LB# 4327

AIR 15-306
NOC 948

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
OFFICE OF RADIATION PROTECTION
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March 12, 2015

Ms. Stacy Charboneau, Manager
for Safety and Environment
United States Department of Energy
Richland Operations Office
P.O. Box 550, MSIN: A5-14
Richland, Washington 99352

Dear Ms. Charboneau:

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

J-318 Fugitive Emissions from the 318 Building (Radiological Calibrations Laboratory), 300 Area, Hanford Site (Replaced NOC 815)
(NOC 948, EU 1333)

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 Mr. Ernest McCormick at (509) 946-0624.

Sincerely,

P. John Martell, Manager
Radioactive Air Emissions Section

Enclosures: Conditions and Limitations for NOC 948(EU 1333)

cc: (see next page)

cc: Ruth Allen, WRPS
Matthew Barnett, PNNL
Lucinda Borneman, WRPS
Lee Bostic, BNI
Cliff Clark, USDOE-RL
Jack Donnelly, WRPS
Rick Engelmann, CHPRC
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Ernest McCormick, WDOH
Valarie Peery, Ecology
John Schmidt, WDOH
Maria Skorska, Ecology
Jeff Voogd, WRPS
Joan Woolard, MSA
Davis Zhen, EPA
Environmental Portal
RAES Tracking: Line# 1026; Follow-up to LB# 4276; NOC 948; EU 1333

Emission Unit ID: 1333

300

318 Building

This is a MINOR, FUGITIVE, non-point source emission unit.

300 Diffuse/Fugitive Emissions

Emission Unit Information

Stack Height: ft. m. Stack Diameter ft. m.

Average Stack Effluent Temperature: degrees Fahrenheit. degrees Celsius.

Average Stack ExhaustVelocity: ft/second. m/second.

Abatement Technology ALARCT 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

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
WAC 246-247-075[3]	Tracking system	As listed in condition 3 of this emission unit.	Tracking system.

Sampling Requirements Radionuclide emissions will be determined using 40 CFR 61 Appendix D calculations in lieu of monitoring.

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 has 1 active Notice(s) of Construction.

Project Title	Approval #	Date Approved	NOC_ID
J-318 Fugitive Emissions from the 318 Building (Radiological Calibrations Laboratory), 300 Area, Hanford Site (Replaced NOC 815)	AIR 15-306	3/12/2015	948

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 6.80E-04 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies to those additional 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 318 Building provides technical services in internal dosimetry, external dosimetry, instrument calibration, repair, and materials testing for protecting the health of workers and the public, and providing liability protection for government and industrial customers. Additionally, workplace measurements are applied to research and development (R&D) activities to better understand and determine occupational exposures. Work activities may be performed "continuously" (i.e., year-round, normal-business, swing-shift, and night-shift hours).

In addition to the technical services, there is direct support for environment, health, safety and security systems. Product line R&D includes a strategic intent of assisting the government and individual customers to comply with exposure limits by providing accurate information about the level of exposure and dose to the workers from chemical and radioactive agents. The 318 Building also supports national nuclear security activities; it also stages and maintains equipment and performs team training for radiological assistance and response to radiological incidents.

The laboratory activities conducted in the 318 Building include:

- Basic and applied research in the areas of environmental health and sustainability.
- Developing methods for radioactive material sampling collection and analysis techniques.
- Developing methods to detect nuclear proliferation materials.
- Instrument testing with dispersible short-lived medical isotopes.
- Laboratory setup projects.
- Provide technical services in dosimetry and instrumentation (e.g., calibrations, and ANSI N42 equipment testing).
- Radiation testing on equipment and materials.
- Research activities involving the use and creation of mixed activation products (MAPs) mixed fission products (MFPs), and naturally-occurring radioactive materials, actinides and standards.
- Research and laboratory activities that may include processes where the temperature may be equal to or exceed 100°C.
- Research capabilities to support determining occupational and environmental doses and exposures.
- Research capabilities to support the development of radiation detection and measuring instruments.
- Support for national nuclear security and radiological assistance activities (e.g., equipment and sample management, and training).

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 6.80E-04 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha - 0	Gas	WAC 246-247-030(21)(a)

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.

Beta - 0	Gas	WAC 246-247-030(21)(a)

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.

The radioactive isotopes identified for this emission unit are (no quantities specified):

Ac - 225	Ac - 227	Ac - 228	Ag - 108 m	Ag - 108
Ag - 109 m	Ag - 110 m	Ag - 110	Ag - 111	Ag - 112
Al - 26	Al - 28	Am - 240	Am - 241	Am - 242 m
Am - 242	Am - 243	Am - 245	Am - 246	Ar - 37
Ar - 39	Ar - 41	Ar - 42	As - 74	As - 76
As - 77	At - 217	Au - 193	Au - 194	Au - 195
Au - 196	Au - 198	Au - 198 m	Au - 199	Ba - 131
Ba - 133	Ba - 133 m	Ba - 137 m	Ba - 139	Ba - 140
Ba - 141	Ba - 142	Ba - 143	Be - 10	Be - 7
Bi - 207	Bi - 208	Bi - 210 m	Bi - 210	Bi - 211
Bi - 212	Bi - 213	Bi - 214	Bk - 247	Bk - 249
Bk - 250	Br - 82	Br - 82 m	Br - 83	Br - 84
Br - 84 m	Br - 85	C - 11	C - 14	C - 15
Ca - 41	Ca - 45	Ca - 47	Cd - 107	Cd - 109
Cd - 111 m	Cd - 113 m	Cd - 113	Cd - 115 m	Cd - 115
Cd - 117	Cd - 117 m	Ce - 139	Ce - 141	Ce - 142
Ce - 143	Ce - 144	Cf - 249	Cf - 250	Cf - 251
Cf - 252	Cl - 36	Cm - 241	Cm - 242	Cm - 243
Cm - 244	Cm - 245	Cm - 246	Cm - 247	Cm - 248

Cm - 250	Co - 56	Co - 57	Co - 58	Co - 60
Co - 60 m	Cr - 49	Cr - 51	Cr - 55	Cs - 131
Cs - 132	Cs - 134	Cs - 134 m	Cs - 135	Cs - 136
Cs - 137	Cs - 138	Cs - 139	Cs - 140	Cs - 141
Cu - 64	Cu - 66	Cu - 67	Dy - 159	Dy - 165
Dy - 169	Er - 169	Er - 171	Es - 254	Eu - 150
Eu - 152	Eu - 152 m	Eu - 154	Eu - 155	Eu - 156
Eu - 157	F - 18	Fe - 55	Fe - 59	Fr - 221
Fr - 223	Ga - 67	Ga - 68	Ga - 70	Ga - 72
Gd - 148	Gd - 149	Gd - 151	Gd - 152	Gd - 153
Gd - 159	Ge - 68	Ge - 71	Ge - 71 m	Ge - 75
Ge - 77	Ge - 77 m	H - 3	Hf - 175	Hf - 178 m
Hf - 179 m	Hf - 181	Hf - 182	Hg - 203	Ho - 163
Ho - 166	Ho - 166 m	I - 122	I - 123	I - 125
I - 126	I - 128	I - 129	I - 130	I - 130 m
I - 131	I - 132	I - 132 m	I - 133	I - 133 m
I - 134	I - 134 m	I - 135	In - 106	In - 111
In - 113 m	In - 114 m	In - 114	In - 115	In - 115 m
In - 116	In - 116 m	In - 117	In - 117 m	Ir - 189
Ir - 190	Ir - 192	Ir - 194	K - 40	K - 42
Kr - 81	Kr - 81 m	Kr - 83 m	Kr - 85	Kr - 85 m
Kr - 87	Kr - 88	Kr - 89	Kr - 90	La - 137
La - 138	La - 140	La - 141	La - 142	La - 144
Lu - 177	Lu - 177 m	Mg - 27	Mg - 28	Mn - 52
Mn - 54	Mn - 56	Mo - 103	Mo - 104	Mo - 105
Mo - 93	Mo - 99	N - 13	Na - 22	Na - 24
Na - 24 m	Nb - 100	Nb - 101	Nb - 103	Nb - 91
Nb - 91 m	Nb - 92	Nb - 93 m	Nb - 94	Nb - 95
Nb - 95 m	Nb - 96	Nb - 97	Nb - 97 m	Nb - 98
Nd - 144	Nd - 147	Ni - 56	Ni - 57	Ni - 59
Ni - 63	Ni - 65	Np - 235	Np - 236	Np - 237
Np - 238	Np - 239	Np - 240	Np - 240 m	O - 15
O - 19	Os - 191	P - 32	P - 33	Pa - 231
Pa - 233	Pa - 234	Pa - 234 m	Pb - 203	Pb - 209
Pb - 210	Pb - 211	Pb - 212	Pb - 214	Pd - 103
Pd - 107	Pd - 109	Pd - 112	Pm - 143	Pm - 144
Pm - 145	Pm - 146	Pm - 147	Pm - 148 m	Pm - 148
Pm - 149	Pm - 151	Po - 208	Po - 209	Po - 210

Po - 211	Po - 212	Po - 213	Po - 214	Po - 215
Po - 216	Po - 218	Pr - 143	Pr - 144	Pr - 144 m
Pt - 191	Pt - 192	Pt - 193	Pt - 193 m	Pt - 195 m
Pt - 197 m	Pt - 197	Pt - 198	Pt - 199	Pt - 199 m
Pu - 234	Pu - 236	Pu - 237	Pu - 238	Pu - 239
Pu - 240	Pu - 241	Pu - 242	Pu - 243	Pu - 244
Pu - 246	Ra - 223	Ra - 224	Ra - 225	Ra - 226
Ra - 228	Rb - 81	Rb - 82	Rb - 83	Rb - 84
Rb - 86	Rb - 87	Rb - 88	Rb - 89	Rb - 90
Rb - 90 m	Re - 186	Re - 187	Re - 188	Rh - 101
Rh - 102	Rh - 102 m	Rh - 103 m	Rh - 104	Rh - 105
Rh - 105 m	Rh - 106	Rn - 219	Rn - 220	Rn - 222
Rn - 224	Ru - 103	Ru - 105	Ru - 106	Ru - 97
S - 35	Sb - 122	Sb - 124	Sb - 125	Sb - 126
Sb - 126 m	Sb - 127	Sb - 129	Sc - 44	Sc - 46
Sc - 47	Sc - 48	Se - 75	Se - 79	Se - 79 m
Si - 31	Si - 32	Sm - 145	Sm - 146	Sm - 147
Sm - 148	Sm - 151	Sm - 153	Sm - 157	Sn - 113
Sn - 117 m	Sn - 119 m	Sn - 121 m	Sn - 121	Sn - 123
Sn - 125	Sn - 126	Sr - 82	Sr - 85	Sr - 87 m
Sr - 89	Sr - 90	Sr - 91	Sr - 92	Ta - 179
Ta - 180	Ta - 182	Ta - 182 m	Ta - 183	Tb - 157
Tb - 158	Tb - 160	Tb - 161	Tc - 101	Tc - 103
Tc - 106	Tc - 95 m	Tc - 95	Tc - 97	Tc - 97 m
Tc - 98	Tc - 99	Tc - 99 m	Te - 121 m	Te - 121
Te - 123	Te - 123 m	Te - 125 m	Te - 127 m	Te - 127
Te - 129 m	Te - 129	Te - 131	Te - 131 m	Te - 132
Te - 133	Te - 133 m	Te - 134	Th - 227	Th - 228
Th - 229	Th - 230	Th - 231	Th - 232	Th - 233
Th - 234	Ti - 44	Ti - 45	Ti - 51	Tl - 201
Tl - 204	Tl - 206	Tl - 207	Tl - 208	Tl - 209
Tm - 168	Tm - 170	Tm - 171	U - 232	U - 233
U - 234	U - 235	U - 235 m	U - 236	U - 237
U - 238	U - 239	U - 240	V - 48	V - 49
W - 181	W - 185	W - 187	W - 188	Xe - 122
Xe - 123	Xe - 125	Xe - 127	Xe - 127 m	Xe - 129 m
Xe - 131 m	Xe - 133	Xe - 133 m	Xe - 135	Xe - 135 m
Xe - 137	Xe - 138	Xe - 139	Y - 88	Y - 90

Y - 90 m	Y - 91	Y - 91 m	Y - 92	Y - 93
Yb - 164	Yb - 169	Yb - 175	Yb - 177	Zn - 65
Zn - 69	Zn - 69 m	Zr - 100	Zr - 88	Zr - 89
Zr - 93	Zr - 95	Zr - 97	Zr - 98	Zr - 99

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notify the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) ABATEMENT TECHNOLOGY-Emission Control System
The 318 Building has multiple emission points that may or may not be actively ventilated. Emissions from this non-point source are essentially fugitive in nature. There is currently no abatement technology credited for the 318 Building. No emission controls are proposed for this activity because of the low quantities of radioactive material that may be used or stored. Since no control devices are proposed, the abated emissions and doses are the same as the unabated emissions and doses.

5) ALTERNATE APPROVAL- use of 40 CFR 61 Appendix D calculations for PTE
This emission unit is identified as PNNL Potential Impact Category 4 (PNNL 2012). Because the total unabated PTE for the emission unit is < 0.1 mrem/yr TEDE to the MEI, the radionuclide emissions will be determined using 40 CFR 61, Appendix D calculations in lieu of monitoring (EPA 1989).