Maryland
Department of
the Environment

Larry Hogan, Governor
Boyd K. Rutherford, Lt. Governor

Horacio Tablada, Secretary
Suzanne E. Dorsey, Deputy Secretary

Mr. Pranav Patel, VP and GM
AstraZeneca, PLP
Frederick Manufacturing Center
633 Research Court
Frederick, MD 21703

SEP 15 2022

Dear Mr. Patel:

Re: Renewal Part 70/ Title V Operating Permit # 24-021-0459

Enclosed, please find the renewal Part 70/Title V Operating Permit and Fact Sheet for the AstraZeneca, PLP facility located in Frederick County, MD. The Permit will expire on January 31, 2027.

The Code of Maryland Regulations (COMAR) 26.11.03.11 states the following:

If the Department denies a Part 70 permit or issues it with terms and conditions that are objectionable to the applicant, the applicant may request that a contested case hearing be held regarding the permit. This request shall be made to the Department in writing not later than 15 days after the applicant receives notice that the permit has been denied or of the objectionable terms and conditions. The request shall include the basis for the request and refer to any objectionable terms and conditions.

Please note the following revised condition in the Permit under Section II, General Conditions, Number 5, Permit Renewal:

The Permittee shall submit to the Department a completed application for renewal of this Part 70 permit 12 months before the expiration of the permit. Upon submitting a complete application, the Permittee may continue to operate this facility pending final action by the Department on the renewal.

If you have any questions, please feel free to contact Ms. Janay Mendez, the permit manager for this facility, via email at Janay.mendez@maryland.gov or by phone (410) 537-3230.

Sincerely,

Suna Yi Sariscak, Manager
Air Quality Permits Program
Air & Radiation Administration

SYS/jm

Enclosures

cc: EPA Region III (w/encl)
Mr. Pranav Patel (w/encl)
Mr. Joseph Bonamer (w/encl)

KEEP PERMIT AT SITE

CONTROL NO. B - 07215

Larry Hogan
Governor

State of Maryland

Horacio Tablada
Secretary

DEPARTMENT OF THE ENVIRONMENT

Air and Radiation Administration
1800 Washington Boulevard, Suite 720
Baltimore, MD 21230

[ ] Construction Permit

Part 70
[X] Operating Permit

PERMIT NO. 24-021-0459

DATE ISSUED SEP 15 2022

PERMIT FEE To be paid in accordance with COMAR 26.11.02.19B

EXPIRATION DATE January 31, 2027

LEGAL OWNER & ADDRESS
AstraZeneca, PLP
Frederick Manufacturing Center
633 Research Court
Frederick, MD 21703
Attn: Mr. Pranav Patel, VP and GM

SITE
AstraZeneca, PLP
Frederick Manufacturing Center
633 Research Court
Frederick, Maryland 21703
AI # 578

SOURCE DESCRIPTION

Biotechnology products facility, including boilers and generators to support manufacturing operations.

This source is subject to the conditions described on the attached pages.

Page 1 of 84

Program Manager

Director, Air and Radiation Administration

ASTRAZENECA, PLP
FREDERICK CAMPUS
630, 633, 636, AND 660 RESEARCH COURT
FREDERICK, MARYLAND 21703
PART 70 OPERATING PERMIT NO. 021-0459

SECTION I SOURCE IDENTIFICATION

1. DESCRIPTION OF FACILITY

AstraZeneca, PLP's Frederick Campus ("AstraZeneca") is a biotechnology / pharmaceutical manufacturing facility located at 630, 633, 636, and 660 Research Court in Frederick County, Frederick, Maryland in Maryland's Air Quality Region II. The primary SIC for this facility is 2836, Biological Products, Except Diagnostic Substances. The facility currently operates boilers, emergency generators, and non-emergency generators to support a number of biopharmaceutical manufacturing processes. These biopharmaceutical processes do not emit or emit small amounts of air pollution.

2. FACILITY INVENTORY LIST

Emissions Unit No.	MDE ARA Registration No.	Emissions Unit Name and Description	Date of Installation
EU-1	021-0459-5-0388	One (1) natural gas/diesel fired boiler rated at 32.659 MMBtu per hour (AstraZeneca ID 137401, Building 633).	2009
EU-2	021-0459-5-0389	One (1) natural gas/diesel fired boiler rated at 32.659 MMBtu per hour (AstraZeneca ID 137501, Building 633).	2009
EU-3	021-0459-5-0390	One (1) natural gas/diesel fired boiler rated at 32.659 MMBtu per hour (AstraZeneca ID 137601, Building 633).	2009
EU-4	021-0459-5-0391	One (1) natural gas/diesel fired boiler rated at 32.659 MMBtu per hour (AstraZeneca ID 137701, Building 633).	2009
EU-5	021-0459-9-0254	One (1) diesel fired, non-emergency generator rated at 2,701 kW and controlled by a selective catalytic reduction system for control of NOx emissions (AstraZeneca ID 410405, Building 633).	2009 Modified 2020
EU-6	021-0459-9-0255	One (1) diesel fired, non-emergency generator rated at 2,701 kW and controlled by a selective catalytic reduction system for control of NOx emissions (AstraZeneca ID 410404, Building 633).	2009 Modified 2020

Emissions Unit No.	MDE ARA Registration No.	Emissions Unit Name and Description	Date of Installation
EU-7	021-0459-9-0256	One (1) diesel fired, federal non-emergency generator rated at 2,701 kW (AstraZeneca ID 410403. Building 633)	2009
EU-8	021-0459-9-0257	One (1) diesel fired, federal non-emergency generator rated at 2,701 kW (AstraZeneca ID 410501. Building 633)	2009
EU-9	021-0459-9-0258	One (1) diesel fired, federal non-emergency generator rated at 2,701 kW (AstraZeneca ID 410502. Building 633)	2009
EU-10	021-0459-5-0501	One (1) natural gas fired boiler rated at 14.288 MMBtu per hour (AstraZeneca ID 683101, Building 636).	2016
EU-11	021-0459-5-0502	One (1) natural gas fired boiler rated at 14.288 MMBtu per hour (AstraZeneca ID 683102, Building 636).	2016
EU-14	021-0459-9-0382	One (1) diesel fired, emergency generator rated at 750 kW (Building 660).	2015
EU-15	021-0459-9-0392	One (1) diesel fired, emergency generator rated at 1,500 kW (Building 630).	2017
EU-16	021-0459-9-0393	One (1) diesel fired, emergency generator rated at 1,500 kW (Building 630).	2017
EU-17	021-0459-5-0534	One (1) natural gas fired boiler rated at 4 MMBtu per hour (AstraZeneca ID 285001, Building 630)	2017
EU-18	021-0459-5-0535	One (1) natural gas fired boiler rated at 4 MMBtu per hour (AstraZeneca ID 285002, Building 630)	2017

SECTION II GENERAL CONDITIONS

1. DEFINITIONS

[COMAR 26.11.01.01] and [COMAR 26.11.02.01]

The words or terms in this Part 70 permit shall have the meanings established under COMAR 26.11.01 and .02 unless otherwise stated in this permit.

2. ACRONYMS

ARA	Air and Radiation Administration
BACT	Best Available Control Technology
Btu	British thermal unit
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CEM	Continuous Emissions Monitor
CFR	Code of Federal Regulations
CO	Carbon Monoxide
COMAR	Code of Maryland Regulations
EPA	United States Environmental Protection Agency
FR	Federal Register
gr	grains
HAP	Hazardous Air Pollutant
MACT	Maximum Achievable Control Technology
MDE	Maryland Department of the Environment
MVAC	Motor Vehicle Air Conditioner
NESHAPS	National Emission Standards for Hazardous Air Pollutants
NO_x	Nitrogen Oxides
NSPS	New Source Performance Standards
NSR	New Source Review
OTR	Ozone Transport Region
PM	Particulate Matter
PM10	Particulate Matter with Nominal Aerodynamic Diameter of 10 micrometers or less
ppm	parts per million
ppb	parts per billion
PSD	Prevention of Significant Deterioration
PTC	Permit to construct
PTO	Permit to operate (State)

SIC	Standard Industrial Classification
SO_2	Sulfur Dioxide
TAP	Toxic Air Pollutant
tpy	tons per year
VE	Visible Emissions
VOC	Volatile Organic Compounds

3. EFFECTIVE DATE

The effective date of the conditions in this Part 70 permit is the date of permit issuance, unless otherwise stated in the permit.

4. PERMIT EXPIRATION

[COMAR 26.11.03.13B(2)]

Upon expiration of this permit, the terms of the permit will automatically continue to remain in effect until a new Part 70 permit is issued for this facility provided that the Permittee has submitted a timely and complete application and has paid applicable fees under COMAR 26.11.02.16.

Otherwise, upon expiration of this permit the right of the Permittee to operate this facility is terminated.

5. PERMIT RENEWAL

[COMAR 26.11.03.02B(3)] and [COMAR 26.11.03.02E]

The Permittee shall submit to the Department a completed application for renewal of this Part 70 permit at least 12 months before the expiration of the permit. Upon submitting a completed application, the Permittee may continue to operate this facility pending final action by the Department on the renewal.

The Permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the permit application, shall submit such supplementary facts or corrected information no later than 10 days after becoming aware that this occurred. The Permittee shall also provide additional information as necessary to address any requirements

that become applicable to the facility after the date a completed application was submitted, but prior to the release of a draft permit. This information shall be submitted to the Department no later than 20 days after a new requirement has been adopted.

6. CONFIDENTIAL INFORMATION

[COMAR 26.11.02.02G]

In accordance with the provisions of the State Government Article, Sec. 10-611 et seq., Annotated Code of Maryland, all information submitted in an application shall be considered part of the public record and available for inspection and copying, unless the Permittee claims that the information is confidential when it is submitted to the Department. At the time of the request for inspection or copying, the Department will make a determination with regard to the confidentiality of the information. The Permittee, when requesting confidentiality, shall identify the information in a manner specified by the Department and, when requested by the Department, promptly provide specific reasons supporting the claim of confidentiality. Information submitted to the Department without a request that the information be deemed confidential may be made available to the public. Subject to approval of the Department, the Permittee may provide a summary of confidential information that is suitable for public review. The content of this Part 70 permit is not subject to confidential treatment.

7. PERMIT ACTIONS

[COMAR 26.11.03.06E(3)] and [COMAR 26.11.03.20(A)]

This Part 70 permit may be revoked or reopened and revised for cause. The filing of an application by the Permittee for a permit revision or renewal; or a notification of termination, planned changes or anticipated noncompliance by the facility, does not stay a term or condition of this permit.

The Department shall reopen and revise, or revoke the Permittee's Part 70 permit under the following circumstances:

a. Additional requirements of the Clean Air Act become applicable to this facility and the remaining permit term is 3 years or more;

b. The Department or the EPA determines that this Part 70 permit contains a material mistake, or is based on false or inaccurate information supplied by or on behalf of the Permittee;

c. The Department or the EPA determines that this Part 70 permit must be revised or revoked to assure compliance with applicable requirements of the Clean Air Act; or

d. Additional requirements become applicable to an affected source under the Federal Acid Rain Program.

8. PERMIT AVAILABILITY

[COMAR 26.11.02.13G]

The Permittee shall maintain this Part 70 permit in the vicinity of the facility for which it was issued, unless it is not practical to do so, and make this permit immediately available to officials of the Department upon request.

9. REOPENING THE PART 70 PERMIT FOR CAUSE BY THE EPA

[COMAR 26.11.03.20B]

The EPA may terminate, modify, or revoke and reissue a permit for cause as prescribed in 40 CFR §70.7(g)

10. TRANSFER OF PERMIT

[COMAR 26.11.02.02E]

The Permittee shall not transfer this Part 70 permit except as provided in COMAR 26.11.03.15.

11. REVISION OF PART 70 PERMITS – GENERAL CONDITIONS

[COMAR 26.11.03.14] and [COMAR 26.11.03.06A(8)]

a. The Permittee shall submit an application to the Department to revise this Part 70 permit when required under COMAR 26.11.03.15 -.17.

b. When applying for a revision to a Part 70 permit, the Permittee shall comply with the requirements of COMAR 26.11.03.02 and .03 except that the application for a revision need include only information listed that is related to the proposed change to the source and revision to the permit. This information shall be sufficient to evaluate the proposed change and to determine whether it will comply with all applicable requirements of the Clean Air Act.

c. The Permittee may not change any provision of a compliance plan or schedule in a Part 70 permit as an administrative permit amendment or as a minor permit modification unless the change has been approved by the Department in writing.

d. A permit revision is not required for a change that is provided for in this permit relating to approved economic incentives, marketable permits, emissions trading, and other similar programs.

12. SIGNIFICANT PART 70 OPERATING PERMIT MODIFICATIONS

[COMAR 26.11.03.17]

The Permittee may apply to the Department to make a significant modification to its Part 70 Permit as provided in COMAR 26.11.03.17 and in accordance with the following conditions:

a. A significant modification is a revision to the federally enforceable provisions in the permit that does not qualify as an administrative permit amendment under COMAR 26.11.03.15 or a minor permit modification as defined under COMAR 26.11.03.16.

b. This permit does not preclude the Permittee from making changes, consistent with the provisions of COMAR 26.11.03, that would make the permit or particular terms and conditions of the permit irrelevant, such as by shutting down or reducing the level of operation of a

source or of an emissions unit within the source. Air pollution control equipment shall not be shut down or its level of operation reduced if doing so would violate any term of this permit.

c. Significant permit modifications are subject to all requirements of COMAR 26.11.03 as they apply to permit issuance and renewal, including the requirements for applications, public participation, and review by affected states and EPA, except:

(1) An application need include only information pertaining to the proposed change to the source and modification of this permit, including a description of the change and modification, and any new applicable requirements of the Clean Air Act that will apply if the change occurs;

(2) Public participation, and review by affected states and EPA, is limited to only the application and those federally enforceable terms and conditions of the Part 70 permit that are affected by the significant permit modification.

d. As provided in COMAR 26.11.03.15B(5), an administrative permit amendment may be used to make a change that would otherwise require a significant permit modification if procedures for enhanced preconstruction review of the change are followed that satisfy the requirements of 40 CFR 70.7(d)(1)(v).

e. Before making a change that qualifies as a significant permit modification, the Permittee shall obtain all permits-to-construct and approvals required by COMAR 26.11.02.

f. The Permittee shall not make a significant permit modification that results in a violation of any applicable requirement of the Clean Air Act.

g. The permit shield in COMAR 26.11.03.23 applies to a final significant permit modification that has been issued by the Department, to the extent applicable under COMAR 26.11.03.23.

13. MINOR PERMIT MODIFICATIONS

[COMAR 26.11.03.16]

The Permittee may apply to the Department to make a minor modification to the federally enforceable provisions of this Part 70 permit as provided in COMAR 26.11.03.16 and in accordance with the following conditions:

a. A minor permit modification is a Part 70 permit revision that:

(1) Does not result in a violation of any applicable requirement of the Clean Air Act;

(2) Does not significantly revise existing federally enforceable monitoring, including test methods, reporting, record keeping, or compliance certification requirements except by:

(a) Adding new requirements,

(b) Eliminating the requirements if they are rendered meaningless because the emissions to which the requirements apply will no longer occur, or

(c) Changing from one approved test method for a pollutant and source category to another;

(3) Does not require or modify a:

(a) Case-by-case determination of a federally enforceable emissions standard,

(b) Source specific determination for temporary sources of ambient impacts, or

(c) Visibility or increment analysis;

(4) Does not seek to establish or modify a federally enforceable permit term or condition for which there is no corresponding underlying applicable requirement of the Clean Air Act, but that the Permittee has assumed to avoid an applicable requirement to which the source would otherwise be subject, including:

(a) A federally enforceable emissions standard applied to the source pursuant to COMAR 26.11.02.03 to avoid classification as a Title I modification; and

(b) An alternative emissions standard applied to an emissions unit pursuant to regulations promulgated under Section 112(i)(5) of the Clean Air Act

(5) Is not a Title I modification; and

(6) Is not required under COMAR 26.11.03.17 to be processed as a significant modification to this Part 70 permit.

b. Application for a Minor Permit Modification

The Permittee shall submit to the Department an application for a minor permit modification that satisfies the requirements of COMAR 26.11.03.03 which includes the following:

(1) A description of the proposed change, the emissions resulting from the change, and any new applicable requirements that will apply if the change is made;

(2) The proposed minor permit modification;

(3) Certification by a responsible official, in accordance with COMAR 26.11.02.02F, that:

(a) The proposed change meets the criteria for a minor permit modification, and

(b) The Permittee has obtained or applied for all required permits-to-construct required by COMAR 26.11.03.16 with respect to the proposed change;

(4) Completed forms for the Department to use to notify the EPA and affected states, as required by COMAR 26.11.03.07-.12.

c. Permittee's Ability to Make Change

(1) For changes proposed as minor permit modifications to this permit that will require the applicant to obtain a permit to

construct, the permit to construct must be issued prior to the new change.

(2) During the period of time after the Permittee applies for a minor modification but before the Department acts in accordance with COMAR 26.11.03.16F(2):

(a) The Permittee shall comply with applicable requirements of the Clean Air Act related to the change and the permit terms and conditions described in the application for the minor modification.

(b) The Permittee is not required to comply with the terms and conditions in the permit it seeks to modify. If the Permittee fails to comply with the terms and conditions in the application during this time, the terms and conditions of both this permit and the application for modification may be enforced against it.

d. The Permittee is subject to enforcement action if it is determined at any time that a change made under COMAR 26.11.03.16 is not within the scope of this regulation.

e. Minor permit modification procedures may be used for Part 70 permit modifications involving the use of economic incentives, marketable permits, emissions trading, and other similar approaches, but only to the extent that the minor permit modification procedures are explicitly provided for in regulations approved by the EPA as part of the Maryland SIP or in other applicable requirements of the Clean Air Act.

14. ADMINISTRATIVE PART 70 OPERATING PERMIT AMENDMENTS

[COMAR 26.11.03.15]

The Permittee may apply to the department to make an administrative permit amendment as provided in COMAR 26.11.03.15 and in accordance with the following conditions:

a. An application for an administrative permit amendment shall:

(1) Be in writing;

(2) Include a statement certified by a responsible official that the proposed amendment meets the criteria in COMAR 26.11.03.15 for an administrative permit amendment, and

(3) Identify those provisions of this part 70 permit for which the amendment is requested, including the basis for the request.

b. An administrative permit amendment:

(1) Is a correction of a typographical error;

(2) Identifies a change in the name, address, or phone number of a person identified in this permit, or a similar administrative change involving the Permittee or other matters which are not directly related to the control of air pollution;

(3) requires more frequent monitoring or reporting by the Permittee;

(4) Allows for a change in ownership or operational control of a source for which the Department determines that no other revision to the permit is necessary and is documented as per COMAR 26.11.03.15B(4);

(5) Incorporates into this permit the requirements from preconstruction review permits or approvals issued by the Department in accordance with COMAR 26.11.03.15B(5), but only if it satisfies 40 CFR 70.7(d)(1)(v);

(6) Incorporates any other type of change, as approved by the EPA, which is similar to those in COMAR 26.11.03.15B(1)—(4);

(7) Notwithstanding COMAR 26.11.03.15B(1)—(6), all modifications to acid rain control provisions included in this Part 70 permit are governed by applicable requirements promulgated under Title IV of the Clean Air Act; or

(8) Incorporates any change to a term or condition specified as State-only enforceable, if the Permittee has obtained all necessary permits-to-construct and approvals that apply to the change.

c. The Permittee may make the change addressed in the application for an administrative amendment upon receipt by the Department of the application, if all permits-to-construct or approvals otherwise required by COMAR 26.11.02 prior to making the change have first been obtained from the Department.

d. The permit shield in COMAR 26.11.03.23 applies to administrative permit amendments made under Section B(5) of COMAR 26.11.03.15 , but only after the Department takes final action to revise the permit.

e. The Permittee is subject to enforcement action if it is determined at any time that a change made under COMAR 26.11.03.15 is not within the scope of this regulation.

15. OFF-PERMIT CHANGES TO THIS SOURCE

[COMAR 26.11.03.19]

The Permittee may make off-permit changes to this facility as provided in COMAR 26.11.03.19 and in accordance with the following conditions:

a. The Permittee may make a change to this permitted facility that is not addressed or prohibited by the federally enforceable conditions of this Part 70 permit without obtaining a Part 70 permit revision if:

(1) The Permittee has obtained all permits and approvals required by COMAR 26.11.02 and .03;

(2) The change is not subject to any requirements under Title IV of the Clean Air Act;

(3) The change is not a Title I modification; and

(4) The change does not violate an applicable requirement of the Clean Air Act or a federally enforceable term or condition of the permit.

b. For a change that qualifies under COMAR 26.11.03.19, the Permittee shall provide contemporaneous written notice to the Department and the EPA, except for a change to an emissions unit or activity that is

exempt from the Part 70 permit application, as provided in COMAR 26.11.03.04. This written notice shall describe the change, including the date it was made, any change in emissions, including the pollutants emitted, and any new applicable requirements of the Clean Air Act that apply as a result of the change.

c. Upon satisfying the requirements of COMAR 26.11.03.19, the Permittee may make the proposed change.

d. The Permittee shall keep a record describing:

(1) Changes made at the facility that result in emissions of a regulated air pollutant subject to an applicable requirement of the Clean Air Act , but not otherwise regulated under this permit; and

(2) The emissions resulting from those changes.

e. Changes that qualify under COMAR 26.11.03.19 are not subject to the requirements for Part 70 revisions.

f. The Permittee shall include each off-permit change under COMAR 26.11.03.19 in the application for renewal of the part 70 permit.

g. The permit shield in COMAR 26.11.03.23 does not apply to off-permit changes made under COMAR 26.11.03.19.

h. The Permittee is subject to enforcement action if it is determined that an off-permit change made under COMAR 26.11.03.19 is not within the scope of this regulation.

16. ON-PERMIT CHANGES TO SOURCES

[COMAR 26.11.03.18]

The Permittee may make on-permit changes that are allowed under Section 502(b)(10) of the Clean Air Act as provided in COMAR 26.11.03.18 and in accordance with the following conditions:

a. The Permittee may make a change to this facility without obtaining a revision to this Part 70 permit if:

(1) The change is not a Title I modification;

(2) The change does not result in emissions in excess of those expressly allowed under the federally enforceable provisions of the Part 70 permit for the permitted facility or for an emissions unit within the facility, whether expressed as a rate of emissions or in terms of total emissions;

(3) The Permittee has obtained all permits and approvals required by COMAR 26.11.02 and .03;

(4) The change does not violate an applicable requirement of the Clean Air Act;

(5) The change does not violate a federally enforceable permit term or condition related to monitoring, including test methods, record keeping, reporting, or compliance certification requirements;

(6) The change does not violate a federally enforceable permit term or condition limiting hours of operation, work practices, fuel usage, raw material usage, or production levels if the term or condition has been established to limit emissions allowable under this permit;

(7) If applicable, the change does not modify a federally enforceable provision of a compliance plan or schedule in this Part 70 permit unless the Department has approved the change in writing; and

(8) This permit does not expressly prohibit the change under COMAR 26.11.03.18.

b. The Permittee shall notify the Department and the EPA in writing of a proposed on-permit change under COMAR 26.11.03.18 not later than 7 days before the change is made. The written information shall include the following information:

(1) A description of the proposed change;

(2) The date on which the change is proposed to be made;

(3) Any change in emissions resulting from the change, including the pollutants emitted;

(4) Any new applicable requirement of the Clean Air Act; and

(5) Any permit term or condition that would no longer apply.

c. The responsible official of this facility shall certify in accordance with COMAR 26.11.02.02F that the proposed change meets the criteria for the use of on-permit changes under COMAR 26.11.03.18.

d. The Permittee shall attach a copy of each notice required by condition b. above to this Part 70 permit.

e. On-permit changes that qualify under COMAR 26.11.03.18 are not subject to the requirements for part 70 permit revisions.

f. Upon satisfying the requirements under COMAR 26.11.03.18, the Permittee may make the proposed change.

g. The permit shield in COMAR 26.11.03.23 does not apply to on-permit changes under COMAR 26.11.03.18.

h. The Permittee is subject to enforcement action if it is determined that an on-permit change made under COMAR 26.11.03.18 is not within the scope of the regulation or violates any requirement of the State air pollution control law.

17. FEE PAYMENT

[COMAR 26.11.02.16A(2) & (5)(b)]

a. The fee for this Part 70 permit is as prescribed in Regulation .19 of COMAR 26.11.02.

b. The fee is due on and shall be paid on or before each 12-month anniversary date of the permit.

c. Failure to pay the annual permit fee constitutes cause for revocation of the permit by the Department.

18. REQUIREMENTS FOR PERMITS-TO-CONSTRUCT AND APPROVALS

[COMAR 26.11.02.09.]

The Permittee may not construct or modify or cause to be constructed or modified any of the following sources without first obtaining, and having in current effect, the specified permits-to-construct and approvals:

a. New Source Review source, as defined in COMAR 26.11.01.01, approval required, except for generating stations constructed by electric companies;

b. Prevention of Significant Deterioration source, as defined in COMAR 26.11.01.01, approval required, except for generating stations constructed by electric companies;

c. New Source Performance Standard source, as defined in COMAR 26.11.01.01, permit to construct required, except for generating stations constructed by electric companies;

d. National Emission Standards for Hazardous Air Pollutants source, as defined in COMAR 26.11.01.01, permit to construct required, except for generating stations constructed by electric companies;

e. A stationary source of lead that discharges one ton per year or more of lead or lead compounds measured as elemental lead, permit to construct required, except for generating stations constructed by electric companies;

f. All stationary sources of air pollution, including installations and air pollution control equipment, except as listed in COMAR 26.11.02.10, permit to construct required;

g. In the event of a conflict between the applicability of (a.— e.) above and an exemption listed in COMAR 26.11.02.10, the provision that requires a permit applies.

h. Approval of a PSD or NSR source by the Department does not relieve the Permittee obtaining an approval from also obtaining all permits-to-construct required b y (c.— g.) above.

19. CONSOLIDATION OF PROCEDURES FOR PUBLIC PARTICIPATION

[COMAR 26.11.02.11C] and [COMAR 26.11.03.01K]

The Permittee may request the Department to authorize special procedures for the Permittee to apply simultaneously, to the extent possible, for a permit to construct and a revision to this permit.

These procedures may provide for combined public notices, informational meetings, and public hearings for both permits but shall not adversely affect the rights of a person, including EPA and affected states, to obtain information about the application for a permit, to comment on an application, or to challenge a permit that is issued.

These procedures shall not alter any existing permit procedures or time frames.

20. PROPERTY RIGHTS

[COMAR 26.11.03.06E(4)]

This Part 70 permit does not convey any property rights of any sort, or any exclusive privileges.

21. SEVERABILITY

[COMAR 26.11.03.06A(5)]

If any portion of this Part 70 permit is challenged, or any term or condition deemed unenforceable, the remainder of the requirements of the permit continues to be valid.

22. INSPECTION AND ENTRY

[COMAR 26.11.03.06G(3)]

The Permittee shall allow employees and authorized representatives of the Department, the EPA, and local environmental health agencies, upon

presentation of credentials or other documents as may be required by law, to:

a. Enter at a reasonable time without delay and without prior notification the Permittee's property where a Part 70 source is located, emissions-related activity is conducted, or records required by this permit are kept;

b. Have access to and make copies of records required by the permit;

c. Inspect all emissions units within the facility subject to the permit and all related monitoring systems, air pollution control equipment, and practices or operations regulated or required by the permit; and

d. Sample or monitor any substances or parameters at or related to the emissions units at the facility for the purpose of determining compliance with the permit.

23. DUTY TO PROVIDE INFORMATION

[COMAR 26.11.03.06E(5)]

The Permittee shall furnish to the Department, within a reasonable time specified by the Department, information requested in writing by the Department in order to determine whether the Permittee is in compliance with the federally enforceable conditions of this Part 70 permit, or whether cause exists for revising or revoking the permit. Upon request, the Permittee shall also furnish to the Department records required to be kept under the permit.

For information claimed by the Permittee to be confidential and therefore potentially not discloseable to the public, the Department may require the Permittee to provide a copy of the records directly to the EPA along with a claim of confidentiality.

The Permittee shall also furnish to the Department, within a reasonable time specified by the Department, information or records requested in writing by the Department in order to determine if the Permittee is in compliance with the State-only enforceable conditions of this permit.

24. COMPLIANCE REQUIREMENTS

[COMAR 26.11.03.06E(1)] and [COMAR 26.11.03.06A(11)] and [COMAR 26.11.02.05]

The Permittee shall comply with the conditions of this Part 70 permit. Noncompliance with the permit constitutes a violation of the Clean Air Act, and/or the Environment Article Title 2 of the Annotated Code of Maryland and may subject the Permittee to:

a. Enforcement action,

b. Permit revocation or revision,

c. Denial of the renewal of a Part 70 permit, or

d. Any combination of these actions.

The conditions in this Part 70 permit are enforceable by EPA and citizens under the Clean Air Act except for the State-only enforceable conditions.

Under Environment Article Section 2-609, Annotated Code of Maryland, the Department may seek immediate injunctive relief against a person who violates this permit in such a manner as to cause a threat to human health or the environment.

25. CREDIBLE EVIDENCE

Nothing in this permit shall be interpreted to preclude the use of credible evidence to demonstrate noncompliance with any term of this permit.

26. NEED TO HALT OR REDUCE ACTIVITY NOT A DEFENSE

[COMAR 26.11.03.06E(2)]

The need to halt or reduce activity in order to comply with the conditions of this permit may not be used as a defense in an enforcement action.

27. CIRCUMVENTION

[COMAR 26.11.01.06]

The Permittee may not install or use any article, machine, equipment or other contrivance, the use of which, without resulting in a reduction in the total weight of emissions, conceals or dilutes emissions which would otherwise constitute a violation of any applicable air pollution control regulation.

28. PERMIT SHIELD

[COMAR 26.11.03.23]

A permit shield as described in COMAR 26.11.03.23 shall apply only to terms and conditions in this Part 70 permit that have been specifically identified as covered by the permit shield. Neither this permit nor COMAR 26.11.03.23 alters the following:

a. The emergency order provisions in Section 303 of the Clean Air Act, including the authority of EPA under that section;

b. The liability of the Permittee for a violation of an applicable requirement of the Clean Air Act before or when this permit is issued or for a violation that continues after issuance;

c. The requirements of the Acid Rain Program, consistent with Section 408(a) of the Clean Air Act;

d. The ability of the Department or EPA to obtain information from a source pursuant to Maryland law and Section 114 of the Clean Air Act; or

e. The authority of the Department to enforce an applicable requirement of the State air pollution control law that is not an applicable requirement of the Clean Air Act.

29. ALTERNATE OPERATING SCENARIOS

[COMAR 26.11.03.06A(9)]

For all alternate operating scenarios approved by the Department and contained within this permit, the Permittee, while changing from one approved scenario to another, shall contemporaneously record in a log maintained at the facility each scenario under which the emissions unit is operating and the date and time the scenario started and ended.

SECTION III PLANT WIDE CONDITIONS

1. PARTICULATE MATTER FROM CONSTRUCTION AND DEMOLITION

[COMAR 26.11.06.03D]

The Permittee shall not cause or permit any building, its appurtenances, or a road to be used, constructed, altered, repaired, or demolished without taking reasonable precautions to prevent particulate matter from becoming airborne.

2. OPEN BURNING

[COMAR 26.11.07]

Except as provided in COMAR 26.11.07.04, the Permittee shall not cause or permit an open fire from June 1 through August 31 of any calendar year. Prior to any open burning, the Permittee shall request and receive approval from the Department.

3. AIR POLLUTION EPISODE

[COMAR 26.11.05.04]

When requested by the Department, the Permittee shall prepare in writing standby emissions reduction plans, consistent with good industrial practice and safe operating procedures, for reducing emissions creating air pollution during periods of Alert, Warning, and Emergency of an air pollution episode.

4. REPORT OF EXCESS EMISSIONS AND DEVIATIONS

[COMAR 26.11.01.07] and [COMAR 26.11.03.06C(7)]

The Permittee shall comply with the following conditions for occurrences of excess emissions and deviations from requirements of this permit, including those in Section VI – State-only Enforceable Conditions:

a. Report any deviation from permit requirements that could endanger human health or the environment, by orally notifying the Department immediately upon discovery of the deviation;

b. Promptly report all occurrences of excess emissions that are expected to last for one hour or longer by orally notifying the Department of the onset and termination of the occurrence;

c. When requested by the Department the Permittee shall report all deviations from permit conditions, including those attributed to malfunctions as defined in COMAR 26.11.01.07A, within 5 days of the request by submitting a written description of the deviation to the Department. The written report shall include the cause, dates and times of the onset and termination of the deviation, and an account of all actions planned or taken to reduce, eliminate, and prevent recurrence of the deviation;

d. The Permittee shall submit to the Department semi-annual monitoring reports that confirm that all required monitoring was performed, and that provide accounts of all deviations from permit requirements that occurred during the reporting periods. Reporting periods shall be January 1 through June 30 and July 1 through December 31, and reports shall be submitted within 30 days of the end of each reporting period. Each account of deviation shall include a description of the deviation, the dates and times of onset and termination, identification of the person who observed or discovered the deviation, causes and corrective actions taken, and actions taken to prevent recurrence. If no deviations from permit conditions occurred during a reporting period, the Permittee shall submit a written report that so states.

e. When requested by the Department, the Permittee shall submit a written report to the Department within 10 days of receiving the request concerning an occurrence of excess emissions. The report shall contain the information required in COMAR 26.11.01.07D(2).

5. ACCIDENTAL RELEASE PROVISIONS

[COMAR 26.11.03.03B(23)] and [40 CFR 68]

Should the Permittee become subject to 40 CFR 68 during the term of this permit, the Permittee shall submit risk management plans by the date specified in 40 CFR 68.150 and shall certify compliance with the requirements of 40 CFR 68 as part of the annual compliance certification as required by 40 CFR 70.

The Permittee shall initiate a permit revision or reopening according to the procedures of 40 CFR 70.7 to incorporate appropriate permit conditions into the Permittee's Part 70 permit.

6. GENERAL TESTING REQUIREMENTS

[COMAR 26.11.01.04]

The Department may require the Permittee to conduct, or have conducted, testing to determine compliance with this Part 70 permit. The Department, at its option, may witness or conduct these tests. This testing shall be done at a reasonable time, and all information gathered during a testing operation shall be provided to the Department.

7. EMISSIONS TEST METHODS

[COMAR 26.11.01.04]

Compliance with the emissions standards and limitations in this Part 70 permit shall be determined by the test methods designated and described below or other test methods submitted to and approved by the Department.

Reference documents of the test methods approved by the Department include the following:

a. 40 CFR 60, appendix A

b. 40 CFR 51, appendix M

c. The Department's Technical Memorandum 91-01 "Test Methods and Equipment Specifications for Stationary Sources", (January 1991), as amended through Supplement 3, (October 1, 1997)

8. EMISSIONS CERTIFICATION REPORT

[COMAR 26.11.01.05-1] and [COMAR 26.11.02.19C] and [COMAR 26.11.02.19D]

The Permittee shall certify actual annual emissions of regulated pollutants from the facility on a calendar year basis.

a. The certification shall be on forms obtained from the Department and submitted to the Department not later than April 1 of the year following the year for which the certification is required;

b. The individual making the certification shall certify that the information is accurate to the individual's best knowledge. The individual shall be:

(1) Familiar with each source for which the certifications forms are submitted, and

(2) Responsible for the accuracy of the emissions information;

c. The Permittee shall maintain records necessary to support the emissions certification including the following information if applicable:

(1) The total amount of actual emissions of each regulated pollutant and the total of all regulated pollutants;

(2) An explanation of the methods used to quantify the emissions and the operating schedules and production data that were used to determine emissions, including significant assumptions made;

(3) Amounts, types and analyses of all fuels used;

(4) Emissions data from continuous emissions monitors that are required by this permit, including monitor calibration and malfunction information;

(5) Identification, description, and use records of all air pollution control equipment and compliance monitoring equipment including:

(a) Significant maintenance performed,
(b) Malfunctions and downtime, and
(c) Episodes of reduced efficiency of all equipment;

(6) Limitations on source operation or any work practice standards that significantly affect emissions; and

(7) Other relevant information as required by the Department.

9. COMPLIANCE CERTIFICATION REPORT

[COMAR 26.11.03.06G(6) and (7)]

The Permittee shall submit to the Department and EPA Region III a report certifying compliance with each term of this Part 70 permit including each applicable standard, emissions limitation, and work practice for the previous calendar year by April 1 of each year.

a. The compliance certification shall include:

(1) The identification of each term or condition of this permit which is the basis of the certification;

(2) The compliance status;

(3) Whether the compliance was continuous or intermittent;

(4) The methods used for determining the compliance status of each source, currently and over the reporting period; and

(5) Any other information required to be reported to the Department that is necessary to determine the compliance status of the Permittee with this permit.

b. The Permittee shall submit the compliance certification reports to the Department and EPA simultaneously.

10. CERTIFICATION BY RESPONSIBLE OFFICIAL

[COMAR 26.11.02.02F]

All application forms, reports, and compliance certifications submitted pursuant to this permit shall be certified by a responsible official as to truth, accuracy, and completeness. The Permittee shall expeditiously notify the Department of an appointment of a new responsible official.

The certification shall be in the following form:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

11. SAMPLING AND EMISSIONS TESTING RECORD KEEPING

[COMAR 26.11.03.06C(5)]

The Permittee shall gather and retain the following information when sampling and testing for compliance demonstrations:

a. The location as specified in this permit, and the date and time that samples and measurements are taken;

b. All pertinent operating conditions existing at the time that samples and measurements are taken;

c. The date that each analysis of a sample or emissions test is performed and the name of the person taking the sample or performing the emissions test;

d. The identity of the Permittee, individual, or other entity that performed the analysis;

e. The analytical techniques and methods used; and

f. The results of each analysis.

12. GENERAL RECORDKEEPING

[COMAR 26.11.03.06C(6)]

The Permittee shall retain records of all monitoring data and information that support the compliance certification for a period of five (5) years from the date that the monitoring, sample measurement, application, report or emissions test was completed or submitted to the Department.

These records and support information shall include:

a. All calibration and maintenance records;

b. All original data collected from continuous monitoring instrumentation;

c. Records which support the annual emissions certification; and

d. Copies of all reports required by this permit.

13. GENERAL CONFORMITY

[COMAR 26.11.26.09]

The Permittee shall comply with the general conformity requirements of 40 CFR 93, Subpart B and COMAR 26.11.26.09.

14. ASBESTOS PROVISIONS

[40 CFR 61, Subpart M]

The Permittee shall comply with 40 CFR 61, Subpart M when conducting any renovation or demolition activities at the facility.

15. OZONE DEPLETING REGULATIONS

[40 CFR 82, Subpart F]

The Permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR 82, Subpart F, except as provided for MVACs in subpart B:

a. Persons opening appliances for maintenance, service, repair, or disposal shall comply with the prohibitions and required practices pursuant to 40 CFR 82.154 and 82.156.

b. Equipment used during the maintenance, service, repair or disposal of appliances shall comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.

c. Persons performing maintenance, service, repairs or disposal of appliances shall be certified by an approved technician certification program pursuant to 40 CFR 82.161.

d. Persons disposing of small appliances, MVACS, and MVAC-like appliances as defined in 40 CFR 82.152, shall comply with record keeping requirements pursuant to 40 CFR 82.155.

e. Persons owning commercial or industrial process refrigeration equipment shall comply with the leak repair requirements pursuant to 40 CFR 82.156.

f. Owners/operators of appliances normally containing 50 or more pounds of refrigerant shall keep records of refrigerant purchased and added to such appliances pursuant to 40 CFR 82.166.

16. ACID RAIN PERMIT

Not applicable

SECTION IV PLANT SPECIFIC CONDITIONS

This section provides tables that include the emissions standards, emissions limitations, and work practices applicable to each emissions unit located at this facility. The Permittee shall comply with all applicable emissions standards, emissions limitations and work practices included herein.

The tables also include testing, monitoring, record keeping and reporting requirements specific to each emissions unit. In addition to the requirements included here in **Section IV**, the Permittee is also subject to the general testing, monitoring, record keeping and reporting requirements included in **Section III – Plant Wide Conditions** of this permit.

Unless otherwise provided in the specific requirements for an emissions unit, the Permittee shall maintain at the facility for at least five (5) years, and shall make available to the Department upon request, all records that the Permittee is required under this section to establish. [Authority: COMAR 26.11.03.06C(5)(g)]

A permit shield shall apply for the applicable requirements included for each of the emissions units identified in Table IV-1 through Table IV-6.

Table IV – 1	
1.0	**Emissions Unit Numbers: EU-10, EU-11, EU-17 and EU-18** **EU-10 and EU-11**: Two (2) natural gas fired boilers each rated at 14.288 MMBtu per hour (ARA Registration Nos. 021-0459-5-0501 and 5-0502), installed in 2016. **EU-17 and EU-18**: Two (2) natural gas fired boilers each rated at 4 MMBtu per hour (ARA Registration Nos. 021-0459-5-0534 and 5-0535), installed in 2017.
1.1	**Applicable Standards/Limits:** A. Visible Emissions Limitations The Permittee shall not cause or permit visible emissions from any fuel burning equipment other than uncombined water which is greater than 20 percent opacity except during load changing, soot blowing, startup, or adjustments or occasional cleaning of control equipment if the visible emissions are not greater than 40 percent opacity and the visible emissions do not occur for more than 6 consecutive minutes in

Table IV – 1

any sixty minute period. **[Authority: COMAR 26.11.09.05A(1) and (3)]**

B. Control of NOx – NOx RACT Requirements

1. A person who owns or operates fuel-burning equipment with a rated heat input capacity of 100 MMBtu per hour or less shall:

   a. Submit to the Department an identification of each affected installation, the rated heat input capacity of each installation, and the type of fuel burned in each;

   b. Perform a combustion analysis for each installation at least once each year and optimize combustion based on the analysis;

   c. Maintain the results of the combustion analysis at the site for at least 5 years and make this data available to the Department and the EPA upon request;

   d. Once every 3 years, require each operator of the installation to attend operator training programs on combustion optimization that are sponsored by the Department, the EPA, or equipment vendors; and

   e. Prepare and maintain a record of training program attendance for each operator at the site, and make these records available to the Department upon request.

   [Authority: COMAR 26.11.09.08E]

2. For the purposes of COMAR 26.11.09.08, the equipment operator to be trained may be the person who maintains the equipment and makes the necessary adjustments for efficient operation. **[Authority: COMAR 26.11.09.08B(5)]**

C. Operational Limit

The Permittee shall burn only natural gas in each of the four (4) boilers unless the Permittee obtains an approval from the Department to burn alternate fuels. **[Authority: COMAR 26.11.02.09A]**

Table IV – 1	
1.2	**Testing Requirements:** A. Visible Emissions Limitations See Monitoring, Record Keeping, and Reporting Requirements. B. Control of NOx – NOx RACT Requirements The Permittee shall perform a combustion analysis for each installation at least once each year and optimize combustion based on the analysis. **[Authority: COMAR 26.11.09.08E(2)]** C. Operational Limit See Record Keeping and Reporting Requirements.
1.3	**Monitoring Requirements:** A. Visible Emissions Limitations The Permittee shall properly operate and maintain the boilers in a manner to minimize visible emissions. **[Authority: COMAR 26.11.03.06C]** B. Control of NOx – NOx RACT Requirements Once every three years, require each operator of the installation to attend operator training programs on combustion optimization that are sponsored by the Department, the EPA, or equipment vendors. **[Authority: COMAR 26.11.09.08E(4)]** C. Operational Limit See Record Keeping and Reporting Requirements.
1.4	**Record Keeping Requirements:** A. Visible Emissions Limitations 1. The Permittee shall maintain an operations manual and preventive maintenance plan on site. 2. The Permittee shall maintain a record of the maintenance performed that relates to combustion performance. **[Authority: COMAR 26.11.03.06C]**

Table IV – 1	
	B. Control of NOx – NOx RACT Requirements 1. The Permittee shall maintain the results of the combustion analyses and test results at the site and make this data available to the Department and EPA upon request. **[Authority: COMAR 26.11.09.08E(3)]** 2. The Permittee shall prepare and maintain a record of training program attendance for each operator. **[Authority: COMAR 26.11.09.08E(5)]** C. Operational Limit The Permittee shall maintain for at least five (5) years, and shall make available to the Department upon request, monthly records of the amount of fuel combusted during each calendar month in the four (4) natural gas fired boilers. **[Authority: 40 CFR §60.48c(g)(2) and COMAR 26.11.03.06C]**
1.5	**Reporting Requirements:** A. Visible Emissions Limitations The Permittee shall report incidents of visible emissions in accordance with permit condition 4, Section III, Plant Wide Conditions, "Report of Excess Emissions and Deviations." **[Authority: COMAR 26.11.03.06C]** B. Control of NOx – NOx RACT Requirements The Permittee shall report records of combustion analyses and training program attendance upon request. **[Authority: COMAR 26.11.09.08E(3) and (5)]** C. Operational Limit The Permittee shall submit records of the quantity and type of fuels burned with the annual emissions certification report. See permit condition 8 of Section III. **[Authority: COMAR 26.11.02.19C&D]**

Table IV – 2	
2.0	**Emissions Unit Numbers: EU-1 through EU-4** Four (4) natural gas/diesel fired boilers each rated at 32.659 MMBtu per hour (ARA Registration Nos. 021-0459-5-0388, 5-0389, 5-0390, and 5-0391), installed in January 2009.
2.1	**Applicable Standards/Limits:** A. Visible Emissions Limitations 1. The Permittee shall not cause or permit visible emissions from any fuel burning equipment other than uncombined water which is greater than 20 percent opacity except during load changing, soot blowing, startup, or adjustments or occasional cleaning of control equipment if the visible emissions are not greater than 40 percent opacity and the visible emissions do not occur for more than 6 consecutive minutes in any sixty minute period. **[Authority: COMAR 26.11.09.05A(1) and (3)]** 2. Except during periods of start up, shut down, or malfunction the Permittee shall operate each of the four (4) boilers so that the opacity of any exhaust gases does not exceed 20 percent on a 6-minute average, except for one (1) 6-minute period per hour of not more than 27 percent. **[Authority: 40 CFR §60.43c(c) and (d)]** B. Control of Sulfur Oxides 1. The Permittee shall burn only ultra low sulfur diesel fuel (No. 2 fuel oil) with a maximum sulfur content of 0.0015 percent by weight or natural gas (includes propane, as defined in 40 CFR §63.11237) in each of the four (4) boilers. Compliance with this requirement also provides compliance with COMAR 26.11.09.07A(2)(b) which limits the sulfur content of diesel fuel (No. 2 fuel oil) to 0.3 percent by weight and provides compliance with the emissions standard for sulfur dioxide established under 40 CFR 60, Subpart Dc, §60.42c. Specifically, §60.42c(d) establishes that compliance with the standard must be demonstrated by use of fuel oil with a sulfur content that does not exceed 0.5 percent by weight. **[Authority: COMAR 26.11.02.09A, ARA Premises-Wide Permit to Construct and ARA NSR Approval NSR-2007-01 issued on January 28, 2008]**

Table IV – 2

2. Installations that burn distillate oil with a sulfur content that does not exceed 0.5 weight percent sulfur or a mixture of 0.50 weight percent sulfur oil with other fuels not subject to a PM standard under §60.43c and not using a post-combustion technology (except a wet scrubber) to reduce PM or SO_2 emissions are not subject to the particulate emissions limit established in Subpart Dc.
[Authority: 40 CFR §60.43c(e)(4)]

3. The fuel oil sulfur limits of 40 CFR §60.42c(d) apply at all times, including periods of startup, shutdown, and malfunction.
[Authority: 40 CFR §60.42c(i)]

C. Control of NOx – NOx RACT Requirements

1. A person who owns or operates fuel-burning equipment with a rated heat input capacity of 100 MMBtu per hour or less shall:

   a. Submit to the Department an identification of each affected installation, the rated heat input capacity of each installation, and the type of fuel burned in each;

   b. Perform a combustion analysis for each installation at least once each year and optimize combustion based on the analysis;

   c. Maintain the results of the combustion analysis at the site for at least 5 years and make this data available to the Department and the EPA upon request;

   d. Once every 3 years, require each operator of the installation to attend operator training programs on combustion optimization that are sponsored by the Department, the EPA, or equipment vendors; and

   e. Prepare and maintain a record of training program attendance for each operator at the site, and make these records available to the Department upon request.

[Authority: COMAR 26.11.09.08E]

Table IV – 2

2. For the purposes of COMAR 26.11.09.08, the equipment operator to be trained may be the person who maintains the equipment and makes the necessary adjustments for efficient operation. **[Authority: COMAR 26.11.09.08B(5)]**

D. Control of NOx – Major NSR Requirements

1. The Permittee shall meet the following Lowest Achievable Emissions Rate (LAER) requirements for the four (4) boilers:

   a. When firing natural gas, the LAER requirement shall be the use of ultra low NOx burners designed such that emissions of NOx from each boiler do not exceed 9 parts per million by volume on a dry basis (ppmvd), corrected to 3% oxygen.

   b. When firing a diesel fuel (No. 2 fuel oil), the LAER requirements shall be a combination of the following:

      (i) The use of ultra low sulfur diesel fuel (No. 2 fuel oil) with a maximum sulfur content of 0.0015 percent by weight such that emissions of NOx from each boiler do not exceed 58 parts per million by volume on a dry basis (ppmvd) corrected to 3% oxygen; and

      (ii) A limit on total diesel fuel (No. 2 fuel oil) usage for all four (4) boilers of 60,000 gallons in any rolling 12-month period.

   [Authority: ARA NSR Approval NSR-2007-01 issued on January 28, 2008]

2. Total NOx emissions from the four (4) boilers (ARA Registration Nos. 021-0459-5-0388 through 5-0391) and five (5) generators (ARA Registration Nos. 021-0459-9-0254 through 9-0258) shall not exceed 56 tons in any rolling 12-month period. **[Authority: ARA NSR Approval NSR-2007-01 issued on January 28, 2008]**

E. Control of HAP for EU-4 only

40 CFR 63, Subpart JJJJJJ, which requires work practice standards, emission reduction measures, and management practices for control of HAP emissions for existing oil-fired boilers.

Table IV – 2	
	F. Operational Limits for EU-1, EU-2, and EU-3 only 1. The Permittee shall burn natural gas (includes propane, as defined in 40 CFR §63.11237) or diesel fuel (No. 2 fuel oil) only during periods of gas curtailment, gas supply interruption, startups, or periodic testing on liquid fuel unless the Permittee obtains an approval from the Department to burn alternate fuels. 2. Periodic testing of liquid fuel shall not exceed a combined total of 48 hours during any calendar year. 3. Period of gas curtailment or supply interruption means a period of time during which the supply of gaseous fuel to an affected boiler is restricted or halted for reasons beyond the control of the facility. The act of entering into a contractual agreement with a supplier of natural gas established for curtailment purposes does not constitute a reason that is under the control of a facility for the purposes of this definition. An increase in the cost or unit price of natural gas due to normal market fluctuations not during periods of supplier delivery restriction does not constitute a period of natural gas curtailment or supply interruption. On-site gaseous fuel system emergencies or equipment failures qualify as periods of supply interruption when the emergency or failure is beyond the control of the facility. **[Authority: COMAR 26.11.02.02H and 40 CFR §63.11237]**
2.2	**Testing Requirements:** A. Visible Emissions Limitations For each boiler the Permittee may, as an alternative to the opacity monitoring requirements in 40 CFR §60.47c(a), (a)(1), (a)(2), and (a)(3), operate in accordance with a written site-specific monitoring plan approved by the Department. The monitoring plan must include procedures and criteria for establishing and monitoring specific parameters indicative of compliance with the opacity standard specified in 40 CFR §60.43c(c). **[Authority: 40 CFR §60.47c(f)(3)]** The Permittee shall comply with the following site-specific monitoring plan approved by the Department:

Table IV – 2

For each boiler, the Permittee shall conduct Method 9 performance tests when burning diesel fuel using the following procedures, as determined by the most recent Method 9 performance test results:

1. If no visible emissions are observed, a subsequent Method 9 performance test shall be completed within either (i) 12 calendar months from the date the most recent performance test was conducted, or (ii) if the boilers are not fired with diesel fuel for a period longer than 12 months from the date of the most recent Method 9 performance test, when the boilers are first fired with diesel fuel following the most recent Method 9 performance test.

2. If visible emissions are observed but the maximum 6-minute average opacity is less than or equal to 5 percent, a subsequent Method 9 performance test shall be completed within either: (i) 6 calendar months from the date the most recent performance test was conducted, or (ii) if the boilers are not fired with diesel fuel for a period longer than 6 months from the date of the most recent Method 9 performance test, when the boilers are first fired with diesel fuel following the most recent Method 9 performance test.

3. If visible emissions are observed greater than or equal to 10% (but less than 20%) opacity during any 6-minute average the results will be documented and adjustments to the boiler operation will be made. A subsequent Method 9 performance test will be completed within 24 hours of completion of boiler adjustments to verify proper operation.

4. If visible emissions are observed greater than or equal to 20% opacity during any 6-minute average: the results will be documented, notification to MDE will be made, adjustments to the boiler operation will be made, and a subsequent Method 9 performance test will be completed within 24 hours of completion of boiler adjustments to verify proper operation.

5. Per 40 CFR §60.47c(a) when performing subsequent Method 9 performance tests: If during the initial 60 minutes of observation all 6-minute averages are less than 10 percent opacity and all individual 15-second observations are less than or equal to 20 percent opacity, the observation period may be reduced from 3 hours to 60 minutes.

Table IV – 2

For each boiler, if the maximum 6-minute opacity is less than 10 percent during the most recent Method 9 performance test, the Permittee may, as an alternative to performing subsequent Method 9 performance tests, elect to perform subsequent monitoring using Method 22 according to the following procedures:

1. The Permittee shall conduct 10 minute observations (during normal operation) each operating day the boiler fires diesel fuel using Method 22 and demonstrate that the sum of the occurrences of any visible emissions is not in excess of 5 percent of the observation period (i.e. 30 seconds per 10 minute period).

2. If the sum of the occurrences of any visible emissions is greater than 30 seconds during the initial 10-minute observation (i.e. 5%), the Permittee shall immediately conduct a 30-minute observation. If the sum of any visible emissions is greater than 5 percent of the 30-minute observation period (i.e. 90 seconds per 30 minute period) the Permittee shall either document and adjust the operation of the boiler and demonstrate within 24 hours that the sum of the occurrence of visible emissions is equal to or less than 5 percent during a 30-minute observation (i.e. 90 seconds) or conduct a new Method 9 performance test using the procedures in 40 CFR §60.47c(a) within 24 hours.

[Authority: 40 CFR §60.47c(f)(3) and COMAR 26.11.03.06C]

B. Control of Sulfur Oxides
See Monitoring, Record Keeping, and Reporting Requirements.

C. Control of NOx – NOx RACT Requirements
The Permittee shall perform a combustion analysis for each installation at least once each year and optimize combustion based on the analysis. **[Authority: COMAR 26.11.09.08E(2)]**

D. Control of NOx – Major NSR Requirements
See Monitoring, Record Keeping, and Reporting Requirements.

E. Control of HAP for EU-4 only
The Permittee must conduct biennial performance tune-ups of EU-4 while burning fuel oil. The biennial tune-up must be conducted no

Table IV – 2

more than 25 months after the previous tune-up. Each tune-up shall be conducted as follows:

1. As applicable, inspect the burner, and clean or replace any components of the burner as necessary (the Permittee may delay the burner inspection until the next scheduled unit shutdown, not to exceed 36 months from the previous inspection).

2. Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available.

3. Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (the Permittee may delay the inspection until the next scheduled unit shutdown, not to exceed 36 months from the previous inspection).

4. Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any nitrogen oxide requirement to which the unit is subject.

5. Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer.

6. Maintain on-site and submit, if requested by the Department, a report containing the following information:

    a. The concentrations of CO in the effluent stream in parts per million, by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the boiler.

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	b. A description of any corrective actions taken as a part of the tune-up of the boiler. c. The type and amount of fuel used over the 12 months prior to the tune-up of the boiler. Units sharing a fuel meter may estimate the fuel use by each unit. 7. If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 days of startup. **[Authority: 40 CFR §63.11201(b) and (d), §63.11210(c) and (j), §63.11223(a) and (b), and Table 2, Item 4, of 40 CFR 63, Subpart JJJJJJ]** F. Operational Limit for EU-1, EU-2, and EU-3 only See Record Keeping and Reporting Requirements.
2.3	**Monitoring Requirements:** A. Visible Emissions Limitations The Permittee shall conduct visible emissions observations as specified in the Testing Requirements section of this table (Table IV-2, 2.2A). B. Control of Sulfur Oxides 1. Compliance with the fuel oil sulfur limits of 40 CFR §60.42c(d) may be determined based on a certification from the fuel supplier as described under 40 CFR §60.48c(f)(1). **[Authority: 40 CFR §60.42c(h)]** 2. Boilers that burn only distillate oil that contains no more than 0.5 weight percent sulfur or liquid or gaseous fuels with potential sulfur dioxide emissions rates of 0.06 pounds per million Btu heat input or less are not required to conduct sulfur emissions monitoring or continuous opacity monitoring if they maintain fuel supplier certifications of the sulfur content of the fuels burned. **[Authority: 40 CFR §60.45c(d) and §60.47c(c)]** C. Control of NOx – NOx RACT Requirements Once every three years, require each operator of the installation to attend operator training programs on combustion optimization that are

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sponsored by the Department, the EPA, or equipment vendors. **[Authority: COMAR 26.11.09.08E(4)]**

D. Control of NOx – Major NSR Requirements

1. The Permittee shall calculate monthly NOx emissions from each boiler using the monthly natural gas and diesel fuel (No. 2 fuel oil) usage rates and emissions factors based on stack emissions test data, fuel specifications, manufacturer data, or any other method approved by the Department. **[Authority: ARA NSR Approval NSR-2007-01 issued on January 28, 2008]**

2. Each calendar month, the Permittee shall calculate the total NOx emissions from the four (4) boilers (ARA Registration Nos. 021-0459-5-0388 through 5-0391) and the five (5) generators (ARA Registration Nos. 021-0459-9-0254 through 9-0258) for the month and the total NOx emissions from the four (4) boilers and the five (5) generators for the previous rolling 12-month period to demonstrate compliance with the NOx emissions limit of 56 tons in any rolling 12-month period. **[Authority: ARA NSR Approval NSR-2007-01 issued on January 28, 2008]**

3. The Permittee shall maintain an Operations and Maintenance Plan for the boilers which incorporates all of the following:

   a. Information that is sufficient to demonstrate that air emissions from each affected emissions unit can be expected to comply with all applicable regulatory requirements during periods of normal operation. Examples of types of information that could be included to support the required demonstrations would be design criteria, vendor specifications and performance guarantees, approved computer modeling studies, and results of testing programs in which approved test methods and procedures were utilized.

   b. Procedures that provide for proper operation and maintenance of all affected emissions units and air pollution control equipment within the facility.

   c. Provisions for periodic monitoring of operating parameters and emissions as necessary to determine that the affected

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emissions units and air pollution control equipment are functioning properly.

d. Descriptions of procedures to be followed and corrective actions to be taken when monitoring information indicates that an affected emissions unit or pollution control device is not functioning properly.

e. Provisions for developing written or printable electronic records that will show whether prescribed operating, maintenance and monitoring procedures are consistently followed, and whether timely and appropriate corrective actions are taken when malfunctions occur.

[Authority: ARA NSR Approval NSR-2007-01 issued on January 28, 2008]

4. The Permittee shall monitor monthly natural gas and diesel fuel (No. 2 fuel oil) usage rates for each boiler. **[Authority: ARA NSR Approval NSR-2007-01 issued on January 28, 2008]**

E. Control of HAP for EU-4 only

At all times the Permittee must operate and maintain the boiler, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the Permittee to make any further efforts to reduce emissions if levels required by 40 CFR 63, Subpart JJJJJJ have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Department that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. **[Authority: 40 CFR §63.11205(a)]**

F. Operational Limit for EU-1, EU-2, and EU-3 only

See Record Keeping and Reporting Requirements.

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2.4 Record Keeping Requirements:

A. Visible Emissions Limitations

1. For each performance test conducted using Method 9, the Permittee shall keep the following records:
   a. Dates and time intervals of all opacity observation periods;
   b. Name, affiliation, and copy of current visible emission reading certification for each visible emission observer participating in the performance test; and
   c. Copies of all visible emission observer opacity field data sheets.

   [Authority: 40 CFR §60.48c(c)(1), and (1)(i) through (iii)]

2. For each performance test conducted using Method 22, the Permittee shall keep the following records:
   a. Dates and time intervals of all visible emissions observation periods;
   b. Name and affiliation for each visible emission observer participating in the performance test;
   c. Copies of all visible emission observer opacity field data sheets; and
   d. Documentation of any adjustments made and the time the adjustments were completed to the affected boiler operation by the Permittee to demonstrate compliance with the applicable monitoring requirements.

   [Authority: 40 CFR §60.48c(c)(2) and (2)(i) through (iv)]

B. Control of Sulfur Oxides

The Permittee shall maintain for at least five (5) years, and shall make available to the Department upon request, fuel supplier certification records including the following information:

a. The name of the oil supplier.
b. A statement from the oil supplier that the oil complies with the specifications under the definition of distillate oil in 40 CFR §60.41c.
c. The sulfur content or maximum sulfur content of the oil.

[Authority: 40 CFR §60.48c(f)(1)(i), (ii), and (iii)]

C. Control of NOx – NOx RACT Requirements

1. The Permittee shall maintain the results of the combustion analyses and test results at the site and make this data available to

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the Department and EPA upon request. **[Authority: COMAR 26.11.09.08E(3)]**

2. The Permittee shall prepare and maintain a record of training program attendance for each operator. **[Authority: COMAR 26.11.09.08E(5)]**

D. Control of NOx – Major NSR Requirements

The Permittee shall maintain for at least five (5) years, and shall make available to the Department upon request, records of the following information:

a. Total NOx emissions from the four (4) boilers (ARA Registration Nos. 021-0459-5-0388 through 5-0391) and the five (5) generators (ARA Registration Nos. 021-0459-9-0254 through 9-0258) for each calendar month and each rolling 12-month period.
b. Monthly natural gas and diesel fuel (No. 2 fuel oil) usage for each boiler. **[Authority: 40 CFR §60.48c(g)(2)]**
c. Monthly NOx emissions from each boiler.
d. All stack emissions test reports.
e. The Operations and Maintenance Plan required by the NSR Approval.
f. All supporting calculations and documentation used to demonstrate compliance with the requirements of the NSR Approval.

[Authority: ARA NSR Approval NSR-2007-01 issued on January 28, 2008]

E. Control of HAP for EU-4 only

1. As required in 40 CFR §63.10(b)(2)(xiv), the Permittee must keep a copy of each notification and report that the Permittee submitted to comply with 40 CFR 63, Subpart JJJJJJ and all documentation supporting any Initial Notification or Notification of Compliance Status that the Permittee submitted.

2. The Permittee must keep records to document conformance with the work practices, emission reduction measures, and management practices required by 40 CFR §63.11214 and §63.11223 as follows:

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a. Records must identify the boiler, the date of tune-up, the procedures followed for tune-up, and the manufacturer's specifications to which the boiler was tuned.

b. A copy of the energy assessment report for the boiler.

c. Records of the occurrence and duration of each malfunction of the boiler, or of the associated air pollution control and monitoring equipment.

d. Records of actions taken during periods of malfunction to minimize emissions in accordance with the general duty to minimize emissions in 40 CFR §63.11205(a), including corrective actions to restore the malfunctioning boiler, air pollution control, or monitoring equipment to its normal or usual manner of operation.

e. Records must be in a form suitable and readily available for expeditious review. The Permittee must keep each record for five (5) years following the date of each recorded action. The Permittee must keep each record on-site or be accessible from a central location by computer or other means that instantly provide access at the site for at least two (2) years after the date of each recorded action. The Permittee may keep the records off site for the remaining three (3) years.
[Authority: 40 CFR §63.11225(c) and (d)]

F. Operational Limit for EU-1, EU-2, and EU-3 only

1. The Permittee shall keep monthly records of the types and amounts of fuels burned in each boiler.

2. The Permittee shall maintain documentation that fuel oil was only burned in the boilers during periods of natural gas curtailment or for fuel oil testing (for periods not to exceed a total of 48 hours per calendar year).
[Authority: COMAR 26.11.03.06C]

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2.5	**Reporting Requirements:** A. Visible Emissions Limitations Within 45 days following each Method 9 performance test or Method 22 observation, the Permittee shall submit to the Department the performance test or observation results. **[Authority: 40 CFR §60.48c(b)]** B. Control of Sulfur Oxides The Permittee shall submit reports to the Department including the following information for the four (4) boilers: 1. Calendar dates covered in the reporting period. **[Authority: 40 CFR §60.48c(e)(1)]** 2. Records of fuel supplier certification including the name of the oil supplier and a statement from the oil supplier that the oil complies with the specifications under the definition of distillate oil in 40 CFR §60.41c, and the sulfur content of the oil. The report shall include a certified statement signed by the Permittee that the records of fuel supplier certifications submitted represent all of the fuel combusted during the reporting period. **[Authority: 40 CFR §60.48c(e)(11) and §60.48c(f)(1)(i), (ii), and (iii)]** 3. In addition to the applicable requirements of 40 CFR §60.7, excess emission reports of any excess emissions that occur during the reporting period. **[Authority: 40 CFR §60.48c(c)]** 4. The reporting period for the reporting required by 40 CFR §60.48c is each six (6) month period. All reports shall be submitted to the Department with the semi-annual monitoring report required under permit condition 4, Section III, Plant Wide Conditions, "Report of Excess Emissions and Deviations" and shall be postmarked by the 30th day following the end of the reporting period. **[Authority: 40 CFR §60.48c(j)]** C. Control of NOx – NOx RACT Requirements The Permittee shall report records of combustion analyses and training program attendance upon request. **[Authority: COMAR 26.11.09.08E(3) and (5)]** D. Control of NOx – Major NSR Requirements 1. If total NOx emissions from the four (4) boilers (ARA Registration Nos. 021-0459-5-0388 through 5-0391) and the five (5) generators (ARA Registration Nos. 021-0459-9-0254 through 9-0258) exceed

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56 tons in any rolling 12-month period, the Permittee shall notify the Department in writing within 30 days of the exceedance. **[Authority: ARA NSR Approval NSR-2007-01 issued on January 28, 2008]**

2. All required records shall be submitted to the Department upon request. **[Authority: COMAR 26.11.03.06C]**

E. Control of HAP for EU-4 only

1. The Permittee must prepare a biennial compliance report containing the following information:

   a. Company name and address.

   b. Statement by a responsible official, with the official's name, title, phone number, email address, and signature, certifying the truth, accuracy and completeness of the notification and a statement of whether the source has complied with all the relevant standards and other requirements of 40 CFR 63, Subpart JJJJJJ. The notification must include the following certification of compliance, as applicable, and signed by a responsible official:

      i. "This facility complies with the requirements in 40 CFR §63.11223 to conduct a biennial tune-up of the boiler."

      ii. "This facility complies with the requirement in 40 CFR §§63.11214(d) and 63.11223(g) to minimize the boiler's time spent during startup and shutdown and to conduct startups and shutdowns according to the manufacturer's recommended procedures or procedures specified for a boiler of similar design if manufacturer's recommended procedures are not available."

2. If the Permittee has switched fuels or made a physical change to the boiler and the fuel switch or change resulted in the applicability of a different subcategory within 40 CFR 63, Subpart JJJJJJ, or in the boiler switching out of 40 CFR 63, Subpart JJJJJJ due to a

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	change to 100 percent natural gas, the Permittee must provide notice of the date upon which the Permittee made the change, within 30 days of the change. The notification must identify: a. The name of the owner or operator of the affected source, the location of the source, the boiler that was changed and the date of the notice. b. The date upon which the change occurred and a description of the change. **[Authority: 40 CFR §63.11225(a), (b), and (g)]** F. Operational Limit for EU-1, EU-2, and EU-3 only Required records shall be submitted to the Department upon request. **[Authority: COMAR 26.11.03.06C]**

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3.0	**Emissions Unit Numbers: EU-5 and EU-6** Two (2) diesel fired non-emergency generators each rated at 2,701 kilowatts and each controlled by a selective catalytic reduction (SCR) system for control of NOx emissions. (ARA Registration Nos. 021-0459-9-0254 and 9-0255), installed in May 2009 and modified in 2020.
3.1	**Applicable Standards/Limits:** A. Visible Emissions Limitations 1. The Permittee may not cause or permit the discharge of emissions from any engine, operating at idle greater than 10 percent opacity. **[Authority: COMAR 26.11.09.05E(2)]** 2. The Permittee may not cause or permit the discharge of emissions from any engine, operating at other than idle conditions, greater than 40 percent opacity. **[Authority: COMAR 26.11.09.05E(3)]** **Exceptions.** COMAR 26.11.09.05E(2) does not apply for a period of 2 consecutive minutes after a period of idling of 15 consecutive minutes for the purpose of clearing the exhaust system.

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COMAR 26.11.09.05E(2) does not apply to emissions resulting directly from cold engine start-up and warm-up for the following maximum periods:

(i) Engines that are idled continuously when not in service: 30 minutes

(ii) All other engines: 15 minutes

COMAR 26.11.09.05E(2) and (3) do not apply while maintenance, repair, or testing is being performed by qualified mechanics. **[Authority: COMAR 26.11.09.05E(4)**

B. Control of Sulfur Oxides and NSPS Fuel Requirements

1. The Permittee shall burn only ultra low sulfur diesel fuel (No. 2 fuel oil) with a maximum sulfur content of 0.0015 percent by weight in each of the two (2) non-emergency generators unless the Permittee obtains an approval from the Department to burn alternate fuels. Compliance with this requirement demonstrates compliance with COMAR 26.11.09.07A(2)(b) which limits the sulfur content of diesel fuel (No. 2 fuel oil) to 0.3 percent by weight. **[Authority: COMAR 26.11.02.09A]**

2. The Permittee must use diesel fuel in each of the two (2) non-emergency generators that meets the requirements of 40 CFR §80.510(b) for nonroad diesel fuel, i.e. diesel fuel that has a per-gallon sulfur content that does not exceed 15 ppm, and that either has a minimum per-gallon cetane index of 40 or a maximum per-gallon aromatic content of 35 volume percent. **[Authority: 40 CFR §60.4207(b)]**

C. NSPS Emissions Standards and Control of NOx – Major NSR Requirements

1. The Permittee must comply with the following emissions standards for non-emergency generators with a maximum engine power greater than 3,000 horsepower, a displacement of less than 10 liters per cylinder and a 2007 model year:

   a. Hydrocarbons: 1.0 gram per horsepower-hour (g/hp-hr) or 1.3 grams per kilowatt-hour (g/kW-hr).

   b. NOx: 6.9 g/hp-hr or 9.2 g/kW-hr.

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c. CO: 8.5 g/hp-hr or 11.4 g/kW-hr.

d. Particulate Matter (PM): 0.4 g/hp-hr or 0.54 g/kW-hr.

[Authority: 40 CFR §60.4204(b)]

2. The Permittee shall meet the following LAER requirements for the two (2) non-emergency generators:

   a. Each non-emergency generator shall be equipped with a selective catalytic reduction (SCR) system designed to reduce NOx emissions from each non-emergency generator by 90% or greater.

   b. Each non-emergency generator and SCR system shall be designed such that post-control NOx emissions from each non-emergency generator do not exceed 0.61 grams per horsepower-hour (g/hp-hr).

   c. The 90% NOx emissions control efficiency and the short term NOx emissions limit of 0.61 g/hp-hr shall not apply during start-up conditions.

   d. The duration of start-up shall not exceed 9 minutes.

   e. "Start-up" is defined as the period of time from the initiation of operation of a non-emergency generator for maintenance, testing, emergency standby power or other use to full SCR system functionality. The start-up period is limited to 9 minutes after the non-emergency generators reach at least 30 percent load.

Compliance with the LAER requirements for the ARA NSR Approval NSR-2007-01 issued to AstraZeneca on January 28, 2008 also demonstrates compliance with the NOx emissions limits specified in 40 CFR §60.4204(b).

[Authority: ARA NSR Approval NSR-2007-01 issued on January 28, 2008]

3. Total NOx emissions from the four (4) boilers (ARA Registration Nos. 021-0459-5-0388 through 5-0391) and five (5) generators (ARA Registration Nos. 021-0459-9-0254 through 9-0258) shall not

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exceed 56 tons in any rolling 12-month period. **[Authority: ARA NSR Approval NSR-2007-01 issued on January 28, 2008]**

D. Control of NOx – Major NSR NOx Operational Limits
Total operating hours, including hours used for maintenance and testing shall not exceed 2626 hours in any rolling 12-month period for each of the two (2) non-emergency generators. **[Authority: ARA NSR Approval NSR-2007-01 issued on January 28, 2008]**

E. Control of HAP
The Permittee must meet the requirements of 40 CFR, Part 63, Subpart ZZZZ by meeting the requirements of 40 CFR, Part 60, Subpart IIII for the two (2) non-emergency generators. No further requirements apply to the two (2) non-emergency generators under 40 CFR, Part 63, Subpart ZZZZ. **[Authority: 40 CFR §63.6590(c)(1)]**

F. Control of NOx – NOx RACT Requirements
1. A person who owns or operates fuel-burning equipment with a capacity factor (as defined in 40 CFR, Part 72.2) of 15 percent or less shall:

   a. Provide certification of the capacity factor of the equipment to the Department in writing;

   b. For fuel-burning equipment that operates more than 500 hours during a calendar year, perform a combustion analysis and optimize combustion at least once annually;

   c. Maintain the results of the combustion analysis at the site for at least 5 years and make these results available to the Department and the EPA upon request;

   d. Require each operator of an installation, except combustion turbines, to attend operator training programs at least once every 3 years, on combustion optimization that are sponsored by the Department, the EPA, or equipment vendors; and

   e. Maintain a record of training program attendance for each operator at the site, and make these records available to the Department upon request.

[Authority: COMAR 26.11.09.08G]

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	2. For the purposes of COMAR 26.11.09.08, the equipment operator to be trained may be the person who maintains the equipment and makes the necessary adjustments for efficient operation. **[Authority: COMAR 26.11.09.08B(5)]**
3.2	**Testing Requirements:** A. Visible Emissions Limitations See Monitoring, Record Keeping, and Reporting Requirements. B. Control of Sulfur Oxides and NSPS Fuel Requirements See Monitoring, Record Keeping, and Reporting Requirements. C. NSPS Emissions Standards and Control of NOx – Major NSR Requirements At least once during the term of this permit, the Permittee shall conduct stack emissions tests to measure the NOx emissions entering and exiting the catalyst bed of each SCR system for the two (2) non-emergency generators in order to demonstrate compliance with the NSPS and LAER requirements. 1. All required stack emissions tests shall be conducted in accordance with the testing specifications in the Department's Technical Memorandum 91-01, "Test Methods and Equipment Specifications for Stationary Sources" (January 1991), or other test methods approved by the Department. 2. During each required stack emissions test, the affected equipment shall be operated at 90 percent or higher of its rated capacity unless an alternate operating scenario is approved by the Department. 3. At least 30 days prior to each required stack emissions test, the Permittee shall submit to the Department a test protocol for review and approval. 4. Within 45 days following each required stack emissions test, the Permittee shall submit to the Department a stack emissions test report, including the following information:

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a. Hourly gas volume and oxygen content of the exhaust gases exiting the SCR exhaust stack.

b. Diesel exhaust fluid (DEF) pressure recorded every 15 minutes during the testing period.

c. SCR conversion efficiency recorded every 15 minutes during the testing period.

d. Engine load recorded every 15 minutes during the testing period.

e. Ammonia concentration in the exhaust gases (ammonia slip) exiting the SCR system.

f. Hourly NOx emissions data including the NOx concentration and temperature of the gases entering and exiting the catalyst bed of the SCR system.

g. Calculation of NOx percent removal across the SCR system and SCR NOx emission rate in grams per horsepower-hour (g/hp-hr) for each test run.

[Authority: COMAR 26.11.03.06C]

D. Control of NOx – Major NSR NOx Operational Limits
See Record Keeping and Reporting Requirements.

E. Control of HAP
The Permittee must meet the requirements of 40 CFR, Part 63, Subpart ZZZZ by meeting the requirements of 40 CFR, Part 60, Subpart IIII for the two (2) non-emergency generators. No further requirements apply to the two (2) non-emergency generators under 40 CFR, Part 63, Subpart ZZZZ. **[Authority: 40 CFR §63.6590(c)(1)]**

F. Control of NOx – NOx RACT Requirements
The Permittee shall perform combustion analysis and optimize combustion once each year, for each year that the emission unit operates more than 500 hours. **[Authority: COMAR 26.11.09.08G(1)(b)]**

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3.3	**Monitoring Requirements:** A. Visible Emissions Limitations The Permittee shall properly operate and maintain each non-emergency generator to minimize visible emissions. **[Authority: COMAR 26.11.03.06C]** B. Control of Sulfur Oxides and NSPS Fuel Requirements The Permittee shall obtain a certification from the fuel supplier indicating that the oil complies with the sulfur content and cetane index requirements for the fuel oil. **[Authority: COMAR 26.11.03.06C]** C. NSPS Emissions Standards and Control of NOx – Major NSR Requirements 1. The Permittee must operate and maintain each generator that achieves the emissions standards as required by 40 CFR §60.4204 for non-emergency generators according to the manufacturer's written instructions or procedures developed by the Permittee that are approved by the engine manufacturer over the entire life of the engine. In addition the Permittee may only change those settings that are permitted by the manufacturer. The Permittee must also meet the requirements of 40 CFR Parts 89, 94, and/or 1068 as applicable. **[Authority: 40 CFR §60.4206 and 40 CFR §60.4211(a)]** 2. The Permittee shall monitor the SCR inlet temperature once per operating day during normal operating conditions. **[Authority: Indicator 1 of the CAM Plan in Table IV-3a]** 3. The Permittee shall monitor the diesel exhaust fluid pressure of the SCR once per operating day during normal operating conditions. **[Authority: Indicator 2 of the CAM Plan in Table IV-3a]** 4. The Permittee shall monitor the percent engine load, the pump output percent and the corresponding SCR conversion efficiency once per operating day during normal operating conditions. **[Authority: Indicator 3 of the CAM Plan in Table IV-3a]** 5. The Permittee shall maintain an Operations and Maintenance Plan for the generators, including the SCR systems used for air pollution control, which incorporates all of the following:

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a. Information that is sufficient to demonstrate that air emissions from each affected emissions unit can be expected to comply with all applicable regulatory requirements during periods of normal operation. Examples of types of information that could be included to support the required demonstrations would be design criteria, vendor specifications and performance guarantees, approved computer modeling studies, and results of testing programs in which approved test methods and procedures were utilized.

b. Procedures that provide for proper operation and maintenance of all affected emissions units and air pollution control equipment within the facility.

c. Provisions for periodic monitoring of operating parameters and emissions as necessary to determine that the affected emissions units and air pollution control equipment are functioning properly.

d. Descriptions of procedures to be followed and corrective actions to be taken when monitoring information indicates that an affected emissions unit or pollution control device is not functioning properly.

e. Provisions for developing written or printable electronic records that will show whether prescribed operating, maintenance and monitoring procedures are consistently followed, and whether timely and appropriate corrective actions are taken when malfunctions occur.

[Authority: ARA NSR Approval NSR-2007-01 issued on January 28, 2008 and Indicator No. 4 of the CAM Plan in Table IV-3a]

6. The Permittee shall monitor monthly diesel fuel (No. 2 fuel oil) usage rates for each generator. **[Authority: ARA NSR Approval NSR-2007-01 issued on January 28, 2008]**

7. The Permittee shall calculate monthly NOx emissions from each generator using the monthly diesel fuel (No. 2 fuel oil) usage rates and emissions factors based on stack emissions test data, fuel specifications, manufacturer data, or any other method approved

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	by the Department. **[Authority: ARA NSR Approval NSR-2007-01 issued on January 28, 2008]** 8. Each calendar month, the Permittee shall calculate the total NOx emissions from the four (4) boilers (ARA Registration Nos. 021-0459-5-0388 through 5-0391) and the five (5) generators (ARA Registration Nos. 021-0459-9-0254 through 9-0258) for the month and the total NOx emissions from the four (4) boilers and the five (5) generators for the previous rolling 12-month period to demonstrate compliance with the NOx emissions limit of 56 tons in any rolling 12-month period. **[Authority: ARA NSR Approval NSR-2007-01 issued on January 28, 2008]** D. Control of NOx – Major NSR NOx Operational Limits See Record Keeping and Reporting Requirements. E. Control of HAP The Permittee must meet the requirements of 40 CFR, Part 63, Subpart ZZZZ by meeting the requirements of 40 CFR, Part 60, Subpart IIII for the two (2) non-emergency generators. No further requirements apply to the two (2) non-emergency generators under 40 CFR, Part 63, Subpart ZZZZ. **[Authority: 40 CFR §63.6590(c)(1)]** F. Control of NOx – NOx RACT Requirements Once every three years, require each operator of the installation to attend operator training programs on combustion optimization that are sponsored by the Department, the EPA, or equipment vendors. **[Authority: COMAR 26.11.09.08E(4)]**
3.4	**Record Keeping Requirements:** A. Visible Emissions Limitations The Permittee shall maintain records at the premises of maintenance/repairs performed that relate to combustion performance. **[Authority: COMAR 26.11.03.06C]** B. Control of Sulfur Oxides and NSPS Fuel Requirements The Permittee shall retain fuel supplier certifications at the premises stating that the fuel is in compliance with the sulfur content and cetane index/aromatic content requirements for the fuel oil. **[Authority: COMAR 26.11.03.06C]**

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C. NSPS Emissions Standards and Control of NOx – Major NSR Requirements

1. The Permittee shall maintain for at least five (5) years, and shall make available to the Department upon request, records of the following information for the two (2) non-emergency generators:
   a. All notifications submitted to comply with 40 CFR Part 60, Subpart IIII and all documentation supporting any notification. **[Authority: 40 CFR §60.4214(a)(2)(i)]**
   b. Maintenance conducted on the engine. **[Authority: 40 CFR §60.4214(a)(2)(ii)]**
   c. If the generator is a certified engine, documentation from the manufacturer that the engine is certified to meet the emissions standards. **[Authority: 40 CFR §60.4214(a)(2)(iii)]**
   d. If the generator is not a certified engine, documentation that the engine meets the emissions standards. **[Authority: 40 CFR §60.4214(a)(2)(iv)]**

2. The Permittee shall maintain for at least five (5) years, and shall make available to the Department upon request, records of the following information:
   a. Total NOx emissions from the four (4) boilers (ARA Registration Nos. 021-0459-5-0388 through 5-0391) and the five (5) generators (ARA Registration Nos. 021-0459-9-0254 through 9-0258) for each calendar month and each rolling 12-month period.
   b. Monthly diesel fuel (No. 2 fuel oil) usage for each generator.
   c. Monthly NOx emissions from each generator.
   d. All stack emissions test reports.
   e. SCR inlet temperature records for each operating day.
   f. DEF pressure records for each operating day.
   g. SCR conversion efficiency records for each operating day.
   h. The Operations and Maintenance Plan required by the NSR Approval.
   i. All supporting calculations and documentation used to demonstrate compliance with the requirements of the NSR Approval.

[Authority: ARA NSR Approval NSR-2007-01 issued on January 28, 2008 and the CAM Plan in Table IV-3a]

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	D. Control of NOx – Major NSR NOx Operational Limits The Permittee shall maintain for at least five (5) years, and shall make available to the Department upon request, annual records of the total hours of operation for each generator. **[Authority: ARA NSR Approval NSR-2007-01 issued on January 28, 2008]** E. Control of HAP The Permittee must meet the requirements of 40 CFR, Part 63, Subpart ZZZZ by meeting the requirements of 40 CFR, Part 60, Subpart IIII for the two (2) non-emergency generators. No further requirements apply to the two (2) non-emergency generators under 40 CFR, Part 63, Subpart ZZZZ. **[Authority: 40 CFR §63.6590(c)(1)]** F. Control of NOx – NOx RACT Requirements The Permittee shall maintain the following records at the premises: 1. Records of the calculated capacity factors. **[Authority: COMAR 26.11.03.06C]** 2. Records of combustion analysis performed if the hours of operation exceed 500. **[Authority: COMAR 26.11.09.08G(1)(c)]** 3. Record of training program attendance for each operator. **[Authority: COMAR 26.11.09.08G(1)(e)]**
3.5	**Reporting Requirements:** A. Visible Emissions Limitations The Permittee shall report incidents of visible emissions in accordance with permit condition 4, Section III, Plant Wide Conditions, "Report of Excess Emissions and Deviations." **[Authority: COMAR 26.11.03.06C]** B. Control of Sulfur Oxides and NSPS Fuel Requirements The Permittee shall report fuel supplier certification records to the Department upon request. **[Authority: COMAR 26.11.03.06C]** C. NSPS Emissions Standards and Control of NOx – Major NSR Requirements 1. The Permittee shall submit all required records to the Department upon request. **[Authority: COMAR 26.11.03.06C]**

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2. If total NOx emissions from the four (4) boilers (ARA Registration Nos. 021-0459-5-0388 through 5-0391) and the five (5) generators (ARA Registration Nos. 021-0459-9-0254 through 9-0258) exceed 56 tons in any rolling 12-month period, the Permittee shall notify the Department in writing within 30 days of the exceedance. **[Authority: ARA NSR Approval NSR-2007-01 issued on January 28, 2008]**

3. All records required by the CAM Plan in Table IV-3a shall be submitted to the Department upon request. **[Authority: COMAR 26.11.03.06C]**

D. Control of NOx – Major NSR NOx Operational Limits
The Permittee shall make all required records available to the Department upon request. **[Authority: COMAR 26.11.03.06C]**

E. Control of HAP
The Permittee must meet the requirements of 40 CFR, Part 63, Subpart ZZZZ by meeting the requirements of 40 CFR, Part 60, Subpart IIII for the two (2) non-emergency generators. No further requirements apply to the two (2) non-emergency generators under 40 CFR, Part 63, Subpart ZZZZ. **[Authority: 40 CFR §63.6590(c)(1)]**

F. Control of NOx – NOx RACT Requirements
The Permittee shall make all records (combustion analyses, emissions unit hours of operation and training program attendance) to meet the NOx RACT requirements, available to the Department upon request. The Permittee shall provide certification of the capacity factor of the equipment to the Department in writing as part of the April 1 emissions certification report. **[Authority: COMAR 26.11.09.08G, COMAR 26.11.02.19C, and COMAR 26.11.03.06C]**

Table IV – 3a	
COMPLIANCE ASSURANCE MONITORING REQUIREMENTS – PART 64	
Two (2) Selective Catalytic Reduction (SCR) Systems for Non-Emergency Generators (EU-5 and EU-6)	
Applicable Requirements	**Limit: 0.61 g/HP-hr and 90 percent reduction of NOx emissions**
I. Indicator No. 1	SCR inlet temperature.
Measurement Approach	Temperature sensor installed at the inlet of the SCR.
II. Indicator Range	350° C - 500° C during normal operations
III. Performance Criteria	
Data Representativeness	The monitoring system consists of a temperature sensor located in the SCR inlet ductwork.
QA/QC Practices and Criteria	Visual inspections of temperature sensor. An alarm will be triggered on the SCR if the temperature sensor fails.
Monitoring Frequency	Once per operating day during normal operations.
Data Collection Procedures	The SCR inlet temperature readings will be documented in a log.
Averaging Periods and Excursions	Daily temperature must be within the acceptable indicator range
I. Indicator No. 2	Diesel exhaust fluid active pressure
Measurement Approach	Install a pressure sensor.
II. Indicator Range	Active pressure should be less than 10.9 kilopascals.
III. Performance Criteria	
Data Representativeness	The diesel exhaust fluid pressure sensor monitors the active pressure of the diesel exhaust fluid injection prior to the catalyst.
QA/QC Practices and Criteria	Diesel exhaust fluid pressure sensor and pitot lines inspected on an annual basis.
Monitoring Frequency	Once per operating day during normal operations.
Data Collection Procedures	The pressure readings will be documented in a log.

Table IV – 3a	
COMPLIANCE ASSURANCE MONITORING REQUIREMENTS – PART 64	
Two (2) Selective Catalytic Reduction (SCR) Systems for Non-Emergency Generators (EU-5 and EU-6)	
Applicable Requirements	**Limit: 0.61 g/HP-hr and 90 percent reduction of NOx emissions**
Averaging Periods and Excursions	Daily pressure should not exceed the maximum indicator value.
I. Indicator No. 3	SCR Conversion Efficiency
Measurement Approach	Record percent engine load and corresponding SCR conversion efficiency.
II. Indicator Range	The conversion efficiency should be 90% or greater.
III. Performance Criteria	
Data Representativeness	The engine and SCR control modules monitor and provide electrical load on the generator and generator engine and the corresponding urea injection pump output percentage and SCR conversion efficiency.
QA/QC Practices and Criteria	The urea pump output is factory calibrated.
Monitoring Frequency	SCR conversion efficiency is checked once per operating day during normal operations.
Data Collection Procedures	The SCR conversion efficiency is documented in a log.
Averaging Periods and Excursions	Daily SCR conversion efficiency must meet or exceed the minimum indicator value.
I. Indicator No. 4	Inspection and maintenance program
Measurement Approach	Inspection and maintenance checks.
II. Indicator Range	Inspections and maintenance will be performed as recommended by the manufacturer.
III. Performance Criteria	
Data Representativeness	Inspection and maintenance checks performed to ensure proper equipment operation.

Table IV – 3a	
COMPLIANCE ASSURANCE MONITORING REQUIREMENTS – PART 64	
Two (2) Selective Catalytic Reduction (SCR) Systems for Non-Emergency Generators (EU-5 and EU-6)	
Applicable Requirements	**Limit: 0.61 g/HP-hr and 90 percent reduction of NOx emissions**
QA/QC Practices and Criteria	Qualified personnel will perform inspection and maintenance activities.
Monitoring Frequency	Inspections and maintenance checks will be performed on a monthly, quarterly, semi-annual, and/or annual basis as specified on the maintenance work order.
Data Collection Procedures	The inspection and maintenance checks will be documented on a maintenance work order.
Excursions	Failure to conduct inspections and maintenance checks as outlined in the program.

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4.0	**Emissions Unit Numbers: EU-7 through EU-9 and EU-14 through EU-16** Three (3) diesel fired, federal non-emergency generators each rated at 2,701 kilowatts (ARA Registration Nos. 021-0459-9-0256, 9-0257, and 9-0258), installed in February 2009. One (1) diesel fired, emergency generator rated at 750 kilowatts (ARA Registration No. 021-0459-9-0382), installed in 2015. One (1) diesel fired, emergency generator rated at 1,500 kilowatts (ARA Registration No. 021-0459-9-0392), installed in 2017. One (1) diesel fired, emergency generator rated at 1,500 kilowatts (ARA Registration No. 021-0459-9-0393), installed in 2017.
4.1	**Applicable Standards/Limits:** A. Visible Emissions Limitations 1. The Permittee may not cause or permit the discharge of emissions from any engine, operating at idle greater than 10 percent opacity. **[Authority: COMAR 26.11.09.05E(2)]**

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2. The Permittee may not cause or permit the discharge of emissions from any engine, operating at other than idle conditions, greater than 40 percent opacity. **[Authority: COMAR 26.11.09.05E(3)]**

Exceptions. COMAR 26.11.09.05E(2) does not apply for a period of 2 consecutive minutes after a period of idling of 15 consecutive minutes for the purpose of clearing the exhaust system.

COMAR 26.11.09.05E(2) does not apply to emissions resulting directly from cold engine start-up and warm-up for the following maximum periods:
(i) Engines that are idled continuously when not in service: 30 minutes
(ii) All other engines: 15 minutes

COMAR 26.11.09.05E(2) and (3) do not apply while maintenance, repair, or testing is being performed by qualified mechanics.

B. Control of Sulfur Oxides and NSPS Fuel Requirements

1. For EU-7, EU-8, and EU-9 only, the Permittee shall burn only ultra low sulfur diesel fuel (No. 2 fuel oil) with a maximum sulfur content of 0.0015 percent by weight in each of the three (3) generators unless the Permittee obtains an approval from the Department to burn alternate fuels. Compliance with this requirement demonstrates compliance with COMAR 26.11.09.07A(2)(b) which limits the sulfur content of diesel fuel (No. 2 fuel oil) to 0.3 percent by weight. **[Authority: COMAR 26.11.02.09A]**

2. The Permittee must use diesel fuel in the generators that meets the requirements of 40 CFR §80.510(b) for nonroad diesel fuel, i.e., diesel fuel that has a per-gallon sulfur content that does not exceed 15 ppm, and that either has a minimum per-gallon cetane index of 40 or a maximum per-gallon aromatic content of 35 volume percent. **[Authority: 40 CFR §60.4207(b)]**

C. NSPS Emissions Standards and Control of NOx – Major NSR Requirements

1. For EU-7, EU-8, and EU-9 only:

   a. The Permittee must comply with the following emissions standards for federal non-emergency generators:

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i. Hydrocarbons: 1.0 gram per horsepower-hour (g/hp-hr) or 1.3 grams per kilowatt-hour (g/kW-hr)

ii. NOx: 6.9 g/hp-hr or 9.2 g/kW-hr

iii. CO: 8.5 g/hp-hr or 11.4 g/kW-hr

iv. Particulate Matter (PM): 0.4 g/hp-hr or 0.54 g/kW-hr

[Authority: 40 CFR §60.4204(b)]

b. The Permittee shall meet the following LAER requirement for the three (3) generators:

Each generator shall be designed such that NOx emissions from each emergency generator do not exceed 6.06 grams per horsepower-hour (g/hp-hr).

Compliance with the LAER requirement for the ARA NSR Approval NSR-2007-01 issued to AstraZeneca on January 28, 2008 also demonstrates compliance with the NOx emissions limits specified in 40 CFR §60.4205(b). **[Authority: ARA NSR Approval NSR-2007-01 issued on January 28, 2008]**

c. Total NOx emissions from the four (4) boilers (ARA Registration NOx. 021-0459-5-0388 through 5-0391) and five (5) generators (ARA Registration Nos. 021-0459-9-0254 through 9-0258) shall not exceed 56 tons in any rolling 12-month period. **[Authority: ARA NSR Approval NSR-2007-01 issued on January 28, 2008]**

2. For EU-14, EU-15, and EU-16 only:

a. The Permittee must comply with the following emissions standards for each emergency generator:

i. Non-Methane Hydrocarbons (NMHC) and NOx: 4.8 gram per horsepower-hour (g/hp-hr) or 6.4 grams per kilowatt-hour (g/kW-hr)

ii. CO: 2.6 g/hp-hr or 3.5 g/kW-hr

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iii. Particulate Matter (PM): 0.15 g/hp-hr or 0.2 g/kW-hr
[Authority: 40 CFR §60.4205(b)]

b. The Permittee must comply with the following opacity standards for each emergency generator:

i. Exhaust opacity must not exceed 20 percent during the acceleration mode.

ii. Exhaust opacity must not exceed 15 percent during the lugging mode.

iii. Exhaust opacity must not exceed 50 percent during the peaks in either the acceleration or lugging modes.
[Authority: 40 CFR §60.4205(b)]

D. Operational Limits

1. For EU-14, EU-15, and EU-16 only, the Permittee must operate each emergency generator according to the following requirements:

a. To be considered an emergency stationary RICE under 40 CFR 60, Subpart IIII, any operation other than emergency operation, and maintenance and testing is prohibited. **[Authority: 40 CFR §60.4211(f)]**

b. There is no time limit on the use of the emergency generator in emergency situations. **[Authority: 40 CFR §60.4211(f)(1)]**

c. The Permittee may operate the emergency generator for any combination of the following purposes for a maximum of 100 hours per calendar year: Maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The Permittee may petition the Department for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the Permittee maintains

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records indicating that federal, state, or local standards require maintenance and testing of the emergency generator beyond 100 hours per calendar year. **[Authority: 40 CFR §60.4211(f)(2)(i)]**

2. Total operating hours, including hours used for maintenance and testing, shall not exceed 500 hours in any rolling 12-month period for each of the three (3) generators (EU-7, EU-8, and EU-9). **[Authority: ARA NSR Approval NSR-2007-01 issued on January 28, 2008]**

E. Control of HAP

The Permittee must meet the requirements of 40 CFR, Part 63, Subpart ZZZZ by meeting the requirements of 40 CFR, Part 60, Subpart IIII for the generators. No further requirements apply to the generators under 40 CFR, Part 63, Subpart ZZZZ. **[Authority: 40 CFR §63.6590(c)(1)]**

F. Control of NOx – NOx RACT Requirements

1. A person who owns or operates fuel-burning equipment with a capacity factor (as defined in 40 CFR, Part 72.2) of 15 percent or less shall:

   a. Provide certification of the capacity factor of the equipment to the Department in writing;

   b. For fuel-burning equipment that operates more than 500 hours during a calendar year, perform a combustion analysis and optimize combustion at least once annually;
   Note: EU-7, EU-8, and EU-9 are limited to operating less than 500 hours per calendar year. See Table IV-5 Condition D3. Combustion analyses for these generators are not be required.

   c. Maintain the results of the combustion analysis at the site for at least 5 years and make these results available to the Department and the EPA upon request;

   d. Require each operator of an installation, except combustion turbines, to attend operator training programs at least once every 3 years, on combustion optimization that are sponsored by the Department, the EPA, or equipment vendors; and

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	e. Maintain a record of training program attendance for each operator at the site, and make these records available to the Department upon request. **[Authority: COMAR 26.11.09.08G]** 2. For the purposes of COMAR 26.11.09.08, the equipment operator to be trained may be the person who maintains the equipment and makes the necessary adjustments for efficient operation. **[Authority: COMAR 26.11.09.08B(5)]**
4.2	**Testing Requirements:** A. Visible Emissions Limitations See Monitoring, Record Keeping, and Reporting Requirements. B. Control of Sulfur Oxides and NSPS Fuel Requirements See Monitoring, Record Keeping, and Reporting Requirements. C. NSPS Emissions Standards and Control of NOx – Major NSR Requirements See Monitoring, Record Keeping, and Reporting Requirements. D. Operational Limits See Record Keeping and Reporting Requirements. E. Control of HAP The Permittee must meet the requirements of 40 CFR, Part 63, Subpart ZZZZ by meeting the requirements of 40 CFR, Part 60, Subpart IIII for the generators. No further requirements apply to the generators under 40 CFR, Part 63, Subpart ZZZZ. **[Authority: 40 CFR §63.6590(c)(1)]** F. Control of NOx – NOx RACT Requirements For EU-14 only, EU-15, and EU-16 only, the Permittee shall perform combustion analysis and optimize combustion once each year, for each year that the emission unit operates more than 500 hours. **[Authority: COMAR 26.11.09.08G(1)(b)]**

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4.3	**Monitoring Requirements:** A. Visible Emissions Limitations The Permittee shall properly operate and maintain each emergency generator to minimize visible emissions. **[Authority: COMAR 26.11.03.06C]** B. Control of Sulfur Oxides and NSPS Fuel Requirements The Permittee shall obtain a certification from the fuel supplier indicating that the oil complies with the sulfur content and cetane index requirements for the fuel oil. **[Authority: COMAR 26.11.03.06C]** C. NSPS Emissions Standards and Control of NOx – Major NSR Requirements 1. The Permittee must operate and maintain each generator that achieves the emissions standards as required by 40 CFR §60.4205 for emergency generators according to the manufacturer's written instructions or procedures developed by the Permittee that are approved by the engine manufacturer over the entire life of the engine. In addition the Permittee may only change those settings that are permitted by the manufacturer. The Permittee must also meet the requirements of 40 CFR Parts 89, 94, and/or 1068 as applicable. **[Authority: 40 CFR §60.4206 and 40 CFR §60.4211(a)]** 2. The Permittee shall maintain an Operations and Maintenance Plan for EU-7, EU-8, and EU-9 only, which incorporates all of the following: a. Information that is sufficient to demonstrate that air emissions from each affected emissions unit can be expected to comply with all applicable regulatory requirements during periods of normal operation. Examples of types of information that could be included to support the required demonstrations would be design criteria, vendor specifications and performance guarantees, approved computer modeling studies, and results of testing programs in which approved test methods and procedures were utilized. b. Procedures that provide for proper operation and maintenance of all affected emissions units and air pollution control equipment within the facility.

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c. Provisions for periodic monitoring of operating parameters and emissions as necessary to determine that the affected emissions units and air pollution control equipment are functioning properly.

d. Descriptions of procedures to be followed and corrective actions to be taken when monitoring information indicates that an affected emissions unit or pollution control device is not functioning properly.

e. Provisions for developing written or printable electronic records that will show whether prescribed operating, maintenance and monitoring procedures are consistently followed, and whether timely and appropriate corrective actions are taken when malfunctions occur. **[Authority: ARA NSR Approval NSR-2007-01 issued on January 28, 2008]**

3. The Permittee shall monitor monthly diesel fuel (No. 2 fuel oil) usage rates for EU-7, EU-8, and EU-9. **[Authority: ARA NSR Approval NSR-2007-01 issued on January 28, 2008]**

4. For EU-7, EU-8, and EU-9 only, the Permittee shall calculate monthly NOx emissions from each generator using the monthly diesel fuel (No. 2 fuel oil) usage rates and emissions factors based on stack emissions test data, fuel specifications, manufacturer data, or any other method approved by the Department. **[Authority: ARA NSR Approval NSR-2007-01 issued on January 28, 2008]**

5. Each calendar month, the Permittee shall calculate the total NOx emissions from the four (4) boilers (ARA Registration Nos. 021-0459-5-0388 through 5-0391) and the five (5) generators (ARA Registration Nos. 021-0459-9-0254 through 9-0258) for the month and the total NOx emissions from the four (4) boilers and the five (5) generators for the previous rolling 12-month period to demonstrate compliance with the NOx emissions limit of 56 tons in any rolling 12-month period. **[Authority: ARA NSR Approval NSR-2007-01 issued on January 28, 2008]**

D. Operational Limits
See Record Keeping and Reporting Requirements.

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	E. Control of HAP The Permittee must meet the requirements of 40 CFR, Part 63, Subpart ZZZZ by meeting the requirements of 40 CFR, Part 60, Subpart IIII for the generators. No further requirements apply to the generators under 40 CFR, Part 63, Subpart ZZZZ. **[Authority: 40 CFR §63.6590(c)(1)]** F. Control of NOx – NOx RACT Requirements Once every three years, require each operator of the installation to attend operator training programs on combustion optimization that are sponsored by the Department, the EPA, or equipment vendors. **[Authority: COMAR 26.11.09.08E(4)]**
4.4	**Record Keeping Requirements:** A. Visible Emissions Limitations The Permittee shall maintain records at the premises of maintenance/repairs performed that relate to combustion performance. **[Authority: COMAR 26.11.03.06C]** B. Control of Sulfur Oxides and NSPS Fuel Requirements The Permittee shall retain fuel supplier certifications at the premises stating that the fuel is in compliance with the sulfur content and cetane index requirements for the fuel oil. **[Authority: COMAR 26.11.03.06C]** C. NSPS Emissions Standards and Control of NOx – Major NSR Requirements 1. The Permittee shall maintain documentation from the manufacturer that the engine is certified to meet the applicable emissions standards. **[Authority: COMAR 26.11.03.06C]** 2. The Permittee shall maintain for at least five (5) years, and shall make available to the Department upon request, records of the following information for EU-7, EU-8, and EU-9 only: a. Total NOx emissions from the four (4) boilers (ARA Registration Nos. 021-0459-5-0388 through 5-0391) and the five (5) generators (ARA Registration Nos. 021-0459-9-0254 through 9-0258) for each calendar month and each rolling 12-month period. b. Monthly diesel fuel (No. 2 fuel oil) usage for each generator. c. Monthly NOx emissions from each generator. d. The Operations and Maintenance Plan required by the NSR Approval.

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	e. All supporting calculations and documentation used to demonstrate compliance with the requirements of the NSR Approval. **[Authority: ARA NSR Approval NSR-2007-01 issued on January 28, 2008]** D. Operational Limits The Permittee shall maintain for at least five (5) years, and shall make available to the Department upon request, annual records of the total hours of operation for each generator including the hours used for maintenance checks and readiness testing. The Permittee must also document how many hours are spent for emergency operation, including what classified the operation as emergency. **[Authority: ARA NSR Approval NSR-2007-01 issued on January 28, 2008 and COMAR 26.11.03.06C]** E. Control of HAP The Permittee must meet the requirements of 40 CFR, Part 63, Subpart ZZZZ by meeting the requirements of 40 CFR, Part 60, Subpart IIII for the generators. No further requirements apply to the generators under 40 CFR, Part 63, Subpart ZZZZ. **[Authority: 40 CFR §63.6590(c)(1)]** F. Control of NOx – NOx RACT Requirements The Permittee shall maintain the following records at the premises: a. Records of the calculated capacity factors. **[Authority: COMAR 26.11.03.06C]** b. Records of hours of operation. **[Authority: COMAR 26.11.02.19C]** c. Records of combustion analysis performed if the hours of operation exceed 500. **[Authority: COMAR 26.11.09.08G(1)(c)]** d. Record of training program attendance for each operator. **[Authority: COMAR 26.11.09.08G(1)(e)]**
4.5	**Reporting Requirements:** A. Visible Emissions Limitations The Permittee shall report incidents of visible emissions in accordance with permit condition 4, Section III, Plant Wide Conditions, "Report of Excess Emissions and Deviations." **[Authority: COMAR 26.11.03.06C]** B. Control of Sulfur Oxides and NSPS Fuel Requirements The Permittee shall report fuel supplier certification records to the Department upon request. **[Authority: COMAR 26.11.03.06C]**

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C. NSPS Emissions Standards and Control of NOx – Major NSR Requirements

1. The Permittee shall submit all required records to the Department upon request. **[Authority: ARA NSR Approval NSR-2007-01 issued on January 28, 2008 and COMAR 26.11.03.06C]**

2. If total NOx emissions from the four (4) boilers (ARA Registration Nos. 021-0459-5-0388 through 5-0391) and the five (5) generators (ARA Registration Nos. 021-0459-9-0254 through 9-0258) exceed 56 tons in any rolling 12-month period, the Permittee shall notify the Department in writing within 30 days of the exceedance. **[Authority: ARA NSR Approval NSR-2007-01 issued on January 28, 2008]**

D. Operational Limits

The Permittee shall submit operating records to the Department upon request. **[Authority: ARA NSR Approval NSR-2007-01 issued on January 28, 2008 and COMAR 26.11.03.06C]**

E. Control of HAP

The Permittee must meet the requirements of 40 CFR, Part 63, Subpart ZZZZ by meeting the requirements of 40 CFR, Part 60, Subpart IIII for the generators. No further requirements apply to the generators under 40 CFR, Part 63, Subpart ZZZZ. **[Authority: 40 CFR §63.6590(c)(1)]**

F. Control of NOx – NOx RACT Requirements

The Permittee shall make all records (emissions unit hours of operation and training program attendance) to meet the NOx RACT requirements, available to the Department upon request. The Permittee shall provide certification of the capacity factor of the equipment to the Department in writing as part of the April 1 emissions certification report. **[Authority: COMAR 26.11.09.08G, COMAR 26.11.02.19C, and COMAR 26.11.03.06C]**

SECTION V INSIGHIFICANT ACTIVITIES

This section provides a list of insignificant emissions units that were reported in the Title V permit application. The applicable Clean Air Act requirements, if any, are listed below the insignificant activity.

(1) No. 2 Stationary internal combustion engines with an output less than 500 brake horsepower (373 kilowatts) and which are not used to generate electricity for sale or for peak or load shaving;

The units are subject to the following requirements:

(A) COMAR 26.11.09.05E(2), Emissions During Idle Mode: The Permittee may not cause or permit the discharge of emissions from any engine, operating at idle, greater than 10 percent opacity.

(B) COMAR 26.11.09.05E(3), Emissions During Operating Mode: The Permittee may not cause or permit the discharge of emissions from any engine, operating at other than idle conditions, greater than 40 percent opacity.

(C) Exceptions:

(i) COMAR 26.11.09.05E(2) does not apply for a period of 2 consecutive minutes after a period of idling of 15 consecutive minutes for the purpose of clearing the exhaust system.

(ii) COMAR 26.11.09.05E(2) does not apply to emissions resulting directly from cold engine start-up and warm-up for the following maximum periods:

(a) Engines that are idled continuously when not in service: 30 minutes
(b) all other engines: 15 minutes.

(iii) COMAR 26.11.09.05E(2) & (3) do not apply while maintenance, repair or testing is being performed by qualified mechanics.

(D) 40 CFR 60, Subpart IIII, which states that the Permittee must:

1. purchase an engine certified to the emission standards in 40 CFR §60.4205(c) for the same model year and maximum engine power;

2. install a non-resettable hour meter prior to startup of the engine;

3. install and configure the engine according to the manufacturer's emission-related specifications;

3. operate and maintain the diesel engine that achieves the emissions standards as required by 40 CFR §60.4205 for emergency engines according to the manufacturer's emissions related written instructions over the entire life of the engine;

4. change those settings that are permitted by the manufacturer;

5. meet the requirements of 40 CFR Parts 89, 94, and/or 1068, as applicable;

6. use diesel fuel in the engine that meets the requirements of 40 CFR §80.510(b); and

7. meet the requirements of 40 CFR 63, Subpart ZZZZ by meeting the requirements of 40 CFR 60, Subpart IIII.

(2) ✓ Water cooling towers and water cooling ponds unless used for evaporative cooling of water from barometric jets or barometric condensers, or used in conjunction with an

(3) ✓ Equipment for drilling, carving, cutting, routing, turning, sawing, planing, spindle sanding, or disc sanding of wood or wood products;

(4) Containers, reservoirs, or tanks used exclusively for:

(a) ✓ Storage of butane, propane, or liquefied petroleum, or natural gas;

(b) No. 11 Storage of lubricating oils;

(c) No. 10 Storage of Numbers 1, 2, 4, 5, and 6 fuel oil and aviation jet engine fuel;

AstraZeneca currently maintains the following diesel (No. 2 fuel oil) storage tanks:

Designation	Vessel Type	Capacity (gallons)	Location	Description
Tank 1	AST - Vertical	101,000	Building 633	Main Storage tank
Tank 2	AST – Horizontal	4,500	Building 633	Emergency Generator #1
Tank 3	AST – Horizontal	275	Building 633	Generator Overflow Belly Receiver
Tank 4	AST – Horizontal	4,500	Building 633	Emergency Generator #2
Tank 5	AST – Horizontal	4,500	Building 633	Emergency Generator #3
Tank 6	AST – Horizontal	4,500	Building 633	Non-Emergency Generator #1
Tank 7	AST – Horizontal	4,500	Building 633	Non-Emergency Generator #2
Tank 8	AST – Horizontal	440	Building 636	Emergency Generator Tank
Tank 9	AST – Horizontal	350	Building 636	Fire Pump House
Tank 10	AST – Horizontal	460	Building 636	Fire Pump House
Tank 11	AST – Horizontal	2150	Building 660	Generator Fuel Tank

(d) No. ✓ The storage of VOC normally used as solvents, diluents, thinners, inks, colorants, paints, lacquers, enamels, varnishes, liquid resins, or other surface coatings and having individual capacities of 2,000 gallons (7.6 cubic meters) or less;

Including but not limited to the following types:

Container Size	VOC Containing Material
30 gallon drum	200 proof ethanol
30 gallon drum	20% ethanol
200 liter drum	20% ethanol
16 fl. oz. sterile bottles	70% spray isopropyl alcohol
16 fl. oz. non-sterile bottles	70% spray isopropyl alcohol

(5) ✓ Charbroilers and pit barbecues as defined in COMAR 26.11.18.01 with a total cooking area of 5 square feet (0.46 square meter) or less;

(6) ✓ Certain recreational equipment and activities, such as fireplaces, barbecue pits and cookers, fireworks displays, and kerosene fuel use;

(7) ✓ Potable water treatment equipment, not including air stripping equipment;

(8) ✓ Comfort air conditioning subject to requirements of Title VI of the Clean Air Act;

(9) ✓ Laboratory fume hoods and vents;

(10) any other emissions unit, not previously listed in this section, which has a pre-control potential-to-emit that is: (a) less than 1 ton per year for VOC; (b) less than 1 ton per year for each pollutant for which there is a federal ambient air quality standard; (c) less than 1 ton per year for each Class II pollutant as defined in COMAR 26.11.15.01B(4); and (d) not more than 1

pound per day of a Class I toxic air pollutant as defined in COMAR 26.11.15.01B(4):

No. 1 Cell Culture Process Area in Building 633.

✓ Support Activities including but not limited to the following: glass washer, sterilizer (autoclave), Water for Injection (WFI) still, waste water inactivation/neutralization system, and chilled water.

VOC emissions from the installations listed in this category are subject to either COMAR 26.11.06.06B(2)(c).

COMAR 26.11.06.06B(2)(c) requires that the Permittee limit emissions of VOC to not more than 20 pounds per day from installations constructed on or after November 15, 1992 unless VOC emissions are reduced by 85 percent or more overall.

SECTION VI STATE-ONLY ENFORCEABLE CONDITIONS

The Permittee is subject to the following State-only enforceable requirements:

1. Applicable Regulations:

   (A) COMAR 26.11.06.08 and 26.11.06.09, which generally prohibit the discharge of emissions beyond the property line in such a manner that a nuisance or air pollution is created.

   (B) COMAR 26.11.15.06, which prohibits the discharge of toxic air pollutants to the extent that such emissions will unreasonably endanger human health

2. Record Keeping and Reporting:

   The Permittee shall submit to the Department, by April 1 of each year during the term of this permit, a written certification of the results of an analysis of emissions of toxic air pollutants from the Permittee's facility during the previous calendar year. The analysis shall include either:

   (a) a statement that previously submitted compliance demonstrations for emissions of toxic air pollutants remain valid; or

   (b) a revised compliance demonstration, developed in accordance with requirements included under COMAR 26.11.15 & 16, that accounts for changes in operations, analytical methods, emissions determinations, or other factors that have invalidated previous demonstrations.

ASTRAZENECA, PLP
FREDERICK CAMPUS
630, 633, 636, AND 660 RESEARCH COURT
FREDERICK, MARYLAND 21703
PERMIT NO. 021-0459
PART 70 OPERATING PERMIT FACT SHEET

BACKGROUND

AstraZeneca, PLP's Frederick Campus ("AstraZeneca") is a biotechnology / pharmaceutical manufacturing facility located at 630, 633, 636, and 660 Research Court in Frederick County, Frederick, Maryland in Maryland's Air Quality Region II. The primary SIC for this facility is 2836, Biological Products, Except Diagnostic Substances.

The facility was initially built in 1997 and was a minor source of all criteria pollutants and VOC. In 2008, AstraZeneca received a permit to construct and a major New Source Review ("NSR") Approval for a facility expansion with potential emissions of NOx in excess of 25 tons per year, the major source threshold in Frederick County. The facility currently operates boilers, emergency generators, and non-emergency generators to support a number of biopharmaceutical manufacturing processes. These biopharmaceutical processes do not emit or emit small amounts of air pollution.

Table 1 summarizes the actual emissions from AstraZeneca based on its Annual Emission Certification Reports for the past five years.

Table 1: Actual Emissions

Year	NO_x (TPY)	SO_x (TPY)	PM_{10} (TPY)	CO (TPY)	VOC (TPY)	Total HAP (TPY)
2015	4.55	0.12	0.31	4.72	0.5	<0.1
2016	5.34	0.13	0.33	5.77	0.52	<0.1
2017	10.09	0.35	0.48	8.32	4.48	<0.1
2018	5.66	0.22	0.3	6.19	1.41	<0.1
2019	5.53	0.17	0.28	5.56	0.59	<0.1

The major source threshold for triggering Title V permitting requirements in Frederick County is 25 tons per year for VOC, 25 tons per year for NOx, and 100 tons per year for any other criteria pollutants and 10 tons for a single Hazardous Air Pollutant ("HAP") or 25 tons per year for total HAPs. Potential NOx emissions from the facility are greater than the major source threshold, and AstraZeneca is required to obtain a Title V – Part 70 Operating Permit under COMAR 26.11.03.01. An administratively amended Title V – Part 70 Operating Permit was issued to AstraZeneca on March 9, 2017. The permit expires on January 31, 2021.

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On June 9, 2020, the Department received an application for a minor modification to AstraZeneca's current Title V - Part 70 Operating Permit to reflect the installation of two (2) replacement selective catalytic reduction systems. An administrative completeness review was conducted and the application was deemed to be administratively complete. An administrative completeness letter was sent on July 1, 2020. Once issued, this renewal Title V – Part 70 Operating Permit will expire on January 31, 2027.

GREENHOUSE GAS (GHG) EMISSIONS

AstraZeneca emits the following greenhouse gases (GHG) related to Clean Air Act requirements: carbon dioxide, methane, and nitrous oxide. These GHG originate from the fuel burning equipment (mainly boilers and generators) at the facility. The facility has not triggered Prevention of Significant Deterioration (PSD) requirements for GHG emissions; therefore, there are no applicable GHG Clean Air Act requirements. While there may be no applicable requirements as a result of PSD, emission certifications reports for the past 3 years show that AstraZeneca is not a major source of GHG emissions. (see Table 2 below). The Permittee shall quantify facility wide GHG emissions and report them in accordance with Section 3 of the Title V – Part 70 permit. The following table summarizes the actual emissions from AstraZeneca based on its Annual Emission Certification Reports:

Table 2: Greenhouse Gases Emissions Summary

GHG	Conversion Factor	2017 (tons CO_{2e})	2018 (tons CO_{2e})	2019 (tons CO_{2e})
Carbon Dioxide (CO_2)	1	15,077	13,857	13,196
Methane (CH_4)	25	7.25	6.75	6
Nitrous Oxide (N_2O)	300	9	8.4	7.5
Total GHG (tons CO_{2e}):		15,093	13,872	13,209

CHANGES AND MODIFICATIONS TO THE PART 70 OPERATING PERMIT

The following changes and modifications that have occurred since the issuance of the last Title V – Part 70 Operating Permit are incorporated into this amended permit:

- Permit to Construct No. 021-0459-5-0534 and 021-0459-5-0535 issued on April 18, 2017 for the installation of two (2) new natural gas fired boilers each rated at 4 million Btu per hour. The new boilers will be designated as emission unit numbers (EU-17 and EU-18). The applicable requirements are

nearly identical to the requirements for boilers EU-10 and EU11 in Table IV-1 of the permit.

- Permit to Construct No. 021-0459-9-0254 and 021-0459-9-0255 issued on August 6, 2020 for the installation of two (2) replacement selective catalytic reduction systems for the two (2) existing non-emergency generators. The applicable requirements for these generators (EU-5 and EU-6) remain mostly the same. New monitoring, testing, and recordkeeping parameters related to the new selective catalytic reduction systems are included in this Title V – Part 70 Operating Permit renewal.

- In January of 2022 AstraZeneca notified the Department that EU-12: one (1) diesel fired emergency generator rated at 500 kw (ARA Registration No. 021-0459-9-0239) had been completely removed from the site. All regulations pertaining to this equipment have been omitted from the Title V operating permit.

NSPS APPLICABILITY

AstraZeneca operates six (6) boilers (ARA Registration Nos. 021-0459-5-0388 through 5-0391, 5-0501, and 5-0102) that are subject to the requirements of 40 CFR, Part 60, Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units. Each boiler has a maximum rated heat input of greater than 10 MMBtu per hour and each boiler was constructed after June 9, 1989. The NSPS requirements of 40 CFR, Part 60, Subpart Dc are included in the Title V – Part 70 Operating Permit for these boilers.

AstraZeneca operates eight (8) generators (ARA Registration Nos. 021-0459-9-0254 through 9-0258, 9-0382, 9-0392 and 9-0393) that are subject to the requirements of 40 CFR, Part 60, Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. Each generator has a displacement of less than 30 liters per cylinder, and a model year 2007 or later. The NSPS requirements of 40 CFR, Part 60, Subpart IIII are included in the Title V – Part 70 Operating Permit for these generators.

NESHAP APPLICABILITY

AstraZeneca is a true minor, area source of HAP emissions and is not subject to any major source NESHAP requirements under 40 CFR, Part 63.

The five (5) generators installed in 2009, the one (1) generator installed in 2015, and the two (2) generators installed in 2017 are subject to 40 CFR 63 Subpart

ZZZZ for new Stationary Reciprocating Internal Combustion Engines (RICE). For new stationary RICE, 40 CFR §63.6590(c) states that AstraZeneca must meet the requirements of Subpart ZZZZ by meeting the requirements of 40 CFR 60 Subpart IIII. No further requirements apply to these eight (8) generators under Subpart ZZZZ.

The one (1) generator installed in 1998 is subject to additional requirements under 40 CFR, Part 63, Subpart ZZZZ. AstraZeneca is not a major source with respect to HAP emissions and the engine was installed prior to June 12, 2006. The engine is considered an existing stationary RICE at an area source of HAP emissions. The compliance date for existing sources was May 3, 2013. All applicable NESHAP requirements under 40 CFR 63, Subpart ZZZZ for the generator are included in the renewal permit.

The four (4) boilers installed in 2009 have the capability to burn either natural gas or diesel fuel. Three (3) boilers burn primarily natural gas with diesel fuel as a back up fuel only and are considered gas-fired boilers not subject to NESHAP requirements. One (1) boiler, EU-4, burns either fuel with no limitations. EU-4 is subject to 40 CFR 63, Subpart JJJJJ for Industrial, Commercial, and Institutional Boilers Area Sources. EU-4 is considered an existing boiler because it was installed on or before June 4, 2010. The compliance date for existing sources was March 21, 2014. All applicable NESHAP requirements for EU-4 under 40 CFR 63, Subpart JJJJJJ are included in the permit.

CAM APPLICABILITY

Compliance Assurance Monitoring (CAM), as specified in 40 CFR, Part 64, applies to any emission unit at a Title V major source that meets all of the following criteria:

(1) The emission unit is subject to a federally enforceable emission limit or standard for a regulated pollutant;

(2) The emission unit uses a control device to achieve compliance with any such emission limitation or standard; and

(3) The emission unit has the potential to emit pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year required for a source to be classified as a major source and must not otherwise be exempt from CAM.

AstraZeneca operates a dust collection system to control particulate matter emissions from the cell culture process area (EU-13). The cell culture process area does not emit pre-control particulate matter in excess the major source threshold of 100 tons per year. CAM requirements do not apply to the dust collection system.

AstraZeneca also operates two (2) Selective Catalytic Reduction ("SCR") units to control NOx emissions from two (2) non-emergency generators (EU-5 and EU-6). Pre-control NOx emissions from each generator exceed the major source threshold of 25 tons per year. CAM requirements apply to the SCR units and a CAM plan for EU-5 and EU-6 is included in Table IV-3a of the Title V Part 70 Operating Permit.

AstraZeneca does not employ any other control devices at the facility.

EMISSION UNIT IDENTIFICATION

AstraZeneca has identified the following emission units as being subject to Title V permitting requirements and having applicable requirements:

Table 3: Emission Unit Identification

Emissions Unit No.	MDE ARA Registration No.	Emissions Unit Name and Description	Date of Installation
EU-1	021-0459-5-0388	One (1) natural gas/diesel fired boiler rated at 32.659 MMBtu per hour (AstraZeneca ID 137401, Building 633).	2009
EU-2	021-0459-5-0389	One (1) natural gas/diesel fired boiler rated at 32.659 MMBtu per hour (AstraZeneca ID 137501, Building 633).	2009
EU-3	021-0459-5-0390	One (1) natural gas/diesel fired boiler rated at 32.659 MMBtu per hour (AstraZeneca ID 137601, Building 633).	2009
EU-4	021-0459-5-0391	One (1) natural gas/diesel fired boiler rated at 32.659 MMBtu per hour (AstraZeneca ID 137701, Building 633).	2009
EU-5	021-0459-9-0254	One (1) diesel fired, non-emergency generator rated at 2,701 kW and controlled by a selective catalytic reduction system for control of NOx emissions (AstraZeneca ID 410405, Building 633).	2009 Modified 2020

Emissions Unit No.	MDE ARA Registration No.	Emissions Unit Name and Description	Date of Installation
EU-6	021-0459-9-0255	One (1) diesel fired, non-emergency generator rated at 2,701 kW and controlled by a selective catalytic reduction system for control of NOx emissions (AstraZeneca ID 410404, Building 633).	2009 Modified 2020
EU-7	021-0459-9-0256	One (1) diesel fired, federal non-emergency generator rated at 2,701 kW (AstraZeneca ID 410403. Building 633)	2009
EU-8	021-0459-9-0257	One (1) diesel fired, federal non-emergency generator rated at 2,701 kW (AstraZeneca ID 410501. Building 633)	2009
EU-9	021-0459-9-0258	One (1) diesel fired, federal non-emergency generator rated at 2,701 kW (AstraZeneca ID 410502. Building 633)	2009
EU-10	021-0459-5-0501	One (1) natural gas fired boiler rated at 14.288 MMBtu per hour (AstraZeneca ID 683101, Building 636).	2016
EU-11	021-0459-5-0502	One (1) natural gas fired boiler rated at 14.288 MMBtu per hour (AstraZeneca ID 683102, Building 636).	2016
EU-14	021-0459-9-0382	One (1) diesel fired, emergency generator rated at 750 kW (Building 660).	2015
EU-15	021-0459-9-0392	One (1) diesel fired, emergency generator rated at 1,500 kW (Building 630).	2017
EU-16	021-0459-9-0393	One (1) diesel fired, emergency generator rated at 1,500 kW (Building 630).	2017
EU-17	021-0459-5-0534	One (1) natural gas fired boiler rated at 4 MMBtu per hour (AstraZeneca ID 285001, Building 630)	2017
EU-18	021-0459-5-0535	One (1) natural gas fired boiler rated at 4 MMBtu per hour (AstraZeneca ID 285002, Building 630)	2017

AN OVERVIEW OF THE PART 70 PERMIT

The Fact Sheet is an informational document. If there are any discrepancies between the Fact Sheet and the Part 70 permit, the Part 70 permit is the enforceable document.

Section I of the Part 70 Permit contains a brief description of the facility and an inventory list of the emissions units for which applicable requirements are identified in Section IV of the permit.

Section II of the Part 70 Permit contains the general requirements that relate to administrative permit actions. This section includes the procedures for renewing, amending, reopening, and transferring permits, the relationship to permits to construct and approvals, and the general duty to provide information and to comply with all applicable requirements.

Section III of the Part 70 Permit contains the general requirements for testing, record keeping and reporting; and requirements that affect the facility as a whole, such as open burning, air pollution episodes, particulate matter from construction and demolition activities, asbestos provisions, ozone depleting substance provisions, general conformity, and acid rain permit. This section includes the requirement to report excess emissions and deviations, to submit an annual emissions certification report and an annual compliance certification report, and results of sampling and testing.

Section IV of the Part 70 Permit identifies the emissions standards, emissions limitations, operational limitations, and work practices applicable to each emissions unit located at the facility. For each standard, limitation, and work practice, the permit identifies the basis upon which the Permittee will demonstrate compliance. The basis will include testing, monitoring, record keeping, and reporting requirements. The demonstration may include one or more of these methods.

Section V of the Part 70 Permit contains a list of insignificant activities. These activities emit very small quantities of regulated air pollutants and do not require a permit to construct or registration with the Department. For insignificant activities that are subject to a requirement under the Clean Air Act, the requirement is listed under the activity.

Section VI of the Part 70 Permit contains State-only enforceable requirements.

Section VI identifies requirements that are not based on the Clean Air Act, but solely on Maryland air pollution regulations. These requirements generally relate to the prevention of nuisances and implementation of Maryland's Air Toxics Program.

REGULATORY REVIEW/TECHNICAL REVIEW/COMPLIANCE METHODOLOGY

EU-10 and EU-11

EU-10 and EU-11 – Two (2) natural gas boilers each rated at 14.288 MMBtu per hour (ARA Registration Nos. 021-0459-5-0501 and 5-0502).

EU-17 and EU-18 – Two (2) natural gas boilers each rated at 4 MMBtu per hour (ARA Registration Nos. 021-0459-5-0534 and 5-0535).

On April 18, 2016, AstraZeneca received a permit to construct for the two (2) boilers to replace the existing identical boilers registered under ARA Registration Nos. 021-0459-0214 and 021-0459-5-0215 that were installed in 1997. The new, replacement boilers were installed in 2016. The two (2) boilers are subject to the requirements of 40 CFR, Part 60, Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units. Each boiler has a maximum rated heat input of greater than 10 MMBtu per hour and each boiler was constructed after June 9, 1989. Natural gas boilers are only subject to record keeping requirements in Subpart Dc.

On April 18, 2017, AstraZeneca received a permit to construct for the two (2) boilers ARA Registration Nos. 021-0459-5-0534 and 021-0459-5-00535. The two (2) boilers are not subject to the requirements of 40 CFR, Part 60, Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units, as they are under 10 MMBtu per hour.

Gas-fired boilers are not subject to the NESHAP requirements for boilers under 40 CFR 63, Subpart JJJJJJ.

Applicable Standards for Visible Emissions

- The Permittee shall not cause or permit visible emissions from any fuel burning equipment other than uncombined water which is greater than 20 percent opacity except during load changing, soot blowing, startup, or adjustments or occasional cleaning of control equipment if the visible emissions are not greater than 40 percent opacity and the visible emissions do not occur for more than 6 consecutive minutes in any sixty minute period. **[Authority: COMAR 26.11.09.05A(1) and (3)]**

Compliance Demonstration and Rationale for Periodic Monitoring Strategy

The Permittee shall properly operate and maintain the boilers in a manner to minimize visible emissions. The Permittee shall maintain an operations manual and preventive maintenance plan for the boilers. The Permittee shall maintain a log of maintenance performed that relates to combustion performance. The Permittee shall report incidents of visible emissions in accordance with permit condition 4 of Section III, Plant Wide Conditions, "Report of Excess Emissions and Deviations".

Boilers that burn natural gas fuel rarely have visible emissions if properly operated and maintained. No additional periodic monitoring is required.

Applicable Standards for Control of NOx – NOx RACT Requirements

- A person who owns or operates fuel-burning equipment with a rated heat input capacity of 100 MMBtu per hour or less shall:

  (a) Submit to the Department an identification of each affected installation, the rated heat input capacity of each installation, and the type of fuel burned in each;

  (b) Perform a combustion analysis for each installation at least once each year and optimize combustion based on the analysis;

  (c) Maintain the results of the combustion analysis at the site for at least 5 years and make this data available to the Department and the EPA upon request;

  (d) Once every 3 years, require each operator of the installation to attend operator training programs on combustion optimization that are sponsored by the Department, the EPA, or equipment vendors; and

  (e) Prepare and maintain a record of training program attendance for each operator at the site, and make these records available to the Department upon request.

  [Authority: COMAR 26.11.09.08E]

- For the purposes of COMAR 26.11.09.08, the equipment operator to be trained may be the person who maintains the equipment and makes the necessary adjustments for efficient operation. **[Authority: COMAR 26.11.09.08B(5)]**

  Compliance Demonstration and Rationale for Periodic Monitoring Strategy
  COMAR 26.11.09.08E outlines the specific monitoring, record keeping, and reporting requirements necessary to demonstrate compliance. These requirements include periodic combustion analyses and training programs. No additional periodic monitoring is necessary to demonstrate compliance.

Applicable Standards for Operational Limit

- The Permittee shall burn only natural gas in each of the four (4) boilers unless the Permittee obtains an approval from the Department to burn alternate fuels. **[Authority: COMAR 26.11.02.09A]**

  Compliance Demonstration and Rationale for Periodic Monitoring Strategy
  For EU 10 and EU 11, the Permittee is required to maintain monthly records of the types and quantity of fuel burned to comply with the requirements of 40 CFR 60, Subpart Dc for natural gas boilers and to support the annual emissions certification report (permit condition 8 of Section III, Plant Wide Conditions "Emissions Certification Report").

  The annual certification report must contain the type, quantities, and analyses of all fuels burned. No additional requirements are needed to show compliance with this operational limitation.

Emissions Units EU 1 through EU 4
EU 1 through EU 4 – Four (4) natural gas/diesel fired boilers each rated at 32.7 million Btu per hour (ARA Registration Nos. 021-0459-5-0388 through 5-0391).

On January 28, 2008, AstraZeneca received a permit to construct to install the four (4) boilers. The four (4) boilers were part of a facility expansion that included the installation of five (5) generators. The expansion project triggered major NSR requirements for NOx emissions. The NSR Approval was issued with the permit to construct on January 28, 2008. The boilers were installed in 2009. All applicable conditions from the permit to construct and NSR Approval are included in the Title V – Part 70 Operating Permit.

The four (4) boilers are subject to the requirements of 40 CFR, Part 60, Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units. Each boiler has a maximum rated heat input of greater than 10 MMBtu per hour and each boiler was constructed after June 9, 1989. The NSPS requirements of 40 CFR, Part 60, Subpart Dc are included in Title V – Part 70 Operating Permit for these boilers.

The boilers have the capability to burn either natural gas (includes propane as defined in 40 CFR §63.11237) or diesel fuel. Three (3) boilers burn primarily natural gas with diesel fuel as a back up fuel only. Propane may be used for start-up purposes. The boilers are considered gas-fired boilers and not subject to NESHAP requirements. One (1) boiler, EU-4, burns natural gas or diesel fuel with no limitations, and propane for start-up purposes. EU-4 is subject to 40 CFR 63, Subpart JJJJJJ for Industrial, Commercial, and Institutional Boilers Area Sources. EU-4 is considered an existing boiler because it was installed on or before June 4, 2010. The compliance date for existing sources was March 21, 2014. All applicable NESHAP requirements for EU-4 under 40 CFR 63, Subpart JJJJJJ are included in the permit.

Applicable Standards for Visible Emissions

- The Permittee shall not cause or permit visible emissions from any fuel burning equipment other than uncombined water which is greater than 20 percent opacity except during load changing, soot blowing, startup, or adjustments or occasional cleaning of control equipment if the visible emissions are not greater than 40 percent opacity and the visible emissions do not occur for more than 6 consecutive minutes in any sixty minute period. **[Authority: COMAR 26.11.09.05A(1) and (3)]**

  Except during periods of start up, shut down, or malfunction the Permittee shall operate each of the four (4) boilers so that the opacity of any exhaust gases does not exceed 20 percent on a 6-minute average, except for one (1) 6-minute period per hour of not more than 27 percent. **[Authority: 40 CFR §60.43c(c) and (d)]**

  Compliance Demonstration
  When burning diesel fuel, AstraZeneca shall conduct periodic Method 9 performance tests or periodic Method 22 observations as specified in the Permittee's written site-specific monitoring plan approved by the Department as allowed under 40 CFR §60.47c(f)(3). AstraZeneca must keep records of all performance tests and submit the records to the Department within 45 days following each test.

Rationale for Periodic Monitoring Strategy

Boilers that burn natural gas rarely have visible emissions if properly operated and maintained. AstraZeneca is required to maintain an operations and maintenance plan for the boilers as part of the compliance demonstration for major NSR requirements (see Control of NOx – Major NSR Requirements below). No periodic monitoring is required when burning natural gas.

If visible emissions occur, it will happen when burning diesel fuel. When burning fuel oil, 40 CFR 60, Subpart Dc requires the use of a COMS, annual Method 9 performance tests, periodic Method 22 observations, a digital opacity monitoring system, or a site-specific monitoring plan approved by the Department. Fuel oil is rarely used in these boilers and a requirement to operate a COMS or digital opacity monitoring system would be an unnecessary burden. In addition, the required annual Method 9 tests and periodic Method 22 observations assume the boilers burn fuel oil consistently. These standard monitoring requirements in Subpart Dc do not account for sources that rarely burn fuel oil. AstraZeneca would be required to fire the boilers with fuel oil annually just to conduct the required annual Method 9 test. AstraZeneca, PLP has opted to submit a site-specific monitoring plan to the Department for approval, as allowed under 40 CFR §60.47c(f)(3), in lieu of the standard monitoring requirements in Subpart Dc. The plan, approved by the Department, includes Method 9 performance tests and Method 22 observations at a modified frequency that suits a source that intermittently burns fuel oil. The plan contains the procedures and criteria for establishing and monitoring specific parameters indicative of compliance with the opacity standard as required under 40 CFR §60.47c(f)(3).

Applicable Standards for Control of Sulfur Oxides

- The Permittee shall burn only ultra low sulfur diesel fuel (No. 2 fuel oil) with a maximum sulfur content of 0.0015 percent by weight or natural gas (includes propane as defined in 40 CFR §63.11237) in each of the four (4) boilers.

  Compliance with this requirement also provides compliance with COMAR 26.11.09.07A(2)(b) which limits the sulfur content of diesel fuel (No. 2 fuel oil) to 0.3 percent by weight and provides compliance with the emissions standard for sulfur dioxide established under 40 CFR 60, Subpart Dc, §60.42c. Specifically, §60.42c(d) establishes that compliance with the standard must be demonstrated by use of fuel oil with a sulfur content that does not exceed 0.5 percent by weight. **[Authority: COMAR 26.11.02.09A,**

ARA Premises-Wide Permit to Construct and ARA NSR Approval NSR-2007-01 issued on January 28, 2008]

- Installations that burn distillate oil with a sulfur content that does not exceed 0.5 percent by weight or a mixture of 0.50 weight percent sulfur oil with other fuels not subject to a PM standard under §60.43c and not using a post-combustion technology (except a wet scrubber) to reduce PM or SO2 emissions are not subject to the particulate emissions limit established in Subpart Dc. **[Authority: 40 CFR §60.43c(e)(4)]**

- The fuel oil sulfur limits of 40 CFR §60.42c(d) apply at all times, including periods of startup, shutdown, and malfunction. **[Authority: 40 CFR §60.42c(i)]**

Compliance Demonstration and Rationale for Periodic Monitoring Strategy

AstraZeneca has elected to comply with a lower fuel sulfur content limit than what is required by State and federal regulations. The lower sulfur content requirement is part of the Lowest Achievable Emission Rate ("LAER") requirements for the boilers (see Control of NOx – Major NSR Requirements below).

To comply with the fuel oil sulfur limit, the Permittee shall obtain fuel supplier certifications for all fuels used. For distillate oil, the fuel supplier certification shall include the name of the supplier; a statement from the oil supplier that the oil complies with specifications under the definition of distillate oil in 40 CFR §60.41c; and the sulfur content or maximum sulfur content of the oil. **[Authority: 40 CFR §60.42c(h) and 40 CFR §60.48c(f)(1)]**

The Permittee shall maintain records of fuel supplier certifications and submit reports to the Department and the EPA Region III every six months with the Title V semi-annual (six-month) monitoring report. The report shall include the calendar dates covered in the reporting period, records of fuel supplier certifications, and a certified statement by the Permittee that the records of fuel supplier certifications represent all of the fuel combusted during the reporting period. The report shall be postmarked by the 30th day following the end of the reporting period. **[Authority: 40 CFR §60.48c(c), (e)(1), (e)(11), (f)(1) and (j)]** Fuel supplier certifications are sufficient to demonstrate compliance with all applicable fuel sulfur limits. No additional monitoring is required.

Applicable Standards for Control of NOx – NOx RACT Requirements

- A person who owns or operates fuel-burning equipment with a rated heat input capacity of 100 MMBtu per hour or less shall:

  (a) Submit to the Department an identification of each affected installation, the rated heat input capacity of each installation, and the type of fuel burned in each;

  (b) Perform a combustion analysis for each installation at least once each year and optimize combustion based on the analysis;

  (c) Maintain the results of the combustion analysis at the site for at least 5 years and make this data available to the Department and the EPA upon request;

  (d) Once every 3 years, require each operator of the installation to attend operator training programs on combustion optimization that are sponsored by the Department, the EPA, or equipment vendors; and

  (e) Prepare and maintain a record of training program attendance for each operator at the site, and make these records available to the Department upon request.
  [Authority: COMAR 26.11.09.08E]

- For the purposes of COMAR 26.11.09.08, the equipment operator to be trained may be the person who maintains the equipment and makes the necessary adjustments for efficient operation. **[Authority: COMAR 26.11.09.08B(5)]**

Compliance Demonstration and Rationale for Periodic Monitoring Strategy

COMAR 26.11.09.08E outlines the specific monitoring, record keeping, and reporting requirements necessary to demonstrate compliance. These requirements include periodic combustion analyses and training programs. According to the six-month report submitted on July 29, 2020, the facility has been performing combustion analyses on each boiler for each fuel used at least once per year. No additional periodic monitoring is necessary to demonstrate compliance.

Applicable Standards for Control of NOx – Major NSR Requirements

- The Permittee shall meet the following Lowest Achievable Emissions Rate (LAER) requirements for the four (4) boilers:

  (a) When firing natural gas, the LAER requirement shall be the use of ultra low NOx burners designed such that emissions of NOx from each boiler do not exceed 9 parts per million by volume on a dry basis (ppmvd), corrected to 3% oxygen.

  (b) When firing a diesel fuel (No. 2 fuel oil), the LAER requirements shall be a combination of the following:

  (i) The use of ultra low sulfur diesel fuel (No. 2 fuel oil) with a maximum sulfur content of 0.0015 percent by weight such that emissions of NOx from each boiler do not exceed 58 parts per million by volume on a dry basis (ppmvd) corrected to 3% oxygen; and

  (ii) A limit on total diesel fuel (No. 2 fuel oil) usage for all four (4) boilers of 60,000 gallons in any rolling 12-month period.

  [Authority: ARA NSR Approval NSR-2007-01 issued on January 28, 2008]

- Total NOx emissions from the four (4) boilers (ARA Registration Nos. 021-0459-5-0388 through 5-0391) and five (5) generators (ARA Registration Nos. 021-0459-9-0254 through 9-0258) shall not exceed 56 tons in any rolling 12-month period. **[Authority: ARA NSR Approval NSR-2007-01 issued on January 28, 2008]**

Compliance Demonstration

To comply with the LAER limits when firing natural gas, AstraZeneca must maintain an operations and maintenance plan for the boilers to ensure proper operation and monitor monthly natural gas usage.

To comply with the LAER requirements when firing diesel, AstraZeneca must obtain fuel supplier certifications as specified under the Control of Sulfur Oxides section above and must also monitor monthly diesel fuel usage rates for each boiler. AstraZeneca shall calculate NOx emissions monthly as specified in the NSR Approval issued on January 28, 2008 to demonstrate compliance with the NOx emissions limit.

Rationale for Periodic Monitoring Strategy
An initial NOx performance test was conducted on Boiler #3 (one of the four identical boilers) on June 2, 2009. The performance test showed an average of 6.8 ppmvd of NOx at 3% oxygen while burning natural gas. The boilers are required to be properly operated and maintained. NOx emissions from properly operated and maintained boilers of this size should not fluctuate greatly from the results achieved during the initial performance test. Periodic performance testing for the boilers when burning natural gas is not required.

Fuel supplier certifications and monthly diesel fuel usage records are sufficient to demonstrate compliance with the diesel LAER requirements. Diesel fuel usage is limited to only 60,000 gallons per year. Periodic performance testing when burning diesel fuel is not required due to limited diesel fuel use.

Monthly NOx emissions calculations are sufficient to demonstrate compliance with the NOx emissions limit. If NOx emissions exceed the limit the Permittee must notify the Department in writing within 30 days of the exceedance.

The NSR Approval issued on January 28, 2008, specifies the methods and procedures that AstraZeneca must use to demonstrate compliance. No other periodic monitoring is required.

Applicable Standards for Control of HAP for EU-4 Only

- **40 CFR 63, Subpart JJJJJJ**, which requires work practice standards, emission reduction measures, and management practices for control of HAP emissions for existing oil-fired boilers.

Compliance Demonstration
For boilers installed on or before June 4, 2010 with a heat input capacity of equal to or greater than 10 million Btu per hour, a one-time energy assessment and biennial performance tune-ups are required.

The Permittee submitted a Notification of Compliance Status report to the EPA on July 14, 2014 verifying that an energy assessment and tune-up meeting the requirements of 40 CFR 63, Subpart JJJJJJ were performed on the boiler on March 6, 2014, prior to the March 21, 2014 compliance date for existing boilers. According to the six-month report submitted on July 29, 2020, a tune up was conducted on June 11, 2020.

In addition to the one-time energy assessment and biennial tune-ups, the Permittee must also operate and maintain the boiler in a manner that minimizes emissions. The Permittee must keep records of all notifications, energy assessments, and tune-ups and prepare a biennial compliance report to be submitted to the Department upon request.

Rationale for Periodic Monitoring Strategy for Control of HAP
40 CFR 63, Subpart JJJJJJ outlines the specific energy assessment and performance tune-up methods, procedures, and frequency and notification, record keeping and reporting requirements applicable to the boiler to demonstrate initial and continuous compliance with the subpart. No additional periodic monitoring is required.

Operational Limit for EU-1, EU-2, and EU-3 only

- The Permittee shall burn natural gas (includes propane as defined in 40 CFR §63.11237) or diesel fuel (No. 2 fuel oil) only during periods of gas curtailment, gas supply interruption, startups, or periodic testing on liquid fuel unless the Permittee obtains an approval from the Department to burn alternate fuels.

- Periodic testing of liquid fuel shall not exceed a combined total of 48 hours during any calendar year.

- Period of gas curtailment or supply interruption means a period of time during which the supply of gaseous fuel to an affected boiler is restricted or halted for reasons beyond the control of the facility. The act of entering into a contractual agreement with a supplier of natural gas established for curtailment purposes does not constitute a reason that is under the control of a facility for the purposes of this definition. An increase in the cost or unit price of natural gas due to normal market fluctuations not during periods of supplier delivery restriction does not constitute a period of natural gas curtailment or supply interruption. On-site gaseous fuel system emergencies or equipment failures qualify as periods of supply interruption when the emergency or failure is beyond the control of the facility.
[Authority: COMAR 26.11.02.02H and 40 CFR §63.11237]

Compliance Demonstration and Rationale for Periodic Monitoring Strategy
The Permittee shall maintain records of fuel use and documentation showing that fuel oil was only used during periods of natural gas curtailment or fuel oil testing. These records are sufficient to

demonstrate compliance with the operational limit. No additional periodic monitoring is required.

Emissions Units EU-5 and EU-6

EU-5 and EU-6 – Two (2) diesel fired, non-emergency generators each rated at 2,701 kilowatts and each controlled by a selective catalytic reduction ("SCR") system for control of NOx emissions (ARA Registration Nos. 021-0459-9-0254 and 9-0255).

On January 28, 2008, AstraZeneca received a permit to construct to install the two (2) non-emergency generators each controlled by an SCR system. The two (2) non-emergency generators were part of a facility expansion that included the installation of four (4) boilers and three (3) emergency generators. The expansion project triggered major NSR requirements for NOx emissions. The NSR Approval was issued with the permit to construct on January 28, 2008. The non-emergency generators were installed in 2009. All applicable conditions from the permit to construct and NSR Approval are included in the Title V – Part 70 Operating Permit.

On August 6, 2020, Astrazeneca received a permit to construct to install two (2) replacement, like in kind, selective catalytic reduction systems on these non-emergency generators. Modified monitoring, testing, and recordkeeping requirements are included in this permit.

The two (2) non-emergency generators are subject to the requirements of 40 CFR, Part 60, Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. Each generator has a displacement of less than 30 liters per cylinder, and a model year 2007 or later. The NSPS requirements of 40 CFR, Part 60, Subpart IIII are included in the Title V – Part 70 Operating Permit for these generators.

The two (2) non-emergency generators are subject to 40 CFR 63 Subpart ZZZZ for Stationary Reciprocating Internal Combustion Engines. Per 40 CFR §63.6590(c), AstraZeneca must meet the requirements of Subpart ZZZZ by meeting the requirements of 40 CFR 60 Subpart IIII. No further requirements apply to these generators under Subpart ZZZZ.

Applicable Standards for Visible Emissions

- The Permittee may not cause or permit the discharge of emissions from any engine, operating at idle greater than 10 percent opacity. **[Authority: COMAR 26.11.09.05E(2)]**

- The Permittee may not cause or permit the discharge of emissions from any engine, operating at other than idle conditions, greater than 40 percent opacity. **[Authority: COMAR 26.11.09.05E(3)]**

  Exceptions. COMAR 26.11.09.05E(2) does not apply for a period of 2 consecutive minutes after a period of idling of 15 consecutive minutes for the purpose of clearing the exhaust system.

  COMAR 26.11.09.05B(2) does not apply to emissions resulting directly from cold engine start-up and warm-up for the following maximum periods:
  (i) Engines that are idled continuously when not in service: 30 minutes
  (ii) All other engines: 15 minutes

  COMAR 26.11.09.05E(2) and (3) do not apply while maintenance, repair, or testing is being performed by qualified mechanics.

  Compliance Demonstration and Rationale for Periodic Monitoring Strategy
  The Permittee shall operate and maintain each non-emergency generator in a manner to prevent visible emissions. Properly operated and maintained engines should not cause visible emissions in excess of the applicable standards. The Permittee shall maintain records of all maintenance/repairs performed and make them available to the Department upon request. In addition, the Permittee is required to maintain an operations and maintenance plan for the generators (see NSPS Emissions Standards and Control of NOx – Major NSR Requirements below).

Applicable Standards for Control of Sulfur Oxides and NSPS Fuel Requirements

- The Permittee shall burn only ultra low sulfur diesel fuel (No. 2 fuel oil) with a maximum sulfur content of 0.0015 percent by weight in each of the two (2) non-emergency generators unless the Permittee obtains an approval from the Department to burn alternate fuels. Compliance with this requirement demonstrates compliance with COMAR 26.11.09.07A(2)(b) which limits the sulfur content of diesel fuel (No. 2 fuel oil) to 0.3 percent by weight. **[Authority: COMAR 26.11.02.09A]**

- The Permittee must use diesel fuel in each of the two (2) non-emergency generators that meets the requirements of 40 CFR §80.510(b) for nonroad diesel fuel, i.e. diesel fuel that has a per-gallon sulfur content that does not exceed 15 ppm, and that either has a minimum per-gallon cetane index of 40

or a maximum per-gallon aromatic content of 35 volume percent. **[Authority: 40 CFR §60.4207(b)]**

Compliance Demonstration and Rationale for Periodic Monitoring Strategy

AstraZeneca has elected to comply with a lower fuel sulfur content limit than what is required by state and federal regulations. This limit was placed in the permit to construct for the generators issued on January 28, 2008. The Permittee shall obtain a certification from the fuel supplier indicating that the oil complies with the limitation on the sulfur content and cetane index of fuel oil. The Permittee shall retain fuel supplier certification records and submit the records to the Department upon request. Fuel supplier certifications are sufficient to demonstrate compliance with all applicable fuel sulfur limits. No additional monitoring is required.

NSPS Emissions Standards and Control of NOx – NOx Major NSR Requirements

- The Permittee must comply with the following emissions standards for emergency and non-emergency generators with a maximum engine power greater than 3,000 horsepower, a displacement of less than 10 liters per cylinder and a 2007 model year:

  (a) Hydrocarbons: 1.0 gram per horsepower-hour (g/hp-hr) or 1.3 grams per kilowatt-hour (g/kW-hr).

  (b) NOx: 6.9 g/hp-hr or 9.2 g/kW-hr.

  (c) CO: 8.5 g/hp-hr or 11.4 g/kW-hr.

  (d) Particulate Matter (PM): 0.4 g/hp-hr or 0.54 g/kW-hr.
  [Authority: 40 CFR §60.4204(b)]

- The Permittee shall meet the following LAER requirements for the two (2) non-emergency generators:

  (a) Each non-emergency generator shall be equipped with a selective catalytic reduction (SCR) system designed to reduce NOx emissions from each non-emergency generator by 90% or greater.

(b) Each non-emergency generator and SCR system shall be designed such that post-control NOx emissions from each non-emergency generator do not exceed 0.61 grams per horsepower-hour (g/hp-hr).

(c) The 90% NOx emissions control efficiency and the short term NOx emissions limit of 0.61 g/hp-hr shall not apply during start-up conditions.

(d) The duration of start-up shall not exceed 9 minutes.

(e) "Start-up" is defined as the period of time from the initiation of operation of a non-emergency generator for maintenance, testing, emergency standby power or other use to full SCR system functionality. The start-up period is limited to 9 minutes after the non-emergency generators reach at least 30 percent load.

Compliance with the LAER requirements and NOx emissions limits specified in 40 CFR §60.4204(b) will be determined by stack testing within 180 days of permit to construct issuance for the replacement SCRs. The stack testing was originally conducted on September 29-30, 2020. The results showed that the SCRs did not meet the required removal efficiency. A retest was conducted on January 13-14, 2021. On this date, the stack test demonstrated a NOx removal efficiency of 91.2% for EU-5 and 92.7% for EU-6. These removal efficiencies are greater than the required 90% NOx control efficiency, and therefore the units are in compliance with the LAER standard. The post-control emissions were determined to be 0.459 g/hp-hr for EU-5 and 0.369 g/hp-hr for EU-6. The post control emissions are below the required limit of 0.61 g/hp-hr, and are therefore in compliance with the LAER standard.

[Authority: ARA PTC issued on August 6, 2020]

Clarification Note: The sentence "The start-up period is limited to 9 minutes after the non-emergency generators reach at least 30 percent load." was added to the permit condition to clarify when the 9 minute start-up period begins. The 9-minute start-up period is based on a manufacturer's guarantee that the SCR system would become fully operational within that time period. The SCR system is designed to begin operation when a non-emergency generator reaches at least 30 percent load. The SCR system does not operate during no load or low load conditions (less than 30%), such as occasional testing of the non-emergency generators under no load or low load conditions to ensure operational readiness. Therefore, the start-up period of the SCR system begins after the non-emergency generators reach at least 30 percent load for no more than 9 minutes.

- Total NOx emissions from the four (4) boilers (ARA Registration Nos. 021-0459-5-0388 through 5-0391) and five (5) generators (ARA Registration Nos. 021-0459-9-0254 through 9-0258) shall not exceed 56 tons in any rolling 12-month period. **[Authority: ARA NSR Approval NSR-2007-01 issued on January 28, 2008]**

Compliance Demonstration
To demonstrate compliance with the LAER requirements, AstraZeneca shall conduct stack emissions tests on each SCR system at least once during the term of the permit. The LAER requirements are more stringent than the NSPS requirements for NOx, therefore the testing requirements also support the compliance demonstration for the NSPS NOx emissions limit.
To demonstrate compliance with all other NSPS emissions limits, the Permittee must operate and maintain each generator according to manufacturer's written instructions or procedures developed by the Permittee that are approved by the engine manufacturer over the entire life of the engine, as specified in 40 CFR §60.4206 and 40 CFR §60.4211(a). In addition, the Permittee must maintain an operations and maintenance plan for the generators as specified in the NSR Approval issued on January 28, 2008 to ensure that the generators are properly operated and maintained.

To demonstrate compliance with the total NOx emissions limit for the boilers and generators AstraZeneca shall calculate NOx emissions monthly as specified in the NSR Approval issued on January 28, 2008.

Rationale for Periodic Monitoring Strategy
Initial performance tests on the SCR systems to demonstrate compliance with the LAER requirements were conducted on September 29 and 30, 2009. Subsequent performance tests, as required by the Title V – Permit to Operate were conducted in 2015. Most recently, stack testing required by the Title V- Permit to Operate and the Permit to Construct issued on August 6, 2020, was conducted on January 13 and 14, 2021.

The results of the most recent tests are summarized below:

Generator ID	NOx Emissions Control Efficiency (average of 3 test runs)	NOx Emissions (grams/hp-hr) (avg. of 3 test runs)
410405 (EU-5)	91.2 %	0.459
410404 (EU-6)	92.7 %	0.369

Tests on both SCR systems have consistently demonstrated compliance with the LAER requirements of 90% NOx emissions control efficiency and 0.61 grams/hp-hr. AstraZeneca must operate and maintain the generators in accordance with an operations and maintenance plan and periodic stack testing will confirm compliance with the LAER requirements.

Monthly NOx emissions calculations are sufficient to demonstrate compliance with the NOx emissions limit. If NOx emissions exceed the limit the Permittee must notify the Department in writing within 30 days of the exceedance.

CAM Plan Requirements

Compliance Assurance Monitoring (CAM), as specified in 40 CFR, Part 64, applies to any emission unit at a Title V major source that meets all of the following criteria:

(1) The emission unit is subject to a federally enforceable emission limit or standard for a regulated pollutant;

(2) The emission unit uses a control device to achieve compliance with any such emission limitation or standard; and

(3) The emission unit has the potential to emit pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year required for a source to be classified as a major source and must not otherwise be exempt from CAM.

Pre-control NOx emissions from each generator exceed the NOx major source threshold of 25 tons per year. CAM requirements apply to the two (2) SCR systems and a CAM plan for EU-5 and EU-6 is included in Table IV-3a of the Title V - Part 70 Operating Permit.

Rationale for Selection of Performance Indicators in the CAM Plan
The following four (4) performance indicators in the CAM Plan for the two (2) Selective Catalytic Reduction (SCR) Systems were selected to provide a reasonable level of assurance that emissions of NOx from the diesel fired, non-emergency generators (EU 5 and EU 6) would be controlled by at least 90% and would not exceed 0.61 grams per horsepower hour.

1. Indicator 1– SCR Inlet Temperature
   This indicator was selected because proper SCR inlet temperature is critical to catalyst and overall SCR performance. The metal catalyst must be operated in a narrow temperature range because variations in temperature can have an impact on the NOx reduction efficiency. The SCR inlet temperature shall be no less than 350° F and no greater than 500° F during normal operations. The indicator range was based on manufacturer's specifications.

2. Indicator 2 – Diesel Exhaust Fluid Active Pressure of the SCR
   This indicator was selected because the diesel exhaust fluid pressure provides an indicator of catalyst performance. The SCR's metal catalyst is susceptible to being coated by chemicals or particulate adsorbing to the surface by engine materials. Lubricating oils are one potential source affecting coating of the catalyst. The pressure shall not exceed 10.9 kPa based on manufacturer's specifications.

3. Indicator 3 – SCR Conversion Efficiency
   This indicator was selected because it provides assurance that the generator engine and corresponding urea injection pump is operating efficiently, as well as provides monitoring of the pump output percent into the SCR. The conversion efficiency should be greater than 90%. If the conversion efficiency drops below 90% the SCR automatically adjusts.

4. Indicator 4 – Inspection and Maintenance Program
   Each SCR system will undergo inspection and maintenance checks on a monthly, quarterly, semi-annual, and annual basis. This indicator was selected because routine inspection and maintenance will ensure that the SCR equipment is in good repair and operating properly. The program will include visual inspection and cleaning of the various SCR components in a manner consistent with the manufacturer's recommendations and performed by qualified personnel.

The following table contains the CAM Plan for the two (2) SCR systems that is included in Table IV-3a of the Title V – Part 70 Operating Permit:

Table IV – 3a	
COMPLIANCE ASSURANCE MONITORING REQUIREMENTS – PART 64	
Two (2) Selective Catalytic Reduction (SCR) Systems for Non-Emergency Generators (EU-5 and EU-6)	
Applicable Requirements	**Limit: 0.61 g/HP-hr and 90 percent reduction of NOx emissions**
I. Indicator No. 1	SCR inlet temperature.
Measurement Approach	Temperature sensor installed at the inlet of the SCR.
II. Indicator Range	350° C - 500° C during normal operations
III. Performance Criteria	
Data Representativeness	The monitoring system consists of a temperature sensor located in the SCR inlet ductwork.
QA/QC Practices and Criteria	Visual inspections of temperature sensor. An alarm will be triggered on the SCR if the temperature sensor fails.
Monitoring Frequency	Once per operating day during normal operations.
Data Collection Procedures	The SCR inlet temperature readings will be documented in a log.
Averaging Periods and Excursions	Daily temperature must be within the acceptable indicator range
I. Indicator No. 2	Diesel exhaust fluid active pressure
Measurement Approach	Install a pressure sensor.
II. Indicator Range	Active pressure should be less than 10.9 kilopascals.
III. Performance Criteria	
Data Representativeness	The diesel exhaust fluid pressure sensor monitors the active pressure of the diesel exhaust fluid injection prior to the catalyst.
QA/QC Practices and Criteria	Diesel exhaust fluid pressure sensor and pitot lines inspected on an annual basis.
Monitoring Frequency	Once per operating day during normal operations.
Data Collection Procedures	The pressure readings will be documented in a log.
Averaging Periods and Excursions	Daily pressure should not exceed the maximum indicator value.
I. Indicator No. 3	SCR Conversion Efficiency

Table IV – 3a	
COMPLIANCE ASSURANCE MONITORING REQUIREMENTS – PART 64	
Two (2) Selective Catalytic Reduction (SCR) Systems for Non-Emergency Generators (EU-5 and EU-6)	
Applicable Requirements	**Limit: 0.61 g/HP-hr and 90 percent reduction of NOx emissions**
Measurement Approach	Record percent engine load and corresponding SCR conversion efficiency.
II. Indicator Range	The conversion efficiency should be 90% or greater.
III. Performance Criteria	
Data Representativeness	The engine and SCR control modules monitor and provide electrical load on the generator and generator engine and the corresponding urea injection pump output percentage and SCR conversion efficiency.
QA/QC Practices and Criteria	The urea pump output is factory calibrated.
Monitoring Frequency	SCR conversion efficiency is checked once per operating day during normal operations.
Data Collection Procedures	The SCR conversion efficiency is documented in a log.
Averaging Periods and Excursions	Daily SCR conversion efficiency must meet or exceed the minimum indicator value.
I. Indicator No. 4	Inspection and maintenance program
Measurement Approach	Inspection and maintenance checks.
II. Indicator Range	Inspections and maintenance will be performed as recommended by the manufacturer.
III. Performance Criteria	
Data Representativeness	Inspection and maintenance checks performed to ensure proper equipment operation.
QA/QC Practices and Criteria	Qualified personnel will perform inspection and maintenance activities.
Monitoring Frequency	Inspections and maintenance checks will be performed on a monthly, quarterly, semi-annual, and/or annual basis as specified on the maintenance work order.
Data Collection Procedures	The inspection and maintenance checks will be documented on a maintenance work order.
Excursions	Failure to conduct inspections and maintenance checks as outlined in the program.

Applicable Standards for NOx NSR Operational Limits

- Total operating hours, including hours used for maintenance and testing shall not exceed 2626 hours in any rolling 12-month period for each of the two (2) non-emergency generators. **[Authority: ARA NSR Approval NSR-2007-01 issued on January 28, 2008]**

Compliance Demonstration and Rationale for Periodic Monitoring Strategy

The Permittee is required to maintain monthly records of the hours of operation for each generator. These records are sufficient to demonstrate compliance with these requirements, no periodic monitoring is required.

Applicable Standards for NESHAP Requirements

- The Permittee must meet the requirements of 40 CFR, Part 63, Subpart ZZZZ by meeting the requirements of 40 CFR, Part 60, Subpart IIII for the two (2) non-emergency generators. No further requirements apply to the two (2) non-emergency generators under 40 CFR, Part 63, Subpart ZZZZ. **[Authority: 40 CFR §63.6590(c)(1)]**

Compliance Demonstration and Rationale for Periodic Monitoring Strategy

The generators will meet the requirements of Subpart ZZZZ by meeting the requirements of Subpart IIII. No further requirements are required for these generators under Subpart ZZZZ.

Applicable Standards for Control of NOx – NOx RACT Requirements

- A person who owns or operates fuel-burning equipment with a capacity factor (as defined in 40 CFR, Part 72.2) of 15 percent or less shall:

  (a) Provide certification of the capacity factor of the equipment to the Department in writing;

  (b) For fuel-burning equipment that operates more than 500 hours during a calendar year, perform a combustion analysis and optimize combustion at least once annually;

  (c) Maintain the results of the combustion analysis at the site for at least 5 years and make these results available to the Department and the EPA upon request;

(d) Require each operator of an installation, except combustion turbines, to attend operator training programs at least once every 3 years, on combustion optimization that are sponsored by the Department, the EPA, or equipment vendors; and

(e) Maintain a record of training program attendance for each operator at the site, and make these records available to the Department upon request.

[Authority: COMAR 26.11.09.08G]

- For the purposes of COMAR 26.11.09.08, the equipment operator to be trained may be the person who maintains the equipment and makes the necessary adjustments for efficient operation. **[Authority: COMAR 26.11.09.08B(5)]**

Compliance Demonstration and Rationale for Periodic Monitoring Strategy

COMAR 26.11.09.08G outlines the specific monitoring record keeping, and reporting requirements necessary to demonstrate compliance. No additional periodic monitoring is necessary to demonstrate compliance.

Emissions Units EU-7 through EU-9, and EU-14 through EU-16

EU-7 through EU-9 – Three (3) diesel fired, federal non-emergency generators each rated at 2,701 kilowatts (ARA Registration Nos. 021-0459-9-0256 through 9-0258).

EU-14 – One (1) diesel fired, emergency generator rated at 750 kilowatts (ARA Registration No. 021-0459-9-0382).

EU-15 – One (1) diesel fired, emergency generator rated at 1,500 kilowatts (ARA Registration No. 021-0459-9-0392).

EU-16 – One (1) diesel fired, emergency generator rated at 1,500 kilowatts (ARA Registration No. 021-0459-9-0393).

On January 28, 2008, AstraZeneca received a permit to construct to install EU-7, EU-8, and EU-9. The three (3) emergency generators were part of a facility expansion that included the installation of four (4) boilers and two (2) non-emergency generators. The expansion project triggered major NSR requirements for NOx emissions. The NSR Approval was issued with the permit to construct on January 28, 2008. The three (3) emergency generators were

installed in 2009 and are subject to the NSPS requirements 40 CFR 60, Subpart IIII.

On September 26, 2016, AstraZeneca submitted a letter requesting re-classification of the three (3) existing emergency generators (ARA Registration Nos. 021-0459-9-0256, 021-0459-9-0257, and 021-0459-0258) to allow operation for emergency demand response purposes. Based on a May 4, 2016 federal court mandate to reverse and remand §60.4211(f)(2)(ii) and (iii) of 40 CFR 60, Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, operation of engines for emergency demand response or during periods of voltage or frequency deviation is considered non-emergency operation. The existing generators meet the requirements for non-emergency generators with the same model year and capacity and are now classified as non-emergency generators with respect to the federal requirements of 40 CFR 60, Subpart IIII. The generators are still considered emergency generators with respect to the State-only regulations.

On January 20, 2015, AstraZeneca received a permit to construct to install EU-14. The emergency generator was installed in 2015 and is subject to the NSPS requirements 40 CFR 60, Subpart IIII. This generator is only operated for emergencies and maintenance and testing only and is considered an emergency generator with respect to both federal and State air pollution control regulations.

On February 2, 2017, AstraZeneca received a permit to construct to install EU-15 and EU-16. The two (2) emergency generators will be installed in 2017 and are subject to the NSPS requirements 40 CFR 60, Subpart IIII. These generators are only operated for emergencies and maintenance and testing only and are considered emergency generators with respect to both federal and State air pollution control regulations.

All six (6) generators are also subject to 40 CFR, Part 63, Subpart ZZZZ. The Permittee must meet the requirements of 40 CFR, Part 63, Subpart ZZZZ by meeting the requirements of 40 CFR, Part 60, Subpart IIII for the generators. No further requirements apply to the generators under 40 CFR, Part 63, Subpart ZZZZ. **[Authority: 40 CFR §63.6590(c)(1)]**

Applicable Standards for Visible Emissions

- The Permittee may not cause or permit the discharge of emissions from any engine, operating at idle greater than 10 percent opacity. **[Authority: COMAR 26.11.09.05E(2)]**

- The Permittee may not cause or permit the discharge of emissions from any engine, operating at other than idle conditions, greater than 40 percent opacity. **[Authority: COMAR 26.11.09.05E(3)]**

  Exceptions. COMAR 26.11.09.05E(2) does not apply for a period of 2 consecutive minutes after a period of idling of 15 consecutive minutes for the purpose of clearing the exhaust system.

  COMAR 26.11.09.05E(2) does not apply to emissions resulting directly from cold engine start-up and warm-up for the following maximum periods:
  (i) Engines that are idled continuously when not in service: 30 minutes
  (ii) All other engines: 15 minutes

  COMAR 26.11.09.05E(2) and (3) do not apply while maintenance, repair, or testing is being performed by qualified mechanics.

  Compliance Demonstration and Rationale for Periodic Monitoring Strategy
  The Permittee shall operate and maintain the each generator in a manner to prevent visible emissions. Properly operated and maintained engines should not cause visible emissions in excess of the applicable standards. The Permittee shall maintain records of all maintenance/repairs performed and make them available to the Department upon request. In addition, the Permittee is required to maintain an operations and maintenance plan for the generators (see NSPS Emissions Standards and Control of NOx – Major NSR Requirements below).

Applicable Standards for Control of Sulfur Oxides and NSPS Fuel Requirements

- For EU-7, EU-8, and EU-9 only, the Permittee shall burn only ultra low sulfur diesel fuel (No. 2 fuel oil) with a maximum sulfur content of 0.0015 percent by weight in each of the three (3) generators unless the Permittee obtains an approval from the Department to burn alternate fuels. Compliance with this requirement demonstrates compliance with COMAR 26.11.09.07A(2)(b) which limits the sulfur content of diesel fuel (No. 2 fuel oil) to 0.3 percent by weight. **[Authority: COMAR 26.11.02.09A]**
- The Permittee must use diesel fuel in the generators that meets the requirements of 40 CFR §80.510(b) for nonroad diesel fuel, i.e., diesel fuel that has a per-gallon sulfur content that does not exceed 15 ppm, and that either has a minimum per-gallon cetane index of 40 or a maximum per-gallon aromatic content of 35 volume percent. **[Authority: 40 CFR §60.4207(b)]**

Compliance Demonstration and Rationale for Periodic Monitoring Strategy

The Permittee shall obtain a certification from the fuel supplier indicating that the oil complies with the limitation on the sulfur content and cetane index of fuel oil. The Permittee shall keep records of fuel supplier certifications of sulfur content in fuel and submit the records to the Department upon request. Fuel supplier certifications are sufficient to demonstrate compliance with all applicable fuel sulfur limits. No additional monitoring is required.

NSPS Emissions Standards and Control of NOx – Major NSR Requirements

- For EU-7, EU-8, and EU-9 only:
  The Permittee must comply with the following emissions standards for the three (3) federal non-emergency generators:

  (a) Hydrocarbons: 1.0 gram per horsepower-hour (g/hp-hr) or 1.3 grams per kilowatt-hour (g/kW-hr)

  (b) NOx: 6.9 g/hp-hr or 9.2 g/kW-hr

  (c) CO: 8.5 g/hp-hr or 11.4 g/kW-hr

  (d) Particulate Matter (PM): 0.4 g/hp-hr or 0.54 g/kW-hr
  [Authority: 40 CFR §60.4204(b)]

- For EU-7, EU-8, and EU-9 only:
  The Permittee shall meet the following LAER requirement for the three (3) generators:

  Each generator shall be designed such that NOx emissions from each emergency generator do not exceed 6.06 grams per horsepower-hour (g/hp-hr).

  Compliance with the LAER requirements for the ARA NSR Approval NSR-2007-01 issued to AstraZeneca on January 28, 2008 also demonstrates compliance with the NOx emissions limits specified in 40 CFR §60.4204(b).
  [Authority: ARA NSR Approval NSR-2007-01 issued on January 28, 2008]

- For EU-7, EU-8, and EU-9 only:
  Total NOx emissions from the four (4) boilers (ARA Registration Nos. 021-0459-5-0388 through 5-0391) and five (5) generators (ARA Registration Nos. 021-0459-9-0254 through 9-0258) shall not exceed 56 tons in any rolling 12-

month period. **[Authority: ARA NSR Approval NSR-2007-01 issued on January 28, 2008]**

- For EU-14, EU-15, and EU-16 only:
  The Permittee must comply with the following emissions standards for each emergency generator:

  i. Non-Methane Hydrocarbons (NMHC) and NOx: 4.8 gram per horsepower-hour (g/hp-hr) or 6.4 grams per kilowatt-hour (g/kW-hr)

  ii. CO: 2.6 g/hp-hr or 3.5 g/kW-hr

  iii. Particulate Matter (PM): 0.15 g/hp-hr or 0.2 g/kW-hr
  [Authority: 40 CFR §60.4205(b)]

- For EU-14, EU-15, and EU-16 only:
  The Permittee must comply with the following opacity standards for each emergency generator:

  i. Exhaust opacity must not exceed 20 percent during the acceleration mode.

  ii. Exhaust opacity must not exceed 15 percent during the lugging mode.

  iii. Exhaust opacity must not exceed 50 percent during the peaks in either the acceleration or lugging modes.
  [Authority: 40 CFR §60.4205(b)]

Compliance Demonstration
To comply with the NSPS limits, AstraZeneca must operate and maintain each generator according to the manufacturer's written instructions for the entire life of each engine, and AstraZeneca shall maintain documentation from the manufacturer certifying that the engines meet the applicable emissions standards. For the Major NSR limits for EU-7 through EU-9, AstraZeneca is required to maintain an operations and maintenance plan for the generators to ensure proper operation.

AstraZeneca shall monitor monthly fuel usage and shall calculate NOx emissions monthly as specified in the NSR Approval issued on January 28, 2008 to demonstrate compliance with the NOx emission limit.

Rationale for Periodic Monitoring Strategy

The manufacturer of the engines certified that each engine meets the applicable emissions standards. Generators that are properly operated and maintained should comply with all applicable regulatory requirements during periods of normal operation. Periodic emissions testing is not required for generators that operate intermittently for emergency purposes only.

Monthly NOx emissions calculations are sufficient to demonstrate compliance with the rolling 12-month NOx emission limit. If NOx emissions exceed the limit the Permittee must notify the Department in writing within 30 days of the exceedance.

The NSR Approval issued on January 28, 2008, specifies the methods and procedures that AstraZeneca must use to demonstrate compliance. No other periodic monitoring is required.

Operational Limits

- For EU-14, EU-15, and EU-16 only, the Permittee must operate each emergency generator according to the following requirements:

  a. To be considered an emergency stationary RICE under 40 CFR 60, Subpart IIII, any operation other than emergency operation and maintenance and testing is prohibited. **[Authority: 40 CFR §60.4211(f)]**

  b. There is no time limit on the use of the emergency generator in emergency situations. **[Authority: 40 CFR §60.4211(f)(1)]**

  c. The Permittee may operate the emergency generator for any combination of the following purposes for a maximum of 100 hours per calendar year: Maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine.

  The Permittee may petition the Department for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the Permittee maintains records

indicating that federal, state, or local standards require maintenance and testing of the emergency generator beyond 100 hours per calendar year.
[Authority: 40 CFR §60.4211(f)(2)(i)]

- Total operating hours, including hours used for maintenance and testing shall not exceed 500 hours in any rolling 12-month period for each of the three (3) generators (EU-7, EU-8, and EU-9). **[Authority: ARA NSR Approval NSR-2007-01 issued on January 28, 2008]**

Compliance Demonstration and Rationale for Periodic Monitoring Strategy
The Permittee is required to maintain annual records of the hours of operation for each generator including hours for maintenance and readiness checks. The Permittee must also document how many hours are spent for emergency operation, including what classified as emergency. Also, the Permittee is required to submit annual reports whenever the generators are operated for emergency demand purposes. These records are sufficient to demonstrate compliance with the operating limits.

Applicable Standards for Control of HAP

- The Permittee must meet the requirements of 40 CFR, Part 63, Subpart ZZZZ by meeting the requirements of 40 CFR, Part 60, Subpart IIII for the generators. No further requirements apply to the generators under 40 CFR, Part 63, Subpart ZZZZ. **[Authority: 40 CFR §63.6590(c)(1)]**

Compliance Demonstration and Rationale for Periodic Monitoring Strategy
The generators will meet the requirements of Subpart ZZZZ by meeting the requirements of Subpart IIIII. No further requirements are required for these generators under Subpart ZZZZ.

Applicable Standards for Control of NOx – NOx RACT Requirements

- A person who owns or operates fuel-burning equipment with a capacity factor (as defined in 40 CFR, Part 72.2) of 15 percent or less shall:

  (a) Provide certification of the capacity factor of the equipment to the Department in writing;

  (b) For fuel-burning equipment that operates more than 500 hours during a calendar year, perform a combustion analysis and optimize combustion at

least once annually; **Note: EU-7, EU-8, and EU-9 are limited to operating less than 500 hours per calendar year. See Table IV-5 Condition D3. Combustion analyses for these generators are not required.**

(c) Maintain the results of the combustion analysis at the site for at least 5 years and make these results available to the Department and the EPA upon request;

(d) Require each operator of an installation, except combustion turbines, to attend operator training programs at least once every 3 years, on combustion optimization that are sponsored by the Department, the EPA, or equipment vendors; and

(e) Maintain a record of training program attendance for each operator at the site, and make these records available to the Department upon request. **[Authority: COMAR 26.11.09.08G]**

- For the purposes of COMAR 26.11.09.08, the equipment operator to be trained may be the person who maintains the equipment and makes the necessary adjustments for efficient operation. **[Authority: COMAR 26.11.09.08B(5)]**

Compliance Demonstration and Rationale for Periodic Monitoring Strategy

COMAR 26.11.09.08G outlines the specific monitoring, record keeping, and reporting requirements necessary to demonstrate compliance. No additional periodic monitoring is necessary to demonstrate compliance.

COMPLIANCE SCHEDULE

AstraZeneca, PLP's Frederick Campus is currently in compliance with all applicable air quality regulations.

TITLE IV – ACID RAIN

The Acid Rain Program does not apply to AstraZeneca, PLP's Frederick Campus.

TITLE VI – OZONE DEPLETING SUBSTANCES

AstraZeneca, PLP is subject to Title VI requirements.

SECTION 112(r) – ACCIDENTAL RELEASE

AstraZeneca, PLP is not subject to the requirements of Section 112(r).

PERMIT SHIELD

AstraZeneca, PLP requested that a permit shield be expressly included in the Title V – Part 70 renewal permit. Permit shields are granted on an emission unit by emission unit basis. A permit shield shall apply for the applicable requirements included for each of the emissions units identified in Table IV-1 through Table IV-6. A permit shield statement is included in the opening summary statement in Section IV - Plant Specific Conditions of the permit.

INSIGNIFICANT ACTIVITIES

This section provides a list of insignificant emissions units that were reported in the Title V permit application. The applicable Clean Air Act requirements, if any, are listed below the insignificant activity.

(1) No. 2 Stationary internal combustion engines with an output less than 500 brake horsepower (373 kilowatts) and which are not used to generate electricity for sale or for peak or load shaving;

The units are subject to the following requirements:

(A) COMAR 26.11.09.05E(2), Emissions During Idle Mode: The Permittee may not cause or permit the discharge of emissions from any engine, operating at idle, greater than 10 percent opacity.

(B) COMAR 26.11.09.05E(3), Emissions During Operating Mode: The Permittee may not cause or permit the discharge of emissions from any engine, operating at other than idle conditions, greater than 40 percent opacity.

(C) Exceptions:

(i) COMAR 26.11.09.05E(2) does not apply for a period of 2 consecutive minutes after a period of idling of 15

consecutive minutes for the purpose of clearing the exhaust system.

(ii) COMAR 26.11.09.05E(2) does not apply to emissions resulting directly from cold engine start-up and warm-up for the following maximum periods:

(a) Engines that are idled continuously when not in service: 30 minutes
(b) all other engines: 15 minutes.

(iii) COMAR 26.11.09.05E(2) & (3) do not apply while maintenance, repair or testing is being performed by qualified mechanics.

(D) 40 CFR 60, Subpart IIII, which states that the Permittee must:

1. purchase an engine certified to the emission standards in 40 CFR §60.4205(c) for the same model year and maximum engine power;

2. install a non-resettable hour meter prior to startup of the engine;

3. install and configure the engine according to the manufacturer's emission-related specifications;

3. operate and maintain the diesel engine that achieves the emissions standards as required by 40 CFR §60.4205 for emergency engines according to the manufacturer's emissions related written instructions over the entire life of the engine;

4. change those settings that are permitted by the manufacturer;

5. meet the requirements of 40 CFR Parts 89, 94, and/or 1068, as applicable;

6. use diesel fuel in the engine that meets the requirements of 40 CFR §80.510(b); and

7. meet the requirements of 40 CFR 63, Subpart ZZZZ by meeting the requirements of 40 CFR 60, Subpart IIII.

(2) ✓ Water cooling towers and water cooling ponds unless used for evaporative cooling of water from barometric jets or barometric condensers, or used in conjunction with an installation requiring a permit to operate;

(3) ✓ Equipment for drilling, carving, cutting, routing, turning, sawing, planing, spindle sanding, or disc sanding of wood or wood products;

(4) Containers, reservoirs, or tanks used exclusively for:

(a) ✓ Storage of butane, propane, or liquefied petroleum, or natural gas (AstraZeneca maintains one (1) 120-gallon propane storage tank);

(b) No. 11 Storage of lubricating oils;

(c) No. 10 Storage of Numbers 1, 2, 4, 5, and 6 fuel oil and aviation jet engine fuel;

AstraZeneca currently maintains the following diesel (No. 2 fuel oil) storage tanks:

Designation	Vessel Type	Capacity (gallons)	Location	Description
Tank 1	AST - Vertical	101,000	Building 633	Main Storage tank
Tank 2	AST – Horizontal	4,500	Building 633	Emergency Generator #1
Tank 3	AST – Horizontal	275	Building 633	Generator Overflow Belly Receiver
Tank 4	AST – Horizontal	4,500	Building 633	Emergency Generator #2

Designation	Vessel Type	Capacity (gallons)	Location	Description
Tank 5	AST – Horizontal	4,500	Building 633	Emergency Generator #3
Tank 6	AST – Horizontal	4,500	Building 633	Non-Emergency Generator #1
Tank 7	AST – Horizontal	4,500	Building 633	Non-Emergency Generator #2
Tank 8	AST – Horizontal	440	Building 636	Emergency Generator Tank
Tank 9	AST – Horizontal	350	Building 636	Fire Pump House
Tank 10	AST – Horizontal	460	Building 636	Fire Pump House
Tank 11	AST – Horizontal	2150	Building 660	Generator Fuel Tank

(d) No. ✓ The storage of VOC normally used as solvents, diluents, thinners, inks, colorants, paints, lacquers, enamels, varnishes, liquid resins, or other surface coatings and having individual capacities of 2,000 gallons (7.6 cubic meters) or less;

Including but not limited to the following types:

Container Size	VOC Containing Material
30 gallon drum	200 proof ethanol
30 gallon drum	20% ethanol
200 liter drum	20% ethanol
16 fl. oz. sterile bottles	70% spray isopropyl alcohol
16 fl. oz. non-sterile bottles	70% spray isopropyl alcohol

(5) ✓ Charbroilers and pit barbecues as defined in COMAR 26.11.18.01 with a total cooking area of 5 square feet (0.46 square meter) or less;

(6) ✓ Certain recreational equipment and activities, such as fireplaces, barbecue pits and cookers, fireworks displays, and kerosene fuel use;

(7) ✓ Potable water treatment equipment, not including air stripping equipment;

(8) ✓ Comfort air conditioning subject to requirements of Title VI of the Clean Air Act;

(9) ✓ Laboratory fume hoods and vents;

(10) any other emissions unit, not previously listed in this section, which has a pre-control potential-to-emit that is: (a) less than 1 ton per year for VOC; (b) less than 1 ton per year for each pollutant for which there is a federal ambient air quality standard; (c) less than 1 ton per year for each Class II pollutant as defined in COMAR 26.11.15.01B(4); and (d) not more than 1 pound per day of a Class I toxic air pollutant as defined in COMAR 26.11.15.01B(4):

No. 1 Cell Culture Process Area in Building 633.

✓ Support Activities including but not limited to the following: glass washer, sterilizer (autoclave), Water for Injection (WFI) still, waste water inactivation/neutralization system, and chilled water.

VOC emissions from the installations listed in this category are subject to either COMAR 26.11.06.06B(2)(c).

COMAR 26.11.06.06B(2)(c) requires that the Permittee limit emissions of VOC to not more than 20 pounds per day from installations constructed on or after November 15, 1992 unless VOC emissions are reduced by 85 percent or more overall.

STATE ONLY ENFORCEABLE REQUIREMENTS

This section of the permit contains state-only enforceable requirements. The requirements in this section will not be enforced by the U.S. Environmental Protection Agency. The requirements in this section are not subject to COMAR 26.11.03.10 - Public Petitions for Review to EPA Regarding Part 70 Permits.

The Permittee is subject to the following State-only enforceable requirements:

1. Applicable Regulations:

   (a) COMAR 26.11.06.08 and 26.11.06.09, which generally prohibit the discharge of emissions beyond the property line in such a manner that a nuisance or air pollution is created.

   (b) COMAR 26.11.15.06, which prohibits the discharge of toxic air pollutants to the extent that such emissions will unreasonably endanger human health

2. Record Keeping and Reporting:

   The Permittee shall submit to the Department, by April 1 of each year during the term of this permit, a written certification of the results of an analysis of emissions of toxic air pollutants from the Permittee's facility during the previous calendar year. The analysis shall include either:

   (i) a statement that previously submitted compliance demonstrations for emissions of toxic air pollutants remain valid; or

   (ii) a revised compliance demonstration, developed in accordance with requirements included under COMAR 26.11.15 & 16, that accounts for changes in operations, analytical methods, emissions determinations, or other factors that have invalidated previous demonstrations.