CORRESPONDENCE DISTRIBUTION COVERSHEET

Author	Addressee	Correspondence No.
N. C. Boyter, FH (N. M. Menard, FH, 372-3627)	H. E. Bilson, RL	FH-0003311

Subject: CONTRACT NUMBER DE-AC06-96RL13200, RADIOACTIVE AIR EMISSIONS NOTICE OF CONSTRUCTION FOR THE 300 AREA PROCESS SEWER CLEANOUT

DISTRIBUTION

Approval	Date	Name	Location	w/att
		Correspondence Control	A3-01	X
		Fluor Hanford		
		Presidents's Office	H5-20	
		E. S. Aromi	H6-10	
		R. C. Brunke	G1-37	
		S. B. Cherry	B3-15	X
		L P. Diediker	G1-29	
X	6-16-00	R. H. Engelmann	G1-30	
X	16JUN00	R. H. Gurske	H8-73	
		J. W. Hales	A1-14	
X	6-16-00	J. Langdon	L6-04	
X	6/16/00	D. J. McBride	L6-04	
X	6-16-00	N. M. Menard	G1-30	X
		T. L. Moore	G1-32	
		J. O. Perkins	G1-31	
X	6-16-00	J. K. Perry	L1-04	
		S. M. Price	H8-67	
X	6/16/00	C. P. Strand	A1-14	
		R. T. Wilde	G1-36	
		J. D. Williams	H8-67	
		L. F. Willis	H8-73	
		AOP/File (B. L. Curn)	G1-29	X
		FH Legal (S. B. Cherry)	B3-15	X
		PED File/LB	G1-30	X
		U.S. Department of Energy, Richland Operations Office		
		R. F. Guercia	H0-12	
		P. J. Krupin	A2-15	
		G. Richardson	H0-12	
		G. H. Sanders	H0-12	
		G. L. Sinton	H0-12	

Fluor Hanford
P.O. Box 1000
Richland, WA 99352

FLUOR GLOBAL SERVICES

June 16, 2000

FH-0003311

Ms. H. E. Bilson, Assistant Manager for
Environmental Restoration & Waste Management
U.S. Department of Energy
Richland Operations Office
Post Office Box 500
Richland, Washington 99352

Dear Ms. Bilson:

CONTRACT NUMBER DE-AC06-96RL13200, RADIOACTIVE AIR EMISSIONS NOTICE OF CONSTRUCTION FOR THE 300 AREA PROCESS SEWER CLEANOUT

Attached for submittal to the State of Washington, Department of Health (WDOH) and the U.S. Environmental Protection Agency (EPA), pursuant to the requirements of *Washington Administrative Code* 246-247-060, and as a request for approval to construct pursuant to Title 40, Code of Federal Regulations 61.07, is a radioactive air emissions Notice of Construction (NOC) to cleanout the 300 Area Process Sewer. A portion of the 300 Area Process Sewer contains low levels of radioactive contamination that needs to be removed.

Using the currently approved unit dose conversion factors in HNF-3602, the estimated potential total effective dose equivalent to the maximally exposed individual (MEI) resulting from the unabated, fugitive emissions from the cleanout of the 300 Area Process Sewer is 4.70 E-05 millirem per year. As requested by the EPA and the WDOH, a new MEI evaluation was also performed and showed that the nearest public on-site receptor (313 Building) would receive 1.59 E-05 millirem per year.

Please transmit this NOC to WDOH and EPA no later than **June 20, 2000**. If there are questions or comments concerning this matter, please contact Mr. D. J. McBride of my staff on 373-5698.

Sincerely,

N. C. Boyter
Vice President
River Corridor Project

slm:bjk

Attachments 2

FH-0003311

ATTACHMENT 1

Letter from S. H. Wisness to State of Washington, Department
of Health and U.S. Environmental Protection Agency
for the Notice of Construction for the 300 Area Process Sewer Cleanout

Consisting of 2 pages, including cover page

Mr. A. W. Conklin, Manager
Air Emissions and Defense
Waste Section
State of Washington
Department of Health
Post Office. Box 47827
Olympia, Washington 98504

Mr. J. Leitch, Chief
Radiation and Indoor Air Section
U.S. Environmental Protection Agency
Region 10
1200 Sixth Avenue
Seattle, Washington 98101

Messrs Conklin and Leitch:

RADIOACTIVE AIR EMISSIONS NOTICE OF CONSTRUCTION FOR THE 300 AREA PROCESS SEWER CLEANOUT

Enclosed is a radioactive air emissions notice of construction pursuant to the requirements of Washington Administrative Code 246-247-060, and as a request for approval to construct pursuant to Title 40, Code of Federal Regulations 61.07, for the cleanout of the 300 Area Process Sewer. A portion of the 300 Area Process Sewer contains low levels of radioactive contamination that needs to be removed.

Using the currently approved unit dose conversion factors in HNF-3602, the estimated potential total effective dose equivalent to the maximally exposed individual (MEI) resulting from the unabated, fugitive emissions from the cleanout of the 300 Area Process Sewer is 4.70 E-05 millirem per year. As requested by the U.S. Environmental Protection Agency and the State of Washington, Department of Health, a new MEI evaluation was also performed and showed that the nearest public on-site receptor (313 Building) would receive 1.59 E-05 millirem per year.

Should you have any questions or comments, please contact Paul Krupin on (509) 372-1112.

Sincerely,

Steven H. Wisness, Director
Office of Site Services

Enclosure

cc w/encl.
N. C. Boyter, FH
R. H. Engelmann, FH
N .M. Menard, FH
D. J. McBride, FH

FH-0003311

ATTACHMENT 2

Radioactive Air Emissions Notice of Construction
for the 300 Area Process Sewer

Consisting of 22 pages, including cover page

INFORMATION CLEARANCE FORM

A. Information Category

- ☐ Abstract
- ☐ Journal Article
- ☐ Summary
- ☐ Internet
- ☐ Visual Aid
- ☐ Software
- ☐ Full Paper
- ☐ Report
- ☒ Other NOC

B. Document Number DOE/RL-2000-48

C. Title

Radioactive Air Emissions Notice of Construction for the 300 Area Process Sewer Cleanout

D. Internet Address

E. Required Information

1. Is document potentially Classified? ◉ No ○ Yes (MANDATORY)

R. H. Engelmann 6-15-00
Manager's Signature Required

If Yes _____ ◉ No ○ Yes Classified
ADC Signature Required

2. Internal Review Required? ◉ No ○ Yes
If Yes, Document Signatures Below

Counsel _____

Program _____

3. References in the Information are Applied Technology ◉ No ○ Yes
Export Controlled Information ◉ No ○ Yes

4. Does Information Contain the Following: (MANDATORY)

a. New or Novel (Patentable) Subject Matter? ◉ No ○ Yes
If "Yes", Disclosure No.: _____

b. Information Received in Confidence, Such as Proprietary and/or Inventions?
◉ No ○ Yes If "Yes", Affix Appropriate Legends/Notices.

c. Copyrights? ◉ No ○ Yes If "Yes", Attach Permission.

d. Trademarks? ○ No ◉ Yes If "Yes", Identify in Document.

5. Is Information requiring submission to OSTI? ○ No ○ Yes
If Yes UC- 630 and B&R- _____

6. Release Level? ○ Public ○ Limited

7. Charge Code ~~101724~~ 4328-122

F. Complete for a Journal Article

1. Title of Journal

G. Complete for a Presentation

1. Title for Conference or Meeting _____
2. Group Sponsoring _____
3. Date of Conference _____ 4. City/State _____
5. Will Information be Published in Proceedings? ○ No ○ Yes 6. Will Material be Handed Out? ○ No ○ Yes

H. Author/Requestor

Nina M. Menard Nina M. Menard 6-15-00
(Print and Sign)

Responsible Manager

R. H. Engelmann R. H. Engelmann 6-15-00
(Print and Sign)

I. Reviewers

	Yes	Print	Signature	Public Y/N (If N, complete J)
General Counsel	☒	L. F. Willis	S. B. Cram for L. F. Willis	Y / N
Office of External Affairs	☐			Y / N
DOE-RL	☐	P. J. Krupin	Paul J. Krupin	Y / N
Other	☐			Y / N
Other	☐			Y / N

J. If Information Includes Sensitive Information and is not to be released to the Public indicate category below.

- ☐ Applied Technology
- ☐ Personal/Private
- ☐ Proprietary
- ☐ Business-Sensitive
- ☐ Predecisional
- ☒ UCNI
- ☐ Protected CRADA
- ☐ Export Controlled
- ☐ Procurement-Sensitive
- ☐ Patentable
- ☐ Other (Specify) _____

Information Clearance Approval

APPROVED FOR RELEASE
OFFICIAL
CW
DOCUMENT
Date 6-16-00

K. If Additional Comments, Please Attach Separate Sheet

A-6001-401 (02/98)

DOE/RL-2000-48
Revision 0

Radioactive Air Emissions Notice of Construction for the 300 Area Process Sewer Cleanout

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Project Hanford Management Contractor for the
U.S. Department of Energy under Contract DE-AC06-96RL13200

United States Department of Energy
P.O. Box 550
Richland, Washington 99352

DOE/RL-2000-48
Revision 0
[EDT]
[ECN]

Radioactive Air Emissions Notice of Construction for the 300 Area Process Sewer Cleanout

Date Published
June 2000

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Project Hanford Management Contractor for the
U.S. Department of Energy under Contract DE-AC06-96RL13200

United States Department of Energy
P.O. Box 550
Richland, Washington 99352

Chris Willingham 6/16/00
Release Approval Date

CONTENTS

FIGURES

TABLE

TERMS

ALARA	as low as reasonably achievable
ALARACT	as low as reasonably achievable control technology
ANSI	American National Standards Institute
AMSE	American Society of Mechanical Engineers
APQ	annual possession quantity
BARCT	best available radionuclide control technology
CFR	Code of Federal Regulation
Ci	curie
DOE-RL	U.S. Department of Energy, Richland Operations Office
EPA	U.S. Environmental Protection Agency
HEPA	high-efficiency particulate air
MEI	maximally exposed individual
mrem	millirem
NOC	notice of construction
POG	process off-gas
PS	process sewer
PTE	potential-to-emit
REC	radiochemical engineering cells
SEPA	*State Environmental Policy Act of 1971*
SMF	Shielded Materials Facility
TEDE	total effective dose equivalent
TEDF	Treated Effluent Disposal Facility
VV	vessel ventilation
WAC	Washington Administrative Code
WDOH	Washington State Department of Health

METRIC CONVERSION CHART

Into metric units			Out of metric units		
If you know	Multiply by	To get	If you know	Multiply by	To get
Length			**Length**		
inches	25.40	millimeters	millimeters	0.0393	inches
inches	2.54	centimeters	centimeters	0.393	inches
feet	0.3048	meters	meters	3.2808	feet
yards	0.914	meters	meters	1.09	yards
miles	1.609	kilometers	kilometers	0.62	miles
Area			**Area**		
square inches	6.4516	square centimeters	square centimeters	0.155	square inches
square feet	0.092	square meters	square meters	10.7639	square feet
square yards	0.836	square meters	square meters	1.20	square yards
square miles	2.59	square kilometers	square kilometers	0.39	square miles
acres	0.404	hectares	hectares	2.471	acres
Mass (weight)			**Mass (weight)**		
ounces	28.35	grams	grams	0.0352	ounces
pounds	0.453	kilograms	kilograms	2.2046	pounds
short ton	0.907	metric ton	metric ton	1.10	short ton
Volume			**Volume**		
fluid ounces	29.57	milliliters	milliliters	0.03	fluid ounces
quarts	0.95	liters	liters	1.057	quarts
gallons	3.79	liters	liters	0.26	gallons
cubic feet	0.03	cubic meters	cubic meters	35.3147	cubic feet
cubic yards	0.76456	cubic meters	cubic meters	1.308	cubic yards
Temperature			**Temperature**		
Fahrenheit	subtract 32 then multiply by 5/9ths	Celsius	Celsius	multiply by 9/5ths, then add 32	Fahrenheit
Energy			**Energy**		
kilowatt hour	3,412	British thermal unit	British thermal unit	0.000293	kilowatt hour
kilowatt	0.948	British thermal unit per second	British thermal unit per second	1.055	kilowatt
Force/Pressure			**Force/Pressure**		
pounds per square inch	6.895	kilopascals	kilopascals	0.14504	pounds per square inch

Source: *Engineering Unit Conversions*, M. R. Lindeburg, PE., Second Ed., 1990, Professional Publications, Inc., Belmont, California.

This page intentionally left blank

NOTICE OF CONSTRUCTION HISTORY

The 300 Area Process Sewer (PS) serves various facilities for the collection of industrial wastewater. The PS discharges go to the 300 Area Treated Effluent Disposal Facility (TEDF) for treatment and the treated liquid is discharged to the Columbia River.

The 300 Area PS was upgraded in 1995 by pressure washing the existing PS system and lining the sewer with an epoxy-resin liner. An application for a notice of construction (NOC) was sent to Washington State Department of Health (WDOH) in December 1994 (95-PCA-076) and approved by the WDOH in January 1995 (AIR 95-102). The NOC was modified in the fall of 1995 to change the method of solids removal from the PS (95-PCA-497).

This page intentionally left blank.

RADIOACTIVE AIR EMISSIONS NOTICE OF CONSTRUCTION FOR THE 300 AREA PROCESS SEWER CLEANOUT

INTRODUCTION

This document serves as a NOC pursuant to the requirements of Washington Administrative Code (WAC) 246-247-060, and as a request for approval to construct pursuant to 40 Code of Federal Regulations (CFR) 61.07, for the cleanout of sections of the 300 Area PS. Approval of the NOC will allow the pressure washing of certain pipe sections, the sump in the TEDF lift station, and the cleaning of PS 16 of the 300 Area PS that contains low levels of radioactivity.

Section 15.0 of this NOC discusses the estimated total effective dose equivalent (TEDE) to the offsite maximally exposed individual (MEI) resulting from the unabated emissions from these cleaning activities.

Using the currently approved unit dose conversion factors in HNF-3602, the estimated potential TEDE to the MEI resulting from the unabated, fugitive emissions from cleanout of the 300 Area PS is 4.70 E-05 millirem (mrem) per year. This dose was derived by conservatively estimating the doses from both the pressure washing and the use of the Guzzler™ for removal of the liquid/soil mixture, as described in Section 5.0, and adding these doses together

The following text provides information requirements of Appendix A of WAC 246-247 (requirements 1 through 18).

1.0 LOCATION

Name and address of the facility, and location (latitude and longitude) of the emission unit(s):

U.S. Department of Energy, Richland Operations Office
Hanford Site,
Richland, Washington

Latitude: 46°22"20' North
Longitude: 119°16"44' West

These are the coordinates of the 3720 Building Stack that is adjacent to PS 16.

Figure 1 is a map of the Hanford Site.

Guzzler™ - Guzzler Manufacturing, Inc.

2.0 RESPONSIBLE MANAGER

Name, title, address, and phone number of the responsible manager:

Keith A. Klein, Manager
Richland Operations Office
P. O. Box 550
Richland, Washington 99352
(509) 376-7395

3.0 PROPOSED ACTIONS

Identify the type of proposed action for which this application is submitted.

The proposed action is to clean out selected PS lines and sumps. The estimated emissions associated with this activity are less than 0.1-millirem per year and are considered an insignificant source from an existing fugitive emissions source.

4.0 STATE ENVIRONMENTAL POLICY ACT

If this project is subject to the requirements of the State Environmental Policy Act (SEPA) contained in chapter 197-11 WAC, provide the name of the lead agency, lead agency contact person, and their phone number.

The proposed action categorically is exempt from the requirements of the SEPA under WAC 197-11-845.

5.0 CHEMICAL AND PHYSICAL PROCESSES

Describe the chemical and physical processes upstream of the emission unit(s).

A portion of the 300 Area PS has accumulated sand and dirt that contains low-level radioactivity. The source of the sand and dirt is believed to be a sewer line that was not lined. This line only transports rainwater runoff from around the 3720 and 333 Buildings. The rainwater is assumed to have moved low-level contaminated soil in the unlined PS line to the lined portion of the PS. Because of the presence of contamination, portions of the lines between PS 45 and PS 80 and the line between PS 80 and the 300 Area TEDF lift station sump, as well as the lift station sump, will require infrequent cleaning.

PS 16 also will be cleaned, although PS 16 is not believed to contribute to the radiological contamination found in the sewer lines between PS 2 and PS 80 and the 300 Area TEDF left station sump (Figure 2).

It is proposed to use a pressure washer to clean the lines between PS 45 and PS 80, and PS 80 and the 300 Area lift station sump (Figure 2). PS 80 will have all outgoing lines temporarily plugged to accumulate the wash water for removal by the Guzzler™. The Guzzler™ will be used with the separate cyclone attachment that will direct the extracted liquid/soil mixture to a collection trough. The liquid/soil mixture will be pumped from the collection trough to a tank trailer for transportation to the 307 Basins. Other types of pumping and collection equipment could be used to remove the liquid/sludge mixture, if the Guzzler™ is not available. It is estimated that approximately 1,000 gallons of liquid containing 2 cubic feet of sand/dirt will be removed.

The 300 Area TEDF lift station contains a sump that will have a 3,000-gallon liquid heel with approximately 48 cubic feet of sand/dirt. The Guzzler™ will remove this heel in the same manner described previously and approximately 100 gallons of water will be used to wash out the sump. If the Guzzler™ is not available, other types of pumping and collection equipment could be used to remove the liquid/soil mixture.

PS 16 also will be cleaned out using the Guzzler™ to remove an existing liquid/soil mixture. The liquid/soil mixture will be containerized in barrels for transport to the 307 Basins. Approximately 70 gallons of water and 0.67 cubic foot of sludge will be removed. If the Guzzler™ is not available, other types of pumping and collection equipment could be used to remove the water/sludge mixture.

6.0 PROPOSED CONTROLS

Describe the existing and proposed (as applicable) abatement technology. Describe the basis for the use of the proposed system. Include expected efficiency of each control device, and the annual average volumetric flow rate(s) in cubic meters/second for the emission unit(s).

Emission controls used during the cleanout activities are administrative, based in as low as reasonably achievable (ALARA) principles and consist of ALARA techniques. It is proposed that these controls be approved as ALARA control technology (ALARACT) for the PS cleanout.

Airborne radioactive emissions resulting from power washing activities are expected to be a minimal because of the following:

- The power washing activities will take place within the intact piping system, which has limited access ports allowing for air exchange to the environment.
- Piping system access ports will be closed to the maximum extent practicable during power washing activities.
- Use of liquids during power washing activities will be expected to reduce the potential for airborne particulate resuspension.

The Guzzler™ controls consist of five different technologies linked in series: collection tank and plate separator device; cyclone separators; baghouse system (99% efficient) with 72 bags each, equipped with a cyclic bag cleaning air blow-back system; micro-strainer device; and a high-efficiency particulate air (HEPA) filter system consisting of three in-place tested HEPA filters in parallel (99.95 % efficient system).

Normal operating conditions for the PS would create fugitive emissions from the wastewater falling from the end of the pipe into the 300 Area TEDF lift station sump. The discharge of wastewater from the Guzzler™ to the collection trough, as well as the subsequent transport and discharge to the 307 Basins is similar to the wastewater discharging to the sump. Therefore, these activities are considered routine and do not constitute a modification per WAC 246-247-030(16).

7.0 DRAWINGS OF CONTROLS

Provide conceptual drawings showing all applicable control technology components from the point of entry of radionuclides into the vapor space to release to the environment.

Drawings are not applicable because the emissions controls to be used during these activities administratively are defined, based on ALARA principles and consist of ALARA techniques.

8.0 RADIONUCLIDES OF CONCERN

Identify each radionuclide that could contribute greater than ten percent of the potential-to-emit TEDE to the MEI, or greater than 0.1 mrem/yr potential-to-emit TEDE to the MEI.

Radionuclides that could contribute greater than 10 percent of the PTE TEDE to the MEI or greater than 0.1 mrem/yr PTE TEDE to the MEI consist of U-234, U-235, U-238, and Pu-239 (refer to Table 1).

9.0 MONITORING

Describe the effluent monitoring system for the proposed control system. Describe each piece of monitoring equipment and its monitoring capability, including detection limits, for each radionuclide that could contribute greater than ten percent of the potential-to-emit TEDE to the MEI, or greater than 0.1 mrem/yr potential-to-emit TEDE to the MEI, or greater than twenty-five percent of the TEDE to the MEI, after controls. Describe the method for monitoring or calculating those radionuclide emissions. Describe the method with detail sufficient to demonstrate compliance with the applicable requirements.

The potential unabated offsite dose associated with this activity is calculated to be less than 0.1 millirem per year. Therefore, in accordance with 40 CFR 61, Subpart H, periodic confirmatory measurements will be made to verify the low emissions.

The liquid/soil mixture has been analyzed and the radiological composition is known. Therefore, the volume removed will be measured and used to calculate the release per the National Emissions Standard For Hazardous Air Pollutants Application for Approval of the Categorical use of the Guzzler™ Vacuum Excavation System for Radiologically Limited Activities on the Hanford Site (FDH-9950235).

10.0 ANNUAL POSSESSION QUANTITY

Indicate the annual possession quantity for each radionuclide.

The annual possession quantity (APQ) for each radionuclide of concern is calculated from the results of samples taken from PS 2 and PS 16. The sample results from PS 2 were used to calculate the annual possession quantity for the liqid/soil mixture being removed from PS 80 (this includes the cleaning of the lines as described in Section 5.0) and the lift station sump.

Radionuclide of concern (millirem per year):

Sr-90	6.56 E-08
U-234	2.04 E-05
U-235	2.34 E-06
U-238	1.33 E-05
U-239	3.79 E-08
Am-241	8.11 E-08
Pu-238	1.46 E-08
Pu-239	1.09 E-05
Total	4.70 E-05

The sample results from PS 16 were used to calculate the annual possession quantity for waste being removed from PS 16. Although the sample data indicated that uranium isotopes accounted for a portion of the alpha and beta activity, the APQ conservatively is estimated using Pu-239 and Sr-90 for alpha and beta activity, respectively (refer to Table 1).

11.0 PHYSICAL FORM

Indicate the physical form of each radionuclide in inventory: Solid, particulate solids, liquid, or gas.

The physical form of each radionuclide in the inventory is particulate solid.

12.0 RELEASE FORM

Indicate the release form of each radionuclide in inventory: Particulate solids, vapor, or gas. Give the chemical form and ICRP 30 solubility class, if known.

For purposes of emission or offsite dose estimates, any emissions from the radionuclides in the inventory presented in Section 10.0 are assumed to be released as particulate solids.

13.0 RELEASE RATES

Give the predicted release rates without any emissions control equipment (potential to emit) and with the proposed control equipment using the efficiencies described in subsection (6) of this section. Indicate whether the emission unit is operating in a batch or continuous mode.

Unabated release rates resulting from these cleanout activities are expected to be low. Unabated release rates were determined from actual analysis results from samples obtained from PS 2 and PS 16. The unabated doses are presented in Table 1 using the appropriate Appendix D release fractions. The total potential release rates for the radionuclides of concern (unabated) are summarized in Table 1. The modification to this emission unit will be operating in a batch mode.

The estimated Hanford Site fugitive emission estimated dose to the closest MEI for 1998 is 2.5 E-02 mrem (DOE/RL 99-41).

14.0 LOCATION OF MAXIMALLY EXPOSED INDIVIDUAL

Identify the MEI by distance and direction from the emission unit(s).

The MEI is located approximately 1,400 meters northeast of the 300 Area. The 313 Building MEI location also was calculated and proved to be less conservative than the MEI located 1,400 meters northeast of the 300 Area.

15.0 TOTAL EFFECTIVE DOSE EQUIVALENT TO THE MAXIMALLY EXPOSED INDIVIDUAL

Calculate the TEDE to the MEI using an approved procedure. For each radionuclide identified in sub section (8) of this section, determine the TEDE to the MEI for existing and proposed emission controls, and without any existing controls using the release rates from subsection 13 of this section. provide all input data used in the calculations.

The calculations are summarized in Table 1. The total unabated dose for this NOC conservatively is estimated to be 4.70 E-05 mrem/yr to the MEI, with a total abated dose estimate of 4.70 E-05 mrem/yr to the MEI.

The TEDE from all 1998 Hanford Site air emissions (point sources, diffuse and fugitive sources, and radon and thoron) was 0.038 millirem (DOE/RL-99-41). The emissions resulting from the cleanout of the described sections of the 300 Area PS, in conjunction with other operations on the Hanford Site, will not result in a violation of the National Emission Standard of 10 millirem per year.

16.0 COST FACTOR IF NO ANALYSIS

Provide cost factors for construction, operation, and maintenance of the proposed control technology components and system, if a BARCT or ALARACT demonstration is not submitted with the NOC.

Providing cost factors are not applicable because the emission controls used during the cleanout activities administratively are defined and consist of ALARA techniques.

17.0 DURATION OR LIFETIME

Provide an estimate of the lifetime for the facility process with the emission rates provided in this application.

Cleanout activities for the immediate cleaning of this portion of the 300 Area PS are scheduled to take place infrequently; typically, once a year.

18.0 STANDARDS

Indicate which of the following control technology standards have been considered and will be complied with in the design and operation of the emission unit(s) described in this application:

ASME/ANSI AG-1; ASME/ANSI N509; ASME/ANSI N510; ANSI/ASME NQA-1; 40 CFR 60, Appendix A, Methods 1,1A, 2, 2A, 2C, 2D, 4,5, and 17; and ANSI N13.1.

The activity of cleaning out the previously described portions of the 300 Area PS has an estimated PTE of less than 0.1 millirem/year TEDE to the MEI. None of the standards apply to the emission controls planned for the cleanout activities.

19.0 REFERENCES

95-PCA-076, DOE-RL to WDOH, "Notice of Construction for the Upgrade of the 300 Area Process Sewer System", December 15, 1994.

95-PCA-497, DOE-RL to WDOH, "National Emissions Standard for Hazardous Air Pollutants Application forApproval for the Pipeline Cleanout Activities of Project L-070", December 9, 1995.

AIR 95-102, WDOH to DOE-RL, "NOC Approval for the Upgrade of the 300 Area Process Sewer System, January 11, 1995.

DOE/RL-99-41, *Radionuclide Air Emissions Report for the Hanford Site, Calendar Year 1998*, June 1999, U.S. Department of Energy, Richland, Washington.

FDH-9950235, J. E. Rasmussen, U.S. Department of Energy, Richland Field Office, to J. Leitch, U.S. Environmental Protection Agency, Region 10, *National Emissions Standard For Hazardous Air Pollutants Application for Approval of the Categorical Use of the Guzzler™ Vacuum Excavation System for Radiologically Limited Activities on the Hanford Site*, January 15, 1999.

HNF-3602, *Volume 1: Calculating Potential to Emit Releases and Doses for FEMPs and NOCs*, July 1999, Fluor Daniel Hanford, Inc., Richland, Washington.

This page intentionally left blank.

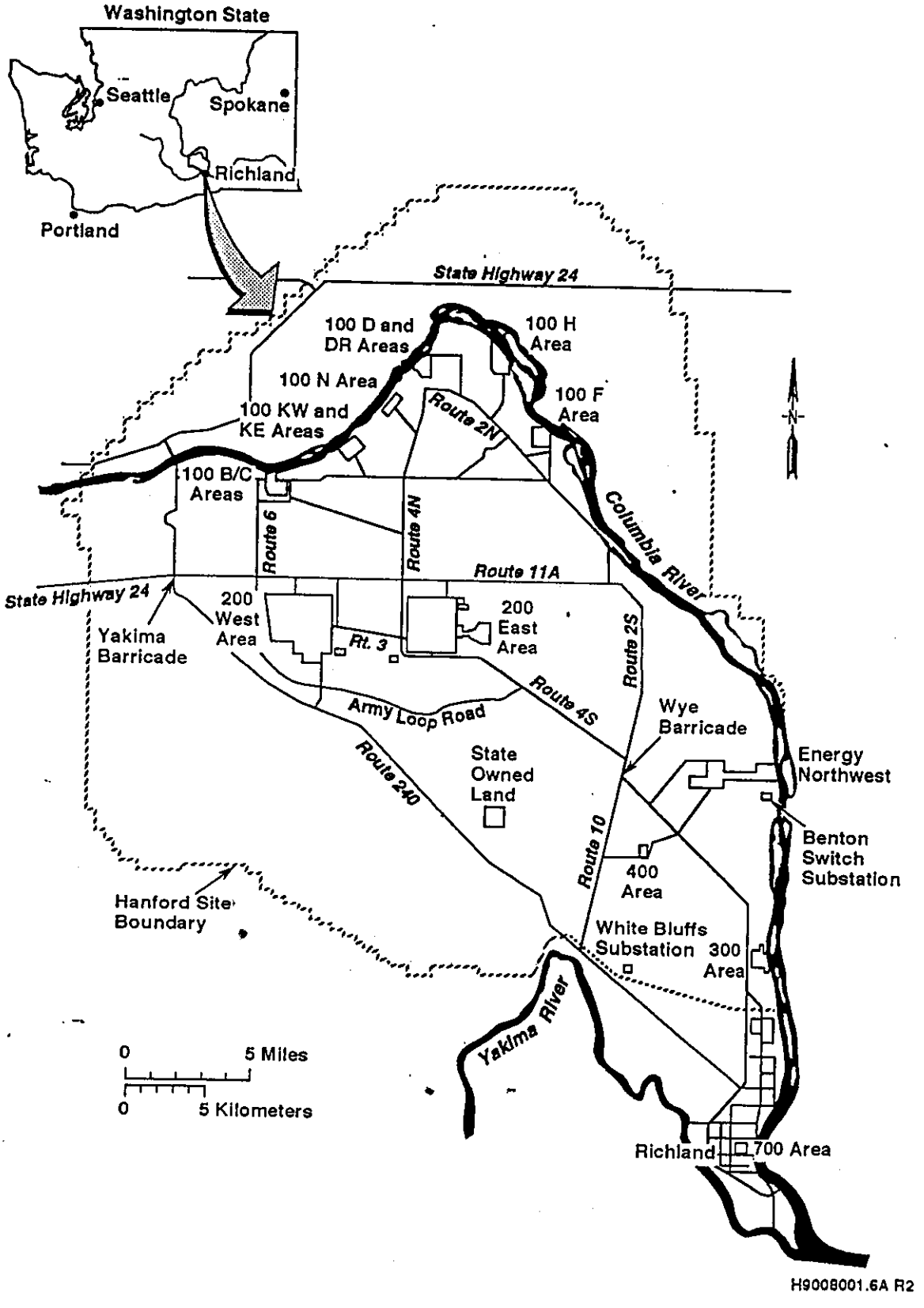

Figure 1. Hanford Site.

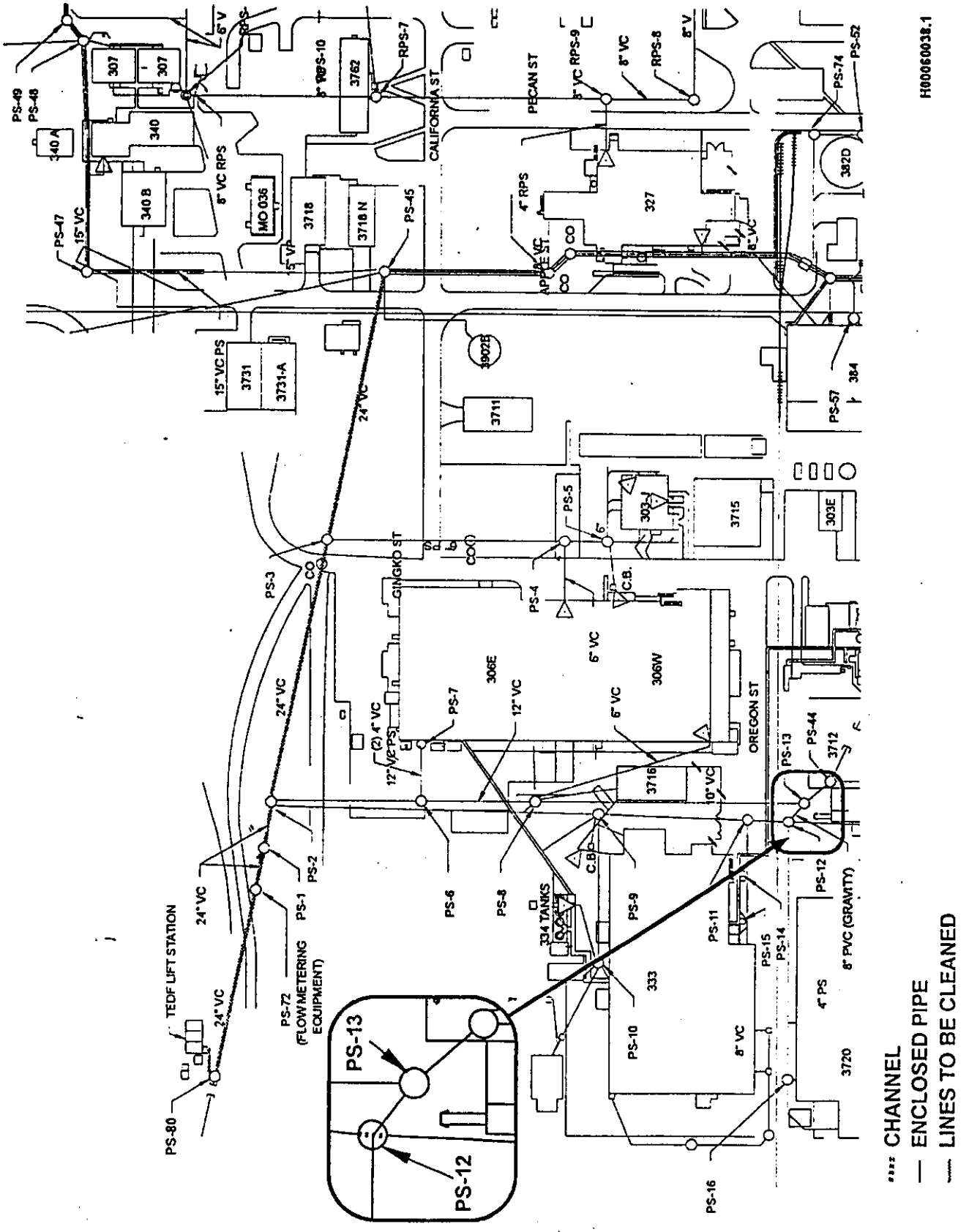

Figure 2. Schematic of the Process Sewer for Proposed Cleanout.

Table 1. Estimated Effective Dose Equivalent Calculations

PS 80 - Liquid (Pressure Wash and Pump out)						
Radionuclide	pCi/l	Ci/l	Volume (liters)	App. D factor	300 East Area unit dose factor (mrem/Ci)	Effective dose equivalent (mrem)
Alpha	150	1.5 E-10	3785.4	1.00 E-03		
Beta	51	5.1 E-11	3785.4	1.00 E-03		
U-234	100	1 E-10	3785.4	1.00 E-03	7.40 E+01	2.80 E-08
U-235	12	1.2 E-11	3785.4	1.00 E-03	7.10 E+01	3.23 E-09
U-238	73	7.3 E-11	3785.4	1.00 E-03	6.60 E+01	1.82 E-08
Total						4.95 E-08
PS 80 - Solid (Pressure Wash and Pump out)						
Radionuclide	pCi/l	Ci/l	Volume (liters)	App. D factor	300 East Area unit dose factor (mrem/Ci)	Effective dose equivalent (mrem)
Alpha	110					
Beta	82					
U-234	100	0.000000191	56.6338	1.00 E-03	7.40 E+01	8.00 E-07
U-235	12	2.292E-08	56.6338	1.00 E-03	7.10 E+01	9.22 E-08
U-238	73	1.3943E-07	56.6338	1.00 E-03	6.60 E+01	5.21 E-07
Am-241	0.1	1.91E-10	56.6338	1.00 E-03	3.00 E+02	3.25 E-09
Pu-238	0.03	5.73E-11	56.6338	1.00 E-03	1.80 E+02	5.84 E-10
Pu-239	0.07	1.337E-10	56.6338	1.00 E-03	2.00 E+02	1.51 E-09
Total						1.42 E-06
WCS - Liquid						
Radionuclide	pCi/l	Ci/l	Volume (liters)	App. D factor	300 East Area unit dose factor (mrem/Ci)	Effective dose equivalent (mrem)
Alpha	150	1.5 E-10	11734.74			
Beta	51	5.1 E-11	11734.74			
U-234	100	1 E-10	11734.74	1.00 E-03	7.40 E+01	8.68 E-08
U-235	12	1.2 E-11	11734.74	1.00 E-03	7.10 E+01	1.00 E-08
U-238	73	7.3 E-11	11734.74	1.00 E-03	6.60 E+01	5.65 E-08
Total						1.53 E-07

Table 1. Estimated Effective Dose Equivalent Calculations

WCS - Solid						
Radionuclide	pCi/l	Ci/l	Volume (liters)	App. D factor	300 East Area unit dose factor (mrem/Ci)	Effective dose equivalent (mrem)
Alpha	110					
Beta	82					
U-234	100	1.91 E-07	1359.211	1.00 E-03	7.40 E+01	1.92 E-05
U-235	12	2.292 E-08	1359.211	1.00 E-03	7.10 E+01	2.21 E-06
U-238	73	1.3943 E-07	1359.211	1.00 E-03	6.60 E+01	1.25 E-05
Am-241	0.1	1.91 E-10	1359.211	1.00 E-03	3.00 E+02	7.79 E-08
Pu-238	0.03	5.73 E-11	1359.211	1.00 E-03	1.80 E+02	1.40 E-08
Pu-239	0.07	1.337 E-10	1359.211	1.00 E-03	2.00 E+02	3.63 E-08
Total						3.41 E-05
PS 16 - Liquid						
Radionuclide	pCi/l	Ci/l	Volume (liters)	App. D factor	300 East Area unit dose factor (mrem/Ci)	Effective dose equivalent (mrem)
Alpha	130	1.3 E-10	227.124			
Beta	67	6.7 E-11	227.124			
U-234	100	1 E-10	227.124	1.00E-03	7.40E+01	1.68E-09
U-235	6.3	6.3 E-12	227.124	1.00E-03	7.10E+01	1.02E-10
U-238	76	7.6 E-11	227.124	1.00E-03	6.60E+01	1.14E-09
Total						2.92E-09
PS 16 - Solid						
Radionuclide	pCi/l	Ci/l	Volume (liters)	App. D factor	300 East Area unit dose factor (mrem/Ci)	Effective dose equivalent (mrem)
Alpha (Pu-239)	1500	2.8650 E-06	18.87888	1.00 E-03	2.00 E+02	1.08 E-05
Beta(Sr-90)	700	1.3370 E-06	18.87888	1.00 E-03	2.60 E+00	6.56 E-08
U-234	87	1.6617 E-07	18.87888	1.00 E-03	7.40 E+01	2.32 E-07
U-235	7.3	1.3943 E-08	18.87888	1.00 E-03	7.10 E+01	1.87 E-08
U-238	64	1.2224 E-07	18.87888	1.00 E-03	6.60 E+01	1.52 E-07
Total						1.13 E-05
Total - Liquid						**2.06 E-07**
Total - Solid						4.68 E-05
Total						4.70 E-05

DISTRIBUTION

MSIN

A. W. Conklin
Air Emissions and Defense Waste Section
Division of Radiation Protection
Washington State Department of Health
Airdustrial Park Building 5, LE-13
Olympia, Washington 98504-0095

J. Leitch, Chief
Radiation and Indoor Air Section
United States Environmental Protection Agency
Region 10
1200 Sixth Avenue
Seattle, Washington 98101

D. A. Dunning
Oregon Office of Energy
625 Marrian Street N.E., Suite 1
Salem, Oregon 97301-3742

J. Wilkinson
Confederated Tribes of the Umatilla Indian Nation
P. O. Box 638
Pendleton, Oregon 97801

P. Sobotta
Nez Perce Tribe
P. O. Box 365
Lapwai, Idaho 93540

R. Jim, Manager
Environmental Restoration/Waste Management Program Yakama Nation
P. O. Box 151
Toppenish, Washington 98948

U.S. Department of Energy, Richland Operations Office

G. M. Bell	A5-52
H. E. Bilson	H0-12
R. F. Guercia	H0-12
P. J. Krupin	A5-15
G. Richardson	H0-12
G. H. Sanders	H0-12
G. L. Sinton	H0-12
Public Reading Room	H2-53

DISTRIBUTION

	MSIN
Fluor Project Hanford	
B. L. Curn	G1-30
R. H. Engelmann	G1-30
J. Langdon	L6-04
D. J. McBride	L6-04
N.M. Menard	G1-30
J. K. Perry	L1-04
S. M. Price	A0-22
C. P. Strand	A1-14
L. F. Willis	H8-73
Air Operating Permit File	G1-29
Pacific Northwest National Laboratory	
Hanford Technical Library	P8-55
Lockheed Martin Services, Inc.	
Central Files	B1-07
DPC	H6-08
EDMC (2)	H6-08