests that minor air permit AQ1401MSS01 be rescinded upon issuance of this ORL.

Per 18 AAC 50.400(h), TNSG anticipates paying a one-time administrative fee of \$2,168 for an ORL, per 18 AAC 50.400(f)(1).

If you have any questions regarding this submittal, please call Lynette Ampadu at (907) 762-8403 or Chris Lindsey of SLR International Corporation at (907) 222-1112.

TDX North Slope Generating, LLC

Application for an Owner Requested Limit for the South Power Plant

October 22, 2021

Page 2

"Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are true, accurate, and complete."

Sincerely,



John G. Lyons

President, TDX North Slope Generating, LLC

Encl.: ORL to Avoid HAP-Major Source, Title V Major Source, and Title I Minor Source Classification
Permit Application (Hardcopy and Electronic Copy)

cc: Dan Lenel, TDX North Slope Generating, LLC
Lynette Ampadu, TDX Power, LLC
Chris Lindsey, SLR
Colette Kennedy-Larimer, SLR

TDX North Slope Generating – South Power Plant

Application for an Owner Requested Limit

Prepared for: TDX North Slope Generating, LLC

October 2021



[THIS PAGE IS INTENTIONALLY LEFT BLANK]

TDX North Slope Generating – South Power Plant

Application for an Owner Requested Limit

Prepared for:

TDX North Slope Generating, LLC

3601 C. Street, Ste. 1000-50
Anchorage, AK 99503

This document has been prepared by SLR International Corporation. The material and data in this report were prepared under the supervision and direction of the undersigned.



Colette Kennedy
Associate Engineer



Chris Lindsey
Principal Scientist

[THIS PAGE IS INTENTIONALLY LEFT BLANK]

TABLE OF CONTENTS

Stationary Source Identification Form

Attachment A – Summary of Required Application Elements

Attachment B – Detailed Emission Calculations

Attachment C – Owner Requested Limit Application Requirements

Attachment D – 2009 Emission Source Test Data

[THIS PAGE IS INTENTIONALLY LEFT BLANK]

STATIONARY SOURCE IDENTIFICATION FORM

TDX North Slope Generating – South Power Plant Application for an Owner Requested Limit

TDX North Slope Generating, LLC

3601 C Street, Ste. 1000-50
Anchorage, AK 99503

October 2021

[THIS PAGE IS INTENTIONALLY LEFT BLANK]

**Alaska Department of Environmental Conservation
Air Quality Minor Permit Application**



STATIONARY SOURCE IDENTIFICATION FORM

Section 1 Stationary Source Information

Name: TDX North Slope Generating - South Power Plant			SIC:4911
Project Name (if different): ORL to Avoid HAP-Major, Title V Major, and Title I Minor Source Classification		Contact: TNSG South Power Plant – Lead Operators	
Physical Address: 100 Power Plant Way	City: Deadhorse	State:AK	Zip: 99734
	Telephone: 907-659-2559		
	E-Mail Address:		
UTM Coordinates (m) or Latitude/Longitude:	Northing:	Easting:	Zone:
	Latitude: 70° 11' 59.77"N	Longitude: 140° 28' 00.26"W	

Section 2 Legal Owner

Name: TDX Power, LLC		
Mailing Address: 3601 C Street, Suite 1000		
City: Anchorage	State: AK	Zip: 99503
Telephone #: (907) 762-8450		
E-Mail Address:		

Section 3 Operator (if different from owner)

Name: TDX North Slope Generating, LLC		
Mailing Address: 3601 C Street, Suite 1000		
City: Anchorage	State: AK	Zip: 99503
Telephone #: (907) 762-8450		
E-Mail Address:		

Section 4 Designated Agent (for service of process)

Name: National Corporate Research		
Mailing Address: 3085 Mountainwood Circle		
City: Juneau	State: AK	Zip: 99801
Telephone #:		
E-Mail Address:		

Section 5 Billing Contact Person (if different from owner)

Name: Lynette Ampadu		
Mailing Address: 3601 C Street, Suite 1000		
City: Anchorage	State: AK	Zip: 99503
Telephone #: 907-762-8403		
E-Mail Address: lampadu@tdxpower.com		

Section 6 Application Contact

Name: Chris Lindsey			
Mailing Address: 2700 Gambell Street, Suite 200	City: Anchorage	State: AK	Zip: 99503
	Telephone: 907-222-1112		
	E-Mail Address: clindey@slrconsulting.com		

Section 7 Desired Process Method (Check only one – see 18 AAC 50.542(a) for process descriptions and restrictions)

- ☐ Fast track for a permit classification under 18 AAC 50.502 [18 AAC 50.542(b)]
 ☒ Public comment [18 AAC 50.542(d)]

STATIONARY SOURCE IDENTIFICATION FORM

Section 8 Source Classification(s) (Check all that apply)

[18 AAC 50.502(b)]

- ☐ Asphalt Plant ≥ 5 ton per hour]
- ☐ Thermal Soil Remediation Unit ≥ 5 ton per hour]
- ☐ Rock Crusher ≥ 5 ton per hour]
- ☐ Incinerator(s) [total rated capacity ≥ 1000 lb/hour]
- ☐ Coal Preparation Plant
- ☐ Port of Anchorage Facility

If you checked any of the above, is (are) the emission unit(s) ☐ new, ☐ relocated*, or ☐ existing?

[18 AAC 50.502(c)(1)]

New or relocated* stationary source with potential emissions greater than:

- ☐ 40 tons per year (tpy) NOx
- ☐ 40 tpy SO₂
- ☐ 15 tpy PM-10
- ☐ 10 tpy PM-2.5
- ☐ 0.6 tpy lead
- ☐ 100 tpy CO in a nonattainment area

[18 AAC 50.502(c)(2)]

Construction or relocation* of a:

- ☐ Portable oil and gas operation
- ☐ ≥ 10 MMBtu/hr fuel burning equipment in a SO₂ special protection area

* Relocation does NOT include moving equipment from one place to another within your current stationary source boundary.

Section 9 Modification Classification(s) (Check all that apply)

[18 AAC 50.502(c)(3)]

- ☐ NOx Increase > 10 tpy [and existing PTE > 40 tpy]
- ☐ SO₂ Increase > 10 tpy [and existing PTE > 40 tpy]
- ☐ PM-10 Increase > 10 tpy [and existing PTE > 15 tpy]
- ☐ PM-2.5 Increase > 10 tpy [and existing PTE > 10 tpy]
- ☐ CO Increase > 100 tpy [and existing PTE > 100 tpy in a nonattainment area]

[18 AAC 50.502(c)(4)]

- ☐ NOx Increase > 40 tpy [and existing PTE ≤ 40 tpy]
- ☐ SO₂ Increase > 40 tpy [and existing PTE ≤ 40 tpy]
- ☐ PM-10 Increase > 15 tpy [and existing PTE ≤ 15 tpy]
- ☐ PM-2.5 Increase > 10 tpy [and existing PTE ≤ 10 tpy]
- ☐ CO Increase > 100 tpy [and Existing PTE ≤ 100 tpy in a nonattainment area]

Basis for calculating modification:

- ☐ Projected actual emissions minus baseline actual emissions
- ☐ New potential emissions minus existing potential emissions

Section 10 Permit Action Request (Check all that apply)

[18 AAC 50.508]

- ☐ Establish Plant-wide Applicability Limitation (PAL)
 - ☐ Establish emission reductions to offset nonattainment pollutant
 - ☒ Owner Requested Limit* (ORL)
 - ☐ Revise or Rescind Title I Permit Conditions *
- Permit Number: _____ Condition No. _____
Date: _____

*Which to use? See <http://www.dec.state.ak.us/air/ap/docs/orlrtc.pdf>

Section 11 Existing Permits and Limits

For an existing stationary source, do you have an existing:
(Check all that apply)

- ☒ Air quality permit Number(s)*: AQ1401TVP01
AQ1401MSS01

- ☐ Owner Requested Limit(s) Permit Number(s):
- ☐ Pre-Approved Emission Limit (PAEL) Number(s)**:

* All active construction, Title V, and minor permit numbers.

**Optional. Please provide this number if possible.

<http://dec.alaska.gov/Applications/Air/airtoolsweb/>

STATIONARY SOURCE IDENTIFICATION FORM

Section 12 Project Description

Provide a short narrative describing the project. Discuss the purpose for conducting this project, what emission units/activities will be added/modified under this project (i.e., project scope), and the project timeline. If the project is a modification to an existing stationary source, describe how this project will affect the existing process. Include any other discussion that may assist the Department in understanding your project or processing your application. Include a schedule of construction.

Please use additional copies of this sheet if necessary.

TDX North Slope Generating, LLC (TNSG) is submitting this application for an Owner Requested Limit (ORL) for the South Power Plant under 18 Alaska Administrative Code (AAC) 50.225 to limit its potential to emit (PTE) criteria and Hazardous Air Pollutant (HAP) emissions to avoid classification as a Title V major source under 18 AAC 50.326. The ORL will also limit PTE criteria pollutant emissions to avoid classification as a minor source under 18 AAC 50.502(c)(1).

On November 19, 2020, the US Environmental Protection Agency (EPA) issued a final rule that promulgated changes to regulations to allow reclassification of major sources as area sources under Section 112 of the Clean Air Act (85 FR 73854). These changes provide that a major source can be reclassified to area source status at any time upon reducing its PTE HAP to below the major source thresholds of 10 tons per year (tpy) of any single HAP and 25 tpy of any combination of HAP. Under these changes, EPA has finalized amendments to the General Provisions of the NESHAP regulations in 40 Code of Federal Regulations (CFR) part 63. Per 40 CFR 71.3(b)(1), a source not classified as a “major source” under 40 CFR 71.2 (i.e., not a major source under section 112 of the Clean Air Act) is exempted from the obligation to obtain a Title V operating permit under part 71.

TNSG is requesting this ORL for an hourly operating limit of 7,260 hours per 12-month period for EU IDs 1a and 4a (G1 and G4 – Cat G3516B LE), each, and an hourly operating limit of 500 hours per 12-month period for EU IDs 2 (G2 – Cat G3516), 3 (G3 – Cat G3516), and 6 (G7 – Cat G3516), each, to avoid classification as a HAP and Title V major source. In addition, TNSG is requesting an ORL of 250 parts per million by volume of hydrogen sulfide in fuel gas burned to avoid classification as a Title V major source and Title I minor source.

STATIONARY SOURCE IDENTIFICATION FORM

Section 12 Project Description Continued

For **PALs under Section 10** of this application, include the information listed in 40 C.F.R. 52.21(aa)(3), adopted by reference in 18 AAC 50.040 [18 AAC 50.540(h)].

N/A

For a **limit to establish offsetting emissions under Section 10** of this application, specify the physical or operational limitations necessary to provide actual emission reductions of the nonattainment air pollutant; including [18 AAC 50.540(i)]:

- A calculation of the expected reduction in actual emissions; and

N/A

- The emission limitation representing that quantity of emission reduction.

N/A

STATIONARY SOURCE IDENTIFICATION FORM

Section 12 Project Description Continued

For **ORLs under Section 10** of this application [18 AAC 50.540(j)], include:

A description of each proposed limit, including for each air pollutant a calculation of the effect the limit will have on the stationary source's potential to emit and the allowable emissions [18 AAC 50.225(b)(4)];

See Attachment C for a description of each proposed limit and Tables 3 through 4 under Attachment B for the effect the limits will have on the stationary source's potential to emit and the allowable emissions.

A description of a verifiable method to attain and maintain each limit, including monitoring and recordkeeping requirements [18 AAC 50.225(b)(5)];

See Attachment C.

Citation to each requirement that the person seeks to avoid, including an explanation of why the requirement would apply in the absence of the limit and how the limit allows the person to avoid the requirement [18 AAC 50.225(b)(6)];

See Attachment C.

A statement that the owner or operator of the stationary source will be able to comply with each limit [18 AAC 50.225(b)(8)];

See Attachment C.

Section 12 Project Description Continued

For revising or rescinding Title I permit conditions under Section 10 of this application [18 AAC 50.540(k)], include:

An explanation of why the permit term or condition should be revised or rescinded [18 AAC 50.540(k)(2)];

N/A

The effect of revising or revoking the permit term or condition on [18 AAC 50. 540 (k)(3)]:

- Emissions;

N/A

- Other permit terms;

N/A

- The underlying ambient demonstration, if any;

N/A

- Compliance monitoring; and

N/A

For revising a condition that allows avoidance of a permit classification, the information required for that type of permit, unless the revised condition would also allow the owner or operator to avoid the classification. [18 AAC 50.540(k)(4)]

N/A

STATIONARY SOURCE IDENTIFICATION FORM

Section 13 Other Application Material

The information listed below must be included in your air quality control minor permit application. *Note: These must be attached in order for your application to be complete.*

If required to submit an analysis of ambient air quality under 18 AAC 50.540(c)(2), or if otherwise requested by the Department:

- ☐ Attached are maps, plans, and/or aerial photographs as necessary to show the locations and distances of
- emissions units, buildings, emitting activities and boundaries of the associated with the stationary source, and
 - nearby or adjacent residences, roads, other occupied structures and general topography within 15 kilometers.

(Indicate compass direction and scale on each.)

- ☐ Attached is a document (e.g., spreadsheet) showing coordinates and elevations of each modeled unit, along with parameters necessary to characterize each unit for dispersion modeling.

- ☐ Attached is an electronic copy of all modeling files.

Section 14 Certification

This certification applies to the Air Quality Control Minor Permit Application for the submitted to the Department on: 10/19/2021

TNSG South Power Plant
(Stationary Source Name)

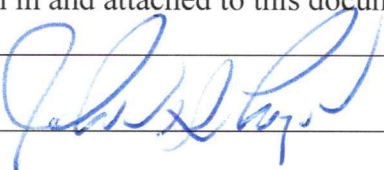
Type of Application

- ☒ Initial Application
☐ Change to Initial Application

The application is **NOT** complete unless the certification of truth, accuracy, and completeness on this form bears the signature of a **Responsible Official**. Responsible Official is defined in 18 AAC 50.990. (18 AAC 50.205)

CERTIFICATION OF TRUTH, ACCURACY, AND COMPLETENESS

“Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are true, accurate, and complete.”

Signature: 	Date: <u>22 OCTOBER 2021</u>
Printed Name: John G. Lyons	Title: President, TDX North Slope Generating, LLC

Section 15 Attachments

- ☒ Attachments Included. List attachments:
- Attachment A – Summary of Required Application Elements
 - Attachment B – Detailed Emissions Calculations
 - Attachment C – Owner Requested Limit Application Requirements
 - Attachment D – 2009 Emission Source Test Data

STATIONARY SOURCE IDENTIFICATION FORM

Section 16 Mailing Address

Submit the minor permit application to the Permit Intake Clerk in the Department's Anchorage office. Submitting to a different office will delay processing. The mailing address and phone number for the Anchorage office is:

Permit Intake Clerk
Alaska Department of Environmental Conservation
Air Permit Program
555 Cordova Street
Anchorage, Alaska 99501
(907) 269-6881

ATTACHMENT A – SUMMARY OF REQUIRED APPLICATION ELEMENTS

TDX North Slope Generating – South Power Plant Application for an Owner Requested Limit

TDX North Slope Generating, LLC
3601 C Street, Ste. 1000-50
Anchorage, AK 99503

October 2021

[THIS PAGE IS INTENTIONALLY LEFT BLANK]

TDX North Slope Generating, LLC – South Power Plant

Minor Permit Application for an Owner Requested Limit

Attachment A: Required Elements for an Owner Requested Limit under 18 AAC 50.225

Per 18 AAC 50.225(b), the required elements of an application for establishing an owner requested limit (ORL) to avoid one or more permit classification under Alaska Statute (AS) 46.14.130 at a stationary source that will remain subject to at least one permit classification are located in this application per the following table:

ORL Air Quality Application Elements

Regulatory Citation	Requirement	Location
18 AAC 50.225(b)(1)	Completed stationary source identification form	Stationary Source Identification (SSID) Form
18 AAC 50.225(b)(2)	List of all emissions units at the stationary source	Table B-1, Attachment B
18 AAC 50.225(b)(3)	Calculation of the stationary source's actual emissions and potential to emit air pollutants	Table B-2, Attachment B
18 AAC 50.225(b)(4)	Description of each proposed limit, and Effects the limit will have on: - Stationary source potential to emit - Stationary source allowable emissions	Attachment C Table B-3 and B-4, Attachment B
18 AAC 50.225(b)(5)	Description of a verifiable method to attain and maintain each limit, including monitoring and recordkeeping requirements	Attachment C
18 AAC 50.225(b)(6)	Citation to each requirement that the person seeks to avoid, including an explanation of why the requirement would apply in the absence of the limit and how the limit allows the person to avoid the requirement	Attachment C
18 AAC 50.225(b)(8)	Statement that the owner or operator of the stationary source will be able to comply with each limit	Attachment C
18 AAC 50.225(b)(9)	Certification statement	Cover Letter

[THIS PAGE IS INTENTIONALLY LEFT BLANK]

ATTACHMENT B – DETAILED EMISSION CALCULATIONS

TDX North Slope Generating – South Power Plant Application for an Owner Requested Limit

TDX North Slope Generating, LLC

3601 C Street, Ste. 1000-50
Anchorage, AK 99503

October 2021

[THIS PAGE IS INTENTIONALLY LEFT BLANK]

**Table B-1. TDX North Slope Generating, LLC - South Power Plant
 ORL to Avoid HAP Major Source, Title V Major Source, and Title I Minor Source Classification
 Stationary Source Emission Unit Inventory**

Emission Unit			Fuel Type	Maximum Capacity	Construction Date
EU ID	Description	Name			
1a	Cat G3516B LE	Generator No. 1	Fuel Gas	1,818 bhp	2006
2	Cat G3516	Generator No. 2	Fuel Gas	1,148 bhp	1992
3	Cat G3516	Generator No. 3	Fuel Gas	1,148 bhp	1992
4a	Cat G3516B LE	Generator No. 4	Fuel Gas	1,818 bhp	2006
6	Cat G3616	Generator No. 7	Fuel Gas	4,811 bhp	2003

**Table B-2. TDX North Slope Generating, LLC - South Power Plant
 ORL to Avoid HAP Major Source, Title V Major Source, and Title I Minor Source Classification
 Stationary Source Actual and Potential Emissions: Without Proposed ORL**

Regulated NSR Pollutant ^{1,2}	Stationary Source Actual Emissions ³	Stationary Source Potential Emissions
NO _x	0.2 tpy	174.1 tpy
CO	0.3 tpy	182.4 tpy
PM	0.005 tpy	3.4 tpy
PM ₁₀	0.005 tpy	3.4 tpy
PM _{2.5}	0.005 tpy	3.4 tpy
SO ₂	0.003 tpy	15.3 tpy
Pb	0 tpy	0 tpy
NO _x as a precursor to PM _{2.5}	0.2 tpy	174.1 tpy
SO ₂ as a precursor to PM _{2.5}	0.003 tpy	15.3 tpy
NO _x as a precursor to O ₃	0.2 tpy	174.1 tpy
VOC as a precursor to O ₃	0.2 tpy	108.9 tpy
Maximum Individual HAP (Formaldehyde)	0.03 tpy	22.7 tpy
Cumulative Total HAP	0.04 tpy	27.7 tpy

Notes:

¹ PM₁₀ and PM_{2.5} are assumed to be equal to total PM

² Lead (Pb) emissions are considered negligible.

³ Based on calendar year 2020 operation.

**Table B-3. TDX North Slope Generating, LLC - South Power Plant
 ORL to Avoid HAP Major Source, Title V Major Source, and Title I Minor Source Classification
 Title I Permit Applicability Summary: With Proposed ORL**

Regulated NSR Pollutant ^{1,2}	Stationary Source PTE with ORL	Minor Source Permit Applicability 18 AAC 50.502(c)(1)	Minor Source Permit Required?	PSD Major Source Permit Applicability 18 AAC 50.306	PSD Major Source Permit Required?
NO _x	36.9 tpy	40 tpy	No	250 tpy	No
CO	76.7 tpy	N/A ³	N/A	250 tpy	No
PM ₁₀	1.1 tpy	15 tpy	No	250 tpy	No
PM _{2.5}	1.1 tpy	10 tpy	No	250 tpy	No
SO ₂	4.9 tpy	40 tpy	No	250 tpy	No
Pb	0 tpy	0.6 tpy	No	N/A	N/A
NO _x as a precursor to PM _{2.5}	36.9 tpy	N/A	N/A	250 tpy	No
SO ₂ as a precursor to PM _{2.5}	4.9 tpy	N/A	N/A	250 tpy	No
NO _x as a precursor to O ₃	36.9 tpy	N/A	N/A	250 tpy	No
VOC as a precursor to O ₃	29.8 tpy	N/A	N/A	250 tpy	No

Notes:

¹ PM₁₀ and PM_{2.5} are assumed to be equal to total PM

² Lead (Pb) emissions are considered negligible.

³ South Power Plant is not located within 10 kilometers of a carbon monoxide non-attainment area

**Table B-4. TDX North Slope Generating, LLC - South Power Plant
 ORL to Avoid HAP Major Source, Title V Major Source, and Title I Minor Source Classification
 Title V Permit Applicability Summary: With Proposed ORL**

Regulated NSR Pollutant ^{1,2}	Stationary Source PTE with ORL	Title V Major Source Permit Applicability 40 CFR 71.2	Title V Major Source Permit Required?
NO _x	36.9 tpy	100 tpy	No
CO	76.7 tpy	100 tpy	No
PM	1.1 tpy	100 tpy	No
PM ₁₀	1.1 tpy	100 tpy	No
PM _{2.5}	1.1 tpy	100 tpy	No
SO ₂	4.9 tpy	100 tpy	No
Pb	0 tpy	100 tpy	No
NO _x as a precursor to PM _{2.5}	36.9 tpy	100 tpy	No
SO ₂ as a precursor to PM _{2.5}	4.9 tpy	100 tpy	No
NO _x as a precursor to O ₃	36.9 tpy	100 tpy	No
VOC as a precursor to O ₃	29.8 tpy	100 tpy	No
Maximum Individual HAP (Formaldehyde)	9.5 tpy	10 tpy	No
Cumulative Total HAP	10.3 tpy	25 tpy	No

Notes:

¹ PM₁₀ and PM_{2.5} are assumed to be equal to total PM

² Lead (Pb) emissions are considered negligible.

**Table B-5. TDX North Slope Generating, LLC - South Power Plant
 ORL to Avoid HAP Major Source, Title V Major Source, and Title I Minor Source Classification
 Estimated Criteria Pollutant Emissions: Nitrogen Oxides (NO_x)**

Emission Unit		Maximum Capacity	Factor Reference	NO _x Emission Factor	Stationary Source Actual Operation ¹	Stationary Source Actual	Stationary Source	Stationary Source	Stationary Source	Stationary Source
EU ID	Description					NO _x Emissions	Potential Operation	Potential to Emit NO _x Emissions	Limited Operation	Limited NO _x Emissions
1a	Cat G3516B LE	1,818 bhp	August 2009 Source Tests	3.99 lb/hr	16 hrs/yr	0.03 tpy	8,760 hrs/yr	17.48 tpy	7,260 hrs/yr	14.5 tpy
2	Cat G3516	1,148 bhp		12.9 lb/hr	8 hrs/yr	0.05 tpy	8,760 hrs/yr	56.50 tpy	500 hrs/yr	3.2 tpy
3	Cat G3516	1,148 bhp		12.9 lb/hr	7 hrs/yr	0.05 tpy	8,760 hrs/yr	56.50 tpy	500 hrs/yr	3.2 tpy
4a	Cat G3516B LE	1,818 bhp		3.99 lb/hr	19 hrs/yr	0.04 tpy	8,760 hrs/yr	17.48 tpy	7,260 hrs/yr	14.5 tpy
6	Cat G3616	4,811 bhp		5.97 lb/hr	11 hrs/yr	0.03 tpy	8,760 hrs/yr	26.15 tpy	500 hrs/yr	1.5 tpy
Total NO _x Emissions						0.2 tpy		174.1 tpy		36.9 tpy

Notes:

¹ Based on calendar year 2020 hours of operation.

Table B-6. TDX North Slope Generating, LLC - South Power Plant
ORL to Avoid HAP Major Source, Title V Major Source, and Title I Minor Source Classification
Estimated Criteria Pollutant Emissions: Carbon Monoxide (CO)

Emission Unit		Maximum Capacity	Factor Reference	CO Emission Factor	Stationary Source Actual Operation ¹	Stationary Source Actual CO Emissions	Stationary Source Potential Operation	Stationary Source Potential to Emit CO Emissions	Stationary Source Limited Operation	Stationary Source Limited CO Emissions
EU ID	Description									
1a	Cat G3516B LE	1,818 bhp	August 2009 Source Tests	9.81 lb/hr	16 hrs/yr	0.08 tpy	8,760 hrs/yr	43.0 tpy	7,260 hrs/yr	35.6 tpy
2	Cat G3516	1,148 bhp		3.91 lb/hr	8 hrs/yr	0.02 tpy	8,760 hrs/yr	17.1 tpy	500 hrs/yr	1.0 tpy
3	Cat G3516	1,148 bhp		3.91 lb/hr	7 hrs/yr	0.01 tpy	8,760 hrs/yr	17.1 tpy	500 hrs/yr	1.0 tpy
4a	Cat G3516B LE	1,818 bhp		9.81 lb/hr	19 hrs/yr	0.09 tpy	8,760 hrs/yr	43.0 tpy	7,260 hrs/yr	35.6 tpy
6	Cat G3616	4,811 bhp		14.2 lb/hr	11 hrs/yr	0.08 tpy	8,760 hrs/yr	62.2 tpy	500 hrs/yr	3.6 tpy
Total CO Emissions						0.3 tpy		182.4 tpy		76.7 tpy

Notes:

¹ Based on calendar year 2020 hours of operation.

**Table B-7. TDX North Slope Generating, LLC - South Power Plant
ORL to Avoid HAP Major Source, Title V Major Source, and Title I Minor Source Classification
Estimated Criteria Pollutant Emissions: Particulate Matter (PM)**

Emission Unit		Maximum Capacity	Factor Reference	PM Emission Factor ¹	Stationary Source Actual Operation ²	Stationary Source Actual PM Emissions ³	Stationary Source Potential Operation	Stationary Source Potential to Emit PM Emissions ³	Stationary Source Limited Operation	Stationary Source Limited PM Emissions ³
EU ID	Description									
1a	Cat G3516B LE	1,818 bhp	AP-42, Table 3.2-2	9.99E-03 lb/MMBtu	16 hrs/yr	1.06E-03 tpy	8,760 hrs/yr	0.6 tpy	7,260 hrs/yr	0.5 tpy
2	Cat G3516	1,148 bhp	AP-42, Table 3.2-2	9.99E-03 lb/MMBtu	8 hrs/yr	3.45E-04 tpy	8,760 hrs/yr	0.4 tpy	500 hrs/yr	0.02 tpy
3	Cat G3516	1,148 bhp	AP-42, Table 3.2-2	9.99E-03 lb/MMBtu	7 hrs/yr	3.02E-04 tpy	8,760 hrs/yr	0.4 tpy	500 hrs/yr	0.02 tpy
4a	Cat G3516B LE	1,818 bhp	AP-42, Table 3.2-2	9.99E-03 lb/MMBtu	19 hrs/yr	1.26E-03 tpy	8,760 hrs/yr	0.6 tpy	7,260 hrs/yr	0.5 tpy
6	Cat G3616	4,811 bhp	AP-42, Table 3.2-2	9.99E-03 lb/MMBtu	11 hrs/yr	1.81E-03 tpy	8,760 hrs/yr	1.4 tpy	500 hrs/yr	0.08 tpy
Total PM Emissions						4.78E-03 tpy		3.4 tpy		1.1 tpy

Notes:

¹ PM emission factor is sum of PM condensable and PM_{2.5} (filterable) emission factors from AP-42, Table 3.2-2

² Based on calendar year 2020 hours of operation.

³ Manufacturer heat rates at 75 pct. load:

Cat G3516B LE Heat Rate: (EU IDs 1a and 4a)	7,320 BTU/bhp-hr
Cat G3516 Heat Rate: (EU ID 2 and 3)	7,523 BTU/bhp-hr
Cat G3616 Heat Rate: (EU ID 6)	6,834 BTU/bhp-hr

Table B-8. TDX North Slope Generating, LLC - South Power Plant
ORL to Avoid HAP Major Source, Title V Major Source, and Title I Minor Source Classification
Estimated Criteria Pollutant Emissions: Volatile Organic Compounds (VOC)

Emission Unit		Maximum Capacity	Factor Reference	VOC Emission Factor	Stationary Source Actual Operation ¹	Stationary Source Actual VOC Emissions	Stationary Source Potential Operation	Stationary Source Potential to Emit VOC Emissions	Stationary Source Limited Operation	Stationary Source Limited VOC Emissions
EU ID	Description									
1a	Cat G3516B LE	1,818 bhp	Manufacturer Data	0.87 g/bhp-hr	16 hrs/yr	0.028 tpy	8,760 hrs/yr	15.3 tpy	7,260 hrs/yr	12.7 tpy
2	Cat G3516	1,148 bhp	Manufacturer Data	0.60 g/bhp-hr	8 hrs/yr	0.006 tpy	8,760 hrs/yr	6.7 tpy	500 hrs/yr	0.4 tpy
3	Cat G3516	1,148 bhp	Manufacturer Data	0.60 g/bhp-hr	7 hrs/yr	0.005 tpy	8,760 hrs/yr	6.7 tpy	500 hrs/yr	0.4 tpy
4a	Cat G3516B LE	1,818 bhp	Manufacturer Data	0.87 g/bhp-hr	19 hrs/yr	0.033 tpy	8,760 hrs/yr	15.3 tpy	7,260 hrs/yr	12.7 tpy
6	Cat G3616	4,811 bhp	Manufacturer Data	1.40 g/bhp-hr	11 hrs/yr	0.08 tpy	8,760 hrs/yr	65.0 tpy	500 hrs/yr	3.7 tpy
Total VOC Emissions						0.2 tpy		108.9 tpy		29.8 tpy

Notes:

¹ Based on calendar year 2020 hours of operation.

Table B-9. TDX North Slope Generating, LLC - South Power Plant
ORL to Avoid HAP Major Source, Title V Major Source, and Title I Minor Source Classification
Estimated Criteria Pollutant Emissions: Sulfur Dioxide (SO₂)

Emission Unit		Maximum Capacity	Factor Reference	Stationary Source Actual Operation ¹	Stationary Source Actual SO ₂ Emissions ^{2,4,5}	Stationary Source Potential Operation	Stationary Source Potential to Emit SO ₂ Emissions ^{3,4,5}	Stationary Source Limited Operation	Stationary Source Limited SO ₂ Emissions ^{3,4,5}
EU ID	Description								
1a	Cat G3516B LE	1,818 bhp	Mass Balance	16 hrs/yr	0.0007 tpy	8,760 hrs/yr	2.6 tpy	7,260 hrs/yr	2.14 tpy
2	Cat G3516	1,148 bhp	Mass Balance	8 hrs/yr	0.0002 tpy	8,760 hrs/yr	1.6 tpy	500 hrs/yr	0.09 tpy
3	Cat G3516	1,148 bhp	Mass Balance	7 hrs/yr	0.0002 tpy	8,760 hrs/yr	1.6 tpy	500 hrs/yr	0.09 tpy
4a	Cat G3516B LE	1,818 bhp	Mass Balance	19 hrs/yr	0.0008 tpy	8,760 hrs/yr	2.6 tpy	7,260 hrs/yr	2.14 tpy
6	Cat G3616	4,811 bhp	Mass Balance	11 hrs/yr	0.001 tpy	8,760 hrs/yr	6.8 tpy	500 hrs/yr	0.39 tpy
Total SO₂ Emissions					0.003 tpy		15.3 tpy		4.9 tpy

Notes:

¹ Based on calendar year 2020 hours of operation.

² Fuel sulfur content:

Actual (2020 avg.) 35 ppmv H₂S

³ Fuel sulfur content:

Maximum Allowable 250 ppmv H₂S

⁴ Manufacturer heat rates at 75 pct. load:

Cat G3516B LE Heat Rate: 7,320 BTU/bhp-hr (EU IDs 1a and 4a)

Cat G3516 Heat Rate: 7,523 BTU/bhp-hr (EU ID 2 and 3)

Cat G3616 Heat Rate: 6,834 BTU/bhp-hr (EU ID 6)

⁵ Average natural gas heat content from May 2021 analysis:

950.8 Btu/scf

[THIS PAGE IS INTENTIONALLY LEFT BLANK]

**Table B-10. TDX North Slope Generating, LLC - South Power Plant
 ORL to Avoid HAP Major Source, Title V Major Source, and Title I Minor Source Classification
 Estimated Hazardous Air Pollutant (HAP) Emissions**

CAS No.	Chemical Name	Stationary Source Actual HAP Emissions	Stationary Source Potential to Emit HAP Emissions Without Proposed Limit	Stationary Source Potential to Emit HAP Emissions With Proposed Limit
75-07-0	Acetaldehyde	0.00264 tpy	2.1 tpy	0.3 tpy
107-02-8	Acrolein	0.00162 tpy	1.3 tpy	0.2 tpy
71-43-2	Benzene	0.00014 tpy	0.1 tpy	0.02 tpy
92-52-4	Biphenyl	0.00007 tpy	0.05 tpy	0.01 tpy
106-99-0	1,3-Butadiene	0.00008 tpy	0.07 tpy	0.01 tpy
56-23-5	Carbon tetrachloride	0.00001 tpy	0.009 tpy	0.002 tpy
108-90-7	Chlorobenzene	0.00001 tpy	0.008 tpy	0.001 tpy
67-66-3	Chloroform	0.00001 tpy	0.007 tpy	0.001 tpy
542-75-6	1,3-Dichloropropene	0.00001 tpy	0.007 tpy	0.001 tpy
100-41-4	Ethylbenzene	0.00001 tpy	0.01 tpy	0.002 tpy
1006-93-4	Ethylene dibromide (Dibromoethane)	0.00001 tpy	0.01 tpy	0.002 tpy
107-06-2	Ethylene dichloride (1,2-Dichloroethane)	0.00001 tpy	0.006 tpy	0.001 tpy
75-34-3	Ethylidene dichloride (1,1-Dichloroethane)	0.00001 tpy	0.006 tpy	0.001 tpy
5-00-0	Formaldehyde	0.03 tpy	22.7 tpy	9.5 tpy
110-54-3	Hexane	0.00035 tpy	0.3 tpy	0.05 tpy
67-56-1	Methanol	0.00079 tpy	0.6 tpy	0.1 tpy
75-09-2	Methylene chloride (Dichloromethane)	0.00001 tpy	0.005 tpy	0.0008 tpy
108-95-2	Phenol	0.00001 tpy	0.006 tpy	0.0010 tpy
78-87-5	Propylene dichloride (1,2-Dichloropropane)	0.00001 tpy	0.007 tpy	0.001 tpy
100-42-5	Styrene	0.00001 tpy	0.006 tpy	0.001 tpy
79-34-5	1,1,2,2-Tetrachloroethane	0.00001 tpy	0.01 tpy	0.002 tpy
N/A	Tetrachloroethane	0.00001 tpy	0.01 tpy	0.002 tpy
108-88-3	Toluene	0.00013 tpy	0.1 tpy	0.02 tpy
79-00-5	1,1,2-Trichloroethane	0.00001 tpy	0.01 tpy	0.001 tpy
540-84-1	2,2,4-Trimethylpentane	0.00008 tpy	0.06 tpy	0.01 tpy
75-01-4	Vinyl chloride	0.000005 tpy	0.004 tpy	0.0006 tpy
1330-20-7	Xylenes (isomers and mixture)	0.00006 tpy	0.05 tpy	0.008 tpy
N/A	Polycyclic Organic Matter (POC)	0.00004 tpy	0.03 tpy	0.006 tpy
91-20-3	Naphthalene	0.00002 tpy	0.02 tpy	0.003 tpy
Maximum Individual (Formaldehyde)		0.03 tpy	22.7 tpy	9.5 tpy
Total HAP Emissions ¹		0.04 tpy	27.7 tpy	10.3 tpy

Notes:

¹ Naphthalene is a subset of POC and therefore is excluded from *Total HAP Emissions* to avoid double counting.

[THIS PAGE IS INTENTIONALLY LEFT BLANK]

**Table B-11. TDX North Slope Generating, LLC - South Power Plant
 ORL to Avoid HAP Major Source, Title V Major Source, and Title I Minor Source Classification
 EU IDs 1a and 4a Estimated Hazardous Air Pollutant (HAP) Emissions**

	Actual Emissions	Potential to Emit (PTE) Emissions Without Proposed Limit	Potential to Emit Emissions With Proposed Limit
Maximum Total Heat Input ¹ :	466 MMBtu/yr	233,152 MMBtu/yr	193,229 MMBtu/yr

Section 112 Hazardous Air Pollutants			Source Category Emission Calculations			
No.	CAS No.	Chemical Name	Emission Factor ^{2,3}	Actual Emissions ⁴	PTE Emissions ⁴	Limited Emissions ⁴
1	75-07-0	Acetaldehyde	8.36E-03 lb/MMBtu	5.84E-04 tpy	0.3 tpy	0.2 tpy
6	107-02-8	Acrolein	5.14E-03 lb/MMBtu	3.59E-04 tpy	0.2 tpy	0.1 tpy
15	71-43-2	Benzene	4.40E-04 lb/MMBtu	3.07E-05 tpy	1.54E-02 tpy	1.28E-02 tpy
19	92-52-4	Biphenyl	2.12E-04 lb/MMBtu	1.48E-05 tpy	7.41E-03 tpy	6.14E-03 tpy
23	106-99-0	1,3-Butadiene	2.67E-04 lb/MMBtu	1.87E-05 tpy	9.34E-03 tpy	7.74E-03 tpy
29	56-23-5	Carbon tetrachloride	3.67E-05 lb/MMBtu	2.56E-06 tpy	1.28E-03 tpy	1.06E-03 tpy
37	108-90-7	Chlorobenzene	3.04E-05 lb/MMBtu	2.12E-06 tpy	1.06E-03 tpy	8.81E-04 tpy
39	67-66-3	Chloroform	2.85E-05 lb/MMBtu	1.99E-06 tpy	9.97E-04 tpy	8.26E-04 tpy
56	542-75-6	1,3-Dichloropropene	2.64E-05 lb/MMBtu	1.84E-06 tpy	9.23E-04 tpy	7.65E-04 tpy
77	100-41-4	Ethylbenzene	3.97E-05 lb/MMBtu	2.77E-06 tpy	1.39E-03 tpy	1.15E-03 tpy
80	1006-93-4	Ethylene dibromide (Dibromoethane)	4.43E-05 lb/MMBtu	3.10E-06 tpy	1.55E-03 tpy	1.28E-03 tpy
81	107-06-2	Ethylene dichloride (1,2-Dichloroethane)	2.36E-05 lb/MMBtu	1.65E-06 tpy	8.25E-04 tpy	6.84E-04 tpy
86	75-34-3	Ethylidene dichloride (1,1-Dichloroethane)	2.36E-05 lb/MMBtu	1.65E-06 tpy	8.25E-04 tpy	6.84E-04 tpy
87	5-00-0	Formaldehyde	1.21 lb/hr	0.02 tpy	10.60 tpy	8.8 tpy
95	110-54-3	n-Hexane	1.11E-03 lb/MMBtu	7.76E-05 tpy	3.88E-02 tpy	0.03 tpy
103	67-56-1	Methanol	2.50E-03 lb/MMBtu	1.75E-04 tpy	8.74E-02 tpy	0.07 tpy
116	75-09-2	Methylene chloride (Dichloromethane)	2.00E-05 lb/MMBtu	1.40E-06 tpy	6.99E-04 tpy	5.80E-04 tpy
130	108-95-2	Phenol	2.40E-05 lb/MMBtu	1.68E-06 tpy	8.39E-04 tpy	6.96E-04 tpy
141	78-87-5	Propylene dichloride (1,2-Dichloropropane)	2.69E-05 lb/MMBtu	1.88E-06 tpy	9.41E-04 tpy	7.80E-04 tpy
146	100-42-5	Styrene	2.36E-05 lb/MMBtu	1.65E-06 tpy	8.25E-04 tpy	6.84E-04 tpy
149	79-34-5	1,1,2,2-Tetrachloroethane	4.00E-05 lb/MMBtu	2.79E-06 tpy	1.40E-03 tpy	1.16E-03 tpy
152	108-88-3	Toluene	4.08E-04 lb/MMBtu	2.85E-05 tpy	1.43E-02 tpy	1.18E-02 tpy
158	79-00-5	1,1,2-Trichloroethane	3.18E-05 lb/MMBtu	2.22E-06 tpy	1.11E-03 tpy	9.22E-04 tpy
164	540-84-1	2,2,4-Trimethylpentane	2.50E-04 lb/MMBtu	1.75E-05 tpy	8.74E-03 tpy	7.25E-03 tpy
167	75-01-4	Vinyl chloride	1.49E-05 lb/MMBtu	1.04E-06 tpy	5.21E-04 tpy	4.32E-04 tpy
169	1330-20-7	Xylenes (isomers and mixture)	1.84E-04 lb/MMBtu	1.29E-05 tpy	6.43E-03 tpy	5.33E-03 tpy
187	N/A	Polycyclic Organic Matter (POC)	1.35E-04 lb/MMBtu	9.40E-06 tpy	4.71E-03 tpy	3.90E-03 tpy
119	91-20-3	Naphthalene	7.44E-05 lb/MMBtu	5.20E-06 tpy	2.60E-03 tpy	2.16E-03 tpy
TOTAL HAP Emissions			0.02 tpy		11.3 tpy	9.3 tpy
EU ID 1a			0.010 tpy		5.6 tpy	4.7 tpy
EU ID 4a			0.012 tpy		5.6 tpy	4.7 tpy

Notes:

¹ Total heat consumption calculated for Actual, PTE and Limited operating hours based on the below parameters

(2) 1,818 hp Cat G3516B LE Engines		13.3 MMBtu/hr, each	
Potential Fuel Use ID 1a	213 MMBtu/yr @ 16 hr/yr	116,576 MMBtu/yr @ 8,760hr/yr	96,614 MMBtu/yr @ hr/yr 7,260
ID 4a	253 MMBtu/yr @ 19hr/yr	116,576 MMBtu/yr @ 8,760hr/yr	96,614 MMBtu/yr @ hr/yr 7,260
Total Potential Heat Consumption	TOTAL	466 MMBtu/yr 35 hours	233,152 MMBtu/yr 17,520 hours 193,229 MMBtu/yr 14,520 hours

² Formaldehyde emission factor(s) are from August 2009 Source Test

³ AP-42, Table 3.2-2 Uncontrolled Emission Factors for 4-Stroke Lean-Burn Engines

⁴ Actual, PTE and Limited Emissions calculations that use AP-42 Table 3.2-2 emission factors have a 70% control efficiency applied to the calculation consistent with Table 2d, 40 CFR Part 63 Subpart ZZZZ.

**Table B-12. TDX North Slope Generating, LLC - South Power Plant
ORL to Avoid HAP Major Source, Title V Major Source, Title I Minor Source Classification
EU IDs 2, 3, and 6 Estimated Hazardous Air Pollutant (HAP) Emissions**

	Actual Emissions	Potential to Emit (PTE) Emissions Without Proposed Limit	Potential to Emit Emissions With Proposed Limit
Maximum Total Heat Input ¹ :	491.21 MMBtu/yr	439,324 MMBtu/yr	25,076 MMBtu/yr

Section 112 Hazardous Air Pollutants			Source Category Emission Calculations			
No.	CAS No.	Chemical Name	Emission Factor ^{2,3}	Actual Emissions	PTE Emissions	Limited Emissions
1	75-07-0	Acetaldehyde	8.36E-03 lb/MMBtu	0.002 tpy	1.8 tpy	0.1 tpy
6	107-02-8	Acrolein	5.14E-03 lb/MMBtu	0.001 tpy	1.1 tpy	0.06 tpy
15	71-43-2	Benzene	4.40E-04 lb/MMBtu	1.08E-04 tpy	0.10 tpy	0.006 tpy
19	92-52-4	Biphenyl	2.12E-04 lb/MMBtu	5.21E-05 tpy	0.05 tpy	0.003 tpy
23	106-99-0	1,3-Butadiene	2.67E-04 lb/MMBtu	6.56E-05 tpy	0.06 tpy	0.003 tpy
29	56-23-5	Carbon tetrachloride	3.67E-05 lb/MMBtu	9.01E-06 tpy	0.008 tpy	0.0005 tpy
37	108-90-7	Chlorobenzene	3.04E-05 lb/MMBtu	7.47E-06 tpy	0.007 tpy	0.0004 tpy
39	67-66-3	Chloroform	2.85E-05 lb/MMBtu	7.00E-06 tpy	0.006 tpy	0.0004 tpy
56	542-75-6	1,3-Dichloropropene	2.64E-05 lb/MMBtu	6.48E-06 tpy	0.006 tpy	0.0003 tpy
77	100-41-4	Ethylbenzene	3.97E-05 lb/MMBtu	9.75E-06 tpy	0.009 tpy	0.0005 tpy
80	1006-93-4	Ethylene dibromide (Dibromoethane)	4.43E-05 lb/MMBtu	1.09E-05 tpy	0.010 tpy	0.0006 tpy
81	107-06-2	Ethylene dichloride (1,2-Dichloroethane)	2.36E-05 lb/MMBtu	5.80E-06 tpy	0.005 tpy	0.0003 tpy
86	75-34-3	Ethylidene dichloride (1,1-Dichloroethane)	2.36E-05 lb/MMBtu	5.80E-06 tpy	0.005 tpy	0.0003 tpy
87	5-00-0	Formaldehyde	See Note 1	0.01 tpy	12.1 tpy	0.7 tpy
95	110-54-3	n-Hexane	1.11E-03 lb/MMBtu	2.73E-04 tpy	0.2 tpy	0.01 tpy
103	67-56-1	Methanol	2.50E-03 lb/MMBtu	6.14E-04 tpy	0.5 tpy	0.03 tpy
116	75-09-2	Methylene chloride (Dichloromethane)	2.00E-05 lb/MMBtu	4.91E-06 tpy	0.004 tpy	0.0003 tpy
130	108-95-2	Phenol	2.40E-05 lb/MMBtu	5.89E-06 tpy	0.005 tpy	0.0003 tpy
141	78-87-5	Propylene dichloride (1,2-Dichloropropane)	2.69E-05 lb/MMBtu	6.61E-06 tpy	0.006 tpy	0.0003 tpy
146	100-42-5	Styrene	2.36E-05 lb/MMBtu	5.80E-06 tpy	0.005 tpy	0.0003 tpy
149	79-34-5	1,1,2,2-Tetrachloroethane	4.00E-05 lb/MMBtu	9.82E-06 tpy	0.009 tpy	0.0005 tpy
152	108-88-3	Toluene	4.08E-04 lb/MMBtu	1.00E-04 tpy	0.09 tpy	0.005 tpy
158	79-00-5	1,1,2-Trichloroethane	3.18E-05 lb/MMBtu	7.81E-06 tpy	0.007 tpy	0.0004 tpy
164	540-84-1	2,2,4-Trimethylpentane	2.50E-04 lb/MMBtu	6.14E-05 tpy	0.05 tpy	0.003 tpy
167	75-01-4	Vinyl chloride	1.49E-05 lb/MMBtu	3.66E-06 tpy	0.003 tpy	0.0002 tpy
169	1330-20-7	Xylenes (isomers and mixture)	1.84E-04 lb/MMBtu	4.52E-05 tpy	0.04 tpy	0.002 tpy
187	N/A	Polycyclic Organic Matter (POC)	1.35E-04 lb/MMBtu	3.31E-05 tpy	0.03 tpy	0.002 tpy
119	91-20-3	Naphthalene	7.44E-05 lb/MMBtu	1.83E-05 tpy	0.02 tpy	0.0009 tpy

TOTAL HAP Emissions	0.02 tpy	16.4 tpy	0.9 tpy
EU ID 2	0.003 tpy	2.8 tpy	0.2 tpy
EU ID 3	0.002 tpy	2.8 tpy	0.2 tpy
EU ID 6	0.01 tpy	10.7 tpy	0.6 tpy

Notes/Comments:

¹ Total heat consumption calculated for Actual, PTE and Limited operating hours based on the below parameters

(2) 1,148 hp Cat G3516 Engines		8.6 MMBtu/hr, each			
Potential Fuel Use/Heat Input	EU ID 2	69.09 MMBtu/yr @ 8 hr/yr	75,655 MMBtu/yr @ 8,760 hr/yr	4,318 MMBtu/yr @ 500 hr/yr	
	EU ID 3	60.45 MMBtu/yr @ 7 hr/yr	75,655 MMBtu/yr @ 8,760 hr/yr	4,318 MMBtu/yr @ 500 hr/yr	
(1) 4,811 hp Cat G3616 Engine		32.9 MMBtu/hr			
	EU ID 6	361.66 MMBtu/yr @ 11 hr/yr	288,015 MMBtu/yr @ 8,760 hr/yr	16,439 MMBtu/yr @ 500 hr/yr	
Total Potential Heat Consumption	TOTAL	491.21 MMBtu/yr	439,324 MMBtu/yr	25,076 MMBtu/yr	

² Formaldehyde emission factor(s) are from August 2009 Source Test; EU IDs 2 and 3: 0.521 lb/hr EU ID 6: 1.72 lb/hr

³ AP-42, Table 3.2-2 Uncontrolled Emission Factors for 4-Stroke Lean-Burn Engines

ATTACHMENT C – OWNER REQUESTED LIMIT APPLICATION REQUIREMENTS

TDX North Slope Generating – South Power Plant Application for an Owner Requested Limit

TDX North Slope Generating, LLC

3601 C Street, Ste. 1000-50
Anchorage, AK 99503

October 2021

[THIS PAGE IS INTENTIONALLY LEFT BLANK]

TDX North Slope Generating, LLC – South Power Plant
Application for an Owner Requested Limit
Attachment C: Owner Requested Limit Application Requirements
under 18 AAC 50.225(b)

An application for an owner requested limit (ORL) under 18 Alaska Administrative Code (AAC) 50.225 must include the information and materials required under 18 AAC 50.225(b). Information pertaining to 18 AAC 50.225(b)(4) – (6) and (8) is provided below.

18 AAC 50.225(b)(4): A description of each proposed limit, including for each air pollutant a calculation of the effect the limit will have on the stationary source's potential to emit and the allowable emissions.

TDX North Slope Generating, LLC (TNSG) is requesting this ORL for an hourly operating limit of 7,260 hours per 12-month period for EU IDs 1a and 4a (G1 and G4 – Cat G3516B LE), each, and an hourly operating limit of 500 hours per 12-month period for EU IDs 2 (G2 – Cat G3516), 3 (G3 – Cat G3516), and 6 (G7 – Cat G3616), each, and an ORL of 250 parts per million by volume of hydrogen sulfide in fuel gas to avoid classification as a HAP-major source, Title V major source, and Title I minor source.

See Table 3 and Table 4 in Attachment B of this application for the effect the limit will have on the stationary source's potential to emit and the allowable emissions.

18 AAC 50.225(b)(5): A description of a verifiable method to attain and maintain each limit, including monitoring and recordkeeping requirements.

Owner Requested Limit to Avoid Classification as a HAP-major Source, Title V Major Source, and Title I Minor Source

1. **Limit Hours of Operation for EU IDs 1a, 2, 3, 4a, and 6.** The Permittee shall limit the operation of EU IDs 1a and 4a to no more than 7,260 hours per year (hrs/yr), each. The Permittee shall limit the operation of EU IDs 2, 3 and 6 to no more than 500 hours per year (hrs/yr), each. Monitor, record, and report in accordance with Conditions [1.1] through [1.3].
 - 1.1 For each of EU ID 1a, 2, 3, 4a, and 6:
 - a. Install a non-resettable hour-meter.
 - b. Monitor and record the total monthly hours of operation.
 - c. By the end of each calendar month, calculate and record the operating hours for the previous 12-month rolling period.

- d. If operating hours are not available for a calendar day, assume 24 hours of operation for the calendar day in which it operated.
 - e. If the non-resettable hour-meter requires maintenance or repair during operation of the equipment, TDX shall manually track and record the hours of operation for which the non-resettable hour-meter data is unavailable.
 - f. During the initial twelve months of data collection, use the available data to date as a substitute for the 12-month period.
- 1.2 Report in the operating report required by Condition [X] the total monthly hours of operation for each month and 12-month rolling period covered by the operating report for EU ID 1a, 2, 3, 4a, and 6.
 - 1.3 Report as excess emissions or permit deviation if the rolling 12-month rolling operating hours for any month exceeds the operating hour limit of Condition [1.1].
- 2. **Limit Sulfur Content of Fuel Gas.** The Permittee shall use only fuel gas with total sulfur content of no more than 250 parts per million by volume (ppmv) in all gas-fired emission units. Monitor, record, and report in accordance with Conditions [2.1] through [2.3].
 - 2.1 Obtain a semiannual statement or receipt from the fuel supplier certifying the fuel gas sulfur concentration in ppmv. If a certificate is not available from the supplier, then analyze a representative sample of the fuel no less than once each six months to determine the sulfur content using 40 C.F.R. 60, Appendix A, Method 11 or an appropriate method listed in 18 AAC 50.035.
 - 2.2 Report under excess emissions and permit deviations described in Condition [X], whenever the total sulfur concentration of the fuel gas obtained or analyzed exceeds 250 ppmv.
 - 2.3 Attach copies of the records required by Condition [2.1] in the operating report submitted under Condition [X].

18 AAC 50.225(b)(6): Citation to each requirement that the person seeks to avoid, including an explanation of why the requirement would apply in the absence of the limit and how the limit allows the person to avoid the requirement.

18 AAC 50.326(a) – Avoid Classification as a Title V Major Source

Without the ORLs to restrict the number of hours of operation and total sulfur content of fuel gas burned for EU IDs 1a, 2, 3, 4a, and 6, the TDX North Slope Generating – South Power Plant would be classified as a Title V major source. The ORLs reduce the potential to emit (PTE) emissions for the source to levels below the Title V major source thresholds under 40 CFR 71.3(a)(1).

Without the ORLs to restrict the number of hours of operation for EU IDs 1a, 2, 3, 4a, and 6, the South Power Plant would be classified as a HAP-major source. The ORLs reduce the PTE

emissions for the source to levels below the HAP-major source thresholds, thereby avoiding the requirement to obtain a permit for a Title V major source under 40 CFR 71.3(a)(1).

18 AAC 50.502(c)(1) – Avoid Classification as a Minor Stationary Source

Without the ORL to restrict the number of hours of operation and total sulfur content of fuel gas burned for EU IDs 1a, 2, 3, 4a, and 6, the TDX North Slope Generating – South Power Plant would be classified as a Minor Stationary Source. The ORLs reduce the PTE emissions for the stationary source to levels below the Minor Stationary Source thresholds under 18 AAC 50.502(c)(1).

18 AAC 50.225(b)(8): A statement that the owner or operator of the stationary source will be able to comply with each limit.

TNSG will be able to comply with the proposed limits.

[THIS PAGE IS INTENTIONALLY LEFT BLANK]

ATTACHMENT D – 2009 EMISSION SOURCE TEST DATA

TDX North Slope Generating – South Power Plant Application for an Owner Requested Limit

TDX North Slope Generating, LLC

3601 C Street, Ste. 1000-50

Anchorage, AK 99503

October 2021

[THIS PAGE IS INTENTIONALLY LEFT BLANK]

1.0 Executive Summary

TDX North Slope Generating Inc.

Deadhorse, Alaska - August 2009

Generators 1, 3, and 7 - EU #1a, EU #3, EU #6

Site #	Date	Run #	Start Time	End Time	O ₂ (%)	NO _x (ppm)	NO _x (lb/hr)	CO (ppm)	CO (lb/hr)	CH ₂ O (ppm)	CH ₂ O (lb/hr)
G-1 (EU 1a)	8/25/2009	1	1410	1510	9.2	171.0	3.97	704.4	9.95	80.1	1.21
G-1 (EU 1a)	8/25/2009	2	1551	1651	9.1	175.1	3.98	697.1	9.65	81.6	1.21
G-1 (EU 1a)	8/25/2009	3	1715	1815	9.2	176.9	4.04	708.5	9.84	81.9	1.22
Generator #1 (EU 1a) - Average Results:					9.2	174.3	3.99	703.3	9.81	81.2	1.21
G-3 (EU 3)	8/25/2009	1	2101	2201	7.0	1088.1	13.3	519.1	3.88	63.7	0.510
G-3 (EU 3)	8/25/2009	2	2227	2327	6.9	1027.5	12.7	521.7	3.91	65.9	0.530
G-3 (EU 3)	8/25-26/09	3	2347	0047	6.9	1039.2	12.8	524.7	3.94	64.9	0.522
Generator #3 (EU 3) - Average Results:					7.0	1051.6	12.9	521.8	3.91	64.8	0.521
G-7 (EU 6)	8/26/2009	1	1037	1137	10.7	113.6	6.02	433.3	14.0	49.2	1.70
G-7 (EU 6)	8/26/2009	2	1201	1301	10.7	110.4	5.87	438.2	14.2	49.6	1.72
G-7 (EU 6)	8/26/2009	3	1320	1420	10.7	112.0	6.01	438.8	14.3	49.2	1.72
Generator #7 (EU 6) - Average Results:					10.7	112.0	5.97	436.8	14.2	49.3	1.72

[THIS PAGE IS INTENTIONALLY LEFT BLANK]

[THIS PAGE IS INTENTIONALLY LEFT BLANK]

