Emission Unit ID: 362

300 EP-326-01-S

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This is a MINOR, ACTIVELY ventilated emission unit.

326 MATERIAL SCIENCE LAB

Emission Unit Information

Stack Height: 47.60 ft. 14.51 m. Stack Diameter 6.00 ft. 1.83 m.

Average Stack Effluent Temperature: 77 degrees Fahrenheit. 25 degrees Celsius.

Average Stack ExhaustVelocity: 32.40 ft/second. 9.88 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

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

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Fan	3	In parallel, common to both areas
Hoods, SEM	HEPA	2	In series
Hot cells and hoods	HEPA	1	

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(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	2 week sample/year

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 Activities at the 326 Building support operations. This 47.6 foot tall stack exhausts both filtered and unfiltered air. Particulate emissions are sampled. The building contains laboratories and equipment for studies of metallurgical, chemical, and physical behavior of reactor components, fuel materials, mixed fission products mixed activation products, and ceramic composite materials.

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

Project Title	Approval No	Date Approved	NOC_ID
Research at the 326 Facility	AIR 06-640	7/5/2006	677

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 8.52E-05 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) 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.

   Included are the following type of research activities within the 326 Facility.

   Development and calibration of fiber optic chemical sensors, electrical and mechanical engineering support for nuclear instrumentation development and fabrication, design and engineering of special purpose radiation detectors and sampling systems, and operation of a continuous glass fiber draw capability to produce neutron sensitive scintillating glass fiber which is a new class of solid state radiation detectors.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 8.15E-03 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha - 0	1.76E-06	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Alpha release rate based on AM-241			
Beta - 0	1.33E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Beta release rate based on Co-60			

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

Ag - 110 m	Am - 241	Am - 243	Ar - 37	Ar - 39
Ar - 41	Ba - 133	Bi - 207	C - 14	Ca - 45
Cd - 109	Ce - 144	Cf - 252	Cm - 244	Co - 56
Co - 57	Co - 58	Co - 60	Cr - 51	Cs - 134
Cs - 137	Cu - 64	Eu - 152	Eu - 154	Eu - 155
Eu - 156	Fe - 55	Gd - 149	Gd - 151	H - 3
I - 125	I - 129	I - 131	Kr - 83 m	Kr - 85
Kr - 85 m	Kr - 87	Kr - 88	Mn - 54	Mo - 93
Na - 22	Nb - 93 m	Nb - 94	Ni - 59	Ni - 63
Np - 237	Pu - 238	Pu - 239	Pu - 240	Pu - 242
Ra - 226	Rn - 222	Ru - 106	Sb - 124	Sb - 125
Sc - 46	Sn - 113	Sn - 119 m	Sn - 123	Sr - 85
Sr - 89	Sr - 90	Ta - 179	Ta - 182	Tc - 99
Te - 123	Th - 230	Th - 232	U - 234	U - 235
U - 236	U - 238	V - 49	W - 181	W - 185
Xe - 131 m	Xe - 133	Xe - 133 m	Xe - 135	Xe - 135 m
Xe - 137	Xe - 138	Zn - 65	Zr - 95	

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy 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.