

Hanford
Richland WA
RAEL-FF-01
296-S-21 (222-S LAB)
(EU 254; NOC 1063)

Licensing File

Table of Contents

- 1) Licensing Checklist
- 2) Authorization IM#9283 16-ECD-0055
- 3) Informal Draft EU License
- ~~4) Licensee Comments on Informal Draft~~
- 4) 28 Day Draft
 - a) Licensee Acceptance
- 5) Final License

Item #

1

LICENSING CHECKLIST

(Rev. 2)

Eu 254

NOC 954 1063

Please initial boxes, as appropriate, rather than placing a check mark in the box

RAES date received 12/1/14 and IM# assigned 9,283

Entered into RAES Tracking/RDTT 16-218. Completeness Review due 12/31/14

To HP3 (responsible for facility) for assignment: Randy Wiley

To assigned HP2: Ernest McCormick

Add draft Table of Contents and separator pages to file.

Conduct completeness review using "Completeness Review Checklist" and draft "Completeness Notification" letter within 20 days of RAES date received. Discuss any concerns/issues with HP3 during this 20 day period.

Place "Completeness Review Checklist" in license file and prepare draft "Completeness Determination" letter. Letter must go out within 30 days of RAES date received.

- If application is incomplete, you may need to repeat this (and prior) step(s).
If application complete, assign NOC ID and EU ID, as appropriate. Do NOT obsolete 'old' NOC, EU, etc. before the new final, approved, license is issued (you may have to exclude old from AOP for printing purposes).

Forward license file and draft "Completeness Determination" letter to HP3 for review. (If 28-day draft has already been reviewed by licensee and HP3 and is ready to go out at the 30 day mark, you may combine completeness and 28-day draft.)

HP3 - work with HP2 to resolve any comments then forward license file and draft "Completeness Determination" letter to HSC for review.

HSC - work with HP3 to resolve any comments then forward draft "Completeness Determination" letter to AA3 for finalization (HSC will update RAES Tracking/RDTT upon transmittal and will note the 28-Day Draft Due Date, below, upon returning file to you). You now have 60 days to issue the official 28-Day Draft Approval letter.

28-Day Draft Due Date: N/A (See next step, immediately.)

Is it necessary to send the 20-Day City Notification? If yes, prepare ASAP and forward to HP3 for review (follow same process as above for letter issuance [HP3 -> HSC -> AA3]). HSC will update RAES Tracking/RDTT upon transmittal and will notify you of 20-Day Comment Due Date, below, upon returning the file to you).

- USDOE-RL Hanford Site is exempt from this requirement.
If RAEL is part of a Materials or Waste license, the responsibility falls on them to notify the city.
We issue these notifications for new licenses or renewals only; we do not issue them for modifications.

20-Day Comment Due Date: N/A

(see page 2)

N/A

Within 40 days. _____ of completeness determined, complete thorough review of application and draft license. Any EU specific conditions must have justification/basis documented in the 'explanation' section of the database. Discuss any concerns/issues with HP3 during this 40 day period. Also, have HSC do an informal review of the license for consistency before sending to the licensee.

N/A

HSC Informal License Review

N/A

Send informal draft license to licensee for review, allowing them a week to 10 days to get comments back to you. Be sure to include a 'due date'.

N/A

Upon receipt of response from licensee, resolve any comments/issues/concerns right away and finalize the draft license and transmittal letter (28-day Draft). At least 3-5 days before 28-Day Draft Due Date, send license file, draft transmittal letter, and draft license to HP3 for final review.

N/A

HP3 approves and forwards license file and draft letter to HSC for review. HSC reviews and forwards to AA3 for finalization (HSC will hold file until licensee receives 28-day draft).

N/A

Upon licensee receipt of 28-day draft, ^{12/22/16} HSC will update RAES Tracking/RDTT, verify database concurrence, and return license file to HP2 with due date for licensee response or final issuance of license.

Final Due Date: 1/24/17

N/A

Once licensee has accepted, or the 28 days has expired (no more than 2-3 days before), obtain an approval number (AIR#) from AA3 and prepare final license and "Final Approval" letter. Send license file (be sure table of contents provides for final letter/license), final transmittal letter, and final license to HP3 for final review.

N/A

HP3 approves and forwards to HSC for review. HSC forwards to AA3 for finalization.

HSC finalizes:

N/A

- Add final letter(s)
- Update RAES Tracking/RDTT
- Verify database concurrence
- Update Licensee List
- Add final file to database 'inbox' to be entered/scanned

Item #

2



DUPLICATE
OFFICE OF RIVER PROTECTION
P.O. Box 450, MSIN H6-60
Richland, Washington 99352

11/11/16
9,283

16-ECD-0055

NOV 21 2016

RECEIVED

DEC - 1 2016

WA Dept of Health
Radioactive Air Emissions Section

Mr. John Martell, Manager
Radioactive Air Emissions Section
Washington State, Department of Health
309 Bradley Blvd., Suite 201
Richland, Washington 99352
(Hanford Mailstop: B1-42)

Mr. Martell:

U.S. DEPARTMENT OF ENERGY, OFFICE OF RIVER PROTECTION SUBMITS THE LICENSE REVISION FORMS FOR NOTICE OF CONSTRUCTION IDENTIFICATION NUMBERS 954, 996, 997, 998, AND 1000 FOR THE 222-S LABORATORY AND THE LIQUID EFFLUENT RETENTION FACILITY CONTAINED IN THE HANFORD SITE AIR OPERATING PERMIT, PERMIT NUMBER 00-05-006, U.S. DEPARTMENT OF ENERGY HANFORD SITE RADIOACTIVE AIR EMISSIONS LICENSE NUMBER FF-01

The U.S. Department of Energy, Office of River Protection hereby submits the following attached documents for review and approval to the Washington State Department of Health:

- License / As Low As Reasonably Achievable Revision Request, "Revision Request for Notice of Construction Identification Number 954," (Attachment 1)
- License / As Low As Reasonably Achievable Revision Request, "Revision Request for Notice of Construction Identification Numbers 996, 997, 998, and 1000," (Attachment 2)
- Notification of Change Not Requiring Permit Revision, (Attachment 3).

If you have any questions, please contact Dennis W. Bowser, Environmental Compliance Division, (509) 373-2566.

Kevin W. Smith
Manager

ECD:DWB

Attachments: (3)

cc: See page 2

Mr. John Martell
16-ECD-0055

-2-

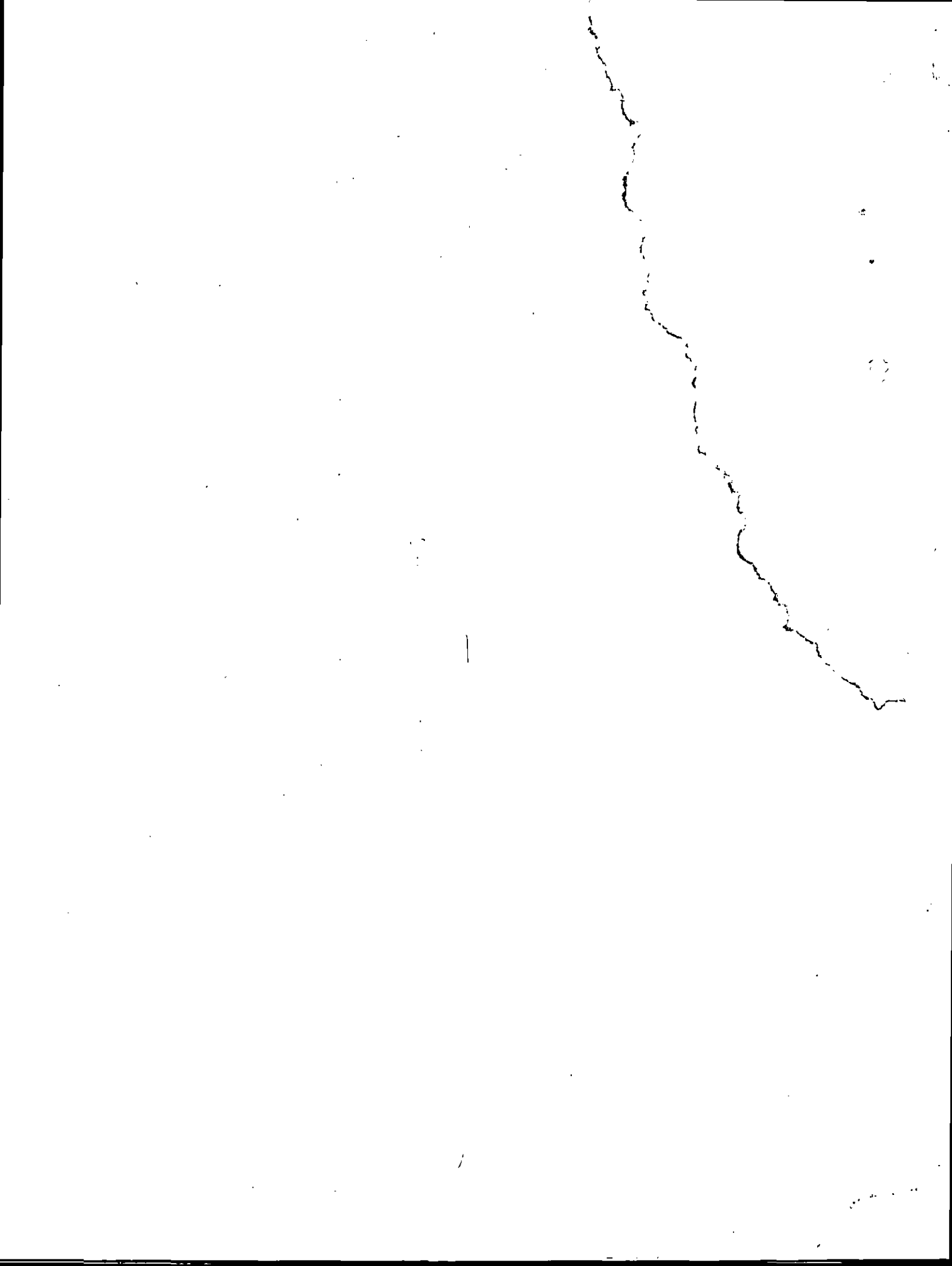
NOV 21 2016

cc w/attachs:

P.M. Gent, Ecology
R.A. Kaldor, MSA
R.J. Utley, WDOH
BNI Correspondence
Environmental Portal, LMSI
WRPS Correspondence

cc w/o attachs:

B.G. Erlandson, BNI
R.S. Skeen, CTUIR
S.L. Dahl, Ecology
J. McAuly, EPA (Region 10, Seattle)
G. Bohnee, NPT
K. Niles, Oregon Energy
E.T. Faust, RL
J.W. Schmidt, WDOH
J.A. Joyner, WRPS
R. Jim, YN



**Attachment 1
16-ECD-0055
(1 Page)**

**License / ALARACT Revision Request
License to Operate 222-S Laboratory
Current WDOH NOC Number: 954**

License / ALARACT Revision Request

NOTE: Any increase to abated or unabated potential to emit (PTE) is considered a modification and requires an Appendix A Application per Washington Administrative Code (WAC) 246-247.

Submittal Date: 11/21/16

License Revision ALARACT Revision
WDOH Condition Number: _____ New ALARACT Rev. #: _____

Report of Closure

PROJECT IDENTIFICATION

Project Title: License to Operate 222-S Laboratory
Current WDOH NOC Number(s): 954
WDOH EU ID Number(s): 254
Current WDOH Approval Letter Number(s): AIR 15-511

DESCRIPTION OF CHANGE

Number of Attachments: 0

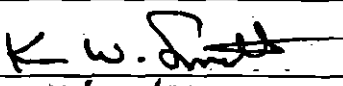
WDOH will provide a new approval letter containing any new or modified conditions that result from the following proposed change.

Enter original and proposed wording here:

Condition 2:

... The 222-S Laboratory primarily receives, processes, and stores samples from various projects and packages samples for shipment to other onsite and offsite laboratories. The 222-S Laboratory is also used for sample analysis, testing, and process development. The majority of samples are from the single-shell tanks (SST) and double-shell tanks (DST) in the tank farm system with a few samples coming from other facilities such as the 242-A Evaporator, K Basins Project, Plutonium Finishing Plant (PFP), and the 219-S Waste Handling Facility. For samples that require receipt into a hot cell, any hot cell may be used. ~~All SST and DST samples and most other samples are received through the 11A hot cell. ...~~

SIGNATURE

Licensee Name: U.S. Department of Energy, Office of River Protection
Licensee Title: Permittee, Hanford Air Operating Permit and FF-01
Licensee
Signature: 
Date: 11/21/16

**Attachment 2
16-ECD-0055
(2 Pages Excluding Cover Sheet)**

**License / ALARACT Revision Request
Operation of the Liquid Effluent Retention Facility Basins 42, 43, and
44, and Diffuse and Fugitive Operations at LERF and ETF
Current WDOH NOC Numbers: 996, 997, 998, and 1000**

License / ALARACT Revision Request

NOTE: Any increase to abated or unabated potential to emit (PTE) is considered a modification and requires an Appendix A Application per Washington Administrative Code (WAC) 246-247.

Submittal Date: 11/21/16

- License Revision** **ALARACT Revision**
WDOH Condition Number: _____ New ALARACT Rev. #: _____
- Report of Closure**

PROJECT IDENTIFICATION

Project Title: Operation of the Liquid Effluent Retention Facility Basins 42, 43, and 44, and Diffuse and Fugitive Operations at LERF and ETF
Current WDOH NOC Number(s): 996, 997, 998, and 1000
WDOH EU ID Number(s): 146, 147, 148, and 1425
Current WDOH Approval Letter Number(s): AIR 15-1217, AIR 15-1218, AIR 15-1219, and AIR 15-1221

DESCRIPTION OF CHANGE

Number of Attachments: 0

WDOH will provide a new approval letter containing any new or modified conditions that result from the following proposed change.

Enter original and proposed wording here:

Condition 2 for NOCs 996, 997, 998, and 1000:

...Vegetation and debris (such as old hoses and failed pumps) are removed using mechanical methods and tools including, but not limited to, cranes, heavy equipment, chain balls, nets, long reach tools, or similar methods. Workers will employ these methods from the sides of the basins. This material will be placed in containers and disposed.

LERF Cover Repair and Replacement
Basin covers may be repaired or replaced as needed.

Condition 10 for NOCs 996, 997, 998:

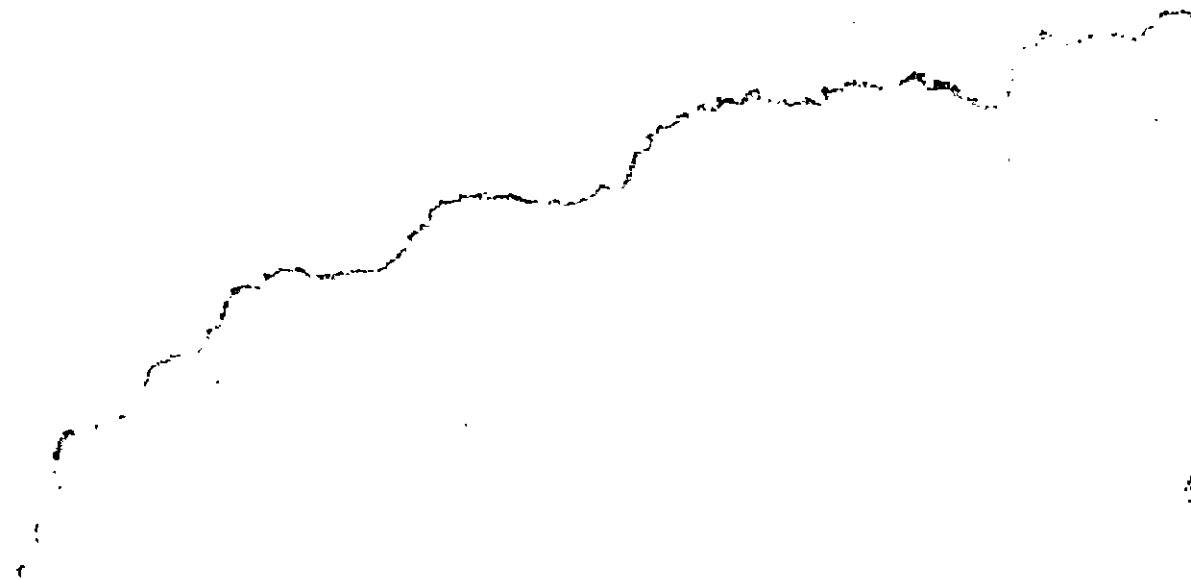
-Cover repair and replacement
(WAC 246-247-040(5))

Condition 4 for NOC 1000:

-Cover repair and replacement
(WAC 246-247-040(5))

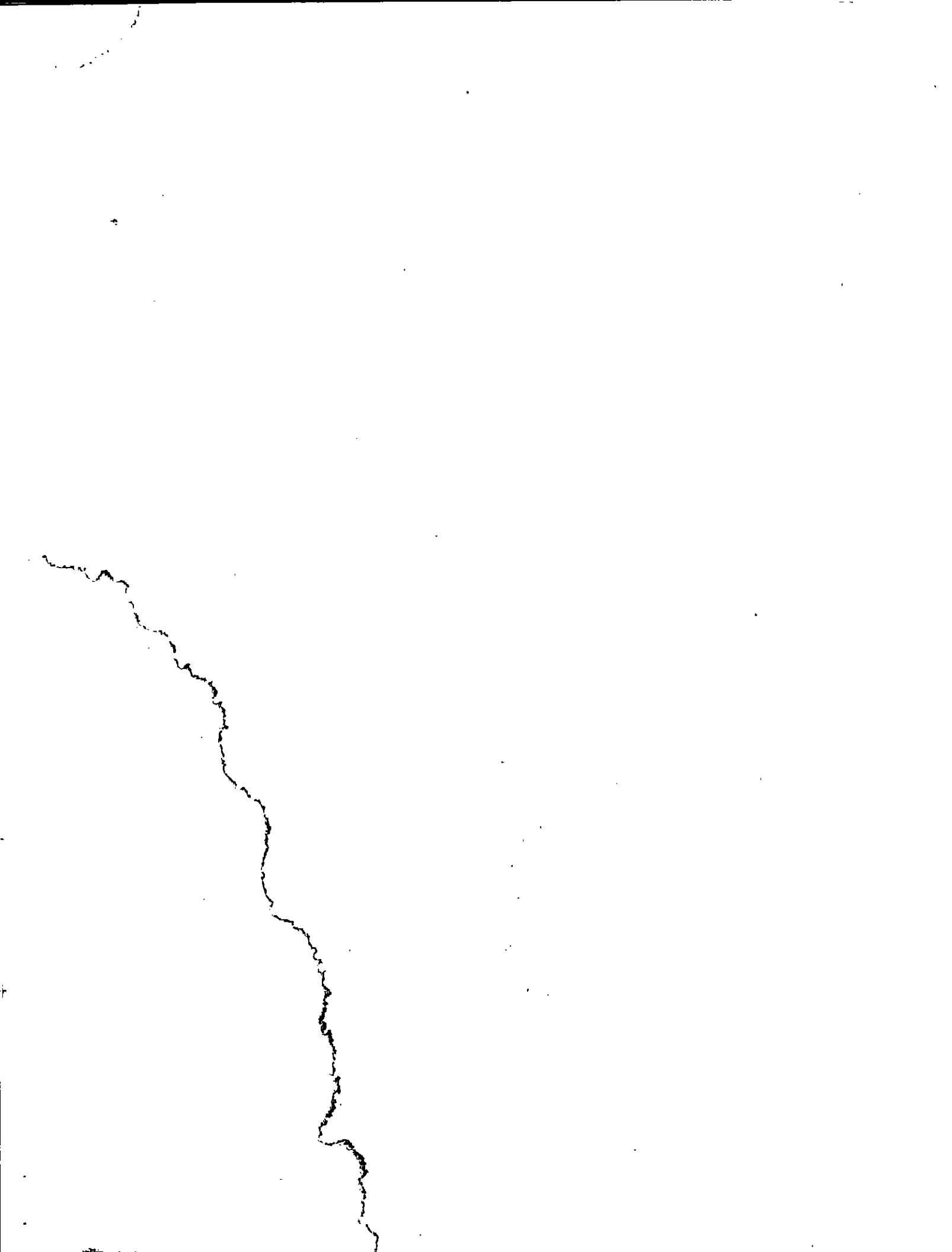
SIGNATURE

Licensee Name: U.S. Department of Energy, Office of River Protection
Licensee Title: Permittee, Hanford Air Operating Permit and FF-01
Licensee
Signature: *K. P. Smith*
Date: 11/21/16



**Attachment 3
16-ECD-0055
(1 Page Excluding Cover Sheet)**

Notification of Change Not Requiring Permit Revision



NOTIFICATION OF CHANGE NOT REQUIRING PERMIT REVISION

Section 502(2)(10) Change*

This notification is provided to the Washington State Department of Ecology, Washington State Department of Health, and the U.S. Environmental Protection Agency as notice of a change not requiring permit revision described as follows.

This change is allowed pursuant to WAC 173-401-722(1), WAC 173-401-722(2) and WAC 173-401-722(5):

1. Change is not a Title I modification.
2. Change does not result in emissions that exceed those allowable under the permit, whether expressed as a rate of emissions, or in total emissions.
3. Change does not alter permit terms that are necessary to enforce limitations on emissions from units covered by the permit.
4. Notification is proved to Ecology, WDOH, and EPA at least 7 days before making the change, and
5. Change does not violate applicable requirements or contravene enforceable permit terms and conditions that are monitoring (including test methods), recordkeeping, reporting, or compliance certification requirements.
6. A source making a change under this section shall comply with applicable preconstruction review requirements established pursuant to RCW 70.94.152.

Permit Number: 00-05-006

Provide the following information pursuant to WAC-173-401-722(2)(a):

Description of the change:
<ul style="list-style-type: none">• Modification of notification of construction identification number 954, License to Operate 222-S Laboratory.• Modification of notification of construction identification numbers 996, 997, 998, and 1000, Operation of the Liquid Effluent Retention Facility Basins 42, 43, and 44, and Diffuse and Fugitive Operations at LERF and ETF.
Date of change:
The date of change will be established when the State of Washington Department of Health issues a license revision.
Describe the emissions resulting from the change:
There are no anticipated changes to the emissions.
List any permit term or condition that will no longer be applicable as a result of the change:
None.

* WAC 173-401-200(30) states that "Section 502(b)(10) changes" are changes that contravene an express permit term. Such changes do not include changes that would violate applicable requirements or contravene enforceable permit terms and conditions that are monitoring (including test methods), recordkeeping, reporting or compliance certification requirements.

Item #

3

Emission Unit ID: 254

200W S-296S021-001

296-S-21

This is a MAJOR, ACTIVELY ventilated emission unit.

222-S LABORATORY

Emission Unit Information

Stack Height: 68.00 ft. 20.73 m. Stack Diameter 5.50 ft. 1.68 m.

Average Stack Effluent Temperature: 78 degrees Fahrenheit. 26 degrees Celsius.

Average Stack Exhaust Velocity: 63.16 ft/second. 19.25 m/second.

Abatement Technology BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	3	In series for both the primary and backup exhaust systems (222-S Lab Hot Cells)
	HEPA	1	For both primary and backup exhaust systems (222-S Lab Complex)
	Fan	3	Primary exhaust operated in parallel, serves both hot cell addition & main lab.
	Fan	1	Backup exhaust operates independently or in parallel with primary exhaust

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(2)	40 CFR 61, Appendix B Method 114	Sr-90, Cs-137, Am-241 and Pu-239	Continuous

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a laboratory building/facility exhauster that is used to ventilate building and facility operations such as but not limited to contaminated rooms, hot cells, glove boxes, and hoods, that support tank farm waste characterization activities, research and development, environmental sample analysis, and Hanford operations and remediation projects. The exhauster can be used to support current surveillance; maintenance activities, operations, decontamination, and cleanup activities within the building/facility. The emission unit is a laboratory building/facility exhauster ventilation system that operates continuously.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval #	Date Approved	NOC_ID
License to Operate the 222-S Laboratory (Replaced NOC ID 954)		Not Approved	1063

Conditions (state only enforceable: WAC 246-247-040(5), 060(5) if not specified)

- 1) The total abated emission limit for this Notice of Construction is limited to 1.02E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 3.00E+00 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).
- 2) **PROCESS DESCRIPTION**
This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16),

may be conducted.

The 222-S Laboratory was built in the early 1950's to provide analytical services, first for the reduction and oxidation (REDOX) process, and later for several programs and plant operations. In 1994 Project W-041H, Environmental Hot Cell Expansion, provided the hot cell facility, an addition at the east end of the 222-S Laboratory that includes the 11A hot cells and associated fume hoods. The increased hot cell capacity was required to support an increased demand for analytical services.

The 222-S Laboratory primarily receives, processes, and stores samples from various projects and packages samples for shipment to other onsite and offsite laboratories. The 222-S Laboratory is also used for sample analysis, testing, and process development. The majority of samples are from the single-shell tanks (SST) and double-shell tanks (DST) in the tank farm system with a few samples coming from other facilities such as the 242-A Evaporator, K Basins Project, Plutonium Finishing Plant (PFP), and the 219-S Waste Handling Facility. For samples that require receipt into a hot cell, any hot cell may be used.

The 222-S Laboratory is also used for waste management activities, such as waste transfers to the 219-S Waste Handling Facility and other activities supporting laboratory and other Hanford Site operations. The 222-S Laboratory manages waste generated at 222-S Laboratory and small amounts of radioactive waste not generated at the 222-S Laboratory (i.e., for short-term storage or transfer to the 219-S Tank System).

The 222-S Laboratory undergoes operation and maintenance activities that occur in the radioactive portion of the facility and contribute to emissions through the 296-S-21 stack. Nonanalytical portions of the facility that exhaust through the 296-S-21 stack are the basement, tunnels, and other miscellaneous sources (e.g., vented storage cabinets).

- 3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**
- 4) **STANDARDS-ASME AG-1 Equivalency**
HEPA Filters for the S-21 exhauster will meet the requirements of HNF-S-0477 and/or HNF-S-0552 which assure equivalency to ASME AG-1: Code on Nuclear Air and Gas Treatment.
- 5) **STANDARDS-Quality Assurance**
Quality Assurance program will meet the requirements of 40 CFR 61, Appendix B, Method 114.
- 6) **ABATEMENT TECHNOLOGY-ANSI N13.1 Compliance**
Air sampling will be conducted in accordance with ANSI/HPS N13.1-1999: Sampling and Monitoring Releases of Airborne Radioactive Substances from the Stacks and Ducts of Nuclear Facilities.

Item #

4

U.S. Postal Service
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com

OFFICIAL USE

7015 0640 0007 5050 8071

Certified Mail Fee \$ 3.30

Extra Services & Fees (check box, add fee as appropriate)

Return Receipt (hardcopy) \$ 2.70

Return Receipt (electronic) \$ _____

Certified Mail Restricted Delivery \$ _____

Adult Signature Required \$ _____

Adult Signature Restricted Delivery \$ _____

Postage \$ 2.62

Total Postage and Fees \$ 8.62



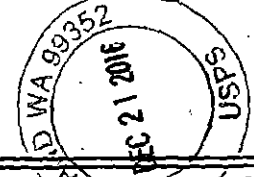
Sent To _____

Street and Apt. No., or PO Box No. _____

City, State, ZIP+4® _____

Postmark Here 16-12-18

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<ul style="list-style-type: none"> <input type="checkbox"/> Complete items 1, 2, and 3. <input type="checkbox"/> Print your name and address on the reverse so that we can return the card to you. <input type="checkbox"/> Attach this card to the back of the mailpiece, or on the front if space permits. 	<p>A. Signature <input checked="" type="checkbox"/> Agent</p> <p><u>[Signature]</u> <input type="checkbox"/> Addressee</p> <p>B. Received by (Printed Name) <u>KA Adams</u></p> <p>C. Date of Delivery <u>12/27/16</u></p> <p>3. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No</p>
<p>Mr. Kevin W. Smith, Manager United States Department of Energy Office of River Protection P.O. Box 450, MSIN: H6-60 Richland, WA 99352</p>	
 9590 9402 1337 5285 0590 91	<p style="text-align: center;">   </p> <p>Service Type</p> <p><input type="checkbox"/> Adult Signature</p> <p><input type="checkbox"/> Adult Signature Restricted Delivery</p> <p><input type="checkbox"/> Certified Mail®</p> <p><input type="checkbox"/> Certified Mail Restricted Delivery</p> <p><input type="checkbox"/> Collect on Delivery</p> <p><input type="checkbox"/> Collect on Delivery Restricted Delivery</p> <p><input type="checkbox"/> Insured Mail</p> <p><input type="checkbox"/> Insured Mail Restricted Delivery (over \$500)</p> <p><input type="checkbox"/> Priority Mail Express®</p> <p><input type="checkbox"/> Registered Mail™</p> <p><input type="checkbox"/> Registered Mail Restricted Delivery</p> <p><input type="checkbox"/> Return Receipt for Merchandise</p> <p><input type="checkbox"/> Signature Confirmation™</p> <p><input type="checkbox"/> Signature Confirmation Restricted Delivery</p>
<p>2. Article Number (Transfer from service label)</p> <p>7015 0640 0007 5050 8071</p>	
<p>PS Form 3811, July 2015 PSN 7530-02-000-9053</p>	

Domestic Return Receipt



**AIR 16-1218
NOC 1063**

STATE OF WASHINGTON
DEPARTMENT OF HEALTH

OFFICE OF RADIATION PROTECTION
309 Bradley Blvd., Suite 201 • Richland, Washington 99352
TDD Relay Service: 1-800-833-6388

December 19, 2016

CERTIFIED MAIL

7015 0640 0007 5050 8071

Mr. Kevin W. Smith, Manager
United States Department of Energy
Office of River Protection
P.O. Box 450, MSIN: H6-60
Richland, Washington 99352

Re: 28-Day Draft Approval of Radioactive Air Emissions License (RAEL) for Emission Unit 296-S-21 (EU 254), License to Operate the 222-S Laboratory

Reference: 1. Letter 16-ECD-0055 (IM# 9,283), Kevin Smith (USDOE-ORP) to John Martell (WDOH), "U.S. Department of Energy, Office of River Protection, Submits the License Revision Forms for Notice of Construction Identification Numbers 954, 996, 997, 998, and 1000 for the 222-S Laboratory...", dated November 21, 2016.

Mr. Smith:

We have reviewed the reference application (for EU 254, NOC 954) and no further information is required as the application has been deemed complete per Washington Administrative Code (WAC) 246-247-110 Appendix A - Application Information Requirements.

Pursuant to Chapter 246-247 of the Washington Administrative Code (WAC), your modification to EU 254 (296-S-21) will be approved according to the enclosed license for:

**License to Operate the 222-S Laboratory (Replaced NOC ID 954)
(EU 254, NOC 1063)**

The Washington State Department of Health (DOH) considers the conditions, controls, monitoring requirements, and limitations of this license integral to approval of your application.

This approval shall take effect, and a final approval letter issued, twenty-eight (28) days after you receive it unless you apply for an adjudicative proceeding, as described below.



Mr. Kevin W. Smith
December 19, 2016
Page 2 of 3

AIR 16-1218

If you accept the conditions and limitations of this approval and do not wish to apply for an adjudicative proceeding, but wish to proceed under this approval before the 28 days have elapsed, please notify us in writing and the DOH will issue the final approval letter. Your notice should be mailed or faxed to:

DOH – Office of Radiation Protection
Radioactive Air Emissions Section
309 Bradley Blvd., Suite 201
Richland, Washington 99352
FAX: (509) 946-0876
EMAIL: AIRRichland@doh.wa.gov

If there are concerns with the conditions and limitations of the approval, please notify the DOH. If attempts to resolve the concerns fail, the DOH will deny your application and you may contest the conditions and limitations of this approval, within 28 days of receipt, by filing the enclosed Request for Adjudicative Proceeding or a document providing substantially the same information with the DOH, Adjudicative Service Unit (ASU), in a manner that shows proof of service on the ASU. The ASU's address is:

DOH – Adjudicative Service Unit
310 Israel Road SE
P.O. Box 47879
Olympia, Washington 98504-7879

You must include a copy of this approval with your application. FILING SHALL NOT BE DEEMED COMPLETE UNTIL THE ADJUDICATIVE SERVICE UNIT ACTUALLY RECEIVES YOUR APPLICATION.

If you have any questions regarding this draft approval, please contact Ernest McCormick ernest.mccormick@doh.wa.gov at (509) 946-0624 or Randy Utley randell.utley@doh.wa.gov at (509) 946-0534.

Sincerely,



for John Martell, Manager
Radioactive Air Emissions Section

Enclosures: (1) License to Operate the 222-S Laboratory (Replaced NOC ID 954)
(2) Request for Adjudicative Proceeding

cc: (see next page)

Mr. Kevin W. Smith
December 19, 2016
Page 3 of 3

AIR 16-1218

cc: Ruth Allen, WRPS
Matthew Barnett, PNNL
Lilyann Bauder, Ecology
Shawna Berven, WDOH
Lucinda Borneman, WRPS
Lee Bostic, BNI
Dennis Bowser, USDOE-ORP
Frank Carleo, CHPRC
Cliff Clark, USDOE-RL
Jack Donnelly, WRPS
Dennis Faulk, EPA
Eric Faust, USDOE-RL
Gary Fritz, MSA
Philip Gent, Ecology
Robert Haggard, BNI
Daniel Heuston, Ecology
Jessica Joyner, WRPS
Reed Kaldor, MSA
Paul Karschnia, CHPRC
Jim McAuley, EPA
Ernest McCormick, WDOH
Bryan Trimberger, USDOE-ORP
Randy Utley, WDOH
Jeff Voogd, WRPS
Environmental Portal
RAES Tracking: Line 16-218; Resp to IM 9,283; EU 254; NOC 1063

Emission Unit ID: 254

200W S-296S021-001

296-S-21

This is a MAJOR, ACTIVELY ventilated emission unit.

222-S LABORATORY

Emission Unit Information

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Average Stack Effluent Temperature: 78 degrees Fahrenheit. 26 degrees Celsius.

Average Stack Exhaust Velocity: 63.16 ft/second. 19.25 m/second.

Abatement Technology BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	3	In series for both the primary and backup exhaust systems (222-S Lab Hot Cells)
	HEPA	1	For both primary and backup exhaust systems (222-S Lab Complex)
	Fan	3	Primary exhaust operated in parallel, serves both hot cell addition & main lab.
	Fan	1	Backup exhaust operates independently or in parallel with primary exhaust

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(2)	40 CFR 61, Appendix B Method 114	Sr-90, Cs-137, Am-241 and Pu-239	Continuous

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a laboratory building/facility exhauster that is used to ventilate building and facility operations such as but not limited to contaminated rooms, hot cells, glove boxes, and hoods, that support tank farm waste characterization activities, research and development, environmental sample analysis, and Hanford operations and remediation projects. The exhauster can be used to support current surveillance, maintenance activities, operations, decontamination, and cleanup activities within the building/facility. The emission unit is a laboratory building/facility exhauster ventilation system that operates continuously.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval #	Date Approved	NOC_ID
License to Operate the 222-S Laboratory (Replaced NOC ID 954)		Not Approved	1063

Conditions (state only enforceable: WAC 246-247-040(5), 060(5) if not specified)

- 1) The total abated emission limit for this Notice of Construction is limited to 1.02E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 3.00E+00 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).
- 2) **PROCESS DESCRIPTION**
This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16),

may be conducted.

The 222-S Laboratory was built in the early 1950's to provide analytical services, first for the reduction and oxidation (REDOX) process, and later for several programs and plant operations. In 1994 Project W-041H, Environmental Hot Cell Expansion, provided the hot cell facility, an addition of the east end of the 222-S Laboratory that includes the 11A hot cells and associated fume hoods. The increased hot cell capacity was required to support an increased demand for analytical services.

The 222-S Laboratory primarily receives, processes, and stores samples from various projects and packages samples for shipment to other onsite and offsite laboratories. The 222-S Laboratory is also used for sample analysis, testing, and process development. The majority of samples are from the single-shell tanks (SST) and double-shell tanks (DST) in the tank farm system with a few samples coming from other facilities such as the 242-A Evaporator, K Basins Project, Plutonium Finishing Plant (PFP), and the 219-S Waste Handling Facility. For samples that require receipt into a hot cell, any hot cell may be used.

The 222-S Laboratory is also used for waste management activities, such as waste transfers to the 219-S Waste Handling Facility and other activities supporting laboratory and other Hanford Site operations. The 222-S Laboratory manages waste generated at 222-S Laboratory and small amounts of radioactive waste not generated as the 222-S Laboratory (i.e., for short-term storage or transfer to the 219-S Tank System).

The 222-S Laboratory undergoes operation and maintenance activities that occur in the radioactive portion of the facility and contribute to emissions through the 296-S-21 stack. Nonanalytical portions of the facility that exhaust through the 296-S-21 stack are the basement, tunnels, and other miscellaneous sources (e.g., vented storage cabinets).

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Ba - 137 m

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Cm - 242

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Co - 60

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Eu - 152

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

H - 3

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Ni - 59

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Am - 241

6.76E+01

Identified as contributing greater than 0.1 mrem/yr to the MEI, greater than 10% of the potential TEDE to the MEI, and greater than 25% of the TEDE to the MEI after controls.

C - 14

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Cm - 243

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Cs - 134

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Eu - 154

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

I - 129

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Ni - 63

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Am - 243

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Cd - 113 m

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Cm - 244

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Cs - 137

3.16E+03

Identified as contributing greater than 0.1 mrem/yr to the MEI, greater than 10% of the potential TEDE to the MEI, and greater than 25% of the TEDE to the MEI after controls.

Eu - 155

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Nb - 93 m

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Np - 237

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Pa - 231

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Pu - 240

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Ra - 226

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Sb - 125

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Sn - 126

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Th - 229

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

U - 233

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

U - 236

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Zr - 93

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Pu - 238

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Pu - 241

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Ra - 228

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Se - 79

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Sr - 90

9.00E+03

Identified as contributing greater than 0.1 mrem/yr to the MEI

Th - 232

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

U - 234

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

U - 238

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Pu - 239

6.85E+01

Identified as contributing greater than 0.1 mrem/yr to the MEI, greater than 10% of the potential TEDE to the MEI, and greater than 25% of the TEDE to the MEI after controls.

Pu - 242

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Ru - 106

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Sm - 151

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Tc - 99

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

U - 232

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

U - 235

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Y - 90

Contributes less than 0.1 mrem/yr to the MEI and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

- 4) **STANDARDS-ASME AG-1 Equivalency**
HEPA Filters for the S-21 exhauster will meet the requirements of HNF-S-0477 and/or HNF-S-0552 which assure equivalency to ASME AG-1: Code on Nuclear Air and Gas Treatment.
- 5) **STANDARDS-Quality Assurance**
Quality Assurance program will meet the requirements of 40 CFR 61, Appendix B, Method 114.
- 6) **ABATEMENT TECHNOLOGY-ANSI N13.1 Compliance**
Air sampling will be conducted in accordance with ANSI/HPS N13.1-1999: Sampling and Monitoring Releases of Airborne Radioactive Substances from the Stacks and Ducts of Nuclear Facilities.

**STATE OF WASHINGTON
DEPARTMENT OF HEALTH
ENVIRONMENTAL HEALTH PROGRAMS
OFFICE OF RADIATION PROTECTION**

In Re The Approval of:
**28-DAY DRAFT FOR NOTICE OF
CONSTRUCTION (NOC) 1063 FOR
222S LABORATORY**

Docket No:
REQUEST FOR ADJUDICATIVE PROCEEDING

Approval No: **AIR 16-1218**

THE STATE OF WASHINGTON TO:

**Mr. Kevin W. Smith, Manager
United States Department of Energy
Richland Operations Office
P.O. Box 450, MSIN: H6-60
Richland, Washington 99352**

If you wish to request an adjudicative proceeding, you or your attorney must **COMPLETE AND FILE THIS FORM OR A DOCUMENT PROVIDING SUBSTANTIALLY THE SAME INFORMATION WITH THE DEPARTMENT OF HEALTH ADJUDICATIVE SERVICE UNIT WITHIN TWENTY-EIGHT (28) DAYS OF YOUR RECEIPT** of this Request for Adjudicative Proceeding form and a copy of the Office of Radiation Protection's approval, **AIR 16-1218**.

You must file your application in a manner that shows proof of service on the Adjudicative Service Unit, at the following address:

Department of Health
Adjudicative Service Unit
310 Israel Road S.E.
P.O. Box 47879
Olympia, WA 98504-7879

With your application, you must include a copy of the Office of Radiation Protection's approval.

FILING SHALL NOT BE DEEMED COMPLETE UNTIL THE ADJUDICATIVE SERVICE UNIT ACTUALLY RECEIVES YOUR APPLICATION.

YOU HAVE THE RIGHT TO a formal hearing in this matter conducted pursuant to Revised Code of Washington (RCW) 43.70.115, Chapter 34.05 RCW, and Chapter 246-10 of the Washington Administrative Code (WAC). Alternatively, you may waive the formal hearing and submit a written statement and supporting documents setting out your position, your defenses, and any mitigating circumstances that you wish to bring to the Department's attention.

You have the right to be represented by an attorney at your own expense.

I.

I WILL BE represented by an attorney. His/her name, address, and phone number are:

Name:

Address:

Phone:

I **WILL NOT BE** represented by an attorney.

If after submitting this request, you obtain attorney representation or change attorneys, you must notify the Adjudicative Service Unit.

II.

I **DO NOT** waive my right to a formal hearing.

I **DO** waive my right to a formal hearing. I understand that if I waive my right to a formal hearing, the Department may decide this matter solely with reference to information in the Department's possession and to such written statements and supporting documents as I may have submitted.

If you choose to waive your right to a formal hearing, please complete the following:

I **AM NOT** submitting documents to the Department in support of my position.

I **AM** submitting a sworn statement and/or other documents to the Department in support of my position. Instructions - Please indicate your responses below:

If you are submitting documents to the Department, please list and briefly identify all such documents in the space provided below and on any additional sheet that may be necessary.

III.

ADMISSION/DENIAL OF CONDITIONS OR LIMITATIONS

The Office of Radiation Protection's approval AIR 16-1218, dated December 19, 2016, contains conditions and limitations set out as numbered paragraphs. In the space below you must indicate, in good faith, whether you admit, or do not contest, or deny the conditions or limitations. Conditions or limitations denied or not contested may later be admitted. Conditions or limitations admitted or not contested shall be conclusively deemed true for further proceedings.

Instructions: I admit, deny, or do not contest the conditions or limitations as follows
(fill in the appropriate paragraph number):

	<u>Admit</u>	<u>Deny</u>	<u>Do Not Contest</u>
Paragraph _____	[]	[]	[]
Paragraph _____	[]	[]	[]
Paragraph _____	[]	[]	[]
Paragraph _____	[]	[]	[]
Paragraph _____	[]	[]	[]
Paragraph _____	[]	[]	[]
Paragraph _____	[]	[]	[]
Paragraph _____	[]	[]	[]
Paragraph _____	[]	[]	[]

Please attach any additional sheets that may be necessary to respond to all allegations.

If you have chosen not to waive your rights to a formal hearing, please state all grounds for contesting this matter in the space provided below and on any additional sheets that may be necessary.

IV.

You have the right to an interpreter, appointed at no cost, if you are a hearing impaired person or limited English speaking person. If any witness for you is a hearing impaired person or a limited English speaking person, an interpreter will be appointed at your expense.

I [DO] / [DO NOT] (circle one) request an interpreter be appointed. If an interpreter is requested, please indicate the person or persons for whom an interpreter is required and their primary language, and/or whether they are hearing impaired.

IF YOU FAIL TO FILE YOUR APPLICATION IN A TIMELY MANNER, OR IF YOU FILE YOUR APPLICATION TIMELY BUT FAIL TO APPEAR AT ANY SCHEDULED SETTLEMENT CONFERENCE, PREHEARING CONFERENCE, OR HEARING WITHOUT LEAVE TO DO SO, THE DEPARTMENT MAY DECIDE THIS MATTER WITHOUT YOUR PARTICIPATION AND WITHOUT FURTHER NOTICE TO YOU.

DATED this _____ day of _____,

Party

Party's Representative (if any)

WSBA #: _____

Item #

5



LB 4949

AIR 17-135
NOC 1063

STATE OF WASHINGTON
DEPARTMENT OF HEALTH

OFFICE OF RADIATION PROTECTION
309 Bradley Blvd., Suite 201 • Richland, Washington 99352
TDD Relay Service: 1-800-833-6388

January 24, 2017

Mr. Kevin W. Smith, Manager
United States Department of Energy
Office of River Protection
P.O. Box 450, MSIN: H6-60
Richland, Washington 99352

Re: Final Approval of Notice of Construction (NOC) 1063

Mr. Smith:

Pursuant to Chapter 246-247 of the Washington Administrative Code (WAC), your revision is hereby approved according to the enclosed emission unit (EU) specific license for:

**License to Operate the 222-S Laboratory (Replaces NOC ID 954)
(EU 254, NOC 1063)**

The conditions, controls, monitoring requirements, and limitations of this license must be observed in order for you to be in compliance with WAC 246-247. Failure to meet any provision of this license may result in the revocation of approval, the issuance of Notices of Violation, or other enforcement actions under WAC 246-247-100.

If you have any questions regarding this approval, please contact, please contact Ernest McCormick ernest.mccormick@doh.wa.gov at (509) 946-0624 or Randy Utley randell.utley@doh.wa.gov at (509) 946-0534.

Sincerely,

John Martell, Manager
Radioactive Air Emissions Section

Enclosure: Conditions and Limitations for EU 254 (NOC 1063)

cc: (see next page)



Mr. Kevin W. Smith
January 24, 2017
Page 2 of 2

AIR 17-135

cc: Ruth Allen, WRPS
Matthew Barnett, PNNL
Lilyann Bauder, Ecology
Shawna Berven, WDOH
Lucinda Borneman, WRPS
Lee Bostic, BNI
Holly Bowers, WRPS
Dennis Bowser, USDOE-ORP
Frank Carleo, CHPRC
Cliff Clark, USDOE-RL
Jack Donnelly, WRPS
Dennis Faulk, EPA
Eric Faust, USDOE-RL
Gary Fritz, MSA
Philip Gent, Ecology
Robert Haggard, BNI
Daniel Heuston, Ecology
Jessica Joyner, WRPS
Reed Kaldor, MSA
Paul Karschnia, CHPRC
Jim McAuley, EPA
Ernest McCormick, WDOH
Bryan Trimberger, USDOE-ORP
Randy Utley, WDOH
Jeff Voogd, WRPS
Environmental Portal
RAES Tracking: Line 16-217; EU 254; NOC 1063

Emission Unit ID: 254

200W S-296S021-001

296-S-21

This is a MAJOR, ACTIVELY ventilated emission unit.

222-S LABORATORY

Emission Unit Information

Stack Height: 68.00 ft. 20.73 m. Stack Diameter 5.50 ft. 1.68 m.

Average Stack Effluent Temperature: 78 degrees Fahrenheit. 26 degrees Celsius.

Average Stack Exhaust Velocity: 63.16 ft/second. 19.25 m/second.

Abatement Technology BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	3	In series for both the primary and backup exhaust systems (222-S Lab Hot Cells)
	HEPA	1	For both primary and backup exhaust systems (222-S Lab Complex)
	Fan	3	Primary exhaust operated in parallel, serves both hot cell addition & main lab.
	Fan	1	Backup exhaust operates independently or in parallel with primary exhaust

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(2)	40 CFR 61, Appendix B Method 114	Sr-90, Cs-137, Am-241 and Pu-239	Continuous

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a laboratory building/facility exhauster that is used to ventilate building and facility operations such as but not limited to contaminated rooms, hot cells, glove boxes, and hoods, that support tank farm waste characterization activities, research and development, environmental sample analysis, and Hanford operations and remediation projects. The exhauster can be used to support current surveillance, maintenance activities, operations, decontamination, and cleanup activities within the building/facility. The emission unit is a laboratory building/facility exhauster ventilation system that operates continuously.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval #	Date Approved	NOC_ID
License to Operate the 222-S Laboratory (Replaced NOC ID 954)	AIR-17-135	1/24/2017	1063

Conditions (state only enforceable: WAC 246-247-040(5), 060(5) if not specified)

- 1) The total abated emission limit for this Notice of Construction is limited to 1.02E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 3.00E+00 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).
- 2) **PROCESS DESCRIPTION**
This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may

be conducted.

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The 222-S Laboratory is also used for waste management activities, such as waste transfers to the 219-S Waste Handling Facility and other activities supporting laboratory and other Hanford Site operations. The 222-S Laboratory manages waste generated at 222-S Laboratory and small amounts of radioactive waste not generated at the 222-S Laboratory (i.e., for short-term storage or transfer to the 219-S Tank System).

The 222-S Laboratory undergoes operation and maintenance activities that occur in the radioactive portion of the facility and contribute to emissions through the 296-S-21 stack. Nonanalytical portions of the facility that exhaust through the 296-S-21 stack are the basement, tunnels, and other miscellaneous sources (e.g., vented storage cabinets).

3) The Annual Possession Quantity is limited to the following radionuclides (Curies/year):

<p>Ac - 227 Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.</p>	<p>Am - 241 6.76E+01 Identified as contributing greater than 0.1 mrem/yr to the MEI, greater than 10% of the potential TEDE to the MEI, and greater than 25% of the TEDE to the MEI after controls.</p>	<p>Am - 243 Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.</p>
<p>Ba - 137 m Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.</p>	<p>C - 14 Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.</p>	<p>Cd - 113 m Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.</p>
<p>Cm - 242 Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.</p>	<p>Cm - 243 Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.</p>	<p>Cm - 244 Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.</p>
<p>Co - 60 Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.</p>	<p>Cs - 134 Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.</p>	<p>Cs - 137 3.16E+03 Identified as contributing greater than 0.1 mrem/yr to the MEI, greater than 10% of the potential TEDE to the MEI, and greater than 25% of the TEDE to the MEI after controls.</p>
<p>Eu - 152 Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.</p>	<p>Eu - 154 Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.</p>	<p>Eu - 155 Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.</p>
<p>H - 3 Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.</p>	<p>I - 129 Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.</p>	<p>Nb - 93 m Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.</p>
<p>Ni - 59 Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.</p>		

less than 25% of the abated dose.

Pa - 231

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

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Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

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Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

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Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Sn - 126

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Th - 229

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

U - 233

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

U - 238

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Zr - 93

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Ni - 63

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Pu - 238

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Pu - 241

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Ra - 228

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Se - 79

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Sr - 90

9.00E+03

Identified as contributing greater than 0.1 mrem/yr to the MEI

Th - 232

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

U - 234

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

U - 238

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Np - 237

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Pu - 239

6.85E+01

Identified as contributing greater than 0.1 mrem/yr to the MEI, greater than 10% of the potential TEDE to the MEI, and greater than 25% of the TEDE to the MEI after controls.

Pu - 242

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Ru - 106

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Sm - 151

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Tc - 99

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

U - 232

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

U - 235

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Y - 90

Contributes less than 0.1 mrem/yr to the MEI and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

- 4) **STANDARDS-ASME AG-1 Equivalency**
HEPA Filters for the S-21 exhauster will meet the requirements of HNF-S-0477 and/or HNF-S-0552 which assure equivalency to ASME AG-1: Code on Nuclear Air and Gas Treatment.
- 5) **STANDARDS-Quality Assurance**
Quality Assurance program will meet the requirements of 40 CFR 61, Appendix B, Method 114.
- 6) **ABATEMENT TECHNOLOGY-ANSI N13.1 Compliance**
Air sampling will be conducted in accordance with ANSI/HPS N13.1-1999: Sampling and Monitoring Releases of Airborne Radioactive Substances from the Stacks and Ducts of Nuclear Facilities.