Commonwealth of Kentucky
Energy and Environment Cabinet
Department for Environmental Protection
Division for Air Quality
300 Sower Boulevard, 2nd Floor
Frankfort, Kentucky 40601
(502) 564-3999

Draft

AIR QUALITY PERMIT

Issued under 401 KAR 52:020

Permittee Name:	**Four Rivers Nuclear Partnership, LLC**
Mailing Address:	**5511 Hobbs Road** **Kevil, Kentucky 42053**
Source Name:	**Four Rivers Nuclear Partnership, LLC**
Mailing Address:	**5511 Hobbs Road** **Kevil, Kentucky 42053**
Source Location:	**5600 Hobbs Road, Kevil, KY 42053**
Permit ID:	**V-26-027**
Agency Interest #:	**46094**
Activity ID:	**APE20260001**
Review Type:	**Title V, Operating**
Source ID:	**21-145-00074**
Regional Office:	**Paducah Regional Office** **130 Eagle Nest Drive** **Paducah, KY 42003** **(270) 898-8468**
County:	**McCracken**
Application Complete Date:	**April 17, 2026**
Issuance Date:	
Expiration Date:	

For Michael J. Kennedy, P.E.
Director
Division for Air Quality

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Permit	Permit Type	Activity #	Complete Date	Issuance Date	Summary of Action
V-26-027	Renewal	APE20260001	4/17/2026		Renewal of Title V Permit, Updated EU 67 Permit Requirements and EU description on page 54

SECTION A - PERMIT AUTHORIZATION

Pursuant to a duly submitted application the Kentucky Energy and Environment Cabinet (Cabinet) hereby authorizes the operation of the equipment described herein in accordance with the terms and conditions of this permit. This permit was issued under the provisions of Kentucky Revised Statutes (KRS) Chapter 224 and regulations promulgated pursuant thereto.

The permittee shall not construct, reconstruct, or modify any affected facilities without first submitting a complete application and receiving a permit for the planned activity from the permitting authority, except as provided in this permit or in 401 KAR 52:020, Title V Permits.

Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits, licenses, or approvals required by the Cabinet or any other federal, state, or local agency.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS

Process Group A

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Emission Unit 03 (EU 03): C-310 Cascade Operations (C-310 Unit)

Description: The cascade is the portion of the process where uranium hexafluoride (UF_6) was separated and the concentration of the desired uranium-235 (^{235}U) isotopes was increased (uranium enriched). During the deactivation stage, the cascade cells and associated piping/equipment will be cleaned, and exhaust gases will be routed to the C-310 200-foot stack. In some cases, a wet air passivation process is used to clean out the cells further prior to deactivation. When each cell is exposed to air, potential UF_6 deposits react with moisture in the air and could create HF gas. To minimize exposure to HF gas, wet air is introduced prior to the deactivation of cells to force the reaction process and allow treatment of the gases through the alumina traps in the 200-foot stack. Cleanout of the cells will be a batch process with evacuation of one cell and/or section of piping taking place over the course of several days to allow for purging of the equipment after the initial evacuation. Prior to the evacuation of each cell, the concentration of radionuclides is determined in accordance with the approved Alternate Monitoring Procedure.

Size/Rated Capacity:	3040 Megawatts, 11 million Separative Work Units (SWU)
Construction Commenced:	1952
Controls (radionuclides):	26 Activated Alumina Adsorption Traps 14 Sodium Fluoride Adsorption Traps
Controls (fluorides, chlorides):	None

APPLICABLE REGULATIONS:

401 KAR 50:050, *Monitoring*

401 KAR 53:010, *Ambient air quality standards,* applies to fluoride emissions.

40 CFR 61, Subpart H, *National Emission Standards for Emissions of Radionuclides Other Than Radon from Department of Energy Facilities*

40 CFR 190, Subpart B, *Environmental Standards for the Uranium Fuel Cycle*

STATE ORIGIN REQUIREMENTS:

401 KAR 63:020, *Potentially hazardous matter or toxic substances,* applies to chloride emissions.

1. **Operating Limitations:**
   To provide reasonable assurance that the limits for site-wide gaseous fluoride emissions are met (refer to **Section D**) when operating Emission Unit 03, the permittee shall only use the 200 foot stack.

2. **Emission Limitations:**
   a. Emissions of radionuclides to the ambient air from Department of Energy (DOE) facilities shall not exceed those amounts that would cause any member of the public to receive in any year an effective dose equivalent of 10 mrem/yr. [40 CFR 61.92]

      Compliance Demonstration Method:
      To determine compliance with the standard, radionuclide emissions shall be determined and effective dose equivalent values to members of the public calculated using EPA approved sampling procedures, computer models CAP-88 or AIRDOS-PC, or other procedures for which EPA has granted prior approval. [40 CFR 61.93(a)] Refer to **3.**

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Testing Requirements, **4. Specific Monitoring Requirements**, **5. Specific Recordkeeping Requirements**, and **6. Specific Reporting Requirements.**

b. Operations covered by 40 CFR 190, Subpart B shall be conducted in such a manner as to provide reasonable assurance that: [40 CFR 190.10]
   i. The annual dose equivalent does not exceed 25 millirems to the whole body, 75 millirems to the thyroid, and 25 millirems to any other organ of any member of the public as the result of exposures to planned discharges of radioactive materials, radon and its daughters excepted, to the general environment from uranium fuel cycle operations and to radiation from these operations. [40 CFR 190.10(a)]
   ii. The total quantity of radioactive materials entering the general environment from the entire uranium fuel cycle, per gigawatt-year of electrical energy produced by the fuel cycle, contains less than 50,000 curies of krypton-85, 5 millicuries of iodine-129, and 0.5 millicuries combined of plutonium-239 and other alpha-emitting transuranic radionuclides with half-lives greater than one year. [40 CFR 190.10(b)]

Compliance Demonstration Method:
To provide reasonable assurance that the limits for radionuclides imposed by 40 CFR 190, Subpart B are not exceeded, the source shall annually determine radionuclide emissions and effective dose equivalent values to members of the public through U.S. EPA and Division approved procedures as well as through complying with **3. Testing Requirements**, **4. Specific Monitoring Requirements**, **5. Specific Recordkeeping Requirements**, and **6. Specific Reporting Requirements.** The requirements of 40 CFR 190.10 are met by source compliance with 40 CFR 61.92 and the compliance demonstration method for **2. Emission Limitations**, **(a)**.

c. The permittee shall provide the utmost care and consideration, in the handling of materials from which hazardous matter or toxic substances may be emitted, to the potentially harmful effects of the emissions resulting from such activities. The permittee shall not allow any affected facility to emit potentially hazardous matter or toxic substances in such quantities or duration as to be harmful to the health and welfare of humans, animals and plants. Evaluation of such facilities as to adequacy of controls and/or procedures and emission potential will be made on an individual basis by the Cabinet. [401 KAR 63:020, Section 3]

Compliance Demonstration Method:
Based upon the emission rates of toxic and hazardous air pollutants determined by the Cabinet using information provided in the application and supplemental information submitted by the source, the Cabinet determines the affected facility to be in compliance with 401 KAR 63:020.

d. Refer to **Section D** for site-wide gaseous and total fluoride limits.

Compliance Demonstration Method:
To provide reasonable assurance that the limits for site-wide gaseous fluoride emissions are met, the source shall only use the 200 foot stack.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

3. T**esting Requirements:**

a. In accordance with 40 CFR 61.93, radionuclide emissions rates from stacks and vents shall be measured in accordance with Method 114, Appendix B to 40 CFR Part 61 or allowed alternate method approved through U.S. EPA and the Division. The stack shall be tested upon request by the Cabinet.

b. Pursuant to 401 KAR 50:055, General Compliance Requirements, and 401 KAR 50:045, Section 1, performance testing using either Kentucky Method 130 for gaseous fluoride emissions specified in 401 KAR 50:015 or other Division approved method, shall be conducted at such times as may be required by the Cabinet in accordance with 401 KAR 50:045.

c. Pursuant to 401 KAR 50:045, Section 1, performance testing using the reference methods specified in 401 KAR 50:015 shall be conducted if required by the Division.

4. Specific Monitoring Requirements:

a. Radionuclides emission rates from existing point sources (stacks or vents) shall be measured in accordance with the following requirements or with the requirements of 40 CFR 61.93(c), or other procedures for which EPA has granted prior approval: [40 CFR 61.93(b)]

i. Effluent flow rate measurements shall be made using the following methods: [40 CFR 61.93(b)(1)]

1) Reference Method 2 of appendix A to 40 CFR 60 shall be used to determine velocity and volumetric flow rates for stacks and large vents. [40 CFR 61.93(b)(1)(i)]

2) Reference Method 2A of appendix A to 40 CFR 60 shall be used to measure flow rates through pipes and small vents. [40 CFR 61.93(b)(1)(ii)]

3) The frequency of the flow rate measurements shall depend upon the variability of the effluent flow rate. For variable flow rates, continuous or frequent flow rate measurements shall be made. For relatively constant flow rates only periodic measurements are necessary. [40 CFR 61.93(b)(1)(iii)]

ii. Radionuclides shall be directly monitored or extracted, collected and measured using the following methods: [40 CFR 61.93(b)(2)]

1) Reference Method 1 of appendix A to 40 CFR 60 shall be used to select monitoring or sampling sites. [40 CFR 61.93(b)(2)(i)]

2) The effluent stream shall be directly monitored continuously with an in-line detector or representative samples of the effluent stream shall be withdrawn continuously from the sampling site following the guidance presented in ANSIN13.1-1969 “Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities” (including the guidance presented in appendix A of ANSIN13.1) (incorporated by reference—see 40 CFR 61.18). The requirements for continuous sampling are applicable to batch processes when the unit is in operation. Periodic sampling (grab samples) may be used only with EPA's prior approval. Such approval may be granted in cases where continuous sampling is not practical and radionuclide emission rates are relatively constant. In such cases, grab samples shall be collected with sufficient frequency so as to provide a representative sample of the emissions. [40 CFR 61.93(b)(2)(ii)]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

3) Radionuclides shall be collected and measured using procedures based on the principles of measurement described in 40 CFR 61, Appendix B, Method 114. Use of methods based on principles of measurement different from those described in 40 CFR 61, Appendix B, Method 114 must have prior approval from the Administrator. EPA reserves the right to approve measurement procedures. [40 CFR 61.93(b)(2)(iii)]
4) A quality assurance program shall be conducted that meets the performance requirements described in 40 CFR 61, Appendix B, Method 114. [40 CFR 61.93(b)(2)(iv)]

b. When it is impractical to measure the effluent flow rate at a source in accordance with the requirements of 40 CFR 61.93(b)(1) or to monitor or sample an effluent stream at a source in accordance with the site selection and sample extraction requirements of 40 CFR 61.93(b)(2), the permittee may use alternative effluent flow rate measurement procedures or site selection and sample extraction procedures provided that: [40 CFR 61.93(b)(3); 40 CFR 61.93(d)]
   i. It can be shown that the requirements of 40 CFR 61.93(b)(1) or (2) are impractical for the effluent stream. [40 CFR 61.93(b)(3)(i); 40 CFR 61.93(d)(1)]
   ii. The alternative procedure will not significantly underestimate the emissions. [40 CFR 61.93(b)(3)(ii); 40 CFR 61.93(d)(2)]
   iii. The alternative procedure is fully documented. [40 CFR 61.93(b)(3)(iii); 40 CFR 61.93(d)(3)]
   iv. The permittee has received prior approval from EPA. [40 CFR 61.93(b)(3)(iv); 40 CFR 61.93(d)(4)]

c. Radionuclide emission measurements in conformance with the requirements of 40 CFR 61.93(b) shall be made at all release points that have a potential to discharge radionuclides into the air in quantities that could cause an effective dose equivalent in excess of 1% of the standard. All radionuclides that could contribute greater than 10% of the potential effective dose equivalent for a release point shall be measured. With prior EPA approval, DOE may determine these emissions through alternative procedures. For other release points that have a potential to release radionuclides into the air, periodic confirmatory measurements shall be made to verify the low emissions. [40 CFR 61.93(b)(4)(i); 40 CFR 61.93(e)]

d. To determine whether a release point is subject to the emission measurement requirements of 40 CFR 61.93(b), it is necessary to evaluate the potential for radionuclide emissions for that release point. In evaluating the potential of a release point to discharge radionuclides into the air for the purposes of this section, the estimated radionuclide release rates shall be based on the discharge of the effluent stream that would result if all pollution control equipment did not exist, but the facilities operations were otherwise normal. [40 CFR 61.93(b)(4)(ii); 40 CFR 61.93(f)]

e. Environmental measurements of radionuclide air concentrations at critical receptor locations may be used as an alternative to air dispersion calculations in demonstrating compliance with the standard if the permittee meets the following criteria: [40 CFR 61.93(b)(5); 40 CFR 61.93(g)]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

i. The air at the point of measurement shall be continuously sampled for collection of radionuclides. [40 CFR 61.93(b)(5)(i); 40 CFR 61.93(g)(1)]
ii. Those radionuclides released from the facility that are the major contributors to the effective dose equivalent must be collected and measured as part of the environmental measurement program. [40 CFR 61.93(b)(5)(ii); 40 CFR 61.93(g)(2)]
iii. Radionuclide concentrations that would cause an effective dose equivalent of 10% of the standard shall be readily detectable and distinguishable from background. [40 CFR 61.93(b)(5)(iii); 40 CFR 61.93(g)(3)]
iv. Net measured radionuclide concentrations shall be compared to the concentration levels in Table 2 appendix E of 40 CFR 61 to determine compliance with the standard. In the case of multiple radionuclides being released from a facility, compliance shall be demonstrated if the value for all radionuclides is less than the concentration level in Table 2 of appendix E of 40 CFR 61, and the sum of the fractions that result when each measured concentration value is divided by the value in Table 2 of appendix E of 40 CFR 61 for each radionuclide is less than 1. [40 CFR 61.93(b)(5)(iv); 40 CFR 61.93(g)(4)]
v. A quality assurance program shall be conducted that meets the performance requirements described in appendix B, Method 114 of 40 CFR 61. [40 CFR 61.93(b)(5)(v); 40 CFR 61.93(g)(5)]
vi. Use of environmental measurements to demonstrate compliance with the standard is subject to prior approval of EPA. Applications for approval shall include a detailed description of the sampling and analytical methodology and show how the above criteria will be met. [40 CFR 61.93(b)(5)(vi); 40 CFR 61.93(g)(6)]

f. The permittee shall:
i. Continuously sample the C-310 radionuclide emissions and calculate and record the radionuclide emissions. Compliance is demonstrated through annual use of computer models CAP-88 or AIRDOS-PC, or other procedures for which U.S. EPA has granted prior approval.
ii. Monitor sample flow rate and note any excursions of the flow rate outside of the established range for the sample flow; and
iii. Calculate and model emissions annually to demonstrate compliance of the emissions unit in accordance with both 40 CFR 61.93 and 40 CFR 190.10.

g. The permittee may request approval for the use of an alternative method at any time, except: [40 CFR 61.13(h)(3)]
i. For an existing source or a new source that had an initial startup before the effective date, any request for use of an alternative method during the initial emission test shall be submitted to the Administrator within 30 days after the effective date, or with the request for a waiver of compliance if one is submitted under 40 CFR 60.10(b); or [40 CFR 61.13(h)(3)(i)]
ii. For a new source that has an initial startup after the effective date, any request for use of an alternative method during the initial emission test shall be submitted to the Administrator no later than with the notification of anticipated startup required under 40 CFR 60.09. [40 CFR 61.13(h)(3)(ii)]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

h. As allowed by **4. Specific Monitoring Requirements (b)**, the previously established monitoring method for the Cascade System has become impractical during Decommissioning of the facility. As allowed under 40 CFR 61.93, an alternative method for monitoring the Cascade System, is established as follows:
   i. Prior to evacuation of each Cascade Cell, testing shall be conducted to evaluate the concentrations of radionuclides in the Cell.
      1) Three gaseous samples shall be collected from the shell to determine uranium isotopes present using ASTM Method ASTM C799-12, EPA Method 6020A (SW-846), 40 CFR 61, Appendix B, Method 114, or an equivalent and approved method.
      2) The maximum result of the test for each cell will be used to calculate the worst case (greatest amount of radionuclides) emissions.
      3) Maximum hourly emissions and maximum total amounts to be emitted for each cell shall be calculated daily and recorded.
   ii. The facility will maintain and operate the existing ambient air monitoring network for radionuclides to provide confirmatory results that the facility remains within compliance dose limits at receptor locations. Refer to **2. Emission Limitations**.

i. Refer to **Section F** for general monitoring requirements.

5. Specific Recordkeeping Requirements:

a. The permittee must maintain records documenting the source of input parameters including the results of all measurements upon which they are based, the calculations and/or analytical methods used to derive values for input parameters, and the procedure used to determine effective dose equivalent. This documentation should be sufficient to allow an independent auditor to verify the accuracy of the determination made concerning the facility's compliance with the standard. These records must be kept at the site of the facility for at least five years and, upon request, be made available for inspection by the Administrator, or his authorized representative. [40 CFR 61.95]

b. If compliance with the radiological dose limits is accomplished through environmental measurements of radionuclide air concentrations at critical receptor locations, the permittee shall record results of sampling at critical receptor locations, maintenance and accuracy checks of instrumentation used, and all other parameters used to demonstrate compliance under this alternate method. [401 KAR 52:020, Section 10]

c. Flow rate excursions outside the established ranges for the sampler system shall be noted and recorded. [401 KAR 52:020, Section 10]

d. Calculations referenced in **4. Specific Monitoring Requirements** may be performed through the use of spreadsheets. When using spreadsheets, a record of the inputs, equations used, stack (emission source) in use at time of sample, and results must be recorded and made available for review for a term of not less than five (5) years. [401 KAR 52:020, Section 10]

e. Refer to **Section F** for general recordkeeping requirements.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

6. Specific Reporting Requirements:

a. Compliance with 40 CFR 61.92 shall be determined by calculating the highest effective dose equivalent to any member of the public at any offsite point where there is a residence, school, business or office. The permittee shall submit an annual report to both EPA headquarters and the appropriate regional office by June 30 which includes the dose calculations required by 40 CFR 61.93(a) for the previous calendar year. [40 CFR 61.94(a)]

b. In addition to the requirements of 40 CFR 61.94(a), an annual report shall include the following information: [40 CFR 61.94(b)]
   i. The name and location of the facility. [40 CFR 61.94(b)(1)]
   ii. A list of the radioactive materials used at the facility. [40 CFR 61.94(b)(2)]
   iii. A description of the handling and processing that the radioactive materials undergo at the facility. [40 CFR 61.94(b)(3)]
   iv. A list of the stacks or vents or other points where radioactive materials are released to the atmosphere. [40 CFR 61.94(b)(4)]
   v. A description of the effluent controls that are used on each stack, vent, or other release point and an estimate of the efficiency of each control device. [40 CFR 61.94(b)(5)]
   vi. Distances from the points of release to the nearest residence, school, business or office and the nearest farms producing vegetables, milk, and meat. [40 CFR 61.94(b)(6)]
   vii. The values used for all other user-supplied input parameters for the computer models (e.g., meteorological data) and the source of these data. [40 CFR 61.94(b)(7)]
   viii. A brief description of all construction and modifications which were completed in the calendar year for which the report is prepared, but for which the requirement to apply for approval to construct or modify was waived under 40 CFR 61.96 and associated documentation developed by the DOE to support the waiver. EPA reserves the right to require that DOE send to EPA all the information that normally would be required in an application to construct or modify, following receipt of the description and supporting documentation. [40 CFR 61.94(b)(8)]
   ix. Each report shall be signed and dated by a corporate officer or public official in charge of the facility and contain the following declaration immediately above the signature line: “I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment. See, 18 U.S.C. 1001." [40 CFR 61.94(b)(9)]

c. If the facility is not in compliance with the emission limits of 40 CFR 61.92 in the calendar year covered by the report, then the facility must commence reporting to the U.S. EPA and the Division’s regional office on a monthly basis the information listed in 40 CFR 61.94(b), for the preceding month. These reports will start the month immediately following the submittal of the annual report for the year in noncompliance and will be due 30 days following the end of each month. This increased level of reporting will continue until the U.S. EPA has determined that the monthly reports are no longer necessary. In addition to all the information required in 40 CFR 61.94(b), monthly reports shall also include the following information: [40 CFR 61.94(c)]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

i. All controls or other changes in operation of the facility that will be or are being installed to bring the facility into compliance. [40 CFR 61.94(c)(1)]
ii. If the facility is under a judicial or administrative enforcement decree, the report will describe the facilities performance under the terms of the decree. [40 CFR 61.94(c)(2)]

d. Flow rate excursions beyond the established sample flow range shall be noted in the annual report and an analysis of the impact, if any, of these excursions on the samples taken and accuracy of the emissions estimations shall be included in the report. [401 KAR 52:020, Section 10]

e. Refer to **Section F** for general reporting requirements.

7. Specific Control Equipment Operating Conditions:
Control devices shall be operated and maintained according to manufacturer's specifications. The permittee shall monitor and maintain records of the maximum daily hours of operation and periods of malfunction of the control equipment. Refer to **Section E.** Alumina and Sodium Fluoride Trap efficiencies are not considered in radionuclide and dose calculations.

8. Alternate Operating Scenarios:
The permittee is required to use the 200 foot stack at all times except under upset or Division approved circumstances. When these types of conditions are present, the facility may use a combination of the 200 foot stack and the C-335 Surge Drum Purging Vent. Modeling has demonstrated that under either direct use of the 200 foot stack, or a combination of the 200 foot stack and the C-335 Surge Drum Purging Vent, the Ambient Air Quality Standards for gaseous fluorides will be met.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Emission Unit 09 (EU 09): Cascade Cooling System

Description: Compression of the UF_6 gas as it was diffused through the membranes caused heating in the cascade (EU 03). This coolant system previously provided cooling to the cascade system through the use of CFC-114 ("Freon") coolant/refrigerant or through a U.S. EPA-approved alternate coolant. The emission of concern is the refrigerant itself, which is an ozone depleting substance.

Construction Commenced: 1952

APPLICABLE REGULATIONS:
40 CFR 82, *Protection of Stratospheric Ozone*

1. **Operating Limitations:**
   Refer to **Section G(8)**.

2. **Emission Limitations:**
   Refer to **Section G(8)**.

3. **Testing Requirements:**
   Pursuant to 401 KAR 50:045, Section 1, performance testing using the reference methods specified in 401 KAR 50:015 shall be conducted if required by the Division.

4. **Specific Monitoring Requirements:**
   Refer to **Section F** for general monitoring requirements.

5. **Specific Recordkeeping Requirements:**
   a. Service and refrigerant purchase records must be kept in accordance with 40 CFR 82, Protection of Stratospheric Ozone.

   b. Any applicable training and/or certification requirements shall also be noted and kept with service records.

   c. Refer to **Section F** for general recordkeeping requirements.

6. **Specific Reporting Requirements:**
   Refer to **Section F** for general reporting requirements.

7. **Specific Control Equipment Operating Conditions:**
   Refer to **Section E.**

8. **Alternate Operating Scenarios:**
   The source may use substitute coolant for the CFC-114 as approved by U.S. EPA under 40 CFR 82 and shall notify the Division of any substitution made in accordance with **Section F**.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Emission Unit 18 (EU 18): C-409 Building Auxiliary Systems (18, 38)

Description: This building also includes equipment that supported the uranium enrichment process. The emission points, discussed individually below, are the potential source of radionuclides (U, ^{99}Tc, ^{237}Np, ^{239}Pu, and ^{230}Th). Building Ventilation is discussed under Emission Unit 65. Specific emission points for Emission Unit 18 are:

Emission Point 01 (EP 18-01): C-409 Cylinder Wash Station - uses water, sodium carbonate, and borated water to remove "heels" from processed cylinders so the cylinders may be reused.

Emission Point 02 (EP 18-02): C-409 Rotary Vacuum Filter - used to dissolve and precipitate the high assay uranium in solutions from the laboratory and other sources.

Emission Point 03 (EP 18-03): C-409 Lab Hood – Used to safely contain and ventilate hazardous fumes, vapors, gases and dusts generated by chemical sampling processes performed in the hood.

Construction Commenced:	1952
Controls:	C-409 Cylinder Wash Station Scrubber, installed 1992. No other active controls, but the permittee utilizes administrative, procedural, and passive controls to minimize radionuclide emissions in accordance with ALARA principals.

Applicable Regulations:
401 KAR 50:050, *Monitoring*
401 KAR 53:010, *Ambient air quality standards,* applies to fluoride emissions.
40 CFR 61, Subpart H, *National Emission Standards for Emissions of Radionuclides Other Than Radon from Department of Energy Facilities*
40 CFR 190, Subpart B, *Environmental Standards for the Uranium Fuel Cycle*

1. **Operating Limitations:**
   Refer to **Section D.**

2. **Emission Limitations:**
   a. Emissions of radionuclides to the ambient air from Department of Energy (DOE) facilities shall not exceed those amounts that would cause any member of the public to receive in any year an effective dose equivalent of 10 mrem/yr. [40 CFR 61.92]

   Compliance Demonstration Method:
   To determine compliance with the standard, radionuclide emissions shall be determined and effective dose equivalent values to members of the public calculated using EPA approved sampling procedures, computer models CAP-88 or AIRDOS-PC, or other procedures for which EPA has granted prior approval. [40 CFR 61.93(a)] Refer to **4. Specific Monitoring Requirements**, **5. Specific Recordkeeping Requirements**, and **6. Specific Reporting Requirements.**

   b. Operations covered by 40 CFR 190, Subpart B shall be conducted in such a manner as to provide reasonable assurance that: [40 CFR 190.10]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

i. The annual dose equivalent does not exceed 25 millirems to the whole body, 75 millirems to the thyroid, and 25 millirems to any other organ of any member of the public as the result of exposures to planned discharges of radioactive materials, radon and its daughters excepted, to the general environment from uranium fuel cycle operations and to radiation from these operations. [40 CFR 190.10(a)]

ii. The total quantity of radioactive materials entering the general environment from the entire uranium fuel cycle, per gigawatt-year of electrical energy produced by the fuel cycle, contains less than 50,000 curies of krypton-85, 5 millicuries of iodine-129, and 0.5 millicuries combined of plutonium-239 and other alpha-emitting transuranic radionuclides with half-lives greater than one year. [40 CFR 190.10(b)]

Compliance Demonstration Method:
To provide reasonable assurance that the limits for radionuclides imposed by 40 CFR 190, Subpart B are not exceeded, the source shall annually determine radionuclide emissions and effective dose equivalent values to members of the public through U.S. EPA and Division approved procedures as well as through complying with **4. Specific Monitoring Requirements**, **5. Specific Recordkeeping Requirements**, and **6. Specific Reporting Requirements.** The requirements of 40 CFR 190.10 are met by source compliance with 40 CFR 61.92 and the compliance demonstration method for **2. Emission Limitations (a)**.

c. Refer to **Section D** for site-wide gaseous and total fluoride limits.

3. Testing Requirements:
Pursuant to 401 KAR 50:045, Section 1, performance testing using the reference methods specified in 401 KAR 50:015 shall be conducted if required by the Division.

4. Specific Monitoring Requirements:

a. Radionuclides emission rates from existing point sources (stacks or vents) shall be measured in accordance with the following requirements or with the requirements of 40 CFR 61.93(c), or other procedures for which EPA has granted prior approval: [40 CFR 61.93(b)]

b. Effluent flow rate measurements shall be made using the following methods: [40 CFR 61.93(b)(1)]
   i. Reference Method 2 of appendix A to 40 CFR 60 shall be used to determine velocity and volumetric flow rates for stacks and large vents. [40 CFR 61.93(b)(1)(i)]
   ii. Reference Method 2A of appendix A to 40 CFR 60 shall be used to measure flow rates through pipes and small vents. [40 CFR 61.93(b)(1)(ii)]
   iii. The frequency of the flow rate measurements shall depend upon the variability of the effluent flow rate. For variable flow rates, continuous or frequent flow rate measurements shall be made. For relatively constant flow rates only periodic measurements are necessary. [40 CFR 61.93(b)(1)(iii)]

c. Radionuclides shall be directly monitored or extracted, collected and measured using the following methods: [40 CFR 61.93(b)(2)]
   i. Reference Method 1 of appendix A to 40 CFR 60 shall be used to select monitoring or sampling sites. [40 CFR 61.93(b)(2)(i)]
   ii. The effluent stream shall be directly monitored continuously with an in-line detector or representative samples of the effluent stream shall be withdrawn continuously from the

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

sampling site following the guidance presented in ANSIN13.1-1969 "Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities" (including the guidance presented in appendix A of ANSIN13.1) (incorporated by reference—see 40 CFR 61.18). The requirements for continuous sampling are applicable to batch processes when the unit is in operation. Periodic sampling (grab samples) may be used only with EPA's prior approval. Such approval may be granted in cases where continuous sampling is not practical and radionuclide emission rates are relatively constant. In such cases, grab samples shall be collected with sufficient frequency so as to provide a representative sample of the emissions. [40 CFR 61.93(b)(2)(ii)]

iii. Radionuclides shall be collected and measured using procedures based on the principles of measurement described in 40 CFR 61, Appendix B, Method 114. Use of methods based on principles of measurement different from those described in 40 CFR 61, Appendix B, Method 114 must have prior approval from the Administrator. EPA reserves the right to approve measurement procedures. [40 CFR 61.93(b)(2)(iii)]

iv. A quality assurance program shall be conducted that meets the performance requirements described in 40 CFR 61, Appendix B, Method 114. [40 CFR 61.93(b)(2)(iv)]

d. When it is impractical to measure the effluent flow rate at a source in accordance with the requirements of 40 CFR 61.93(b)(1) or to monitor or sample an effluent stream at a source in accordance with the site selection and sample extraction requirements of 40 CFR 61.93(b)(2), the permittee may use alternative effluent flow rate measurement procedures or site selection and sample extraction procedures provided that: [40 CFR 61.93(b)(3); 40 CFR 61.93(d)]

i. It can be shown that the requirements of 40 CFR 61.93(b)(1) or (2) are impractical for the effluent stream. [40 CFR 61.93(b)(3)(i); 40 CFR 61.93(d)(1)]

ii. The alternative procedure will not significantly underestimate the emissions. [40 CFR 61.93(b)(3)(ii); 40 CFR 61.93(d)(2)]

iii. The alternative procedure is fully documented. [40 CFR 61.93(b)(3)(iii); 40 CFR 61.93(d)(3)]

iv. The permittee has received prior approval from EPA. [40 CFR 61.93(b)(3)(iv); 40 CFR 61.93(d)(4)]

e. Radionuclide emission measurements in conformance with the requirements of 40 CFR 61.93(b) shall be made at all release points that have a potential to discharge radionuclides into the air in quantities that could cause an effective dose equivalent in excess of 1% of the standard. All radionuclides that could contribute greater than 10% of the potential effective dose equivalent for a release point shall be measured. With prior EPA approval, DOE may determine these emissions through alternative procedures. For other release points that have a potential to release radionuclides into the air, periodic confirmatory measurements shall be made to verify the low emissions. [40 CFR 61.93(b)(4)(i); 40 CFR 61.93(e)]

f. To determine whether a release point is subject to the emission measurement requirements of 40 CFR 61.93(b), it is necessary to evaluate the potential for radionuclide emissions for that release point. In evaluating the potential of a release point to discharge radionuclides into the air for the purposes of this section, the estimated radionuclide release rates shall

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

be based on the discharge of the effluent stream that would result if all pollution control equipment did not exist, but the facilities operations were otherwise normal. [40 CFR 61.93(b)(4)(ii); 40 CFR 61.93(f)]

g. Environmental measurements of radionuclide air concentrations at critical receptor locations may be used as an alternative to air dispersion calculations in demonstrating compliance with the standard if the permittee meets the following criteria: [40 CFR 61.93(b)(5); 40 CFR 61.93(g)]
   i. The air at the point of measurement shall be continuously sampled for collection of radionuclides. [40 CFR 61.93(b)(5)(i); 40 CFR 61.93(g)(1)]
   ii. Those radionuclides released from the facility that are the major contributors to the effective dose equivalent must be collected and measured as part of the environmental measurement program. [40 CFR 61.93(b)(5)(ii); 40 CFR 61.93(g)(2)]
   iii. Radionuclide concentrations that would cause an effective dose equivalent of 10% of the standard shall be readily detectable and distinguishable from background. [40 CFR 61.93(b)(5)(iii); 40 CFR 61.93(g)(3)]
   iv. Net measured radionuclide concentrations shall be compared to the concentration levels in Table 2 appendix E of 40 CFR 61 to determine compliance with the standard. In the case of multiple radionuclides being released from a facility, compliance shall be demonstrated if the value for all radionuclides is less than the concentration level in Table 2 of appendix E of 40 CFR 61, and the sum of the fractions that result when each measured concentration value is divided by the value in Table 2 of appendix E of 40 CFR 61 for each radionuclide is less than 1. [40 CFR 61.93(b)(5)(iv); 40 CFR 61.93(g)(4)]
   v. A quality assurance program shall be conducted that meets the performance requirements described in appendix B, Method 114 of 40 CFR 61. [40 CFR 61.93(b)(5)(v); 40 CFR 61.93(g)(5)]
   vi. Use of environmental measurements to demonstrate compliance with the standard is subject to prior approval of EPA. Applications for approval shall include a detailed description of the sampling and analytical methodology and show how the above criteria will be met. [40 CFR 61.93(b)(5)(vi); 40 CFR 61.93(g)(6)]

h. If compliance with the radiological dose limits is accomplished through calculation and dispersion modeling, the source shall perform the calculations and modeling to show the contributions made to the resultant site-wide dose levels by the emissions from activities in building C-409. Volume of solution processed and analytical results necessary to perform the required dose calculations and computer modeling shall be monitored. [401 KAR 52:020, Section 10]

i. Refer to **Section F** for general monitoring requirements.

5. Specific Recordkeeping Requirements:

a. The permittee must maintain records documenting the source of input parameters including the results of all measurements upon which they are based, the calculations and/or analytical methods used to derive values for input parameters, and the procedure used to determine effective dose equivalent. This documentation should be sufficient to allow an independent auditor to verify the accuracy of the determination made concerning the

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

facility's compliance with the standard. These records must be kept at the site of the facility for at least five years and, upon request, be made available for inspection by the Administrator, or his authorized representative. [40 CFR 61.95]

b. The permittee shall maintain records of the volume of solution processed and analytical results necessary to perform the required dose calculations, as well as the calculations themselves. [401 KAR 52:020, Section 10]

c. If compliance with the radiological dose limits is accomplished through environmental measurements of radionuclide air concentrations at critical receptor locations, the permittee shall record results of sampling at critical receptor locations, maintenance and accuracy checks of instrumentation used, and all other parameters used to demonstrate compliance under this alternate method. Any change to procedural, administrative, or passive control methods used to minimize radionuclide release for demonstration of ALARA principals shall be noted. [401 KAR 52:020, Section 10]

d. Refer to **Section F** for general recordkeeping requirements.

6. Specific Reporting Requirements:

a. Compliance with 40 CFR 61.92 shall be determined by calculating the highest effective dose equivalent to any member of the public at any offsite point where there is a residence, school, business or office. The permittee shall submit an annual report to both EPA headquarters and the appropriate regional office by June 30 which includes the dose calculations required by 40 CFR 61.93(a) for the previous calendar year. [40 CFR 61.94(a)]

b. In addition to the requirements of 40 CFR 61.94(a), an annual report shall include the following information: [40 CFR 61.94(b)]
   i. The name and location of the facility. [40 CFR 61.94(b)(1)]
   ii. A list of the radioactive materials used at the facility. [40 CFR 61.94(b)(2)]
   iii. A description of the handling and processing that the radioactive materials undergo at the facility. [40 CFR 61.94(b)(3)]
   iv. A list of the stacks or vents or other points where radioactive materials are released to the atmosphere. [40 CFR 61.94(b)(4)]
   v. A description of the effluent controls that are used on each stack, vent, or other release point and an estimate of the efficiency of each control device. [40 CFR 61.94(b)(5)]
   vi. Distances from the points of release to the nearest residence, school, business or office and the nearest farms producing vegetables, milk, and meat. [40 CFR 61.94(b)(6)]
   vii. The values used for all other user-supplied input parameters for the computer models (e.g., meteorological data) and the source of these data. [40 CFR 61.94(b)(7)]

c. A brief description of all construction and modifications which were completed in the calendar year for which the report is prepared, but for which the requirement to apply for approval to construct or modify was waived under 40 CFR 61.96 and associated documentation developed by the DOE to support the waiver. EPA reserves the right to require that DOE send to EPA all the information that normally would be required in an application to construct or modify, following receipt of the description and supporting documentation. [40 CFR 61.94(b)(8)]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

d. Each report shall be signed and dated by a corporate officer or public official in charge of the facility and contain the following declaration immediately above the signature line: "I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment. See, 18 U.S.C. 1001." [40 CFR 61.94(b)(9)]

e. If the facility is not in compliance with the emission limits of 40 CFR 61.92 in the calendar year covered by the report, then the facility must commence reporting to the U.S. EPA and the Division's regional office on a monthly basis the information listed in 40 CFR 61.94(b), for the preceding month. These reports will start the month immediately following the submittal of the annual report for the year in noncompliance and will be due 30 days following the end of each month. This increased level of reporting will continue until the U.S. EPA has determined that the monthly reports are no longer necessary. In addition to all the information required in 40 CFR 61.94(b), monthly reports shall also include the following information: [40 CFR 61.94(c)]
   i. All controls or other changes in operation of the facility that will be or are being installed to bring the facility into compliance. [40 CFR 61.94(c)(1)]
   ii. If the facility is under a judicial or administrative enforcement decree, the report will describe the facilities performance under the terms of the decree. [40 CFR 61.94(c)(2)]

f. The results of dose calculations and dispersion modeling used shall be included in the annual report. [401 KAR 52:020, Section 10]

g. Refer to **Section F** for general reporting requirements.

7. <u>Specific Control Equipment Operating Conditions:</u>

a. The Cylinder Wash Stand scrubber shall be in operation whenever the Cylinder Wash Stand is in use. Control devices shall be operated and maintained according to manufacturer's specifications. The permittee shall monitor and maintain records of the maximum daily hours of operation and periods of malfunction of the control equipment.

b. Refer to **Section E.**

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Emission Unit 21 (EU 21): C-709/710 Lab

Description: The C-709/710 Lab is the main facility for sample analysis and research at the Paducah site. The lab is a potential source of radionuclides (uranium). Insignificant quantities of various chemicals, used for testing, may also be released.

Construction Commenced:	1952
Controls:	Various Chemical Traps. The permittee also utilizes administrative, procedural, and passive controls to minimize radionuclide emissions in accordance with ALARA principles.

APPLICABLE REGULATIONS:
40 CFR 61, Subpart H, *National Emission Standards for Emissions of Radionuclides Other Than Radon from Department of Energy Facilities*

40 CFR 190, Subpart B, *Environmental Standards for the Uranium Fuel Cycle*

STATE ORIGIN REQUIREMENTS:
401 KAR 63:020, *Potentially hazardous matter or toxic substances*

1. **Operating Limitations:**
   a. Refer to **Section D.**

2. **Emission Limitations:**
   a. Emissions of radionuclides to the ambient air from Department of Energy (DOE) facilities shall not exceed those amounts that would cause any member of the public to receive in any year an effective dose equivalent of 10 mrem/yr. [40 CFR 61.92]

      Compliance Demonstration Method:
      To determine compliance with the standard, radionuclide emissions shall be determined and effective dose equivalent values to members of the public calculated using EPA approved sampling procedures, computer models CAP-88 or AIRDOS-PC, or other procedures for which EPA has granted prior approval. [40 CFR 61.93(a)] Refer to **4. Specific Monitoring Requirements**, **5. Specific Recordkeeping Requirements**, and **6. Specific Reporting Requirements.**

   b. Operations covered by 40 CFR 190, Subpart B shall be conducted in such a manner as to provide reasonable assurance that: [40 CFR 190.10]
      i. The annual dose equivalent does not exceed 25 millirems to the whole body, 75 millirems to the thyroid, and 25 millirems to any other organ of any member of the public as the result of exposures to planned discharges of radioactive materials, radon and its daughters excepted, to the general environment from uranium fuel cycle operations and to radiation from these operations. [40 CFR 190.10(a)]
      ii. The total quantity of radioactive materials entering the general environment from the entire uranium fuel cycle, per gigawatt-year of electrical energy produced by the fuel cycle, contains less than 50,000 curies of krypton-85, 5 millicuries of iodine-129, and

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

0.5 millicuries combined of plutonium-239 and other alpha-emitting transuranic radionuclides with half-lives greater than one year. [40 CFR 190.10(b)]

Compliance Demonstration Method:
To provide reasonable assurance that the limits for radionuclides imposed by 40 CFR 190, Subpart B are not exceeded, the source shall annually determine radionuclide emissions and effective dose equivalent values to members of the public through U.S. EPA and Division approved procedures as well as through complying with **4. Specific Monitoring Requirements**, **5. Specific Recordkeeping Requirements**, and **6. Specific Reporting Requirements.** The requirements of 40 CFR 190.10 are met by source compliance with 40 CFR 61.92 and the compliance demonstration method for **2. Emission Limitations (a)**.

c. The permittee shall provide the utmost care and consideration, in the handling of materials from which hazardous matter or toxic substances may be emitted, to the potentially harmful effects of the emissions resulting from such activities. The permittee shall not allow any affected facility to emit potentially hazardous matter or toxic substances in such quantities or duration as to be harmful to the health and welfare of humans, animals and plants. Evaluation of such facilities as to adequacy of controls and/or procedures and emission potential will be made on an individual basis by the Cabinet. [401 KAR 63:020, Section 3]

Compliance Demonstration Method:
Based upon the emission rates of toxic and hazardous air pollutants determined by the Cabinet using information provided in the application and supplemental information submitted by the source, the Cabinet determines the affected facility to be in compliance with 401 KAR 63:020.

3. Testing Requirements:

a. Pursuant to 401 KAR 50:045, Section 1, performance testing using the reference methods specified in 401 KAR 50:015 shall be conducted if required by the Division.

4. Specific Monitoring Requirements:

a. Radionuclides emission rates from existing point sources (stacks or vents) shall be measured in accordance with the following requirements or with the requirements of 40 CFR 61.93(c), or other procedures for which EPA has granted prior approval: [40 CFR 61.93(b)]
   i. Effluent flow rate measurements shall be made using the following methods: [40 CFR 61.93(b)(1)]
      1) Reference Method 2 of appendix A to 40 CFR 60 shall be used to determine velocity and volumetric flow rates for stacks and large vents. [40 CFR 61.93(b)(1)(i)]
      2) Reference Method 2A of appendix A to 40 CFR 60 shall be used to measure flow rates through pipes and small vents. [40 CFR 61.93(b)(1)(ii)]
      3) The frequency of the flow rate measurements shall depend upon the variability of the effluent flow rate. For variable flow rates, continuous or frequent flow rate measurements shall be made. For relatively constant flow rates only periodic measurements are necessary. [40 CFR 61.93(b)(1)(iii)]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

ii. Radionuclides shall be directly monitored or extracted, collected and measured using the following methods: [40 CFR 61.93(b)(2)]
   1) Reference Method 1 of appendix A to 40 CFR 60 shall be used to select monitoring or sampling sites. [40 CFR 61.93(b)(2)(i)]
   2) The effluent stream shall be directly monitored continuously with an in-line detector or representative samples of the effluent stream shall be withdrawn continuously from the sampling site following the guidance presented in ANSIN13.1-1969 "Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities" (including the guidance presented in appendix A of ANSIN13.1) (incorporated by reference—see 40 CFR 61.18). The requirements for continuous sampling are applicable to batch processes when the unit is in operation. Periodic sampling (grab samples) may be used only with EPA's prior approval. Such approval may be granted in cases where continuous sampling is not practical and radionuclide emission rates are relatively constant. In such cases, grab samples shall be collected with sufficient frequency so as to provide a representative sample of the emissions. [40 CFR 61.93(b)(2)(ii)]
   3) Radionuclides shall be collected and measured using procedures based on the principles of measurement described in 40 CFR 61, Appendix B, Method 114. Use of methods based on principles of measurement different from those described in 40 CFR 61, Appendix B, Method 114 must have prior approval from the Administrator. EPA reserves the right to approve measurement procedures. [40 CFR 61.93(b)(2)(iii)]
   4) A quality assurance program shall be conducted that meets the performance requirements described in 40 CFR 61, Appendix B, Method 114. [40 CFR 61.93(b)(2)(iv)]

b. When it is impractical to measure the effluent flow rate at a source in accordance with the requirements of 40 CFR 61.93(b)(1) or to monitor or sample an effluent stream at a source in accordance with the site selection and sample extraction requirements of 40 CFR 61.93(b)(2), the permittee may use alternative effluent flow rate measurement procedures or site selection and sample extraction procedures provided that: [40 CFR 61.93(b)(3); 40 CFR 61.93(d)]
   i. It can be shown that the requirements of 40 CFR 61.93(b)(1) or (2) are impractical for the effluent stream. [40 CFR 61.93(b)(3)(i); 40 CFR 61.93(d)(1)]
   ii. The alternative procedure will not significantly underestimate the emissions. [40 CFR 61.93(b)(3)(ii); 40 CFR 61.93(d)(2)]
   iii. The alternative procedure is fully documented. [40 CFR 61.93(b)(3)(iii); 40 CFR 61.93(d)(3)]
   iv. The permittee has received prior approval from EPA. [40 CFR 61.93(b)(3)(iv); 40 CFR 61.93(d)(4)]

c. Radionuclide emission measurements in conformance with the requirements of 40 CFR 61.93(b) shall be made at all release points that have a potential to discharge radionuclides into the air in quantities that could cause an effective dose equivalent in excess of 1% of the standard. All radionuclides that could contribute greater than 10% of the potential effective dose equivalent for a release point shall be measured. With prior EPA approval, DOE may determine these emissions through alternative procedures. For other release

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points that have a potential to release radionuclides into the air, periodic confirmatory measurements shall be made to verify the low emissions. [40 CFR 61.93(b)(4)(i); 40 CFR 61.93(e)]

d. To determine whether a release point is subject to the emission measurement requirements of 40 CFR 61.93(b), it is necessary to evaluate the potential for radionuclide emissions for that release point. In evaluating the potential of a release point to discharge radionuclides into the air for the purposes of this section, the estimated radionuclide release rates shall be based on the discharge of the effluent stream that would result if all pollution control equipment did not exist, but the facilities operations were otherwise normal. [40 CFR 61.93(b)(4)(ii); 40 CFR 61.93(f)]

e. Environmental measurements of radionuclide air concentrations at critical receptor locations may be used as an alternative to air dispersion calculations in demonstrating compliance with the standard if the permittee meets the following criteria: [40 CFR 61.93(b)(5); 40 CFR 61.93(g)]
   i. The air at the point of measurement shall be continuously sampled for collection of radionuclides. [40 CFR 61.93(b)(5)(i); 40 CFR 61.93(g)(1)]
   ii. Those radionuclides released from the facility that are the major contributors to the effective dose equivalent must be collected and measured as part of the environmental measurement program. [40 CFR 61.93(b)(5)(ii); 40 CFR 61.93(g)(2)]
   iii. Radionuclide concentrations that would cause an effective dose equivalent of 10% of the standard shall be readily detectable and distinguishable from background. [40 CFR 61.93(b)(5)(iii); 40 CFR 61.93(g)(3)]
   iv. Net measured radionuclide concentrations shall be compared to the concentration levels in Table 2 appendix E of 40 CFR 61 to determine compliance with the standard. In the case of multiple radionuclides being released from a facility, compliance shall be demonstrated if the value for all radionuclides is less than the concentration level in Table 2 of appendix E of 40 CFR 61, and the sum of the fractions that result when each measured concentration value is divided by the value in Table 2 of appendix E of 40 CFR 61 for each radionuclide is less than 1. [40 CFR 61.93(b)(5)(iv); 40 CFR 61.93(g)(4)]
   v. A quality assurance program shall be conducted that meets the performance requirements described in appendix B, Method 114 of 40 CFR 61. [40 CFR 61.93(b)(5)(v); 40 CFR 61.93(g)(5)]
   vi. Use of environmental measurements to demonstrate compliance with the standard is subject to prior approval of EPA. Applications for approval shall include a detailed description of the sampling and analytical methodology and show how the above criteria will be met. [40 CFR 61.93(b)(5)(vi); 40 CFR 61.93(g)(6)]

f. If compliance with the radiological dose limits is accomplished through calculation and dispersion modeling, the source shall perform the calculations and modeling to show the contributions made to the resultant site-wide dose levels by the emissions from activities in buildings C-709/C-710. Samples processed and typical sample concentrations used to perform the required dose calculations and computer modeling shall be monitored. [401 KAR 52:020, Section 10]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

g. For operations which include chemical traps, the chemical traps shall be properly maintained and traps replaced/recharged in accordance with the Lab-specific administrative procedures and applicable requirements of 40 CFR 61, Subpart H. [401 KAR 52:020, Section 10]

h. Refer to **Section F** for general monitoring requirements.

5. Specific Recordkeeping Requirements:

a. The permittee must maintain records documenting the source of input parameters including the results of all measurements upon which they are based, the calculations and/or analytical methods used to derive values for input parameters, and the procedure used to determine effective dose equivalent. This documentation should be sufficient to allow an independent auditor to verify the accuracy of the determination made concerning the facility's compliance with the standard. These records must be kept at the site of the facility for at least five years and, upon request, be made available for inspection by the Administrator, or his authorized representative. [40 CFR 61.95]

b. The permittee shall maintain records of samples processed and typical sample concentrations used to perform the required dose calculations and computer modeling used, as well as the calculations themselves. [401 KAR 52:020, Section 10]

c. If compliance with the radiological dose limits is accomplished through environmental measurements of radionuclide air concentrations at critical receptor locations, the permittee shall record results of sampling at critical receptor locations, maintenance and accuracy checks of instrumentation used, and all other parameters used to demonstrate compliance under this alternate method. Any change to procedural, administrative, or passive control methods used to minimize radionuclide release for demonstration of ALARA principals shall be noted. [401 KAR 52:020, Section 10]

d. The permittee shall maintain records of maintenance performed on or replacements made of chemical traps. [401 KAR 52:020, Section 10]

e. Refer to **Section F** for general recordkeeping requirements.

6. Specific Reporting Requirements:

a. Compliance with 40 CFR 61.92 shall be determined by calculating the highest effective dose equivalent to any member of the public at any offsite point where there is a residence, school, business or office. The permittee shall submit an annual report to both EPA headquarters and the appropriate regional office by June 30 which includes the dose calculations required by 40 CFR 61.93(a) for the previous calendar year. [40 CFR 61.94(a)]

b. In addition to the requirements of 40 CFR 61.94(a), an annual report shall include the following information: [40 CFR 61.94(b)]
   i. The name and location of the facility. [40 CFR 61.94(b)(1)]
   ii. A list of the radioactive materials used at the facility. [40 CFR 61.94(b)(2)]
   iii. A description of the handling and processing that the radioactive materials undergo at the facility. [40 CFR 61.94(b)(3)]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

iv. A list of the stacks or vents or other points where radioactive materials are released to the atmosphere. [40 CFR 61.94(b)(4)]
v. A description of the effluent controls that are used on each stack, vent, or other release point and an estimate of the efficiency of each control device. [40 CFR 61.94(b)(5)]
vi. Distances from the points of release to the nearest residence, school, business or office and the nearest farms producing vegetables, milk, and meat. [40 CFR 61.94(b)(6)]
vii. The values used for all other user-supplied input parameters for the computer models (e.g., meteorological data) and the source of these data. [40 CFR 61.94(b)(7)]
viii. A brief description of all construction and modifications which were completed in the calendar year for which the report is prepared, but for which the requirement to apply for approval to construct or modify was waived under 40 CFR 61.96 and associated documentation developed by the DOE to support the waiver. EPA reserves the right to require that DOE send to EPA all the information that normally would be required in an application to construct or modify, following receipt of the description and supporting documentation. [40 CFR 61.94(b)(8)]
ix. Each report shall be signed and dated by a corporate officer or public official in charge of the facility and contain the following declaration immediately above the signature line: "I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment. See, 18 U.S.C. 1001." [40 CFR 61.94(b)(9)]

c. If the facility is not in compliance with the emission limits of 40 CFR 61.92 in the calendar year covered by the report, then the facility must commence reporting to the U.S. EPA and the Division's regional office on a monthly basis the information listed in 40 CFR 61.94(b), for the preceding month. These reports will start the month immediately following the submittal of the annual report for the year in noncompliance and will be due 30 days following the end of each month. This increased level of reporting will continue until the U.S. EPA has determined that the monthly reports are no longer necessary. In addition to all the information required in 40 CFR 61.94(b), monthly reports shall also include the following information: [40 CFR 61.94(c)]
   i. All controls or other changes in operation of the facility that will be or are being installed to bring the facility into compliance. [40 CFR 61.94(c)(1)]
   ii. If the facility is under a judicial or administrative enforcement decree, the report will describe the facilities performance under the terms of the decree. [40 CFR 61.94(c)(2)]

d. The results of dose calculations and dispersion modeling used shall be included in the annual report. [401 KAR 52:020, Section 10]

e. Refer to **Section F** for general reporting requirements.

7. <u>Specific Control Equipment Operating Conditions</u>:
Control devices shall be operated and maintained according to manufacturer's specifications. The permittee shall monitor and maintain records of the maximum daily hours of operation and periods of malfunction of the control equipment. Refer to **Section E.**

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Emission Unit 54 (EU 54): Seal Exhaust/Wet Air System

Description: This group consists of the Seal Exhaust/Wet Air Systems and the UF_6/R-114 Separation System. EU 54 also includes cylinder disconnection activities for the C-310 burp station, the C-310 product withdrawal building, the C-315 tails withdrawal building, the C-333-A feed facility and the C-337-A feed facility. Descriptions of the individual components of this part of the group are included, below. Emissions of concern from this group consist of radionuclides (U, ^{99}Tc, ^{237}Np, ^{239}Pu, and ^{230}Th).

Seal Exhausts: The seals on cascade compressors are exhausted, and the air is pumped through various traps/filters. There are six seal exhaust systems and many seals.

Wet Air Exhausts: After maintenance on cascade piping and equipment, the humid ambient air is pumped from the system through traps/filters. Maintenance includes deactivation activities during which the cascade cells and associated piping/equipment will be cleaned, and exhaust gases could be routed to the wet air exhaust vents. In some cases, a wet air passivation process will be used to clean out the cells further prior to deactivation. There are five wet air exhaust systems.

CFC-114/UF_6 Separation System: This system is used to freeze out UF_6 from process gas that has become significantly contaminated with R-114 coolant.

Cylinder Disconnections: Cylinder valves are connected to the associated process via a "pigtail." Although the pigtails are purged prior to disconnection and serviced by a high efficiency particulate air vacuum, there is a minor possibility of radionuclide emissions occurring when a pigtail is disconnected.

Construction Commenced:	CFC-114/UF_6 Separation System:	1978, modified in 2004
	Seal Exhausts / Wet Air Exhausts:	1952
Controls:	No active controls, but the permittee utilizes administrative, procedural, and passive controls to minimize radionuclide emissions in accordance with ALARA principles. Chemical traps within the CFC-114/UF_6 Separation System were installed to protect equipment, only, and are not classified as add-on control devices since the emission reductions achieved are inherent to the process itself.	

APPLICABLE REGULATIONS:

401 KAR 50:050, *Monitoring*

401 KAR 53:010, *Ambient air quality standards,* applies to fluoride emissions.

40 CFR 61 Subpart H, *National Emission Standards for Emissions of Radionuclides Other Than Radon from Department of Energy Facilities*

40 CFR 190, Subpart B, *Environmental Standards for the Uranium Fuel Cycle*

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

1. **Operating Limitations:**
   Refer to **Section D.**

2. **Emission Limitations:**
   a. Emissions of radionuclides to the ambient air from Department of Energy (DOE) facilities shall not exceed those amounts that would cause any member of the public to receive in any year an effective dose equivalent of 10 mrem/yr. [40 CFR 61.92]

      Compliance Demonstration Method:
      To determine compliance with the standard, radionuclide emissions shall be determined and effective dose equivalent values to members of the public calculated using EPA approved sampling procedures, computer models CAP-88 or AIRDOS-PC, or other procedures for which EPA has granted prior approval. [40 CFR 61.93(a)] Refer to **3. Testing Requirements**, **4. Specific Monitoring Requirements**, **5. Specific Recordkeeping Requirements**, and **6. Specific Reporting Requirements.**

   b. Operations covered by 40 CFR 190, Subpart B shall be conducted in such a manner as to provide reasonable assurance that: [40 CFR 190.10]
      i. The annual dose equivalent does not exceed 25 millirems to the whole body, 75 millirems to the thyroid, and 25 millirems to any other organ of any member of the public as the result of exposures to planned discharges of radioactive materials, radon and its daughters excepted, to the general environment from uranium fuel cycle operations and to radiation from these operations. [40 CFR 190.10(a)]
      ii. The total quantity of radioactive materials entering the general environment from the entire uranium fuel cycle, per gigawatt-year of electrical energy produced by the fuel cycle, contains less than 50,000 curies of krypton-85, 5 millicuries of iodine-129, and 0.5 millicuries combined of plutonium-239 and other alpha-emitting transuranic radionuclides with half-lives greater than one year. [40 CFR 190.10(b)]

      Compliance Demonstration Method:
      To provide reasonable assurance that the limits for radionuclides imposed by 40 CFR 190, Subpart B are not exceeded, the source shall annually determine radionuclide emissions and effective dose equivalent values to members of the public through U.S. EPA and Division approved procedures as well as through complying with **3. Testing Requirements**, **4. Specific Monitoring Requirements**, and **5. Specific Recordkeeping Requirements**, below. The requirements of 40 CFR 190.10 are met by source compliance with 40 CFR 61.92 and the compliance demonstration method for **2. Emission Limitations (a)**.

   c. Refer to **Section D** for site-wide gaseous and total fluoride limits.

3. **Testing Requirements:**
   a. In accordance with 40 CFR 61.93, periodic confirmatory measurements (stack testing) shall be made to verify the low emissions. Representative stack testing shall be conducted on each system type at 5 year intervals, assuming the system is operational. In the event the system is not operational at the 5 year interval, stack testing shall be conducted the next time the system is placed into operation.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

b. Pursuant to 401 KAR 50:045, Section 1, performance testing using the reference methods specified in 401 KAR 50:015 shall be conducted if required by the Division.

4. Specific Monitoring Requirements:

a. Radionuclides emission rates from existing point sources (stacks or vents) shall be measured in accordance with the following requirements or with the requirements of 40 CFR 61.93(c), or other procedures for which EPA has granted prior approval: [40 CFR 61.93(b)]

i. Effluent flow rate measurements shall be made using the following methods: [40 CFR 61.93(b)(1)]

1) Reference Method 2 of appendix A to 40 CFR 60 shall be used to determine velocity and volumetric flow rates for stacks and large vents. [40 CFR 61.93(b)(1)(i)]

2) Reference Method 2A of appendix A to 40 CFR 60 shall be used to measure flow rates through pipes and small vents. [40 CFR 61.93(b)(1)(ii)]

3) The frequency of the flow rate measurements shall depend upon the variability of the effluent flow rate. For variable flow rates, continuous or frequent flow rate measurements shall be made. For relatively constant flow rates only periodic measurements are necessary. [40 CFR 61.93(b)(1)(iii)]

ii. Radionuclides shall be directly monitored or extracted, collected and measured using the following methods: [40 CFR 61.93(b)(2)]

1) Reference Method 1 of appendix A to 40 CFR 60 shall be used to select monitoring or sampling sites. [40 CFR 61.93(b)(2)(i)]

2) The effluent stream shall be directly monitored continuously with an in-line detector or representative samples of the effluent stream shall be withdrawn continuously from the sampling site following the guidance presented in ANSIN13.1-1969 “Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities” (including the guidance presented in appendix A of ANSIN13.1) (incorporated by reference—see 40 CFR 61.18). The requirements for continuous sampling are applicable to batch processes when the unit is in operation. Periodic sampling (grab samples) may be used only with EPA's prior approval. Such approval may be granted in cases where continuous sampling is not practical and radionuclide emission rates are relatively constant. In such cases, grab samples shall be collected with sufficient frequency so as to provide a representative sample of the emissions. [40 CFR 61.93(b)(2)(ii)]

3) Radionuclides shall be collected and measured using procedures based on the principles of measurement described in 40 CFR 61, Appendix B, Method 114. Use of methods based on principles of measurement different from those described in 40 CFR 61, Appendix B, Method 114 must have prior approval from the Administrator. EPA reserves the right to approve measurement procedures. [40 CFR 61.93(b)(2)(iii)]

4) A quality assurance program shall be conducted that meets the performance requirements described in 40 CFR 61, Appendix B, Method 114. [40 CFR 61.93(b)(2)(iv)]

b. When it is impractical to measure the effluent flow rate at a source in accordance with the requirements of 40 CFR 61.93(b)(1) or to monitor or sample an effluent stream at a source

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

in accordance with the site selection and sample extraction requirements of 40 CFR 61.93(b)(2), the permittee may use alternative effluent flow rate measurement procedures or site selection and sample extraction procedures provided that: [40 CFR 61.93(b)(3); 40 CFR 61.93(d)]

i. It can be shown that the requirements of 40 CFR 61.93(b)(1) or (2) are impractical for the effluent stream. [40 CFR 61.93(b)(3)(i); 40 CFR 61.93(d)(1)]
ii. The alternative procedure will not significantly underestimate the emissions. [40 CFR 61.93(b)(3)(ii); 40 CFR 61.93(d)(2)]
iii. The alternative procedure is fully documented. [40 CFR 61.93(b)(3)(iii); 40 CFR 61.93(d)(3)]
iv. The permittee has received prior approval from EPA. [40 CFR 61.93(b)(3)(iv); 40 CFR 61.93(d)(4)]

c. Radionuclide emission measurements in conformance with the requirements of 40 CFR 61.93(b) shall be made at all release points that have a potential to discharge radionuclides into the air in quantities that could cause an effective dose equivalent in excess of 1% of the standard. All radionuclides that could contribute greater than 10% of the potential effective dose equivalent for a release point shall be measured. With prior EPA approval, DOE may determine these emissions through alternative procedures. For other release points that have a potential to release radionuclides into the air, periodic confirmatory measurements shall be made to verify the low emissions. [40 CFR 61.93(b)(4)(i); 40 CFR 61.93(e)]

d. To determine whether a release point is subject to the emission measurement requirements of 40 CFR 61.93(b), it is necessary to evaluate the potential for radionuclide emissions for that release point. In evaluating the potential of a release point to discharge radionuclides into the air for the purposes of this section, the estimated radionuclide release rates shall be based on the discharge of the effluent stream that would result if all pollution control equipment did not exist, but the facilities operations were otherwise normal. [40 CFR 61.93(b)(4)(ii); 40 CFR 61.93(f)]

e. Environmental measurements of radionuclide air concentrations at critical receptor locations may be used as an alternative to air dispersion calculations in demonstrating compliance with the standard if the permittee meets the following criteria: [40 CFR 61.93(b)(5); 40 CFR 61.93(g)]

i. The air at the point of measurement shall be continuously sampled for collection of radionuclides. [40 CFR 61.93(b)(5)(i); 40 CFR 61.93(g)(1)]
ii. Those radionuclides released from the facility that are the major contributors to the effective dose equivalent must be collected and measured as part of the environmental measurement program. [40 CFR 61.93(b)(5)(ii); 40 CFR 61.93(g)(2)]
iii. Radionuclide concentrations that would cause an effective dose equivalent of 10% of the standard shall be readily detectable and distinguishable from background. [40 CFR 61.93(b)(5)(iii); 40 CFR 61.93(g)(3)]
iv. Net measured radionuclide concentrations shall be compared to the concentration levels in of environmental measurements to demonstrate compliance with the standard is subject to prior approval of EPA. Applications for approval shall include a detailed

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

description of the sampling and analytical methodology and show how the above criteria will be met. [40 CFR 61.93(b)(5)(vi); 40 CFR 61.93(g)(6)]

f. If compliance with the radiological dose limits is accomplished through calculation and dispersion modeling, the source shall perform the calculations and modeling to show the contributions made to the resultant site-wide dose levels by emissions from the Seal Exhaust/Wet Air Systems and CFR-114/UF_6 Separation equipment. [401 KAR 52:020, Section 10]

g. Refer to **Section F** for general monitoring requirements.

5. Specific Recordkeeping Requirements:

a. The permittee must maintain records documenting the source of input parameters including the results of all measurements upon which they are based, the calculations and/or analytical methods used to derive values for input parameters, and the procedure used to determine effective dose equivalent. This documentation should be sufficient to allow an independent auditor to verify the accuracy of the determination made concerning the facility's compliance with the standard. These records must be kept at the site of the facility for at least five years and, upon request, be made available for inspection by the Administrator, or his authorized representative. [40 CFR 61.95]

b. The permittee shall maintain records of hours of operation and stack testing results necessary to perform the required dose calculations, as well as the calculations themselves. [401 KAR 52:020, Section 10]

c. If compliance with the radiological dose limits is accomplished through environmental measurements of radionuclide air concentrations at critical receptor locations, the permittee shall record results of sampling at critical receptor locations, maintenance and accuracy checks of instrumentation used, and all other parameters used to demonstrate compliance under this alternate method. Any change to procedural, administrative, or passive control methods used to minimize radionuclide release for demonstration of ALARA principals shall be noted. [401 KAR 52:020, Section 10]

d. Refer to **Section F** for general recordkeeping requirements.

6. Specific Reporting Requirements:

a. Compliance with 40 CFR 61.92 shall be determined by calculating the highest effective dose equivalent to any member of the public at any offsite point where there is a residence, school, business or office. The permittee shall submit an annual report to both EPA headquarters and the appropriate regional office by June 30 which includes the dose calculations required by 40 CFR 61.93(a) for the previous calendar year. [40 CFR 61.94(a)]

b. In addition to the requirements of 40 CFR 61.94(a), an annual report shall include the following information: [40 CFR 61.94(b)]
   i. The name and location of the facility. [40 CFR 61.94(b)(1)]
   ii. A list of the radioactive materials used at the facility. [40 CFR 61.94(b)(2)]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

iii. A description of the handling and processing that the radioactive materials undergo at the facility. [40 CFR 61.94(b)(3)]
iv. A list of the stacks or vents or other points where radioactive materials are released to the atmosphere. [40 CFR 61.94(b)(4)]
v. A description of the effluent controls that are used on each stack, vent, or other release point and an estimate of the efficiency of each control device. [40 CFR 61.94(b)(5)]
vi. Distances from the points of release to the nearest residence, school, business or office and the nearest farms producing vegetables, milk, and meat. [40 CFR 61.94(b)(6)]
vii. The values used for all other user-supplied input parameters for the computer models (e.g., meteorological data) and the source of these data. [40 CFR 61.94(b)(7)]
viii. A brief description of all construction and modifications which were completed in the calendar year for which the report is prepared, but for which the requirement to apply for approval to construct or modify was waived under 40 CFR 61.96 and associated documentation developed by the DOE to support the waiver. EPA reserves the right to require that DOE send to EPA all the information that normally would be required in an application to construct or modify, following receipt of the description and supporting documentation. [40 CFR 61.94(b)(8)]
ix. Each report shall be signed and dated by a corporate officer or public official in charge of the facility and contain the following declaration immediately above the signature line: “I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment. See, 18 U.S.C. 1001." [40 CFR 61.94(b)(9)]

c. If the facility is not in compliance with the emission limits of 40 CFR 61.92 in the calendar year covered by the report, then the facility must commence reporting to the U.S. EPA and the Division’s regional office on a monthly basis the information listed in 40 CFR 61.94(b), for the preceding month. These reports will start the month immediately following the submittal of the annual report for the year in noncompliance and will be due 30 days following the end of each month. This increased level of reporting will continue until the U.S. EPA has determined that the monthly reports are no longer necessary. In addition to all the information required in 40 CFR 61.94(b), monthly reports shall also include the following information: [40 CFR 61.94(c)]
   i. All controls or other changes in operation of the facility that will be or are being installed to bring the facility into compliance. [40 CFR 61.94(c)(1)]
   ii. If the facility is under a judicial or administrative enforcement decree, the report will describe the facilities performance under the terms of the decree. [40 CFR 61.94(c)(2)]

d. The results of dose calculations and dispersion modeling used shall be included in the annual report. [401 KAR 52:020, Section 10]

e. Refer to **Section F** for general reporting requirements.

7. <u>Specific Control Equipment Operating Conditions</u>:
Refer to **Section E.**

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Emission Unit 62 (EU 62): C-631 Emergency Pump

Description: An on-site (source related) emergency pump.
Size/Rated Capacity: 572 HP
Fuel: Diesel
Construction Commenced: 1952
Controls: None

APPLICABLE REGULATIONS:
401 KAR 63:002, Section 2(4)(eeee), 40 C.F.R. 63.6580 to 63.6675, Tables 1a to 8, and Appendix A (Subpart ZZZZ), *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*

NON-APPLICABLE REGULATIONS:
401 KAR 60:005, Section 2(2)(dddd), **40 C.F.R. 60.4200 to 60.4219, Tables 1 to 8 (Subpart IIII),** *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*. (Note: This regulation will become applicable should EU 62 be modified or reconstructed in the future as defined under the Federal Regulation)

1. **Operating Limitations:**
   a. If the RICE operates for the purpose specified in 40 CFR 63.6640(f)(4)(ii), the permittee must use diesel fuel that meets the requirements in 40 CFR 1090.305 for nonroad diesel fuel. [40 CFR 63.6604(b)]

   b. The permittee must be in compliance with the emission limitations, operating limitations, and other requirements in 40 CFR 63, Subpart ZZZZ that apply at all times. [40 CFR 63.6605(a)]

   c. At all times the permittee must operate and maintain any affected source, 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 this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which 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. [40 CFR 63.6605(b)]

   d. The permittee must minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the emission standards applicable to all times other than startup in Table 2c to 40 CFR 63, Subpart ZZZZ apply. [40 CFR 63.6625(h); 40 CFR 63, Subpart ZZZZ, Table 2c(1.)]

   e. The permittee has the option of utilizing an oil analysis program in order to extend the specified oil and filter change requirement in table 2c to 40 CFR 63, Subpart ZZZZ. The oil analysis must be performed at the same frequency specified for changing the oil and

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

filter in table 2c to 40 CFR 63, Subpart ZZZZ. The analysis program must at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Base Number is less than 30 percent of the Total Base Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the permittee is not required to change the oil and filter. If any of the limits are exceeded, the permittee must change the oil and filter within 2 business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the permittee must change the oil and filter within 2 business days or before commencing operation, whichever is later. The permittee must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil and filter changes for the engine. The analysis program must be part of the maintenance plan for the engine. [40 CFR 63.6625(i)]

f. The permittee must operate the emergency stationary RICE according to the requirements in 40 CFR 63.6640(f)(1) through (4). In order for the engine to be considered an emergency stationary RICE under 40 CFR 63, Subpart ZZZZ, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as described in 40 CFR 63.6640(f)(1) through (4), is prohibited. If the permittee does not operate the engine according to the requirements in 40 CFR 63.6640(f)(1) through (4), the engine will not be considered an emergency engine under 40 CFR 63, Subpart ZZZZ and must meet all requirements for non-emergency engines. [40 CFR 63.6640(f)]
   i. There is no time limit on the use of emergency stationary RICE in emergency situations. [40 CFR 63.6640(f)(1)]
   ii. The permittee may operate the emergency stationary RICE for the purpose specified in 40 CFR 63.6640(f)(2)(i) for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by 40 CFR 63.6640(f)(3) and (4) counts as part of the 100 hours per calendar year allowed by 40 CFR 63.6640(f)(2). [40 CFR 63.6640(f)(2)]
      1) Emergency stationary RICE may be operated for 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 Administrator 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 emergency RICE beyond 100 hours per calendar year. [40 CFR 63.6640(f)(2)(i)]
   iii. Emergency stationary RICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing provided in 40 CFR 63.6640(f)(2). The 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity. [40 CFR 63.6640(f)(3)]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

g. The permittee must meet the following requirement, except during periods of startup: [40 CFR 63, Subpart ZZZZ, Table 2c(1.)]
   i. Change oil and filter every 500 hours of operation or annually, whichever comes first. [40 CFR 63, Subpart ZZZZ, Table 2c(1.)(a.)]
      1) Sources have the option to utilize an oil analysis program as described in 40 CFR 63.6625(i) in order to extend the specified oil change requirement in Table 2c of 40 CFR 63, Subpart ZZZZ. [40 CFR 63, Subpart ZZZZ, Table 2c, Footnote 2]
   ii. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; [40 CFR 63, Subpart ZZZZ, Table 2c(1.)(b.)]
   iii. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary. [40 CFR 63, Subpart ZZZZ, Table 2c(1.)(c.)]

h. If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the work practice requirements on the schedule required in Table 2c of 40 CFR 63, Subpart ZZZZ, or if performing the work practice on the required schedule would otherwise pose an unacceptable risk under federal, state, or local law, the work practice can be delayed until the emergency is over or the unacceptable risk under federal, state, or local law has abated. The work practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under federal, state, or local law has abated. Sources must report any failure to perform the work practice on the schedule required and the federal, state or local law under which the risk was deemed unacceptable. [40 CFR 63, Subpart ZZZZ, Table 2c, Footnote 1]

2. Emission Limitations:
None.

3. Testing Requirements:
Pursuant to 401 KAR 50:045, Section 1, performance testing using the reference methods specified in 401 KAR 50:015 shall be conducted if required by the Division.

4. Specific Monitoring Requirements:
a. The permittee shall monitor the hours of operation and how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. [401 KAR 52:020, Section 10]

b. Refer to **Section F** for general monitoring requirements.

5. Specific Recordkeeping Requirements:
a. The permittee must keep the records described in 40 CFR 63.6655(a)(1) through (a)(5). [40 CFR 63.6655(a)]
   i. A copy of each notification and report that was submitted to comply with 40 CFR 63, Subpart ZZZZ, including all documentation supporting any Initial Notification or Notification of Compliance Status that was submitted, according to the requirement in 40 CFR 63.10(b)(2)(xiv). [40 CFR 63.6655(a)(1)]
   ii. Records of the occurrence and duration of each malfunction of operation (i.e., process equipment). [40 CFR 63.6655(a)(2)]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

iii. Records of actions taken during periods of malfunction to minimize emissions in accordance with 40 CFR 63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation. [40 CFR 63.6655(a)(5)]

b. The permittee shall keep records of the maintenance conducted on the stationary RICE in order to demonstrate that the permittee operated and maintained the stationary RICE according to the permittee's own maintenance plan. [40 CFR 63.6655(e)(2)]

c. The records must be in a form suitable and readily available for expeditious review according to 40 CFR 63.10(b)(1). [40 CFR 63.6660(a)]

d. As specified in 40 CFR 63.10(b)(1), the permittee must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. [40 CFR 63.6660(b)]

e. The permittee must keep each record readily accessible in hard copy or electronic form for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to 40 CFR 63.10(b)(1). [40 CFR 63.6660(c)]

f. The permittee shall maintain records of the hours of operation and how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. [401 KAR 52:020, Section 10]

g. The permittee shall maintain records of the manufacturer's emission-related written instructions or the permittee's own maintenance plan for the emergency stationary RICE. [401 KAR 52:020, Section 10]

h. Refer to **Section F** for general recordkeeping requirements.

6. <u>Specific Reporting Requirements:</u>

a. The permittee must report each instance in which the permittee did not meet each emission limitation or operating limitation in Table 2c to 40 CFR 63, Subpart ZZZZ that applies. These instances are deviations from the emission and operating limitations in this 40 CFR 63, Subpart ZZZZ. These deviations must be reported according to the requirements in 40 CFR 63.6650. [40 CFR 63.6640(b)]

b. The permittee must report all deviations as defined in 40 CFR 63, Subpart ZZZZ in the semiannual monitoring report required by 40 CFR 70.6 (a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A). [40 CFR 63.6650(f)]

c. If the emergency stationary RICE operates for the purpose specified in 40 CFR 63.6640(f)(4)(ii), the permittee must submit an annual report according to the requirements in 40 CFR 63.6650(h)(1) through (3). [40 CFR 63.6650(h)]

d. The permittee shall include the monthly hours of operation and purpose of operation in each semi-annual report. [401 KAR 52:020, Section 10]

e. Refer to **Section F** for general reporting requirements.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Emission Unit 65 (EU 65): Building Ventilation Systems

Description: There are several buildings that have the potential to emit radionuclides through their ventilation systems. They include buildings C-310, C-315, C-331, C-333, C-333-A, C-335, C-337, C-337-A, C-360, C-400, C-631, C-709/C-710, and C-720.

Construction Commenced:	1952
Controls:	No active controls, but the permittee utilizes administrative, procedural, and passive controls to minimize radionuclide emissions in accordance with ALARA principles.

APPLICABLE REGULATIONS:
401 KAR 50:050, *Monitoring*

401 KAR 53:010, *Ambient air quality standards,* applies to fluoride emissions.

40 CFR 61, Subpart H, *National Emission Standards for Emissions of Radionuclides Other Than Radon from Department of Energy Facilities*

40 CFR 190, Subpart B, *Environmental Standards for the Uranium Fuel Cycle*

STATE ORIGIN REQUIREMENTS:
401 KAR 63:020, *Potentially hazardous matter or toxic substances*

1. **Operating Limitations:**
   a. Refer to **Section D.**

2. **Emission Limitations:**
   a. Emissions of radionuclides to the ambient air from Department of Energy (DOE) facilities shall not exceed those amounts that would cause any member of the public to receive in any year an effective dose equivalent of 10 mrem/yr. [40 CFR 61.92]

      Compliance Demonstration Method:
      To determine compliance with the standard, radionuclide emissions shall be determined and effective dose equivalent values to members of the public calculated using EPA approved sampling procedures, computer models CAP-88 or AIRDOS-PC, or other procedures for which EPA has granted prior approval. [40 CFR 61.93(a)] Refer to **3. Testing Requirements**, **4. Specific Monitoring Requirements**, **5. Specific Recordkeeping Requirements**, and **6. Specific Reporting Requirements.**

   b. Operations covered by 40 CFR 190, Subpart B shall be conducted in such a manner as to provide reasonable assurance that: [40 CFR 190.10]
      i. The annual dose equivalent does not exceed 25 millirems to the whole body, 75 millirems to the thyroid, and 25 millirems to any other organ of any member of the public as the result of exposures to planned discharges of radioactive materials, radon and its daughters excepted, to the general environment from uranium fuel cycle operations and to radiation from these operations. [40 CFR 190.10(a)]
      ii. The total quantity of radioactive materials entering the general environment from the entire uranium fuel cycle, per gigawatt-year of electrical energy produced by the fuel

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

cycle, contains less than 50,000 curies of krypton-85, 5 millicuries of iodine-129, and 0.5 millicuries combined of plutonium-239 and other alpha-emitting transuranic radionuclides with half-lives greater than one year. [40 CFR 190.10(b)]

Compliance Demonstration Method:
To provide reasonable assurance that the limits for radionuclides imposed by 40 CFR 190, Subpart B are not exceeded, the source shall annually determine radionuclide emissions and effective dose equivalent values to members of the public through U.S. EPA and Division approved procedures as well as through complying with **3. Testing Requirements**, **4. Specific Monitoring Requirements**, **5. Specific Recordkeeping Requirements**, and **6. Specific Reporting Requirements.** The requirements of 40 CFR 190.10 are met by source compliance with 40 CFR 61.92 and the compliance demonstration method for **2. Emission Limitations**, **(a)**.

c. The permittee shall provide the utmost care and consideration, in the handling of materials from which hazardous matter or toxic substances may be emitted, to the potentially harmful effects of the emissions resulting from such activities. The permittee shall not allow any affected facility to emit potentially hazardous matter or toxic substances in such quantities or duration as to be harmful to the health and welfare of humans, animals and plants. Evaluation of such facilities as to adequacy of controls and/or procedures and emission potential will be made on an individual basis by the Cabinet. [401 KAR 63:020, Section 3]

Compliance Demonstration Method:
Based upon the emission rates of toxic and hazardous air pollutants determined by the Cabinet using information provided in the application and supplemental information submitted by the source, the Cabinet determines the affected facility to be in compliance with 401 KAR 63:020.

d. Refer to **Section D** for site-wide gaseous and total fluoride limits.

3. Testing Requirements:
Pursuant to 401 KAR 50:045, Section 1, performance testing using the reference methods specified in 401 KAR 50:015 shall be conducted if required by the Division.

4. Specific Monitoring Requirements:
a. Radionuclides emission rates from existing point sources (stacks or vents) shall be measured in accordance with the following requirements or with the requirements of 40 CFR 61.93(c), or other procedures for which EPA has granted prior approval: [40 CFR 61.93(b)]
   i. Effluent flow rate measurements shall be made using the following methods: [40 CFR 61.93(b)(1)]
      1) Reference Method 2 of appendix A to 40 CFR 60 shall be used to determine velocity and volumetric flow rates for stacks and large vents. [40 CFR 61.93(b)(1)(i)]
      2) Reference Method 2A of appendix A to 40 CFR 60 shall be used to measure flow rates through pipes and small vents. [40 CFR 61.93(b)(1)(ii)]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

3) The frequency of the flow rate measurements shall depend upon the variability of the effluent flow rate. For variable flow rates, continuous or frequent flow rate measurements shall be made. For relatively constant flow rates only periodic measurements are necessary. [40 CFR 61.93(b)(1)(iii)]

b. Radionuclides shall be directly monitored or extracted, collected and measured using the following methods: [40 CFR 61.93(b)(2)]
   i. Reference Method 1 of appendix A to 40 CFR 60 shall be used to select monitoring or sampling sites. [40 CFR 61.93(b)(2)(i)]
   ii. The effluent stream shall be directly monitored continuously with an in-line detector or representative samples of the effluent stream shall be withdrawn continuously from the sampling site following the guidance presented in ANSIN13.1-1969 "Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities" (including the guidance presented in appendix A of ANSIN13.1) (incorporated by reference—see 40 CFR 61.18). The requirements for continuous sampling are applicable to batch processes when the unit is in operation. Periodic sampling (grab samples) may be used only with EPA's prior approval. Such approval may be granted in cases where continuous sampling is not practical and radionuclide emission rates are relatively constant. In such cases, grab samples shall be collected with sufficient frequency so as to provide a representative sample of the emissions. [40 CFR 61.93(b)(2)(ii)]
   iii. Radionuclides shall be collected and measured using procedures based on the principles of measurement described in 40 CFR 61, Appendix B, Method 114. Use of methods based on principles of measurement different from those described in 40 CFR 61, Appendix B, Method 114 must have prior approval from the Administrator. EPA reserves the right to approve measurement procedures. [40 CFR 61.93(b)(2)(iii)]
   iv. A quality assurance program shall be conducted that meets the performance requirements described in 40 CFR 61, Appendix B, Method 114. [40 CFR 61.93(b)(2)(iv)]

c. When it is impractical to measure the effluent flow rate at a source in accordance with the requirements of 40 CFR 61.93(b)(1) or to monitor or sample an effluent stream at a source in accordance with the site selection and sample extraction requirements of 40 CFR 61.93(b)(2), the permittee may use alternative effluent flow rate measurement procedures or site selection and sample extraction procedures provided that: [40 CFR 61.93(b)(3); 40 CFR 61.93(d)]
   i. It can be shown that the requirements of 40 CFR 61.93(b)(1) or (2) are impractical for the effluent stream. [40 CFR 61.93(b)(3)(i); 40 CFR 61.93(d)(1)]
   ii. The alternative procedure will not significantly underestimate the emissions. [40 CFR 61.93(b)(3)(ii); 40 CFR 61.93(d)(2)]
   iii. The alternative procedure is fully documented. [40 CFR 61.93(b)(3)(iii); 40 CFR 61.93(d)(3)]
   iv. The permittee has received prior approval from EPA. [40 CFR 61.93(b)(3)(iv); 40 CFR 61.93(d)(4)]

d. Radionuclide emission measurements in conformance with the requirements of 40 CFR 61.93(b) shall be made at all release points that have a potential to discharge radionuclides into the air in quantities that could cause an effective dose equivalent in excess of 1% of the standard. All radionuclides that could contribute greater than 10% of the potential

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

effective dose equivalent for a release point shall be measured. With prior EPA approval, DOE may determine these emissions through alternative procedures. For other release points that have a potential to release radionuclides into the air, periodic confirmatory measurements shall be made to verify the low emissions. [40 CFR 61.93(b)(4)(i); 40 CFR 61.93(e)]

e. To determine whether a release point is subject to the emission measurement requirements of 40 CFR 61.93(b), it is necessary to evaluate the potential for radionuclide emissions for that release point. In evaluating the potential of a release point to discharge radionuclides into the air for the purposes of this section, the estimated radionuclide release rates shall be based on the discharge of the effluent stream that would result if all pollution control equipment did not exist, but the facilities operations were otherwise normal. [40 CFR 61.93(b)(4)(ii); 40 CFR 61.93(f)]

f. Environmental measurements of radionuclide air concentrations at critical receptor locations may be used as an alternative to air dispersion calculations in demonstrating compliance with the standard if the permittee meets the following criteria: [40 CFR 61.93(b)(5); 40 CFR 61.93(g)]
   i. The air at the point of measurement shall be continuously sampled for collection of radionuclides. [40 CFR 61.93(b)(5)(i); 40 CFR 61.93(g)(1)]
   ii. Those radionuclides released from the facility that are the major contributors to the effective dose equivalent must be collected and measured as part of the environmental measurement program. [40 CFR 61.93(b)(5)(ii); 40 CFR 61.93(g)(2)]
   iii. Radionuclide concentrations that would cause an effective dose equivalent of 10% of the standard shall be readily detectable and distinguishable from background. [40 CFR 61.93(b)(5)(iii); 40 CFR 61.93(g)(3)]
   iv. Net measured radionuclide concentrations shall be compared to the concentration levels in Table 2 appendix E of 40 CFR 61 to determine compliance with the standard. In the case of multiple radionuclides being released from a facility, compliance shall be demonstrated if the value for all radionuclides is less than the concentration level in Table 2 of appendix E of 40 CFR 61, and the sum of the fractions that result when each measured concentration value is divided by the value in Table 2 of appendix E of 40 CFR 61 for each radionuclide is less than 1. [40 CFR 61.93(b)(5)(iv); 40 CFR 61.93(g)(4)]
   v. A quality assurance program shall be conducted that meets the performance requirements described in appendix B, Method 114 of 40 CFR 61. [40 CFR 61.93(b)(5)(v); 40 CFR 61.93(g)(5)]
   vi. Use of environmental measurements to demonstrate compliance with the standard is subject to prior approval of EPA. Applications for approval shall include a detailed description of the sampling and analytical methodology and show how the above criteria will be met. [40 CFR 61.93(b)(5)(vi); 40 CFR 61.93(g)(6)]

g. If compliance with the radiological dose limits is accomplished through calculation and dispersion modeling, the source shall perform the calculations and modeling to show the contributions made to the resultant site-wide dose levels by the emissions from building ventilation. Emissions shall be monitored using low-volume air samplers. [401 KAR 52:020, Section 10]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

h. Refer to **Section F** for general monitoring requirements.

5. Specific Recordkeeping Requirements:

a. The permittee must maintain records documenting the source of input parameters including the results of all measurements upon which they are based, the calculations and/or analytical methods used to derive values for input parameters, and the procedure used to determine effective dose equivalent. This documentation should be sufficient to allow an independent auditor to verify the accuracy of the determination made concerning the facility's compliance with the standard. These records must be kept at the site of the facility for at least five years and, upon request, be made available for inspection by the Administrator, or his authorized representative. [40 CFR 61.95]

b. The permittee shall maintain records of the volume of solution processed and analytical results necessary to perform the required dose calculations, as well as the calculations themselves. [401 KAR 52:020, Section 10]

c. If compliance with the radiological dose limits is accomplished through environmental measurements of radionuclide air concentrations at critical receptor locations, the permittee shall record results of sampling at critical receptor locations, maintenance and accuracy checks of instrumentation used, and all other parameters used to demonstrate compliance under this alternate method. Any change to procedural, administrative, or passive control methods used to minimize radionuclide release for demonstration of ALARA principals shall be noted. [401 KAR 52:020, Section 10]

d. Alpha (^{237}Np) and beta (^{99}Tc) low-volume air sampling results exceeding 10 percent of the derived air concentration limits listed in 10 CFR 20, Standards for Protection Against Radiation, shall be recorded in log books or other suitable media and made available for inspection.

e. Refer to **Section F** for general recordkeeping requirements.

6. Specific Reporting Requirements:

a. Compliance with 40 CFR 61.92 shall be determined by calculating the highest effective dose equivalent to any member of the public at any offsite point where there is a residence, school, business or office. The permittee shall submit an annual report to both EPA headquarters and the appropriate regional office by June 30 which includes the dose calculations required by 40 CFR 61.93(a) for the previous calendar year. [40 CFR 61.94(a)]

b. In addition to the requirements of 40 CFR 61.94(a), an annual report shall include the following information: [40 CFR 61.94(b)]
   i. The name and location of the facility. [40 CFR 61.94(b)(1)]
   ii. A list of the radioactive materials used at the facility. [40 CFR 61.94(b)(2)]
   iii. A description of the handling and processing that the radioactive materials undergo at the facility. [40 CFR 61.94(b)(3)]
   iv. A list of the stacks or vents or other points where radioactive materials are released to the atmosphere. [40 CFR 61.94(b)(4)]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

v. A description of the effluent controls that are used on each stack, vent, or other release point and an estimate of the efficiency of each control device. [40 CFR 61.94(b)(5)]
vi. Distances from the points of release to the nearest residence, school, business or office and the nearest farms producing vegetables, milk, and meat. [40 CFR 61.94(b)(6)]
vii. The values used for all other user-supplied input parameters for the computer models (e.g., meteorological data) and the source of these data. [40 CFR 61.94(b)(7)]
viii. A brief description of all construction and modifications which were completed in the calendar year for which the report is prepared, but for which the requirement to apply for approval to construct or modify was waived under 40 CFR 61.96 and associated documentation developed by the DOE to support the waiver. EPA reserves the right to require that DOE send to EPA all the information that normally would be required in an application to construct or modify, following receipt of the description and supporting documentation. [40 CFR 61.94(b)(8)]
ix. Each report shall be signed and dated by a corporate officer or public official in charge of the facility and contain the following declaration immediately above the signature line: "I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment. See, 18 U.S.C. 1001." [40 CFR 61.94(b)(9)]

c. If the facility is not in compliance with the emission limits of 40 CFR 61.92 in the calendar year covered by the report, then the facility must commence reporting to the U.S. EPA and the Division's regional office on a monthly basis the information listed in 40 CFR 61.94(b), for the preceding month. These reports will start the month immediately following the submittal of the annual report for the year in noncompliance and will be due 30 days following the end of each month. This increased level of reporting will continue until the U.S. EPA has determined that the monthly reports are no longer necessary. In addition to all the information required in 40 CFR 61.94(b), monthly reports shall also include the following information: [40 CFR 61.94(c)]
   i. All controls or other changes in operation of the facility that will be or are being installed to bring the facility into compliance. [40 CFR 61.94(c)(1)]
   ii. If the facility is under a judicial or administrative enforcement decree, the report will describe the facilities performance under the terms of the decree. [40 CFR 61.94(c)(2)]

d. The results of dose calculations and dispersion modeling used shall be included in the annual report. [401 KAR 52:020, Section 10]

e. Refer to **Section F** for general reporting requirements.

7. <u>Specific Control Equipment Operating Conditions</u>:
Refer to **Section E.**

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Emission Unit 93 (EU 93): C-104 Emergency Generator

Description: A spark-ignition, 4-stroke, rich burn emergency generator used to provide emergency power to the C-104 building.

Size/Rated Capacity:	54 HP
Make and Model:	Generac SG035, Model Year: 2018
Fuel:	Propane
Construction Commenced:	2019
Controls:	None

APPLICABLE REGULATIONS:

401 KAR 60:005, Section 2(2)(eeee), **40 C.F.R. 60.4230 to 60.4248, Tables 1 to 4** (**Subpart JJJJ),** *Standards of Performance for Stationary Spark Ignition Internal Combustion Engines*

401 KAR 63:002, Section 2(4)(eeee), 40 C.F.R. 63.6580 to 63.6675, Tables 1a to 8, and Appendix A (Subpart ZZZZ), *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*

1. **Operating Limitations:**
   a. The permittee must meet the requirements of 40 CFR Part 63 by meeting the requirements of 40 CFR part 60, Subpart JJJJ, for spark ignition engines. No further requirements apply for such engines under 40 CFR part 63. [40 CFR 63.6590(c)(4)]

   b. The permittee must operate and maintain stationary SI ICE that achieve the emission standards as required in 40 CFR 60.4233 over the entire life of the engine. [40 CFR 60.4234]

   c. The permittee must operate the emergency stationary ICE according to the requirements in 40 CFR 60.4243(d)(1) through (3). In order for the engine to be considered an emergency stationary ICE under 40 CFR 60, Subpart JJJJ, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as described in 40 CFR 60.4243(d)(1) through (3), is prohibited. If the permittee does not operate the engine according to the requirements in 40 CFR 60.4243(d)(1) through (3), the engine will not be considered an emergency engine under 40 CFR 60, Subpart JJJJ and must meet all requirements for non-emergency engines. [40 CFR 60.4243(d)]
      i. There is no time limit on the use of emergency stationary ICE in emergency situations. [40 CFR 60.4243(d)(1)]
      ii. The permittee may operate the emergency stationary ICE for the purpose specified in 40 CFR 60.4243(d)(2)(i) for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by 40 CFR 60.4243(d)(3) counts as part of the 100 hours per calendar year allowed by 40 CFR 60.4243(d)(2). [40 CFR 60.4243(d)(2)]
         1) Emergency stationary ICE may be operated for 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 Administrator for approval of additional hours to be used for maintenance checks and readiness

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

testing, but a petition is not required if the permittee maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year. [40 CFR 60.4243(d)(2)(i)]

iii. Emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing provided in 40 CFR 60.4243(d)(2). Except as provided in 40 CFR 60.4243(d)(3)(i), the 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity. [40 CFR 60.4243(d)(3)]

2. Emission Limitations:

a. The permittee must comply with the emission standards in 40 CFR 60.4231(c) for their stationary SI ICE. [40 CFR 60.4233(c)]

i. The engine must be certified to the Phase 1 emission standards in 40 CFR 90.103, applicable to class II engines, and other requirements for new nonroad SI engines in 40 CFR part 90. [40 CFR 60.4231(c)]

ii. Exhaust emissions for new Phase 1 nonroad spark ignition engines at or below 19 kilowatts (kW), shall not exceed the following levels: [40 CFR 90.103(a)]

EU #	HC + NO_x (g/kW-hr)	CO (g/kW-hr)
EU 93	13.4	519

iii. Compliance Demonstration Method:

iv. The permittee must comply by purchasing an engine certified to the emission standards in 40 CFR 60.4231(c), for the same engine class and maximum engine power. In addition, the permittee must meet one of the requirements specified in 40 CFR 60.4243(a)(1) and (2). [40 CFR 60.4243(a)]

v. If the permittee operates and maintains the certified stationary SI internal combustion engine and control device according to the manufacturer's emission-related written instructions, the permittee must keep records of conducted maintenance to demonstrate compliance, but no performance testing is required. The permittee must also meet the requirements as specified in 40 CFR part 1068, subparts A through D, as they apply. If the permittee adjusts engine settings according to and consistent with the manufacturer's instructions, the stationary SI internal combustion engine will not be considered out of compliance. [40 CFR 60.4243(a)(1)]

vi. If the permittee does not operate and maintain the certified stationary SI internal combustion engine and control device according to the manufacturer's emission-related written instructions, the engine will be considered a non-certified engine, and the must demonstrate compliance according to 40 CFR 60.4243(a)(2)(i): [40 CFR 60.4243(a)(2)]

b. The permittee must keep a maintenance plan and records of conducted maintenance to demonstrate compliance and must, to the extent practicable, maintain and operate the

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

engine in a manner consistent with good air pollution control practice for minimizing emissions, but no performance testing is required. [40 CFR 60.4243(a)(2)(i)]

3. Testing Requirements:

a. Pursuant to 401 KAR 50:045, Section 1, performance testing using the reference methods specified in 401 KAR 50:015 shall be conducted if required by the Division.

4. Specific Monitoring Requirements:

a. If the emergency stationary SI internal combustion engine does not meet the standards applicable to non-emergency engines, the permittee must install a non-resettable hour meter upon startup of the emergency engine. [40 CFR 60.4237(c)]

b. The permittee shall monitor the hours of operation for the emission unit and how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. [401 KAR 52:020, Section 10]

c. Refer to **Section F** for general monitoring requirements.

5. Specific Recordkeeping Requirements:

a. The permittee shall keep records of the information in 40 CFR 60.4245(a)(1) through (4). [40 CFR 60.4245(a)]
   i. All notifications submitted to comply with 40 CFR 60, Subpart JJJJ and all documentation supporting any notification. [40 CFR 60.4245(a)(1)]
   ii. Maintenance conducted on the engine. [40 CFR 60.4245(a)(2)]
   iii. If the stationary SI internal combustion engine is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards and information as required in 40 CFR parts 90, 1048, 1054, and 1060, as applicable. [40 CFR 60.4245(a)(3)]
   iv. If the stationary SI internal combustion engine is not a certified engine or is a certified engine operating in a non-certified manner and subject to 40 CFR 60.4243(a)(2), documentation that the engine meets the emission standards. [40 CFR 60.4245(a)(4)]

b. The permittee must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The permittee must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. [40 CFR 60.4245(b)]

c. Refer to **Section F** for general recordkeeping requirements.

6. Specific Reporting Requirements:

a. The permittee shall include the monthly hours of operation and purpose of operation in each semi-annual report. [401 KAR 52:020, Section 10]

b. Refer to **Section F** for general reporting requirements.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Process Group B

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Emission Group B-1: Emergency Engines ≤ 500HP, Constructed on or after June 12, 2006

Emission Units 67, 80, 81, 83, 92, 95
Description: On-site (source related) emergency engines and pumps ≤ 500HP, constructed on or after June 12, 2006.

EU #	Description	Fuel	Size/Rated Capacity (HP)	Controls	Construction Commenced
EU 67	C-100-2 Emergency Generator	Diesel	250	None	10/20/2008
EU 80	C-611-H-1 Emergency Pump #4	Diesel	245	None	8/12/2009
EU 81	C-611-H-2 Emergency Pump #5	Diesel	245	None	8/12/2009
EU 83	C-611-H-4 Emergency Pump #7	Diesel	447	None	4/4/2007
EU 92	C-310-02 Emergency Generator	Diesel	274	None	6/18/2016
EU 95	C-105 Emergency Generator	Diesel	279	None	9/1/2022

APPLICABLE REGULATIONS:
401 KAR 60:005, Section 2(2)(dddd), 40 C.F.R. 60.4200 to 60.4219, Tables 1 to 8 (Subpart IIII), *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*

401 KAR 63:002, Section 2(4)(eeee), 40 C.F.R. 63.6580 to 63.6675, Tables 1a to 8, and Appendix A (Subpart ZZZZ), *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*

1. **Operating Limitations:**
   a. The permittee must meet the requirements of 40 CFR Part 63 by meeting the requirements of 40 CFR part 60, subpart IIII, for compression ignition engines. No further requirements apply for such engines under 40 CFR part 63. [40 CFR 63.6590(c)(6)]

   b. The permittee must operate and maintain stationary CI ICE that achieve the emission standards as required in 40 CFR 60.4204 and 60.4205 over the entire life of the engine. [40 CFR 60.4206]

   c. The permittee shall use diesel fuel that meets the requirements of 40 CFR 1090.305 for nonroad diesel fuel. [40 CFR 60.4207(b)]

   d. The permittee must do all of the following, except as permitted under 40 CFR 60.4211(g): [40 CFR 60.4211(a)]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

i. Operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's emission-related written instructions; [40 CFR 60.4211(a)(1)]
ii. Change only those emission-related settings that are permitted by the manufacturer; and [40 CFR 60.4211(a)(2)]
iii. Meet the requirements of 40 CFR part 1068, as they apply. [40 CFR 60.4211(a)(3)]

e. The permittee must operate the emergency stationary ICE according to the requirements in 40 CFR 60.4211(f)(1) through (3). In order for the engine to be considered an emergency stationary ICE under 40 CFR 60, Subpart IIII, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as described in 40 CFR 60.4211(f)(1) through (3), is prohibited. If the permittee does not operate the engine according to the requirements in 40 CFR 60.4211(f)(1) through (3), the engine will not be considered an emergency engine under 40 CFR 60, Subpart IIII and must meet all requirements for non-emergency engines. [40 CFR 60.4211(f)]
   i. There is no time limit on the use of emergency stationary ICE in emergency situations. [40 CFR 60.4211(f)(1)]
   ii. The permittee may operate the emergency stationary ICE for the purpose specified in 40 CFR 60.4211(f)(2)(i) for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by 40 CFR 60.4211(f)(3) counts as part of the 100 hours per calendar year allowed by 40 CFR 60.4211(f)(2). [40 CFR 60.4211(f)(2)]
      1) Emergency stationary ICE may be operated for 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 Administrator 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 emergency ICE beyond 100 hours per calendar year. [40 CFR 60.4211(f)(2)(i)]
   iii. Emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing provided in 40 CFR 60.4211(f)(2). Except as provided in 40 CFR 60.4211(f)(3)(i), the 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity. [40 CFR 60.4211(f)(3)]

f. If the permittee does not install, configure, operate, and maintain the engine according to the manufacturer's emission-related written instructions, or the permittee changes emission-related settings in a way that is not permitted by the manufacturer, the permittee must demonstrate compliance as specified in 40 CFR 60.4211(g). [40 CFR 60.4211(g)]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

2. Emission Limitations:

a. For EU 67, 92 & EU 95: The permittee must comply with the emission standards for new nonroad CI engines in 40 CFR 60.4202, for all pollutants, for the same model year and maximum engine power. [40 CFR 60.4205(b)]

b. For EU 80, EU 81, & EU 83: The permittee must comply with the emission standards in 40 CFR 60, Subpart IIII, Table 4 for all pollutants. [40 CFR 60.4205(c)]

EU #	NMHC + NOx (g/HP-hr)	CO (g/HP-hr)	PM (g/HP-hr)
EU 80	3.0	N/A	0.15
EU 81	3.0	N/A	0.15
EU 83	7.8	2.6	0.40

Compliance Demonstration Method:

For EU 83: The permittee must demonstrate compliance according to one of the methods specified in 40 CFR 60.4211(b)(1) through (5). [40 CFR 63.4211(b)]

i. Purchasing an engine certified according to 40 CFR part 89 or 40 CFR part 94, as applicable, for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's specifications. [40 CFR 63.4211(b)(1)]

ii. Keeping records of performance test results for each pollutant for a test conducted on a similar engine. The test must have been conducted using the same methods specified in 40 CFR 60, Subpart IIII and these methods must have been followed correctly. [40 CFR 63.4211(b)(2)]

iii. Keeping records of engine manufacturer data indicating compliance with the standards. [40 CFR 63.4211(b)(3)]

iv. Conducting an initial performance test to demonstrate compliance with the emission standards according to the requirements specified in 40 CFR 60.4212, as applicable. [40 CFR 63.4211(b)(5)]

For EU 67, 80, EU 81, EU 92 & EU 95: The permittee must comply by purchasing an engine certified to the emission standards in 40 CFR 60.4205(b) or (c), as applicable, for the same model year and maximum (or in the case of fire pumps, NFPA nameplate) engine power. The engine must be installed and configured according to the manufacturer's emission-related specifications, except as permitted in 40 CFR 60.4211(g). [40 CFR 60.4211(c)]

3. Testing Requirements:

a. Pursuant to 401 KAR 50:045, Section 1, performance testing using the reference methods specified in 401 KAR 50:015 shall be conducted if required by the Division.

4. Specific Monitoring Requirements:

a. If an emergency stationary CI internal combustion engine does not meet the standards applicable to non-emergency engines, the permittee must install a non-resettable hour meter prior to startup of the engine. [40 CFR 60.4209(a)]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

b. The permittee shall monitor the hours of operation for each emission unit and how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. [401 KAR 52:020, Section 10]

c. Refer to **Section F** for general monitoring requirements.

5. Specific Recordkeeping Requirements:

a. Starting with the model years in 40 CFR 60, Subpart IIII, Table 5, if the emergency engine does not meet the standards applicable to non-emergency engines in the applicable model year, the permittee shall keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The permittee shall record the time of operation of the engine and the reason the engine was in operation during that time. [40 CFR 60.4214(b)]

b. The permittee shall maintain records of the hours of operation for each emission unit and how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. [401 KAR 52:020, Section 10]

c. The permittee shall maintain records of engine certification for each emission unit listed above. [401 KAR 52:020, Section 10]

d. Refer to **Section F** for general recordkeeping requirements.

6. Specific Reporting Requirements:

a. If any of the emission units listed above operates for the purposes specified in 40 CFR 60.4211(f)(3)(i), the permittee shall submit an annual report according to the requirements in 40 CFR 60.4214(d)(1) through (3). [40 CFR 60.4214(d)]

b. The permittee shall include the monthly hours of operation and purpose of operation in each semi-annual report. [401 KAR 52:020, Section 10]

c. Refer to **Section F** for general reporting requirements.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Emission Group B-2: Emergency Engines ≤ 500HP, Constructed Before June 12, 2006.

Emission Units 66, 68, 84, & 85
Description: Existing on-site (source related) emergency engines.

EU #	Description	Fuel	Size/Rated Capacity (HP)	Controls	Construction Commenced
EU 66	C-100-1 Emergency Generator	Diesel	277	None	6/19/2003
EU 68	C-200-1 Emergency Generator	Diesel	82	None	1/1/1985
EU 84	C-611-U-3 Emergency Generator	Diesel	380	None	3/1/1996
EU 85	C-802-1 Emergency Generator	Diesel	56	None	5/8/2003

APPLICABLE REGULATIONS:
401 KAR 63:002, Section 2(4)(eeee), 40 C.F.R. 63.6580 to 63.6675, Tables 1a to 8, and Appendix A (Subpart ZZZZ), *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*

NON-APPLICABLE REGULATIONS:
401 KAR 60:005, Section 2(2)(dddd), **40 C.F.R. 60.4200 to 60.4219, Tables 1 to 8 (Subpart IIII),** *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*. (Note: This regulation will become applicable should any of the emission units listed be modified or reconstructed in the future as defined under the Federal Regulation)

1. **Operating Limitations:**
   a. The permittee shall comply with the emission limitations and other requirements in Table 2c to 40 CFR 63, Subpart ZZZZ which apply. [40 CFR 63.6602]

   b. The permittee must use diesel fuel that meets the requirements in 40 CFR 1090.305 for nonroad diesel fuel. [40 CFR 63.6604(b)]

   c. The permittee must be in compliance with the emission limitations, operating limitations, and other requirements in 40 CFR 63, Subpart ZZZZ that apply at all times. [40 CFR 63.6605(a)]

   d. At all times the permittee must operate and maintain any affected source, 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 this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which 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. [40 CFR 63.6605(b)]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

e. The permittee must operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop a maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 CFR 63.6625(e)]

f. The permittee must install a non-resettable hour meter if one is not already installed. [40 CFR 63.6625(f)]

g. The permittee has the option of utilizing an oil analysis program in order to extend the specified oil and filter change requirement in table 2c to 40 CFR 63, Subpart ZZZZ. The oil analysis must be performed at the same frequency specified for changing the oil and filter in table 2c to 40 CFR 63, Subpart ZZZZ. The analysis program must at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Base Number is less than 30 percent of the Total Base Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the permittee is not required to change the oil and filter. If any of the limits are exceeded, the permittee must change the oil and filter within 2 business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the permittee must change the oil and filter within 2 business days or before commencing operation, whichever is later. The permittee must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil and filter changes for the engine. The analysis program must be part of the maintenance plan for the engine. [40 CFR 63.6625(i)]

h. The permittee must operate the emergency stationary RICE according to the requirements in 40 CFR 63.6640(f)(1) through (4). In order for the engine to be considered an emergency stationary RICE under 40 CFR 63, Subpart ZZZZ, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as described in 40 CFR 63.6640(f)(1) through (4), is prohibited. If the permittee does not operate the engine according to the requirements in 40 CFR 63.6640(f)(1) through (4), the engine will not be considered an emergency engine under 40 CFR 63, Subpart ZZZZ and must meet all requirements for non-emergency engines. [40 CFR 63.6640(f)]
   i. There is no time limit on the use of emergency stationary RICE in emergency situations. [40 CFR 63.6640(f)(1)]
   ii. The permittee may operate the emergency stationary RICE for the purpose specified in 40 CFR 63.6640(f)(2)(i) for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by 40 CFR 63.6640(f)(3) and (4) counts as part of the 100 hours per calendar year allowed by 40 CFR 63.6640(f)(2). [40 CFR 63.6640(f)(2)]
      1) Emergency stationary RICE may be operated for 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 Administrator

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

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 emergency RICE beyond 100 hours per calendar year. [40 CFR 63.6640(f)(2)(i)]

iii. Emergency stationary RICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing provided in 40 CFR 63.6640(f)(2). The 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity. [40 CFR 63.6640(f)(3)]

i. The permittee must meet the following requirement, except during periods of startup: [40 CFR 63, Subpart ZZZZ, Table 2c(1.)]
   i. Change oil and filter every 500 hours of operation or annually, whichever comes first. [40 CFR 63, Subpart ZZZZ, Table 2c(1.)(a.)]
   ii. Sources have the option to utilize an oil analysis program as described in 40 CFR 63.6625(i) in order to extend the specified oil change requirement in Table 2c of 40 CFR 63, Subpart ZZZZ. [40 CFR 63, Subpart ZZZZ, Table 2c, Footnote 2]
   iii. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; [40 CFR 63, Subpart ZZZZ, Table 2c(1.)(b.)]
   iv. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary. [40 CFR 63, Subpart ZZZZ, Table 2c(1.)(c.)]

j. If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the work practice requirements on the schedule required in Table 2c of 40 CFR 63, Subpart ZZZZ, or if performing the work practice on the required schedule would otherwise pose an unacceptable risk under federal, state, or local law, the work practice can be delayed until the emergency is over or the unacceptable risk under federal, state, or local law has abated. The work practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under federal, state, or local law has abated. Sources must report any failure to perform the work practice on the schedule required and the federal, state or local law under which the risk was deemed unacceptable. [40 CFR 63, Subpart ZZZZ, Table 2c, Footnote 1]

k. During periods of startup the permittee shall minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply. [40 CFR 63, Subpart ZZZZ, Table 2c(1.)

2. Emission Limitations:
None.

3. Testing Requirements:
Pursuant to 401 KAR 50:045, Section 1, performance testing using the reference methods specified in 401 KAR 50:015 shall be conducted if required by the Division.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

4. Specific Monitoring Requirements:

a. The permittee shall monitor the hours of operation and how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. [401 KAR 52:020, Section 10]

b. Refer to **Section F** for general monitoring requirements.

5. Specific Recordkeeping Requirements:

a. The permittee must keep the records described in 40 CFR 63.6655(a)(1) through (a)(5). [40 CFR 63.6655(a)]

i. A copy of each notification and report that was submitted to comply with 40 CFR 63, Subpart ZZZZ, including all documentation supporting any Initial Notification or Notification of Compliance Status that was submitted, according to the requirement in 40 CFR 63.10(b)(2)(xiv). [40 CFR 63.6655(a)(1)]

ii. Records of the occurrence and duration of each malfunction of operation (i.e., process equipment). [40 CFR 63.6655(a)(2)]

iii. Records of actions taken during periods of malfunction to minimize emissions in accordance with 40 CFR 63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation. [40 CFR 63.6655(a)(5)]

b. The permittee shall keep records of the maintenance conducted on the stationary RICE in order to demonstrate that the permittee operated and maintained the stationary RICE according to the permittee's own maintenance plan. [40 CFR 63.6655(e)(2)]

c. The permittee must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The permittee must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engine is used for the purpose specified in 40 CFR 63.6640(f)(4)(ii), the permittee must keep records of the notification of the emergency situation, and the date, start time, and end time of engine operation for these purposes. [40 CFR 63.6655(f)(1)]

d. The records must be in a form suitable and readily available for expeditious review according to 40 CFR 63.10(b)(1). [40 CFR 63.6660(a)]

e. As specified in 40 CFR 63.10(b)(1), the permittee must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. [40 CFR 63.6660(b)]

f. The permittee must keep each record readily accessible in hard copy or electronic form for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to 40 CFR 63.10(b)(1). [40 CFR 63.6660(c)]

g. The permittee shall maintain records of the hours of operation and how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. [401 KAR 52:020, Section 10]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

h. The permittee shall maintain records of the manufacturer's emission-related written instructions or the permittee's own maintenance plan for the emergency stationary RICE. [401 KAR 52:020, Section 10]

i. Refer to **Section F** for general recordkeeping requirements.

6. Specific Reporting Requirements:

a. The permittee must report each instance in which the permittee did not meet each emission limitation or operating limitation in Table 2c to 40 CFR 63, Subpart ZZZZ that applies. These instances are deviations from the emission and operating limitations in this 40 CFR 63, Subpart ZZZZ. These deviations must be reported according to the requirements in 40 CFR 63.6650. [40 CFR 63.6640(b)]

b. The permittee must report all deviations as defined in 40 CFR 63, Subpart ZZZZ in the semiannual monitoring report required by 40 CFR 70.6 (a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A). [40 CFR 63.6650(f)]

c. If the emergency stationary RICE operates for the purpose specified in 40 CFR 63.6640(f)(4)(ii), the permittee must submit an annual report according to the requirements in 40 CFR 63.6650(h)(1) through (3). [40 CFR 63.6650(h)]

d. The permittee shall include the monthly hours of operation and purpose of operation in each semi-annual report. [401 KAR 52:020, Section 10]

e. Refer to **Section F** for general reporting requirements.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Emission Unit 89 (EU 89): Package Boiler #5 (PB5)

Description: A package boiler that provides steam energy for both process heat and space heating. This unit is equipped with ultra-low NOx burners.

Size/Rated Capacity:	27.2 MMBtu/hr
Make and Model:	Hurst SE-X-650 (HP)/Alzeta Powerflame CSB272R-G-30 (burner)
Fuel:	Natural Gas
Construction Commenced:	9/2/2015
Controls:	None

APPLICABLE REGULATIONS:

401 KAR 59:015, *New indirect heat exchangers*

401 KAR 60:005, Section 2(2)(d), 40 C.F.R. 60.40c to 60.48c (Subpart Dc), *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*

401 KAR 63:002, Section 2(4)(iiii), 40 C.F.R. 63.7480 to 63.7575, Tables 1 to 13 (Subpart DDDDD), *National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters*

1. **Operating Limitations:**
   a. During a startup period or shutdown period, the permittee shall comply with the work practice standards established in 401 KAR 59:015, Section 7. [401 KAR 59:015, Section 7]
      i. The permittee shall comply with 401 KAR 50:055, Section 2(5); [401 KAR 59:015, Section 7(1)(a)]
      ii. The frequency and duration of startup periods or shutdown periods shall be minimized by the affected facility; [401 KAR 59:015, Section 7(1)(b)]
      iii. All reasonable steps shall be taken by the permittee to minimize the impact of emissions on ambient air quality from the affected facility during startup periods and shutdown periods; [401 KAR 59:015, Section 7(1)(c)]
      iv. The actions, including duration of the startup period, of the permittee during startup and shutdown periods, shall be documented in signed, contemporaneous logs or other relevant evidence; [401 KAR 59:015, Section 7(1)(d)]
      v. Startups and shutdowns shall be conducted according to either: [401 KAR 59:015, Section 7(1)(e)]
         1) The manufacturer's recommended procedures; or [401 KAR 59:015, Section 7(1)(e)1.]
         2) Recommended procedures for a unit of similar design, for which manufacturer's recommended procedures are available, as approved by the cabinet based on documentation provided by the permittee. [401 KAR 59:015, Section 7(1)(e)2.]

   Compliance Demonstration Method:
   Compliance shall be demonstrated according to **5. Specific Recordkeeping Requirements (b).**

   b. The permittee must meet the requirements in 40 CFR 63.7500(a)(1) through (3), except as

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

provided in 40 CFR 63.7500(b) through (e). The permittee must meet these requirements at all times the affected unit is operating. [40 CFR 63.7500(a)]

i. The permittee must meet each emission limit and work practice standard in Tables 1 through 3, and 11 through 15 to 40 CFR 63, Subpart DDDDD that applies to the boiler or process heater, for each boiler or process heater, except as provided under 40 CFR 63.7522. [40 CFR 63.7500(a)(1)]

ii. At all times, the permittee must operate and maintain any affected source (as defined in 40 CFR 63.7490), including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator 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. [40 CFR 63.7500(a)(3)]

c. As provided in 40 CFR 63.6(g), EPA may approve use of an alternative to the work practice standards in 40 CFR 63.7500. [40 CFR 63.7500(b)]

d. Boilers and process heaters in the units designed to burn gas 1 fuels subcategory are not subject to the emission limits in Tables 1 and 2 or 11 through 15 to 40 CFR 63, Subpart DDDDD, or the operating limits in Table 4 to 40 CFR 63, Subpart DDDDD. [40 CFR 63.7500(e)]

e. The permittee must conduct an annual performance tune-up according to 40 CFR 63.7540(a)(10). Each annual tune-up specified in 40 CFR 63.7540(a)(10) must be no more than 13 months after the previous tune-up. [40 CFR 63.7515(d)]

f. For affected sources (as defined in 40 CFR 63.7490) that have not operated since the previous compliance demonstration and more than one year has passed since the previous compliance demonstration, the permittee must complete a subsequent tune-up by following the procedures described in 40 CFR 63.7540(a)(10)(i) through (vi) and the schedule described in 40 CFR 63.7540(a)(13) for units that are not operating at the time of their scheduled tune-up. [40 CFR 63.7515(g)]

g. The permittee must conduct an annual tune-up of the boiler to demonstrate continuous compliance as specified in 40 CFR 63.7540(a)(10)(i) through (vi). The permittee must conduct the tune-up while burning the type of fuel that provided the majority of the heat input to the boiler over the 12 months prior to the tune-up. [40 CFR 63.7540(a)(10)]

i. As applicable, inspect the burner, and clean or replace any components of the burner as necessary (the permittee may perform the burner inspection any time prior to the tune-up or delay the burner inspection until the next scheduled unit shutdown). At units where entry into a piece of process equipment or into a storage vessel is required to complete the tune-up inspections, inspections are required only during planned entries into the storage vessel or process equipment; [40 CFR 63.7540(a)(10)(i)]

ii. 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; [40 CFR 63.7540(a)(10)(ii)]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

iii. 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). [40 CFR 63.7540(a)(10)(iii)]
iv. Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any NO_X requirement to which the unit is subject; [40 CFR 63.7540(a)(10)(iv)]
v. 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; and [40 CFR 63.7540(a)(10)(v)]
vi. Maintain on-site and submit, if requested by the Administrator, a report containing the information in 40 CFR 63.7540(a)(10)(vi)(A) through (C), [40 CFR 63.7540(a)(10)(vi)]
    1) 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; [40 CFR 63.7540(a)(10)(vi)(A)]
    2) A description of any corrective actions taken as a part of the tune-up; and [40 CFR 63.7540(a)(10)(vi)(B)]
    3) The type and amount of fuel used over the 12 months prior to the tune-up, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel used by each unit. [40 CFR 63.7540(a)(10)(vi)(C)]

h. If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup. [40 CFR 63.7540(a)(13)]

2. Emission Limitations

a. The permittee shall not cause emissions of particulate matter in excess of 0.10 lb/MMBtu actual heat input. [401 KAR 59:015, Section 4(1)(b)]

b. The permittee shall not cause emissions of particulate matter in excess of 20 percent opacity, except: [401 KAR 59:015, Section 4(2)]
    i. A maximum of 40 percent opacity shall be allowed for a maximum of 6 consecutive minutes in any 60 consecutive minutes during fire box cleaning or soot blowing; and [401 KAR 59:015, Section 4(2)(b)]
    ii. For emissions from an affected facility caused by building a new fire, emissions during the period required to bring the boiler up to operating conditions shall be allowed, if the method used is recommended by the manufacturer and the time does not exceed the manufacturer's recommendations. [401 KAR 59:015, Section 4(2)(c)]

c. The permittee shall not cause emissions of gases that contain sulfur dioxide in excess of 0.8 lb/MMBtu actual heat input. [401 KAR 59:015, Section 5(1)(b)(1.)]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Compliance Demonstration Method:
While burning natural gas, this unit is assumed to be in compliance with the particulate matter, opacity, and sulfur dioxide standards.

3. **Testing Requirements:**
Pursuant to 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the reference methods specified in 401 KAR 50:015 shall be conducted if required by the Division.

4. **Specific Monitoring Requirements:**
   a. The permittee shall monitor the amount of natural gas combusted, in MMscf, on a monthly basis. [401 KAR 52:020, Section 10]

   b. Refer to **Section F** for general monitoring requirements.

5. **Specific Recordkeeping Requirements:**
   a. The permittee shall maintain records of the amount of natural gas combusted, in MMscf, on a monthly basis. [401 KAR 52:020, Section 10]

   b. The permittee shall keep records of the manufacturer's recommended procedures for startup and shutdown, any instance in which the recommended procedures were not followed, and any corrective action taken. [401 KAR 52:020, Section 10]

   c. Except as provided under 40 CFR 60.48c(g)(2) and (g)(3), the permittee of each affected facility shall record and maintain records of the amount of each fuel combusted during each operating day. [40 CFR 60.48c(g)(1)]
      i. As an alternative to meeting the requirements of 40 CFR 60.48c(g)(1), the permittee of an affected facility that combusts only natural gas may elect to record and maintain records of the amount of each fuel combusted during each calendar month. [40 CFR 60.48c(g)(2)]
      ii. As an alternative to meeting the requirements of 40 CFR 60.48c(g)(1), the permittee of an affected facility or multiple affected facilities located on a contiguous property unit where the only fuels combusted in any steam generating unit (including steam generating units not subject to 40 CFR 60, Subpart Dc) at that property are natural gas, wood, distillate oil meeting the most current requirements in 40 CFR 60.42c to use fuel certification to demonstrate compliance with the SO_2 standard, and/or fuels, excluding coal and residual oil, not subject to an emissions standard (excluding opacity) may elect to record and maintain records of the total amount of each steam generating unit fuel delivered to that property during each calendar month. [40 CFR 60.48c(g)(3)]

   d. The permittee must keep records according to 40 CFR 63.7555(a)(1) and (2). [40 CFR 63.7555(a)]
      i. A copy of each notification and report that was submitted to comply with 40 CFR 63, Subpart DDDDD, including all documentation supporting any Initial Notification or Notification of Compliance Status or semiannual compliance report that was submitted, according to the requirements in 40 CFR 63.10(b)(2)(xiv). [40 CFR 63.7555(a)(1)]
      ii. Records of performance tests, fuel analyses, or other compliance demonstrations and

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

performance evaluations as required in 40 CFR 63.10(b)(2)(viii). [40 CFR 63.7550(a)(2)]

e. The records must be in a form suitable and readily available for expeditious review, according to 40 CFR 63.10(b)(1). [40 CFR 63.7560(a)]

f. As specified in 40 CFR 63.10(b)(1), the permittee must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. [40 CFR 63.7560(b)]

g. The permittee must keep each record on site, or they must be accessible from on site (for example, through a computer network), for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to 40 CFR 63.10(b)(1). The permittee can keep the records off site for the remaining 3 years. [40 CFR 63.7560(c)]

h. Refer to **Section F** for general recordkeeping requirements.

6. Specific Reporting Requirements:

a. The permittee must report each instance in which the permittee did not meet each emission limit and operating limit in Tables 1 through 4 or 11 through 15 to 40 CFR 63, Subpart DDDDD that applies. These instances are deviations from the emission limits or operating limits, respectively, in 40 CFR 63, Subpart DDDDD. These deviations must be reported according to the requirements in 40 CFR 63.7550. [40 CFR 63.7540(b)]

b. Unless the EPA Administrator has approved a different schedule for submission of reports under 40 CFR 63.10(a), the permittee must submit each report, according to 4 CFR 63.7550(h), by the date in Table 9 to 40 CFR 63, Subpart DDDDD and according to the requirements in 40 CFR 63.7550(b)(1) through (4). For units that are subject only to a requirement to conduct subsequent annual tune-ups according to 40 CFR 63.7540(a)(10) and not subject to emission limits or Table 4 operating limits, the permittee may submit only an annual, biennial, or 5-year compliance report, as applicable, as specified in 40 CFR 63.7550(b)(1) through (4), instead of a semi-annual compliance report. [40 CFR 63.7550(b)]
   i. Each subsequent semi-annual compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31. Annual compliance reports must cover the 1-year period from January 1 to December 31. [40 CFR 63.7550(b)(3)]
   ii. Each subsequent semi-annual compliance report must be postmarked or submitted no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period. Annual compliance reports must be postmarked or submitted no later than January 31. [40 CFR 63.7550(b)(4)]
   iii. The permittee may submit the first and subsequent compliance reports according to the dates the Division has established in **Section F** instead of according to the dates in 40 CFR 63.7550(b)(1) through (4). [40 CFR 63.7550(b)(5)]

c. The permittee must submit a compliance report with the information in 40 CFR

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

63.7550(c)(5)(i) through (iii), (xiv) and (xvii). [40 CFR 63.7550(c)(1)]

i. Company and Facility name and address. [40 CFR 63.7550(c)(5)(i)]
ii. Process unit information, emissions limitations, and operating parameter limitations. [40 CFR 63.7550(c)(5)(ii)]
iii. Date of report and beginning and ending dates of the reporting period. [40 CFR 63.7550(c)(5)(iii)]
iv. Include the date of the most recent tune-up for each unit subject to only the requirement to conduct an annual tune-up according to 40 CFR 63.7540(a)(10). Include the date of the most recent burner inspection if it was not done annually and was delayed until the next scheduled or unscheduled unit shutdown. [40 CFR 63.7550(c)(5)(xiv)]
v. Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report. [40 CFR 63.7550(c)(5)(xvii)]

d. For each deviation from an emission limit or operating limit in 40 CFR 63, Subpart DDDDD that occurs at an individual boiler or process heater where the permittee is not using a CMS to comply with that emission limit or operating limit, or from the work practice standards for periods of startup and shutdown, the compliance report must additionally contain the information required in 40 CFR 63.7550(d)(1) through (3). [40 CFR 63.7550(d)]
   i. A description of the deviation and which emission limit, operating limit, or work practice standard from which the permittee deviated. [40 CFR 63.7550(d)(1)]
   ii. Information on the number, duration, and cause of deviations (including unknown cause), as applicable, and the corrective action taken. [40 CFR 63.7550(d)(2)]

e. The permittee must submit all reports required by Table 9 of 40 CFR 63, Subpart DDDDD electronically to the EPA via the CEDRI. (CEDRI can be accessed through the EPA's CDX.) The permittee must use the appropriate electronic report in CEDRI for 40 CFR 63, Subpart DDDDD. Instead of using the electronic report in CEDRI for 40 CFR 63, Subpart DDDDD, the permittee may submit an alternate electronic file consistent with the XML schema listed on the CEDRI Web site (http://www.epa.gov/ttn/chief/cedri/index.html), once the XML schema is available. If the reporting form specific to 40 CFR 63, Subpart DDDDD is not available in CEDRI at the time that the report is due, the permittee must submit the report to the Administrator at the appropriate address listed in 40 CFR 63.13. The permittee must begin submitting reports via CEDRI no later than 90 days after the form becomes available in CEDRI. [40 CFR 63.7550(h)(3)]

f. Refer to **Section F** for general reporting requirements.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Emission Unit 90 (EU 90): Package Boiler #1 (PB1)

Description: A Dual Fuel Package Boiler that provides steam energy for both process heat and space heating. This unit is equipped with low-NOx burners. This unit uses Natural Gas as the primary fuel, but may use #2 Fuel Oil during periods of natural gas curtailment.

Size/Rated Capacity:	27.2 MMBtu/hr NG, 26.2 MMBtu/hr Fuel Oil.
Make and Model:	Donlee Technologies 582-SPHF-650 (HP); Coen HTE-14 Micronox HID (burners)
Construction Commenced:	2015
Controls:	None

APPLICABLE REGULATIONS:

401 KAR 59:015, *New indirect heat exchangers*

401 KAR 60:005, Section 2(2)(d), 40 C.F.R. 60.40c to 60.48c (Subpart Dc), *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*

401 KAR 63:002, Section 2(4)(iiii), 40 C.F.R. 63.7480 to 63.7575, Tables 1 to 13 (Subpart DDDDD), *National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters*

1. **Operating Limitations:**
   a. During a startup period or shutdown period, the permittee shall comply with the work practice standards established in 401 KAR 59:015, Section 7. [401 KAR 59:015, Section 7]
      i. The permittee shall comply with 401 KAR 50:055, Section 2(5); [401 KAR 59:015, Section 7(1)(a)]
      ii. The frequency and duration of startup periods or shutdown periods shall be minimized by the affected facility; [401 KAR 59:015, Section 7(1)(b)]
      iii. All reasonable steps shall be taken by the permittee to minimize the impact of emissions on ambient air quality from the affected facility during startup periods and shutdown periods; [401 KAR 59:015, Section 7(1)(c)]
      iv. The actions, including duration of the startup period, of the permittee during startup and shutdown periods, shall be documented in signed, contemporaneous logs or other relevant evidence; [401 KAR 59:015, Section 7(1)(d)]
      v. Startups and shutdowns shall be conducted according to either: [401 KAR 59:015, Section 7(1)(e)]
         1) The manufacturer's recommended procedures; or [401 KAR 59:015, Section 7(1)(e)1.]
         2) Recommended procedures for a unit of similar design, for which manufacturer's recommended procedures are available, as approved by the cabinet based on documentation provided by the permittee. [401 KAR 59:015, Section 7(1)(e)2.]

   Compliance Demonstration Method:
   Compliance shall be demonstrated according to **5. Specific Recordkeeping Requirements (b).**

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

b. The permittee shall not combust oil in the affected facility that contains greater than 0.5 weight percent sulfur. The percent reduction requirements are not applicable to affected facilities under 40 CFR 60.42c(d). [40 CFR 60.42c(d)]

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

Compliance Demonstration Method:
Compliance with the fuel oil sulfur limits under 40 CFR 60.42c may be determined based on a certification from the fuel supplier, as described under 40 CFR 60.48c(f), as applicable. [40 CFR 60.42c(h)(1)]

d. The permittee must meet the requirements in 40 CFR 63.7500(a)(1) through (3), except as provided in 40 CFR 63.7500(b) through (e). The permittee must meet these requirements at all times the affected unit is operating. [40 CFR 63.7500(a)]
   i. The permittee must meet each emission limit and work practice standard in Tables 1 through 3, and 11 through 15 to 40 CFR 63, Subpart DDDDD that applies to the boiler or process heater, for each boiler or process heater, except as provided under 40 CFR 63.7522. [40 CFR 63.7500(a)(1)]
   ii. At all times, the permittee must operate and maintain any affected source (as defined in 40 CFR 63.7490), including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator 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. [40 CFR 63.7500(a)(3)]

e. As provided in 40 CFR 63.6(g), EPA may approve use of an alternative to the work practice standards in 40 CFR 63.7500. [40 CFR 63.7500(b)]

f. Boilers and process heaters in the units designed to burn gas 1 fuels subcategory are not subject to the emission limits in Tables 1 and 2 or 11 through 15 to 40 CFR 63, Subpart DDDDD, or the operating limits in Table 4 to 40 CFR 63, Subpart DDDDD. [40 CFR 63.7500(e)]

g. The permittee must conduct an annual performance tune-up according to 40 CFR 63.7540(a)(10). Each annual tune-up specified in 40 CFR 63.7540(a)(10) must be no more than 13 months after the previous tune-up. [40 CFR 63.7515(d)]

h. For affected sources (as defined in 40 CFR 63.7490) that have not operated since the previous compliance demonstration and more than one year has passed since the previous compliance demonstration, the permittee must complete a subsequent tune-up by following the procedures described in 40 CFR 63.7540(a)(10)(i) through (vi) and the schedule described in 40 CFR 63.7540(a)(13) for units that are not operating at the time of their scheduled tune-up. [40 CFR 63.7515(g)]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

i. The permittee must conduct an annual tune-up of the boiler to demonstrate continuous compliance as specified in 40 CFR 63.7540(a)(10)(i) through (vi). The permittee must conduct the tune-up while burning the type of fuel that provided the majority of the heat input to the boiler over the 12 months prior to the tune-up. [40 CFR 63.7540(a)(10)]
   i. As applicable, inspect the burner, and clean or replace any components of the burner as necessary (the permittee may perform the burner inspection any time prior to the tune-up or delay the burner inspection until the next scheduled unit shutdown). At units where entry into a piece of process equipment or into a storage vessel is required to complete the tune-up inspections, inspections are required only during planned entries into the storage vessel or process equipment; [40 CFR 63.7540(a)(10)(i)]
   ii. 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; [40 CFR 63.7540(a)(10)(ii)]
   iii. 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). [40 CFR 63.7540(a)(10)(iii)]
   iv. Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any NO_X requirement to which the unit is subject; [40 CFR 63.7540(a)(10)(iv)]
   v. 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; and [40 CFR 63.7540(a)(10)(v)]
   vi. Maintain on-site and submit, if requested by the Administrator, a report containing the information in 40 CFR 63.7540(a)(10)(vi)(A) through (C), [40 CFR 63.7540(a)(10)(vi)]
      1) 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; [40 CFR 63.7540(a)(10)(vi)(A)]
      2) A description of any corrective actions taken as a part of the tune-up; and [40 CFR 63.7540(a)(10)(vi)(B)]
      3) The type and amount of fuel used over the 12 months prior to the tune-up, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel used by each unit. [40 CFR 63.7540(a)(10)(vi)(C)]

j. If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup. [40 CFR 63.7540(a)(13)]

k. The facility shall burn liquid fuel only during periods of gas curtailment or gas supply interruptions. [40 CFR 63.7575]

2. <u>Emission Limitations</u>:

a. The permittee shall not cause emissions of particulate matter in excess of 0.10 lb/MMBtu actual heat input from each emission unit. [401 KAR 59:015, Section 4(1)(b)]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

b. The permittee shall not cause emissions of particulate matter in excess of 20 percent opacity, except: [401 KAR 59:015, Section 4(2)]
   i. A maximum of 40 percent opacity shall be allowed for a maximum of 6 consecutive minutes in any 60 consecutive minutes during fire box cleaning or soot blowing; and [401 KAR 59:015, Section 4(2)(b)]
   ii. For emissions from an affected facility caused by building a new fire, emissions during the period required to bring the boiler up to operating conditions shall be allowed, if the method used is recommended by the manufacturer and the time does not exceed the manufacturer's recommendations. [401 KAR 59:015, Section 4(2)(c)]

c. The permittee shall not cause emissions of gases that contain sulfur dioxide in excess of 0.8 lb/MMBtu actual heat input from each emission unit. [401 KAR 59:015, Section 5(b)(1.)]

Compliance Demonstration Method:
   i. While burning natural gas, this unit is assumed to be in compliance with the particulate matter, opacity, and sulfur dioxide standards.
   ii. During periods of natural gas curtailment, while burning oil in the either of the dual-fired boilers, the permittee shall demonstrate compliance as follows:
      1) The permittee shall calculate the PM emissions from each emission unit weekly and compare the results of the calculation to the limit.
      2) The permittee shall perform daily qualitative emissions observations. Refer to **4. Specific Monitoring Requirements**.
      3) The permittee shall calculate the SO_2 emissions from each emission unit weekly and compare the results of the calculation to the limit.

3. Testing Requirements:

Pursuant to 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the reference methods specified in 401 KAR 50:015 shall be conducted as required by the Division.

4. Specific Monitoring Requirements:

a. As an alternative fuel sampling procedure for affected facilities combusting oil, oil samples may be collected from the fuel tank for each steam generating unit immediately after the fuel tank is filled and before any oil is combusted. The permittee shall analyze the oil sample to determine the sulfur content of the oil. If a partially empty fuel tank is refilled, a new sample and analysis of the fuel in the tank would be required upon filling. Results of the fuel analysis taken after each new shipment of oil is received shall be used as the daily value when calculating the 30-day rolling average until the next shipment is received. If the fuel analysis shows that the sulfur content in the fuel tank is greater than 0.5 weight percent sulfur, the permittee shall ensure that the sulfur content of subsequent oil shipments is low enough to cause the 30-day rolling average sulfur content to be 0.5 weight percent sulfur or less. [40 CFR 60.46c(d)(2)]

b. The permittee shall monitor the amount of natural gas combusted, in MMscf, on a monthly basis. [401 KAR 52:020, Section 10]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

c. The permittee shall monitor the following during periods of natural gas curtailment: [401 KAR 52:020, Section 10]
   i. The daily hours of operation; and
   ii. The daily gallons of #2 Fuel Oil burned.

d. The permittee shall perform a qualitative visual observation of the opacity of emissions at each stack no less than daily while the affected facility is operating during periods of natural gas curtailment. If visible emissions from the stacks are observed (not including condensed water in the plume), the permittee shall determine the opacity using Reference Method 9. In lieu of determining the opacity using U.S. EPA Method 9, the permittee shall immediately perform a corrective action which results in no visible emissions (not including condensed water in the plume). [401 KAR 52:020, Section 10]

e. Refer to **Section F** for general monitoring requirements.

5. Specific Recordkeeping Requirements:

a. The permittee shall keep records and submit reports as required under 40 CFR 60.48c(d), including the following information, as applicable. [40 CFR 60.48c(e)]
   i. Calendar dates covered in the reporting period. [40 CFR 60.48c(e)(1)]
   ii. Each 30-day average sulfur content (weight percent), calculated during the reporting period, ending with the last 30-day period; reasons for any noncompliance with the emission standards; and a description of corrective actions taken. [40 CFR 60.48c(e)(2)]
   iii. If fuel supplier certification is used to demonstrate compliance, records of fuel supplier certification as described under 40 CFR 60.48c(f)(1). In addition to records of fuel supplier certifications, 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. [40 CFR 60.48c(e)(11)]

b. Fuel supplier certification shall include the following information for distillate oil: [40 CFR 60.48(f)(1)]
   i. The name of the oil supplier; [40 CFR 60.48(f)(1)(i)]
   ii. 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 [40 CFR 60.48(f)(1)(ii)]
   iii. The sulfur content or maximum sulfur content of the oil. [40 CFR 60.48(f)(1)(iii)]

c. Except as provided under 40 CFR 60.48c(g)(2) and (g)(3), the permittee of each affected facility shall record and maintain records of the amount of each fuel combusted during each operating day. [40 CFR 60.48c(g)(1)]
   i. As an alternative to meeting the requirements of 40 CFR 60.48c(g)(1), the permittee of an affected facility that combusts only natural gas, fuels using fuel certification in 40 CFR 60.48c(f) to demonstrate compliance with the SO_2 standard, or a mixture of these fuels may elect to record and maintain records of the amount of each fuel combusted during each calendar month. [40 CFR 60.48c(g)(2)]
   ii. As an alternative to meeting the requirements of 40 CFR 60.48c(g)(1), the permittee of an affected facility or multiple affected facilities located on a contiguous property unit where the only fuels combusted in any steam generating unit (including steam

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

generating units not subject to 40 CFR 60, Subpart Dc) at that property are natural gas, wood, distillate oil meeting the most current requirements in 40 CFR 60.42c to use fuel certification to demonstrate compliance with the SO_2 standard, and/or fuels, excluding coal and residual oil, not subject to an emissions standard (excluding opacity) may elect to record and maintain records of the total amount of each steam generating unit fuel delivered to that property during each calendar month. [40 CFR 60.48c(g)(3)]

d. The permittee must keep records according to 40 CFR 63.7555(a)(1) and (2). [40 CFR 63.7555(a)]
   i. A copy of each notification and report that was submitted to comply with 40 CFR 63, Subpart DDDDD, including all documentation supporting any Initial Notification or Notification of Compliance Status or semiannual compliance report that was submitted, according to the requirements in 40 CFR 63.10(b)(2)(xiv). [40 CFR 63.7555(a)(1)]
   ii. Records of performance tests, fuel analyses, or other compliance demonstrations and performance evaluations as required in 40 CFR 63.10(b)(2)(viii). [40 CFR 63.7550(a)(2)]

e. The permittee must keep records of the total hours per calendar year that #2 Fuel Oil is burned and the total hours per calendar year that the unit operated during periods of gas curtailment or gas supply emergencies. [40 CFR 63.7550(h)]

f. The records must be in a form suitable and readily available for expeditious review, according to 40 CFR 63.10(b)(1). [40 CFR 63.7560(a)]

g. As specified in 40 CFR 63.10(b)(1), the permittee must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. [40 CFR 63.7560(b)]

h. The permittee must keep each record on site, or they must be accessible from on site (for example, through a computer network), for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to 40 CFR 63.10(b)(1). The permittee can keep the records off site for the remaining 3 years. [40 CFR 63.7560(c)]

i. The permittee shall maintain records of the following: [401 KAR 52:020, Section 10]
   i. The daily hours of operation during periods of natural gas curtailment;
   ii. The daily gallons of #2 Fuel Oil burned during periods of natural gas curtailment; and
   iii. The weekly PM and SO_2 emission calculations during periods of natural gas curtailment.

j. The permittee shall maintain records of the amount of natural gas combusted, in MMscf, on a monthly basis. [401 KAR 52:020, Section 10]

k. The permittee shall maintain a log of the qualitative visual observations made as specified in **4. Monitoring Requirements (c)** including the date, time, initials of observer, whether any emissions were observed (yes/no), and any Method 9 readings taken. [401 KAR 52:020, Section 10]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

l. The permittee shall keep records of the manufacturer's recommended procedures for startup and shutdown, any instance in which the recommended procedures were not followed, and any corrective action taken. [401 KAR 52:020, Section 10

m. Refer to **Section F** for general recordkeeping requirements.

6. Specific Reporting Requirements:

a. The permittee shall submit reports to the Administrator. [40 CFR 60.48c(d)]

b. The permittee must report each instance in which the permittee did not meet each emission limit and operating limit in Tables 1 through 4 or 11 through 15 to 40 CFR 63, Subpart DDDDD that applies. These instances are deviations from the emission limits or operating limits, respectively, in 40 CFR 63, Subpart DDDDD. These deviations must be reported according to the requirements in 40 CFR 63.7550. [40 CFR 63.7540(b)]

c. If the permittee operates an emission unit during a period of natural gas curtailment or supply interruption, as defined in 40 CFR 63.7575, the permittee must submit a notification of alternative fuel use within 48 hours of the declaration of each period of natural gas curtailment or supply interruption, as defined in 40 CFR 63.7575. The notification must include the information specified in 40 CFR 63.7545(f)(1) through (5). [40 CFR 63.7545(f)]
   i. Company name and address. [40 CFR 63.7545(f)(1)]
   ii. Identification of the affected unit. [40 CFR 63.7545(f)(2)]
   iii. Reason the permittee is unable to use natural gas or equivalent fuel, including the date when the natural gas curtailment was declared or the natural gas supply interruption began. [40 CFR 63.7545(f)(3)]
   iv. Type of alternative fuel that the permittee intends to use. [40 CFR 63.7545(f)(4)]
   v. Dates when the alternative fuel use is expected to begin and end. [40 CFR 63.7545(f)(5)]

d. Unless the EPA Administrator has approved a different schedule for submission of reports under 40 CFR 63.10(a), the permittee must submit each report, according to 4 CFR 63.7550(h), by the date in Table 9 to 40 CFR 63, Subpart DDDDD and according to the requirements in 40 CFR 63.7550(b)(1) through (4). For units that are subject only to a requirement to conduct subsequent annual tune-ups according to 40 CFR 63.7540(a)(10) and not subject to emission limits or Table 4 operating limits, the permittee may submit only an annual, biennial, or 5-year compliance report, as applicable, as specified in 40 CFR 63.7550(b)(1) through (4), instead of a semi-annual compliance report. [40 CFR 63.7550(b)]
   i. Each subsequent semi-annual compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31. Annual compliance reports must cover the 1-year period from January 1 to December 31. [40 CFR 63.7550(b)(3)]
   ii. Each subsequent semi-annual compliance report must be postmarked or submitted no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period. Annual compliance reports must be postmarked or submitted no later than January 31. [40 CFR 63.7550(b)(4)]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

iii. The permittee may submit the first and subsequent compliance reports according to the dates the Division has established in **Section F** instead of according to the dates in 40 CFR 63.7550(b)(1) through (4). [40 CFR 63.7550(b)(5)]

e. The permittee must submit a compliance report with the information in 40 CFR 63.7550(c)(5)(i) through (iii), (xiv) and (xvii). [40 CFR 63.7550(c)(1)]
   i. Company and Facility name and address. [40 CFR 63.7550(c)(5)(i)]
   ii. Process unit information, emissions limitations, and operating parameter limitations. [40 CFR 63.7550(c)(5)(ii)]
   iii. Date of report and beginning and ending dates of the reporting period. [40 CFR 63.7550(c)(5)(iii)]
   iv. Include the date of the most recent tune-up for each unit subject to only the requirement to conduct an annual tune-up according to 40 CFR 63.7540(a)(10). Include the date of the most recent burner inspection if it was not done annually and was delayed until the next scheduled or unscheduled unit shutdown. [40 CFR 63.7550(c)(5)(xiv)]
   v. Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report. [40 CFR 63.7550(c)(5)(xvii)]

f. For each deviation from an emission limit or operating limit in 40 CFR 63, Subpart DDDDD that occurs at an individual boiler or process heater where the permittee is not using a CMS to comply with that emission limit or operating limit, or from the work practice standards for periods of startup and shutdown, the compliance report must additionally contain the information required in 40 CFR 63.7550(d)(1) through (3). [40 CFR 63.7550(d)]
   i. A description of the deviation and which emission limit, operating limit, or work practice standard from which the permittee deviated. [40 CFR 63.7550(d)(1)]

g. Information on the number, duration, and cause of deviations (including unknown cause), as applicable, and the corrective action taken. [40 CFR 63.7550(d)(2)]

h. The permittee must submit all reports required by Table 9 of 40 CFR 63, Subpart DDDDD electronically to the EPA via the CEDRI. (CEDRI can be accessed through the EPA's CDX.) The permittee must use the appropriate electronic report in CEDRI for 40 CFR 63, Subpart DDDDD. Instead of using the electronic report in CEDRI for 40 CFR 63, Subpart DDDDD, the permittee may submit an alternate electronic file consistent with the XML schema listed on the CEDRI Web site (http://www.epa.gov/ttn/chief/cedri/index.html), once the XML schema is available. If the reporting form specific to 40 CFR 63, Subpart DDDDD is not available in CEDRI at the time that the report is due, the permittee must submit the report to the Administrator at the appropriate address listed in 40 CFR 63.13. The permittee must begin submitting reports via CEDRI no later than 90 days after the form becomes available in CEDRI. [40 CFR 63.7550(h)(3)]

i. Refer to **Section F** for general reporting requirements.

SECTION C - INSIGNIFICANT ACTIVITIES

The following listed activities have been determined to be insignificant activities for this source pursuant to 401 KAR 52:020, Section 6. Although these activities are designated as insignificant the permittee must comply with the applicable regulation. Process and emission control equipment at each insignificant activity subject to an opacity standard shall be inspected monthly and a qualitative visible emissions evaluation made. Results of the inspection, evaluation, and any corrective action shall be recorded in a log.

Description	Generally Applicable Regulation
1. Dry Chemical Unloading – Process Group B	401 KAR 61:020, 401 KAR 63:010
2. Diesel Storage Tanks	401 KAR 63:020
3. Gasoline Storage Tanks	401 KAR 63:020
4. Beech-Russ Vacuum Pumps	401 KAR 61:020, 401 KAR 63:010
5. C-709 & C-710 Laboratory Fume Hoods	401 KAR 61:020, 401 KAR 63:010
6. Datum Pumps	401 KAR 61:020, 401 KAR 63:010
7. Cooling Systems/large (More than 50 lbs)	40 CFR 82
8. Cooling Systems/small (Less than 50 lbs)	40 CFR 82

NOTE: For insignificant activities subject to an opacity standard that operate infrequently, the equipment shall be inspected and qualitative visible emissions evaluations made while such equipment is in operation.

SECTION D - SOURCE EMISSION LIMITATIONS AND TESTING REQUIREMENTS

1. As required by Section 1b of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26; compliance with annual emissions and processing limitations contained in this permit, shall be based on emissions and processing rates for any twelve (12) consecutive months.

2. *Radionuclide, fluoride, NOx, CO, opacity, and PM* emissions, measured by applicable reference methods, or an equivalent or alternative method specified in 40 C.F.R. Chapter I, or by a test method specified in the state implementation plan shall not exceed the respective limitations specified herein.

3. Source-wide gaseous fluoride emissions shall not cause or contribute to an exceedance of the following ambient air quality standards: [401 KAR 53:010]

Primary Standards:	Annual Average:	400 $\mu g/m^3$ (0.5 ppm)
	Maximum 24 Hour Average:	800 $\mu g/m^3$ (1.0 ppm)
Secondary Standards:	Maximum monthly average:	0.82 $\mu g/m^3$ (1.0 ppb)
	Maximum weekly average:	1.64 $\mu g/m^3$ (2.0 ppb)
	Maximum 24-hour average:	2.86 $\mu g/m^3$ (3.5 ppb)
	Maximum 12-hour average:	3.68 $\mu g/m^3$ (4.5 ppb)

Compliance Demonstration Method:
Based upon the emission rates of gaseous fluorides determined by the Cabinet using information provided in the application and supplemental information submitted by the source, the Cabinet determines the affected facility to be in compliance with the ambient standards in 401 KAR 53:010 for gaseous fluorides when complying with the requirements in this permit, including the use of the 200 feet stack for EU 03.

4. Source-wide total fluoride emissions shall not cause or contribute to an exceedance, more than once annually, of the following ambient air quality standards: [401 KAR 53:010]

Dry weight basis (as fluoride ion) in and on forage for consumption by grazing ruminants:

Secondary Standards:	Growing Season:	40 ppm
	Two-Month Average:	60 ppm
	One-month average:	80 ppm

Compliance Demonstration Method:
Based upon the emission rates of total fluorides determined by the Cabinet using information provided in the application and supplemental information submitted by the source, the Cabinet determines the affected facility to be in compliance with the ambient standards in 401 KAR 53:010 for total fluorides when complying with the requirements in this permit, including the use of the 200 feet stack for EU 03.

5. Site remediation activities are not subject to the requirements of 40 CFR 63, Subpart GGGGG, except for the recordkeeping requirements in 40 CFR 63.7881(c), provided that the permittee meets the requirements specified in 40 CFR 63.7881(c)(1) through (c)(3). [40 CFR 63.73881(c)]

SECTION D - SOURCE EMISSION LIMITATIONS AND TESTING REQUIREMENTS (CONTINUED)

a. The permittee shall determine that the total quantity of the HAP listed in 40 CFR 63, Subpart GGGGG, Table 1, that is contained in the remediation material excavated, extracted, pumped, or otherwise removed during all of the site remediations conducted at the facility is less than 1 megagram (Mg) annually. This exemption applies the 1 Mg limit on a facility-wide, annual basis, and there is no restriction to the number of site remediations that can be conducted during this period. [40 CFR 63.7881(c)(1)]

Compliance Demonstration Method:

A. The permittee must prepare and maintain at the facility written documentation to support the permittee's determination that the total HAP quantity in the remediation materials for the year is less than 1 Mg. The documentation shall include a description of the methodology and data used for determining the total HAP content of the remediation material. [40 CFR 63.7881(c)(2)]
B. The facility shall maintain records of the total HAP quantity in the remediation materials on a monthly basis, and shall calculate the total HAP quantity in the remediation materials for the year on at least a semi-annual basis. [401 KAR 52:020, Section 10]
C. Refer to **Section I**.

SECTION E - SOURCE CONTROL EQUIPMENT REQUIREMENTS

Pursuant to 401 KAR 50:055, Section 2(5), at all times, including periods of startup, shutdown and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Division which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

SECTION F - MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS

1. Pursuant to Section 1b-IV-1 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26, when continuing compliance is demonstrated by periodic testing or instrumental monitoring, the permittee shall compile records of required monitoring information that include:
   a. Date, place as defined in this permit, and time of sampling or measurements;
   b. Analyses performance dates;
   c. Company or entity that performed analyses;
   d. Analytical techniques or methods used;
   e. Analyses results; and
   f. Operating conditions during time of sampling or measurement.

2. Records of all required monitoring data and support information, including calibrations, maintenance records, and original strip chart recordings, and copies of all reports required by the Division for Air Quality, shall be retained by the permittee for a period of five (5) years and shall be made available for inspection upon request by any duly authorized representative of the Division for Air Quality [Sections 1b-IV-2 and 1a-8 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].

3. In accordance with the requirements of 401 KAR 52:020, Section 3(1)h, the permittee shall allow authorized representatives of the Cabinet to perform the following during reasonable times:
   a. Enter upon the premises to inspect any facility, equipment (including air pollution control equipment), practice, or operation;
   b. To access and copy any records required by the permit:
   c. Sample or monitor, at reasonable times, substances or parameters to assure compliance with the permit or any applicable requirements.

   Reasonable times are defined as during all hours of operation, during normal office hours; or during an emergency.

4. No person shall obstruct, hamper, or interfere with any Cabinet employee or authorized representative while in the process of carrying out official duties. Refusal of entry or access may constitute grounds for permit revocation and assessment of civil penalties.

5. Summary reports of any monitoring required by this permit shall be submitted to the Regional Office listed on the front of this permit at least every six (6) months during the life of this permit, unless otherwise stated in this permit. For emission units that were still under construction or which had not commenced operation at the end of the 6-month period covered by the report and are subject to monitoring requirements in this permit, the report shall indicate that no monitoring was performed during the previous six months because the emission unit was not in operation [Sections 1b-V-1 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].

SECTION F - MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS (CONTINUED)

6. The semi-annual reports are due by January 30th and July 30th of each year. All reports shall be certified by a responsible official pursuant to 401 KAR 52:020, Section 23. If continuous emission and opacity monitors are required by regulation or this permit, data shall be reported in accordance with the requirements of 401 KAR 59:005, General Provisions, Section 3(3). All deviations from permit requirements shall be clearly identified in the reports.

7. In accordance with the provisions of 401 KAR 50:055, Section 1, the owner or operator shall notify the Regional Office listed on the front of this permit concerning startups, shutdowns, or malfunctions as follows:
   a. When emissions during any planned shutdowns and ensuing startups will exceed the standards, notification shall be made no later than three (3) days before the planned shutdown, or immediately following the decision to shut down, if the shutdown is due to events which could not have been foreseen three (3) days before the shutdown.
   b. When emissions due to malfunctions, unplanned shutdowns and ensuing startups are or may be in excess of the standards, notification shall be made as promptly as possible by telephone (or other electronic media) and shall be submitted in writing upon request.

8. The permittee shall promptly report deviations from permit requirements, including those attributable to upset conditions as defined in the permit, the probable cause of such deviations, and any corrective actions or preventive measures taken shall be submitted to the Regional Office listed on the front of this permit. Where the underlying applicable requirement contains a definition of prompt or otherwise specifies a time frame for reporting deviations, that definition or time frame shall govern. Where the underlying applicable requirement does not identify a specific time frame for reporting deviations, prompt reporting, as required by Sections 1b-V, 3 and 4 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26, shall be defined as follows:
   a. For emissions of a hazardous air pollutant or a toxic air pollutant (as identified in an applicable regulation) that continue for more than an hour in excess of permit requirements, the report must be made within 24 hours of the occurrence.
   b. For emissions of any regulated air pollutant, excluding those listed in F.8.a., that continue for more than two hours in excess of permit requirements, the report must be made within 48 hours.
   c. All deviations from permit requirements, including those previously reported, shall be included in the semiannual report required by F.6.

9. Pursuant to 401 KAR 52:020, Title V permits, Section 21, the permittee shall annually certify compliance with the terms and conditions contained in this permit, by completing and returning a Compliance Certification Form (DEP 7007CC) (or an alternative approved by the regional office) to the Regional Office listed on the front of this permit and the U.S. EPA in accordance with the following requirements:
   a. Identification of the term or condition;
   b. Compliance status of each term or condition of the permit;
   c. Whether compliance was continuous or intermittent;
   d. The method used for determining the compliance status for the source, currently and over the reporting period.
   e. For an emissions unit that was still under construction, or which has not commenced operation at the end of the 12-month period covered by the annual compliance certification, the

SECTION F - MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS (CONTINUED)

permittee shall indicate that the unit is under construction and that compliance with any applicable requirements will be demonstrated within the timeframes specified in the permit.

f. The certification shall be submitted by January 30th of each year. Annual compliance certifications shall be sent to the following addresses:

Division for Air Quality
Paducah Regional Office
130 Eagle Nest Drive
Paducah, KY 42003

U.S. EPA Region 4
Air Enforcement Branch
Atlanta Federal Center
61 Forsyth St. SW
Atlanta, GA 30303-8960

10. In accordance with 401 KAR 52:020, Section 22, the permittee shall provide the Division with all information necessary to determine its subject emissions within 30 days of the date the Kentucky Emissions Inventory System (KYEIS) emissions survey is mailed to the permittee.

SECTION G - GENERAL PROVISIONS

1. General Compliance Requirements

   a. The permittee shall comply with all conditions of this permit. Noncompliance shall be a violation of 401 KAR 52:020, Section 3(1)(b), and a violation of Federal Statute 42 USC 7401 through 7671q (the Clean Air Act). Noncompliance with this permit is grounds for enforcement action including but not limited to termination, revocation and reissuance, revision or denial of a permit [Section 1a-3 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].

   b. The filing of a request by the permittee for any permit revision, revocation, reissuance, or termination, or of a notification of a planned change or anticipated noncompliance, shall not stay any permit condition [Section 1a-6 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].

   c. This permit may be revised, revoked, reopened and reissued, or terminated for cause in accordance with 401 KAR 52:020, Section 19. The permit will be reopened for cause and revised accordingly under the following circumstances:
      (1) If additional applicable requirements become applicable to the source and the remaining permit term is three (3) years or longer. In this case, the reopening shall be completed no later than eighteen (18) months after promulgation of the applicable requirement. A reopening shall not be required if compliance with the applicable requirement is not required until after the date on which the permit is due to expire, unless this permit or any of its terms and conditions have been extended pursuant to 401 KAR 52:020, Section 12;
      (2) The Cabinet or the United States Environmental Protection Agency (U. S. EPA) determines that the permit must be revised or revoked to assure compliance with the applicable requirements;
      (3) The Cabinet or the U. S. EPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit;
      (4) New requirements become applicable to a source subject to the Acid Rain Program.

      Proceedings to reopen and reissue a permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of the permit for which cause to reopen exists. Reopenings shall be made as expeditiously as practicable. Reopenings shall not be initiated before a notice of intent to reopen is provided to the source by the Division, at least thirty (30) days in advance of the date the permit is to be reopened, except that the Division may provide a shorter time period in the case of an emergency.

   d. The permittee shall furnish information upon request of the Cabinet to determine if cause exists for modifying, revoking and reissuing, or terminating the permit; or to determine compliance with the conditions of this permit [Sections 1a- 7 and 8 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].

   e. Emission units described in this permit shall demonstrate compliance with applicable requirements if requested by the Division [401 KAR 52:020, Section 3(1)(c)].

SECTION G - GENERAL PROVISIONS (CONTINUED)

f. The permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the permit application, shall promptly submit such supplementary facts or corrected information to the permitting authority [401 KAR 52:020, Section 7(1)].

g. Any condition or portion of this permit which becomes suspended or is ruled invalid as a result of any legal or other action shall not invalidate any other portion or condition of this permit [Section 1a-14 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].

h. The permittee shall not use as a defense in an enforcement action the contention that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance [Section 1a-4 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].

i. All emission limitations and standards contained in this permit shall be enforceable as a practical matter. All emission limitations and standards contained in this permit are enforceable by the U.S. EPA and citizens except for those specifically identified in this permit as state-origin requirements. [Section 1a-15 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].

j. This permit shall be subject to suspension if the permittee fails to pay all emissions fees within 90 days after the date of notice as specified in 401 KAR 50:038, Section 3(6) [Section 1a-10 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].

k. Nothing in this permit shall alter or affect the liability of the permittee for any violation of applicable requirements prior to or at the time of permit issuance [401 KAR 52:020, Section 11(3) b].

l. This permit does not convey property rights or exclusive privileges [Section 1a-9 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].

m. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits, licenses, or approvals required by the Cabinet or any other federal, state, or local agency.

n. Nothing in this permit shall alter or affect the authority of U.S. EPA to obtain information pursuant to Federal Statute 42 USC 7414, Inspections, monitoring, and entry [401 KAR 52:020, Section 11(3) d.].

o. Nothing in this permit shall alter or affect the authority of U.S. EPA to impose emergency orders pursuant to Federal Statute 42 USC 7603, Emergency orders [401 KAR 52:020, Section 11(3) a.].

SECTION G - GENERAL PROVISIONS (CONTINUED)

p. This permit consolidates the authority of any previously issued PSD, NSR, or Synthetic Minor source preconstruction permit terms and conditions for various emission units and incorporates all requirements of those existing permits into one single permit for this source.

q. Pursuant to 401 KAR 52:020, Section 11, a permit shield shall not protect the owner or operator from enforcement actions for violating an applicable requirement prior to or at the time of permit issuance. Compliance with the conditions of this permit shall be considered compliance with:
(1) Applicable requirements that are included and specifically identified in this permit; and
(2) Non-applicable requirements expressly identified in this permit.

2. Permit Expiration and Reapplication Requirements

a. This permit shall remain in effect for a fixed term of five (5) years following the original date of issue. Permit expiration shall terminate the source's right to operate unless a timely and complete renewal application has been submitted to the Division at least six (6) months prior to the expiration date of the permit. Upon a timely and complete submittal, the authorization to operate within the terms and conditions of this permit, including any permit shield, shall remain in effect beyond the expiration date, until the renewal permit is issued or denied by the Division [401 KAR 52:020, Section 12].

b. The authority to operate granted shall cease to apply if the source fails to submit additional information requested by the Division after the completeness determination has been made on any application, by whatever deadline the Division sets [401 KAR 52:020, Section 8(2)].

3. Permit Revisions

a. A minor permit revision procedure may be used for permit revisions involving the use of economic incentive, marketable permit, emission trading, and other similar approaches, to the extent that these minor permit revision procedures are explicitly provided for in the State Implementation Plan (SIP) or in applicable requirements and meet the relevant requirements of 401 KAR 52:020, Section 14(2).

b. This permit is not transferable by the permittee. Future owners and operators shall obtain a new permit from the Division for Air Quality. The new permit may be processed as an administrative amendment if no other change in this permit is necessary, and provided that a written agreement containing a specific date for transfer of permit responsibility coverage and liability between the current and new permittee has been submitted to the permitting authority within ten (10) days following the transfer.

4. Construction, Start-Up, and Initial Compliance Demonstration Requirements

No construction authorized by this permit (V-26-027).

SECTION G - GENERAL PROVISIONS (CONTINUED)

5. Testing Requirements

   a. Pursuant to 401 KAR 50:045, Section 2, a source required to conduct a performance test shall submit a completed Compliance Test Protocol form, DEP form 6028, or a test protocol a source has developed for submission to other regulatory agencies, in a format approved by the cabinet, to the Division's Frankfort Central Office a minimum of sixty (60) days prior to the scheduled test date. Pursuant to 401 KAR 50:045, Section 7, the Division shall be notified of the actual test date at least thirty (30) days prior to the test.

   b. Pursuant to 401 KAR 50:045, Section 5, in order to demonstrate that a source is capable of complying with a standard at all times, any required performance test shall be conducted under normal conditions that are representative of the source's operations and create the highest rate of emissions. If [When] the maximum production rate represents a source's highest emissions rate and a performance test is conducted at less than the maximum production rate, a source shall be limited to a production rate of no greater than 110 percent of the average production rate during the performance tests. If and when the facility is capable of operation at the rate specified in the application, the source may retest to demonstrate compliance at the new production rate. The Division for Air Quality may waive these requirements on a case-by-case basis if the source demonstrates to the Division's satisfaction that the source is in compliance with all applicable requirements.

   c. Results of performance test(s) required by the permit shall be submitted to the Division by the source or its representative within forty-five days or sooner if required by an applicable standard, after the completion of the fieldwork.

6. Acid Rain Program Requirements

   a. If an applicable requirement of Federal Statute 42 USC 7401 through 7671q (the Clean Air Act) is more stringent than an applicable requirement promulgated pursuant to Federal Statute 42 USC 7651 through 7651o (Title IV of the Act), both provisions shall apply, and both shall be state and federally enforceable.

   b. The permittee shall comply with all applicable requirements and conditions of the Acid Rain Permit and the Phase II permit application (including the Phase II NOx compliance plan and averaging plan, if applicable) incorporated into the Title V permit issued for this source. The source shall also comply with all requirements of any revised or future acid rain permit(s) issued to this source.

7. Emergency Provisions

   a. Pursuant to 401 KAR 52:020, Section 24(1), an emergency shall constitute an affirmative defense to an action brought for the noncompliance with the technology-based emission limitations if the permittee demonstrates through properly signed contemporaneous operating logs or relevant evidence that:
      (1) An emergency occurred and the permittee can identify the cause of the emergency;
      (2) The permitted facility was at the time being properly operated;

SECTION G - GENERAL PROVISIONS (CONTINUED)

(3) During an emergency, the permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards or other requirements in the permit; and
(4) Pursuant to 401 KAR 52:020, 401 KAR 50:055, and KRS 224.1-400, the permittee notified the Division as promptly as possible and submitted written notice of the emergency to the Division when emission limitations were exceeded due to an emergency. The notice shall include a description of the emergency, steps taken to mitigate emissions, and corrective actions taken.
(5) This requirement does not relieve the source of other local, state or federal notification requirements.

b. Emergency conditions listed in General Condition G.7.a above are in addition to any emergency or upset provision(s) contained in an applicable requirement [401 KAR 52:020, Section 24(3)].

c. In an enforcement proceeding, the permittee seeking to establish the occurrence of an emergency shall have the burden of proof [401 KAR 52:020, Section 24(2)].

8. Ozone Depleting Substances

a. The permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR 82, Subpart F, except as provided for Motor Vehicle Air Conditioners (MVACs) in Subpart B:
(1) Persons opening appliances for maintenance, service, repair, or disposal shall comply with the required practices contained in 40 CFR 82.156.
(2) Equipment used during the maintenance, service, repair, or disposal of appliances shall comply with the standards for recycling and recovery equipment contained in 40 CFR 82.158.
(3) Persons performing maintenance, service, repair, or disposal of appliances shall be certified by an approved technician certification program pursuant to 40 CFR 82.161.
(4) Persons disposing of small appliances, MVACs, and MVAC-like appliances (as defined at 40 CFR 82.152) shall comply with the recordkeeping requirements pursuant to 40 CFR 82.155.
(5) Persons owning commercial or industrial process refrigeration equipment shall comply with the leak repair requirements pursuant to 40 CFR 82.156 and 40 CFR 82.157.
(6) 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.

b. If the permittee performs service on motor (fleet) vehicle air conditioners containing ozone-depleting substances, the source shall comply with all applicable requirements as specified in 40 CFR 82, Subpart B, *Servicing of Motor Vehicle Air Conditioners*.

9. Risk Management Provisions

a. The permittee shall comply with all applicable requirements of 401 KAR Chapter 68, Chemical Accident Prevention, which incorporates by reference 40 CFR Part 68, Risk Management Plan provisions. If required, the permittee shall comply with the Risk

SECTION G - GENERAL PROVISIONS (CONTINUED)

Management Program and submit a Risk Management Plan to U.S. EPA using the RMP* eSubmit software.

b. If requested, submit additional relevant information to the Division or the U.S. EPA.

SECTION H - ALTERNATE OPERATING SCENARIOS

The alternate operating scenarios set forth in **Section B** have been approved by the Division based on information supplied with the application and during the application review process. The terms and conditions of each alternate operating scenario have been developed to ensure compliance with the applicable regulations. The permittee, when making a change from one operating scenario to another, shall record contemporaneously in a log at the permitted facility a record of the scenario under which the facility is operating. The permit shield, as provided in Section G shall extend to each alternate operating scenario set forth in this Section. All conditions not specified under an alternate operating scenario shall remain unchanged from their permit values or requirements. Refer, specifically, to EU 03 (cascade) in **Section B** for specific requirements and additional information with regard to a potential operating scenario for the facility.

SECTION I - COMPLIANCE SCHEDULE

This section contains compliance schedule requirements as specified by Section 1c of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26.

At the time the facility determines or can reasonably project the total quantity of the HAP listed in Table 1 to 40 CFR 63, Subpart GGGGG that is contained in the remediation material excavated, extracted, pumped, or otherwise removed during all of the site remediations conducted will equal or exceed 1 Mg of HAPs annually, the permittee shall apply for the significant revision of the permit pursuant to 401 KAR 52:020, Section 16. The contents of the application shall include all affected sources, as defined in 40 CFR 63, Subpart GGGGG. The permittee shall show compliance for all applicable requirements in 40 CFR 63, Subpart GGGGG on the first day of the following year during which the exceedance occurred.