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DOCUMENT# 00-05-006

TITLE Hanford Site Air Operating Permit for
Public Comment

EDMC# 0054333

SECTION 1 of 2

HANFORD

Air Operating Permit

January 2001

DRAFT

FOR PUBLIC COMMENT



WASHINGTON STATE
DEPARTMENT OF
E C O L O G Y



Washington State Department of

Health



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EDMC

Hanford Site Air Operating Permit

In the matter of the compliance by the)
U.S. Department of Energy - Hanford Operations, with)
Section 70.94.161 RCW, Operating Permits for Air)
Contaminant Sources, and the applicable rules and)
regulations of Ecology.)

Number: 00-05-006
Issue Date: XX, XX, 2000
Effective Date: XX, XX, 2001
Expiration Date: XX, XX, 2006

In accordance with the provisions of Washington Administrative Code (WAC) Chapter 173-401, Operating Permit Regulation, the permittee,

U.S. Department of Energy - Hanford Operations
Hanford Site
825 Jadwin Ave.
Richland, WA 99352

is required to comply with provisions within this air operating permit, including provisions contained all the Attachments identified below. Any paraphrasing of regulations or other applicable requirements is for the convenience of the reader. The underlying applicable requirement is the enforceable requirement.

Attachments 1, 2, 3, and 4 are integral and enforceable provisions of this permit.

Attachment 1 contains the State of Washington Department of Ecology (Ecology) permit terms and conditions.

Attachment 2 contains the State of Washington Department of Health (Health) Radioactive Air Emissions License terms and conditions.

Attachment 3 contains the Benton Clean Air Authority (BCAA) permit terms and conditions applicable to the regulation of open burning and asbestos.

Attachment 4 contains a Federal Facility Compliance Agreement (FFCA) between EPA Region 10 and DOE signed on February 7, 1994. The FFCA is to provide a compliance plan and schedule to bring certain existing Hanford Site stack sampling/monitoring systems into compliance with requirements in 40 CFR 61, Subpart H.

All terms and conditions (or underlying applicable requirements where regulations are paraphrased) are enforceable by the U.S. Environmental Protection Agency (EPA) and United States citizens unless specifically designated as not federally enforceable or listed as an inapplicable requirement in Table 5.1. (WAC 173-401-625).

Regulatory Agency Relationships

Ecology and Health

A memorandum of understanding (MOU) describes the enforcement relationship and responsibilities of Ecology and Health on the Hanford Site. The MOU identifies Ecology as the lead agency for

preparation and enforcement of the terms and conditions of this air operating permit. Health is identified in the MOU as the agency responsible for the enforcement of Attachment 2, the Hanford Site Air Operating Permit License Number FF-01. The MOU is included in its entirety in the Ecology Statement of Basis.

For purposes of this permit, the terms "permit" and "license" are synonymous and may be used interchangeably. Likewise, the terms "permittee" and "licensee" are synonymous and may be used interchangeably.

The Ecology and Health Statements of Basis are supporting reference documents that provide a rationale for the development of the permit and offers clarification where deemed necessary. The Statements of Basis are non-enforceable.

Ecology and Benton Clean Air Authority (BCAA)

Ecology has exercised its authority under RCW 70.94 to regulate the airborne emissions of regulated air pollutants, with the exception of specific articles contained in Regulation 1, BCAA's air pollution control regulation. BCAA enforces Article 5, Open Burning and Article 8, Asbestos on the Hanford Site. Attachment 3 identifies the BCAA open burning and asbestos requirements and the method of compliance utilized by the DOE.

Michael Wilson
Program Manager, Nuclear Waste Program
State of Washington Department of Ecology

Date

John Erickson
Director, Division of Radiation Protection
State of Washington Department of Health

Date

David Lauer, Ph.D.
Control Officer
Benton Clean Air Authority

Date

Oliver Wang, PE
Title V Permit Professional Engineer Reviewer
State of Washington Department of Ecology

Date

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Attachment 2..... Health License

Attachment 3..... Benton Clean Air Authority Permit

Attachment 4..... NESHAP Federal Facility Compliance Agreement

1.0 Acronyms

ABCASH - Automated Bar Code Air Sample Hanford
ALARACT - As Low As Reasonably Achievable Control Technology
AOP - Hanford Site Air Operating Permit
ASIL - Acceptable Source Impact Level
BACT - Best Available Control Technology
BARCT - Best Available Radionuclide Control Technology
BCAA - Benton Clean Air Authority
BTU - British thermal units
CFM - Cubic Feet per Minute
CFR - Code of Federal Regulations
CO - Carbon Monoxide
DCRT - Double Contained Receiving Tank
DOE - U.S. Department of Energy, Hanford Operations
DOP - Dioctyl Phthalate
Ecology - State of Washington Department of Ecology
EMSL - Environmental Molecular Science Laboratory
EPA - U. S. Environmental Protection Agency
ESPC - Energy Savings Performance Contract
ETF - Effluent Treatment Facility
FCAA - Federal Clean Air Act
FFTF - Fast Flux Test Facility
FGR - Flue Gas Re-circulation
gr/dscf - grains per dry standard cubic feet
HAP - Hazardous Air Pollutant
Health - State of Washington Department of Health
HEPA - High Efficiency Particulate Air
IEU - Insignificant Emission Unit
IXM - Ion Exchange Module
JCS - Job Control System
LERF - Liquid Effluent Retention Facility
LNB - Low NO_x burner
MEI - Maximally Exposed Individual
mmBTU/hr - million British thermal units per hour
NAAQS - National Ambient Air Quality Standards
NDA - Non-destructive Assessment
NESHAP - National Emission Standard for Hazardous Air Pollutants
NOC - Notice of Construction
NoC - Notice of Correction
NO_x - Oxides of Nitrogen
NRC - Nuclear Regulatory Commission
PFP - Plutonium Finishing Plant
PM₁₀ - Particulate Matter 10 microns or less

Acronyms (cont.)

ppm - parts per million
ppmvd - parts per million volume dry
PSD - Prevention of Significant Deterioration
PUREX - Plutonium-Uranium Extraction Facility
RACT - Reasonably Available Control Technology
RCW - Revised Code of Washington
RMCS - Rotary Mode Core Sampling
SEM - Scanning Electron Microscope
SO₂ - Sulfur Dioxide
TEDE - Total Effective Dose Equivalent
TEDF - Treated Effluent Disposal Facility
TRUSAF - Transuranic Storage and Assay Facility
VOC - Volatile Organic Compound
WAC - Washington Administrative Code
WESF - Waste Encapsulation and Storage Facility
WRAP - Waste Receiving and Processing
WSCF - Waste Sampling and Characterization Facility

2.0 General Process Information

The Hanford Site, located in south central Washington State, occupies about 1,450 square kilometers (560 square miles) of semi-arid shrub and grasslands just north of the confluence of the Snake and Yakima Rivers with the Columbia River. This land, with restricted public access, provides a buffer for the smaller areas historically used for the production of nuclear materials, waste storage, and waste disposal. About 6% of the land area has been disturbed and is actively used. This 6% is divided into the following areas:

the 100-B/C, 100-D, 100-DR, 100-F, 100-H, 100-K, and 100-N Areas, which lie along the south shore of the Columbia River in the northern portion

the 200 East and 200 West Areas, which lie in the center near the basalt outcrops of Gable Mountain and Gable Butte

the 300 Area, near the southern border including the William R. Wiley Environmental Molecular Sciences Laboratory (EMSL)

the 400 Area, between the 300 and 200 Areas

The 600 Area is the designation for land between the operational areas. Areas off the Hanford Site used for research and technology development and administrative functions can be found in Richland, Kennewick, and Pasco, the nearest cities.

This air operating permit specifically excludes facilities not under the common control of the DOE and non-support facilities on leased land or within leased buildings. Facilities excluded at the time of permit issuance are the following:

- Allied Technology Group Corporation, Richland facility
- Interstate Nuclear Services laundry
- Battelle Richland North facilities
- Applied Process Engineering Laboratory
- Laser Interferometer Gravitational-Wave Observatory
- all Energy Northwest (formerly Washington Public Power Supply System) facilities
- all Port of Benton facilities
- US Ecology, Inc. commercial low-level radioactive waste burial site
- Kaiser Aluminum and Chemical Corporation extrusion press located in the 313 Building
- Siemens Power Corporation, Nuclear Division
- Livingston Rebuild Center, Inc.

The Hanford Site was acquired by the federal government in 1943 and for many years was dedicated primarily to the production of plutonium for national defense and the management of the resulting

wastes. With the shutdown of the production facilities in the 1970s and 1980s, missions were redirected to site cleanup and decommission, and diversified to include research and development in the areas of energy, waste management, and environmental restoration. Decommissioned facilities or emission points are those that cannot be operated as is, and are not planned to ever operate again. In an extremely unlikely event that a decommissioned facility or emission point is reactivated, an applicable requirements assessment must first be completed.

3.0 Standard Terms and Conditions

3.1 *Duty to Comply*

The permittee must comply with all conditions of this Chapter 401 permit. Any permit noncompliance constitutes a violation of chapter 70.94 RCW and, for federally enforceable provisions, a violation of the FCAA. Such violations are grounds for enforcement action; for permit termination, revocation and re-issuance, or modification; or for denial of a permit renewal application. WAC 246-247 and WAC 173-460 are state only enforceable requirements. [WAC 173-401-620(2)(a)]

3.2 *Need To Halt or Reduce Activity Not a Defense*

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

[WAC 173-401-620(2)(b)]

3.3 *Permit Actions*

This permit may be modified, revoked, reopened, and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.

[WAC 173-401-620(2)(c)]

3.4 *Property Rights*

This permit does not convey any property rights of any sort, or any exclusive privilege.

[WAC 173-401-620(2)(d)]

3.5 *Duty to Provide Information*

The permittee shall furnish to the Ecology, Health, or BCAA, within a reasonable time, any information that the Ecology, Health, or BCAA, may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Ecology, Health, or BCAA, copies of records required to be kept by the permit or, for information claimed to be confidential, the permittee may furnish such records directly to the administrator along with a claim of confidentiality. Ecology, Health, or BCAA, shall maintain confidentiality of such information in accordance with RCW 70.94.205.

[WAC 173-401-620(2)(e)]

[Note: The permittee shall provide requested classified documents to representatives of Ecology, Health or BCAA who have the appropriate security clearance and a demonstrable need to know. WAC 246-247-080(10) (state only)]

3.6 Permit Fees

The permittee shall pay fees as a condition of this permit in accordance with the permitting authority's fee schedule. Failure to pay fees in a timely fashion shall subject the permittee to civil and criminal penalties as described in chapter 70.94 RCW.

[WAC 173-401-620(2)(f)]

Per WAC 246-247-065 [Fees], fees for airborne emissions of radioactive materials shall be submitted in accordance with WAC 246-254-160. The licensee shall pay costs associated with direct staff time of the air emissions program in accordance with WAC 246-254-120 (1)(e). In any case where the Licensee fails to pay a prescribed fee or actual costs incurred during a calendar quarter, Health (1) shall not process an application and (2) may suspend or revoke any license or approval involved; or (3) may issue any order with respect to licensed activities as Health determines appropriate or necessary in order to carry out the provisions of WAC 246-254-170.

[WAC 246-247-065 (state only), WAC 246-254-120 (1)(e) (state only), WAC 246-254-170 (state only)]

3.7 Emissions Trading

No permit revision shall be required, under any approved economic incentives, marketable permits, emissions trading, and other similar programs or processes for changes that are provided for in this permit.

[WAC 173-401-620(2)(g)]

3.8 Severability

If any provision of this permit is held to be invalid, all unaffected provisions of the permit shall remain in effect and be enforceable.

[WAC 173-401-620(2)(h)]

3.9 Permit Appeals

This permit or any condition in it, including the attachments or any conditions in them, may be appealed only by filing an appeal with the pollution control hearings board and serving it on the permitting authority within 30 days of receipt pursuant to RCW 43.21B.310. This provision for appeal in this section is separate from and additional to any federal rights to petition and review under section 505(b) of the FCAA.

[WAC 173-401-620(2)(i), WAC 173-401-735]

3.10 Permit Continuation

This permit and all terms and conditions contained therein, including any permit shield provided under WAC 173-401-640, shall not expire until the renewal permit has been issued or denied if a timely and complete application has been submitted. An application shield granted pursuant to WAC 173-401-705(2) shall remain in effect until the renewal permit has been issued or denied if a timely and complete application has been submitted.

[WAC 173-401-620(2)(j)]

4.0 General Conditions

4.1 *Permit Renewal and Conditions*

This permit is issued for a fixed term of 5 years. The permittee's right to operate this Chapter 401 source terminates with the expiration of this permit unless a timely and complete renewal application is submitted at least 6 months but no earlier than 18 months prior to the date of permit expiration. Upon receipt of a complete and timely application for renewal, this source may continue to operate subject to final action by Ecology, Health, and BCAA on the renewal application. This protection shall cease to apply if, subsequent to a completeness determination, the applicant fails to submit by the deadline specified in writing by Ecology, Health, or BCAA any additional information identified as being needed to process the renewal application. The application for renewal shall include the current permit number, the appropriate renewal fee, description of permit revisions and off-permit changes that occurred during the permit term, and any applicable requirements that were promulgated and not incorporated into the permit during the permit term. The renewal application should be sent to:

Program Manager
Nuclear Waste Program
State of Washington Department of Ecology.
1315 W. 4th Avenue
Kennewick, WA 99336-6018

And

Section Head
Air Emissions and Defense Wastes
Division of Radiation Protection
State of Washington Department of Health
Airdustrial Park, Bldg 5, PO Box 47827
Olympia, WA 98504-7827

and

Control Officer
Benton Clean Air Authority
650 George Washington Way
Richland, WA 99352

or other address, as directed by the agencies:

[WAC 173-401-610, WAC 173-401-710(1), WAC 246-247-060(6) (state only)]

4.2 *Transfer of Ownership or Operation*

This permit is nontransferable by the DOE, the owner and operator. Future owners and operators must obtain a new air operating permit. A change of ownership or operational control of this source is treated as an administrative permit amendment if no other changes in this permit are 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 Ecology, Health and BCAA.

[WAC 173-401-720(1)(d)]

4.3 *Submittals*

Reports, test data, monitoring data, notifications, and compliance certifications regarding nonradioactive air emissions, except asbestos and open burning, shall be submitted as specified in Attachment 1 to:

Program Manager
Nuclear Waste Program
State of Washington
Department of Ecology
1315 W. 4th Avenue
Kennewick, WA 99336-6018

or other address as directed by Ecology.

Reports, test data, monitoring data, notifications, and compliance certifications regarding radioactive air emissions shall be submitted as specified in Attachments 2 to:

Section Head
Air Emissions and Defense Wastes
Division of Radiation Protection
State of Washington Department of Health
Airdustrial Park, Bldg 5, PO Box 47827
Olympia, WA 98504-7827

or other address as directed by Health.

Reports, test data, monitoring data, notifications, and compliance certifications required to be sent to the EPA shall be submitted to:

U.S. EPA Region 10 Administrator

Air Permits, MS: OAQ-107
1200 Sixth Avenue
Seattle, WA 98101

or other address as directed by the EPA.

Reports, notifications, and compliance certifications regarding regulated asbestos activities shall be submitted as specified in Attachment 3 to:

Control Officer
Benton Clean Air Authority
650 George Washington Way
Richland, WA 99352

and the EPA at the address shown above or other address as directed by the BCAA or EPA.

Reports, notifications, and compliance certifications regarding regulated open burning activities shall be submitted as specified in Attachment 3 to:

Control Officer
Benton Clean Air Authority
650 George Washington Way
Richland, WA 99352

or other address as directed by the BCAA.

The permittee shall promptly, upon discovery, report to Ecology, Health or BCAA, any material error or omission in these records, reports, plans or other documents.

Any application form, report, or compliance certification submitted to Ecology, Health, or BCAA pursuant to this permit shall contain a certification of truth, accuracy, and completeness by a responsible official. All certifications shall be in accordance with the requirements of WAC 173-401-520 and WAC 173-401-615.

4.3.1 Annual NESHAP report

The annual report consists of the annual Radionuclide Air Emissions Report For the Hanford Site required by 40 CFR 61.94 and WAC 246-247 and includes the following additional information per WAC 246-247-080(3):

1. The results of emission measurements for those emission units subject only to periodic confirmatory measurements.
2. Wind rose or joint frequency table.
3. Annual average ambient temperature.
4. Annual average emission unit gas temperature, if available.
5. Annual total rainfall.
6. Annual average emission unit flow rate and total volume of air released during the calendar year.

In accordance with WAC 246-247-080(3) the report is due by June 30 for the previous calendar year's operation. If the additional information is available in another annual report, the licensee may provide a copy of that report along with the information requirements listed above.

[WAC 246-247-080(3) (state only)]

4.3.2 Annual Air Emission Inventory

The annual emission inventory is submitted to Ecology (when required) no later than 105 days after the end of the calendar year.

[WAC 173-400-105]

4.3.3 Semiannual Reports

Semiannual reports will be submitted by August 15th and by March 15th. The semiannual report submitted by August 15th will contain information for the period from January 1 through June 30. The semiannual report submitted by March 15th will contain information for the period from July 1 through December 31. The semiannual reports will be in addition to the currently submitted reports. There are no semiannual reporting requirements for insignificant emission units defined by WAC 173-401-530, except those required by Ecology under WAC 173-400-105. Each semiannual report will be certified consistent with WAC 173-401-520.

Each semiannual report will contain the following information for the applicable reporting period (January 1 through June 30, or July 1 through December 31):

1. Each semiannual report will provide a reference to reports submitted to the regulatory agencies as required by General Conditions Section 4.5, Permit Deviation Reporting.
2. Each semiannual report will consist of reports of any required monitoring not previously submitted according to Section 4.3 or reference to reports of required monitoring that were submitted during the reporting period.
3. Each semiannual report will contain a summary of any substantiated air emission complaint investigation(s) required in Table 1.2 of Attachment 1 and issued during the reporting period.
4. For all minor radioactive emission points (potential to emit < 0.1 mrem to the maximally exposed individual) listed in Attachment 2, Tables 1.2, 1.3 or 2 of this permit, each semiannual report will confirm that any required monitoring was conducted to verify low emissions during the reporting period. The data derived from that monitoring will be reported in the Annual NESHAP Report, (see Section 4.3.1).
5. Each semiannual report will list any new regulatory order, (e.g. Notice of Construction) approval conditions imposed during the reporting period by Ecology, or Health.
6. Each semiannual report will list the EPA approvals to construct received during the reporting period.
7. Each semiannual report will include a progress report on the compliance schedules identified in Section 4.10.

[WAC 173-401-615(3)(a)]

4.3.4 Annual Compliance Certification

The annual compliance certification will be submitted no later than twelve months following the effective date of the permit. The annual compliance certification will be certified consistent with WAC 173-401-520. The compliance certification will consist of the following:

1. The identification of each term or condition of the permit that is the basis of the certification;
2. The compliance status;
3. Whether compliance was continuous or intermittent;
4. The method(s) used to determine the compliance status of the source over the reporting period consistent with WAC 173-401-615(3)(a).
5. Such other facts as Ecology, Health, or BCAA may require to determine the compliance status of the source.

All compliance certifications shall be submitted to Ecology, Health, or BCAA with a copy to EPA at the address shown in Section 4.3 above.

No certification is required for insignificant emission units per WAC 173-401-530(2)(d).
[WAC 173-401-630(5)]

4.4 Inspection and Entry

Upon presentation of appropriate credentials and equipped with appropriate personal protective equipment, the permittee shall allow Ecology, Health, or BCAA, or an authorized representative to perform the following:

1. Enter, at reasonable times, upon the permittee's premises where a Chapter 401 source is located or emissions related activity is conducted, or where records must be kept under the conditions of this permit.
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit.
3. Inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit. Health may require a demonstration of ALARACT at any time. Where controlled access areas will be entered, Ecology, Health, or BCAA shall provide a reasonable advance notice and enter in the presence of a facility representative.
4. Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the permit.

Nothing in this condition shall limit the ability of EPA to inspect or enter the premises of the permittee under Section 114 or other provisions of the Federal Clean Air Act (FCAA).

No person shall obstruct, hamper, or interfere with any such authorized representative while in the process of carrying out their official duties. In the event the hazards associated with accessibility to a unit require training and/or restrictions or requirements for entry, the permittee shall inform Ecology, Health, or BCAA prior to arrival, of those restrictions or requirements. The permittee shall be responsible for providing the necessary training, escorts, and support services to allow Ecology, Health, or BCAA to inspect the facility.

[WAC 173-401-630(2), WAC 246-247-080(1) (state only), WAC 246-247-080(9) (state only)]

4.5 Permit Deviation Reporting

The permittee shall report deviations from permit conditions, including those attributable to upset conditions as defined in this permit, the probable cause of such deviations, and any corrective actions or preventative measures taken.

Potential threats to human health or safety

Deviations, which represent a potential threat to human health or safety, shall be reported promptly or as soon as possible. Promptly, as defined here, means as soon as possible following discovery¹, but in no case later than 12 hours after discovery¹ of a potential threat to human health or safety. This notice contains a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken. This notice fulfills the immediate reporting requirements of WAC 173-401-615(3)(b), WAC 173-400-107(3) and WAC 246-247-080(5) (state only).

Non-health or safety related deviations

Other deviations from permit requirements or excess emissions shall be reported within 30 days after the end of the month during which the deviation is discovered or as part of routine emission monitoring reports.

[WAC 173-401-615(3)(b) and WAC 173-400-107(3)]

Additional written reports may be required by either Ecology or Health, according to the requirements of WAC 173-400-107(3) or WAC 246-247-080(5) (state only), respectively.

Notification must be given to Health within 24 hours [or during the course of the next normal business day] from the time of discovery¹ of the condition or emission which would require notification pursuant to WAC 246-247-080(5) (state only). Such notification is required for other than normal operations when a potential or actual release of radionuclides to the air is due to any one or more of the following:

1. non-routine bypass or failure of required abatement control technology identified in Tables 1.1 and 1.2 of Attachment 2
2. non-routine and/or unexpected operational changes affecting emissions
3. an exceedance of the dose standard of 10 mrem/y for the Hanford Site

¹ Qualitative determination that a potential threat to public health or safety exists or existed after an evaluation of pertinent information.

4. an exceedance of emission limits or conditions in a regulatory order (e.g., Notices of Construction, enforcement actions, or license) that are not met.

The licensee shall in accordance with conditions identified in WAC 246-247-080(6) (state only) file a report of closure with Health whenever operations producing emissions are permanently ceased at any emission unit regulated under this license.

The licensee shall respond in writing in a timely manner, or within a time limit set by Health per WAC 246-247-080(11) (state only), to inspection results which require the facility to implement corrective actions or any other actions so directed by Health.

The permittee may seek to establish that excess emissions were unavoidable due to startup or shutdown conditions, maintenance, or upset conditions. The permittee may also seek to establish that noncompliance with a technology-based² emission limitation under this permit was due to an emergency³. To do so, the permittee shall demonstrate the affirmative defense of emergency through properly signed, contemporaneous operating logs, or other relevant evidence that:

1. an emergency occurred and that the permittee can identify the cause(s) of the emergency;
2. the permitted facility was at the time being properly operated;
3. during the period of the emergency the permittee did not allow the condition to persist and took all reasonable steps to minimize levels of emissions that exceeded the emissions standards, or other requirements in this permit; and
4. the permittee submitted notice of the emergency to Ecology within 2 working days of the time when non-radiological emission limitations were exceeded due to the emergency, or as soon as possible to Health but in no case later than 12 hours when there is a threat to human health, or within 24 hours for radiological emissions. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken. This notice fulfills the requirements of WAC 173-401-615.

[WAC 173-400-107, WAC 173-401-615, WAC 173-401-645, WAC 246-247-080 (state only)]

² Technology-based emission limits are those established on the basis of emission reductions achievable with various control measures or process changes (e.g., a new source performance standard) rather than those established to attain a health based air quality standard.

³ An "emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of this source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes this source to exceed a technology-based emission limitation under this permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

4.6 Reopening for Cause

The Ecology, and/or Health, or BCAA, acting through Ecology, will reopen and revise this permit, as necessary, in the following circumstances:

- 1) Additional requirements that become applicable to the Hanford Site three or more years prior to the expiration date of this permit. Such a reopening shall be completed no later than 18 months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the expiration date of this permit, unless the original permit or any terms and conditions have been extended pursuant to WAC 173-401-620(2)(j).
- 2) Ecology, Health, BCAA, or the EPA determines that this permit contains a material mistake or inaccurate statements were made in establishing the emissions standards or other terms or conditions of this permit.
- 3) Ecology, Health, BCAA, or the EPA determines that the permit must be revised or revoked to assure compliance with the applicable requirements.

Reopenings shall not be initiated before a notice of intent to reopen is provided to the permittee by Ecology at least 30 days in advance of the date that this permit is to be reopened, except that Ecology, Health, or BCAA may provide a shorter time period in the case of an emergency.

All permit conditions remain in effect until such time as Ecology takes final action.
[WAC173-401-730]

4.7 Off-Permit Changes

The permittee is allowed to make certain changes that are not specifically addressed or prohibited by this permit without a permit revision, provided that the conditions cited below are met. Any change that is a Title I modification or is a change subject to the acid rain requirements under Title IV of the FCAA must be submitted as a permit revision. For these off-permit changes, the following conditions apply:

1. No such change may violate any term or condition of this permit or weaken the enforceability of any existing permit conditions.
2. Each such change shall meet all applicable requirements and shall not violate any existing permit term or condition.
3. Before each such change is made, the permittee must provide written notice to the EPA Region X office and the appropriate permitting authority (Ecology, Health, or BCAA), except for changes that qualify as insignificant activities pursuant to WAC 173-401-530. This notice shall describe each change, the date of the change, any change in emissions or pollutants emitted, and any applicable requirement that would apply as a result.
4. The permit shield (WAC 173-401-640) does not apply to changes made under this provision.

5. The permittee shall keep a record describing changes made at the source that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under this permit, and the emissions resulting from those changes.
6. A source making a change under this section shall comply with applicable pre-construction review requirements established pursuant to RCW 70.94.152.
[WAC 173-401-724]

4.8 Changes Not Requiring Permit Revisions

a) General Conditions

The permittee is allowed to make a limited class of changes to the express terms of this permit without applying for a permit revision, provided the changes do not result in emissions which would exceed the emissions allowable under this permit and are not Title I modifications. This class of changes does not include:

- 1) changes that would violate applicable requirements; or
- 2) changes that alter permit terms or conditions that are necessary to enforce limitations on emissions from units covered by this permit.

b) The permittee is allowed to make FCAA, Section 502(b)(10) changes as defined in WAC 173-401-200(28) without a permit revision.

The permittee is required to send a written notice to EPA Region X and either Ecology, Health, or BCAA, as appropriate, at least 7 days in advance of any change made under this provision. The notice must describe the change, the date on which it will occur, and any change in emissions, and identify any permit terms or conditions made inapplicable as a result of the change. The permittee shall attach each notice to its copy of this permit. Any permit shield provided in this permit does not apply to changes made under this provision.
[WAC 173-401-722]

4.9 Monitoring

4.9.1 Ecology

Ecology shall conduct a continuous surveillance program to monitor the quality of the ambient atmosphere as to concentrations and movements of air contaminants.

As a part of this program, the director of ecology or an authorized representative may require any source under the jurisdiction of ecology to conduct stack and/or ambient air monitoring and to report the results to ecology.
[WAC 173-400-105(2)]

4.9.2 Health

Under the requirements of WAC 246-247-075(9), Health may conduct an environmental surveillance program to ensure that radiation doses to the public from emission units are in compliance with applicable standards. Health may require the operator of an emission unit to conduct stack sampling, ambient air monitoring, or other testing as necessary to demonstrate compliance with the standards in WAC 246-247-040.

4.10 Compliance Schedules

The sub-elements of this section are identified pursuant to WAC 173-401-630(3).

1. Recordkeeping (Health is the permitting authority for compliance oversight and/or enforcement of this recordkeeping sub-element.)

In a time not to exceed 1 year from the effective date of this permit, the licensee shall maintain readily retrievable storage areas at the Hanford Site for records required pursuant to Attachment 2, Section 3.3, Recordkeeping, of this license.

2. NESHAP FFCA (The FFCA Compliance Schedule is a standalone document, see Attachment 4.)

A Federal Facility Compliance Agreement (FFCA) between EPA Region 10 and DOE was signed February 7, 1994. The purpose of the FFCA is to provide a compliance plan and schedule to bring certain existing Hanford Site stack sampling/monitoring systems into compliance with requirements in 40 CFR 61, Subpart H.

For those schedules of compliance identified in this section, the permittee shall report progress against the compliance schedule on a semiannual basis in accordance with Section 4.3.3. The progress report shall contain the date(s) for achieving compliance, the date(s) when compliance was achieved, and provide an explanation of why any date(s) in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.

[WAC 173-401-630(4)]

4.11 New Source Review Applicability

The permittee is not allowed to construct or operate new or modified emission units without prior approval pursuant to the new source review requirements. Additionally, before a deactivated emission unit is re-activated, an applicable requirements assessment shall be performed. This applicable requirements assessment shall include a determination of the applicability of the new source review requirements.

[WAC 173-400-110, WAC 173-460-040 (state only), and WAC 246-247-060 (state only)]

4.12 Emission Standards and Controls for Sources Emitting Gasoline Vapors

Stage 1 requirements are applicable to twenty eastern Washington counties (including Benton County) with new gasoline dispensing facilities greater than 10,000 gallons storage capacity. Total annual throughput records shall be maintained for the most recent two year period.
[WAC 173-491]

4.13 Stratospheric Ozone Protection

The permittee shall comply with the labeling, procurement, maintenance, service, repair, or disposal standards for stratospheric ozone protection pursuant to 40 CFR 82, Subparts B, D, F, and G. Records shall be maintained as required.
[40 CFR 82]

4.14 Accidental Release Prevention Requirements: Risk Management Programs Under the Clean Air Act, Section 112(r)(7).

This facility is subject to part 68 and shall certify compliance with all requirements of 40 CFR part 68 as part of the annual compliance certification as required by 40 CFR § 70.6(c)(5).
[40 CFR 68.215]

4.15 Approval Order Terms and Conditions that Become Irrelevant During the Term of this Permit.

Nothing herein shall be construed to preclude the permittee from making changes consistent with Chapter 401 that would render existing permit compliance terms and conditions irrelevant (WAC 173-401-725(4)(a)).

5. Permit Shield

5.1 Applicable Requirements

Compliance with the permit conditions that are specifically identified in the Standard Terms and Conditions and General Conditions sections (Sections 3 and 4) and Attachments 1 and 2 shall be deemed compliance with the applicable requirements upon which that condition is based, as of the date of permit issuance. The permit shield does not apply to insignificant emission units or activities identified in WAC 173-401-530.

Exclusions:

Nothing in this permit shall alter or affect the liability of the permittee for:

- 1) The provisions of Section 303 of the FCAA (emergency orders), including the authority of the administrator under that section;
 - 2) The liability of the permittee for any violation of applicable requirements prior to or at the time of permit issuance;
 - 3) The applicable requirements of the acid rain program, consistent with Section 408(a) of the FCAA;
 - 4) The ability of EPA to obtain information from a source pursuant to section 114 of the FCAA; or
 - 5) The ability of Ecology to establish or revise requirements for the use of reasonably available control technology (RACT) as provided in chapter 252, Laws of 1993.
- [WAC 173-401-640(1)]

5.2 Inapplicable Requirements

Ecology has determined that the Hanford Site, including all sources, are not subject to certain requirements. In accordance with the provisions of WAC 173-401-640(2), inapplicable requirements at the time of permit issuance are shown below in Table 5.1. The permit shield shall apply to these inapplicable requirements.

[WAC 173-401-640(2)]

TABLE 5.1 INAPPLICABLE REQUIREMENTS

Requirement	Reason for inapplicability
WAC 173-400-040(3)(b)	The site is not located in a nonattainment area.
WAC 173-400-040(8)(b)	The site has not been indicated as a significant contributor to a PM-10 nonattainment area.
WAC 173-400-060	No general process units have been identified on the Hanford Site

Requirement	Reason for inapplicability
WAC 173-400-070	None of the facilities described exist on the site.
WAC 173-400-105(5)(b)(c)(d)	No facilities as described exist on the Hanford Site.
WAC 173-400-112	The Hanford Site is not located in a nonattainment area.
WAC 173-400-151	The Hanford Site has not been identified as a cause or contributor to visibility impairment in any mandatory Class I area.
WAC 173-400-190	The Hanford Site is not located in a nonattainment area.
WAC 173-400-210	The Hanford Site has always been regulated by Ecology. No local authority has previously regulated the Hanford Site.
WAC 173-421, Motor Vehicle Emission Control Systems	The site is not located in a noncompliance area or emission contributing area requiring a vehicle inspection program.
WAC 173-422, Motor Vehicle Emission Inspection	The site is not located in a noncompliance area or emission contributing area requiring a vehicle inspection program.
WAC 173-490, Emission Standards and Controls for Sources Emitting Volatile Organic Compounds	This supplements WAC 173-400 and applies to VOC sources in ozone nonattainment areas. The site is not located in a designated ozone nonattainment area.
WAC 173-492, Motor Fuel Specifications for Oxygenated Gasoline	The site is not located in the control areas requiring oxygenated gasoline use.
WAC 246-247-060(10)	The permittee does not operate a commercial nuclear power plant.
WAC 246-247-075(5)(7)	The permittee does not have point source emissions from NRC licensed facilities. Any NRC license would be to handle a specific sealed source term.
WAC 463-39, General Regulations for Air Pollution Sources	The site emission sources are not subject to EFSEC jurisdiction/authority.
Preconstruction permits issued under Title I Part D Plan Requirements for Nonattainment Areas WAC 173-400-112	The site and surrounding areas have never been determined to be in non-attainment of NAAQS's, therefore permits under this provision have not been required.
Pre-construction permits issued under Title I Part C (PSD) PSD-X80-14	The facilities identified in PSD-X80-14 have been shut down, therefore no applicable requirements are identified in this permit.
40 CFR 72 – 78 WAC 173-406	Steam generators on the site are not included in the acid rain control program and the site does not opt in at this time.
Benton Clean Air Authority, Regulation 1, Articles 1, 2, 3, 4, 6, 7, 9	Authority to regulate Hanford Site air emissions pre-empted by Ecology (see Statement of Basis), except for Articles 5 and 8.

5.3 *Statement of Basis*

The Statement of Basis (Statement) is issued by the permitting agencies as a separate supporting reference document to this air operating permit. This Statement of Basis is non-enforceable and sets forth the legal and factual basis for the permit conditions. It includes references to the applicable statutory or regulatory provisions, technical supporting information on specific emission units, and clarifications of specific requirements.

[WAC 173-401-700(8)]

Attachment 1

Number: 00-05-006

State of Washington Department of Ecology (Ecology)
Nuclear Waste Program
1315 W. 4th Avenue
Kennewick, WA 99336-6018

The permittee is authorized to operate the air emission units identified in this Air Operating Permit Number 00-05-006 and all insignificant emission units not specifically identified in this permit.

Dated at Richland, Washington this [day] day of [month], 2001.

Reviewed by:

Oliver Wang, PE
Title V Permit Professional Engineer Reviewer
State of Washington Department of Ecology

Date

Approved by:

Michael Wilson
Program Manager, Nuclear Waste Program
State of Washington Department of Ecology

Date

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1. Emission Standards and Limitations

1.1 Insignificant Emission Units

Compliance with the cited applicable requirements in Table 1.2 (see Section 1.3) is required, however, the periodic monitoring, testing, recordkeeping, or reporting requirements listed in Table 1.2 is not required. Also the compliance certification is not required for insignificant emission units.

Other emission units not identified in Table 1.1 are subject to 40 CFR 61 Subpart H (see Attachment 2) and the general applicable requirements cited in Table 1.2 (see Section 1.3), but have been determined to represent insignificant sources of non-radioactive regulated air pollutants. For these emission units no additional monitoring, reporting, or recordkeeping is necessary to determine compliance with the requirements in Table 1.2. These emission units need not be individually listed in the annual compliance certification unless there were observed, documented, or known instances of non-compliance during the certification period. All requirements identified in Attachment 2 for this category of emission unit continue to apply, as well as the requirement to annually certify compliance to any applicable requirements identified in Attachment 2.

[WAC 173-401-530(2)(b) and (2)(c)]

1.2 Emission Units And Activities Subject To Monitoring, Reporting, Recordkeeping, and Compliance Certification

Table 1.1 identifies those emission units on the Hanford Site subject to the requirement to annually certify compliance with the terms and conditions of this permit. The emission units listed in this table are subject to the generally applicable requirements in Table 1.2 (see Section 1.3) unless emission unit-specific requirements for these emission units are found in Tables 1.3, 1.4, 1.5, or 1.6.

TABLE 1.1. LIST OF SIGNIFICANT EMISSION UNITS

Fossil-Fuel Fired Steam Generating Units: (See Table 1.3 for applicable requirements)				
<i>200 Area/300 Area Steam Generating Units</i>				
Boiler Annex		Boiler HP	Fuel	Subject to WAC 173-400-115, Subpart Dc, Standards of Performance for New Sources
200CC	Boiler 1	80	fuel oil	No
225-B	Boiler 1	150	fuel oil	No
275-E	Boiler 1	80	fuel oil	No
272-W	Boiler 1	250	fuel oil	No
222-S	Boiler 1	200	fuel oil	No
	Boiler 2	200	fuel oil	No

Fossil-Fuel Fired Steam Generating Units: (See Table 1.3 for applicable requirements)				
<i>200 Area/300 Area Steam Generating Units</i>				
Boiler Annex		Boiler HP	Fuel	Subject to WAC 173-400-115, Subpart Dc, Standards of Performance for New Sources
283-W	Boiler 1	200	fuel oil	No
283-E	Boiler 1	200	fuel oil	No
234-5Z	Boiler 1	350	fuel oil	Yes
	Boiler 2	350	fuel oil	Yes
	Boiler 3	350	fuel oil	Yes
242-A	Boiler 1	200	fuel oil	No
	Boiler 2	700	fuel oil	Yes
	Boiler 3	700	fuel oil	Yes
305	Boiler 1	40	natural gas	No
306-E	Boiler 1	150	natural gas	No
318	Boiler 1	30	natural gas	No
320	Boiler 1	100	natural gas	No
	Boiler 2	100	natural gas	No
323	Boiler 1	50	natural gas	No
324	Boiler 1	300	natural gas	Yes
	Boiler 2	300	natural gas	Yes
325	Boiler 1	125	natural gas	No
	Boiler 2	125	natural gas	No
326	Boiler 1	100	natural gas	No
	Boiler 2	100	natural gas	No
327	Boiler 1	200	natural gas	No
328	Boiler 1	30	natural gas	No
329	Boiler 1	50	natural gas	No
	Boiler 2	50	natural gas	No
	Boiler 3	50	natural gas	No
	Boiler 4	50	natural gas	No
331	Boiler 1	300	natural gas	Yes
	Boiler 2	300	natural gas	Yes
337-B	Boiler 1	60	natural gas	No
	Boiler 2	60	natural gas	No
382-A-D	Boiler 1	200	natural gas	No
3705	Boiler 1	15	natural gas	No
3706	Boiler 1	80	natural gas	No
3717	Boiler 1	80	natural gas	No
3717B	Boiler 1	80	natural gas	No
3709A	Boiler 1	15	natural gas	No
3720	Boiler 1	125	natural gas	No
3745	Boiler 1	15	natural gas	No

<i>EMSL (See Table 1.6 for applicable requirements)</i>			
Emission Point ID	Boiler Rating	Fuel	Subject to WAC 173-400-115, Subpart Dc, Standards of Performance for New Sources
300 EP-3020-07-S	5.0 MMBTU/hr	natural gas (fuel oil backup)	No
300 EP-3020-08-S	5.0 MMBTU/hr	natural gas (fuel oil backup)	No
300 EP-3020-09-S	5.0 MMBTU/hr	natural gas (fuel oil backup)	No

**Internal Combustion Engines, 500 Horsepower and Greater:
(See Table 1.4 for applicable requirements)**

200E E-225BC 001
200E E-225BG 001

200E E-282ED 001, Engine E (See Table 1.6)
200W E-282WD 001, Engine W (See Table 1.6)

300 E-900 001
300 E-1000 001

300 E-900 002
300 E-1450 001

300 E-900 003
300 EP-3020-12-S (See Table 1.6)

400 E-1500 001, DG-1
400 E-1500 002, DG-2

400 E-4250 001, G-3
600 E WSCF 001

All Emission Points Exceeding Insignificant Emission Point Thresholds or Subject to a Federally Enforceable Applicable Requirement, Excluding Fossil-Fueled Combustion Units or Internal Engines:

(See Table 1.5 for applicable requirements)

200E P-244CR 001 (Sludge Vault)	200E P-296AN 001 (Tank Exhauster)
200W P-296SY 001 (Exhauster)	200E P-296AP 001 (Tank Exhauster)
200W P-296P028 001 (Backup Exhauster for 200W P-296SY 001)	200E P-296AW 001 (Tank Exhauster)
200W P-296SX 001 (Exhauster)	200E P-296A042 001 (Tank Exhauster)

Emission Units with NOC Approval Conditions:

(See Table 1.6 for applicable requirements)

Area	Emission Point	Project Title
100K	Cold Vacuum Drying	Cold Vacuum Drying - Phase II
100K	N-1724K 001	1724K Building Maintenance Shop
200	200 Area Emissions	NOC for installation and operation of a waste retrieval system in double-shell tanks.
200	P-296P033-001 & P-296P034-001	Rotary Mode Core Sampling (RMCS) Systems 3 & 4 and Modification to 2, Revision 1
200	W-PORTEX 020	Portable Exhauster Use On Single Shell (SST) Tanks During Saltwell Pumping, Revision 2
200E	C-106 Sluicing	241-C-106 Tank Sluicing, Phase II
200E	E-282ED-001	Emergency Fire Pump Generators
200E	P-2025E ETF	200 Area Effluent Treatment Facility (ETF)
200E	P-296A042-001	241-AZ-101 Tank Waste Retrieval and 241-AY/241-AZ Tank Farms Ventilation Upgrades, Project W-151 and Project W-030
200W	E-282WD 001	Emergency Fire Pump Generators
200W	J-CWC 001	Storage of Vented Waste Containers at Central Waste Complex
200W	P-WRAP1 001	Waste Receiving and Processing (WRAP1)
200W	S-296S021-001	222-S Lab Hot Cell Expansion
300	EP-3020-01-S through EP-3020-12-S	Construction and operation of Environmental Molecular Sciences Laboratory (EMSL) emission points
300	EP-305B-02-V	305-B Building Gas Cylinder Management Process
300	EP-325-01-S	325 Building Hazardous Waste Treatment Unit (HWTU)

**Emission Units with NOC Approval Conditions:
(See Table 1.6 for applicable requirements)**

300	EP-329-01-S	Chemical Sciences Laboratory, 329 Building Modification and Ventilation Upgrades
300	EP-331-01-V	Life Sciences Laboratory I (Building 331) Modifications
300	P-340NTEX-001	340-A Building Tank Solids Removal

**Miscellaneous Emission Units
(See Table 1.7 for applicable requirements)**

Hanford Site Asbestos Landfill	181B-66 (Underground Tank)
600 G-6290 (600 Area Gasoline Distribution)	

1.3 General Standards for Maximum Emissions

The following general regulatory requirements, emission limits, or work practice standards apply to all emission units [see definition of emission units in WAC 173-401-200(11)] on the Hanford Site.

The general standards in Table 1.2 are the applicable requirement, emission limit, or work practice standard unless replaced by another requirement in Tables 1.3, 1.4, 1.5, or 1.6.

TABLE 1.2. GENERAL STANDARDS FOR MAXIMUM EMISSIONS

Requirement Citation (WAC or Order Citation)	Regulatory Requirement, Emission Limit, or Work Practice Standard	State Only Enforceable	Periodic Monitoring	Periodic Monitoring Provisions	Test Method
WAC 173-400-040(1)	20% Opacity Prohibits visible emissions exceeding 20% opacity for more than 3 minutes in any 1 hour of an air contaminant from any emissions unit or within a reasonable distance of the emission unit except for scheduled soot blowing/grate cleaning or due to documented water.	N (See 2.8)	Visible Emission Surveys	2.1	Ecology Method 9A
WAC 173-400-040(2)	Fallout Prohibits emissions of particulate matter from any source to be deposited beyond the facility boundaries in sufficient quantity to interfere unreasonably with the use and enjoyment of the property upon which the material was deposited.	Y	Recordkeeping of complaint investigation	2.2	
WAC 173-400-040(3)(a)	Fugitive emissions The permittee shall take reasonable precautions to prevent the release of air contaminants from any emissions unit engaging in	N	Pre-job planning to determine reasonable control measures	2.3	

Requirement Citation (WAC or Order Citation)	Regulatory Requirement, Emission Limit, or Work Practice Standard	State Only Enforceable	Periodic Monitoring	Periodic Monitoring Provisions	Test Method
	materials handling, construction, demolition, or any other operation that is a source of fugitive emissions.				
WAC 173-400-040(4)	Odor Requires any facility causing an odor that unreasonably interferes with another person's use and enjoyment of their property to use recognized good practices and procedures to reduce odors to a reasonable minimum.	Y	Recordkeeping of complaint investigations	2.2	
WAC 173-400-040(5)	Emissions detrimental to persons or property Prohibits emissions of any air contaminant from any source which is detrimental to the health, safety, or welfare of any person, or causes damage to property or business	N	Recordkeeping of complaint investigation	2.2	
WAC 173-400-040(6)	1000 ppm SO ₂ @ 7% O ₂ on a dry basis Prohibits emission of a gas containing sulfur dioxide from any emissions unit in excess of 1000 ppm of a dry basis, corrected to 7% oxygen for combustion sources, and based on the average of any period of 60 consecutive minutes.	N (see 2.9)	For fossil-fuel combustion units: Recordkeeping and emission calculations shall be performed at least once per 12 months Other significant emission units: Annual certification	2.7	EPA Method 6 or 6C of 40 CFR 60, App. A
WAC 173-400-040(7)	Concealment and masking Prohibits the installation of use of any device or use of any means that conceals or masks an emission of an air	N	Recordkeeping of complaint investigation	2.2	

Requirement Citation (WAC or Order Citation)	Regulatory Requirement, Emission Limit, or Work Practice Standard	State Only Enforceable	Periodic Monitoring	Periodic Monitoring Provisions	Test Method
	contaminant that would otherwise violate any provision of WAC 173-400.				
WAC 173-400-040(8)(a)	Fugitive dust Requires reasonable precautions be taken to prevent fugitive dust from becoming airborne and to minimize dust generation.	N	Pre-job planning to determine reasonable control measures	2.3	
WAC 173-400-040 1 st ¶	Reasonably available control technology (RACT)	N	Permit terms considered RACT	2.4	

1.4 Emission Unit Specific Applicable Requirements

Process: Fossil Fuel Fired Steam Generating Units

TABLE 1.3. EMISSION LIMITS AND PERIODIC MONITORING REQUIREMENTS FOR STEAM GENERATING UNITS.

Boiler Annex		>5mmBTU/hr input	Fuel		Boiler Annex		>5mmBTU/hr input	Fuel
200CC	Boiler 1	No	fuel oil		326	Boiler 1	No	natural gas
225-B	Boiler 1	Yes	fuel oil			Boiler 2	No	natural gas
275-E	Boiler 1	No	fuel oil		327	Boiler 1	Yes	natural gas
272-W	Boiler 1	Yes	fuel oil		328	Boiler 1	No	natural gas
222-S	Boiler 1	Yes	fuel oil		329	Boiler 1	No	natural gas
	Boiler 2	Yes	fuel oil			Boiler 2	No	natural gas
283-W	Boiler 1	Yes	fuel oil			Boiler 3	No	natural gas
283-E	Boiler 1	Yes	fuel oil			Boiler 4	No	natural gas
234-5Z	Boiler 1	Yes	fuel oil		331	Boiler 1	Yes	natural gas
	Boiler 2	Yes	fuel oil			Boiler 2	Yes	natural gas
	Boiler 3	Yes	fuel oil			337-B	Boiler 1	No
242-A	Boiler 1	Yes	fuel oil			Boiler 2	No	natural gas
	Boiler 2	Yes	fuel oil		382-A-D	Boiler 1	Yes	natural gas
	Boiler 3	Yes	fuel oil			3705	Boiler 1	No
305	Boiler 1	No	natural gas		3706	Boiler 1	No	natural gas
306-E	Boiler 1	Yes	natural gas		3717	Boiler 1	No	natural gas
318	Boiler 1	No	natural gas		3717B	Boiler 1	No	natural gas
320	Boiler 1	No	natural gas		3709A	Boiler 1	No	natural gas
	Boiler 2	No	natural gas			3720	Boiler 1	Yes
323	Boiler 1	No	natural gas		3745	Boiler 1	No	natural gas
324	Boiler 1	Yes	natural gas					
	Boiler 2	Yes	natural gas					
325	Boiler 1	No	natural gas					
	Boiler 2	No	natural gas					

Table 1.3 (cont.)

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Description	Requirement Citation (WAC or Order Citation)	Regulatory Requirement, Emission Limit or Work Practice Standard	State Only Enforceable	Periodic Monitoring	Reference Test Method
Steam generating units <5mmBTU/hr listed above	WAC 173-400-040(1)	20% Opacity Prohibits visible emissions exceeding 20% opacity for more than 3 minutes in any 1 hour of an air contaminant from any emissions unit or within a reasonable distance of the emission unit except for scheduled soot blowing/grate cleaning or due to documented water	N (see 2.8)	Fuel-oil Fired Boilers Method: Visible emission surveys, Section 2.1 Tier 1 Frequency: At least once per calendar year quarter Natural gas-fired boilers Method: Visible emission surveys, Section 2.1, Tier 2 Frequency: At least once per quarter	Method: Ecology 9A Frequency: Not Applicable
Fossil-fuel fired steam generating units less than 5 mmBTU/hr	WAC 173-400-040(6)	1000 ppm SO ₂ @ 7% O ₂ on a dry basis Prohibits emission of a gas containing sulfur dioxide from any emissions unit in excess of 1000 ppm of a dry basis, corrected to 7% oxygen for combustion sources, and based on the average of any period of 60 consecutive minutes.	N (see 2.9)	Fuel-oil fired units: Method: See Section 2.7, Tier 1 Frequency: At least annually	EPA Method 6 or 6C of 40 CFR 60, App. A
	WAC 173-400-050(1) & (3)	particulate matter #0.23 gram per dry cubic meter at standard conditions (0.1 grain/dscf) adjusted for volumes corrected to 7% O ₂	N	Recordkeeping. See 2.5	EPA Method 5 or approved procedure in "Source Test Manual - Procedures for Compliance Testing", 7/12/90

Table 1.3 (cont.)

January 2001

Description	Requirement Citation (WAC or Order Citation)	Regulatory Requirement, Emission Limit or Work Practice Standard	State Only Enforceable	Periodic Monitoring	Reference Test Method
Standards of performance for new sources Small industrial-commercial-institutional steam generating units 234-5Z Boiler 1 234-5Z Boiler 2 234-5Z Boiler 3 242-A Boiler 2 242-A Boiler 3	40 CFR 60 Subpart Dc WAC 173-400-115	#0.5 weight percent sulfur fuel (see NOC 97NM-138 condition listed below)	N	Fuel supplier certifications and quarterly report. See 2.6 Recordkeeping.	
No. 2 Distillate Fuel-oil Fired Steam Generating Units Greater than or equal to 5 mmBTU/hr	97NM-138	0.05% sulfur distillate fuel oil will be used in the 200 Areas; natural gas will be used in the 300 Area.	N	Recordkeeping. See 2.5	
		No _x Shall not exceed 0.150 lb/mmBTU and 115 ppm @ 3% O ₂	N	Recordkeeping. See 2.5	
			N	Once every 5 years after startup. See 2.6	EPA Method 7E of 40 CFR 60, App. A
No. 2 Distillate Fuel-oil Fired Steam Generating Units Greater than or equal to 5 mmBTU/hr	97NM-138	SO ₂ shall not exceed 0.051 lb/mmBTU	N	Recordkeeping. See 2.5.	
			N	Once every 5 years after startup. See 2.6.	EPA Method 6 or 6C of 40 CFR 60, App. A

Table 1.3 (cont.)

January 2001

Description	Requirement Citation (WAC or Order Citation)	Regulatory Requirement, Emission Limit or Work Practice Standard	State Only Enforceable	Periodic Monitoring	Reference Test Method
No. 2 Distillate Fuel-oil Fired Steam Generating Units Greater than or equal to 5 mmBTU/hr (cont.)	97NM-138 (cont.)	CO shall not exceed 0.071 lb/mmBTU and 90 ppm @ 3% O ₂	N	Recordkeeping. See 2.5.	
			N	Once every 5 years after startup. See 2.6.	EPA Method 10 of 40 CFR 60, App. A
		Particulate Matter (PM ₁₀) shall not exceed 0.011 lb/mmBTU	N	Recordkeeping. See 2.5.	
			N	Once every 5 years after startup. See 2.6.	EPA Method 5 of 40 CFR 60, App. A
		VOC shall not exceed 0.013 lb/mmBTU and 30 ppm @ 3% O ₂	N	Recordkeeping. See 2.5.	
Natural Gas-Fired Greater than or equal to 5 mmBTU/hr	97NM-138 (cont.)	NO _x shall not exceed 0.037 lb/mmBTU and 30 ppm @ 3% O ₂	N	Recordkeeping. See 2.5.	
			N	Once every 5 years after startup. See 2.6.	EPA Method 7E of 40 CFR 60, App. A
		CO shall not exceed 0.225 lb/mmBTU and 300 ppm @ 3% O ₂	N	Recordkeeping. See 2.5.	
			N	Once every 5 years after startup. See 2.6.	EPA Method 10 of 40 CFR 60, App. A
		Particulate Matter (PM ₁₀) shall not exceed 0.012 lb/mmBTU	N	Recordkeeping. See 2.5.	

Table 1.3 (cont.)

January 2001

Description	Requirement Citation (WAC or Order Citation)	Regulatory Requirement, Emission Limit or Work Practice Standard	State Only Enforceable	Periodic Monitoring	Reference Test Method
Natural Gas-Fired Greater than or equal to 5 mmBTU/hr (cont.)	97NM-138 (cont.)		N	Once every 5 years after startup. See 2.6.	EPA Method 5 of 40 CFR 60, App. A
		VOC shall not exceed 0.013 lb/mmBTU and 30 ppm @ 3% O ₂	N	Recordkeeping. See 2.5.	
			N	Once every 5 years after startup. See 2.6.	EPA Method 25 or 25A of 40 CFR 60, App. A
		SO ₂ shall not exceed 0.0006 lb/mmBTU	N	Recordkeeping. See 2.5.	
			N	Once every 5 years after startup. See 2.6.	EPA Method 6 or 6C of 40 CFR 60, App. A

General Conditions:				
<ul style="list-style-type: none"> • Operation and Maintenance Manuals will be obtained from the manufacturer(s) and made available for review by Ecology on request. • "Good combustion practices" will be applied to all boilers. Good combustion practices include but are not limited to the following: 				
Daily	Monthly	Semi-annually	Annually	Every two years
Visually check combustion	Inspect burner	Clean and check air supply system	Clean fireside surfaces and breaching	Conduct boiler tuneups on smaller boilers (<5 mmBTU/hr heat input) by manufacturer trained technicians or other qualified personnel. See 2.5 for recordkeeping.
Record available operating data	Inspect boiler exteriors	Clean and check fuel supply system	Conduct boiler tuneups on large boilers (>5 mmBTU/hr heat input) by manufacturer trained technicians or other qualified personnel. See 2.5 for recordkeeping.	
	Check combustion controls	Inspect refractory		
	Check for leaks			
	Check for unusual noise, vibrations, etc.			

Process: Internal Combustion Engines

TABLE 1.4. INTERNAL COMBUSTION ENGINES: 500 HORSEPOWER AND GREATER

Discharge Point Number	Requirement Citation (WAC or Order Citation)	Regulatory Requirement, Emission Limit or Work Practice Standard	State Only Enforceable	Periodic Monitoring	Reference Test Method
200E E-225BC 001 200E E-225BG 001 300 E-900 001 300 E-1000 001 300 E-900 002 300 E-1450 001 300 E-900 003 400 E-1500 001, DG-1 400 E-1500 002, DG-2 400 E-4250 001, G-3 600 E WSCF 001	WAC 173-400-040(1)	20% Opacity Prohibits visible emissions exceeding 20% opacity for more than 3 minutes in any 1 hour of an air contaminant from any emissions unit or within a reasonable distance of the emission unit except for scheduled soot blowing/grate cleaning or due to documented water.	N (see 2.8)	Method: See Section 2.1, Tier 1 Frequency: At least once per calendar quarter	Ecology Method 9A
	WAC 173-400-040(6)	1000 ppm SO ₂ @ 7% O ₂ on a dry basis Prohibits emission of a gas containing sulfur dioxide from any emissions unit in excess of 1000 ppm of a dry basis, corrected to 7% oxygen for combustion sources, and based on the average of any period of 60 consecutive minutes.	N (see 2.9)	See Section 2.7, Tier 1	EPA Method 6 or 6C of 40 CFR 60, App. A

Process: Emission Units Exceeding Insignificant Emission Unit Thresholds

TABLE 1.5. PROCESSES AND EMISSION UNITS EXCEEDING INSIGNIFICANT EMISSION UNIT THRESHOLD, EXCLUDING COMBUSTION PROCESSES

Discharge Point Number	Requirement Citation (WAC or Order Citation)	Regulatory Requirement, Emission Limit or Work Practice Standard	State Only Enforceable	Periodic Monitoring	Test Method
Units with HEPA filtration 200E P-244CR 001 (Sludge Vault) 200W P-296SY 001 (Exhauster) 200W P-296P028 001 (Backup Exhauster for 200W P-296SY 001) 200E P-296AN 001 (Tank Exhauster) 200W P-296SX 001 (Exhauster)	WAC 173-400-040(1)	20% Opacity Prohibits visible emissions exceeding 20% opacity for more than 3 minutes in any 1 hour of an air contaminant from any emissions unit or within a reasonable distance of the emission unit except for scheduled soot blowing/grate cleaning or due to documented water.	N (see 2.8)	Units with HEPA filtration: See Section 2.1, Tier 3	Ecology Method 9A
200E P-296AP 001 (Tank Exhauster) 200E P-296AW 001 (Tank Exhauster) 200E P-296A042 001 (Tank Exhauster)	WAC 173-400-040(6)	1000 ppm SO ₂ @ 7% O ₂ on a dry basis Prohibits emission of a gas containing sulfur dioxide from any emissions unit in excess of 1000 ppm of a dry basis, corrected to 7% oxygen for combustion sources, and based on the average of any period of 60 consecutive minutes.	N (see 2.9)	See Section 2.7, Tier 2	EPA Method 6 or 6C of 40 CFR 60, App. A

Process: NOC Approval Order Conditions

TABLE 1.6 EMISSION LIMITS AND PERIODIC MONITORING REQUIREMENTS FOR EMISSION UNITS WITH NOC APPROVAL CONDITIONS.

The emission units identified in this table are those emission units that have received an Ecology approval order to operate under WAC 173-400-110 New Source Review and/or WAC 173-460-040

Requirement Citation (WAC or Order Citation)	Regulatory Requirement, Emission Limit or Work Practice Standard	State Only Enforceable	Periodic Monitoring	Test Method
WAC 173-400-040(1)	20% Opacity Prohibits visible emissions exceeding 20% opacity for more than 3 minutes in any 1 hour of an air contaminant from any emissions unit or within a reasonable distance of the emission unit except for scheduled soot blowing/grate cleaning or due to documented water.	N (see 2.8)	See Section 2.1, Unless an alternative visible emissions, opacity, or particulate matter emission limit is identified in Table 1.6.	Ecology Method 9A
WAC 173-400-040(6)	1000 ppm SO ₂ @ 7% O ₂ on a dry basis Prohibits emission of a gas containing sulfur dioxide from any emissions unit in excess of 1000 ppm of a dry basis, corrected to 7% oxygen for combustion sources, and based on the average of any period of 60 consecutive minutes.	N (see 2.9)	See Section 2.7, Tier 2, Unless an alternative SO ₂ emission limit is identified in Table 1.6.	EPA Method 6 or 6C of 40 CFR 60, App. A

Table 1.6 (cont.)

January 2001

Regulatory Requirement, Emission Limit, or Work Practice Standard	Periodic Monitoring	State Only Enforceable	Test Method / Frequency	Required Records	Calculation Model ID
Discharge Point 100K Cold Vac. Drying Number: Cold Vacuum Drying - Phase II					
Requirement Citation (WAC or Order Citation): 97NM-022 Date: 3/7/97					
Approval to construct and install process equipment.	None	N	Method: Not Specified Frequency: Not Applicable	None	Not Applicable
Discharge Point 100K N-1724K 001 Number: 1724K Building Maintenance Shop					
Requirement Citation (WAC or Order Citation): 97NM-551 Date: 1/29/98					
Particulate Matter (PM): For welding, use of a commercially available portable fume exhauster is required containing a two stage electrostatic precipitator (filter) that removes 98 percent of the particulates.	Startup inspection	N	Method: Not Specified Frequency: Not Applicable	1. Inspection records 2. Work procedures	Not Applicable
For abrasive blasting, use of a commercially available ventilation system containing a cloth bag filtration system.					
For sawdust, use of a cyclone separator and bag filter prior to discharge to the atmosphere.					
Volatile Organic Compounds: Use of an activated charcoal filter is required. The filter shall be examined and replaced when it becomes loaded.	Filter maintenance inspections	N	Method: Not Specified Frequency: Not Applicable	1. Maintenance records and schedules	Not Applicable

Table 1.6 (cont.)

January 2001

Discharge Point **200 Area Emissions**

Number: NOC for installation and operation of a waste retrieval system in double-shell tanks.

Requirement Citation (WAC or Order Citation): DE00NWP-001 Date: 6/13/2000

Regulatory Requirement, Emission Limit, or Work Practice Standard	Periodic Monitoring	State Only Enforceable	Test Method / Frequency	Required Records	Calculation Model ID
<p>Operation of the proposed boilers shall not exceed 720 hours per year per boiler, and be in accordance with good combustion practices (GCP) to minimize emissions, based on the manufacturer's recommendations, and require the use of fuel with a Sulfur content of 0.05% or less. Periodic preventive maintenance and combustion adjustments shall be made, as necessary, to maintain GCP, but at least annually.</p>	<p>Recordkeeping Frequency: Annually</p>	<p>N</p>	<p>Method: Not Specified Frequency: Not Applicable</p>	<p>1. Operating logs showing all hours of operation. 2. GCP - Preventive maintenance and combustion adjustment records. 3. Records of vendor documentation or fuel analysis documenting procurements of diesel fuel with sulfur content of 0.05% or less once per year.</p>	<p>Not Applicable</p>
<p>Tanks: A new Notice of Construction will be required, if total emissions of toxic air pollutants exceed the SQER, unless dispersion modeling demonstrates that emissions would continue to result in concentrations less than the ASILs. Results of any such dispersion modeling demonstrations/calculations will be maintained on file at the tank farms and made available upon request.</p>	<p>Analyze each proposed change to determine if emissions would exceed an SQER or ASIL.</p>	<p>Y</p>	<p>Method: Not Specified Frequency: Not Applicable</p>	<p>1. Results of analyses.</p>	<p>Not Applicable</p>
<p>Tanks: Notification will be made ten (10) days prior to initiating waste retrieval operations in each tank covered by this order.</p>	<p>Recordkeeping</p>	<p>Y</p>	<p>Method: Not Specified Frequency: Not Applicable</p>	<p>1. Copy of notification</p>	<p>Not Applicable</p>

Table 1.6 (cont.)

January 2001

Discharge Point Number: 200 Area Emissions NOC for installation and operation of a waste retrieval system in double-shell tanks.		Requirement Citation (WAC or Order Citation):	DE00NWP-001 Date: 6/13/2000	Regulatory Requirement, Emission Limit, or Work Practice Standard	Periodic Monitoring	State Only Enforceable	Test Method / Frequency	Required Records	Calculation Model ID
An updated schedule of installation and operation activities will be made available upon request.	Recordkeeping	Y	Method: Not Specified Frequency: Not Applicable	1. Copy of updated schedule	Not Applicable				
The data obtained in the course of monitoring worker exposure will be used by the Permittee as an administrative control measure to verify that VOC emissions do not exceed 500 parts per million (PPM). The 500 PPM level will be used as an indicator to facilitate field monitoring of potential VOC emissions, using the existing Industrial Hygiene equipment.	VOC measurements from each stack.	N	Method: Organic Vapor Analyzers (OVAs) or similar instruments Frequency: At least once per year during mixer pump operations. If mixer pumps do not operate, no monitoring is required.	1. VOC measurement	Not Applicable				
No visible emissions shall be allowed beyond the property line.	Boilers: See Section 2.1, Tier 1 Tanks: See Section 2.1, Tier 3	N	Method: Not Specified Frequency: Not Applicable	1. Records of visible emissions or opacity readings	Not Applicable				
Any modification to any equipment or operating procedures, contrary to information in the NOC application, shall be reported to Ecology at least sixty (60) days before such modification. Such modification may require a new, or amended, NOC Approval Order.	Applicable if triggered	N	Method: Not Specified Frequency: Not Applicable		Not Applicable				

Discharge Point **200 P-296P033-001 & P-296P034-001**
Number:

Rotary Mode Core Sampling (RMCS) Systems 3 & 4 Requirement Citation (WAC or Order Citation): DE98NWP-005 Date: 9/3/98 and Modification to 2, Rev. 1

Regulatory Requirement, Emission Limit, or Work Practice Standard	Periodic Monitoring	State Only Enforceable	Test Method / Frequency	Required Records	Calculation Model ID
The permittee shall conduct a vapor composition analysis for each tank to be core-sampled. The emissions estimates, monitoring and exhauster operation will be conducted as described by the NOC application.	Recordkeeping and emission calculations	N	Method: Not Specified Frequency: Not Applicable	1. Calculations 2. TWINS data	10A & 10B
Emissions of volatile organic compounds (VOCs) on a daily average at the stack, shall not exceed the WAC 173-400-110 NSR thresholds.	Recordkeeping and emission calculations	N	Method: Not Specified Frequency: Not Applicable	1. TWINS data 2. Calculations 3. Operating log	10C
Discharge Point 200 W-PORTEX 020, 024, and 025 Number: Portable Exhauster Use On Single Shell (SST) Tanks During Saltwell Pumping, Rev 2 (296-P-43)					
				Requirement Citation (WAC or Order Citation): DE98NWP-006 Date: 10/26/98	
Regulatory Requirement, Emission Limit, or Work Practice Standard	Periodic Monitoring	State Only Enforceable	Test Method / Frequency	Required Records	Calculation Model ID
The portable exhausters and other operations associated with salt well pumping activities will be permitted without additional control technology controls provided that the total emissions from all activities will not result in exceedance of WAC 173-460 ASILs and the proposed ASIL values for N-Nitrosomorpholine and nonchlorinated furans.	Analyze total emissions to determine if an ASIL will be exceeded. Frequency: Annually.	Y	Method: Not Specified Frequency: Not Applicable	1. Results of analyses.	Not Applicable

Discharge Point **200 W-PORTEX 020, 024, and 025**

Number: Portable Exhauster Use On Single Shell (SST) Tanks Requirement Citation (WAC or Order Citation): DE98NWP-006 Date: 10/26/98
 During Saltwell Pumping, Rev 2 (296-P-43)

Regulatory Requirement, Emission Limit, or Work Practice Standard	Periodic Monitoring	State Only Enforceable	Test Method / Frequency	Required Records	Calculation Model ID
A new NOC will be required if total emissions of toxic air pollutants (from the saltwell portable exhauster) exceed the Small Quantity Emission Rates, unless dispersion modeling demonstrates that emissions would continue to result in concentrations less than the ASILs. Results of any such dispersion modeling demonstrations/calculations will be maintained on file at the tank farms and made available upon inspections.	Analyze total emissions to determine if a SQER will be Frequency: Annually.	Y	Method: Not Specified Frequency: Not exceeded. Applicable	1. Results of analyses.	Not Applicable
Notification will made one week prior to initial start-up of activities covered by this order.	Recordkeeping	N	Method: Not Specified Frequency: Not Applicable	1. Notification documentation	Not Applicable
An updated schedule of salt-well pumping activities will be available upon request.	Recordkeeping	N	Method: Not Specified Frequency: Not Applicable	1. Up-to-date schedule of salt-well pumping activities	Not Applicable

Discharge Point **200 W-PORTEX 020, 024, and 025**Number: Portable Exhauster Use On Single Shell (SST) Tanks Requirement Citation (WAC or Order Citation): DE98NWP-006 Date: 10/26/98
During Saltwell Pumping, Rev 2 (296-P-43)

Regulatory Requirement, Emission Limit, or Work Practice Standard	Periodic Monitoring	State Only Enforceable	Test Method / Frequency	Required Records	Calculation Model ID
VOCs are not to exceed 50 ppm carbon.	No stack sampling is required. Instruments used to detect fugitive organic emissions are part of Hanford's Industrial Hygiene worker monitoring program will be used to monitor for VOCs a minimum of 3 times: during each salt well pumping campaign: once before salt well pumping operation begins, once during salt well pumping operation, and once after salt well pumping operation is completed.	N	Method: Not Specified Frequency: Not Applicable	1. Records of VOC sample results	Not Applicable
Visible Emissions - No visible emissions shall be allowed beyond the property line as determined by opacity readings when warranted.	See Section 2.1, Tier 3.	N	Method: Ecology Method 9A Frequency: Not Applicable		Not Applicable
Any modification to any equipment or operating procedures, contrary to information in the NOC application, shall be reported to Ecology at least 60 days before such modification. Such modification may require a new or amended NOC approval Order.	Not applicable		Method: Not Specified Frequency: Not Applicable		Not Applicable

Table 1.6 (cont.)

January 2001

Discharge Point Number: 200E C-106 Sluicing 241-C-106 Tank Sluicing, Phase II	Requirement Citation (WAC or Order Citation): NOC revision approval Date: 4/9/99				
Regulatory Requirement, Emission Limit, or Work Practice Standard	Periodic Monitoring	State Only Enforceable	Test Method / Frequency	Required Records	Calculation Model ID
VOC 500 ppm.	Instruments used to detect fugitive organic emissions as part of Hanford's Industrial Hygiene (IH) worker monitoring program will be used to monitor for VOCs during sluicing pump operations.	N	Method: Hanford's IH monitoring program Frequency: Each exhaust operation episode.	1. Records of VOC sample results	Not Applicable
Sluicing operations may only be conducted for 21 days (504) hours per calendar year. Actions shall be taken prior to reaching 500 ppm to limit any excursions above that level. Cumulative sluicing time may be tracked hourly.	Recordkeeping	N	Method: Not Specified Frequency: Not Applicable	1. Operations log showing all hours of sluicing pump operation	Not Applicable
Discharge Point Number: 200E E-282ED 001 Emergency Fire Pump Generators E-282ED 001	Requirement Citation (WAC or Order Citation): NWP-96-1 Date: 4/30/96				
Regulatory Requirement, Emission Limit, or Work Practice Standard	Periodic Monitoring	State Only Enforceable	Test Method / Frequency	Required Records	Calculation Model ID
Engine E shall operate no more than 350 hours per year	Recordkeeping	N	Method: Not Specified Frequency: Not Applicable	1. Maintain operations log showing all hours of operation.	Not Applicable

Table 1.6 (cont.)

January 2001

Discharge Point **200E E-282ED 001**Number: Emergency Fire Pump Generators
E-282ED 001

Requirement Citation (WAC or Order Citation): NWP-96-1 Date: 4/30/96

Regulatory Requirement, Emission Limit, or Work Practice Standard	Periodic Monitoring	State Only Enforceable	Test Method / Frequency	Required Records	Calculation Model ID
Engine E shall burn only No. 2 fuel oil with sulfur content no more than 0.05 weight percent	Recordkeeping and/or emission calculations	N	Method: Not Specified Frequency: Not Applicable	1. Vendor documentation or fuel analysis once per fuel shipment showing <0.05wt% sulfur.	Not Applicable
NOx 75.5 pounds per hour NOx	Recordkeeping & average fuel consumption rate determination shall be performed at least once per 12 months	N	Method: EPA Method 7A of 40 CFR 60, App. A Frequency: Not Applicable	1. Monthly fuel burned. 2. Hours of operation logged.	2B
10 % Opacity	Each operating period or once per day if operating period exceeds 24 hrs. of continuous operation	N	Method: EPA Method 9 of 40 CFR 60, App. A Frequency: Not Applicable	1. Operations log	Not Applicable

Table 1.6 (cont.)

January 2001

Discharge Point **200E P-2025E ETF**
 Number: Effluent Treatment Facility (ETF) (2025 E), Approval Requirement Citation (WAC or Order Citation): NOC-93-3 Date: 12/20/93
 of NOC Application for Nonradioactive Air Emissions

Regulatory Requirement, Emission Limit, or Work Practice Standard	Periodic Monitoring	State Only Enforceable	Test Method / Frequency	Required Records	Calculation Model ID
Energy shall notify the department in writing at least 45 days before start-up of any emission unit subject to this approval which could cause release of any air pollutants to the atmosphere.	Not Applicable		Method: Not Specified Frequency: Not Applicable		Not Applicable
Energy shall not make any changes to the proposed air emission control system which may result in an increase; or change the types of air emissions without first notifying the department. Based on the notification, the department will make a determination whether a new approval or a modification of this final approval is required.	Not Applicable		Method: Not Specified Frequency: Not Applicable		Not Applicable
Opacity at each stack 5%	See Section 2.1, Tier 3	N	Method: Not Specified Frequency: Not Applicable	1. As required in Attachment 2, Section 4.2	Not Applicable
Any addition of waste streams that do not meet the new source review exemption in WAC 173-460-040(2)(c) or that have previously unidentified constituents to the facility requires prior review and approval by the Department of Ecology.	Analyze each waste stream to determine if emissions would exceed an SQER of ASIL	Y	Method: Not Specified Frequency: Not Applicable	1. Results of analysis.	7C

Table 1.6 (cont.)

January 2001

Discharge Point **200E P-296A042-001**Number: 241-AZ-101 Tank Waste Retrieval and
241-AY/241-AZ Tank Farms Ventilation Upgrades,
Project W-151 and Project W-030

Requirement Citation (WAC or Order Citation): NOC 94-07 Date: 8/29/94

Regulatory Requirement, Emission Limit, or Work Practice Standard	Periodic Monitoring	State Only Enforceable	Test Method / Frequency	Required Records	Calculation Model ID
Ammonia 0.05 lbs/hr	Recordkeeping and emission calculations	N	Method: Field instruments, which may include Draeger Tubes Frequency: Annually	1. Stack flow measurements. 2. Record field instrument or Draeger Tube ammonia concentrations.	5
Opacity 5%	See Section 2.1, Tier 3	N	Method: EPA Method 9 of 40 CFR Part 60, App. A Frequency: Not Applicable	1. As required in Attachment 2, Section 4.2	Not Applicable
VOC max emission limit, 50 ppm, measured as Total Organic Carbon	Recordkeeping and emission calculations	N	Method: EPA Method 25A Frequency: Annually	1. Organic vapor sampling data.	4A

Table 1.6 (cont.)

January 2001

Discharge Point **200W CWC**

Number: Nonradioactive NOC Approval for the Central Waste Complex for Storage of Vented Waste Containers. Requirement Citation (WAC or Order Citation): DE00NWP-002 Date: 6/30/2000

Regulatory Requirement, Emission Limit, or Work Practice Standard	Periodic Monitoring	State Only Enforceable	Test Method / Frequency	Required Records	Calculation Model ID
No visible emissions shall be allowed beyond the property line.	Operator observations per Section 2.1, Tier 1. Frequency: At least annually.	N	Method: Not Specified Frequency: Not Applicable	1. Operating log.	Not Applicable
Any modification to any equipment or operating procedures, contrary to information in the NOC application, shall be reported to Ecology at least sixty (60) days before such modification. Such modification may require a new, or amended, NOC approval Order.	Recordkeeping Frequency: sixty (60) days before any modification	Y	Method: Not Specified Frequency: Not Applicable	1. Records of any equipment or procedure modifications.	Not Applicable
A new/modified NOC will be required, if total emissions of toxic air pollutants exceed the Small Quantity Emission Rates, unless dispersion modeling demonstrates that emissions would continue to result in concentrations less than the ASILs. Results of any such modeling demonstrations/calculations will be on file at the facility and made available upon inspection.	Analyze total emissions to determine if an ASIL will be exceeded. Frequency: Annually.	Y	Method: Not Specified Frequency: Not Applicable	1. Results of analyses.	Not Applicable
An annual assessment of SWITS shall be conducted to document compliance that no monitoring and/or sampling systems are needed. This assessment will be reported annually beginning as part of the Calendar Year 1999 nonradioactive inventory of airborne emissions.	Conduct an assessment of SWITS data and publish results.	Y	Method: Not Specified Frequency: Not Applicable	1. Analysis of SWITS data.	Not Applicable

Table 1.6 (cont.)

January 2001

Discharge Point **200W E-282WD 001**
 Number: Emergency Fire Pump Generators
 E-282WD 001

Requirement Citation (WAC or Order Citation): NWP-96-1 Date: 4/30/96

Regulatory Requirement, Emission Limit, or Work Practice Standard	Periodic Monitoring	State Only Enforceable	Test Method / Frequency	Required Records	Calculation Model ID
Engine W shall operate no more than 350 hours per year.	Recordkeeping	N	Method: Not Specified Frequency: Not Applicable	1. Maintain operations log showing all hours of operation	Not Applicable
Engine W shall burn only No. 2 fuel oil with sulfur content no more than 0.05 weight percent	Recordkeeping and/or emission calculations	N	Method: Not Specified Frequency: Not Applicable	1. Vendor documentation or fuel analysis once per fuel shipment showing <0.05wt% sulfur.	Not Applicable
NOx 42 pounds per hour	Recordkeeping & average fuel consumption rate determination shall be performed at least once per 12 months	N	Method: EPA Method 7A of 40 CFR 60, App. A Frequency: Not Applicable	1. Monthly fuel burned. 2. Hours of operation logged.	2B
10 % Opacity	Each operating period or once per day if operating period exceeds 24 hrs. of continuous operation	N	Method: EPA Method 9 of 40 CFR 60, App. A Frequency: Not Applicable		Not Applicable

Regulatory Requirement, Emission Limit, or Work Practice Standard	Periodic Monitoring	State Only Enforceable	Test Method / Frequency	Required Records	Calculation Model ID
Discharge Point 200W P-WRAP1 001 Number: Waste Receiving and Processing (WRAP1)	Requirement Citation (WAC or Order Citation): NOC 93-05 Date: 12/13/93				
After start-up (i.e., start of processing of TRU retrieval material) of the facility, RL shall conduct performance tests for VOCs. After these tests, Ecology may require RL to conduct an annual test(s) for those pollutants. RL and Ecology shall meet before the testing occurs to discuss the testing protocol. Testing shall occur only after Ecology approves the plan. ¹ Energy shall submit a test plan at least 45 days before testing for Ecology approval. Testing results must be reported to the Department within 60 days after the test completion. Energy shall notify the department 7 days before each test date.	Once: after start of processing of TRU retrieval material	N	VOC EPA Method 25 or 1. Meeting minutes/notes. 25A of 40 CFR 60, App. A Frequency: Ecology may require RL to conduct an annual test(s) for those pollutants.	1. Meeting minutes/notes. 2. Test plan. 3. Test results.	Not Applicable
<hr/>					
Discharge Point 200W S-296S021-001 Number: 222-S Lab Hot Cell Expansion	Requirement Citation (WAC or Order Citation): Letter Date: 7/13/92				
Regulatory Requirement, Emission Limit, or Work Practice Standard	Periodic Monitoring	State Only Enforceable	Test Method / Frequency	Required Records	Calculation Model ID
Any toxic air release must be below detection limits.	No monitoring required beyond initial test.	N	Method: Not Specified Frequency: Not Applicable	None	Not Applicable

¹ If the approved EPA reference test methods are not used, the public will be provided with an opportunity to review the test plan.

Discharge Point **300 EP-3020-01-S**

Number: Construction and operation of Environmental Molecular Sciences Laboratory (EMSL) emission points

Requirement Citation (WAC or Order Citation): NOC-94-08 Date: 9/12/94

Regulatory Requirement, Emission Limit, or Work Practice Standard	Periodic Monitoring	State Only Enforceable	Test Method / Frequency	Required Records	Calculation Model ID
5 % Opacity (300 EP-3020-01-S stack with HEPA filters air emission controls)	See Section 2.1, Tier 3	N	Method: Ecology Method 9A Frequency: Not Applicable	1. Maintenance records and procedures, See Attachment 2, Section 4.2	Not Applicable
300 EP-3020-01-S through -12-S					
Environmental Molecular Sciences Laboratory (EMSL) research projects, supporting operations, and building equipment additions and changes including control systems, can be made to accommodate changing research and support requirements. These changes can be made without filing a Notice of Construction (NOC), provided the total building emissions meet the acceptable source impact levels (ASILs) and the Washington Administrative Code (WAC) 173-400-110 new source review (NSR) thresholds. Total building emissions will be the sum of all emissions sources in the EMSL building not otherwise exempt under WAC 173-400 or WAC 173-460. A new NOC will be required if total building emissions of toxic air pollutants exceed the Small Quantity Emission Rates, unless a T-Screen or ISCST3 analysis, using the current model version, is run that shows the emissions would result in concentrations less than the ASILs, or if total building emissions of criteria pollutants would exceed the WAC 173-400-110 thresholds. Results of these analyses will be maintained on file at Pacific Northwest National Laboratory for inspection.	Analyze each proposed change to determine if emissions would exceed an ASIL or NSR threshold.	N	Method: Not Specified NSR Thresholds - N ASILs - Y Frequency: Not Applicable	1. Results of analyses.	7A and 7B

Table 1.6 (cont.)

January 2001

Regulatory Requirement, Emission Limit, or Work Practice Standard	Periodic Monitoring	State Only Enforceable	Test Method / Frequency	Required Records	Calculation Model ID		
Discharge Point 300 EP-3020-02-S through -06-S Number: Environmental Molecular Sciences Lab (EMSL) chemical stacks	Requirement Citation (WAC or Order Citation): NOC-94-08 Date: 9/12/94	10 % Opacity (300 EP-3020-02-S through -06-S)	See Section 2.1, Tier 2	N	Method: Ecology Method 9A Frequency: Not Applicable	1. Operating log	Not Applicable
Discharge Point 300 EP-3020-07-S through -11-S Number: Environmental Molecular Sciences Lab (EMSL) EP-3020-07-S Natural gas fired boilers		Requirement Citation (WAC or Order Citation): NOC-94-08 Date: 9/12/94	5 % Opacity (300 EP-3020-07-S through 11-S)	See Section 2.1, Tier 2	N	Method: Ecology Method 9A Frequency: Not Applicable	1. Operating log.
Environmental Molecular Sciences Laboratory (EMSL) research projects, supporting operations, and building equipment additions and changes including control systems, can be made to accommodate changing research and support requirements. These changes can be made without filing a Notice of Construction (NOC), provided the total building emissions meet the acceptable source impact levels (ASILs) and the Washington Administrative Code (WAC) 173-400-110 new source review (NSR) thresholds.	Analyze each proposed change to determine if emissions would exceed an ASIL or NSR threshold.		N	Method: Not Specified NSR Thresholds - N ASILs - Y Frequency: Not Applicable	1. Results of analyses.	7A and 7B	

Discharge Point **300 EP-3020-07-S through -11-S**
 Number: Environmental Molecular Sciences Lab (EMSL)
 EP-3020-07-S Natural gas fired boilers

Requirement Citation (WAC or Order Citation): NOC-94-08 Date: 9/12/94

Regulatory Requirement, Emission Limit, or Work Practice Standard	Periodic Monitoring	State Only Enforceable	Test Method / Frequency	Required Records	Calculation Model ID
The EMSL gas-fired boilers shall be operated in accordance with good combustion practices to minimize emissions based on the manufacturer's recommendations. Periodic preventive maintenance and combustion adjustments shall be made as necessary to maintain GCP, but at least annually. Per Ecology's request, Energy shall demonstrate the effectiveness of GCP to Ecology during normal operation of the boilers.	Not applicable	N	Method: Not Specified Frequency: Not Applicable		Not Applicable

Table 1.6 (cont.)

January 2001

Discharge Point **300 EP-3020-07-S through -11-S**
 Number: Environmental Molecular Sciences Lab (EMSL)
 EP-3020-07-S Natural gas fired boilers

Requirement Citation (WAC or Order Citation): NOC-94-08 Date: 9/12/94

Regulatory Requirement, Emission Limit, or Work Practice Standard	Periodic Monitoring	State Only Enforceable	Test Method / Frequency	Required Records	Calculation Model ID
<p>The following emission units: * Three operating or standby 5 MMBTU/hr gas-fired hot water boilers utilizing natural gas (300 EP-3020-07-S through -09-S) * Two inactive 4 MMBTU/hr gas-fired steam boilers utilizing natural gas (300 EP-3020-10-S and 11-S) * The above boilers and the 1072 HP (300 EP-3020-12-S) backup diesel electric generator using diesel fuel may be operated using good combustion practices (GCP) to minimize emissions based on manufacturer's recommendations.</p> <p>The EMSL boilers and backup diesel electric generator may be operated on diesel fuel up to 16 hours each annually for routine maintenance and testing. Additionally when the primary gas or electric supplies are interrupted, diesel fuel may be utilized to maintain building operation. Total runtime on diesel fuel for the generator and boilers shall be maintained and presented to Ecology upon request. Operation shall be in accordance with GCP to minimize emissions based on the manufactures' recommendations, and require the use of fuel with a sulfur content of 0.05% or less.</p>	<p>Recordkeeping Frequency: At least annually</p>	<p>N</p>	<p>Method: Not Specified Frequency: Not Applicable</p>	<ol style="list-style-type: none"> 1. Records of preventive maintenance, combustion adjustments, and operation as necessary to maintain GCP based on manufacturer's recommendations for minimizing emissions. 2. Operating log showing all hours of diesel fuel operation. 3. Records of vendor documentation or fuel analysis documenting procurements of diesel fuel with sulfur content of 0.05% or less once per year. 	<p>Not Applicable</p>

Table 1.6 (cont.)

January 2001

Discharge Point **300 EP-305B-02-V**

Number: 305-B Building Gas Cylinder Management Process

Requirement Citation (WAC or Order Citation): DE 98NWP-003 Date: 9/1/98

Regulatory Requirement, Emission Limit, or Work Practice Standard	Periodic Monitoring	State Only Enforceable	Test Method / Frequency	Required Records	Calculation Model ID
<p>GCMP Release Limits: The maximum total quantity of residuals that are allowed to be released under this Order per calendar year will not exceed two (2) tons/year. This shall include no more than one (1) ton/year of Class I and Class II ozone-depleting substances.</p>	<p>Operator recording of release information. Frequency: for each release</p>	<p>Y</p>	<p>Method: Not Specified Frequency: Not Applicable</p>	<p>1. Daily volumes and concentrations emitted from each cylinder and operator signature</p>	<p>6</p>
<p>GCMP Release Limits: The above release limits and the ASILs shall not be exceeded until a revised NOC application is submitted to Ecology and approved by Ecology.</p>	<p>Applicable if triggered</p>	<p>N</p>	<p>Method: Not Specified Frequency: Not Applicable</p>	<p>1. Chemical inventory if use rates are unavailable 2. Volumes and concentrations in each cylinder 3. Waste handling rates 4. Chemical use rate 5. Chemical inventory if use rates are unavailable</p>	<p>6</p>
<p>Total Building Emission Limits: GCMP process and emission controls, building research and waste handling projects and supporting operations, and building equipment additions and changes, including emission control systems, can be made to accommodate changing research and support requirements without filing a new Notice of Construction, providing the total emissions meet the ASILs and WAC 173-400-110 NSR thresholds.</p>	<p>Recordkeeping Frequency: For each release</p>	<p>N</p>	<p>Method: Not Specified ASILs - Y NSR Thresholds - N Frequency: Not Applicable</p>	<p>1. Results of analyses.</p>	<p>7A and 7B</p>

Table 1.6 (cont.)

January 2001

Discharge Point **300 EP-305B-02-V**

Number: 305-B Building Gas Cylinder Management Process

Requirement Citation (WAC or Order Citation): DE 98NWP-003 Date: 9/1/98

Regulatory Requirement, Emission Limit, or Work Practice Standard	Periodic Monitoring	State Only Enforceable	Test Method / Frequency	Required Records	Calculation Model ID
<p>Total Building Emission Limits: A new NOC will be required if total building emissions of toxic air pollutants exceed the Small Quantity Emission Rates, unless a T-Screen analysis is run that shows that emissions would result in concentrations less than ASILs. Results of these analyses will be maintained on file at PNNL for inspection.</p>	Applicable if triggered	Y	Method: Not Specified Frequency: Not Applicable	<ol style="list-style-type: none"> 1. Chemical inventory if use rates are unavailable 2. Volumes and concentrations in each cylinder 3. Waste handling rates 4. Chemical use rate 5. Chemical inventory if use rates are unavailable 	6
<p>Total Building Emission Limits: A new NOC will be required if total building emissions of criteria pollutants would exceed the WAC 173-400-110 thresholds.</p>	Applicable if triggered	N	Method: Not Specified Frequency: Not Applicable	<ol style="list-style-type: none"> 1. Chemical inventory if use rates are unavailable 2. Volumes and concentrations in each cylinder 3. Waste handling rates 4. Chemical use rate 5. Chemical inventory if use rates are unavailable 	6

Table 1.6 (cont.)

January 2001

Regulatory Requirement, Emission Limit, or Work Practice Standard	Periodic Monitoring	State Only Enforceable	Test Method / Frequency	Required Records	Calculation Model ID
Discharge Point 300 EP-305B-02-V Number: 305-B Building Gas Cylinder Management Process	Requirement Citation (WAC or Order Citation): DE 98NWP-003 Date: 9/1/98				
Monitoring and Recordkeeping: Specific records shall be kept on-site by the permittee and made available for inspection by Ecology upon request. The records shall be organized in a readily accessible manner and cover a minimum of the most recent 60-month period.	Recordkeeping	N	Method: Not Specified Frequency: Not Applicable	1. Logbook identifying individual cylinders. 2. Logbook identifying contents of the cylinders 3. The amount of residuals 4. The date and rate of release 5. Any other information pertaining to said release	Not Applicable
Should any of the emissions become subject to 40 Code of Federal Regulations (CFR) 264/265 Subparts AA, those emissions would be regulated under those parts and are then exempt from WAC 173-460. In that event, those exempted emissions would be excluded from ASIL and threshold evaluations.	Applicable if triggered	Y	Method: Not Specified Frequency: Not Applicable		Not Applicable
General Conditions: Visible emissions - No visible emissions shall be allowed beyond the property line, as determined by opacity readings when warranted.	Section 2.1, Tier 2	N	Method: Ecology Method 9A Frequency: Not Applicable	1. Operating log.	Not Applicable

Table 1.6 (cont.)

January 2001

Discharge Point **300 EP-325-01-S**

Number: 325 Building Hazardous Waste Treatment Unit (HWTU)

Requirement Citation (WAC or Order Citation): DE 98NWP-004 Date: 9/1/98

Regulatory Requirement, Emission Limit, or Work Practice Standard	Periodic Monitoring	State Only Enforceable	Test Method / Frequency	Required Records	Calculation Model ID
<p>HWTU Feed Rate: The process feed rate shall be limited to a rate that will control the WAC 173-460 listed Toxic Air Pollutants (TAPs) to meet the Acceptable Source Impact Level (ASIL), and in any case, not to exceed 8,000 kg of waste per calendar year total for the HWTU the permittee is proposing under this NOC application approval Order.</p>	<p>Recordkeeping Frequency: Daily when operating</p>	<p>Y</p>	<p>Method: Not Specified Frequency: Not Applicable</p>	<p>1. HWTU daily feed rate (Total and WAC 173-460 TAPs).</p>	<p>Not Applicable</p>
<p>Total Building Emission Limits: HWTU process and emission controls, building research and waste handling projects and supporting operations, and building equipment additions and changes, including control systems, can be made to accommodate changing research and support requirements without filing a new Notice of Construction, providing the total emissions meet the ASILs and WAC 173-400-110 NSR thresholds.</p>	<p>Recordkeeping and emission calculations Frequency: Each treatment process and proposed change</p>	<p>N</p>	<p>Method: Not Specified ASILs - Y NSR Thresholds - N Frequency: Not Applicable</p>	<p>1. Results of analyses</p>	<p>7A and 7B</p>
<p>A new Notice of Construction will be required if total building emissions of toxic air pollutants exceed the Small Quantity Emission Rates, unless a T-Screen analysis is run that shows the emissions would result in concentrations less than the ASILs.</p>	<p>Recordkeeping and emission calculations Frequency: Each proposed change</p>	<p>Y</p>	<p>Method: Not Specified Frequency: Not Applicable</p>	<p>1. Results of analyses</p>	<p>7A and 7B</p>
<p>A new Notice of Construction also is required if total building emissions of criteria pollutants would exceed the WAC 173-400-110 thresholds.</p>	<p>Applicable if triggered</p>	<p>N</p>	<p>Method: Not Specified Frequency: Not Applicable</p>	<p></p>	<p>Not Applicable</p>

Discharge Point **300 EP-325-01-S**Number: 325 Building Hazardous Waste Treatment Unit
(HWTU)

Requirement Citation (WAC or Order Citation): DE 98NWP-004 Date: 9/1/98

Regulatory Requirement, Emission Limit, or Work Practice Standard	Periodic Monitoring	State Only Enforceable	Test Method / Frequency	Required Records	Calculation Model ID
<p>General Testing Requirements: Perform initial source test for Volatile Organic Compounds (VOCs). DOE-RL shall demonstrate initial compliance for Volatile Organic Compounds (VOC) through source tests conducted no later than 180 days after start-up of the proposed HWTU/SAL activities. EPA Reference Method 25A shall be followed for testing, the test plan shall be submitted to Ecology upon request. After source tests are completed, mass balance calculations will be accepted for compliance purposes.</p>	Record keeping and emission calculations	N	<p>Method: EPA Method 25A Frequency: Once within 180 days after start-up</p>	<p>1. Annual emission calculations after initial source test 2. Initial source test</p>	Not Applicable
<p>Monitoring and Recordkeeping: Specific records shall be kept on-site by the permittee and made available for inspection by Ecology upon request. The records shall be organized in a readily accessible manner and cover a minimum of the most recent 60-month period.</p>	Recordkeeping and emission calculations	N	<p>Method: Not Specified Frequency: Not Applicable</p>	<p>1. HWTU unit feed rates for TAPS and NSR threshold listed criteria pollutants. 2. HWTU treatment process destruction efficiency data or engineering estimates. 3. Engineering estimates of the maximum emissions of reaction products of the HWTU treatment process. 4. Evaluations of each bench-scale treatment process or additions or changes not otherwise exempt.</p>	Not Applicable

Table 1.6 (cont.)

January 2001

Regulatory Requirement, Emission Limit, or Work Practice Standard	Periodic Monitoring	State Only Enforceable	Test Method / Frequency	Required Records	Calculation Model ID
Discharge Point 300 EP-325-01-S Number: 325 Building Hazardous Waste Treatment Unit (HWTU)	Requirement Citation (WAC or Order Citation): DE 98NWP-004 Date: 9/1/98				
General Conditions: Visible Emissions - No visible emissions shall be allowed beyond the property line, as determined by opacity readings when warranted.	See Section 2.1, Tier 3	N	Method: Ecology Method 9A Frequency: Not Applicable	1. Operating log.	Not Applicable
Discharge Point 300 EP-329-01-S Number: Chemical Sciences Laboratory, 329 Building modification and ventilation upgrades	Requirement Citation (WAC or Order Citation): NWP95-329/300A Date: 9/18/96				
Regulatory Requirement, Emission Limit, or Work Practice Standard	Periodic Monitoring	State Only Enforceable	Test Method / Frequency	Required Records	Calculation Model ID
Opacity 5 %	Maintain abatement technology as required in Attachment 2	N	Method: Not Specified Frequency: Not Applicable		Not Applicable
VOC 0.8 lb/hr	Chemical inventory and usage records and emission calculations for each change	Y	Method: Not Specified Frequency: Not Applicable	1. Results of analyses.	4B

Discharge Point **300 EP-331-01-V**

Number: Life Sciences Laboratory I (Building 331)
 Modifications

Requirement Citation (WAC or Order Citation): 97NM-147 Date: 11/10/97

Regulatory Requirement, Emission Limit, or Work Practice Standard	Periodic Monitoring	State Only Enforceable	Test Method / Frequency	Required Records	Calculation Model ID
<p>A new Notice of Construction shall be filed if emissions of toxic air pollutants exceed the pounds per year Small Quantity Emissions Rates (SQER) of WAC 173-460-080(2)(e), or it shall be on file at the 331 Building that T-SCREEN was run and that emissions were less than the Acceptable Source Impact Level (ASIL), in accordance with 173-460-080(2) and (3). Results shall be on file at PNNL for inspection.</p>	<p>Recordkeeping Frequency: For each change</p>	<p>Y</p>	<p>Method: Not Specified Frequency: Not Applicable</p>	<p>1. Results of analyses.</p>	<p>7A and 7B</p>
<p>A new Notice of Construction shall be filed if emissions of criteria pollutants exceed the following thresholds:</p>					
<p>Carbon Monoxide - 20 tons/year Nitrogen Oxides - 8 tons/year Sulfur dioxide - 8 tons/year Volatile Organic Compounds - 8 tons/year Particulate matter - 5 tons/year PM-10 - 3 tons/year Lead - 0.12 tons/year</p>					

Table 1.6 (cont.)

January 2001

Discharge Point **300 P-340NTEX-001**

Number: 340-A Building Tank Solids Removal

Requirement Citation (WAC or Order Citation): 97NM-137 Date: 5/5/97

Regulatory Requirement, Emission Limit, or Work Practice Standard	Periodic Monitoring	State Only Enforceable	Test Method / Frequency	Required Records	Calculation Model ID
Maintain negative pressure of tanks during solids removal.	Not applicable	N	Method: Not Specified Frequency: Not Applicable	1. Operations log showing negative air pressure was maintained during solids removal from tank	Not Applicable
Implement temporary pollution controls during removal of solids and equipment from tanks. Temporary pollution controls implemented during solids removal will consist of temporary barriers installed between the tank access port and the surrounding area. Temporary pollution controls implemented during removal of equipment will consist of plastic sleeving to provide a barrier between the equipment and the surrounding work area and the environment.	Not applicable	N	Method: Not Specified Frequency: Not Applicable	1. Operations log showing appropriate temporary pollution control was in place during solids removal and equipment removal.	Not Applicable
Control particulates with a prefilter and two banks of HEPAs. HEPAs are to be in-place tested to demonstrate removal efficiency of 99.95% for particulates with a 0.3 micron median diameter.	Not applicable	N	Method: Not Specified Frequency: Not Applicable	1. Inspection records 2. HEPA test results.	Not Applicable

TABLE 1.7 MISCELLANEOUS EMISSION UNITS

Applicable requirements for miscellaneous emission units will be added here.

Discharge Point Number	Requirement Citation	Regulatory Requirement, Emission Limit, or Work Practice Standard (for information only)
Hanford Site Asbestos Landfill	40 CFR 61.151(a)(3)	Cover asbestos-containing waste with at least 60 centimeter of compacted nonasbestos-containing material, and maintain to prevent exposure.
	40 CFR 61.151(d)	Notify in writing at least 45 days prior to excavation. If construction will begin on a date other than the one in the original notice, notice of the new date must be provided at least 10 working days in advance. (1) Notice shall contain starting and completion dates. (2) Notice shall contain reason for disturbing the waste. (3) Notice shall contain procedures to be used to control emissions (4) Notice shall contain a location for any temporary storage site and the final disposal site.
181B-66 Underground Storage Tank	40 CFR 60.116(b)	Keep readily accessible records showing the dimension of the storage vessel and analysis showing capacity
600 Area Gas Distribution	WAC 173-491-040(4)(b)	All gasoline storage tanks shall be equipped with submerged or bottom fill lines and fittings to vapor balance gasoline vapors with the delivery transport tank.
	WAC 173-491-040(4)(d)	The owner or operator shall not permit the loading of gasoline into a storage tank equipped with vapor balance fittings from a transport tank equipped with vapor balance fittings unless the vapor balance system is attached to the transport tank and operated satisfactorily.
	WAC 173-491-040(6)(d)	Recordkeeping.

2. Compliance and Periodic Monitoring Provisions

- 2.1 Visible emission surveys must be conducted during daylight hours and during periods when the emission unit is operating

Tier 1

This method applies primarily to fossil-fuel combustion units and other emission units that may be a source of visible emissions. The method consists of operating personnel observing visible emissions from the emission unit according to the frequency identified in the table. If the operator observes visible emissions for more than 10 consecutive minutes during the observation period, the cause(s) of the visible emissions will be determined and corrective actions taken as necessary, or a visible determination of opacity will be performed using Ecology Method 9A. Records of corrective actions taken to reduce opacity shall be maintained and available for Ecology inspection..

Tier 2

Some emission units are unlikely sources of visible emissions and are not expected to exceed their applicable opacity limit based on past operating experience and/or expected process behavior. These emission units include research and development laboratories, analytical laboratories, and small natural gas-fired boilers. For these emission units, a weekly surveillance will be conducted and the results recorded. If visible emissions from one of these emission units are observed for more than 10 consecutive minutes, an attempt to identify the cause(s) of the visible emissions will be made and those results recorded. The recorded entry will also identify any corrective actions taken and the likely frequency of a future reoccurrence. If the event is likely to be reoccurring, and cannot be demonstrated to consist of water vapor, then a determination of opacity will be made using Ecology Method 9A. The frequency of the visible emission surveys shall be as required in the table unless the following procedure has been satisfactorily completed.

Procedure for reducing visible emission survey frequencies.

If weekly visible emission surveys for 3 months are negative, then quarterly measurements will be taken for the next six months. After one year of no visible emissions, visible emission surveys will be performed only when visible emissions are observed or expected (e.g., during startup, shutdown, or periods of malfunction). Visible emission surveys during these periods will be conducted for non-radionuclide-emitting stacks according to the process described in Tier 2 above.

Tier 3

Maintain abatement control technology as required in Attachment 2, Tables 1.1, 1.2 and 2.1, for that particular emission unit.

- 2.2 Complaints forwarded by Ecology shall be addressed promptly and assessed for corrective action. An initial, informal response shall be made to Ecology within 3 working days of the permittee receiving the complaint. This initial response shall document preliminary investigation results and any planned or completed corrective actions. Follow-up report(s) shall be provided as directed by Ecology. The permittee shall maintain records of complaints forwarded by Ecology.
- 2.3 All construction projects will address fugitive emissions and fugitive dust control during prejob planning and job safety analysis. Measures to control fugitive emissions and fugitive dust may include but are not limited to:

1. Watering.
2. Use of chemical stabilizers.
3. Use of physical barriers and/or physical stabilization.
4. Use of vegetative stabilization.
5. Clearing only limited areas to reduce dust generation.
6. Covering haul vehicles.
7. Controlling site traffic to decrease disturbance of soil and vegetation to decrease dust generated from unnecessary vehicular travel.

2.4 Emission standards and other requirements contained in rules or regulatory orders in effect at the effective date of this permit or subsequent renewals shall be considered RACT for purposes of permit issuance or renewal. RACT determinations made subsequent to the effective date of permit issuance or renewal shall be incorporated into this permit as provided by WAC 173-401-730. [WAC 173-401-605(3)].

2.5 Recordkeeping
DOE and the contractor shall maintain appropriate records of the fuel use on each individual boiler on a monthly basis. These data, along with the emission factors presented in Ecology Regulatory Order 97NM-138 will be used to determine monthly emission levels for individual boilers, and collectively for the 200 East and West, and 300 Area. If Ecology or the permittee determines that emission factors different than the factors specified in Regulatory Order 97NM-138 is appropriate, the public will be provided with an opportunity for review.

WAC 173-400-115 Compliance with the standard may be determine based on a certification from the fuel supplier containing the name of the oil supplier and a statement from the oil supplier that the oil complies with the specifications under the definition of distillate oil in 40 CFR 40.41c. A quarterly report including records of fuel supplier certifications and a certification by the owner or operator that the records of fuel supplier certifications submitted represent all of the fuel combusted during the quarter.

Logs of boiler tune-ups and significant boiler maintenance activities will be kept.

2.6 All source tests for these boilers will be conducted using EPA and Ecology approved procedures with the test boilers operating at full capacity. Tests are to be conducted on a maximum of five boilers selected on the basis of boiler capacity and fuel type. The procedure for selecting the test boilers will be agreed to by Ecology and DOE prior to conducting the tests. A procedure for selecting a representative subset of boilers for testing once every 5 years will be developed prior to the initial 5 year follow-up test. The public will be provided an opportunity for review of the procedure as part of an air operating permit modification or renewal.

The list below is an inventory of the larger boilers that are subject to testing (maximum of 5 boilers):

Distillate Oil-Fired Boilers	Number of units
200 BHP	5
350 BHP	3
700 BHP	2

Table 1.6 (cont.)
January 2001

Natural Gas-Fired Boilers	Number of units
200 BHP	2
300 BHP	4

2.7 Tier 1: Fuel-oil fired combustion units:

Required records	Calculation Model (see Section 3.1)
1. monthly fuel burned 2. Vendor documentation or fuel analysis once per year	Model 1

Tier 2: Other significant emission units:

Ecology has determined, based on process knowledge, that these emission units do not emit significant levels of SO₂. The permittee shall annually certify that the processes have not been modified to increase SO₂ emissions and no SO₂ Monitoring is required.

- 2.8 WAC 173-400-040(1)(a) and (1)(b) are federally enforceable sections. Soot blowing and grate cleaning is allowed if the operator can demonstrate that the emissions will not exceed 20% opacity for more than 15 minutes in any 8 consecutive hours.
- 2.9 WAC 173-400-040(6)¶1 is federally enforceable.

3. Recordkeeping

The permittee shall maintain records of all required Monitoring data and support information. These records shall be maintained for a period of five years from the date of the Monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records, all original continuous Monitoring records (such as strip charts or equivalent), and required reports.

[WAC 173-401-615(2)(a), WAC 173-401-615(2)(c)]

3.1 Emission Calculations

MODEL 1 Description: Compliance with 1000 ppm SO₂ @7% O₂ Internal Combustion Engines >500 hp
SO₂ Emission Calculations

Stoichiometric calculations were done to show emissions for a specific diesel engine (2200 HP, with fuel consumption rate of 99.4 gal/hr) were well below the 1000 ppm SO₂ standard.

theoretical air required (ft³/lb) = $1710 * (C/12 + H/2 + S/32)$

multiply this by fuel consumption rate * fuel density to get ft³/min

Assumptions: diesel fuel is predominantly C₁₆H₂₄

Fuel density = 7.107 lb/gal

Heat content diesel = 140000 BTU/gal

S concentration of 0.5%

AP-42 emission factors for large IC engines

CO = 0.81 lb/mmBTU

CO₂ = 165 lb/mmBTU

TOC (as CH₄) = 0.9 lb/mmBTU

NO_x (as NO₂) = 3.1 lb/mmBTU

Assuming complete combustion of the fuel, emissions were shown in the calculations below to be less than 250 ppm SO₂ at 7% O₂. Calculations were also done varying the fuel consumption rate. Since the theoretical air required was proportional to the fuel consumption rate, theoretical SO₂ emissions were independent of engine size or fuel consumption rate. Actual SO₂ emissions would be diluted by excess air.

Therefore, as a class, these engines cannot exceed the general standard when using fuel with S concentration < 0.5%.

Stoichiometric Calculations to Estimate SO₂ Emissions Normalized to 7% O₂ From Combustion of Diesel #2 Fuel Oil using AP-42 Factors For Large Internal Combustion Engines (> 500 HP)

Assumptions: Diesel #2 Fuel Oil (C₁₆H₂₄), 0.5wt% Sulfur; Heat Content = 140000 BTU/gal;
Case 1: 2200 HP IC Engine; Fuel consumption rate = 99.4 gal/hr.

$$MW_C := 12.01115 \frac{\text{gm}}{\text{mole}} \quad MW_O := 15.9994 \frac{\text{gm}}{\text{mole}} \quad MW_H := 1.0079 \frac{\text{gm}}{\text{mole}}$$

$$MW_S := 32.064 \frac{\text{gm}}{\text{mole}} \quad MW_N := 14.0067 \frac{\text{gm}}{\text{mole}} \quad P := 1 \cdot \text{atm} \quad MM := 1 \cdot 10^6$$

$$MW_{\text{fuel}} := 16 \cdot MW_C + 24 \cdot MW_H \quad MW_{\text{fuel}} = 216.36 \frac{\text{gm}}{\text{mole}}$$

$$MW_{\text{SO}_2} := MW_S + 2 \cdot MW_O \quad MW_{\text{SO}_2} = 64.063 \frac{\text{gm}}{\text{mole}}$$

$$MW_{\text{Air}} := 2 \cdot (.21 \cdot MW_O + .79 \cdot MW_N) \quad MW_{\text{Air}} = 28.85 \frac{\text{gm}}{\text{mole}}$$

$$MW_{\text{CO}} := MW_C + MW_O \quad MW_{\text{CO}} = 28.011 \frac{\text{gm}}{\text{mole}}$$

$$MW_{\text{CO}_2} := MW_C + 2 \cdot MW_O \quad MW_{\text{CO}_2} = 44.01 \frac{\text{gm}}{\text{mole}}$$

$$MW_{\text{CH}_4} := MW_C + 4 \cdot MW_H \quad MW_{\text{CH}_4} = 16.043 \frac{\text{gm}}{\text{mole}}$$

$$MW_{\text{NO}_2} := MW_N + 2 \cdot MW_O \quad MW_{\text{NO}_2} = 44.013 \frac{\text{gm}}{\text{mole}}$$

$$S_f := 0.005 \quad C_f := 16 \cdot \frac{MW_C}{MW_{\text{fuel}}} \quad H_f := 24 \cdot \frac{MW_H}{MW_{\text{fuel}}}$$

$$V_{\text{th_air}} := \left[1710 \left(\frac{C_f}{12} + \frac{H_f}{2} + \frac{S_f}{32} \right) \right] \frac{\text{ft}^3}{\text{lb}} \quad V_{\text{th_air}} = 222.424 \frac{\text{ft}^3}{\text{lb}}$$

$$V_{\text{fuel}} := 99.4 \frac{\text{gal}}{\text{hr}} \quad T_{\text{SC}} := 527.67 \cdot \text{R} \quad T_{\text{SC}} = 293.15 \cdot \text{K}$$

$$SO_2_{\text{conc}} := \frac{71 \cdot \text{lb}}{1000 \cdot \text{gal}} \quad R_{\text{gas}} := \frac{P \cdot 22.4 \cdot \text{liter}}{\text{mole} \cdot T_{\text{SC}}} \quad R_{\text{gas}} = 0.076 \frac{\text{liter} \cdot \text{atm}}{\text{mole} \cdot \text{K}}$$

$$S_{\text{fuel}} := SO_2_{\text{conc}} \cdot \frac{MW_S}{MW_{\text{SO}_2}} \quad S_{\text{fuel}} = 0.036 \frac{\text{lb}}{\text{gal}}$$

$$\rho_{\text{fuel}} := \frac{S_{\text{fuel}}}{.005} \quad \rho_{\text{fuel}} = 7.107 \frac{\text{lb}}{\text{gal}}$$

$$\text{Fuel} := \frac{V_{\text{fuel}} \cdot \rho_{\text{fuel}}}{\text{MW}_{\text{fuel}}} \quad \text{Fuel} = 1.481 \cdot 10^3 \cdot \frac{\text{mole}}{\text{hr}}$$

$$S := \frac{V_{\text{fuel}} \cdot S_{\text{fuel}}}{\text{MW}_S} \quad S = 49.969 \cdot \frac{\text{mole}}{\text{hr}} \quad \text{SO}_2 := S \quad \text{SO}_2 = 49.969 \cdot \frac{\text{mole}}{\text{hr}}$$

$$V_{\text{air}} := V_{\text{th_air}} \cdot \rho_{\text{fuel}} \cdot V_{\text{fuel}} \quad V_{\text{air}} = 2.619 \cdot 10^3 \cdot \frac{\text{ft}^3}{\text{min}}$$

Heat of combustion of fuel reported at 140,000 BTU/gal; however, based on AP-42 factors, results in using more fuel than what was supplied based on the stoichiometry for the combustion of fuel. By trial and error, adjusted the heat of combustion of the fuel so that the remaining amount of uncombusted carbon was essentially "zero."

$$H_{c_fuel} := 138903.34 \frac{\text{BTU}}{\text{gal}} \quad H_{c_total} := H_{c_fuel} \cdot V_{\text{fuel}} \quad H_{c_total} = 1.381 \cdot 10^7 \cdot \frac{\text{BTU}}{\text{hr}}$$

$$\text{CO}_{\text{produced}} := H_{c_total} \cdot .81 \cdot \frac{\text{lb}}{\text{MM} \cdot \text{BTU}} \quad \text{CO}_{\text{produced}} = 11.184 \cdot \frac{\text{lb}}{\text{hr}}$$

$$\text{CO} := \frac{\text{CO}_{\text{produced}}}{\text{MW}_{\text{CO}}} \quad \text{CO} = 181.104 \cdot \frac{\text{mole}}{\text{hr}}$$

$$\text{CO}_2_{\text{produced}} := H_{c_total} \cdot .165 \cdot \frac{\text{lb}}{\text{MM} \cdot \text{BTU}} \quad \text{CO}_2_{\text{produced}} = 2.278 \cdot 10^3 \cdot \frac{\text{lb}}{\text{hr}}$$

$$\text{CO}_2 := \frac{\text{CO}_2_{\text{produced}}}{\text{MW}_{\text{CO}_2}} \quad \text{CO}_2 = 2.348 \cdot 10^4 \cdot \frac{\text{mole}}{\text{hr}}$$

$$\text{CH}_4_{\text{produced}} := H_{c_total} \cdot .09 \cdot \frac{\text{lb}}{\text{MM} \cdot \text{BTU}} \quad \text{CH}_4_{\text{produced}} = 1.243 \cdot \frac{\text{lb}}{\text{hr}}$$

$$\text{CH}_4 := \frac{\text{CH}_4_{\text{produced}}}{\text{MW}_{\text{CH}_4}} \quad \text{CH}_4 = 35.134 \cdot \frac{\text{mole}}{\text{hr}}$$

$$\text{NO}_2_{\text{produced}} := H_{c_total} \cdot .31 \cdot \frac{\text{lb}}{\text{MM} \cdot \text{BTU}} \quad \text{NO}_2_{\text{produced}} = 42.802 \cdot \frac{\text{lb}}{\text{hr}}$$

$$\text{NO}_2 := \frac{\text{NO}_2_{\text{produced}}}{\text{MW}_{\text{NO}_2}} \quad \text{NO}_2 = 441.111 \cdot \frac{\text{mole}}{\text{hr}}$$

$$\text{H}_2\text{O} := \frac{24 \cdot \text{Fuel} - 4 \cdot \text{CH}_4}{2} \quad \text{H}_2\text{O} = 1.77 \cdot 10^4 \cdot \frac{\text{mole}}{\text{hr}}$$

$$\text{Air}_{\text{actual}} := \frac{P \cdot V_{\text{air}}}{R_{\text{gas}} \cdot T_{\text{SC}}}$$

$$\text{Air}_{\text{actual}} = 1.986 \cdot 10^5 \frac{\text{mole}}{\text{hr}}$$

$$\text{O}_{\text{actual}} := 2.21 \cdot \text{Air}_{\text{actual}}$$

$$\text{O}_{\text{actual}} = 8.343 \cdot 10^4 \frac{\text{mole}}{\text{hr}}$$

$$\text{N}_{\text{actual}} := 2.79 \cdot \text{Air}_{\text{actual}}$$

$$\text{N}_{\text{actual}} = 3.138 \cdot 10^5 \frac{\text{mole}}{\text{hr}}$$

$$\text{O}_{\text{remaining}} := \text{O}_{\text{actual}} - 2 \cdot \text{SO}_2 - \text{NO}_2 - 2 \cdot \text{CO}_2 - \text{CO} - \text{H}_2\text{O}$$

$$\text{O}_{\text{remaining}} = 1.804 \cdot 10^4 \frac{\text{mole}}{\text{hr}}$$

$$\text{O}_{2_{\text{remaining}}} := \frac{\text{O}_{\text{remaining}}}{2}$$

$$\text{O}_{2_{\text{remaining}}} = 9.022 \cdot 10^3 \frac{\text{mole}}{\text{hr}}$$

$$\text{N}_{\text{remaining}} := \text{N}_{\text{actual}} - \text{NO}_2$$

$$\text{N}_{\text{remaining}} = 3.134 \cdot 10^5 \frac{\text{mole}}{\text{hr}}$$

$$\text{N}_{2_{\text{remaining}}} := \frac{\text{N}_{\text{remaining}}}{2}$$

$$\text{N}_{2_{\text{remaining}}} = 1.567 \cdot 10^5 \frac{\text{mole}}{\text{hr}}$$

Verification that remaining carbon is essentially "zero".

$$\text{C}_{\text{remaining}} := 16 \cdot \text{Fuel} - \text{CO} - \text{CO}_2 - \text{CH}_4$$

$$\text{C}_{\text{remaining}} = 3.781 \cdot 10^{-4} \frac{\text{mole}}{\text{hr}}$$

Recalling that Mole % = Volume % (for gasses only) one can easily calculate the volume % of the constituents in the exiting gas stream.

$$\text{Moles}_{\text{total}} := \text{O}_{2_{\text{remaining}}} + \text{N}_{2_{\text{remaining}}} + \text{CO} + \text{CO}_2 + \text{SO}_2 + \text{NO}_2 + \text{CH}_4 + \text{H}_2\text{O}$$

$$\text{Moles}_{\text{total}} = 2.076 \cdot 10^5 \frac{\text{mole}}{\text{hr}}$$

Gas calculations are to be done on a dry basis; therefore, need to subtract out the water contribution.

$$\text{Moles}_{\text{total_dry}} := \text{Moles}_{\text{total}} - \text{H}_2\text{O}$$

$$\text{Moles}_{\text{total_dry}} = 1.899 \cdot 10^5 \frac{\text{mole}}{\text{hr}}$$

$$\text{O}_2\% := \frac{(\text{O}_{2_{\text{remaining}}} \cdot 100)}{\text{Moles}_{\text{total_dry}}}$$

$$\text{O}_2\% = 4.751$$

$$\text{N}_2\% := \frac{(\text{N}_{2_{\text{remaining}}} \cdot 100)}{\text{Moles}_{\text{total_dry}}}$$

$$\text{N}_2\% = 82.513$$

$$\text{CH4\%} := \frac{\text{CH4} \cdot 100}{\text{Moles}_{\text{total_dry}}} \quad \text{CH4\%} = 0.019$$

$$\text{SO2\%} := \frac{\text{SO2} \cdot 100}{\text{Moles}_{\text{total_dry}}} \quad \text{SO2\%} = 0.026$$

$$\text{NO2\%} := \frac{\text{NO2} \cdot 100}{\text{Moles}_{\text{total_dry}}} \quad \text{NO2\%} = 0.232$$

$$\text{CO\%} := \frac{\text{CO} \cdot 100}{\text{Moles}_{\text{total_dry}}} \quad \text{CO\%} = 0.095$$

$$\text{CO2\%} := \frac{\text{CO2} \cdot 100}{\text{Moles}_{\text{total_dry}}} \quad \text{CO2\%} = 12.364$$

Check to see if sum equals 100%

$$\text{SUM}_{\text{dry}} := \text{O2\%} + \text{N2\%} + \text{CH4\%} + \text{SO2\%} + \text{NO2\%} + \text{CO\%} + \text{CO2\%} \quad \text{SUM}_{\text{dry}} = 100$$

$$\text{ppm} := \frac{1}{1000000} \quad \text{SO2}_{7\% \text{O}_2} := \text{SO2\%} \cdot \left(\frac{14}{21 - \text{O2\%}} \right) \quad \text{SO2}_{7\% \text{O}_2} = 0.023$$

Since SO2 concentration is already in % divide by 100 to express in ppm

$$\text{SO2}_{7\% \text{O}_2} := \frac{\text{SO2}_{7\% \text{O}_2}}{100} \quad \text{SO2}_{7\% \text{O}_2} = 226.694 \cdot \text{ppm}$$

MODEL 2 Nitrogen Oxides Emission Calculations

MODEL 2B Description: Compliance with 75.5 lbs/hr NO_x (Engine E) or 42 lbs/hr NO_x (Engine W)

$$ER = F * AP_{42} * CF$$

where: ER = Emission rate for NO_x in lbs/hr

$$F = \text{Diesel burn rate (gal/hr)}$$

$$AP_{42} = \text{AP-42 factor (3.1 lbs/mmBTU)}$$

$$CF = 0.139 \text{ mmBTU/gal}$$

Assumptions: heat of combustion for diesel #2 oil = 140,000 BTU/gal
 F = 104.7 gal/hr (Engine E, 2200 hp), manufacturer's specification
 F = 90.8 gal/hr (Engine W, 1850 hp), manufacturer's specification
 ER (Engine E) = 45.1 lbs/hr
 ER (Engine W) = 39.1 lbs/hr

Monthly fuel used divided by monthly hours logged will demonstrate the average fuel consumption rate is below manufacturer's specification

Engine E will be in continuous compliance with the NO_x emission limit of 75.5 lbs/hr

Engine W will be in continuous compliance with the NO_x emission limit of 42 lbs/hr



MODEL 4 Volatile Organic Compounds Emission Calculations

MODEL 4A Description: Compliance with 50 ppm and 500 ppm VOC

Assumptions: A Total Organic Carbon Analyzer or similar instrument will be used to determine VOC concentrations in the stack effluent using EPA method 25A or an approved alternative. The VOC concentration will be determined in accordance with the frequency identified in the tables.

MODEL 4B Description: Compliance with 0.8 lbs VOC emitted in any hour

$$\text{VOC emission rate in lbs/hr} = 10 \times [\sum_{i=1 \text{ to } 3} (U_i * RF_i)]$$

Where $i=1$ for organic gases
 $i=2$ for volatile organic vapors/liquids
 $i=3$ for organic liquids

U_i = Maximum Annual Average Hourly Usage Rate (lb/hr) =
(Maximum annual usage, lbs/yr)/(8760 hrs/yr)

RF_i = Release fractions
 $RF_1 = 1$ for organic gases
 $RF_2 = 0.1$ for volatile organic vapors/liquids
 $RF_3 = 10^{-3}$ for organic liquids

Assumptions:

Maximum emission rate in any hour is 10 times the maximum annual average hourly emissions, as stated in NOC approval condition 2.

If usage is not available, U may be estimated by assuming the inventory is used in a year.

MODEL 5 Ammonia Emission Calculations

Description: Compliance with 0.05 lbs/hr NH₃

$$ER = C * S_f * CF$$

where: ER = Emission rate for NH₃ in lbs/hr

C = Concentration of NH₃ in ppm

S_f = Stack flow (Vent & Balance measurements)

$$CF = 2.20 \text{ E-6} * 1.70 * 0.71 = 2.66 \text{ E-6} \frac{\text{lb}}{\text{ppm} * \text{cfm} * \text{hr}}$$

conversion from mg to lbs, m³/hr to cfm, ppm NH₃ to mg/m³

Assumptions: Stack exhausts at ambient temperature

Vent & Balance measurements for average stack flow

Draeger tube measurement for NH₃ (minimum of one per year) during operations will demonstrate NH₃ levels are below the threshold which would be equal to 0.05 lbs/hr

If measurements during peak activities are below threshold, continuous compliance

is
ppm.

assumed. For example, at 800 cfm, the concentration of NH₃ must be below 23.5

MODEL 6 Emissions from 305 B Gas Cylinder Management Process (GCMP)

GCMP emissions will be determined by recording the daily volume and concentration emitted for each cylinder. The volumes and concentrations will be based on the known and recorded pressures and concentrations in the cylinders, or upper-bounding estimates if unknown.

MODEL 7A – Emissions from Use of Chemical Inventory

Emissions:

Emissions from the use of the chemical inventory in the building will be determined as follows:

Use rate x release fraction x (1-control efficiency).

In addition to chemical use rate, chemical inventory data may be used to estimate emissions. If the inventory information is used, the annual ASILs will be determined assuming the entire inventory is released in a year, and the 24-hour ASILs will be determined assuming the entire inventory is released during 20 days. The above methods and assumptions may be modified with Ecology's concurrence.

MODEL 7B – Air Concentrations for Comparison to ASILs

Total Building Emissions:

Calculate a building's total emissions by summing those due to the use of chemical inventory from Model A and those from additional processes in the building whose emissions are not included in Model A.

Total Building Ambient Air Concentrations

Calculate the air concentrations at the nearest points of unrestricted or uncontrolled public access to the building using the EPA T-Screen or ISCST3 dispersion models and compare them to the ASILs.

MODEL 7C – Emission calculations for LERF/ETF:
Air Emission Concentrations for Comparison to ASILs and SQER

1. Emission concentrations (to compare to ASIL):

$$AC_i = TR_i * FC_i$$

AC_i : air concentration of species i, ug/m³
 TR_i : transfer rate of species i, unitless
 FC_i : feed concentration of species i, ug/m³

Transfer rates vary depending on the species. For acids, bases, and salts, a TR of 1E-12 is given in DOE/RL-92-69. For other species it can be calculated using a variation of Raoult's Law:

$$TR_i = \left[\frac{1/MW_i}{DENSITY_i/MW_i} \right] * \left(\frac{VP_i}{760} \right) * \left[\frac{273/(T + 273)}{22.4} \right] * MW_i$$

TR_i : transfer rate of species i, unitless
 MW_i : molecular weight of species i, kg/kgmol
 $DENSITY_i$: density of pure liquid species, kg/m³
 VP_i : vapor pressure of pure liquid species i at temperature T, mmHg
T : temperature, °C
Other values are conversion factors

Typical transfer rates: acetone = 1E-03
 carbon tetrachloride = 1E-03
 butanol = 1E-04
 TBP = 1E-05

2. Hourly emission rate (to compare to SQER):

$$ERH_i = AC_i * FLOW * 0.02832 * 2.205 * 60 / 1,000,000$$

ERH_i : hourly emission rate of species i, lb/hr
 AC_i : air concentration of species i, ug/m³
FLOW : ETF vessel off-gas flowrate = 27,250 ft³/min
Other values are conversion factors

3. Annual emission rate (to compare to SQER):

$$ERY_i = ERH_i * 24 * 365$$

ERY_i = annual emission rate of species i, lb/yr
Other values are conversion factors.



MODEL 10A Rotary Mode Core Sampling: Emission estimates for Ammonia

Ammonia emissions - vapor composition analysis:

A sample of the vapor space analysis for each passively ventilated tank scheduled for rotary mode core sampling will be obtained as part of the preoperational steps.

Conversion of vapor space sample from parts per million (ppm) by volume to mg/m^3 :

$$[\text{NH}_3(\text{ppm}) \times (\text{gram molecular wt.})] / 24.45 = \text{NH}_3 (\text{mg}/\text{m}^3)$$

Conversion of vapor space sample from mg/m^3 to pounds per hour at $5.7 \text{ m}^3/\text{min}$:

$$[\text{NH}_3 (\text{mg}/\text{m}^3)] \times (339.8 \text{ m}^3/\text{hr}) \times (\text{lb} / 453.593 \text{ mg}) = \text{NH}_3 (\text{lb} / \text{hr})$$

Conversion of vapor space sample from mg/m^3 to pounds per hour at $5.7 \text{ m}^3/\text{min}$:

$$[\text{NH}_3 (\text{mg}/\text{m}^3)] \times (339.8 \text{ m}^3/\text{hr}) \times (\text{lb} / 453.593 \text{ mg}) = \text{NH}_3 (\text{lb} / \text{yr})$$

Where operating time = 672 hr /6 mo

Note: the vapor space sampling data comes from the TWINS database

MODEL 10B Rotary Mode Core Sampling: Emission estimates for Class A and Class B TAPs

Class A and Class B TAP emissions - vapor composition analysis:

A sample of the vapor space analysis for each passively ventilated tank scheduled for rotary mode core sampling will be obtained as part of the preoperational steps.

Conversion of vapor space sample from parts per million (ppm) by volume to mg/m^3 :

$$[\text{TAP}(\text{ppm}) \times (\text{gram molecular wt.})] / 24.45 = \text{TAP} (\text{mg}/\text{m}^3)$$

Conversion of vapor space sample from mg/m^3 to pounds per hour at $5.7 \text{ m}^3/\text{min}$:

$$[\text{TAP} (\text{mg}/\text{m}^3)] \times (339.8 \text{ m}^3/\text{hr}) \times (\text{lb} / 453.593 \text{ mg}) = \text{TAP} (\text{lb} / \text{hr})$$

Conversion of vapor space sample from mg/m^3 to pounds per hour at $5.7 \text{ m}^3/\text{min}$:

$$[\text{TAP} (\text{mg}/\text{m}^3)] \times (339.8 \text{ m}^3/\text{hr}) \times (\text{lb} / 453.593 \text{ mg}) = \text{TAP} (\text{lb} / \text{yr})$$

Where operating time = 672 hr /6 mo

TAP = individual Class A or Class B TAP

Note: the vapor space sampling data comes from the TWINS database

MODEL 10C Description: VOC emissions on a daily average

Compliance with NSR VOC emission limit on a daily average:

$$[2 \text{ ton (2000 lb/ton)}] / 365 = 24[(\text{VOC mg/m}^3) \times (339.8 \text{ m}^3/\text{hr}) \times (\text{lb} / 453.593 \text{ mg})] = \text{VOC (lb/day)}$$

Where:

2 tons/year = WAC 174-400-110 NSR threshold for VOCs

1 year = 365 days

1 day = 24 hours

339.8 m³/hr = volumetric flow rate

1 lb = 453.593 mg

VOC mg/m³ = vapor space sampling data from the TWINs database

Attachment 2

HANFORD RADIOACTIVE AIR EMISSION LICENSE

State of Washington Department of Health

License Number: FF-01

(as part of NWP-AOP-00-1)

Issue Date:

Effective Date:

Expiration Date:

The Licensee; U.S. Department of Energy, Hanford Site, 825 Jadwin Ave., Richland, Washington 99352; is required to comply with all applicable paragraphs contained in the chapter 246-247 Washington Administrative Code (WAC) Radiation Protection -- Air Emissions.

Dated at Richland, Washington this XX day of (Xmonth) 2001

Reviewed By:

License Writer

Approved By:

Head, Air Emissions and Defense Waste Section

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1.0 EMISSION STANDARDS

The emission of radionuclides to the ambient air from the Department of Energy facility as set forth in 40 CFR 61.92 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 per year. [WAC 246-247-040]

2.0 APPLICABLE REQUIREMENT TERMS

WAC 246-247 is a state only applicable requirement.

2.1 Notice of Construction Requirements

A Notice of Construction (NOC) is written information submitted under WAC 246-247-060(1) and (2) that provides information listed in WAC 246-247-110 "Appendix A - Application information requirements." This information must include the effective dose equivalent (EDE). The EDE is calculated using the source term derived from 40 CFR Part 61 Appendix D, or other EPA, or State of Washington, Department of Health (Health) approved method. The calculated EDE is input to the dispersion and other computer models described in 40 CFR 61.93 using abated emissions to calculate the dose.

WAC 246-247-060(1) requirements for new construction or modification of emission units are as follows:

Early in the design phase, the applicant shall submit a NOC containing the information required in Appendix A of WAC 246-247.

Within thirty days of receipt of the NOC, Health shall inform the applicant if additional information is required. The department may determine, on the basis of the information submitted, that the requirements of BARCT or ALARACT have been met, or may require the applicant to submit a BARCT or ALARACT demonstration compatible with Appendix B or C of WAC 246-247, respectively.

Within sixty days of receipt of all required information, Health shall issue an approval or denial to construct. The department may require changes to the final proposed control technology.

The applicant may request a phased approval process by so stating and submitting a limited application. Health may grant a conditional approval to construct for such activities as would not preclude the construction or installation of any control or monitoring equipment required after review of the completed application.

Health shall issue a license, or amend an existing license, authorizing operation of the emission unit(s) when the proposed new construction or modification is complete. For facilities subject to the air operating permit requirements of chapter 173-401, the license shall become part of the air operating permit issued by the Department of Ecology or a local air pollution control authority. For new construction, this action shall constitute registration of the emission unit(s).

WAC 246-247-060(2) requirements for modification of unregistered emission units that are not exempt from the regulations are as follows:

The applicant shall submit an application containing the information required in Appendix A of WAC 246-247.

Within thirty days of receipt of the application, Health shall inform the applicant if additional information is required. The department may determine, on the basis of the information submitted, that the requirements of BARCT or ALARACT have been met, or may require the applicant to submit a BARCT or ALARACT demonstration compatible with Appendix B or C of WAC 246-247, respectively.

Within sixty days of receipt of all required information, Health shall issue or amend the license. For facilities subject to the air operating permit requirements of Chapter 173-401, the license shall become part of the air operating permit issued by the department of ecology or a local air pollution control authority. This action shall constitute registration of the emission unit(s). A determination of non-compliance may result in the issuance of a Notice of Violation.

Health reserves the right to require the owner of an existing, unregistered emission unit to make modifications necessary to comply with the applicable standards of WAC 246-247-040.

The department of Energy shall notify the department of Health at least seven calendar days before any planned pre-operational tests of new or modified emission units that involve emissions control, monitoring, or containment systems of the emission unit(s). The department reserves the right to witness these tests under WAC 246-247-060 (4).

2.2 ALARACT Demonstration Requirements

The ALARACT requirement means the use of radionuclide emission control technology that achieves emission levels that are consistent with ALARA. ALARACT compliance is demonstrated by evaluating the existing control system and proposed nonsignificant modification in relation to applicable technology standards and other control technologies operated successfully in similar applications. An ALARACT compliance demonstration is used for inspection or audit purposes, and to demonstrate compliance with the substantive ALARACT technology standard. The requirement for these demonstrations is considered applicable to this license. Demonstrations reflect good industrial practice and will minimize emissions until the work practices can be completed. Determination of whether good industrial practice is being used will be based on available information such as, but not limited to, monitoring results, review of operations and maintenance procedures, and inspections of the emission unit or equipment. Specific provisions of the ALARACT demonstrations other than those required by specific requirements in this license and monitoring activities under section 3, 5, and in tables 1.1, 1.2, and 2 shall not be deemed a part of this license. [WAC 246-247 030(4)] [WAC 246-247 130(Appendix C)]

2.3 Federally Enforceable Requirements

40 CFR 61 is a federally enforceable applicable requirement

DOE must submit to the U.S.EPA Region X Administrator, applications for approval of construction for any new source or modification of any existing source that emits radionuclides as required by 40 CFR 61.07 and 40 CFR 61.96. Additionally, DOE shall submit notifications of startup as required by 40 CFR 61.09.

3.0 MONITORING AND TESTING

3.1 Monitoring and Testing for Tables 1.1 and 1.2

All required monitoring must be performed under WAC 246-247-075 and described in the paragraphs referenced below.

All required stack monitoring not otherwise specified shall conform to the monitoring and testing requirements of 40 CFR 61, Subpart H.

All required monitoring equipment shall conform to the requirements in WAC 246-247-075(2).

In accordance with WAC 246-247-075(4) approval may be granted by the department to allow alternative monitoring procedures if continuous monitoring is not a feasible or reasonable alternative. Periodic confirmatory measurements, when employed, must be performed during process operations to verify low emissions. Under 40 CFR 61.93(b)(2)(ii), samples must be collected with sufficient frequency to provide a representative sample of the emissions during normal operations.

Figure 1. may be used to select an approved alternate monitoring scenario for stacks listed in Table 1.1 (stacks with PTE < 0.1 mrem/yr). A seven-day notification must be given to the Department before implementing a chosen scenario.

The department may require the owner or operator to make provisions at existing emission unit sampling stations, for the department to take split or co-located samples of the emissions.

[WAC 246-247-075(10)]

Note: Monitoring needs only to occur if the emission unit operates during the year.

The shrouded probe is an approved stack sampling technology for both continuous monitoring of major stacks and periodic confirmatory measurement of minor stacks.

[WAC 173-401-615]

Figure 1. Process for Changing Periodic Confirmatory Measurement Methods for Table 1.2 Minor Stacks*

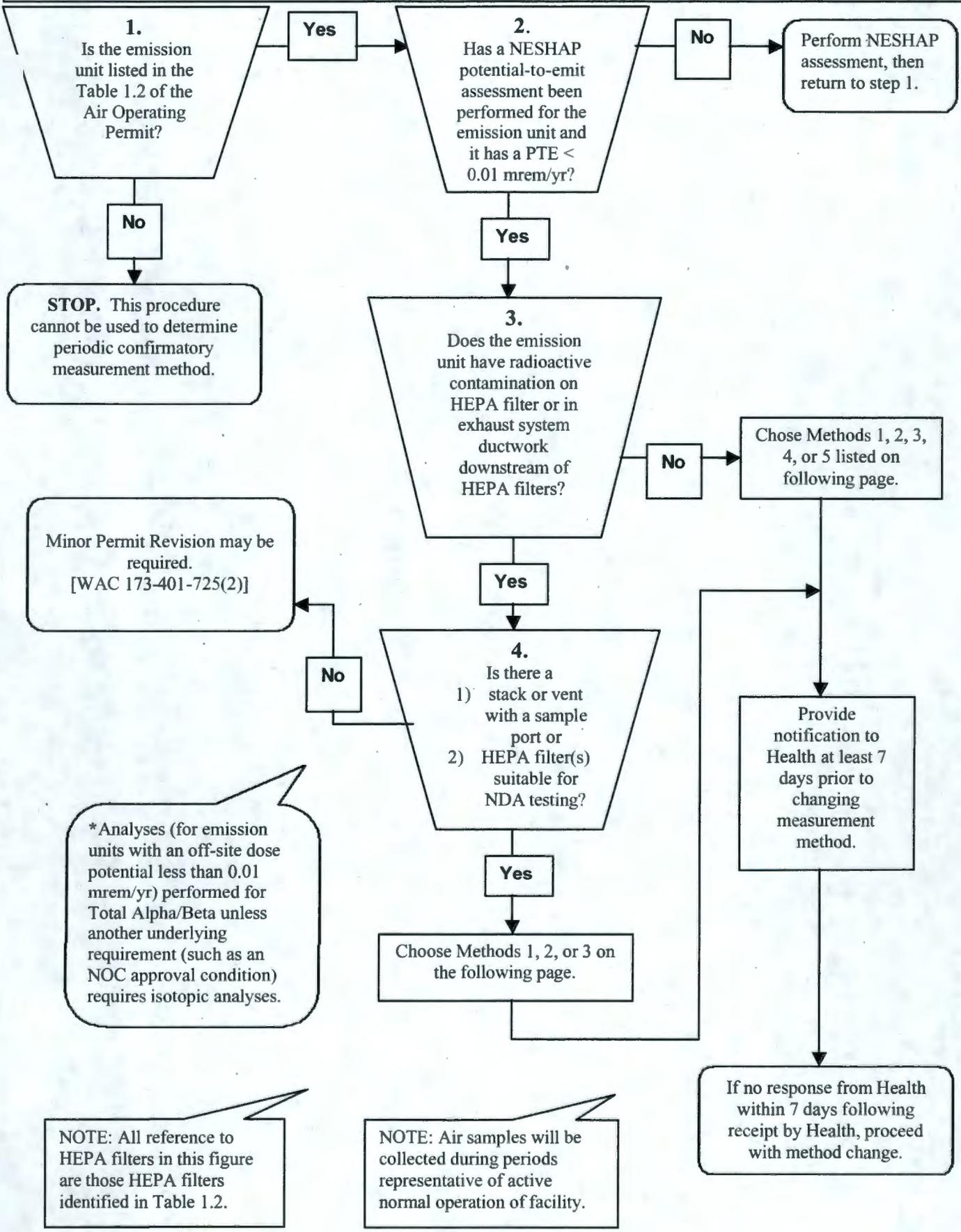


Figure 1. Continued (Process for Changing Periodic Confirmatory Measurement Methods for Table 1.2 Minor Stacks)

Acceptable Methods

	<p>Method 1. Perform Record Stack Sampling a minimum of one week per calendar year or as negotiated with Health.</p>	
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	<p>Method 2. Perform NDA test a minimum of one time every calendar year or as negotiated with Health.</p>	
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	<p>Method 3. Engineering Calculations</p>	
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	<p>Method 4. Upstream air samples from areas within the facility with representative radioactive contamination performed a minimum of one week per calendar year at each sample location or as negotiated with Health</p>	
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	<p>Method 5. Wipe samples of interior surfaces with representative radioactive contamination a minimum of once per calendar year or as negotiated with Health.</p>	
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3.2 Compliance Assurance Monitoring

This section specifically addresses newly discovered sources of emissions from the legacy of operations on the Hanford site. The licensee must establish methods to assure compliance for any unlicensed source of radioactive airborne emissions at Hanford. These methods must determine a means to describe emission monitoring, recordkeeping, and reporting. The licensee must document the compliance methods and notify the department for inclusion into the license. The department will evaluate the compliance methods and may determine that additional monitoring is necessary. Upon approval, the department will identify and add the emission source in the license by an administrative modification to the permit.

[WAC 246-247-060]

4.0 QUALITY ASSURANCE, REPORTING AND RECORDKEEPING

4.1 Quality Assurance for Tables 1 and 2

A quality assurance program must be conducted and documented under the standards referenced in WAC 246-247-075(6) and 40 CFR Part 61, Method 114 (4) Quality Assurance Methods.

Under WAC 246-247-075(6), the licensee must have a documented quality assurance program compatible with the requirements of ANSI/ASME NQA-1, NQA-2, QAMS-004 and QAMS-005. The licensee must respond to formal audit findings and corrective actions documented by Health. Written response must include measures to prevent recurrence and action(s) taken or planned. Health will evaluate the adequacy of the audit responses and may take follow-up actions to verify that corrective action was accomplished.”

The licensee must be able to demonstrate the reliability and accuracy of the radioactive air emissions monitoring data.

[WAC 246-247-075(13)]

4.2 Recordkeeping

Records must be maintained on site for a period of five years from the date of the monitoring sample, measurement, report or application for all required monitoring data and support information. Support information includes all calibration and maintenance records, all original continuous monitoring records (such as strip charts or equivalent), and required reports. [WAC 246-247-080(8), WAC 173-401-615(2)(a), WAC 173-401-615(2)(c)]

The following is a list of requisite retrievable records. Electronic or hard copy records will satisfy these requirements.

Sub-section 1 - Records Required by 40 CFR 61.14 (f) and WAC 246-247-080.

[Note: For NESHAP Major Designated Stacks Only]

Calibration Records

- Records and procedures for stack sampling system instrumentation , functional checks/periodic calibrations (i.e. vacuum gauges, rotameters, and gas meters).

Monitoring Data

- Stack flow data, and sampling data including flow rate calculations (e.g. vent and balance).
- The Radioactive Air Emissions Report for the Hanford Site (NESHAP annual report)
- Documentation verifying compliance with Quality Assurance requirements of 40 CFR 61, Subpart H, Appendix B, Method 114 (e.g., The Quality Assurance Program for Radionuclide Airborne Emissions Monitoring, the Effluent Monitoring Quality Assurance Project Plan for Radioactive Airborne Emissions Data, and the Quality Assurance Plan for Facility Effluent Monitoring.)
- Records documenting periods of malfunction or in operation (i.e., monitoring system down time)

Sub-section 2 - Records Required by 40 CFR 61.95 and WAC 246-247-080.

[Note: As Applicable, For All Sources of Radioactive Air Emissions]

Monitoring Data (for powered, ventilated point sources)

- Stack flow data, and sampling data including flow rate calculations (e.g. vent and balance).
- The Radioactive Air Emissions Report for the Hanford Site (NESHAP annual report)
- NESHAP assessments

Passively Ventilated Point Sources

Nonpoint Source and Fugitive Emissions

- The Radioactive Air Emissions Report for the Hanford Site (NESHAP annual report)
- The annual Hanford Site Environmental Report

Notices of Construction

- Notice of Construction Applications
- Approval orders (letters) from EPA/WDOH including any additional approval conditions

Sub-section 3 - State-only Records Required by WAC 246-247-080(8)

BARCT and ALARACT Demonstrations

- Records of Best Available Radionuclide Control Technology (BARCT) and/or As Low As Reasonably Achievable Control Technology (ALARACT) demonstrations

Drawings and Blueprints (for major stacks)

- Configuration drawings and/or process flow diagrams of radioactive air emission unit effluent control and monitoring systems

Line Loss Studies (if performed)

- Estimated and documented line losses and sample collection efficiency studies completed at the direction of the WDOH

Calibration and Maintenance Records and Procedures

- Maintenance records, maintenance procedures, and all original strip chart records (major stacks) or equivalent for all stack sampling system instrumentation (e.g., continuous air monitoring-record samplers, probes, pumps, rotameters, flow regulators, pressure gauges, totalizers, gas meters, and flow switches) as appropriate for methods identified in Tables 1.1 and 1.2
- Functional checks/periodic calibration records and procedures for all nondesignated stack instrumentation (i.e., vacuum gauges, rotameters, and gas meters).
- Maintenance records and maintenance procedures for required abatement control technology equipment identified in Tables 1.1 and 1.2

Efficiency Tests of high efficiency particulate air (HEPA) filters

- Test procedures and results of the HEPA filter/aerosol tests.

Training

- Training records of personnel and supervisors specific to the operation and maintenance of radioactive air emission units.

Reports

- Reports of closure
- 10-day notification follow-up reports

Operation Log

- Categorically approved units
- Specific regulatory order approval condition

Quality Assurance Program

- Documentation verifying compliance with Quality Assurance requirements of WAC 246-247-075(6) (e.g., The Quality Assurance Program for Radionuclide Airborne Emissions Monitoring, the Effluent Monitoring Quality Assurance Project Plan for Radioactive Airborne Emissions Data, and the Quality Assurance Plan for Facility Effluent Monitoring.)

A log must be maintained under WAC 246-247-080(7) for portable units given categorical approval to operate under this license. The log must contain relevant operation parameters including the date, location, duration of the release, measured or calculated radionuclide concentrations, the type of emissions (liquid, gaseous, solid), and the type of emission control and monitoring equipment.

[WAC 173-401-615(2)]

4.3 Reporting

Reports must be submitted as required in section 4.3 of the Standard Terms and Conditions of the Hanford Air Operating Permit.

5.0 EMISSION UNITS SPECIFIC APPLICABLE REQUIREMENTS TABLES

The following tables list the regulatory requirements for monitoring, emission abatement and specific limits and conditions in approved Notice of Construction applications.

Tables 1.1 and 1.2 abatement technology requirements are state-only enforceable requirements.

Table 1.1 and 1.2 identify specific BARCT and ALARACT requirements for major (NESHAP designated) stacks and minor (non-designated) stacks, respectively. Required abatement technology includes:

1. Primary controls, e.g. HEPA filters, carbon filters.
2. Other listed equipment necessary to ensure the integrity or support the operations of the primary controls.
3. Fans identified as required abatement technology equipment are exhaust fans.
4. The use of units identified as backup, standby, and intermittent units do not constitute the loss of required emission controls.

Table 2 identifies passively ventilated minor point sources in high level waste tank farms with emission controls.

Tables 1.1 and 1.2 identify emission unit applicable federal and state enforceable monitoring requirements.

Table 1.1 identifies specific monitoring and testing requirements, isotopic measurements, and sampling frequencies for major (NESHAP designated) stacks.

Table 1.2 identifies specific monitoring, testing and sampling requirements and frequencies for minor (non-designated) stacks. Allowable methods for required sampling include Record sampling, Upstream sampling, and Non-destructive Assessment (NDA).

Table 2 identifies passively ventilated minor source monitoring requirements for high level waste tank farms.

Table 3 identifies non-point emission monitoring requirements. (Ref: WAC 246-247-075(8)).

Tables 1.1 and 1.2 also contain Notice of Construction conditions and limits for approval to construct, modify, and operate an emission unit; and identifies Federal or State only applicable requirements under 40 CFR 61.06, or WAC 246-247-060 respectively.

(1) All information from the NOC must represent the emission unit(s) and are considered applicable requirements. Modification approval is required before any change is made to a specific applicable requirement. Modification approval is required if this change could increase the amount of radioactive materials emitted or may result in the emission of any radionuclide not previously emitted. Modification approval is not required for any process system change, or description in any NOC that qualifies under the provisions of WAC 173-401-722 and 724.

(2) Inspections reporting, and record keeping shall be maintained under WAC 246-247-080.

(3) Monitoring, testing, and quality assurance shall be performed under WAC 246-247-075.

*ABATEMENT TECHNOLOGY SPECIFIC REQUIREMENTS.

(Applicable to the DCRTs listed in Table 1.1)

1. May continue to operate with existing unmodified equipment provided continued operations do not include new or modified source terms outside of existing mission.

2. The existing system may not be used to support decontamination and decommissioning without Health's prior approval.

Exclusions to conditions 1 and 2:

Conditions 1 and 2 shall not apply to activities to isolate and /or stabilize each facility for near- or long-term safe passive or active management.

3. Operations to support the existing missions may continue using exiting filter test methods.
4. A date for cessation of operations or a schedule for upgrade will be provided if life and mission extension is proposed.
5. Restart of active ventilation after the cessation date will require notification to Health and could be subject to inspection by Health verifying ALARACT.
6. Enhanced emissions trending with defined parameters be provided for, process, frequency, and action levels. Process support equipment (fan interlocks, DP gauges, etc.) shall be regulated as abatement technology for these units.
7. It is recognized extended facility life is possible for 244-A, 244-S and 244-TX. These units are to be assessed for standards compliance and/or actions triggering modification under WAC 246-247-040 and WAC 246-247-060, respectively, if life and mission extension is requested. Upgrades will be evaluated and implemented accordingly.

Note: All Tank Farm stacks and associated equipment operate intermittently.

Table 1.1 Requirements for major point sources**100K Cold Vac. Drying****Cold Vacuum Drying**

COLD VACUUM DRY SYSTEM BLDG (CVS)

Emission Unit ID: 436

Abatement Technology (state only enforceable)

Applicable Requirements:

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Description of Abatement Technology	Required Number of Units	Additional Description/Conditions
	[WAC 246-247-010(4)]	[WAC 246-247-10(4)(5)]	[WAC 246-247-101(4)]
	[WAC 246-247-040(5)]	[WAC 246-247-060(5)]	[WAC 246-247-040(5)] [WAC 246-247-060(5)]

Monitoring Requirements (state and federally enforceable)

Federal and State Regulatory Requirements	Monitoring and Testing Procedure	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	[WAC 246-247-040(5)] [WAC 173--401-615(1)]	[WAC 173-401-615(1)]	[WAC 246-247-075(1)] [WAC 173-401-615(1)]
		All radionuclides which could contribute 10% of the potential EDE.	Monthly Sample

This Emission Unit has 3 active Notice of Construction.

Project Title	Permit No	Date Approved	NOC_ID
Cold Vacuum Drying Facility, Phase II	NOC revision approval	3/21/00	438

Conditions (state only enforceable)

Cold Vacuum Drying

1. No WDOH conditions apply to this NOC.

Project Title	Permit No	Date Approved	NOC_ID
Cold Vacuum Drying Facility, Project W-441, Phase II, Revision 1	AIR 99-804	8/5/99	382

Conditions (state only enforceable)

Cold Vacuum Drying

1. This unit must be fully accessible to Department of Health inspectors. If there are any specific training requirements or have restrictions or special requirements for entry, they must be given to the department when they are known to allow for unannounced inspections, as required by EPA (WAC 246-247-080(9)). At a minimum, for unannounced inspections, such requirements or restrictions must be told to inspectors that morning, with the opportunity for the inspectors to meet those requirements. For prior announced inspections, such notification must occur far enough in advance for the inspectors to have

reasonable time to meet the requirements.

2. U.S. DOE shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
3. The facility shall notify the department at least seven days prior to any planned preoperational testing of the emission unit's emissions control, monitoring or containment systems. The department reserves the right to observe such tests (WAC 246-247-060(4)).
4. Records must be readily (promptly) available for this unit. Those records must be maintained onsite, and must be retained for at least 5 years (WAC 246-247-080(8)).
5. The abated dose limit for this facility shall not exceed 0.0042 mrem/yr to the MEI as described in the NOC revision.
6. All reports and records must be kept and reported according to 40 CFR 61, Subpart H (WAC 246-247-080(2)).
7. The facility shall make requested documents available in a timely manner for review. (WAC 246-247-080(10)).
8. When this project is completed, or operations cease, the facility shall notify the department via a report of closure, including whether or not any potential for airborne releases occurred (WAC 246-247-080(6)).
9. This approval, with its Conditions and Limitations, constitutes an amendment to the Department's Radioactive Air Emission License. This amendment must be included in the next revision of the Hanford Air Operating Permit (WAC 246-247-060(1)(e) and (2)(c)).
10. All measured or calculated emissions must be reported annually (WAC 246-247-080(3)).
11. The department retains the right to conduct its own stack sampling, environmental monitoring or other testing, as required around this unit to assure compliance. If the department so decides, the facility must make provision for such testing (WAC 246-247-075(10) and (11)).
12. The department reserves the right to inspect and audit this unit during construction and operation, including all activities, equipment, operations, documents, data, and other records related to compliance with the regulations (WAC 246-247-080(1)).
13. The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
14. These conditions and limitations must be proceduralized prior to starting the activities described in the Notice of Construction.
15. The facility must be able to demonstrate the reliability and accuracy of emission data and other test results from this unit (WAC 246-247-075(13) and WAC 246-247-075(6)). The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards listed in, or equivalent to, those listed in, or equivalent to, those listed in the above cited regulation.
16. If the department finds that the emission unit described in this NOC, is not in compliance with the standards in WAC 246-247-040 during construction, as described in this NOC, or during operation, it reserves the right to require modifications to bring it into compliance (WAC 246-247-060-(2)(d)).
17. The facility must be able to demonstrate that the workers associated with this emission unit are adequately trained in the use and maintenance of emission control and monitoring systems, and in the performance of associated test and emergency response procedures (WAC 246-247-075(12)).
18. Equipment and procedures for continuous monitoring shall conform to ANSI N13.1 (1999). The specific design must be approved by the department prior to installation. Any deviation from ANSI N13.1 must be approved by the department prior to construction (WAC 246-247-075(2)).
19. If there is an unexpected release of radioactivity or if there is a shutdown or other condition that, if it were allowed to persist, would result in emissions of radionuclides in excess of any standards or limitations in the license or that last more than four hours, it must be reported to the department within 24 hours. Applicable standards (WAC 246-247-040) include unit specific emission limits (paragraph 5), the offsite dose standard (paragraph 1), BARCT (paragraph 3) or ALARACT (paragraph 4), whichever is applicable, or any limitations included in the approval

(paragraph 5).

Project Title

Cold Vacuum Drying - Phase II

Permit No

AIR 97-605

Date Approved NOC_ID

6/19/97 229

Conditions (state only enforceable)

Cold Vacuum Drying

1. The stack monitoring system must be continuous and NESHAPs compliant.
2. Prior to start-up of this facility (WAC 246-247-060)(4), the department shall be notified.
3. All controls, as described in the amended NOC are required, & building HEPA filters meet ASME/ANSI N509 &N510.
4. The CVDF shall consist of up to six process bays in which SNF transport trailers can be housed while water is drained and vacuum/gas purge process dries SNF. It shall have a support area consisting of a control room, change rooms, and other functions.

200 P-296P032-001**296-P-32**

ROTARY MODE CORE SAMPLER

Emission Unit ID: 145

Abatement Technology (state only enforceable)

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Description of Abatement Technology [WAC 246-247-010(4)] [WAC 246-247-040(5)]	Required Number of Units [WAC 246-247-10(4)(5)] [WAC 246-247-060(5)]	Additional Description/Conditions [WAC 246-247-101(4)] [WAC 246-247-040(5)] [WAC 246-247-060(5)]
	Fan	1	1 flow path with 2 HEPA's
	HEPA	2	
	Prefilter	1	
	Heater	1	

Monitoring Requirements (state and federally enforceable)

Federal and State Regulatory Requirements	Monitoring and Testing Procedure [WAC 246-247-040(5)] [WAC 173-401-615(1)]	Radionuclides Requiring Measurement [WAC 173-401-615(1)]	Sampling Frequency [WAC 246-247-075(1)] [WAC 173-401-615(1)]
40 CFR 61.93(b)(4) & WAC 246-247-75(2)	Method 2 appendix A Method 114 appendix B 61.93(b)(2)(ii) ANSI N13.1	All radionuclides which could contribute 10% of the potential EDE.	Continuous

This Emission Unit has 1 active Notice of Construction.

Project Title	Permit No	Date Approved	NOC_ID
Use of a portable exhauster at 244-AR Vault., Rev. 2	RTAM	2/17/99	343

Conditions (state only enforceable)

296-P-32

1. This approval to commence the project is valid for two years from the date of this letter. If the project does not commence within that window, the approval is void.
2. The calculated offsite dose from this project shall not exceed 2.1E-4 mrem/yr to the maximally exposed individual.
3. Control System: The ventilation system will be comprised of a G-1 Series HEPA filter, a prefilter, two HEPA filters, all in series, and the exhaust fan and stack. The RMCS dual HEPA filters shall be testable as a single unit for this application only and are acceptable as equivalent for this NOC only. They must be successfully tested before startup.
4. All health physics practices, contamination control and monitoring activities applicable to the control and monitoring of radioactive air emissions must be incorporated into procedures prior to beginning this project.
5. Abated Dose: The potential abated dose to the maximally exposed individual is not to exceed 2.1 E-04

millirem per year. Actual emissions are limited to the abated curies per year listed in Table 2 of AIR 97-1007. No radionuclide that is not listed in this table may be emitted in any detectable concentrations.

6. The G-1 filter shall be fully testable to ANSI/ASME N509/510 standards and shall be successfully tested before use in this application.
7. The approval to operate the exhauster is valid for ten years from the date of this letter. Operations beyond that time requires re-approval.
8. The project described in the NOC, DOE/RL-97-05 Revision 2, is approved with the following conditions and limitations: Process Description: The 244-AR Vault portable exhauster shall be only allowed for air jetting activities of accumulated liquids from the cell sumps into the tanks and for transfers among the tanks within the vault. Permission to use the exhauster for other purposes is strictly not approved.
9. 296-A-13 cannot be used for two separate emission units with different monitoring and control equipment.
10. Monitoring system: The stack sampler will operate continuously during exhauster operation and it shall be considered a NESHAPS major stack. The monitoring system design and operation shall be fully compliant with 40 CFR 61 and ANSI N13.1 requirements & guidance.
11. If personnel enter the building during air jetting or transfers the exhauster must be operating to pull a negative pressure through the controls. A negative pressure must be pulled on all four tanks through a common header at 5.7 cubic meters/minute.
12. The stack identification numbers 296-A-12 and 296-A-13 cannot be used to identify the portable exhauster WDOH. WDOH shall be notified of the stack identification number prior to startup.

200 P-296P033-001

296-P-33

ROTARY MODE CORE SAMPLER

Emission Unit ID: 144

Abatement Technology (state only enforceable)

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Description of Abatement Technology [WAC 246-247-010(4)] [WAC 246-247-040(5)]	Required Number of Units [WAC 246-247-10(4)(5)] [WAC 246-247-060(5)]	Additional Description/Conditions [WAC 246-247-101(4)] [WAC 246-247-040(5)] [WAC 246-247-060(5)]
	Fan	1	1 flow path with 2 HEPA's each
	HEPA	2	
	Prefilter	1	
	Heater	1	

Monitoring Requirements (state and federally enforceable)

Federal and State Regulatory Requirements	Monitoring and Testing Procedure [WAC 246-247-040(5)] [WAC 173--401-615(1)]	Radionuclides Requiring Measurement [WAC 173-401-615(1)]	Sampling Frequency [WAC 246-247-075(1)] [WAC 173-401-615(1)]
40 CFR 61.93(b)(4) & WAC 246-247-75(2)	Method 2 appendix A Method 114 appendix B 61.93(b)(2)(ii) ANSI N13.1	All radionuclides which could contribute 10% of the potential EDE.	Continuous

This Emission Unit has 1 active Notice of Construction.

Project Title	Permit No	Date Approved	NOC_ID
Rotary Mode Core Sampling (RMCS) Systems 3 & 4, Rev. 1	AIR 98-301	3/6/98	261

Conditions (state only enforceable)

296-P-33

1. Since data and drawings were not provided for the C tank farm exhauster, a separate NOC and approval shall be required to use the RMCS with C tank farm exhaust system, and shall not be allowed by this license
2. Both HEPA filters on the RMCS exhausters shall be testable. It is understood that manifolds can not be installed, so prior to use, an equivalency demonstration for ASME N509.5.6.5.1 must be approved which demonstrates that the second bank is testable.
3. The RMCS exhauster system consists of a first stage (optional) in-riser prefilter, and a second stage prefilter, a heater, two HEPAs, and exhaust fan.
4. The exhauster shall be continuously monitored, while in use, as required by 40 CFR 61. The monitoring systems must be fully compliant with ANSI N13.1.
5. The exhauster shall be continuously operated when the RMCS is in use and samples are being collected in this mode.

6. WDOH Conditions and Limitations dated September 3, 1997 (AIR 97-901) are applicable. There are no new WDOH conditions that apply to this NOC.
7. No activity, not described in this NOC, is approved for the RMCS exhausters.
8. This NOC is only approved for use for a period of ten years from the date of this approval. Any other uses not described in this NOC require a separate NOC.
9. The exhauster shall be continuously monitored, while in use, as required by 40 CFR 61. The monitoring systems must be fully compliant with ANSI N13.1.
10. Work practices encompassing ALARA principles will be followed in accordance with site procedures when moving the RMCS to another site.
11. RMCS 2, 3, & 4 exhausters shall operate as major designated NESHAPs stacks.
12. A separate NOC and approval shall be required to use the RMCS with SX tank farm exhaust system, and shall not be allowed by this license.
13. The HEPA filters must be tested prior to being used for the first time under approval of this NOC after each movement of the RMCS after each filter replacement and at least once per year regardless of use to ensure the integrity of the filters.
14. All requirements, conditions and limitations must be proceduralized prior to start of any work under the umbrella of this NOC.
15. The Cost/Benefit Analysis provided in Appendix B of this NOC (Revision 1) is unacceptable. However, the equivalency demonstration provided in Revision 0, except for the HEPA filter requirements discussion, is adopted by this approval as it is still acceptable.
16. All requirements, conditions and limitations must be proceduralized prior to start of any work under the umbrella of this NOC.
17. Commencement of RMCS use under this NOC is approved for two years. If not started within two years of the date of this approval, the approval is void.
18. The operation of RMCS consists of inserting a drill string, made up of drill rod sections, into the waste. Samplers are lowered down the drill string by the core sample truck and a succession of 48.3 centimeter (19 inch) segments are taken until the core sample is complete. The preferred mode of sampling is push mode, which does not involve rotation of the drill string or purge gas flow. When the waste is too hard to push through, the core sample truck is placed in rotary mode to allow the bit to frill through the waste. It is during the rotary mode operation that an exhauster system is necessary.

Whenever the drill bit is rotating, the drill string is purged with nitrogen at approximately 0.85 cubic meter per minute (30 cubic feet per minute) to a maximum of 2.8 cubic meters per minute (100 cubic feet per minute). Each 48.3 centimeter (19 inch) segment requires 5 to 20 minutes of drilling. While the sampler is being replaced after each segment, nitrogen is injected into the drill string at approximately 0.03 cubic meter per minute (1 cubic foot per minute). This maintains the hydrostatic head in the drill string (preventing waste from entering the drill string) and will allow for pressurization and depressurization of the sample receiver, as necessary, for sampler changeout.

In passively ventilated tanks, the RMCS exhausters will be operated whenever a rotary mode segment is taken and could be operated continuously during sampling operation. Once a core has been obtained, the RMCS truck either could be repositioned on the same riser or moved to a different riser on the same tank to obtain additional cores. When sampling is complete, the RMCS system will be disconnected and moved to the next tank. During the system connection and disconnection, as low as reasonably achievable (ALARA) principles will be followed.

19. Logs must be kept on the use of each RMCS, and kept in a location accessible to WDOH inspectors. An example log must be provided to WDOH prior to the next use.
20. The annual unabated dose PTE shall be equal to or less than 2.462E-01 mrem/year to the MEI
21. This NOC is only approved for use for a period of ten years from the date of this approval. Any other uses not described in this NOC require a separate NOC.

22. The operation of RMCS consists of inserting a drill string, made up of drill rod sections, into the waste. Samplers are lowered down the drill string by the core sample truck and a succession of 48.3 centimeter (19 inch) segments are taken until the core sample is complete. The preferred mode of sampling is push mode, which does not involve rotation of the drill string or purge gas flow. When the waste is too hard to push through, the core sample truck is placed in rotary mode to allow the bit to frill through the waste. It is during the rotary mode operation that an exhaust system is necessary.

Whenever the drill bit is rotating, the drill string is purged with nitrogen at approximately 0.85 cubic meter per minute (30 cubic feet per minute) to a maximum of 2.8 cubic meters per minute (100 cubic feet per minute). Each 48.3 centimeter (19 inch) segment requires 5 to 20 minutes of drilling. While the sampler is being replaced after each segment, nitrogen is injected into the drill string at approximately 0.03 cubic meter per minute (1 cubic foot per minute). This maintains the hydrostatic head in the drill string (preventing waste from entering the drill string) and will allow for pressurization and depressurization of the sample receiver, as necessary, for sampler changeout.

In passively ventilated tanks, the RMCS exhausters will be operated whenever a rotary mode segment is taken and could be operated continuously during sampling operation. Once a core has been obtained, the RMCS truck either could be repositioned on the same riser or moved to a different riser on the same tank to obtain additional cores. When sampling is complete, the RMCS system will be disconnected and moved to the next tank. During the system connection and disconnection, as low as reasonably achievable (ALARA) principles will be followed.

200 P-296P034-001

296-P-34

ROTARY MODE CORE SAMPLER

Emission Unit ID: 253

Abatement Technology (state only enforceable)

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Description of Abatement Technology [WAC 246-247-010(4)] [WAC 246-247-040(5)]	Required Number of Units [WAC 246-247-10(4)(5)] [WAC 246-247-060(5)]	Additional Description/Conditions [WAC 246-247-101(4)] [WAC 246-247-040(5)] [WAC 246-247-060(5)]
	Fan	1	1 flow path with 2 HEPA's
	HEPA	2	
	Prefilter	1	
	Heater	1	

Monitoring Requirements (state and federally enforceable)

Federal and State Regulatory Requirements	Monitoring and Testing Procedure [WAC 246-247-040(5)] [WAC 173-401-615(1)]	Radionuclides Requiring Measurement [WAC 173-401-615(1)]	Sampling Frequency [WAC 246-247-075(1)] [WAC 173-401-615(1)]
40 CFR 61.93(b)(4) & WAC 246-247-75(2)	Method 2 appendix A Method 114 appendix B 61.93(b)(2)(ii) ANSI N13.1	All radionuclides which could contribute 10% of the potential EDE.	Continuous

This Emission Unit has 1 active Notice of Construction.

Project Title	Permit No	Date Approved	NOC_ID
Rotary Mode Core Sampling (RMCS) Systems 3 & 4, Rev. 1	AIR 98-301	3/6/98	261

Conditions (state only enforceable)

296-P-34

1. A separate NOC and approval shall be required to use the RMCS with SX tank farm exhaust system, and shall not be allowed by this license.
2. Both HEPA filters on the RMCS exhausters shall be testable. It is understood that manifolds can not be installed, so prior to use, an equivalency demonstration for ASME N509.5.6.5.1 must be approved which demonstrates that the second bank is testable.
3. The RMCS exhauster system consists of a first stage (optional) in-riser prefilter, and a second stage prefilter, a heater, two HEPAs, and exhaust fan.
4. The exhauster shall be continuously monitored. while in use. as required by 40 CFR 61. The monitoring systems must be fully compliant with ANSI N13.1.
5. The exhauster shall be continuously operated when the RMCS is in use and samples are being collected in this mode.

6. WDOH Conditions and Limitations dated September 3, 1997 (AIR 97-901) are applicable. There are no new WDOH conditions that apply to this NOC.
7. No activity, not described in this NOC, is approved for the RMCS exhausters.
8. This NOC is only approved for use for a period of ten years from the date of this approval. Any other uses not described in this NOC require a separate NOC.
9. The exhauster shall be continuously monitored, while in use, as required by 40 CFR 61. The monitoring systems must be fully compliant with ANSI N13.1.
10. Since data and drawings were not provided for the C tank farm exhauster, a separate NOC and approval shall be required to use the RMCS with C tank farm exhaust system, and shall not be allowed by this license
11. RMCS 2, 3, & 4 exhausters shall operate as major designated NESHAPs stacks.
12. The operation of RMCS consists of inserting a drill string, made up of drill rod sections, into the waste. Samplers are lowered down the drill string by the core sample truck and a succession of 48.3 centimeter (19 inch) segments are taken until the core sample is complete. The preferred mode of sampling is push mode, which does not involve rotation of the drill string or purge gas flow. When the waste is too hard to push through, the core sample truck is placed in rotary mode to allow the bit to frill through the waste. It is during the rotary mode operation that an exhauster system is necessary.

Whenever the drill bit is rotating, the drill string is purged with nitrogen at approximately 0.85 cubic meter per minute (30 cubic feet per minute) to a maximum of 2.8 cubic meters per minute (100 cubic feet per minute). Each 48.3 centimeter (19 inch) segment requires 5 to 20 minutes of drilling. While the sampler is being replaced after each segment, nitrogen is injected into the drill string at approximately 0.03 cubic meter per minute (1 cubic foot per minute). This maintains the hydrostatic head in the drill string (preventing waste from entering the drill string) and will allow for pressurization and depressurization of the sample receiver, as necessary, for sampler changeout.

In passively ventilated tanks, the RMCS exhausters will be operated whenever a rotary mode segment is taken and could be operated continuously during sampling operation.

Once a core has been obtained, the RMCS truck either could be repositioned on the same riser or moved to a different riser on the same tank to obtain additional cores. When sampling is complete, the RMCS system will be disconnected and moved to the next tank. During the system connection and disconnection, as low as reasonably achievable (ALARA) principles will be followed.

13. The HEPA filters must be tested prior to being used for the first time under approval of this NOC after each movement of the RMCS after each filter replacement and at least once per year regardless of use to ensure the integrity of the filters.
14. All requirements, conditions and limitations must be proceduralized prior to start of any work under the umbrella of this NOC.
15. The Cost/Benefit Analysis provided in Appendix B of this NOC (Revision 1) is unacceptable. However, the equivalency demonstration provided in Revision 0, except for the HEPA filter requirements discussion, is adopted by this approval as it is still acceptable.
16. All requirements, conditions and limitations must be proceduralized prior to start of any work under the umbrella of this NOC.
17. Commencement of RMCS use under this NOC is approved for two years. If not started within two years of the date of this approval, the approval is void.
18. The operation of RMCS consists of inserting a drill string, made up of drill rod sections, into the waste. Samplers are lowered down the drill string by the core sample truck and a succession of 48.3 centimeter (19 inch) segments are taken until the core sample is complete. The preferred mode of sampling is push mode, which does not involve rotation of the drill string or purge gas flow. When the waste is too hard to push through, the core sample truck is placed in rotary mode to allow the bit to frill through the waste. It is during the rotary mode operation that an exhauster system is necessary.

Whenever the drill bit is rotating, the drill string is purged with nitrogen at approximately 0.85 cubic meter

per minute (30 cubic feet per minute) to a maximum of 2.8 cubic meters per minute (100 cubic feet per minute). Each 48.3 centimeter (19 inch) segment requires 5 to 20 minutes of drilling. While the sampler is being replaced after each segment, nitrogen is injected into the drill string at approximately 0.03 cubic meter per minute (1 cubic foot per minute). This maintains the hydrostatic head in the drill string (preventing waste from entering the drill string) and will allow for pressurization and depressurization of the sample receiver, as necessary, for sampler changeout.

In passively ventilated tanks, the RMCS exhausters will be operated whenever a rotary mode segment is taken and could be operated continuously during sampling operation.

Once a core has been obtained, the RMCS truck either could be repositioned on the same riser or moved to a different riser on the same tank to obtain additional cores. When sampling is complete, the RMCS system will be disconnected and moved to the next tank. During the system connection and disconnection, as low as reasonably achievable (ALARA) principles will be followed.

19. Logs must be kept on the use of each RMCS, and kept in a location accessible to WDOH inspectors. An example log must be provided to WDOH prior to the next use.
20. The annual unabated dose PTE shall be equal to or less than $2.462E-01$ mrem/year to the MEI
21. This NOC is only approved for use for a period of ten years from the date of this approval. Any other uses not described in this NOC require a separate NOC.
22. Work practices encompassing ALARA principles will be followed in accordance with site procedures when moving the RMCS to another site.

200E P-296A042-001**296-A-42**

241-A TANK FARM

Emission Unit ID: 93

Abatement Technology (state only enforceable)

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Description of Abatement Technology [WAC 246-247-010(4)] [WAC 246-247-040(5)]	Required Number of Units [WAC 246-247-10(4)(5)] [WAC 246-247-060(5)]	Additional Description/Conditions [WAC 246-247-101(4)] [WAC 246-247-040(5)] [WAC 246-247-060(5)]
	Fan	1	2 parallel flow paths
	HEGA	1	2 parallel flow paths
	HEPA	2	Before and After the HEGA (gas absorber) 2 parallel flow paths
	Heater	1	2 parallel flow paths with 1 operational
	HEME	1	
	Condenser	1	

Monitoring Requirements (state and federally enforceable)

Federal and State Regulatory Requirements	Monitoring and Testing Procedure [WAC 246-247-040(5)] [WAC 173--401-615(1)]	Radionuclides Requiring Measurement [WAC 173-401-615(1)]	Sampling Frequency [WAC 246-247-075(1)] [WAC 173-401-615(1)]
40 CFR 61.93(b)(4) & WAC 246-247-75(2)	Method 2 appendix A Method 114 appendix B 61.93(b)(2)(ii) ANSI N13.1	90Sr	Continuous

This Emission Unit has 3 active Notice of Construction.

Project Title	Permit No	Date Approved	NOC_ID
241-AY and 241-AZ Ventilation Upgrades	AIR 98-708	8/18/98	290

Conditions (state only enforceable)

296-A-42

1. WDOH Conditions and Limitations dated July 10, 1998 (AIR 98-708) are applicable. There are no new WDOH conditions that apply to this NOC.
2. The department reserves the right at any time to require the licensee to provide for split or collocated sampling of this emission unit (WAC 246-247-075(10)).
3. The emission limit (abated) for this emission unit is 1.81E-3 mrem/yr to the MEI (WAC 246-247-040(5)).
4. An ALARACT demonstration may be required at any time by the department. WAC 246-247-080(1)).

5. The monitoring system must be ANSI N13.1 and ANSI N42.18 compliant. It is understood the department has approved the system as an acceptable alternative method (Reference: AIR 98-108 and AIR 98-207)
6. The NOC constitutes a contract between the department and the facility. The department must approve any changes.
7. Nothing may be inferred that is not specifically described in the NOC.
8. Abatement controls are those required to be in place at the point effluent enters the vapor space, not necessarily at a common header. Therefore, the following are required control: the recirculating and cooling system coming off each tank, consisting of a condenser, evaporative tower, pump and moisture separator; a condenser at the common header, with a water chiller, and pump, a high efficiency moisture eliminator; an electric heater, two parallel sets of HEPA filters, each with a high efficiency gas absorber. Down time for any of these components must be negotiated with the department.
9. Continuous monitoring must be in place prior to operating. This will include continuous ambient air sampling for this project.
10. Any problems, which could affect the monitoring, ventilation or controls to this facility must be reported to the department.
11. If the department finds that the emission unit described in this NOC is not in compliance with the standards in WAC 246-247-040 during construction and/or operation, the department will require modifications to bring it into compliance (WAC 246-247-060(2)(d)).
12. Preoperational tests planned for this unit, requirement for notification at least seven days prior to such testing under (WAC 246-247-060(4)) will apply.
13. All records required by WAC 246-247 must be readily (promptly) retrievable, and must be stored onsite at the facility. All records shall be maintained for a minimum of five years (WAC 246-247-080(8)).
14. Any deviation from the description of the modification or new construction, without approval of the department, may result in enforcement action under WAC 246-247-100.
15. The facility must be able to demonstrate the reliability and accuracy of emission data and other test results from the facility (WAC 246-247-075(13) and (WAC 246-247-075(6). The facility must demonstrate that it has a quality assurance program compatible with applicable national standards listed in, or equivalent to, those listed in the above cited regulation.
16. NOTE: There is no Condition #13.
17. The department must approve any deviation from required or recommended monitoring standards.
18. NOTE: There is no Condition #14.
19. The department reserves the right to conduct an environmental surveillance program around this emission unit and to require the facility to conduct or modify its own environmental monitoring program (WAC 246-247-075(9)).
20. All measured or calculated emissions must be reported annually (WAC 246-247-080(3)).
21. The ventilation flow rate is limited to a maximum of 0.5 cubic meters per second.
22. All conditions and limitations must be proceduralized prior to the implementation of this NOC.

Project Title	Permit No	Date Approved	NOC_ID
241-AY and 241-AZ Ventilation Upgrades	NOC revision approval	1/19/99	333

Conditions (state only enforceable)

296-A-42

1. The department must approve any deviation from required or recommended monitoring standards.
2. If the department finds that the emission unit described in this NOC is not in compliance with the standards in WAC 246-247-040 during construction and/or operation, the department will require modifications to

bring it into compliance (WAC 246-247-060(2)(d)).

3. WDOH Conditions and Limitations dated July 10, 1998 (AIR 98-708) are applicable. There are no new WDOH conditions that apply to this NOC.
4. Any deviation from the description of the modification or new construction, without approval of the department, may result in enforcement action under WAC 246-247-100.
5. The ventilation flow rate is limited to a maximum of 0.5 cubic meters per second.
6. Abatement controls are those required to be in place at the point effluent enters the vapor space, not necessarily at a common header. Therefore, the following are required control: the recirculating and cooling system coming off each tank, consisting of a condenser, evaporative tower, pump and moisture separator; a condenser at the common header, with a water chiller, and pump, a high efficiency moisture eliminator; an electric heater, two parallel sets of HEPA filters, each with a high efficiency gas absorber. Down time for any of these components must be negotiated with the department.
7. The facility must be able to demonstrate the reliability and accuracy of emission data and other test results from the facility (WAC 246-247-075(13) and (WAC 246-247-075(6)). The facility must demonstrate that it has a quality assurance program compatible with applicable national standards listed in, or equivalent to, those listed in the above cited regulation.
8. Any problems, which could affect the monitoring, ventilation or controls to this facility must be reported to the department.
9. The department reserves the right at any time to require the licensee to provide for split or collocated sampling of this emission unit (WAC 246-247-075(10)).
10. An ALARACT demonstration may be required at any time by the department. WAC 246-247-080(1)).
11. All conditions and limitations must be proceduralized prior to the implementation of this NOC.
12. The monitoring system must be ANSI N13.1 and ANSI N42.18 compliant. It is understood the department has approved the system as an acceptable alternative method (Reference: AIR 98-108 and AIR 98-207)
13. NOTE: There is no Condition #13.
14. NOTE: There is no Condition #14.
15. The department reserves the right to conduct an environmental surveillance program around this emission unit and to require the facility to conduct or modify its own environmental monitoring program (WAC 246-247-075(9)).
16. All measured or calculated emissions must be reported annually (WAC 246-247-080(3)).
17. The NOC constitutes a contract between the department and the facility. The department must approve any changes.
18. Nothing may be inferred that is not specifically described in the NOC.
19. Preoperational tests planned for this unit, requirement for notification at least seven days prior to such testing under (WAC 246-247-060(4)) will apply.
20. All records required by WAC 246-247 must be readily (promptly) retrievable, and must be stored onsite at the facility. All records shall be maintained for a minimum of five years (WAC 246-247-080(8)).
21. The emission limit (abated) for this emission unit is 1.81E-3 mrem/yr to the MEI (WAC 246-247-040(5)).
22. Continuous monitoring must be in place prior to operating. This will include continuous ambient air sampling for this project.

Project Title	Permit No	Date Approved	NOC_ID
241-AY and 241-AZ Ventilation Upgrades	AIR 98-708	7/10/98	286

Conditions (state only enforceable)

296-A-42

1. Abatement controls are those required to be in place at the point effluent enters the vapor space, not necessarily at a common header. Therefore, the following are required control: the recirculating and cooling system coming off each tank, consisting of a condenser, evaporative tower, pump and moisture separator; a condenser at the common header, with a water chiller, and pump, a high efficiency moisture eliminator; an electric heater, two parallel sets of HEPA filters, each with a high efficiency gas absorber. Down time for any of these components must be negotiated with the department.
2. The NOC constitutes a contract between the department and the facility. The department must approve any changes.
3. The department reserves the right at any time to require the licensee to provide for split or collocated sampling of this emission unit (WAC 246-247-075(10)).
4. The facility must be able to demonstrate the reliability and accuracy of emission data and other test results from the facility (WAC 246-247-075(13) and (WAC 246-247-075(6)). The facility must demonstrate that it has a quality assurance program compatible with applicable national standards listed in, or equivalent to, those listed in the above cited regulation.
5. Continuous monitoring must be in place prior to operating. This will include continuous ambient air sampling for this project.
6. Any problems, which could affect the monitoring, ventilation or controls to this facility must be reported to the department.
7. NOTE: There is no Condition #13.
8. WDOH Conditions and Limitations dated July 10, 1998 (AIR 98-708) are applicable. There are no new WDOH conditions that apply to this NOC.
9. Nothing may be inferred that is not specifically described in the NOC.
10. If the department finds that the emission unit described in this NOC is not in compliance with the standards in WAC 246-247-040 during construction and/or operation, the department will require modifications to bring it into compliance (WAC 246-247-060(2)(d)).
11. An ALARACT demonstration may be required at any time by the department. WAC 246-247-080(1)).
12. The monitoring system must be ANSI N13.1 and ANSI N42.18 compliant. It is understood the department has approved the system as an acceptable alternative method (Reference: AIR 98-108 and AIR 98-207)
13. The ventilation flow rate is limited to a maximum of 0.5 cubic meters per second.
14. All conditions and limitations must be proceduralized prior to the implementation of this NOC.
15. Any deviation from the description of the modification or new construction, without approval of the department, may result in enforcement action under WAC 246-247-100.
16. The department must approve any deviation from required or recommended monitoring standards.
17. Preoperational tests planned for this unit, requirement for notification at least seven days prior to such testing under (WAC 246-247-060(4)) will apply.
18. All records required by WAC 246-247 must be readily (promptly) retrievable, and must be stored onsite at the facility. All records shall be maintained for a minimum of five years (WAC 246-247-080(8)).
19. All measured or calculated emissions must be reported annually (WAC 246-247-080(3)).
20. NOTE: There is no Condition #14.
21. The department reserves the right to conduct an environmental surveillance program around this emission unit and to require the facility to conduct or modify its own environmental monitoring program (WAC 246-247-075(9)).
22. The emission limit (abated) for this emission unit is $1.81E-3$ mrem/yr to the MEI (WAC 246-247-040(5)).

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296-A-17

241-AY/AZ TANK FARM

Emission Unit ID: 221

Abatement Technology (state only enforceable)

Applicable Requirements: ALARACT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Description of Abatement Technology [WAC 246-247-010(4)] [WAC 246-247-040(5)]	Required Number of Units [WAC 246-247-10(4)(5)] [WAC 246-247-060(5)]	Additional Description/Conditions [WAC 246-247-101(4)] [WAC 246-247-040(5)] [WAC 246-247-060(5)]
	Fan	Non-Operational	This unit is inactive and will require an NOC to resume operation or a report of closure to deregister.
	HEPA	Non-Operational	This unit is inactive and will require an NOC to resume operation or a report of closure to deregister.
	Heater	Non-Operational	This unit is inactive and will require an NOC to resume operation or a report of closure to deregister.
	Deentrainer	Non-Operational	This unit is inactive and will require an NOC to resume operation or a report of closure to deregister.

Monitoring Requirements (state and federally enforceable)

Federal and State Regulatory Requirements	Monitoring and Testing Procedure [WAC 246-247-040(5)] [WAC 173--401-615(1)]	Radionuclides Requiring Measurement [WAC 173-401-615(1)]	Sampling Frequency [WAC 246-247-075(1)] [WAC 173-401-615(1)]
40 CFR 61.93(b)(4) & WAC 246-247-75(2)	Method 2 appendix A Method 114 appendix B 61.93(b)(2)(ii) ANSI N13.1	137Cs	Continuous

200E C-106 Sluicing

296-C-6

241-C TANK FARM

Emission Unit ID: 236

Abatement Technology (state only enforceable)

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Description of Abatement Technology [WAC 246-247-010(4)] [WAC 246-247-040(5)]	Required Number of Units [WAC 246-247-10(4)(5)] [WAC 246-247-060(5)]	Additional Description/Conditions [WAC 246-247-101(4)] [WAC 246-247-040(5)] [WAC 246-247-060(5)]
	Fan	1	
	HEPA	2	In series
	Heater	1	
	High Efficiency Metal Filter	1	
	High Efficiency Mist Eliminator	1	

Monitoring Requirements (state and federally enforceable)

Federal and State Regulatory Requirements	Monitoring and Testing Procedure [WAC 246-247-040(5)] [WAC 173--401-615(1)]	Radionuclides Requiring Measurement [WAC 173-401-615(1)]	Sampling Frequency [WAC 246-247-075(1)] [WAC 173-401-615(1)]
40 CFR 61.93(b)(4) & WAC 246-247-075(2)	Method 2 appendix A Method 114 appendix B 61.93(b)(2)(ii) ANSI N13.1	All radionuclides which could contribute 10% of the potential EDE.	Continuous

This Emission Unit has 1 active Notice of Construction.

Project Title	Permit No	Date Approved	NOC_ID
241-C-106 Tank Sluicing, Phase II, Rev. 2	AIR 98-1002 + NOC Revision form	10/2/98	310

Conditions (state only enforceable)

296-C-6

1. The process is limited to the mobilizing and retrieving waste in 241-C-106 tank, conveying waste out of 241-C-106 tank, transferring waste to the 241-AY-102, filtering radioactive particulates and vapors, removing heat to maintain safe temperature levels, monitoring and controlling operations, and shielding and maintenance actions.
2. The facility shall make requested documents available in a timely manner for review.
3. Other Conditions: 1) Any problems, which could affect the monitoring, ventilation, or controls to this facility must be reported to the department. WDOH is to be notified if the record sampler is not continuously operated as required. WDOH must be notified of differential pressure alarms on the HEPA filters, the HEME, and HEMF. WDOH must also be notified when the HEME or HEMF is taken off line due to a

system abnormality. If the HEME, or HEMF needs to be bypassed due to planned maintenance or other planned activity, WDOH must be informed prior to the bypass occurring. WDOH is to be notified of actual loss of the electric heater or failure of the heater that takes the off-gas temperature outside of the normal operating limits. WDOH is to be notified of wetting of the filter train, any visible liquid in the HEPA filter drain sightglass or shifting of the filter due to operational upset or anomaly. 2) The NOC constitutes a contract between the department and the facility. The department must approve any changes. 3) The department must approve any deviation from required or recommended monitoring standards. 4) Nothing may be inferred that is not specifically described in this NOC.

4. The department retains the right to conduct its own stack sampling, environmental monitoring or other testing, as required around this unit to assure compliance. If the department so decides, the facility must make provision for such testing (WAC 246-247-075(9)).
5. Periodic confirmatory sampling is required. It must consist of:
 6. The required controls are: The abatement controls are those required to be in place at the point the effluent enters the vapors space and includes the recirculation system. High Efficiency Mist Eliminators (HEME), High Efficiency Metal Filter (HEMF), a heater, two HEPA filters in series, and a fan.
 7. The facility must maintain a log in an approved format for this activity or emission unit.
 8. When this project is completed, or operations cease, the facility shall notify the department via a report of closure, including whether or not any potential for airborne release occur.
 9. All reports and records must be kept and reported according to 40 CFR 61, Subpart H.
10. The radionuclides are limited to: Those described in Table I of the August 28, 1998 DOE letter 98-EAP-469.
11. The facility shall notify the department at least seven days prior to any planned preoperational testing of the emission unit's emissions control, monitoring or containment systems. The department reserves the right to observe such tests.
12. U.S. DOE shall comply with all requirements and limitations of this license.
13. This unit must be fully accessible to Department of Health inspectors. If there are any specific training requirements or have restrictions or special requirements for entry, they must be given to the department when they are known to allow for unannounced inspections. At a minimum, for unannounced inspections, such requirements or restrictions must be told to inspectors that morning, with the opportunity for the inspectors to meet those requirements. For prior announced inspections, such notification must occur far enough in advance for the inspectors to have reasonable time to meet the requirements.
14. The facility must be able to demonstrate the reliability and accuracy of emission data and other test results from this unit (WAC 246-247-075(13) and WAC 246-247-075(6)).
15. The annual possession quantity is limited to: The annual possession quantity is as described in Section 7.0 of the Notice of Construction for Project W-320, Tank 241C-106 Sluicing.
16. All measured or calculated emissions must be reported annually (WAC 246-247-080(3)).
17. The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards listed in, or equivalent to, those listed in, or equivalent to, those listed in the above cited regulation.
18. If there is an unexpected release of radioactivity or if there is a shutdown or other condition that, if it were allowed to persist, would result in emissions of radionuclides in excess of any standards or limitations in the license or that last more than four hours, it must be reported to the department within 24 hours. (Note: Applicable standards (WAC 246-247-040) include unit specific emission limits (paragraph 5), the offsite dose standard (paragraph 1), BARCT (paragraph 3) or ALARACT (paragraph 4), whichever is applicable, or any limitations included in the approval (paragraph 5)).
19. If the department finds that the emission unit described in this NOC, is not in compliance with the standards in WAC 245-247-040 during construction, as described in this NOC, or during operation, it reserves the right to require modifications to bring it into compliance.
20. The facility must be able to demonstrate that the workers associated with this emission unit are adequately trained in the use and maintenance of emission control and monitoring systems, and in the performance of

associated test and emergency response procedures.

21. Approval, with its conditions and limitations, constitutes an amendment to the Department's Radioactive Air Emission License. This amendment must be included in the next revision of the Hanford Air Operating Permit.
22. U.S. DOE shall monitor this project or emission unit as follows: Continuously stack sampling must occur during operation of the emission unit. The sampling system must meet ANSI N13.1 and ANSI 42.18. This will include continuous ambient air sampling for this project. The definition of "continuous ambient air sampling" refers to the Near-Field Monitoring program conducted by Waste Management Hanford (WMH). The definition of continuous is being negotiated between WDOH and DOE.
23. The department reserves the right to inspect and audit this unit during construction and operation, including all activities, equipment, operations, documents, data, and other records related to compliance with the regulations.
24. The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
25. The abated emission limit is: $2.05E-07$ mrem/yr to the MEI.
26. Records must be readily (promptly) available for this unit. Those records must be maintained onsite, and must be retained for at least 5 years (WAC 246-247-080(8)).

200E P-296P016-001

296-P-16

241-C TANK FARM

Emission Unit ID: 234

Abatement Technology (state only enforceable)

Applicable Requirements: ALARACT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Description of Abatement Technology [WAC 246-247-010(4)] [WAC 246-247-040(5)]	Required Number of Units [WAC 246-247-10(4)(5)] [WAC 246-247-060(5)]	Additional Description/Conditions [WAC 246-247-101(4)] [WAC 246-247-040(5)] [WAC 246-247-060(5)]
	Fan	1	
	HEPA	2	In series
	Prefilter	1	
	Heater	1	
	Deentrainer	1	

Monitoring Requirements (state and federally enforceable)

Federal and State Regulatory Requirements	Monitoring and Testing Procedure [WAC 246-247-040(5)] [WAC 173-401-615(1)]	Radionuclides Requiring Measurement [WAC 173-401-615(1)]	Sampling Frequency [WAC 246-247-075(1)] [WAC 173-401-615(1)]
40 CFR 61.93(b)(4) & WAC 246-247-75(2)	Method 2 appendix A Method 114 appendix B 61.93(b)(2)(ii) ANSI N13.1	All radionuclides which could contribute 10% of the potential EDE.	Continuous

This Emission Unit has 2 active Notice of Construction.

Project Title	Permit No	Date Approved	NOC_ID
296-P-16 Stack Monitoring System Upgrades Resume Work Strategy (Project W-420)	RTAM	5/6/99	365

Conditions (state only enforceable)

296-P-16

1. Track any remaining contamination as it is encountered and subtract it from the NOC's APQ. Keep a running total of the actual field encountered APQ to show that the NOC APQ will not be exceeded.
2. Determine how much of APQ was reached due to contamination encounter thus far in the excavation work.
3. Use the APQ, in Curies, as the governing requirement for compliance with the NOC

Project Title	Permit No	Date Approved	NOC_ID
Stack Monitoring System Upgrades (Project W-420)	AIR 99-115	1/29/99	339

Conditions (state only enforceable)

296-P-16

1. The department reserves the right to inspect and audit this unit during construction and operation, including all activities, equipment, operations, documents, data, and other records related to compliance with the regulations.
2. This unit must be fully accessible to Department of Health inspectors. If there are any specific training requirements or have restrictions or special requirements for entry, they must be given to the department when they are known to allow for unannounced inspections. At a minimum, for unannounced inspections, such requirements or restrictions must be told to inspectors that morning, with the opportunity for the inspectors to meet those requirements. For prior announced inspections, such notification must occur far enough in advance for the inspectors to have reasonable time to meet the requirements.
3. U.S. DOE shall monitor this project or emission unit as follows As stated in the NOC.
4. The facility shall make requested documents available in a timely manner for review.
5. The abated emission limit is: $2.89E-3$ mrem/yr to the MEI.
6. The facility must maintain a log in an approved format for this activity or emission unit.
7. The required controls are: Wind speed construction of 20 mph, HPT coverage, engineering and controls
8. The facility's modification activity shall consist of replacing the stack and its associated sampling and monitoring equipment. Portions of existing concrete pads will be removed and the soil excavated to accommodate the installation of utilities (power, signal lines, etc.) The existing ventilation and stack sampling systems will remain operational during the excavation activities but will be shut down during stack and equipment removal and the relocation of the equipment cabinet to a temporary near-by location.
9. The annual possession quantity is limited to:
For Excavation Activities: Sr-90, $5.51E-03$ Ci; Am-241, $2.21E-01$ Ci
For Equipment Removal Activities: Sr, $1.72E-06$ Ci; Am-241, $2.68E-07$ Ci
10. The department retains the right to conduct its own stack sampling, environmental monitoring or other testing, as required around this unit to assure compliance. If the department so decides, the facility must make provision for such testing.
11. Records must be readily (promptly) available for this unit. Those records must be maintained onsite, and must be retained for at least 5 years.
12. All reports and records must be kept and reported according to 40 CFR 61, Subpart H.
13. If there is an unexpected release of radioactivity or if there is a shutdown or other condition that, if it were allowed to persist, would result in emissions of radionuclides in excess of any standards or limitations in the license or that last more than four hours, it must be reported to the department within 24 hours. (Note: Applicable standards (WAC 246-247-040) include unit specific emission limits (paragraph 5), the offsite dose standard (paragraph 1), BARCT (paragraph 3) or ALARACT (paragraph 4), whichever is applicable, or any limitations included in the approval (paragraph 5)).
14. The radionuclides are limited to Sr-90 and Am-241:
For Excavation Activities: Sr-90, dose $2.41E-07$ mrem/year to the MEI;
Am-241, dose $2.89E-03$ mrem/yr to the MEI
For Equipment Removal Activities: Sr-90, dose $3.08E-10$ mrem/year to the MEI;
Am-241, dose $1.43E-08$ to the MEI
15. When this project is completed, or operations cease, the facility shall notify the department via a report of closure, including whether or not any potential for airborne releases occurred.
16. The facility shall notify the department at least seven days prior to any planned preoperational testing of the emission unit's emissions control, monitoring or containment systems. The department reserves the right to observe such tests.
17. All measured or calculated emissions must be reported annually.
18. The facility must be able to demonstrate that the workers associated with this emission unit are adequately trained in the use an maintenance of emission control and monitoring systems, and in the performance of

associated test and emergency response procedures.

19. The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards listed in, or equivalent to, those listed in, or equivalent to, those listed in WAC 246-247-075(6).
20. The facility must be able to demonstrate the reliability and accuracy of emission data and other test results from this unit (WAC 246-247-075(13) and WAC 246-247-075(6)).
21. U.S. DOE shall comply with all Conditions and Limitations of this license.
22. Radiological field surveys will be performed during replacement of the stack and associated sampling and monitoring equipment. HPT coverage will be provided during excavation with these activities stopping if evenly distributed (i.e., non-speck) contamination detection reading of 100,000 dpm/100cm² beta-gamma, or 35 dpm/100cm² above background alpha are encountered. If contamination levels in affected areas are greater than 1,000 dpm/100cm² beta gamma and 20 dpm/100cm² alpha, contamination controls including bagging and taping, applying fixatives, foaming, or glove bags will be used. A 20 mph sustained wind speed restriction shall apply to all demolition and replacement work. When ventilation is restored, between shutdown and completion of the upgrades, the stack emissions measurement system will be restored.
23. If the department finds that the emission unit described in this NOC, is not in compliance with the standards in WAC 245-247-040 during construction, as described in this NOC, or during operation, it reserves the right to require modifications to bring it into compliance.

200E P-244A-001

296-A-25

244 -A-LIFT STATION

Emission Unit ID: 222

Abatement Technology (state only enforceable)

Applicable Requirements: ALARACT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Description of Abatement Technology [WAC 246-247-010(4)] [WAC 246-247-040(5)]	Required Number of Units [WAC 246-247-10(4)(5)] [WAC 246-247-060(5)]	Additional Description/Conditions [WAC 246-247-101(4)] [WAC 246-247-040(5)] [WAC 246-247-060(5)]
			* Technology Specific Requirements
	Fan	1	
	HEPA	2	2 in series 2 in parallel flowpaths
	Prefilter	1	Two parallel flow paths.
	Heater	1	Both tank and annulus connect before going through the heater

Monitoring Requirements (state and federally enforceable)

Federal and State Regulatory Requirements	Monitoring and Testing Procedure [WAC 246-247-040(5)] [WAC 173--401-615(1)]	Radionuclides Requiring Measurement [WAC 173-401-615(1)]	Sampling Frequency [WAC 246-247-075(1)] [WAC 173-401-615(1)]
40 CFR 61.93(b)(4) & WAC 246-247-75(2)	Method 2 appendix A Method 114 appendix B 61.93(b)(2)(ii) ANSI N13.1	All radionuclides which could contribute 10% of the potential EDE.	Continuous

This Emission Unit has 1 active Notice of Construction.

Project Title	Permit No	Date Approved	NOC_ID
Stack Monitoring System Upgrades (Project W-420)	AIR 99-115	1/29/99	339

Conditions (state only enforceable)

296-A-25

1. The department retains the right to conduct its own stack sampling, environmental monitoring or other testing, as required around this unit to assure compliance. If the department so decides, the facility must make provision for such testing.
2. If the department finds that the emission unit described in this NOC, is not in compliance with the standards in WAC 245-247-040 during construction ,as described in this NOC, or during operation, it reserves the right to require modifications to bring it into compliance.
3. U.S. DOE shall monitor this project or emission unit as follows As stated in the NOC.
4. This unit must be fully accessible to Department of Health inspectors. If there are any specific training

requirements or have restrictions or special requirements for entry, they must be given to the department when they are known to allow for unannounced inspections. At a minimum, for unannounced inspections, such requirements or restrictions must be told to inspectors that morning, with the opportunity for the inspectors to meet those requirements. For prior announced inspections, such notification must occur far enough in advance for the inspectors to have reasonable time to meet the requirements.

5. Radiological field surveys will be performed during replacement of the stack and associated sampling and monitoring equipment. HPT coverage will be provided during excavation with these activities stopping if evenly distributed (i.e., non-speck) contamination detection reading of 100,000 dpm/100cm² beta-gamma, or 35 dpm/100cm² above background alpha are encountered. If contamination levels in affected areas are greater than 1,000 dpm/100cm² beta gamma and 20 dpm/100cm² alpha, contamination controls including bagging and taping, applying fixatives, foaming, or glove bags will be used. A 20 mph sustained wind speed restriction shall apply to all demolition and replacement work. When ventilation is restored, between shutdown and completion of the upgrades, the stack emissions measurement system will be restored.
6. The facility must be able to demonstrate that the workers associated with this emission unit are adequately trained in the use and maintenance of emission control and monitoring systems, and in the performance of associated test and emergency response procedures.
7. The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards listed in, or equivalent to, those listed in, or equivalent to, those listed in WAC 246-247-075(6).
8. The department reserves the right to inspect and audit this unit during construction and operation, including all activities, equipment, operations, documents, data, and other records related to compliance with the regulations.
9. All reports and records must be kept and reported according to 40 CFR 61, Subpart H.
10. All measured or calculated emissions must be reported annually.
11. The facility must be able to demonstrate the reliability and accuracy of emission data and other test results from this unit (WAC 246-247-075(13) and WAC 246-247-075(6)).
12. Records must be readily (promptly) available for this unit. Those records must be maintained onsite, and must be retained for at least 5 years.
13. If there is an unexpected release of radioactivity or if there is a shutdown or other condition that, if it were allowed to persist, would result in emissions of radionuclides in excess of any standards or limitations in the license or that last more than four hours, it must be reported to the department within 24 hours. (Note: Applicable standards (WAC 246-247-040) include unit specific emission limits (paragraph 5), the offsite dose standard (paragraph 1), BARCT (paragraph 3) or ALARACT (paragraph 4), whichever is applicable, or any limitations included in the approval (paragraph 5)).
14. The facility shall make requested documents available in a timely manner for review.
15. The facility's modification activity shall consist of replacing the stack and its associated sampling and monitoring equipment. Portions of existing concrete pads will be removed and the soil excavated to accommodate the installation of utilities (power, signal lines, etc.) The existing ventilation and stack sampling systems will remain operational during the excavation activities but will be shut down during stack and equipment removal and the relocation of the equipment cabinet to a temporary near-by location.
16. The required controls are: Wind speed construction of 20 mph, HPT coverage, engineering and controls
17. The radionuclides are limited to Sr-90 and Am-241:
 For Excavation Activities: Sr-90, dose 4.14E-07 mrem/year to the MEI;
 Am-241, dose 4.96E-03 mrem/yr to the MEI
 For Equipment Removal Activities: Sr-90, dose 5.86E-11 mrem/year to the MEI;
 Am-241, dose 3.51E-10 to the MEI
18. The annual possession quantity is limited to:
 For Excavation Activities: Sr-90, 9.45E-03 Ci; Am-241, 3.79E-01 Ci
 For Equipment Removal Activities: Sr, 3.17E-07 Ci; Am-241, 6.33E-09 Ci

19. The abated emission limit is: $4.96E-3$ mrem/yr to the MEI.
20. The facility shall notify the department at least seven days prior to any planned preoperational testing of the emission unit's emissions control, monitoring or containment systems. The department reserves the right to observe such tests.
21. The facility must maintain a log in an approved format for this activity or emission unit.
22. U.S. DOE shall comply with all Conditions and Limitations of this license.
23. When this project is completed, or operations cease, the facility shall notify the department via a report of closure, including whether or not any potential for airborne releases occurred.

200E P-244BX-001

296-B-28

244-BX-DCRT

Emission Unit ID: 208

Abatement Technology (state only enforceable)

Applicable Requirements: ALARACT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Description of Abatement Technology [WAC 246-247-010(4)] [WAC 246-247-040(5)]	Required Number of Units [WAC 246-247-10(4)(5)] [WAC 246-247-060(5)]	Additional Description/Conditions [WAC 246-247-101(4)] [WAC 246-247-040(5)] [WAC 246-247-060(5)]
			* Technology Specific Requirements
	Fan	1	
	HEPA	2	3 parallel flow paths
	Prefilter	1	3 parallel flow paths
	Heater	1	Annulus exhaust is not heated

Monitoring Requirements (state and federally enforceable)

Federal and State Regulatory Requirements	Monitoring and Testing Procedure [WAC 246-247-040(5)] [WAC 173-401-615(1)]	Radionuclides Requiring Measurement [WAC 173-401-615(1)]	Sampling Frequency [WAC 246-247-075(1)] [WAC 173-401-615(1)]
40 CFR 61.93(b)(4) & WAC 246-247-75(2)	Method 2 appendix A Method 114 appendix B 61.93(b)(2)(ii) ANSI N13.1	All radionuclides which could contribute 10% of the potential EDE.	Continuous

This Emission Unit has 2 active Notice of Construction.

Project Title	Permit No	Date Approved	NOC_ID
296-B-28 Stack Monitoring System Upgrades Resume Work Strategy (Project W-420)		5/6/99	363

Project Title	Permit No	Date Approved	NOC_ID
Stack Monitoring System Upgrades (Project W-420)	AIR 99-115	1/29/99	339

Conditions (state only enforceable)

296-B-28

1. All measured or calculated emissions must be reported annually.
2. U.S. DOE shall monitor this project or emission unit as follows As stated in the NOC.
3. U.S. DOE shall comply with all Conditions and Limitations of this license.

4. The facility must be able to demonstrate the reliability and accuracy of emission data and other test results from this unit (WAC 246-247-075(13) and WAC 246-247-075(6)).
5. If there is an unexpected release of radioactivity or if there is a shutdown or other condition that, if it were allowed to persist, would result in emissions of radionuclides in excess of any standards or limitations in the license or that last more than four hours, it must be reported to the department within 24 hours. (Note: Applicable standards (WAC 246-247-040) include unit specific emission limits (paragraph 5), the offsite dose standard (paragraph 1), BARCT (paragraph 3) or ALARACT (paragraph 4), whichever is applicable, or any limitations included in the approval (paragraph 5)).
6. The facility must maintain a log in an approved format for this activity or emission unit.
7. If the department finds that the emission unit described in this NOC, is not in compliance with the standards in WAC 245-247-040 during construction as described in this NOC, or during operation, it reserves the right to require modifications to bring it into compliance.
8. The radionuclides are limited to Sr-90 and Am-241:
For Excavation Activities: Sr-90, dose $2.76E-07$ mrem/year to the MEI;
Am-241, dose $3.31E-03$ mrem/yr to the MEI
For Equipment Removal Activities: Sr-90, dose $9.30E-11$ mrem/year to the MEI;
Am-241, dose $5.56E-10$ to the MEI
9. Radiological field surveys will be performed during replacement of the stack and associated sampling and monitoring equipment. HPT coverage will be provided during excavation with these activities stopping if evenly distributed (i.e., non-speck) contamination detection reading of 100,000 dpm/100cm² beta-gamma, or 35 dpm/100cm² above background alpha are encountered. If contamination levels in affected areas are greater than 1,000 dpm/100cm² beta gamma and 20 dpm/100cm² alpha, contamination controls including bagging and taping, applying fixatives, foaming, or glove bags will be used. A 20 mph sustained wind speed restriction shall apply to all demolition and replacement work. When ventilation is restored, between shutdown and completion of the upgrades, the stack emissions measurement system will be restored.
10. The abated emission limit is:
 $3.31E-03$ mrem/yr to the MEI.
11. Records must be readily (promptly) available for this unit. Those records must be maintained onsite, and must be retained for at least 5 years.
12. The annual possession quantity is limited to:
For Excavation Activities: Sr-90, $6.30E-03$ Ci; Am-241, $2.52E-01$ Ci
For Equipment Removal Activities: Sr, $4.48E-07$ Ci; Am-241, $8.95E-09$ Ci
13. The department retains the right to conduct its own stack sampling, environmental monitoring or other testing, as required around this unit to assure compliance. If the department so decides, the facility must make provision for such testing.
14. The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards listed in, or equivalent to, those listed in, or equivalent to, those listed in WAC 246-247-075(6).
15. All reports and records must be kept and reported according to 40 CFR 61, Subpart H.
16. The facility shall notify the department at least seven days prior to any planned preoperational testing of the emission unit's emissions control, monitoring or containment systems. The department reserves the right to observe such tests.
17. The required controls are: Wind speed construction of 20 mph, HPT coverage, engineering and controls
18. The facility's modification activity shall consist of replacing the stack and its associated sampling and monitoring equipment. Portions of existing concrete pads will be removed and the soil excavated to accommodate the installation of utilities (power, signal lines, etc.) The existing ventilation and stack sampling systems will remain operational during the excavation activities but will be shut down during stack and equipment removal and the relocation of the equipment cabinet to a temporary near-by location.
19. The facility must be able to demonstrate that the workers associated with this emission unit are adequately trained in the use and maintenance of emission control and monitoring systems, and in the performance of

associated test and emergency response procedures.

20. The department reserves the right to inspect and audit this unit during construction and operation, including all activities, equipment, operations, documents, data, and other records related to compliance with the regulations.
21. The facility shall make requested documents available in a timely manner for review.
22. This unit must be fully accessible to Department of Health inspectors. If there are any specific training requirements or have restrictions or special requirements for entry, they must be given to the department when they are known to allow for unannounced inspections. At a minimum, for unannounced inspections, such requirements or restrictions must be told to inspectors that morning, with the opportunity for the inspectors to meet those requirements. For prior announced inspections, such notification must occur far enough in advance for the inspectors to have reasonable time to meet the requirements.
23. When this project is completed, or operations cease, the facility shall notify the department via a report of closure, including whether or not any potential for airborne releases occurred.

200E P-244CR-001**296-C-5**

244-CR-VAULT

Emission Unit ID: 213

Abatement Technology (state only enforceable)

Applicable Requirements: ALARACT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Description of Abatement Technology [WAC 246-247-010(4)] [WAC 246-247-040(5)]	Required Number of Units [WAC 246-247-10(4)(5)] [WAC 246-247-060(5)]	Additional Description/Conditions [WAC 246-247-101(4)] [WAC 246-247-040(5)] [WAC 246-247-060(5)]
	Fan	1	
	HEPA	8	2 banks of 4 filters(2X2)
	Prefilter	4	One bank of 4 prefilters(2X2)

Monitoring Requirements (state and federally enforceable)

Federal and State Regulatory Requirements	Monitoring and Testing Procedure [WAC 246-247-040(5)] [WAC 173--401-615(1)]	Radionuclides Requiring Measurement [WAC 173-401-615(1)]	Sampling Frequency [WAC 246-247-075(1)] [WAC 173-401-615(1)]
40 CFR 61.93(b)(4) & WAC 246-247-75(2)	Method 2 appendix A Method 114 appendix B 61.93(b)(2)(ii) ANSI N13.1	All radionuclides which could contribute 10% of the potential EDE.	Continuous

This Emission Unit has 3 active Notice of Construction.

Project Title	Permit No	Date Approved	NOC_ID
296-C-05 Stack Monitoring System Upgrades Resume Work Strategy (Project W-420)	RTAM	5/6/99	364

Project Title	Permit No	Date Approved	NOC_ID
244-CR Vault Double-Contained Receiver Tank	AIR 94-913	9/15/94	45

Conditions (state only enforceable)

296-C-5

- Monitoring will be performed continuously during the transfer of waste.
- Process Description: Start up and operation of an actively ventilated emissions abatement system shall be allowed during operation of the 244-CR Vault DCRT. The DCRT is used in the transfer of waste within the Tank Farms.
- Control System: The ventilation system shall consist of a pre-filter, two HEPA filters, a fan, and a stack.
- Must maintain a negative pressure on the CR Vault while it is in use. When the CR vault is not in use, the cover blocks shall be taped.

Project Title	Permit No	Date Approved	NOC_ID
Stack Monitoring System Upgrades (Project W-420)	AIR 99-115	1/29/99	339

Conditions (state only enforceable)

296-C-5

1. The facility must be able to demonstrate that the workers associated with this emission unit are adequately trained in the use and maintenance of emission control and monitoring systems, and in the performance of associated test and emergency response procedures.
2. The abated emission limit is: 2.48E-03 mrem/yr to the MEI.
3. U.S. DOE shall comply with all Conditions and Limitations of this license.
4. If there is an unexpected release of radioactivity or if there is a shutdown or other condition that, if it were allowed to persist, would result in emissions of radionuclides in excess of any standards or limitations in the license or that last more than four hours, it must be reported to the department within 24 hours. (Note: Applicable standards (WAC 246-247-040) include unit specific emission limits (paragraph 5), the offsite dose standard (paragraph 1), BARCT (paragraph 3) or ALARACT (paragraph 4), whichever is applicable, or any limitations included in the approval (paragraph 5)).
5. When this project is completed, or operations cease, the facility shall notify the department via a report of closure, including whether or not any potential for airborne releases occurred.
6. The department retains the right to conduct its own stack sampling, environmental monitoring or other testing, as required around this unit to assure compliance. If the department so decides, the facility must make provision for such testing.
7. The facility must be able to demonstrate the reliability and accuracy of emission data and other test results from this unit (WAC 246-247-075(13) and WAC 246-247-075(6)).
8. If the department finds that the emission unit described in this NOC, is not in compliance with the standards in WAC 245-247-040 during construction, as described in this NOC, or during operation, it reserves the right to require modifications to bring it into compliance.
9. The department reserves the right to inspect and audit this unit during construction and operation, including all activities, equipment, operations, documents, data, and other records related to compliance with the regulations.
10. The radionuclides are limited to Sr-90 and Am-241:
For Excavation Activities: Sr-90, dose 2.07E-07 mrem/year to the MEI;
Am-241, dose 2.48E-03 mrem/yr to the MEI
For Equipment Removal Activities: Sr-90, dose 7.63E-10 mrem/year to the MEI;
Am-241, dose 3.55E-08 to the MEI
11. The annual possession quantity is limited to:
For Excavation Activities: Sr-90, 4.72E-03 Ci; Am-241, 1.89E-01 Ci
For Equipment Removal Activities: Sr, 2.36E-07 Ci; Am-241, 3.67E-08 Ci
12. Radiological field surveys will be performed during replacement of the stack and associated sampling and monitoring equipment. HPT coverage will be provided during excavation with these activities stopping if evenly distributed (i.e., non-speck) contamination detection reading of 100,000 dpm/100cm² beta-gamma, or 35 dpm/100cm² above background alpha are encountered. If contamination levels in affected areas are greater than 1.000 dpm/100cm² beta gamma and 20 dpm/100cm² alpha, contamination controls including bagging and taping, applying fixatives, foaming, or glove bags will be used. A 20 mph sustained wind speed restriction shall apply to all demolition and replacement work. When ventilation is restored, between shutdown and completion of the upgrades, the stack emissions measurement system will be restored.
13. All reports and records must be kept and reported according to 40 CFR 61, Subpart H.
14. The facility must maintain a log in an approved format for this activity or emission unit.
15. Records must be readily (promptly) available for this unit. Those records must be maintained onsite, and

must be retained for at least 5 years.

16. This unit must be fully accessible to Department of Health inspectors. If there are any specific training requirements or have restrictions or special requirements for entry, they must be given to the department when they are known to allow for unannounced inspections. At a minimum, for unannounced inspections, such requirements or restrictions must be told to inspectors that morning, with the opportunity for the inspectors to meet those requirements. For prior announced inspections, such notification must occur far enough in advance for the inspectors to have reasonable time to meet the requirements.
17. The facility shall make requested documents available in a timely manner for review.
18. The facility's modification activity shall consist of replacing the stack and its associated sampling and monitoring equipment. Portions of existing concrete pads will be removed and the soil excavated to accommodate the installation of utilities (power, signal lines, etc.) The existing ventilation and stack sampling systems will remain operational during the excavation activities but will be shut down during stack and equipment removal and the relocation of the equipment cabinet to a temporary near-by location.
19. The required controls are: Wind speed construction of 20 mph, HPT coverage, engineering and controls
20. All measured or calculated emissions must be reported annually.
21. The facility shall notify the department at least seven days prior to any planned preoperational testing of the emission unit's emissions control, monitoring or containment systems. The department reserves the right to observe such tests.
22. The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards listed in, or equivalent to, those listed in, or equivalent to, those listed in WAC 246-247-075(6).
23. U.S. DOE shall monitor this project or emission unit as follows As stated in the NOC.

200E P-296B001-001

296-B-1

B- PLANT

Emission Unit ID: 402

Abatement Technology (state only enforceable)

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Description of Abatement Technology [WAC 246-247-010(4)] [WAC 246-247-040(5)]	Required Number of Units [WAC 246-247-10(4)(5)] [WAC 246-247-060(5)]	Additional Description/Conditions [WAC 246-247-101(4)] [WAC 246-247-040(5)] [WAC 246-247-060(5)]
	Fan	2	Only one fan operates at a time.
	HEPA	4	Two trains, 2 in each train
	Prefilter	2	Two trains, one in each train

Monitoring Requirements (state and federally enforceable)

Federal and State Regulatory Requirements	Monitoring and Testing Procedure [WAC 246-247-040(5)] [WAC 173--401-615(1)]	Radionuclides Requiring Measurement [WAC 173-401-615(1)]	Sampling Frequency [WAC 246-247-075(1)] [WAC 173-401-615(1)]
40 CFR 61.93(b)(4) & WAC 246-247-075(2)	Method 2 appendix A Method 114 appendix B 61.93(b)(2)(ii) ANSI N13.1	137Cs, 90Sr	Continuous

This Emission Unit has 4 active Notice of Construction.

Project Title	Permit No	Date Approved	NOC_ID
Shut down and restart of the 296-B-1 stack during future HEPA filter changes, ALARACT revision		4/25/00	445

Conditions (state only enforceable)

296-B-1

1. Results of environmental samplers near B Plant will be trended during the HEPA filter changes when the stack is shut down.
2. BHI will perform radiological surveys of all potential points of fugitive emissions, along with the four points listed above.
3. BHI will perform a pre-shut-down radiological contamination survey of these four doors noted in the second bullet of this agreement.
4. Daily surveys for radiological contamination will be made at 221-B Canyon Doors 1, 3, R1, and the railroad tunnel roll-up door. WDOH will be given notification if any contamination is found as a result of these surveys.
5. Notification will be made to the Washington State Department of Health (WDOH) prior to HEPA filter changes.

Project Title	Permit No	Date Approved	NOC_ID
Surveillances during 296-B-1 Canyon Stack Outage, Fall 1999 (ALARACT)	Agreement on Surveillances	10/6/99	400

Conditions (state only enforceable)

296-B-1

1. Results of environmental samplers near B Plant will be trended during the shut down, and the trended results will be provided to DOH at the end of the calendar year. The system is scheduled to be restored to normal operation at the end of the calendar year.
2. The plant will provide DOH with drawings or other documentation that demonstrate that backdraft dampers in the Stairwell 3 door are designed to close when the ventilation is shut down.
3. The plant will provide DOH with deactivation documentation showing that potential points of fugitive emissions, other than the four points listed above, were sealed.
4. The plant will provide DOH with one-time verification of minimal air flow at the same 4 locations following shut-down to determine whether there is any airflow out of the 221-B Canyon.
5. The plant will perform a pre-shut-down radiological contamination survey of these four doors.
6. Daily surveys for radiological contamination will be made at 221-B Canyon Doors 1, 3, R1 and the railroad tunnel roll-up door. DOH will be given a courtesy notification if any contamination is found as a result of these surveys.

Project Title	Permit No	Date Approved	NOC_ID
B Plant Modification of the Ventilation System (Emission Point: 296-B-1)	AIR 97-1012	10/28/97	240

Conditions (state only enforceable)

296-B-1

1. The continuous air monitor (CAM) listed in Section 9.4 of DOE/RL-97-17, Revision 0 in the proposed stack can be eliminated.
2. The discharge from the new stack must be fully NESHAPS compliant and continuously monitored in accordance to the requirements of 40 CFR 61.93.
3. A procedure must be written to measure the activity of the soil prior to excavation. Records of the activity of the soil measured during excavation must be kept. These records must be available to DOH during inspections.
4. Conditions of AIR-97-805 shall apply.
5. The air cleanout train (ACT) must be located at the south side of B-Plant. The ACT duct must be near the number 5 stairwell at B-Plant. The new stack will be approximately west of stairwell number 7. The concrete pads for filter housing exhaust for filter housing, exhaust fans and duct supports will be placed on the south side of the 221-B Canyon Building. The concrete pads will be no more the 4.5 feet below grade.

Project Title	Permit No	Date Approved	NOC_ID
B Plant Modification of the Ventilation System (Emission Point: 296-B-1)	AIR 97-805	8/20/97	235

Conditions (state only enforceable)

296-B-1

1. The new HEPA filters must be fully compatible with ANSI 509/510 standards.
2. The offsite abated emission must not exceed 4.52 E-02 millirem per year to the Maximally Exposed Individual. The isotopic breakdown is limited to those listed in Appendix A of the NOC.

3. The new 291-B Stack must comply with all National Emissions Standards for Hazardous Air Pollutants (NESHAPS) requirements. All equipment in the new ventilation system must meet the specifications outlined in Section 8.2 of the NOC. The sampling system is outlined in Section 9.4 - 9.4.4 of the NOC.

200E Canister Storage Bldg**CSB**

CANNISTER STORAGE BLDG (CSB)

Emission Unit ID: 435

Abatement Technology (state only enforceable)

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Description of Abatement Technology [WAC 246-247-010(4)] [WAC 246-247-040(5)]	Required Number of Units [WAC 246-247-10(4)(5)] [WAC 246-247-060(5)]	Additional Description/Conditions [WAC 246-247-101(4)] [WAC 246-247-040(5)] [WAC 246-247-060(5)]
	Fan	2	operates in parallel, one fan at a time and one in backup mode
	HEPA	2	double stage, operates in parallel, one HEPA at a time and one in backup mode

Monitoring Requirements (state and federally enforceable)

Federal and State Regulatory Requirements	Monitoring and Testing Procedure [WAC 246-247-040(5)] [WAC 173--401-615(1)]	Radionuclides Requiring Measurement [WAC 173-401-615(1)]	Sampling Frequency [WAC 246-247-075(1)] [WAC 173-401-615(1)]
40 CFR 61.93[b][4][i] & WAC 246-247-075[3]	Appendix B, Method 114(3)	All radionuclides which could contribute 10% of the potential EDE.	The record filter is to be counted annually (either a destructive or non-destructive technique) using a gamma spectrometer calibrated to Cs-137.

This Emission Unit has 1 active Notice of Construction.

Project Title	Permit No	Date Approved	NOC_ID
Canister Storage Building	AIR 98-710	7/30/98	289

Conditions: (state only enforceable)

CSB

1. If construction is not commenced with two years from the date of this letter, the approval is void.
2. Nothing may be inferred that is not specifically described in the NOC.
3. The department must approve any deviation from required or recommended monitoring standards.
4. Continuous monitoring must be in place prior to operating. This will include continuous ambient air sampling for this project.
5. All Conditions and Limitations must be proceduralized prior to the implementation of this NOC.
6. The facility must be able to demonstrate the reliability and accuracy of emission data and other test results

from the facility (WAC 246-247-075(13) and (WAC 246-247-075(6)). The facility must demonstrate that it has a quality assurance program compatible with applicable national standards listed in, or equivalent to, those listed in the above cited regulation.

7. The process for validating the process parameters with respect to storing the MCOs in a sealed configuration is approved, however, the total number of representative samples was not given to us. By telephone, it was indicated that the total number of MCOs tested should not exceed twelve. Twelve is the limit, unless a more specific number is negotiated with the department.
8. If there is an unexpected release of radioactivity, or if there is a shutdown, or any other condition that if it were allowed to persist, would result in emissions of radionuclides in excess of any Conditions or Limitations in the license, or that last more than four hours, it must be reported to the department within 24 hours. Applicable standards (WAC 246-247-040) include unit specific emission limits (paragraph 1), BARCT (paragraph 2), or ALARACT (paragraph 4), whichever is applicable, or any limitations included in this approval (paragraph 5).
9. The NOC constitutes a contract between the department and the facility. Any changes must be approved by the department
10. All measured or calculated emissions must be reported annually (WAC 246-247-080(3)).
11. The emission limit for this emission unit is less than 1.58E-02 mrem/yr to the MEI abated (WAC 246-247-040(5)).
12. U.S. DOE shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
13. Preoperational tests planned for this unit, requirement for notification at least seven days prior to such testing under (WAC 246-247-060(4)) will apply.
14. All records required by WAC 246-247 must be readily (promptly) retrievable, and must be stored onsite at the facility. All records shall be maintained for a minimum of five years (WAC 246-247-080(8))
15. Any problems, which could affect the monitoring, ventilation or controls to this facility must be reported to the department.
16. The monitoring system must be ANSI N13.1 and ANSI N42.18 compliant.
17. Any deviation from the description of the modification or new construction, without approval of the department, may result in enforcement action under WAC 246-247-100.
18. The department reserves the right at any time to require the licensee to provide for split or collocated sampling of this emission unit (WAC 246-247-075(10)).
19. This approval, with its Conditions and Limitations, constitutes an amendment to the Department's Radioactive Air Emissions License. This amendment must be included in the next revision of the Hanford Air Operating Permit (WAC 246-247-060(1)(e) and (2)).
20. If the department finds that the emission unit described in this NOC is not in compliance with the standards in WAC 246-247-040 during construction and/or operation, the department will require modifications to bring it into compliance (WAC 246-247-060(2)(d)).
21. The department reserves the right to conduct an environmental surveillance program around this emission unit and to require the facility to conduct or modify its own environmental monitoring program (WAC 246-247-075(9)).
22. Ventilation systems used to control the release of particulate airborne radiological contamination from individual processes must include:
 1. MHM cask extract ventilation and HEPA exhaust system
 2. Sampling/weld station ventilation and HEPA exhaust system
 3. Overpack storage tube purge system
 4. Temporary containment enclosure with HEPA exhaust system for contamination control.
 5. The building HEPA filters are still required.
 6. All controls must be ANSI N509/510 compliant.

200E P-291A001-001

291-A-1

PUREX

Emission Unit ID: 369

Abatement Technology (state only enforceable)

Applicable Requirements: ALARACT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Description of Abatement Technology [WAC 246-247-010(4)] [WAC 246-247-040(5)]	Required Number of Units [WAC 246-247-10(4)(5)] [WAC 246-247-060(5)]	Additional Description/Conditions [WAC 246-247-101(4)] [WAC 246-247-040(5)] [WAC 246-247-060(5)]
	Fan	3	In parallel, one operating, two back-up
	HEPA	2	In series
	Glass Filter	1	(Deep Bed Glass filter)

Monitoring Requirements (state and federally enforceable)

Federal and State Regulatory Requirements	Monitoring and Testing Procedure [WAC 246-247-040(5)] [WAC 173--401-615(1)]	Radionuclides Requiring Measurement [WAC 173-401-615(1)]	Sampling Frequency [WAC 246-247-075(1)] [WAC 173-401-615(1)]
40 CFR 61.93(b)(4) & WAC 246-247-75(2)	Method 2 appendix A Method 114 appendix B 61.93(b)(2)(ii) ANSI N13.1	239/240Pu, 241Am	Continuous

200E P-296B010-001**296-B-10**

Waste Encapsulation and Storage Facility (WESF)

Emission Unit ID: 340

Abatement Technology (state only enforceable)

Applicable Requirements: ALARACT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Description of Abatement Technology [WAC 246-247-010(4)] [WAC 246-247-040(5)]	Required Number of Units [WAC 246-247-10(4)(5)] [WAC 246-247-060(5)]	Additional Description/Conditions [WAC 246-247-101(4)] [WAC 246-247-040(5)] [WAC 246-247-060(5)]
K-3 Filter Pit	Fan	1	2 parallel paths (1 in-use, 1 backup)
K-3 Filter Pit	HEPA	2	2 parallel flow paths, in-series
K-3 Filter Pit	Impingement Vanes	1	
K-3 Filter Pit	Heater	1	
K-3 Filter Pit	Demister	1	
K-1 Filter Bldg.	Fan	1	2 in parallel
K-1 Filter Bldg.	HEPA	2	In series
K-1 Filter Bldg.	Prefilter	2	In series

Monitoring Requirements (state and federally enforceable)

Federal and State Regulatory Requirements	Monitoring and Testing Procedure [WAC 246-247-040(5)] [WAC 173-401-615(1)]	Radionuclides Requiring Measurement [WAC 173-401-615(1)]	Sampling Frequency [WAC 246-247-075(1)] [WAC 173-401-615(1)]
40 CFR 61.93(b)(4) & WAC 246-247-75(2)	Method 2 appendix A Method 114 appendix B 61.93(b)(2)(ii) ANSI N13.1	All radionuclides which could contribute 10% of the potential EDE.	Continuous

This Emission Unit has 4 active Notice of Construction.

Project Title	Permit No	Date Approved	NOC_ID
Waste Encapsulation and Storage Facility K-3 Duct Characterization	NOC revision approval	9/8/99	392

Conditions (state only enforceable)

296-B-10

- (1) Continuous HPT coverage is required during repair activities. No new activities which could provide airborne emissions are to occur in WESF until the record sample system is confirmed to operate as required.
- (2) Differential pressure readings for the filters upstream of 296-B-10 are to be closely monitored during the repair period.

3. No WDOH conditions apply to this NOC.
4. WDOH Conditions and Limitations dated 12/17/97 (RTAM) are applicable. There are no new WDOH conditions that apply to this NOC.

Project Title	Permit No	Date Approved	NOC_ID
Waste Encapsulation and Storage Facility - approval of alternative monitoring method	AIR 99-501	5/19/99	369

Conditions (state only enforceable)

296-B-10

1. No WDOH conditions apply.
2. Continuous HPT coverage is required during repair activities. No new activities which could provide airborne emissions are to occur in WESF until the record sample system is confirmed to operate as required.
3. Differential pressure readings for the filters upstream of 296-B-10 are to be closely monitored during the repair period.
4. WDOH Conditions and Limitations dated 12/17/97 (RTAM) are applicable. There are no new WDOH conditions that apply to this NOC.

Project Title	Permit No	Date Approved	NOC_ID
Waste Encapsulation and Storage Facility (WESF) Liquid Low Level Radioactive Stream Piping Modification and Contingency Operations	NOC revision approval	1/19/99	334

Conditions (state only enforceable)

296-B-10

1. Differential pressure readings for the filters upstream of 296-B-10 are to be closely monitored during the repair period.
2. WDOH Conditions and Limitations dated 12/17/97 (RTAM) are applicable. There are no new WDOH conditions that apply to this NOC.
3. Continuous HPT coverage is required during repair activities. No new activities which could provide airborne emissions are to occur in WESF until the record sample system is confirmed to operate as required.

Project Title	Permit No	Date Approved	NOC_ID
Waste Encapsulation and Storage Facility (WESF) K-3 Duct Characterization	RTAM	12/17/97	249

Conditions (state only enforceable)

296-B-10

1. Radiation detection equipment will be under continuous surveillance in the K-3 filter pit. Radiation readings will be noted at the beginning of the activity and any increase will result in a reappraisal of procedures before continuing with work.

200W P-244S-001

296-S-22

244 S-DCRT

Emission Unit ID: 165

Abatement Technology (state only enforceable)

Applicable Requirements: ALARACT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Description of Abatement Technology [WAC 246-247-010(4)] [WAC 246-247-040(5)]	Required Number of Units [WAC 246-247-10(4)(5)] [WAC 246-247-060(5)]	Additional Description/Conditions [WAC 246-247-101(4)] [WAC 246-247-040(5)] [WAC 246-247-060(5)]
	Fan	1	
			* Technology Specific Requirements
	HEPA	2	2 parallel flow paths
	Prefilter	1	2 parallel flow paths
	Heater	1	Annulus exhaust is not heated

Monitoring Requirements (state and federally enforceable)

Federal and State Regulatory Requirements	Monitoring and Testing Procedure [WAC 246-247-040(5)] [WAC 173--401-615(1)]	Radionuclides Requiring Measurement [WAC 173-401-615(1)]	Sampling Frequency [WAC 246-247-075(1)] [WAC 173-401-615(1)]
40 CFR 61.93(b)(4) & WAC 246-247-75(2)	Method 2 appendix A Method 114 appendix B 61.93(b)(2)(ii) ANSI N13.1	All radionuclides which could contribute 10% of the potential EDE.	Continuous

This Emission Unit has 3 active Notice of Construction.

Project Title	Permit No	Date Approved	NOC_ID
S-Farm removal of duct work and associated exhausters	AIR 95-1004	10/12/95	120

Project Title	Permit No	Date Approved	NOC_ID
296-S-22 Stack Monitoring System Upgrades Resume Work Strategy (Project W-420)	RTAM	5/6/99	366

Conditions (state only enforceable)

296-S-22

1. Track any remaining contamination as it is encountered and subtract it from the NOC's APQ. Keep a running total of the actual field encountered APQ to show that the NOC APQ will not be exceeded.
2. Determine how much of APQ was reached due to contamination encounter thus far in the excavation work.

3. Use the APQ, in Curies, as the governing requirement for compliance with the NOC.

Project Title	Permit No	Date Approved	NOC_ID
Stack Monitoring System Upgrades (Project W-420)	AIR 99-115	1/29/99	339

Conditions (state only enforceable)

296-S-22

1. Records must be readily (promptly) available for this unit. Those records must be maintained onsite, and must be retained for at least 5 years.
2. U.S. DOE shall monitor this project or emission unit as follows As stated in the NOC.
3. This unit must be fully accessible to Department of Health inspectors. If there are any specific training requirements or have restrictions or special requirements for entry, they must be given to the department when they are known to allow for unannounced inspections. At a minimum, for unannounced inspections, such requirements or restrictions must be told to inspectors that morning, with the opportunity for the inspectors to meet those requirements. For prior announced inspections, such notification must occur far enough in advance for the inspectors to have reasonable time to meet the requirements.
4. The facility must maintain a log in an approved format for this activity or emission unit.
5. U.S. DOE shall comply with all Conditions and Limitations of this license.
6. The radionuclides are limited to Sr-90 and Am-241:
For Excavation Activities: Sr-90, dose 2.41E-07 mrem/year to the MEI;
Am-241, dose 2.89E-03 mrem/yr to the MEI
For Equipment Removal Activities: Sr-90, dose 9.47E-11 mrem/year to the MEI;
Am-241, dose 35.66E-10 to the MEI
7. If the department finds that the emission unit described in this NOC, is not in compliance with the standards in WAC 245-247-040 during construction ,as described in this NOC, or during operation, it reserves the right to require modifications to bring it into compliance.
8. When this project is completed. or operations cease, the facility shall notify the department via a report of closure, including whether or not any potential for airborne releases occurred.
9. The facility shall notify the department at least seven days prior to any planned preoperational testing of the emission unit's emissions control, monitoring or containment systems. The department reserves the right to observe such tests.
10. The required controls are: Wind speed construction of 20 mph, HPT coverage, engineering and controls
11. The annual possession quantity is limited to:
For Excavation Activities: Sr-90, 5.51E-03 Ci; Am-241, 2.21E-01 Ci
For Equipment Removal Activities: Sr, 4.59E-07 Ci; Am-241, 9.17E-09 Ci
12. All reports and records must be kept and reported according to 40 CFR 61, Subpart H.
13. The department reserves the right to inspect and audit this unit during construction and operation, including all activities, equipment, operations, documents, data, and other records related to compliance with the regulations.
14. The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards listed in, or equivalent to, those listed in, or equivalent to, those listed in WAC 246-247-075(6).
15. The facility shall make requested documents available in a timely manner for review.
16. The facility's modification activity shall consist of replacing the stack and its associated sampling and monitoring equipment. Portions of existing concrete pads will be removed and the soil excavated to accommodate the installation of utilities (power, signal lines, etc.) The existing ventilation and stack sampling systems will remain operational during the excavation activities but will be shut down during

stack and equipment removal and the relocation of the equipment cabinet to a temporary near-by location.

17. The abated emission limit is: $2.89E-3$ mrem/yr to the MEI.
18. The department retains the right to conduct its own stack sampling, environmental monitoring or other testing, as required around this unit to assure compliance. If the department so decides, the facility must make provision for such testing.
19. If there is an unexpected release of radioactivity or if there is a shutdown or other condition that, if it were allowed to persist, would result in emissions of radionuclides in excess of any standards or limitations in the license or that last more than four hours, it must be reported to the department within 24 hours. (Note: Applicable standards (WAC 246-247-040) include unit specific emission limits (paragraph 5), the offsite dose standard (paragraph 1), BARCT (paragraph 3) or ALARACT (paragraph 4), whichever is applicable, or any limitations included in the approval (paragraph 5)).
20. All measured or calculated emissions must be reported annually.
21. The facility must be able to demonstrate that the workers associated with this emission unit are adequately trained in the use and maintenance of emission control and monitoring systems, and in the performance of associated test and emergency response procedures.
22. The facility must be able to demonstrate the reliability and accuracy of emission data and other test results from this unit (WAC 246-247-075(13) and WAC 246-247-075(6)).
23. Radiological field surveys will be performed during replacement of the stack and associated sampling and monitoring equipment. HPT coverage will be provided during excavation with these activities stopping if evenly distributed (i.e., non-speck) contamination detection reading of 100,000 dpm/100cm² beta-gamma, or 35 dpm/100cm² above background alpha are encountered. If contamination levels in affected areas are greater than 1,000 dpm/100cm² beta gamma and 20 dpm/100cm² alpha, contamination controls including bagging and taping, applying fixatives, foaming, or glove bags will be used. A 20 mph sustained wind speed restriction shall apply to all demolition and replacement work. When ventilation is restored, between shutdown and completion of the upgrades, the stack emissions measurement system will be restored.

200W P-244TX-001**296-T-18**

244-TX-DCRT

Emission Unit ID: 166

Abatement Technology (state only enforceable)

Applicable Requirements: ALARACT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Description of Abatement Technology [WAC 246-247-010(4)] [WAC 246-247-040(5)]	Required Number of Units [WAC 246-247-10(4)(5)] [WAC 246-247-060(5)]	Additional Description/Conditions [WAC 246-247-101(4)] [WAC 246-247-040(5)] [WAC 246-247-060(5)]
			* Technology Specific Requirements
	Fan	1	
	HEPA	2	3 parallel flow paths with 2 HEPAs in series
	Prefilter	1	3 parallel flow paths
	Heater	1	Annulus exhaust is not heated

Monitoring Requirements (state and federally enforceable)

Federal and State Regulatory Requirements	Monitoring and Testing Procedure [WAC 246-247-040(5)] [WAC 173--401-615(1)]	Radionuclides Requiring Measurement [WAC 173-401-615(1)]	Sampling Frequency [WAC 246-247-075(1)] [WAC 173-401-615(1)]
40 CFR 61.93(b)(4) & WAC 246-247-75(2)	Method 2 appendix A Method 114 appendix B 61.93(b)(2)(ii) ANSI N13.1	All radionuclides which could contribute 10% of the potential EDE.	Continuous

This Emission Unit has 2 active Notice of Construction.

Project Title	Permit No	Date Approved	NOC_ID
296-T-18 Stack Monitoring System Upgrades Resume Work Strategy (Project W-420)	RTAM	5/6/99	367

Project Title	Permit No	Date Approved	NOC_ID
Stack Monitoring System Upgrades (Project W-420)	AIR 99-115	1/29/99	339

Conditions (state only enforceable)

296-T-18

1. The facility shall make requested documents available in a timely manner for review.
2. The facility must be able to demonstrate the reliability and accuracy of emission data and other test results from this unit (WAC 246-247-075(13) and WAC 246-247-075(6)).

3. U.S. DOE shall monitor this project or emission unit as follows As stated in the NOC.
4. The department retains the right to conduct its own stack sampling, environmental monitoring or other testing, as required around this unit to assure compliance. If the department so decides, the facility must make provision for such testing.
5. The facility must be able to demonstrate that the workers associated with this emission unit are adequately trained in the use and maintenance of emission control and monitoring systems, and in the performance of associated test and emergency response procedures.
6. The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards listed in, or equivalent to, those listed in, or equivalent to, those listed in WAC 246-247-075(6).
7. The department reserves the right to inspect and audit this unit during construction and operation, including all activities, equipment, operations, documents, data, and other records related to compliance with the regulations.
8. The facility must maintain a log in an approved format for this activity or emission unit.
9. All reports and records must be kept and reported according to 40 CFR 61, Subpart H.
10. This unit must be fully accessible to Department of Health inspectors. If there are any specific training requirements or have restrictions or special requirements for entry, they must be given to the department when they are known to allow for unannounced inspections. At a minimum, for unannounced inspections, such requirements or restrictions must be told to inspectors that morning, with the opportunity for the inspectors to meet those requirements. For prior announced inspections, such notification must occur far enough in advance for the inspectors to have reasonable time to meet the requirements.
11. U.S. DOE shall comply with all Conditions and Limitations of this license.
12. The facility's modification activity shall consist of replacing the stack and its associated sampling and monitoring equipment. Portions of existing concrete pads will be removed and the soil excavated to accommodate the installation of utilities (power, signal lines, etc.) The existing ventilation and stack sampling systems will remain operational during the excavation activities but will be shut down during stack and equipment removal and the relocation of the equipment cabinet to a temporary near-by location.
13. The radionuclides are limited to Sr-90 and Am-241:
For Excavation Activities: Sr-90, dose $2.41E-07$ mrem/year to the MEI;
Am-241, dose $2.89E-03$ mrem/yr to the MEI
For Equipment Removal Activities: Sr-90, dose $4.38E-02$ mrem/year to the MEI;
Am-241, dose $1.31E+01$ to the MEI
14. The annual possession quantity is limited to:
For Excavation Activities: Sr-90, $5.51E-03$ Ci; Am-241, $2.21E-01$ Ci
For Equipment Removal Activities: Sr, $4.59E-07$ Ci; Am-241, $9.17E-09$ Ci
15. All measured or calculated emissions must be reported annually.
16. The abated emission limit is: $2.89E-3$ mrem/yr to the MEI.
17. The required controls are: Wind speed construction of 20 mph, HPT coverage, engineering and controls
18. If there is an unexpected release of radioactivity or if there is a shutdown or other condition that, if it were allowed to persist, would result in emissions of radionuclides in excess of any standards or limitations in the license or that last more than four hours, it must be reported to the department within 24 hours. (Note: Applicable standards (WAC 246-247-040) include unit specific emission limits (paragraph 5), the offsite dose standard (paragraph 1), BARCT (paragraph 3) or ALARACT (paragraph 4), whichever is applicable, or any limitations included in the approval (paragraph 5)).
19. If the department finds that the emission unit described in this NOC, is not in compliance with the standards in WAC 245-247-040 during construction, as described in this NOC, or during operation, it reserves the right to require modifications to bring it into compliance.
20. Records must be readily (promptly) available for this unit. Those records must be maintained onsite, and

must be retained for at least 5 years.

21. The facility shall notify the department at least seven days prior to any planned preoperational testing of the emission unit's emissions control, monitoring or containment systems. The department reserves the right to observe such tests.
22. Radiological field surveys will be performed during replacement of the stack and associated sampling and monitoring equipment. HPT coverage will be provided during excavation with these activities stopping if evenly distributed (i.e., non-speck) contamination detection reading of 100,000 dpm/100cm² beta-gamma, or 35 dpm/100cm² above background alpha are encountered. If contamination levels in affected areas are greater than 1,000 dpm/100cm² beta gamma and 20 dpm/100cm² alpha, contamination controls including bagging and taping, applying fixatives, foaming, or glove bags will be used. A 20 mph sustained wind speed restriction shall apply to all demolition and replacement work. When ventilation is restored, between shutdown and completion of the upgrades, the stack emissions measurement system will be restored.
23. When this project is completed, or operations cease, the facility shall notify the department via a report of closure, including whether or not any potential for airborne releases occurred.

200W P-244U-001

296-U-11

244-U-DCRT

Emission Unit ID: 329

Abatement Technology (state only enforceable)

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Description of Abatement Technology [WAC 246-247-010(4)] [WAC 246-247-040(5)]	Required Number of Units [WAC 246-247-10(4)(5)] [WAC 246-247-060(5)]	Additional Description/Conditions [WAC 246-247-101(4)] [WAC 246-247-040(5)] [WAC 246-247-060(5)]
			* Technology Specific Requirements
	Fan	Non-Operational	This unit is inactive and will require an NOC to resume operation or a report of closure to deregister.
	HEPA	Non-Operational	This unit is inactive and will require an NOC to resume operation or a report of closure to deregister.
	Prefilter	Non-Operational	This unit is inactive and will require an NOC to resume operation or a report of closure to deregister.
	Heater	Non-Operational	This unit is inactive and will require an NOC to resume operation or a report of closure to deregister.

Monitoring Requirements (state and federally enforceable)

Federal and State Regulatory Requirements	Monitoring and Testing Procedure [WAC 246-247-040(5)] [WAC 173--401-615(1)]	Radionuclides Requiring Measurement [WAC 173-401-615(1)]	Sampling Frequency [WAC 246-247-075(1)] [WAC 173-401-615(1)]
40 CFR 61.93(b)(4) & WAC 246-247-75(2)	Method 2 appendix A Method 114 appendix B 61.93(b)(2)(ii) ANSI N13.1	All radionuclides which could contribute 10% of the potential EDE.	Continuous

200W P-291Z001-001**291-Z-1**

PLUTONIUM FINISHING PLANT(Z PLANT)

Emission Unit ID: 393

Abatement Technology (state only enforceable)

Applicable Requirements: ALARACT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Description of Abatement Technology [WAC 246-247-010(4)] [WAC 246-247-040(5)]	Required Number of Units [WAC 246-247-10(4)(5)] [WAC 246-247-060(5)]	Additional Description/Conditions [WAC 246-247-101(4)] [WAC 246-247-040(5)] [WAC 246-247-060(5)]
(all operations)	Fan	4	3 standby (7 total)
(242-Z Operations)	HEPA	2	2 Stages for process operations
236-Z Operations)	HEPA	2	2 Stages for process operations
(234-5Z Operations)	HEPA	2	2 Stages for process operations

Monitoring Requirements (state and federally enforceable)

Federal and State Regulatory Requirements	Monitoring and Testing Procedure [WAC 246-247-040(5)] [WAC 173-401-615(1)]	Radionuclides Requiring Measurement [WAC 173-401-615(1)]	Sampling Frequency [WAC 246-247-075(1)] [WAC 173-401-615(1)]
40 CFR 61.93(b)(4) & WAC 246-247-75(2)	Alternative effluent flow rate not to exceed 290,000 cfm. Method 114 appendix B 61.93(b)(2)(ii) ANSI N13.1	All radionuclides which could contribute 10% of the potential EDE.	Continuous

This Emission Unit has 6 active Notice of Construction.

Project Title	Permit No	Date Approved	NOC_ID
Magnesium Hydroxide Precipitation Process at PFP	AIR 00-801	8/25/00	488

Conditions (state only enforceable)

291-Z-1

1. The facility must be able to demonstrate the reliability and accuracy of emission data and other test results from this unit (WAC 246-247-075(13) and WAC 246-247-075(6)). The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards listed in, or equivalent to, those listed in the above-cited regulation.
2. The facility shall make requested documents available for timely manner for review (WAC 246-247-080(10)).
3. This unit must be fully accessible to Department of Health (DOH) inspectors. If there are any specific training requirements or have restrictions or special requirements for entry, they must be given to the department when they are known to allow for unannounced inspections, as required by EPA (WAC 246-247-080(9)). At a minimum, for unannounced inspections, such requirements or restrictions must be told to inspectors that morning, with the opportunity for the inspectors to meet those requirements. For prior announced inspections, such notification must occur far enough in advance for the inspectors to have

reasonable time to meet the requirements.

4. If there is an unexpected release of radioactivity or if there is a shutdown or other condition that, if it were allowed to persist, would result in emissions of radionuclides in excess of any Conditions or Limitations in the NOC or that lasts more than four hours, it must be reported to the department within 24 hours. Applicable standards (WAC 246-247-040) include unit specific emission limits (paragraph 5), the offsite dose standard (paragraph 1), BARCT (paragraph 3) or ALARACT (paragraph 4), whichever is applicable, or any limitations included in this approval (paragraph 5).
5. All measured or calculated emissions must be reported annually (WAC 246-247-080(3)).
6. Records must be readily (promptly) available for this unit. Those records must be maintained onsite, and must be retained for at least five years (WAC 246-247-080(8)).
7. All reports and records must be kept and reported according to 40 CFR 61, Subpart H (WAC 246-247-080(2)).
8. U.S. DOE shall comply with all Conditions and Limitations of this Notice of Construction (WAC 246-247-060(5)).
9. The department reserves the right to inspect and audit this unit during construction and operation. This includes all activities, equipment, operation procedures, documents, data, and other records related to compliance with the regulations (WAC 246-247-080(1)).
10. Approved activities included in the process are the following: Stabilization by precipitation and use of the muffle furnaces; drying of the precipitated plutonium oxide (PuO₂); packaging of the dried PuO₂ for interim storage and disposal of the filtrate from the liquid nitrate solution using existing PFP processes.
11. The facility must be able to demonstrate that the workers associated with this emission unit are adequately trained in the use and maintenance of emission control and monitoring systems, and in the performance of associated test and emergency response procedures (WAC 246-247-075(12)).
12. The department reserves the right to conduct its own stack sampling, environmental monitoring or other testing, as required around this unit to assure compliance. If the department so decides, the facility must make provision for such testing (WAC 246-247-075(10)).
13. The facility shall notify the department at least seven days prior to any planned preoperational testing of the emission unit's emission control, monitoring or containment systems. The department reserves the right to observe such tests (WAC 246-247-060(4)).
14. If the department finds that the emission unit described in this NOC is not in compliance with the standards in WAC 246-247-040 during construction (as described in the NOC or during operation) the department reserves the right to require modifications to bring it into compliance (WAC 246-247-060(2)(d)).
15. This approval, with its Conditions and Limitations must be included in the next revision of the Hanford Air Operating Permit (WAC 246-247-060(1)(e) and (2)(c)), and will at that time, constitute a revision of the Radioactive Air Emissions License.
16. These Conditions and Limitations must be proceduralized prior to starting the activities described in the Notice of Construction.
17. The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
18. Construction activities in Room 227 are limited to the installation of wall and ceiling mounts that will stabilize the glovebox during seismic activities. Decontamination activities in Room 227 must be less than 0.1 mrem/yr.

* The HEPA filtered vacuums used for decontamination activities in Room 227 must be approved in the list included in the Radioactive Air Emissions Notice of Construction for HEPA Filtered Vacuum Radioactive Air Emissions Units DOE-RL-97-50. This document is to be used as a guide for the use of HEPA filtered vacuum, prior to the time the room is connected to the ventilation system. All records must be maintained as required in the HEPA Filtered Vacuum Radioactive Air Emissions Units (DOE-RL-97-50) NOC.

19. Construction activities in Room 230C are limited to the following:

- * Decontaminate and/or stabilize any contaminated areas as necessary.
- * Install two new gloveboxes to house the process equipment. These include precipitators, phase separator, polishing filters. Filtering tanks and hotplates.
- * Anchor the two new glove boxes to the floor.
- * Install wall and ceiling mounts, as necessary, to secure the gloveboxes in case of seismic activity.
- * Install drain lines from the new gloveboxes to a clean section of an existing drain line.
- * Connect the two new gloveboxes to the existing E-4 ventilation header.
- * Route feed returns and spare lines that originate in Room 227 to the new gloveboxes.
- * Install a new conveyor transport to connect to the new gloveboxes.
- * Cut a hole, with dimensions approximating a four-foot diameter semicircle, into the wall between Rooms 230C and 230B to allow access to a glovebox port.
- * Remove and relocate the electrical power conditioner.
- * Relocate the current safety shower and eye wash station.
- * Install a new electrical control panel.
- * Install a wash water tank and run lines to two new gloveboxes.

20. All work on this project must be completed on or before October 1, 2010.
21. The maximum furnace temperature must not exceed approximately 1,000 oC.
22. The muffle furnaces must connect into the E-4 ventilation system and be configured as described in the Muffle Furnace Notice of Construction (DOE/RL-96-79).
23. The monitoring system for the 291-Z-1 stack must remain compliant to all the NESHAPs requirements.
24. The air in rooms 227 and 230C will exhaust through the E-3 High - Efficiency Particulate Air (HEPA) ventilation system. The E-3 ventilation system contains one stage of HEPA filtration with a minimum efficiency of 99.95 percent for particles with a medium diameter of 0.3 microns, before connecting with the E-4 ventilation system and exhausting through the 291-Z-1 stack.

The offgases in Rooms 227 and 230C used in the work associated with the MHPP will exhaust through the E-4 ventilation system. The E-4 ventilation system has two stages of HEPA filtration with a minimum efficiency of 99.95 percent for particles with a medium diameter of 0.3 microns. The E-4 ventilation system then passes through two additional stages of HEPA filtration, before connecting with the E-3 ventilation system and exhausting through the 291-Z-1 stack."

25. When this project is completed, or operations cease, the facility shall notify the department via a report of closure, and indicate whether or not any potential for airborne release occurred (WAC 246-247-080(6)).
26. Testing of all HEPA filters described in the NOC will be performed annually.
27. The work approved in this NOC is limited to those described activities associated with the construction and operation activities involving the magnesium hydroxide precipitation process of plutonium solutions in nitric acid solutions within the Plutonium Finishing Plant (PFP).
28. All operating Conditions and Limitations imposed by DOH in letter # AIR 96-1205 or stated in the Notice of Construction for the Muffle Furnaces must be observed.
29. The concentration of the nitric acid diluting solution used in the magnesium hydroxide process will average 0.35 Molar and be maintained within the safe operating parameters established for the process.
30. The concentration of the nitric acid make up feed solution used in the magnesium hydroxide process cannot exceed 3.0 Molar.
31. The total abated emissions are limited to 1.10E-01 mrem/yr.
32. The total unabated dose TEDE to the hypothetical MEI cannot exceed 2.20E+02 mrem/yr.
33. The total unabated emissions are limited to 3.1E+01 Ci/yr.
34. The maximum stack flow rate cannot exceed 137 cubic meters per second.
35. The annual possession quantity for Plutonium (Pu) in nitric acid solutions cannot exceed 0.4 metric tons of Pu.

Project Title	Permit No	Date Approved	NOC_ID
Plutonium Finishing Plant (PFP) Cementation process (ALARACT)	AIR 00-302	3/3/00	432

Project Title	Permit No	Date Approved	NOC_ID
Ductwork and Process Piping Remediation in Buildings 234-5Z & 291-Z (PFP)	Air 95-1102	11/7/95	124

Conditions (state only enforceable)

291-Z-1

1. Approved with the understanding that there shall be no changes to the existing control equipment & all remediation shall utilize a containment tent w/ HEPA filtration and/or glove bags.

Project Title	Permit No	Date Approved	NOC_ID
Vertical Calciner at Plutonium Finishing Plant	AIR 96-1105	11/8/96	195

Conditions (state only enforceable)

291-Z-1

1. The source term is based on approximately 4,800 liters plutonium and transuranic solution which are stored in PFP and a total mass of 335 kg of plutonium and americium is assumed to be in this volume.
2. The proposed action is a modification of the existing process within the PFP complex. It is proposed that a vertical calciner be constructed and installed in Room 230C of the 234-5Z Building and operated to stabilize the plutonium.
3. Emission unit stack 291-Z-1 shall meet applicable NESHAP requirements.

Project Title	Permit No	Date Approved	NOC_ID
Plutonium Finishing Plant Duct Work and Process Piping Remediation	RTAM	7/9/96	170

Conditions (state only enforceable)

291-Z-1

1. WDOH required that the Continuous Air Monitors (CAMs) to be used would be in the same room as where the duct work modifications were to occur.
2. WDOH required that the same vent path for emissions from the Plutonium Finishing Plant (PFP) would be used before and after the ductwork modifications.
3. WDOH required that a modification to this NOC shall be needed each time additional ductwork (beyond that described in this NOC) was to be removed.
4. WDOH approved the planned modifications of the ductwork, the additional 35 feet of removal and an additional 100 feet of removal with the stipulation that the added length would involve 2 kilograms or less of plutonium.
5. WDOH agreed that use of actual data to develop/refine subsequent source term estimates was an appropriate method to employ.

Project Title	Permit No	Date Approved	NOC_ID
PFP (234-5-Z) Stabilization of Plutonium Metal Oxides in Muffle Furnaces at the Plutonium Finishing Plant	AIR 96-1205	12/18/96	209

Conditions (state only enforceable)

291-Z-1

1. This NOC involves the Thermal stabilization of Plutonium metal and oxides in the existing muffle furnaces already at PFP.
2. This NOC expands the use of the muffle furnaces to all material that will or may require thermal stabilization
3. The PFP activities are focused on the clean out and stabilization of plutonium residue left from plutonium weapons material processing activities.
4. This NOC which is similar to the previously submitted NOC for the vertical calciner at the PFP.

200W 200W P-296Z007 001

296-Z-7

PLUTONIUM FINISHING PLANT(Z PLANT)

Emission Unit ID: 503

Abatement Technology (state only enforceable)

Applicable Requirements:

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Description of Abatement Technology	Required Number of Units	Additional Description/Conditions
	[WAC 246-247-010(4)]	[WAC 246-247-10(4)(5)]	[WAC 246-247-101(4)]
	[WAC 246-247-040(5)]	[WAC 246-247-060(5)]	[WAC 246-247-040(5)] [WAC 246-247-060(5)]

Monitoring Requirements (state and federally enforceable)

Federal and State Regulatory Requirements	Monitoring and Testing Procedure	Radionuclides Requiring Measurement	Sampling Frequency
	[WAC 246-247-040(5)] [WAC 173-401-615(1)]	[WAC 173-401-615(1)]	[WAC 246-247-075(1)] [WAC 173-401-615(1)]

All radionuclides which could contribute 10% of the potential EDE.

This Emission Unit has 1 active Notice of Construction.

Project Title	Permit No	Date Approved	NOC_ID
Plutonium Finishing Plant W-460 "Plutonium Stabilization and Handling OLD NOC # 361276	AIR 00-709	7/20/00	450

Conditions (state only enforceable)

296-Z-7

1. If there is an unexpected release of radioactivity or if there is a shutdown or other condition that, if it were allowed to persist, would result in emissions of radionuclides in excess of any standards or limitations in the license or that lasts more than four hours, it must be reported to the department within 24 hours. Applicable standards (WAC 246-247-040) include unit specific emission limits (paragraph 5), the offsite dose standard (paragraph 1), BARCT (paragraph 3) or ALARACT (paragraph 4), whichever is applicable, or any limitations included in this approval (paragraph 5).
2. The alpha stack monitor shall have fail and high radiation alarms. These alarms are tied into an annunciator panel that will be used to notify operations of off normal conditions requiring immediate corrective actions. Sample pumps located downstream from the alpha monitor and the record sampler in the pump skid will draw representative samples from the stack stream. Exhausts from the pumps will return to the stack above the sample location.
3. The stack monitoring system shall consist of two shrouded probes located in the exhaust stream within the stack at an elevation of approximately 25 feet above grade. Each probe will have a sample line to deliver the sample stream to the stack monitoring equipment located at the base of the stack. One sample line will be connected to a continuous alpha monitor and the other line dedicated to the record air filter. The sample flow will be proportional to the stack flow. A stack mass flow sensor will be located near the shrouded probes. Inspection and test ports shall be provided. The design must include the ability for the department

to split stack samples.

4. The new stack (296-Z-7) must be compliant to all the requirements of ANSI N13.1 (1999). Prior to installation, the department must approve the specific design if it deviates from the design submitted in this NOC. All required technical specifications shall be documented as required in the ANSI N13.1 and submitted to DOH to be approved prior to operation of the stack.
5. The new stack (296-Z-7) must be compliant to all the technology standards listed in WAC 246-247-110(18). This information must be made available to DOH upon request. Inspections will verify full compliance. If there are any deviations from these standards, prior approval must be obtained from the department.
6. The only modification approved for the 2736-Z Building is the replacement of the current shelving for new larger units to store the new 3013 compliant cans. Only the new 3013 cans (considered sealed sources) are approved for long-term storage in the 2736-Z building. No modifications are to be made to the ventilation system that exhausts through the minor 296-Z-6 stack.
7. If the design of the ventilation system differs from that submitted in this NOC or the activities described in this project change, the project must obtain additional approval from DOH prior to commencement of construction.
8. Activities approved under this NOC are those associated with the construction and operation of activities involving the stabilization and repackaging of plutonium in 2736-ZB Building and the construction of a new major exhaust stack to be built and operated in the 2736-ZB Building to handle the effluents associated with these processes.
9. The materials to be stabilized and or repackaged under Project W-460 are limited to the plutonium and uranium oxides and metals that are already are stored in Plutonium Finishing Plant (PFP) complex.
10. When this project is completed, or operations cease, the facility shall notify the department via a report of closure, and indicate whether or not any potential for airborne release occurred (WAC 246-247-080(6)).
11. The facility shall make requested documents available in a timely manner for review (WAC 246-247-080(10)).
12. U.S. DOE shall comply with all Conditions and Limitations of this Notice of Construction (WAC 246-247-060(5)).
13. Records must be readily (promptly) available for this unit. Those records must be maintained onsite, and must be retained for at least five years (WAC 246-247-080(8)).
14. Radioisotopes to be encountered during construction, stabilization and packaging activities include the following: uranium-235, uranium-238, plutonium-238, plutonium-239, plutonium-240, plutonium-241, plutonium-242, americium-241 and americium-243.
15. All measured or calculated emissions must be reported annually (WAC 246-247-080(3)).
16. All reports and records must be kept and reported according to 40 CFR 61, Subpart H (WAC 246-247-080(2)).
17. The department may require an ALARACT demonstration at any time (WAC 246-247-080 (1)).
18. The department reserves the right to inspect and audit this unit during construction and operation, including all activities, equipment, operations, documents, data, and other records related to compliance with the regulations (WAC 246-247-080(1)). Periodic inspections will occur.
19. The facility must be able to demonstrate the reliability and accuracy of emission data and other test results from this unit (WAC 246-247-075(13) and WAC 246-247-075(6)). The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards listed in, or equivalent to, those listed in the above-cited regulation.
20. The facility must be able to demonstrate that the workers associated with this emission unit are adequately trained in the use and maintenance of emission control and monitoring systems, and in the performance of associated test and emergency response procedures (WAC 246-247-075(12)).
21. The department reserves the right to conduct its own stack sampling, environmental monitoring or other testing, as required around this unit to assure compliance. The facility must make provisions for such testing during construction. The department intends to split occasional stack samples on 296-Z-7 (WAC 246-247-

075(10)).

22. The facility shall notify the department at least seven days prior to any planned preoperational testing of the emission unit's emissions control, monitoring or containment systems. The department reserves the right to observe such tests (WAC 246-247-060(4)).
23. If the department finds that the emission unit described in this NOC is not in compliance with the standards in WAC 246-247-040 during construction or during operation, the department reserves the right to require modifications to bring it into compliance (WAC 246-247-060(2)(d)).
24. This approval with its Conditions and Limitations must be included in the next revision of the Hanford Air Operating Permit (WAC 246-247-060(1)(e) and (2)(c)), and will at that time, constitute a revision of the Radioactive Air Emissions License.
25. These Conditions and Limitations must be proceduralized prior to starting the activities described in the Notice of Construction before the specified activity is to begin. Copies of these procedures must be provided to the department before starting these activities.
26. This unit must be fully accessible to Department of Health inspectors. If there are any specific training requirements, restrictions or special requirements for entry, they must be given to the department when they are known to allow for unannounced inspections, as required by EPA (WAC 246-247-080(9)). At a minimum, for unannounced inspections, such requirements or restrictions must be told to inspectors that morning, with the opportunity for the inspectors to meet those requirements. For prior announced inspections, such notification must occur far enough in advance for the inspectors to have reasonable time to meet the requirements.
27. Supercritical fluid extraction (SEF) is also approved for the testing of oxide purity. The measured fluid stream of CO₂ and water are exhausted into the glovebox atmosphere.
28. All differential pressure magnehelic gauges associated with 296-Z-5, 296-Z-7 and 296-Z-6 HEPA filters must be calibrated annually.
29. The emergency exhaust line does not have any fire screens or filters. The normal and emergency lines are combined and routed to the process exhaust HEPA filter system. At this point the offgas temperature must be below 400 C.
30. The Department of Health requires that a particle size distribution study be conducted for 296-Z-7 emission unit after 12 months of full operation.
31. Gloveboxes must have two exhaust systems, including a normal and an emergency system. Inside of each glove box, the normal exhaust system must have a roughing filter and fire screen. Outside of the glovebox, the normal exhaust system must be connected to a testable high efficiency particulate air (HEPA) filter.
32. The maximum design life of this project is not to exceed 11 years. All work must be completed by October 1, 2010.
33. The product fill glove box located in Room 642 must be exhausted through a HEPA filter before connecting to the Room 642 exhaust HEPA filter.
34. The 2736-ZB building will exhaust out of the existing 296-Z-5 stack through two stages of individually testable HEPA filters. They will have a minimum efficiency of 99.95% for particulate with a median diameter of 0.3 microns.
35. The annual possession quantities for all construction activities associated with the 296-Z-5 stack are limited to 1.2 E-5 curies for all radionuclides combined. The 296-Z-5 stack must remain operational during all construction activities.
36. The exhaust from the material bagout and preparation areas must each pass through a HEPA filter upon exiting the glove box. Prior to joining the main line, the exhaust must pass through to a HEPA filter prior to connecting with the Room 642 exhaust filter and then to the dual stage HEPA filter and exiting through stack 296-Z-7. All HEPA filters must be tested.
37. Activities in Room 642 are limited to material bagout, sample preparation, and heating of materials in the four muffle furnaces. The containers may only be opened in that area and ventilated through the 296-Z-7 stack.

38. Procedures must be developed to leak test and to check for contamination on the outside of the welded containers prior to transporting them to various designated areas of the project. All staff must be trained on these procedures prior to the start of the project. DOH will review these procedures prior to the start of the project.
39. Deposition losses in the sample lines must be evaluated. The results must be documented and issued in a report submitted to DOH after 12 months of operation.
40. The temperature of the offgas must be below 400 C prior to passing through dual stage testable HEPA filters. After exiting the HEPA filters, the offgas exits through the new stack (296-Z-7). The temperatures of the offgas must be established during operation to insure they are not exceeded. The documentation of the temperature must be available to DOH upon request.
41. Sampling for stack 296-Z-7 shall operate in a continuous mode.
42. The loss on ignition (LOI) purge gas flow rate will be 1 cfm of air. The offgas temperature will range from 1,150 0 C to 1,200 0 C. The offgas is discharged directly into the glovebox. There, it will mix with the approximately 130 C nitrogen atmosphere in the LOI glovebox.
43. The area will be radiologically posted both during and after completion of the project W-460, if appropriate.
44. If contamination is present on the soil surface, the soil will either be removed and containerized, or covered with clean fill soil. After backfilling of the excavation site, where radiological contaminated soil is used as backfill, the surface soil will be surveyed to verify no contamination is on the soil surface.
45. If contamination is more extensive than the prescribed limits, the spread of contamination must be controlled during the backfilling of soil. Minimal water shall be applied using a hand sprayer to control dust.
46. Contaminated soils must be separated from the piles of clean soil during excavation. The movement of contaminated soil will be controlled using fixatives, water and covers.
47. During soil excavation, if the contamination levels exceed 140 dpm alpha or 50,000 dpm beta/gamma, work must stop and DOH must be notified within twenty-four hours. DOH may request that an estimation of the dose due the excavation activities be calculated.
48. Soil excavation to support W-460 activities requires that a survey of the soil be performed every linear and vertical foot before and during excavation. Contaminated soil that is used as backfill must result in activity less than 50 cpm (counts per minutes) alpha or 500,000 cpm beta/gamma. These surveys must be recorded. These records must be made available to DOH upon request.
49. The total annual possession quantities are limited to the following: total plutonium isotopes – 1.6 metric tons/year, total uranium isotopes – 1.1 tons/year, and total americium isotopes – 0.01 metric tons/year.
50. The abated dose to the TEDE to the hypothetical MEI is 8.34 E-1 millirem/year (at the LIGO Facility).
51. The unabated dose to the TEDE to the hypothetical MEI is 1.67 E+3 millirem/year.
52. In these Conditions and Limitations, all filters designated as HEPA filters must be testable to a minimum of 99.95% efficiency.
53. The dual stage of HEPA filters shall be able to be individually tested with minimum efficiency of 99.95%.

200W P-WRAP1 001

296-W-4

Waste Receiving and Processing Facility (WRAP)

Emission Unit ID: 193

Abatement Technology (state only enforceable)

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Description of Abatement Technology [WAC 246-247-010(4)] [WAC 246-247-040(5)]	Required Number of Units [WAC 246-247-10(4)(5)] [WAC 246-247-060(5)]	Additional Description/Conditions [WAC 246-247-101(4)] [WAC 246-247-040(5)] [WAC 246-247-060(5)]
	Fan	4	
	Prefilter	1	Prefilter for each HEPA housing
	HEPA	2	Redundant systems in parallel consisting of two banks each
	HEPA	2	Redundant systems in parallel consisting of two banks each

Monitoring Requirements (state and federally enforceable)

Federal and State Regulatory Requirements	Monitoring and Testing Procedure [WAC 246-247-040(5)] [WAC 173-401-615(1)]	Radionuclides Requiring Measurement [WAC 173-401-615(1)]	Sampling Frequency [WAC 246-247-075(1)] [WAC 173-401-615(1)]
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Method 2 appendix A Method 114 appendix B 61.93(b)(2)(ii) ANSI N13.1	All radionuclides which could contribute 10% of the potential EDE.	Continuous, Collect samples biweekly at a minimum

This Emission Unit has 2 active Notice of Construction.

Project Title	Permit No	Date Approved	NOC_ID
Waste Receiving and Processing (WRAP1)	AIR 93-907	9/7/93	23

Conditions (state only enforceable)

296-W-4

1. The number and placement of nozzles shall be consistent with ANSI N13.1.
2. Collect airborne effluent samples biweekly at a minimum.
3. There shall be a minimum of three stack sample points. The sample points shall be located at least 5 stack diameters down stream of any flow perturbations (such as a duct connection) and at least 2 stack diameters up stream of any flow disturbance (top of stack).
4. Control System: prefilter and HEPAs.
5. WRAP exhaust stack shall be monitored for alpha and beta emitting particulates using an isokinetic probe.
6. Monitoring: Monitoring consists of record sampler.

7. **Process Description:** Waste treatment and repackaging facility. The primary function of WRAP1 is to examine, assay, characterize, treat, and repackage contact handled wastes.

Project Title	Permit No	Date Approved	NOC_ID
Waste Receiving and Processing (WRAP1)	RTAM	7/9/96	171

Conditions (state only enforceable)

296-W-4

1. In order to maintain isokinetic sampling with the Berthold CAM, the 1 inch sample line shall be replaced with a 1.5 inch sample line (to enable a higher sample flow rate).
2. The filter media shall also be changed to a 200 mm glass fiber filter with a collection efficiency of 99% for 0.3 micron particles.
3. This modification only changes the description of the permitted system, it does not change the PTE.

300 EP-324-01-S**EP-324-01-S**

324 WASTE TECHNOLOGY

Emission Unit ID: 360

Abatement Technology (state only enforceable)

Applicable Requirements: ALARACT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Description of Abatement Technology [WAC 246-247-010(4)] [WAC 246-247-040(5)]	Required Number of Units [WAC 246-247-10(4)(5)] [WAC 246-247-060(5)]	Additional Description/Conditions [WAC 246-247-101(4)] [WAC 246-247-040(5)] [WAC 246-247-060(5)]
Zone 1 Cells	Prefilter	2	1 for Zone 1 cell, 1 for POG V/V
Zone 1 Cells	HEPA	1	Last stage shared with B Cell
Zone 1 Cells	Fan	1	3 in parallel, Serves B Cell, Zone 1 Cells.
B Cell	Prefilter	2	
B Cell	Electro Static Precipitator	1	
Zone 2	Fan	1	2 in parallel. Serves both Storage Vault/Rms & Zone 2
Zone 2	Prefilter	1	
Zone 2	HEPA	1	Stage is control for Zone 2

Monitoring Requirements (state and federally enforceable)

Federal and State Regulatory Requirements	Monitoring and Testing Procedure [WAC 246-247-040(5)] [WAC 173-401-615(1)]	Radionuclides Requiring Measurement [WAC 173-401-615(1)]	Sampling Frequency [WAC 246-247-075(1)] [WAC 173-401-615(1)]
40 CFR 61.93(b)(4) & WAC 246-247-75(2)	Method 2 appendix A Method 114 appendix B 61.93(b)(2)(ii) ANSI N13.1	All radionuclides which could contribute 10% of the potential EDE.	Continuous

This Emission Unit has 1 active Notice of Construction.

Project Title	Permit No	Date Approved	NOC_ID
Cleanout of B-Cell in the 324 Building	AIR 95-903	9/18/95	113

Conditions (state only enforceable)

EP-324-01-S

1. A non-testable HEPA Filter for B-Cell, and A-Frame filters for B-Cell and HLV are required.
2. Electrostatic Precipitators in B-Cell shall be surveilled daily for differential pressure readings and monitored for amperage.

3. Main HEPA filters shall be surveilled daily for differential pressure readings and tested annually for efficiency.

300 EP-325-01-S**EP-325-01-S**

325 APPLIED CHEMICAL LAB

Emission Unit ID: 361

Abatement Technology (state only enforceable)

Applicable Requirements: ALARACT (B)

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Description of Abatement Technology [WAC 246-247-010(4)] [WAC 246-247-040(5)]	Required Number of Units [WAC 246-247-10(4)(5)] [WAC 246-247-060(5)]	Additional Description/Conditions [WAC 246-247-101(4)] [WAC 246-247-040(5)] [WAC 246-247-060(5)]
	Fan	3	4 in parallel
	HEPA	2	2 in series

Monitoring Requirements (state and federally enforceable)

Federal and State Regulatory Requirements	Monitoring and Testing Procedure [WAC 246-247-040(5)] [WAC 173--401-615(1)]	Radionuclides Requiring Measurement [WAC 173-401-615(1)]	Sampling Frequency [WAC 246-247-075(1)] [WAC 173-401-615(1)]
40 CFR 61.93(b)(4) & WAC 246-247-75(2)	Method 2 Appendix A; Appendix B, Method 114	All radionuclides which could contribute 10% of the potential EDE.	Continuous

This Emission Unit has 6 active Notice of Construction.

Project Title	Permit No	Date Approved	NOC_ID
Modification to the Tritium Target Qualification Program Radiochemical Processing Laboratory 325 Building, 300 Area	AIR 00-208	2/23/00	430

Conditions (state only enforceable)

EP-325-01-S

1. The unabated emission level is limited to the MEI is 5.73 mrem/yr.
2. The department retains the right to conduct its own stack sampling, environmental monitoring or other testing, as required around this unit to assure compliance. If the department so decides, the facility must make provision for such testing (WAC 246-247-075(10)).
3. This approval, with its Conditions and Limitations, must be included in the next revision of the Hanford Air Operating Permit (WAC 246-247-060(1)(e) and (2)(c)) and will at that time, constitute a revision of the Radioactive Air Emissions License.
4. The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
5. The facility must be able to demonstrate that the workers associated with this emission unit are adequately trained in the use and maintenance of emission control and monitoring systems, and in the performance of associated test and emergency response procedures (WAC 246-247-075(12)).
6. The annual possession quantity for the radionuclides for the eight TPBARs is enclosed.
7. The approved process activities include the sectioning of eight Tritium Producing Burnable Absorber Rods

(TPBAR) tritium extraction and analysis, and the extraction and permeation testing.

8. Molecular sieves may be used until the exhaust gas as measured with an ion chamber indicates the sieves approaching a breakthrough. Disposal of spent molecular sieves must be in compliance with Pacific Northwest's radioactive waste management procedure.
9. If the department finds that the emission unit described in this NOC is not in compliance with the standards in WAC 246-247-040 during construction (as described in the NOC or during operation) it reserves the right to require modifications to bring it into compliance (WAC 246-247-060(2)(d)).
10. Equipment and procedures for continuous monitoring shall conform to ANSI N13.1. The specific design must be approved by the department prior to installation. The department prior to construction must approve any deviation from ANSI N13.1 WAC 246-247-075(2).
11. The sampling system shall consist of an isokinetic sampling probe. The exhaust flow rate is to be a nominal rate of 61 m³/sec. Emission shall be monitored for H₃ using a 2-stage silica gel collector.
12. The inventory of commercial H-3 may only increase from 1,000 Ci to 3,000 Ci.
13. The project will begin January 2000 and will extend for a period of two years extending through the year 2001.
14. Tritium emissions are to remain below 1.8E+3 curies. This total includes 379 Ci (rods currently approved) + 1.42E+3 Ci (additional eight TPBARs) for a total of 1.8E+3 Ci.
15. This unit must be fully accessible to Department of Health inspectors. If there are any specific training requirements or have restrictions or special requirements for entry, they must be given to the department when they are known to allow for unannounced inspections, as required by EPA (WAC 246-247-080(9)). At a minimum, for unannounced inspections, such requirements or restrictions must be told to inspectors that morning, with the opportunity for the inspectors to meet those requirements. For prior announced inspections, such notification must occur far enough in advance for the inspectors to have reasonable time to meet the requirements.
16. The abated emission level is limited to the MEI is 0.1 mrem/yr.
17. Tritium extraction and analysis activities are limited to the hot cells in HLRF and to small-scale extractions in room 416.
18. When this project is completed, or operations cease, the facility shall notify the department via a report of closure, and indicate whether or not any potential for airborne release occurred (WAC 246-247-080(6)).
19. The required emission control technology consists of mandatory use procedures, control valves, two molecular sieves, and two stages of testable HEPAs. In room 416, two stage bladder traps in series must be used. The uranium getter material must be uranium hydride.
20. The "Mandatory Use Procedures" require that each step be read prior to performing the activity. These procedures are those that involve the following:
 - * Operation of the furnace and gas clean-up system used to extract tritium from the Tritium Producing Burnable Absorber Rods and;
 - * The transfer of the extracted tritium to hydride transport vessels.
21. All measured or calculated emissions must be reported annually (WAC 246-247-080(3)).
22. The tritium permeation testing shall be conducted in room 48 of the basement in the laboratory hood or glovebox.
23. All reports and records must be kept and reported according to 40 CFR 61, Subpart H. (WAC 246-247-080(2)).
24. These Conditions and Limitations must be proceduralized prior to starting the activities described in the Notice of Construction.
25. The facility shall make requested documents available for timely review (WAC 246-247-080(10)).
26. U.S. DOE shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
27. Sectioning of the TPBAR rods must be performed in the hot cells in HLRF. Sectioning must be done inside Plexiglas containment.

28. Approval is given to analyze eight additional (TPBARs) containing approximately 88,000 Ci of tritium. The rods must decay a minimum of one year from the time of irradiation to the proposed examination.
29. The department reserves the right to inspect and audit this unit during operation. This includes all activities, equipment, operation procedures, documents, data, and other records related to compliance with the regulations (WAC 246-247-080 (1)).
30. Records must be readily (promptly) available for this unit. Those records must be maintained onsite, and must be retained for at least five years (WAC 246-247-080 (8)).
31. The facility must be able to demonstrate the reliability and accuracy of emission data and other test results from this unit (WAC 246-247-075(13) and WAC 246-247-075(6)). The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards listed in, or equivalent to, those listed in the above cited regulation.
32. Project activities are limited to High Level Radiochemical Facility (HLRF), Shielded Analytical Laboratory (SAL), and rooms 420, 418, and room 48 in the basement.
33. If there is an unexpected release of radioactivity or if there is a shutdown or other condition that, if it were allowed to persist, would result in emissions of radionuclides in excess of any standards or limitations in the license or that lasts more than four hours, it must be reported to the department within 24 hours. Applicable standards (WAC 246-247-040) include unit specific emission limits (paragraph 5), the offsite dose standard (paragraph 1), ALARACT (paragraph 4), or any limitations included in this approval (paragraph 5) or the original Tritium Target Qualification Notice of Construction approval (letter # AIR 97-307).

Project Title	Permit No	Date Approved	NOC_ID
325 Building Hazardous Waste Treatment Unit (HWTU)	AIR 98-909	9/15/98	302

Conditions (state only enforceable)

EP-325-01-S

1. Approved waste treatment processes used in the HWTU/SAL include pH adjustment, ion exchange, carbon absorption, using polymer beads or mineral absorbents; such as clays, chemical oxidation, chemical precipitation, chemical reduction, waste concentration by evaporation, neutralization, filtration, solvent extraction, catalytic destruction, and grout encapsulation (cementation) as described in the NOC.
2. Hazardous materials and radioactive mixed wastes will be stored, dispensed used, handled, packaged in drums and treated, using various small bench-scale treatment processes in the HWTU/SAL.
3. Records must be readily (promptly) available for this unit. Those records must be maintained onsite, and must be retained for at least 5 years (WAC 246-247-080(8)).
4. Radioactive air emissions are limited to the concentrations listed in the NOC.
5. The facility shall make requested documents available in a timely manner for review. (WAC 246-247-080(10)).
6. All waste resulting from activities in the 325 Building treatment operations must be disposed of in accordance with prescribed PNNL Procedures.
7. When this project is completed, or operations cease, the facility shall notify the department via a report of closure, including whether or not any potential for airborne releases occurred (WAC 246-247-080(6)).
8. Monitoring of emission point EP-325-01-S will not change. Stack particulate emission samples will be analyzed for alpha and beta activity, and specific isotopes as required. Analytical methodology for stack samples shall comply with 40 CFR 61 Appendix B, Method 114. An isokinetic sampling probe mounted in the exhaust stack will be used to collect the particulate samples.
9. This unit must be fully accessible to Department of Health inspectors. If there are any specific training requirements or have restrictions or special requirements for entry, they must be given to the department when they are known to allow for unannounced inspections, as required by the Environmental Protection Agency (WAC 246-247-080(9)). At a minimum, for unannounced inspections, such requirements or restrictions must be told to inspectors that morning, with the opportunity for the inspectors to meet those

requirements. For prior announced inspections, such notification must occur far enough in advance for the inspectors to have reasonable time to meet the requirements.

10. The department may require an ALARACT demonstration at any time (WAC 246-247-080(1)).
11. All Conditions and Limitations must be proceduralized prior to starting the activities described in the Notice of Construction (NOC).
12. The waste compactor must remain HEPA filtered and exhausted through the main stack. It is only to be used for low-level dry materials, such as gloves, wipes, and step off pad waste as described in the NOC. Compacting usually occurs in the large compartment of the compactor. Take wipes of the small compactor drawer after each compactor cycle. A log of these wipes must be maintained and available for an inspectors review.
13. The facility must be able to demonstrate that the workers associated with this emission unit are adequately trained in the use an maintenance of emission control and monitoring systems, and in the performance of associated test and emergency response procedures (WAC 246-247-075(12)).
14. Activities of the Radiochemical Processing Analytical Chemistry and Environmental Management groups in the 325 Building are limited to those described in the NOC.
15. The department reserves the right to inspect and audit this unit during construction and operation, including all activities, equipment, operations, documents, data, and other records related to compliance with the regulations (WAC 246-247-080(1)).
16. Equipment and procedures for continuous monitoring shall conform to ANSI N13.1. The specific design must be approved by the department prior to installation. Any deviation from ANSI N13.1 must be approved by the department prior to construction (WAC 246-247-075(2)).
17. If there is an unexpected release of radioactivity or if there is a shutdown or other condition that, if it were allowed to persist, would result in emissions of radionuclides in excess of any standards or limitations in the license or that last more than four hours, it must be reported to the department within 24 hours. Applicable standards (WAC 246-247-040) include unit specific emission limits (paragraph 1), BARCT (paragraph 2) or ALARACT (paragraph 4), whichever is applicable, or any limitations included in the approval (paragraph 5) (WAC 246-247-080(5)).
18. The additional 325 Building emissions must be as a result of waste treatment activities in the waste compactor in room 43, Hazardous Waste Treatment Unit (HWTU) in rooms 520 and 528, and the Shielded Analytical Laboratory (SAL) in rooms 200, 201, and 203 (Hot Cells) of the 325 Building as described in the NOC.
19. All measured or calculated emissions must be reported annually (WAC 246-247-080(3)).
20. All reports and records must be kept and reported according to 40 CFR 61, Subpart H (WAC 246-247-080(2)).
21. The facility must be able to demonstrate the reliability and accuracy of emission data and other test results from this unit (WAC 246-247-075(13) and WAC 246-247-075(6)). The facility must be able to demonstrate that it has a quality assurance program compatible with applicable national standards listed in, or equivalent to, those listed in, or equivalent to, those listed in the above cited regulation.
22. U.S. DOE shall comply with all Conditions and Limitations of this license (WAC 246-247-060(5)).
23. This approval, with its Conditions and Limitations, constitutes and amendment to the Department's Radioactive Air Emission License. This amendment must be included in the next revision of the Hanford Air Operating Permit (WAC 246-247-060(1)(e) and (2)(c)).
24. The department retains the right to conduct its own stack sampling, environmental monitoring, or other testing, as required around this unit to assure compliance. If the department so decides, the facility must make provision for such testing (WAC 246-247-075(10) and (11)).

Project Title	Permit No	Date Approved	NOC_ID
Modification to the annual possession quantity of the 325 Building Special Nuclear Materials Disposition and Low-Level Waste	AIR 98-807	8/20/98	294

Vitrification Research Programs (Pu-238)

Conditions (state only enforceable)

EP-325-01-S

1. Control Technology: 2 - high efficiency particulate air filters (2 in series), 3 - fans(2 in parallel, 1 backup)
2. Potential-to-emit abated (total effective dose equivalent to the maximally exposed individual): 5.9 E-03 mrem/yr
3. Stack Measurement: Continuous measurement

Project Title

Transfer Strontium-90 from the 324 Building to the 325 Building

Permit NoShortform
Approval**Date Approved NOC_ID**

1/19/98 253

Conditions (state only enforceable)

EP-325-01-S

1. Storage at the 325 Bldg approved only; open cannisters and processing will require a new NOC
2. Monitoring is continuous. The sampling system is designed and constructed in conformance with ANSI N 13.1. Samples are analyzed for gross alpha and gross beta, and specific radionuclides, including 90Sr.
3. Unabated dose is 4.69E+01 mrem/year
4. Abated dose is 4.69E-03 mrem/year
5. Two stages of testable HEPA filters are currently installed on the building exhaust stack (EP-325-01-S).

Project Title

Removal of 3rd Stage HEPA Filter, 325 Building

Permit No

RTAM

Date Approved NOC_ID

11/14/95 127

Conditions (state only enforceable)

EP-325-01-S

1. Control Technology: 2 - high efficiency particulate air filters (2 in series), 3 fans (2 in parallel, 1 backup).
Additional controls: 2 stage bubbler-type trapping system, molecular sieves

Project TitleApplied Chemistry, 325 Building LLW Vitrification Research
Program**Permit No**

AIR 96-604

Date Approved NOC_ID

6/7/96 159

Conditions (state only enforceable)

EP-325-01-S

1. Stack Measurement: Continuous measurement
2. Potential-to-emit abated (total effective dose equivalent to the maximally exposed individual): 4.0 E-04 mrem/yr
3. Control Technology: 2 - high efficiency particulate air filters (2 in series), 3 - fans(2 in parallel, 1 backup)

300 EP-327-01-S**EP-327-01-S**

327 BUILDING

Emission Unit ID: 407

Abatement Technology (state only enforceable)

Applicable Requirements: ALARACT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Description of Abatement Technology [WAC 246-247-010(4)] [WAC 246-247-040(5)]	Required Number of Units [WAC 246-247-10(4)(5)] [WAC 246-247-060(5)]	Additional Description/Conditions [WAC 246-247-101(4)] [WAC 246-247-040(5)] [WAC 246-247-060(5)]
Remaining areas of Buil	Fan	1	2 in parallel (machine shop is power ventilated with a single fan to the main flowpath of the remaining areas of building 327.)
Remaining areas of Buil	HEPA	1	Single stage
Rm. 15 Hood and Cells	Fan	1	2 in parallel, one standby. Serves Rm. 15 and Cells
Rm. 15 Hood and Cells	Prefilter	1	Cells only
Rm. 15 Hood and Cells	HEPA	1	

Monitoring Requirements (state and federally enforceable)

Federal and State Regulatory Requirements	Monitoring and Testing Procedure [WAC 246-247-040(5)] [WAC 173--401-615(1)]	Radionuclides Requiring Measurement [WAC 173-401-615(1)]	Sampling Frequency [WAC 246-247-075(1)] [WAC 173-401-615(1)]
40 CFR 61.93(b)(4) & WAC 246-247-75(2)	Method 2 appendix A Method 114 appendix B 61.93(b)(2)(ii) ANSI N13.1	All radionuclides which could contribute 10% of the potential EDE.	Continuous

300 EP-331-01-V**EP-331-01-V**

331 LIFE SCI LAB

Emission Unit ID: 412

Abatement Technology (state only enforceable)

Applicable Requirements: ALARACT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Description of Abatement Technology [WAC 246-247-010(4)] [WAC 246-247-040(5)]	Required Number of Units [WAC 246-247-10(4)(5)] [WAC 246-247-060(5)]	Additional Description/Conditions [WAC 246-247-101(4)] [WAC 246-247-040(5)] [WAC 246-247-060(5)]
Room 302	HEPA	1	
	Fan	2	in parallel, common to areas 3 & 4
Lab Glove Box (area 4)	HEPA	2	In series
Labs and Hoods (area 3)	HEPA	2	In series
	Fan	3	In parallel, common to the areas 1 & 2, and 3rd floor change room
Labs and Hoods (area 2)	HEPA	2	In series
Labs and Hoods (area 1)	HEPA	1	
Third Floor Change Rm	HEPA	1	

Monitoring Requirements (state and federally enforceable)

Federal and State Regulatory Requirements	Monitoring and Testing Procedure [WAC 246-247-040(5)] [WAC 173-401-615(1)]	Radionuclides Requiring Measurement [WAC 173-401-615(1)]	Sampling Frequency [WAC 246-247-075(1)] [WAC 173-401-615(1)]
40 CFR 61.93(b)(4) & WAC 246-247-075(2)	Appendix B, Method 114(3)	All radionuclides which could contribute 10% of the potential EDE.	Continuous

This Emission Unit has 4 active Notice of Construction.

Project Title	Permit No	Date Approved	NOC_ID
Life Sciences Laboratory I (Building 331) Modifications	AIR 98-108	1/21/98	254

Conditions (state only enforceable)

EP-331-01-V

- Stack emissions will be sampled for particulate matter containing alpha and beta activity using methods prescribed within Environmental Protection Agency Methods A-4 and B-4, and analyzed for gross alpha and gross beta activity, and specific radionuclides, as required.
- Emission unit EP 331-01-V must use an isokinetic sampling probe with design specifications meeting ANSI

N 13.1.

Project Title	Permit No	Date Approved	NOC_ID
331 Building Radon Research Facility	AIR 95-803	8/8/95	95

Project Title	Permit No	Date Approved	NOC_ID
HEPA Filter Bank Removal in the 331 Building	RTAM	3/12/96	143

Project Title	Permit No	Date Approved	NOC_ID
Portable Radon Research Facility	AIR 96-506	5/15/96	158

Conditions (state only enforceable)

EP-331-01-V

1. Potential-to-emit abated (total effective dose equivalent to the maximally exposed individual): 7.0 E-03 mrem/yr.
2. Stack measurement: Continuous measurement. Additional measurement: Radon
3. Process description: This project primarily focuses on radon exposures of animals and addresses the major biologic effects and factors influencing risks of indoor radon exposures. Both invitro and invivo experiments are performed using laboratory animals and cell lines. The radon generator contains approximately 1 Ci of a radium chloride solution which will generate up to 130 uCi/minute of Rn-222. The radon is routed directly to HEPA filters and charcoal columns of the radon-holdup system. Exhaust from the radon holdup system is routed to the building exhaust that is HEPA filtered.
4. Control Technology: 2 - high efficiency particulate air filters (2 in series); 3 fans (2 in parallel, 1 backup); Additional controls: in-line HEPA, dehumidifier, and charcoal beds
5. If measurement requirements according to NESHAPs would be altered by the move, then an NOC must be approved.

300 P-340NTEX-001**340-NT-EX**

340 BUILDING

Emission Unit ID: 423

Abatement Technology (state only enforceable)

Applicable Requirements: ALARACT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Description of Abatement Technology [WAC 246-247-010(4)] [WAC 246-247-040(5)]	Required Number of Units [WAC 246-247-10(4)(5)] [WAC 246-247-060(5)]	Additional Description/Conditions [WAC 246-247-101(4)] [WAC 246-247-040(5)] [WAC 246-247-060(5)]
	Moisture separator	1	Serves the vessel off-gas portion of the treatment system
	Fan	2	In parallel, (only one fan operates at a time, one is a backup)
	HEPA	2	In series. 3 parallel flow paths, (Minimum of 2 active flow paths providing 1 stage prefiltration and 2 stages HEPA filtration)
	Prefilter	1	3 parallel flow paths, (Minimum of 2 active flow paths providing 1 stage prefiltration and 2 stages HEPA filtration)

Monitoring Requirements (state and federally enforceable)

Federal and State Regulatory Requirements	Monitoring and Testing Procedure [WAC 246-247-040(5)] [WAC 173--401-615(1)]	Radionuclides Requiring Measurement [WAC 173-401-615(1)]	Sampling Frequency [WAC 246-247-075(1)] [WAC 173-401-615(1)]
40 CFR 61.93(b)(4) & WAC 246-247-75(2)	Method 2 appendix A Method 114 appendix B 61.93(b)(2)(ii) ANSI N13.1	All radionuclides which could contribute 10% of the potential EDE.	Continuous

This Emission Unit has 1 active Notice of Construction.

Project Title	Permit No	Date Approved	NOC_ID
340-A Building Tank Sludge Cleanout	AIR 97-604	6/19/97	228

Conditions (state only enforceable)

340-NT-EX

- The total abated offsite dose from the 340-A Building Tank Sludge Cleanout activities shall not exceed 3.05E-07 mrem/year.
- The ventilation system consists of 3 parallel flow paths. A minimum of two active flow paths is required. Each path shall include a minimum of one prefilter, two HEPA filters in series, and two exhaust fans (one of

which will be a backup fan)

3. Only one tank solids removal campaign shall be performed during any annual period which consists of the removal of all sludge in the subject tanks.

300 EP-3720-01-S

EP-3720-01-S

3720 BUILDING

Emission Unit ID: 419

Abatement Technology (state only enforceable)

Applicable Requirements: ALARACT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Description of Abatement Technology [WAC 246-247-010(4)] [WAC 246-247-040(5)]	Required Number of Units [WAC 246-247-10(4)(5)] [WAC 246-247-060(5)]	Additional Description/Conditions [WAC 246-247-101(4)] [WAC 246-247-040(5)] [WAC 246-247-060(5)]
	Fan	2	1 backup
	HEPA	2	2 stages of HEPAs, two in parallel

Monitoring Requirements (state and federally enforceable)

Federal and State Regulatory Requirements	Monitoring and Testing Procedure [WAC 246-247-040(5)] [WAC 173--401-615(1)]	Radionuclides Requiring Measurement [WAC 173-401-615(1)]	Sampling Frequency [WAC 246-247-075(1)] [WAC 173-401-615(1)]
40 CFR 61.93(b)(4) & WAC 246-247-75(2)	Method 2 appendix A Method 114 appendix B 61.93(b)(2)(ii) ANSI N13.1	All radionuclides which could contribute 10% of the potential EDE.	Continuous

Table 1.2 Requirements for minor point sources

100K R-1706KE-001

1706KE

1706-KE Lab

Emission Unit ID: 168

Abatement Technology (state only enforceable)

Applicable Requirements: ALARACT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Description of Abatement Technology [WAC 246-247-010(4)] [WAC 246-247-040(5)]	Required Number of Units [WAC 246-247-10(4)(5)] [WAC 246-247-060(5)]	Additional Description/Conditions [WAC 246-247-101(4)] [WAC 246-247-040(5)] [WAC 246-247-060(5)]
	Fan	1	Intermittent operation
	HEPA	1	

Monitoring Requirements (state and federally enforceable)

Federal and State Regulatory Requirements	Monitoring and Testing Procedure [WAC 246-247-040(5)] [WAC 173--401-615(1)]	Radionuclides Requiring Measurement [WAC 173-401-615(1)]	Sampling Frequency [WAC 246-247-075(1)] [WAC 173-401-615(1)]
40 CFR 61.93[b][4][i] & WAC 246-247-075[3]	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	4 week sample/year

Sampling Requirements [WAC 246-247-050(5), WAC 173-401-615(1)]: Record Sample

200 W-PORTEX 005**200 Area Interim Storage Area (ISA)**

200 diffuse/fugitive emissions

Emission Unit ID: 454

Abatement Technology (state only enforceable)

Applicable Requirements:

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Description of Abatement Technology	Required Number of Units	Additional Description/Conditions
	[WAC 246-247-010(4)]	[WAC 246-247-10(4)(5)]	[WAC 246-247-101(4)]
	[WAC 246-247-040(5)]	[WAC 246-247-060(5)]	[WAC 246-247-040(5)] [WAC 246-247-060(5)]

Monitoring Requirements (state and federally enforceable)

Federal and State Regulatory Requirements	Monitoring and Testing Procedure	Radionuclides Requiring Measurement	Sampling Frequency
	[WAC 246-247-040(5)] [WAC 173--401-615(1)]	[WAC 173-401-615(1)]	[WAC 246-247-075(1)] [WAC 173-401-615(1)]

40 CFR 61.93(b)(4)(i) &
WAC 246-247-075(3)

Annual

Sampling Requirements [WAC 246-247-050(5), WAC 173-401-615(1)]: Smear Survey

This Emission Unit has 1 active Notice of Construction.

Project Title	Permit No	Date Approved	NOC_ID
200 Area Interim Storage Area (ISA)	AIR 98-503	5/20/98	272

Conditions (state only enforceable)

200 Area Interim Storage Area (ISA)

1. There are no preoperational tests planned for this unit, so the requirement for notification at least seven days prior to such testing under WAC 246-247-060(4) will not apply.
2. This project must be included in the next revision of the Air Operating Permit, if active at that time (WAC 246-247-060(1)(e)).
3. The department reserves the right to conduct an environmental surveillance program around this emission unit and to require the facility to conduct or modify its own environmental monitoring program (WAC 246-247-075(9)).
4. Any deviation from required or recommended monitoring standards must be approved by the department.
5. Any deviation from the description of the modification of new construction, without approval of the department, may result in enforcement action under WAC 246-247-100.
6. All conditions and limitations must be proceduralized prior to the implementation of this NOC.
7. The department reserves the right at any time to require the licensee to provide for split or collocated sampling of this emission unit (WAC 246-247-075(10)).
8. The NOC constitutes a contract between the department and the facility. Any changes must be approved by the department.

200E P-296P031-001

296-P-31

209 E CRITICALITY LAB

Emission Unit ID: 210

Abatement Technology (state only enforceable)

Applicable Requirements: ALARACT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Description of Abatement Technology [WAC 246-247-010(4)] [WAC 246-247-040(5)]	Required Number of Units [WAC 246-247-10(4)(5)] [WAC 246-247-060(5)]	Additional Description/Conditions [WAC 246-247-101(4)] [WAC 246-247-040(5)] [WAC 246-247-060(5)]
	Fan	1	Parallel paths merge and pass through fan
	HEPA	8	2 banks of 4 HEPAs each
	Prefilter	4	1 bank

Monitoring Requirements (state and federally enforceable)

Federal and State Regulatory Requirements	Monitoring and Testing Procedure [WAC 246-247-040(5)] [WAC 173-401-615(1)]	Radionuclides Requiring Measurement [WAC 173-401-615(1)]	Sampling Frequency [WAC 246-247-075(1)] [WAC 173-401-615(1)]
40 CFR 61.93[b][4][i] & WAC 246-247-075[3]	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	4 week sample/ year

Sampling Requirements [WAC 246-247-050(5), WAC 173-401-615(1)]: Record Sample

200E P-204AR-001

296-A-26

241-A TANK FARM

Emission Unit ID: 96

Abatement Technology (state only enforceable)

Applicable Requirements: ALARACT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Description of Abatement Technology	Required Number of Units	Additional Description/Conditions
	[WAC 246-247-010(4)]	[WAC 246-247-10(4)(5)]	[WAC 246-247-101(4)]
	[WAC 246-247-040(5)]	[WAC 246-247-060(5)]	[WAC 246-247-040(5)] [WAC 246-247-060(5)]
	Deentrainer	1	
	Fan	1	
	HEPA	1	

Monitoring Requirements (state and federally enforceable)

Federal and State Regulatory Requirements	Monitoring and Testing Procedure	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93[b][4][i] & WAC 246-247-075[3]	[WAC 246-247-040(5)] [WAC 173--401-615(1)] Appendix B, Method 114(3)	[WAC 173-401-615(1)] TOTAL ALPHA TOTAL BETA	[WAC 246-247-075(1)] [WAC 173-401-615(1)] 4 week sample/ year

Sampling Requirements [WAC 246-247-050(5), WAC 173-401-615(1)]: Record Sample

This Emission Unit has 1 active Notice of Construction.

Project Title	Permit No	Date Approved	NOC_ID
Upgrading the Exhauster Fans in the 241-AN Tank Farm	AIR 98-614	6/30/98	282

Conditions (state only enforceable)

296-A-26

1. The NOC constitutes a contract between the department and the facility. Any changes must be approved by the department.
2. All measured or calculated emissions must be reported annually (WAC 246-247-080(3)).
3. Nothing may be inferred that is not specifically described in the NOC.
4. All conditions and limitations must be proceduralized prior to the implementation of this NOC.
5. This approval, with its conditions and limitations, constitutes an amendment to the Department's Radioactive Air Emissions License. This amendment must be included in the next revision of the Hanford Air Operating Permit (WAC 246-247-060(1)(e) and (2)).
6. The department reserves the right to inspect and audit this unit during construction and operation, including all activities, equipment, operations, documents, data, and other records related to compliance with the regulations (WAC 246-247-080(1)).
7. NOTE: There is no Condition #14.

8. Any deviation from the description of the modification or new construction, without approval of the department, may result in enforcement action under WAC 246-247-100.
9. All records required by WAC 246-247 must be readily (promptly) retrievable, and must be stored onsite at the facility. All records shall be maintained for a minimum of five years (WAC 246-247-080(8)).
10. The monitoring system must be ANSI N13.1 and ANSI N42.18 compliant.
11. Continuous monitoring must be in place prior to operating. This will include continuous ambient air sampling for this project.
12. An ALARACT demonstration may be required at any time by the department (WAC 246-247-080(1)).
13. Any problems, which could affect the monitoring, ventilation or controls to this facility must be reported to the department.
14. The facility must be able to demonstrate the reliability and accuracy of emission data and other test results from the facility (WAC 246-247-075(13) and (WAC 246-247-075(6)). The facility must demonstrate that it has a quality assurance program compatible with applicable national standards listed in, or equivalent to, those listed in the above cited regulation.
15. If construction is not commenced within two years from the date of this letter, the approval is void.
16. The department reserves the right at any time to require the licensee to provide for split or collocated sampling of this emission unit (WAC 246-247-075(10)).
17. Any deviation from required or recommended monitoring standards must be approved by the department.
18. The abated emission limit for emission unit is 5.66E-04 mrem/yr to the MEI (WAC 246-247-040(5)).
19. There will be direct monitoring of emissions as discussed in the NOC.
20. Preoperational tests planned for this unit, requirement for notification at least seven days prior to such testing under (WAC 246-247-060(4)) will apply.
21. This unit must be fully accessible to Department of Health inspectors. If there are any specific training requirements or have restrictions or special requirements for entry, they must be given to the department when they are known to allow for unannounced inspections, as required by Environmental Protection Agency (WAC 246-247-080(9)). At a minimum, for unannounced inspections, such requirements or restrictions must be told to inspectors that morning, with the opportunity for the inspectors to meet those requirements. For prior announced inspections, such notification must occur far enough in advance for the inspectors to have reasonable time to meet requirements.
22. If the department finds that the emission unit described in this NOC is not in compliance with the standards in WAC 246-247-040 during construction and/or operation, the department will require modifications to bring it into compliance (WAC 246-247-060(2)(d)).
23. If there is an unexpected release of radioactivity or if there is a shutdown or any other condition that if it were allowed to persist, would result in emissions of radionuclides in excess of any standards or limitations in the license, or that last more than four hours, it must be reported to the department within 24 hours. Applicable standards (WAC 246-247-040) include unit specific emission limits (paragraph 1), BARCT (paragraph 2), or ALARACT (paragraph 4), whichever is applicable, or any limitations included in this approval (paragraph 5).
24. When this project is completed, or operation cease, the facility shall notify the department via a report of closure, including whether or not any potential for airborne release occurred (WAC 246-247-080(6)).
25. The department reserves the right to conduct an environmental surveillance program around this emission unit and to require the facility to conduct or modify its own environmental monitoring program (WAC 246-247-075(9)).

200E P-296P041-001

296-P-41

241-A TANK FARM

Emission Unit ID: 95

Abatement Technology (state only enforceable)

Applicable Requirements: BARCT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Description of Abatement Technology [WAC 246-247-010(4)] [WAC 246-247-040(5)]	Required Number of Units [WAC 246-247-10(4)(5)] [WAC 246-247-060(5)]	Additional Description/Conditions [WAC 246-247-101(4)] [WAC 246-247-040(5)] [WAC 246-247-060(5)]
	Fan	1	
	HEPA	2	2 in series
	Prefilter	1	

Monitoring Requirements (state and federally enforceable)

Federal and State Regulatory Requirements	Monitoring and Testing Procedure [WAC 246-247-040(5)] [WAC 173--401-615(1)]	Radionuclides Requiring Measurement [WAC 173-401-615(1)]	Sampling Frequency [WAC 246-247-075(1)] [WAC 173-401-615(1)]
40 CFR 61.93[b][4][i] & WAC 246-247-075[3]	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	4 week sample/ year

Sampling Requirements [WAC 246-247-050(5), WAC 173-401-615(1)]: Record Sample

200E P-296AN-001

296-A-29

241-AN TANK FARM

Emission Unit ID: 227

Abatement Technology (state only enforceable)

Applicable Requirements: ALARACT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Description of Abatement Technology [WAC 246-247-010(4)] [WAC 246-247-040(5)]	Required Number of Units [WAC 246-247-10(4)(5)] [WAC 246-247-060(5)]	Additional Description/Conditions [WAC 246-247-101(4)] [WAC 246-247-040(5)] [WAC 246-247-060(5)]
	Fan	1	2 parallel flow paths, 1 in operation at a time
	HEPA	2	2 parallel flow paths with 2 HEPAs in series
	Prefilter	1	2 parallel flow paths
	Heater	1	2 parallel flow paths
	Deentrainer	1	2 parallel flow paths

Monitoring Requirements (state and federally enforceable)

Federal and State Regulatory Requirements	Monitoring and Testing Procedure [WAC 246-247-040(5)] [WAC 173--401-615(1)]	Radionuclides Requiring Measurement [WAC 173-401-615(1)]	Sampling Frequency [WAC 246-247-075(1)] [WAC 173-401-615(1)]
40 CFR 61.93[b][4][i] & WAC 246-247-075[3]	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	4 week sample/ year

Sampling Requirements [WAC 246-247-050(5), WAC 173-401-615(1)]: Record Sample

This Emission Unit has 2 active Notice of Construction.

Project Title	Permit No	Date Approved	NOC_ID
Installation and Operation of a Waste Retrieval System in Tanks 241-AN-101,102,103, 104, 105, and 107.	AIR 00-701	7/9/00	449

Conditions (state only enforceable)

296-A-29

1. If there is an unexpected release of radioactivity or if there is a shutdown or other condition that, if it were allowed to persist, would result in emissions of radionuclides in excess of any standards of limitations in the license or that lasts more than four hours, it must be reported to the department within 24 hours. Applicable standards are included in WAC 246-247-040, unit specific emission limits, offsite dose standard, ALARACT or BARCT whichever is applicable, or any limitations included in this approval.
2. This approval to commence construction is valid for only two years from the date of approval. If construction is not commenced within two years of approval, the approval is void.
3. Any deviation from the description of the modification or new construction, without approval of the

department, may result in enforcement action under WAC 246-247-100.

4. The facility must be able to demonstrate the reliability and accuracy of emission data and other test results from this unit (WAC 246-247-075(13) and WAC 246-247-(6)). The emission data, including periodic confirmatory monitoring, must be reported in the Hanford Site Annual Air Emission Report.
5. No radionuclides other than those listed in the NOC may be emitted in any detectable concentrations (WAC 246-247-110(10)(11)(12)).
6. The department reserves the right at any time to require the licensee to provide for split or co-located sampling of this project (WAC 246-247-075(10)).
7. The department reserves the right to conduct an environmental surveillance program around this emission unit and to require the facility to conduct or modify its own environmental monitoring program (WAC 246-247-075(9)).
8. The facility shall notify the department at least seven days prior to any pre-operational testing (cold or hot) of the monitoring or containment system involved in this project. The department reserves the right to observe any such testing (WAC 246-247-060(4)). Notification may be by phone, electronic mail or written correspondence.
9. This project must be included in the next revision of the Air Operating Permit if active at the time (WAC 246-247-060(1)(e)).
10. The NOC constitutes a contract between the department and the facility. Any changes must be approved by the department.
11. Any deviation from required or recommended monitoring standards must be approved by the department. The NOC makes a commitment on what standards (required or recommended) will be followed. At that point, the commitment is binding.
12. All records required by WAC 246-247 must be retrievable within 24 hours of the request, and must be stored onsite. All records shall be maintained for a minimum of five years (WAC 246-247-080(8)).
13. An ALARACT demonstration may be required at any time by the department (WAC 246-247-130).
14. Nothing may be inferred that is not specifically described in this NOC (WAC 246-247-060 and 110).
15. All Conditions and Limitations must be proceduralized prior to the implementation of this Notice of Construction (NOC).
16. Pipe cuts will be made with a sawzall/tri-tool or equivalent tool. If removable contamination levels are greater than 10,000 dpm/100 cm² beta-gamma and 200 dpm/100 cm² alpha, the cuts and welding preparation must be performed inside a glovebag.
17. Periodic confirmatory monitoring for the 296-A-29 stack will consist of collecting a two-week sample four times a year, and will be representative of operation of the waste retrieval system. In addition, to ensure the potential-to-emit from these proposed activities remains less than 0.1 mrem/year, a non-destructive analysis (NDA) of the 296-A-29 HEPA filters will be performed annually during waste retrieval system operation. A baseline NDA will be performed prior to operation of the waste retrieval system.
18. Periodic confirmatory monitoring for use of the regulated guzzler, portable/temporary radioactive air emissions unit or a HEPA filtered vacuum will be as required by the approved NOC for that equipment.
19. The HEPA filter on the endcap of the Long Length Contaminated Equipment Disposal System shall be installed and maintained in accordance with manufactures recommendations.
20. Monitoring of diffuse and fugitive emissions from this activity will be accomplished through the use of Ambient Near Field Monitors N984, N972, N999 and N158.
21. To confirm low emissions during equipment removal and installation periodic confirmatory monitoring will be as outlined in ALARACT 13, in addition, periodic confirmatory monitoring for the Flexible Receiver Bagging Process will consist of taking a smear survey of the cut bag. Documentation of the survey will be maintained in a WDOH approved log.
22. When this project is completed, and ceases to be an emission unit, a report of closure must be filled with the department (WAC 246-247-080(6)).

23. Work in glovebags will not be performed if sustained wind speeds are greater than 30 miles per hour. This criterion applies to sustained wind speed as determined by the Hanford Meteorological Station
24. The project shall be fully accessible to department inspectors (WAC 246-247-080(9)).
25. Total soil excavated during the project will not exceed 6,000 cubic yards, which includes approximately 3,600 cubic yards inside the tank farm.
26. When a Portable/Temporary Radioactive Air Emission Unit (DOE/RL-96-75), or a HEPA Filtered Vacuum (DOE/RL-97-50) are used all Conditions and Limitations associated with those NOCs must be followed, all required logs must be maintained and emissions reported in the annual air emission report.
27. The TEDE to the MEI from pit work including equipment installation and removal will not exceed the calculated annual dose of 2.85E-02 mrem/year. The pit work will be performed in accordance with TWRS ALARACT Demonstration for Pit Access (6) and TWRS ALARACT Demonstration for Pit Work (14). When contamination levels inside the pit exceed those identified in the ALARACT Demonstrations a notification shall be made to the WDOH, identifying the additional controls to be added in accordance with the containment matrix guide from HNF-IP-0842. The APQ shall not exceed 5.77E+02 curies. The annual dose to the MEI and the APQ will be tracked on a WDOH approved log.
28. The TEDE to the MEI from soil excavation by the Guzzler will not exceed 6.96E-02 mrem/year, and will be performed in accordance with the regulated Guzzler approval identified in (98-EAP-037). The APQ shall not exceed 1.15E-01 curies. The annual dose to the MEI and the APQ will be tracked on a WDOH approved log. Periodic confirmatory monitoring for soil excavation will consist of soil contamination surveys.
29. The unabated curies will not exceed the values for the radionuclides listed below:
 Unabated curies for pipe cuts:
 3H, 2.72E-04; 14C, 3.81E-05; 59Ni, 2.21E-06; 60Co, 1.46E-04; 63Ni, 2.20E-04; 79Se, 4.22E-06; 90Sr, 1.07E-01; 90Y, 1.07E-01; 93mNb, 1.49E-05; 93Zr, 2.04E-05; 99Tc, 2.25E-04; 106Ru, 1.08E-08; 113mCd, 1.09E-04; 125Sb, 2.56E-04; 126Sn, 6.39E-06; 129I, 2.12E-06; 134Cs, 4.01E-05; 137Cs, 4.47E-01; 151Sm, 1.49E-02; 152Eu, 7.84E-06; 154Eu, 5.83E-04; 155Eu, 9.11E-04; 226Ra, 1.76E-07; 227Ac, 1.09E-09; 228Ra, 3.95E-04; 229Th, 9.13E-09; 231Pa, 4.80E-09; 232Th, 4.47E-08; 232U, 1.22E-06; 233U, 4.66E-06; 234U, 1.06E-06; 235U, 4.16E-08; 236U, 5.49E-08; 237Np, 5.97E-06; 238Pu, 2.43E-06; 238U, 1.26E-06; 239Pu, 1.75E-06; 240Pu, 3.56E-07; 241Am, 7.03E-04; 241Pu, 2.04E-04; 242Cm, 1.90E-07; 242Pu, 9.57E-10; 243Am, 3.62E-09; 243Cm, 9.34E-07; 244Cm, 2.97E-06.
- Unabated Curies for Pit Work/Equipment Installation and Removal:
 3H, 2.31E-04; 14C, 3.24E-05; 59Ni, 1.88E-06; 60Co, 1.24E-04; 63Ni, 1.87E-04; 79Se, 3.59E-06; 90Sr, 9.08E-02; 90Y, 9.08E-02; 93mNb, 1.27E-05; 93Zr, 1.74E-05; 99Tc, 1.92E-04; 106Ru, 9.17E-09; 113mCd, 9.26E-05; 125Sb, 2.18E-04; 126Sn, 5.44E-06; 129I, 1.80E-06; 134Cs, 3.41E-05; 137Cs, 3.80E-01; 151Sm, 1.26E-02; 152Eu, 6.67E-06; 154Eu, 4.96E-04; 155Eu, 7.75E-04; 226Ra, 1.50E-07; 227Ac, 9.26E-10; 228Ra, 3.36E-04; 229Th, 7.77E-09; 231Pa, 4.08E-09; 232Th, 3.80E-08; 232U, 1.04E-06; 233U, 3.96E-06; 234U, 9.01E-07; 235U, 3.54E-08; 236U, 4.67E-08; 237Np, 5.08E-06; 238Pu, 2.06E-06; 238U, 1.07E-06; 239Pu, 1.49E-06; 240Pu, 3.03E-07; 241Am, 5.98E-04; 241Pu, 1.74E-04; 242Cm, 1.62E-07; 242Pu, 8.14E-10; 243Am, 3.08E-09; 243Cm, 7.95E-07; 244Cm, 2.52E-06.
- Unabated Curies for Soil Extraction (Guzzler):
 90Sr, 1.01E-01; 90Y, 1.01E-01 and 241Am, 4.42 E-03.
- Unabated Curies for Soil Extraction (Hand Digging):
 90Sr, 2.55E-02; 90Y, 2.55E-02 and 241Am, 1.02 E-03.
30. The annual abated emissions from the 296-A-29 to the MEI, from mixer pump operations shall be 2.06E-5 mrem/yr.
31. Removal of in-tank equipment will be performed in accordance with ALARACT Demonstration 13, TWRS ALARACT Demonstration for Installation, Operation, and Removal of Tank Equipment, and ALARACT 12 TWRS ALARACT Demonstration for Packaging and Transportation of Equipment and Vehicles.

Project Title

Installation of a small mixer pump to support routine pH adjustment in Tank 107-AN.

Permit No

RTAM

Date Approved NOC_ID

6/8/94

38

Conditions (state only enforceable)

296-A-29

1. Increased PTE makes it a modification, but not a significant one.
2. The waste surface must remain quiescent during mixer pump action.
3. Installation of a small mixer pump to support routine pH adjustment. No impact on air emissions. Mixing with pump not considered routine.
4. The pump must be <75 hp.
5. There shall be no measurable increase in air emissions downstream of the abatement system.
6. All mixing must be in-tank.

200E P-296A030-001

296-A-30

241-AN TANK FARM

Emission Unit ID: 228

Abatement Technology (state only enforceable)

Applicable Requirements: ALARACT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Description of Abatement Technology [WAC 246-247-010(4)] [WAC 246-247-040(5)]	Required Number of Units [WAC 246-247-10(4)(5)] [WAC 246-247-060(5)]	Additional Description/Conditions [WAC 246-247-101(4)] [WAC 246-247-040(5)] [WAC 246-247-060(5)]
	HEPA	4	1 stack ventilates 2 mirror trains of abatement systems
	Fan	2	1 in each train(one in operation at a time)
	Heater	2	1 in each train
	Deentrainer	2	1 in each train

Monitoring Requirements (state and federally enforceable)

Federal and State Regulatory Requirements	Monitoring and Testing Procedure [WAC 246-247-040(5)] [WAC 173--401-615(1)]	Radionuclides Requiring Measurement [WAC 173-401-615(1)]	Sampling Frequency [WAC 246-247-075(1)] [WAC 173-401-615(1)]
40 CFR 61.93[b][4][i] & WAC 246-247-075[3]	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	4 week sample/ year

Sampling Requirements [WAC 246-247-050(5), WAC 173-401-615(1)]: Record Sample

200E P-296AP-001

296-A-40

241-AP TANK FARM

Emission Unit ID: 204

Abatement Technology (state only enforceable)

Applicable Requirements: ALARACT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Description of Abatement Technology [WAC 246-247-010(4)] [WAC 246-247-040(5)]	Required Number of Units [WAC 246-247-10(4)(5)] [WAC 246-247-060(5)]	Additional Description/Conditions [WAC 246-247-101(4)] [WAC 246-247-040(5)] [WAC 246-247-060(5)]
	Fan	1	2 parallel flow paths, 1 in operation at a time
	HEPA	2	2 parallel flow paths with 2 HEPAs in series
	Prefilter	1	2 parallel flow paths
	Heater	1	2 parallel flow paths
	Deentrainer	1	2 parallel flow paths

Monitoring Requirements (state and federally enforceable)

Federal and State Regulatory Requirements	Monitoring and Testing Procedure [WAC 246-247-040(5)] [WAC 173-401-615(1)]	Radionuclides Requiring Measurement [WAC 173-401-615(1)]	Sampling Frequency [WAC 246-247-075(1)] [WAC 173-401-615(1)]
40 CFR 61.93[b][4][i] & WAC 246-247-075[3]	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	4 week sample/ year

Sampling Requirements [WAC 246-247-050(5), WAC 173-401-615(1)]: Record Sample

200E P-296A041-001

296-A-41

241-AP TANK FARM

Emission Unit ID: 205

Abatement Technology (state only enforceable)

Applicable Requirements: ALARACT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Description of Abatement Technology [WAC 246-247-010(4)] [WAC 246-247-040(5)]	Required Number of Units [WAC 246-247-10(4)(5)] [WAC 246-247-060(5)]	Additional Description/Conditions [WAC 246-247-101(4)] [WAC 246-247-040(5)] [WAC 246-247-060(5)]
	Fan	1	2 parallel flow paths, minimum of 1 in operation at a time; annulus exhauster
	HEPA	2	2 parallel flow paths with 2 HEPAs in series
	Heater	1	2 parallel flow paths with 1 heater

Monitoring Requirements (state and federally enforceable)

Federal and State Regulatory Requirements	Monitoring and Testing Procedure [WAC 246-247-040(5)] [WAC 173--401-615(1)]	Radionuclides Requiring Measurement [WAC 173-401-615(1)]	Sampling Frequency [WAC 246-247-075(1)] [WAC 173-401-615(1)]
40 CFR 61.93[b][4][i] & WAC 246-247-075[3]	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	4 week sample/ year

Sampling Requirements [WAC 246-247-050(5), WAC 173-401-615(1)]: Record Sample

200E P-296AW-001**296-A-27**

241-AW TANK FARM

Emission Unit ID: 150

Abatement Technology (state only enforceable)

Applicable Requirements: ALARACT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Description of Abatement Technology [WAC 246-247-010(4)] [WAC 246-247-040(5)]	Required Number of Units [WAC 246-247-10(4)(5)] [WAC 246-247-060(5)]	Additional Description/Conditions [WAC 246-247-101(4)] [WAC 246-247-040(5)] [WAC 246-247-060(5)]
	Fan	1	2 parallel flow paths, 1 in operation at a time
	HEPA	2	2 parallel flow paths with 2 HEPAs in series
	Prefilter	1	2 parallel flow paths
	Heater	1	2 parallel flow paths
	Deentrainer	1	2 parallel flow paths

Monitoring Requirements (state and federally enforceable)

Federal and State Regulatory Requirements	Monitoring and Testing Procedure [WAC 246-247-040(5)] [WAC 173-401-615(1)]	Radionuclides Requiring Measurement [WAC 173-401-615(1)]	Sampling Frequency [WAC 246-247-075(1)] [WAC 173-401-615(1)]
40 CFR 61.93[b][4][i] & WAC 246-247-075[3]	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	4 week sample/ year

Sampling Requirements [WAC 246-247-050(5), WAC 173-401-615(1)]: Record Sample

200E P-296A028-001

296-A-28

241-AW TANK FARM

Emission Unit ID: 156

Abatement Technology (state only enforceable)

Applicable Requirements: ALARACT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Description of Abatement Technology [WAC 246-247-010(4)] [WAC 246-247-040(5)]	Required Number of Units [WAC 246-247-10(4)(5)] [WAC 246-247-060(5)]	Additional Description/Conditions [WAC 246-247-101(4)] [WAC 246-247-040(5)] [WAC 246-247-060(5)]
	Heater	2	1 for each train
	Deentrainer	2	1 for each train
	Fan	2	1 for each train
	HEPA	4	In series (1 stack ventilates 2 mirror trains of abatement systems)

Monitoring Requirements (state and federally enforceable)

Federal and State Regulatory Requirements	Monitoring and Testing Procedure [WAC 246-247-040(5)] [WAC 173--401-615(1)]	Radionuclides Requiring Measurement [WAC 173-401-615(1)]	Sampling Frequency [WAC 246-247-075(1)] [WAC 173-401-615(1)]
40 CFR 61.93[b][4][i] & WAC 246-247-075[3]	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	4 week sample/ year

Sampling Requirements [WAC 246-247-050(5), WAC 173-401-615(1)]: Record Sample

200E P-296A018-001

296-A-18

241-AY/AZ TANK FARM

Emission Unit ID: 217

Abatement Technology (state only enforceable)

Applicable Requirements: ALARACT

ALARACT [WAC 246-247-040(4)]

BARCT [WAC 246-247-040(3)]

Zone or Area:	Description of Abatement Technology [WAC 246-247-010(4)] [WAC 246-247-040(5)]	Required Number of Units [WAC 246-247-10(4)(5)] [WAC 246-247-060(5)]	Additional Description/Conditions [WAC 246-247-101(4)] [WAC 246-247-040(5)] [WAC 246-247-060(5)]
	Heater	1	
	Fan	1	Annulus exhauster AY 101, intermittent operations.
	HEPA	2	In series

Monitoring Requirements (state and federally enforceable)

Federal and State Regulatory Requirements	Monitoring and Testing Procedure [WAC 246-247-040(5)] [WAC 173--401-615(1)]	Radionuclides Requiring Measurement [WAC 173-401-615(1)]	Sampling Frequency [WAC 246-247-075(1)] [WAC 173-401-615(1)]
40 CFR 61.93[b][4][i] & WAC 246-247-075[3]	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	4 week sample/ year

Sampling Requirements [WAC 246-247-050(5), WAC 173-401-615(1)]: Record Sample