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M. A. MIHALIC

Memorandum

To: J. A. Adams

Date: November 1, 1984

From: J. J. Dorian

Subject: ENVIRONMENTAL EVALUATION FOR DECOMMISSIONING OPERATIONS

Attached is an Environmental Evaluation that has been prepared to cover the decommissioning of the following facilities:

- o 108-B Laboratory Building (including ventilation stack)
- o 111-B Radiometallurgy Building
- o 115-B, D, F, KE and KW Gas Recirculation Buildings
- o 116-B, C, D, DR, F, H, KE and KW Reactor Exhaust Stacks
- o 117-B, C, D, DR, H, KE and KW Filter Exhaust Buildings
- o 107-B, C, D, and DR Retention Basins

To account for any future contingencies, the option is included in the evaluation to allow in-situ disposal of asbestos. However, Environmental Control's current position is that all asbestos will be removed. Besides gaining EPA and state approval you must convince us the asbestos will be left in a non-friable form and that it is acceptable to create individual asbestos disposal sites. Under no circumstances will mercury wastes be allowed to remain in-situ. Recognize that before any rubble can be placed in the 107 Retention Basins it must be assured that sludge samples are available for radionuclide analysis.

Any work performed outside the scope of this evaluation must be re-evaluated. Should you have any questions on the evaluation, please contact myself or J. A. Hall of my staff.

JAH

Attachment

cc: UNC

DF Brendel
N. Castorina
DS Cunningham
EM Greager
JA Hall - 2
[redacted]
MA Payne
RF Potter
VR Richards
RA Winship
JJD-File/LB

DOE-RL

DR Elle
CE Miller, Jr.

ENVIRONMENTAL EVALUATION FOR DECOMMISSIONING OPERATIONS

1.0 SCOPE

This Environmental Evaluation covers the decommissioning of the following facilities:

- o 108-B Laboratory Building (including ventilation stack)
- o 111-B Radiometallurgy Building
- o 115-B, D, F, KE and KW Gas Recirculation Buildings
- o 116-B, C, D, DR, F, H, KE and KW Reactor Exhaust Stacks
- o 117-B, C, D, DR, H, KE and KW Filter Exhaust Buildings
- o 107-B, C, D, and DR Retention Basins

Environmental Evaluations for 108-B (August 4, 1983) and 117-C and H (May 11, 1983) were previously issued. However, they were prepared prior to implementation of the Allowable Residual Contamination Level (ARCL) methodology. Since it is now planned to decommission these facilities using the ARCL methodology, their evaluation is updated. Similarly, even though Reference 1 previously covers decommissioning of 115-F and 116-F, they are reevaluated under the ARCL methodology.

Filter Exhaust Building 117-F was previously decommissioned as a "clean" facility. The decommissioning procedures, and related environmental impacts, for decommissioning the 117-F Filter Exhaust Building are included in Reference 1.

This evaluation specifically excludes the buried underground gas system piping between the 115-B Gas Recirculation Building tunnel and the 105-C Reactor Building, any left-in-place underground piping running from a facility addressed in this evaluation to a radioactive liquid waste burial site, or any nearby radioactive liquid/solid waste burial site not specifically addressed in this evaluation. Disposition of these items will be adressed at a later date. For the 107 retention basins this evaluation will only cover the intended FY 1985 work since final dispositioning of these facilities has not been determined.

2.0 DESCRIPTION

2.1 108-B

The 108-B Laboratory Building was originally built as a water treatment facility. It was later converted to a tritium recovery processing facility. The upper three floors were contaminated with tritium. The building, mostly of concrete construction is 132 feet long, 32 feet wide, and 53 feet high (12 feet of it below grade). The associated ventilation stack extended 300 feet above grade.

Mercury, asbestos and radioactively contaminated equipment, including HVAC duct work and above grade drain lines have been removed. The remaining building structures will either be decontaminated to meet the release levels, stipulated in Reference 2, to enable building rubble disposal in the 184 coal pit or it will be demolished and buried: either in-situ in an alongside trench or in the 107-B and/or 107-C retention basins using the Allowable Residual Contamination Level (ARCL) methodology (Reference 3); or in the 200 Area Burial Ground. If buried in the retention basins, the top of the rubble (from either 108-B or the demolished basin walls) will allow for the placement of a minimum of 1 to 4 meters of clean fill or an engineered barrier. Below grade drain lines suspected of containing mercury will be checked to ensure no mercury is left in the facility and characterized as to their residual radioactive contamination prior to site burial. Any contaminated soil from the french drain located adjacent to the 108-B Building will be removed to a depth of at least 1 meter below grade using Reference 4 as a release criteria for dispersed activity. Should any contaminated soil remain it will be documented to ensure disposition at a later date. The 108-B ventilation stack was demolished (using explosives) and buried under greater than 1 meter of clean fill in place (pre-dug trench) using the ARCL methodology during CY 1983.

The 108-B Laboratory Building will be demolished using standard demolition techniques. Once demolished, the building site will be covered with a minimum of 1 meter of clean fill and then graded to match existing terrain, ensuring adequate compaction to minimize subsidence. Decommissioning of the 108-B Building will result in an estimated generation of at most 71,000 cubic feet of radioactively contaminated solid waste that will be buried in the 200 Area Burial Ground. This volume assumes that the entire 108-B Building, including all concrete, structural steel and building materials, is included in the shipping total. It also assumes a 50 per cent increase in waste volume due to anticipated void formation from the building rubble. By comparison, relatively small volumes of asbestos and mercury wastes will be shipped for burial.

2.2 111-B

The 111-B Radiometallurgy Building, originally built as a decontamination station also served a variety of other purposes including the first fuel failure inspection facility and a storage building for various items of reactor hardware such as irradiated in-reactor components.

The 111-B Building was of wooden frame construction on a concrete foundation with asbestos shake siding. Building dimensions were 80 feet in length, 61 feet in width, and 14.5 feet in height. The building included two underground fuel examination pits. Located in close proximity to the building were a radioactive liquid waste crib (116-B-6-1) and an undesignated radioactive solid waste burial site (south side of building). Disposition of the adjoining liquid waste crib and solid waste burial site is not intended to be covered by this evaluation.

Asbestos insulation, asbestos shake siding, and radioactively contaminated building structures and equipment have been removed down to the building concrete pad. Provided adequate radiological characterization can be obtained, the concrete pad and fuel examination pits may be demolished and buried in-situ using the ARCL methodology. If adequate characterization cannot be achieved the structures will be removed and buried in the 200 Area Burial Ground. However, if decommissioning of the 111-B Building pad and fuel examination pits disturbs the adjoining liquid waste crib and solid waste burial site, then all contaminated waste and soil from these sites will be removed down to a depth of at least 1 meter below grade using Reference 4 as a release criteria for dispersed activity. Should any contaminated material remain it will be documented to ensure disposition at a later date.

The 111-B Building will be demolished using standard demolition techniques. Once demolished, the building site will be covered with a minimum of 1 meter of clean fill and then graded to match existing terrain, ensuring adequate compaction to minimize subsidence. Decommissioning of the 111-B Building will result in an estimated generation of 1200 cubic feet of radioactively contaminated solid waste and 190 cubic feet of asbestos that will be buried in the 200 Area Burial Ground or sanitary landfill (designated area) as appropriate.

2.3 115-B, D, F, KE and KW

Along with the 117 Filter Exhaust Buildings the major contaminated ancillary structures to the reactors in the retired 100 Areas are the 115 Gas Recirculation Buildings.

The recirculation gas system provided the reactor moderators (graphite) with an inert cover gas mixture of helium-carbon dioxide. The 105 KE/KW reactors used a helium-nitrogen mixture from 1961 to their shutdowns. The 115 Buildings house the gas driers, injection and circulation equipment. At 100-H Area, the gas system is in a wing of the 105-H Reactor Building. Decommissioning of the gas system will be done concurrently with the reactor building and is not covered in this evaluation. The 105-B/C and 105 D/DR Reactor Facilities were each serviced by a common recirculation gas system, 115-B and 115-D, respectively.

The 115 Buildings, mostly of concrete construction, include tunnels, seal pit annex and piping, an operating gallery and gas processing equipment cells. The equipment cell walls and floors are constructed of reinforced concrete and are approximately 3 feet thick. The buildings range from 113 to 168 feet in length, 34 to 98 feet in width, and 32 to 40 feet in height (approximately half of it below grade). Pipe tunnels, approximately 36 feet wide by 8 feet high, ranged in length from 100 to 1400 feet. Seal pits are approximately 37 feet in length, 34 feet in width, 12 feet in height above grade and 32 feet below grade.

In general, all asbestos will be removed. However, if environmental benefit can be gained by immobilizing asbestos into a non-friable form and burying it in-situ, then this could be the preferred alternative to risking occupational exposure encountered by asbestos removal and shipment. Because this disposition method would also involve establishing asbestos burial sites, appropriate federal, state, and local approval would be obtained before proceeding.

In general, all radioactively contaminated equipment and piping will be removed. However, in those cases where removal of these items creates a high industrial safety risk or involves a high cost relative to expected benefit, they may be left in-situ provided they can be radiologically characterized to allow inclusion in the ARCL calculations for that facility. The remaining building structures will be demolished and buried in-situ under the ARCL methodology.

For the 115 Buildings leaving tunnel piping in place presents an additional problem of void formation. Demolition techniques will ensure that a minimum of void formation will occur to prevent subsequent subsidence at a later date.

The 115 Gas Recirculation Buildings will be demolished using standard demolition techniques including the use of explosives. Once demolished, the building site will be covered with a minimum of 1 meter of clean fill and then graded to match existing terrain, ensuring adequate compaction to minimize subsidence. Decommissioning of the 115 Buildings will result in an estimated generation of 8100 cubic feet of radioactively contaminated solid waste per building that will be buried in the 200 Area Burial Ground. By comparison relatively small volumes of asbestos will be shipped for burial.

2.4 116-B, C, D, DR, F, H, KE and KW

The 116 Reactor Exhaust Stacks, originally ranging in height above grade from 200 to 300 feet, dispersed the 105 Reactor Building exhaust air into the atmosphere. The stacks are monolithic, reinforced concrete structures with an outside diameter at the base of 16 feet (22 feet for the 116-KE and KW Stacks). Below grade they extended as much as 16 feet. The 116 Stacks will be demolished and buried in place, if necessary accounting for any residual radioactive contamination using the ARCL methodology. The 116-KE and KW Stacks were decontaminated during FY 1982. Additionally, following decontamination, the top 125 feet of each stack was demolished with the resulting rubble being placed into the bottom of the stack. The 116-C, F, and H Stacks were demolished in CY 1983.

The 116 Reactor Exhaust Stacks will be demolished, using explosives, into a pre-dug trench. Once demolished the stack site will be covered with a minimum of 1 meter of clean fill and then graded to match existing terrain, ensuring adequate compaction to minimize

subsidence. Any decontamination of the 116 Stacks is expected to generate a minimal amount of radioactively contaminated solid waste requiring burial in the 200 Area Burial Ground. The 116-KE and KW Stacks, which were completely decontaminated, generated a combined total of 400 cubic feet of waste.

2.5 117-B, C, D, DR, H, KE and KW

The 117 Exhaust Filter Buildings housed the 105 Reactor Building exhaust air filters and air flow control system. Reactor building exhaust gases (primarily ventilation) were directed to the 117 Building where the air passed through "absolute" (particulate) and "halogen" (activated charcoal) filters before being discharged to the atmosphere through the 116 Reactor Exhaust Stacks.

The 117 Buildings were mostly of concrete construction. Each 117 Building contains two identical filter cells separated by a two-storied operating gallery. The buildings are about 59 feet long, 39 feet wide, and 35 feet high, with only 8 feet being above grade.

In general, all asbestos will be removed. However, if environmental benefit can be gained by immobilizing asbestos into a non-friable form and burying it in-situ, then this could be the preferred alternative to risking occupational exposure encountered by asbestos removal and shipment. Because this disposition method would also involve establishing asbestos burial sites, appropriate federal and state Environmental Protection Agency (EPA) approval would be obtained before proceeding.

In general, all radioactively contaminated equipment and piping will be removed. However, in those cases where removal of these items creates a high industrial safety risk or involves a high cost relative to expected benefit, they may be left in-situ provided they can be radiologically characterized to allow inclusion in the ARCL calculations for that facility. The remaining building structures will be demolished and buried in-situ under the ARCL methodology.

To an extent the decommissioning of the 117 Exhaust Filter Buildings has already been demonstrated in the past by the activities in decommissioning the 117-F Building. Though that facility was completely decontaminated the demolition techniques will be the same for the remainder of the 117 Buildings. The 117 Buildings will be demolished using standard demolition techniques. Once demolished, the building site will be covered with a minimum of 1 meter of clean fill and then graded to match existing terrain, ensuring adequate compaction to minimize subsidence. Decommissioning of the 117 Buildings will result in an estimated generation of 540 cubic feet of radioactively contaminated solid waste per building that will be buried in the 200 Area Burial Ground. By comparison relatively small volumes of asbestos will be shipped for burial.

2.6 107-B, C, D, and DR (Partial)

The 107 Retention Basins, located between the reactors and the river, were used to hold up effluent reactor coolant water long enough to permit thermal decay and radioactive decay of short-lived activation and fission products before returning the water to the Columbia River. Two types of retention basins were used. B, D and DR were rectangular, concrete reservoirs while C used cylindrical, carbon-steel tanks. All basins were open-topped. The concrete basins ranged from 230 to 273 feet wide, 467 to 600 feet long, and were 20 feet in depth; while 107-C consisted of two tanks, 330 feet in diameter and 16 feet deep.

For the 107-B, D and DR Retention Basins the bottom sides of the concrete walls will be excavated as necessary, exposed contamination fixed (if required), the inlet diversion box and basin walls demolished, and the rubble laid in the basins. Enough clean fill will then be placed over the rubble to ensure adequate stablization of residual contamination. For 107-C the existing fill surrounding the exterior of the steel tank walls will be excavated down to a level which will allow later dismantlement of the tank walls and the contamination fixed (if required). Additionally, adjacent structures to the 107-C tanks (expansion boxes and monitor houses) will have their contamination fixed (if required) and either be backfilled as is or demolished to the exterior tank wall excavation level. All asbestos will be removed (monitor house transite siding). Contaminated rubble will be covered by enough clean fill to ensure adequate stabilization.

If determined to be contaminated, rubble from the 108-B Laboratory Building may be placed in the 107-B and/or 107-C retention basins. Any rubble placed into the basins, including that from the walls of the 107-B basin itself, will not prevent at a later date, the placement of an engineered barrier or a minimum of 1 to 4 meters of clean fill atop the rubble. Such placement, regardless of type, will match the existing terrain. The above work will not prevent the decommission- ing alternative of removing the basin sludge at a later date.

3.0 ANTICIPATED IMPACT

3.1 108-B, 111-B, 115-B, D, F, KE & KW, 116-B, C, D, DR, F, H, KE & KW, and 117-B, C, DR, H, KE & KW

The environmental impact of the decommissioning of the above facilities is primarily beneficial, since decommissioning will result in the removal and/or stabilization of potentially harazdous and radioactively contaminated structures. In addition, all hazardous wastes, notably mercury and asbestos, will be removed and buried in approved hazardous waste disposal sites. Decommissioning of these facilities is part of the decommissioning plan for the retired 100 Areas. Eventually, decommissioning will allow removal of the retired 100 Areas from radiological controls.

Decommissioning of the above facilities is not expected to result in any adverse environmental impact. The radioactively contaminated and/or hazardous waste to be buried in the 200 Area Burial Ground or the designated section of the sanitary landfill site will cause a slight land use impact at these locations. "Clean" waste/rubble buried in the 100 Area clearwells/coal pits will as well cause slight land use impacts in these areas. Finally, the contaminated material buried in-situ under the ARCL methodology will cause a slight land use impact in applicable locations. However, under this methodology, for the facilities listed above, the land is immediately capable of being released for unrestricted use. Noise levels will be increased due to the use of heavy equipment and explosives. However, because of the remoteness of the work sites and the infrequent use of explosives, the impact on the environment is minimal. Some occupational exposure from radioactive materials will occur.

3.2 107-B, C, D and DR

The environmental impact of the partial decommissioning of the retention basins is slightly beneficial in that better interim radioactive contamination stabilization will be achieved. Efforts in FY 1985 will be directed towards characterization, contaminant fixation, concrete wall rubblizing, and stabilization. The small amount of asbestos that will be removed will cause a negligible land use impact at the sanitary landfill site. Final disposition of the retention basins has not been determined. None of the actions above will prevent the accomplishment of a disposition alternative including sludge removal. If rubble from the 108-B Laboratory Building is added to the basins it will add insignificant amounts of inventory (curies) to the basins.

No permanent land use decisions will have been made for the 107 Retention Basins. Noise caused by demolition activities will have minimal impact on the environment. Some occupational exposure from radioactive materials will occur.

4.0 DISCUSSION OF IMPACT

4.1 ARCL

Reference 5 directed the Hanford Contractors to utilize the Allowable Residual Contamination Level (ARCL) methodology for evaluations of D&D of surplus contaminated facilities. As described in Reference 5 the ARCL methodology defines the amount of radioactive material that may safely remain after decommissioning a facility by utilizing radiation exposure pathway analysis and realistic exposure scenarios. These scenarios consider the numerous ways that persons could be exposed to the remaining radioactive materials during or after institutional control of the site. The radiation doses are then calculated and compared to an established dose limit (set by Reference 5 as less than 25 mrem/year to the whole body or to any organ to the maximum exposed individual following release of the land or facility from DOE control for unrestricted use). This defines the ARCL limit for the specific

mixture of radionuclides present at a specific facility or location on the Hanford site. Depending on whether the potential dose calculated by this method is less than or greater than the specified dose limit, remedial action to further decontaminate the facility location may be required. See Reference 3 for a more detailed explanation of the ARCL methodology.

4.2 Occupational Exposure

Operational personnel involved in decommissioning the facilities covered by this evaluation will receive occupational exposure from radioactive materials. Exposure estimates were calculated conservatively resulting in a maximum total of 9.5 man-rem covering all facilities. This figure can be further broken down as follows: 108-B, 0.9 man-rem; 111-B, 0.6 man-rem; 115 Buildings, 1.7 man-rem (spread out over five buildings); 116 Stacks (and 108-B Stack), 1.0 man-rem (spread out over nine stacks); 117 Buildings, 2.1 man-rem (spread out over seven buildings); and 107 Retention Basins, 3.2 man-rem (spread out over four basins).

Additionally, exposure for facilities other than the 107 retention basins will be further spread out over a number of years. Finally, controls will be in place to ensure that radiation exposure to individuals is limited to as low as is reasonably achievable and complies with DOE Order 5480.1A.

4.3 Land Use

The land use impact at both the 200 Area Burial Ground and the individual 100 Area sites is slight. The low level radioactive solid waste generated from decommissioning the facilities identified in this evaluation would in the worst case (all of 108-B shipped for burial) represent approximately 130 percent of the total amount shipped by UNC during CY 1983 to the 200 Area Burial Ground. However, this amount would be spread out over a number of years and represents a significant decontamination and decommissioning effort. Reference 6 concluded that impacts of the normal solid radioactive waste disposal in the 200 Areas is a total of 4 acres of land use per year (accounting for all Hanford contractors) and essentially zero population dose. The effort described by this evaluation would result in only a slight increase in land use per year and a negligible change in population dose. Volumes of asbestos and mercury shipped would be much smaller.

4.4 Noise

The impact on the environment from noise generated by decommissioning operations is mostly occupational. Heavy equipment, similar to that used in commercial constuction operations, and occassionally explosives will be used. Because of the remote nature of the site, offsite noise will be minimal.

4.5 Flooding

Flooding conditions predicted by the Army Corps of Engineers indicated that at least portions of the retired 100 Areas are in the flood plain of the dam regulated Probable Maximum Flood (PMF) (which has a recurrence frequency less than the 500-year flood). The 100-year flood peaks at a flow rate much less than the PMF and would probably not inundate these areas. The effects of the PMF have been evaluated in Reference 6. Calculated dose levels from radionuclide release are much less than allowable. Since the facilities whose final disposition is covered by this evaluation will have their radioactive contamination predominately locked up in a concrete matrix, dose levels from a flooding occurence will be neglible as compared to the Reference 6 baseline.

4.6 National Historic Site

Decommissioning of facilities at 100-B Area may be affected by the decision to make the 105-B Reactor Building a national historic site.

5.0 SCHEDULES

Final decommissioning of the facilities covered by this evaluation, except for the retention basins, is scheduled for completion as follows:

o 108-B	FY 1985
o 111-B	Not Scheduled
o 115-F	Completed FY 1984
o 115-B, D, KE & KW	FY 1988
o 116-C, F, H, and 108-B Ventilation Stack	Completed CY 1983
o 116-B, D, DR, KE & KW	FY 1988
o 117-H	Completed FY 1984
o 117-B, C, D, DR, KE & KW	FY 1988

NOTE: More detailed cost and schedule information can be obtained from Reference 7.

6.0 REFERENCES

1. DOE/EA-0120, "Environmental Assessment F-Area Decommissioning Program", October 1980.

2. Letter, J. J. Dorian to N. Castorina, "Radiological Criteria For Decontamination and Decommissioning of the Retired 108-B Building", dated February 29, 1984.

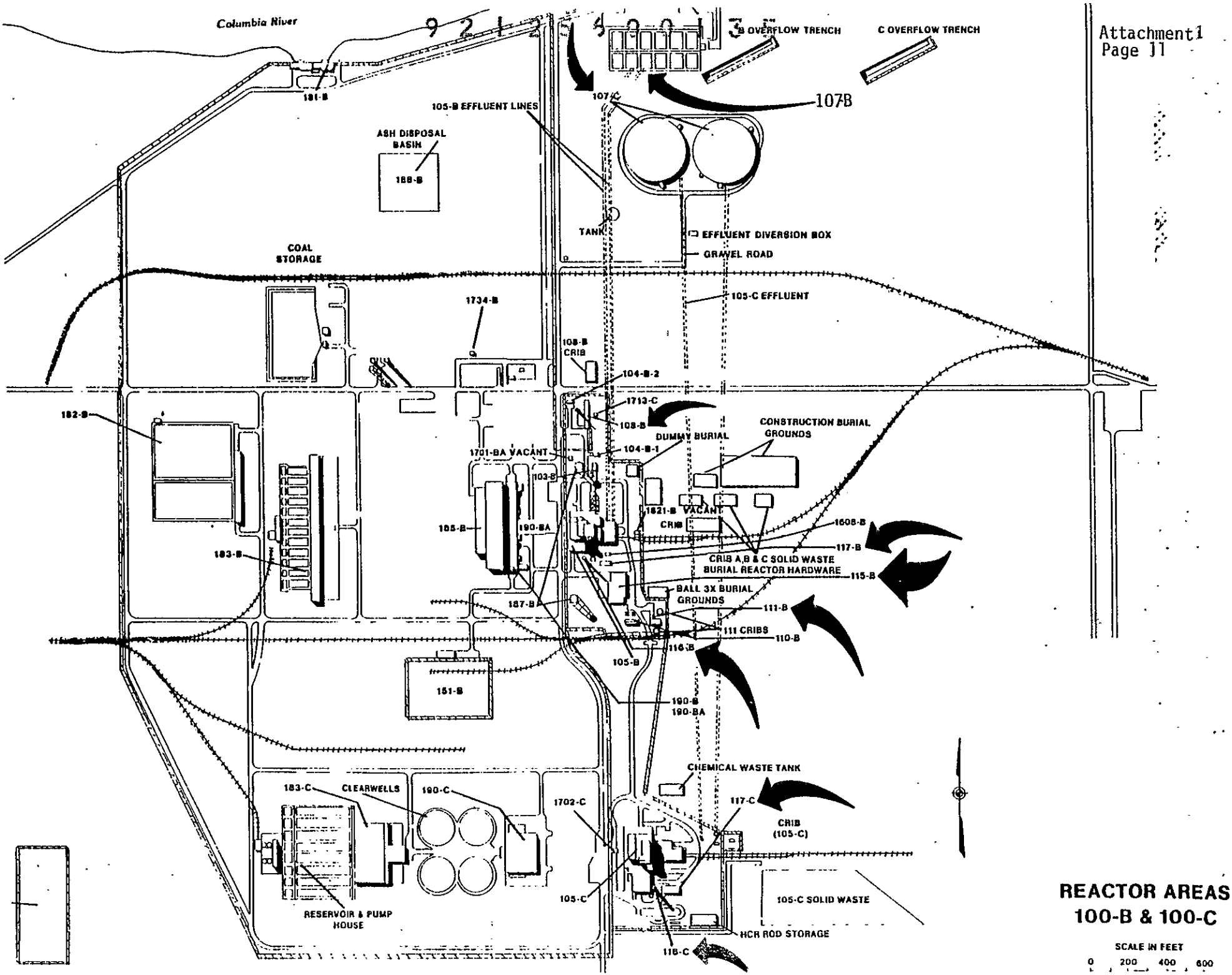
3. UNI-2522, "Allowable Residual Contamination Levels For Decommissioning Facilities in the 100 Areas of the Hanford Site", Kennedy, W. E. Jr. and B. A. Napier, July 1983.

4. UNI-M-30 REV1, "Radiation Control Manual", W. G. Westover, March 1982.

5. Letter, M. J. Lawrence to Distribution, "Radiological Release Criteria For Surplus Contaminated Facilities on the Hanford Site", dated July 3, 1984.

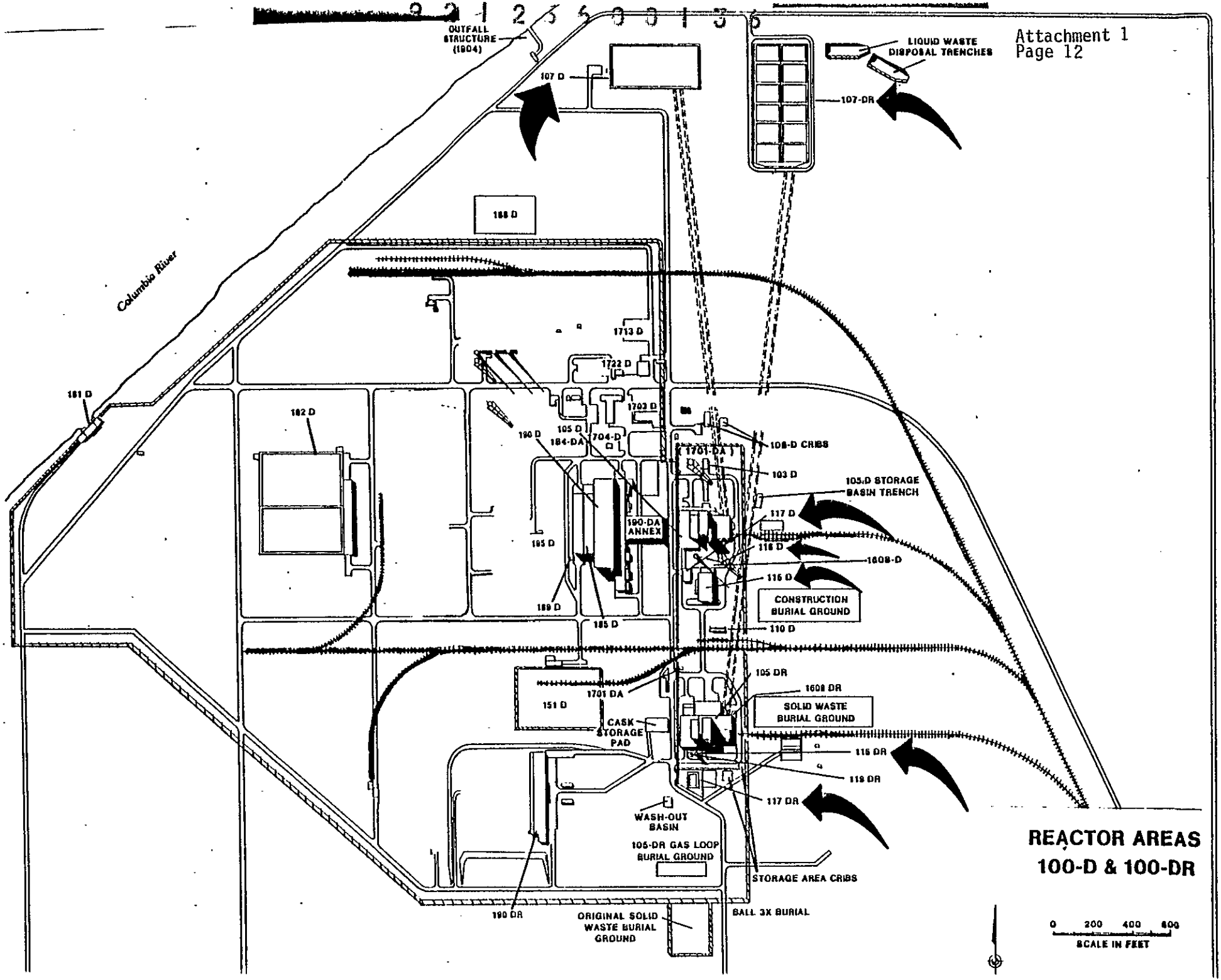
6. ERDA-1538, "Final Environmental Statement Waste-Management Operations Hanford Reservation, Richland, Washington", Energy Research and Development Administration, dated December 1975.

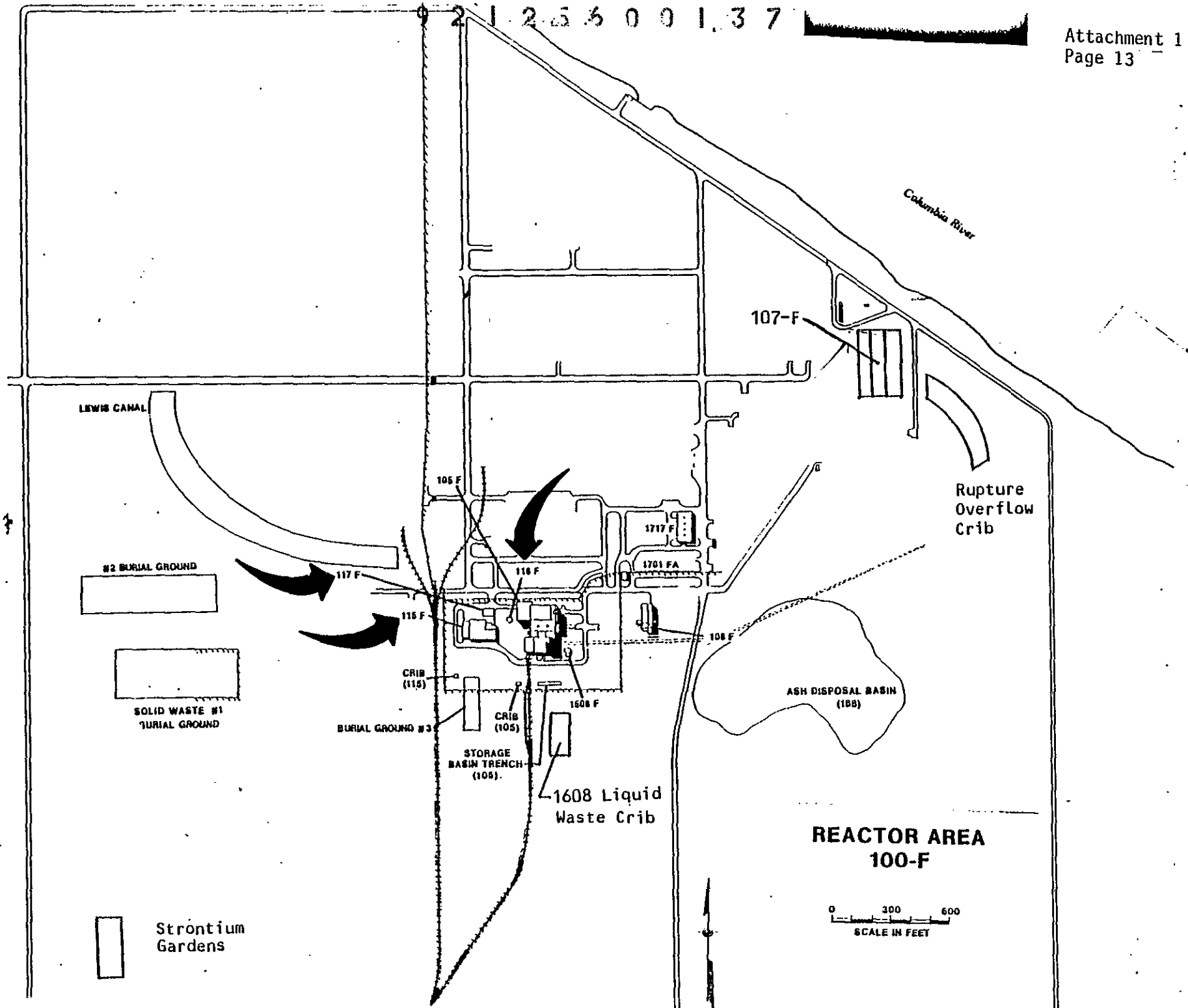
7. UNI-2533, "Hanford 100 Area Long-Range Decommissioning Plan", J. A. Adams et al., dated September 1, 1984.

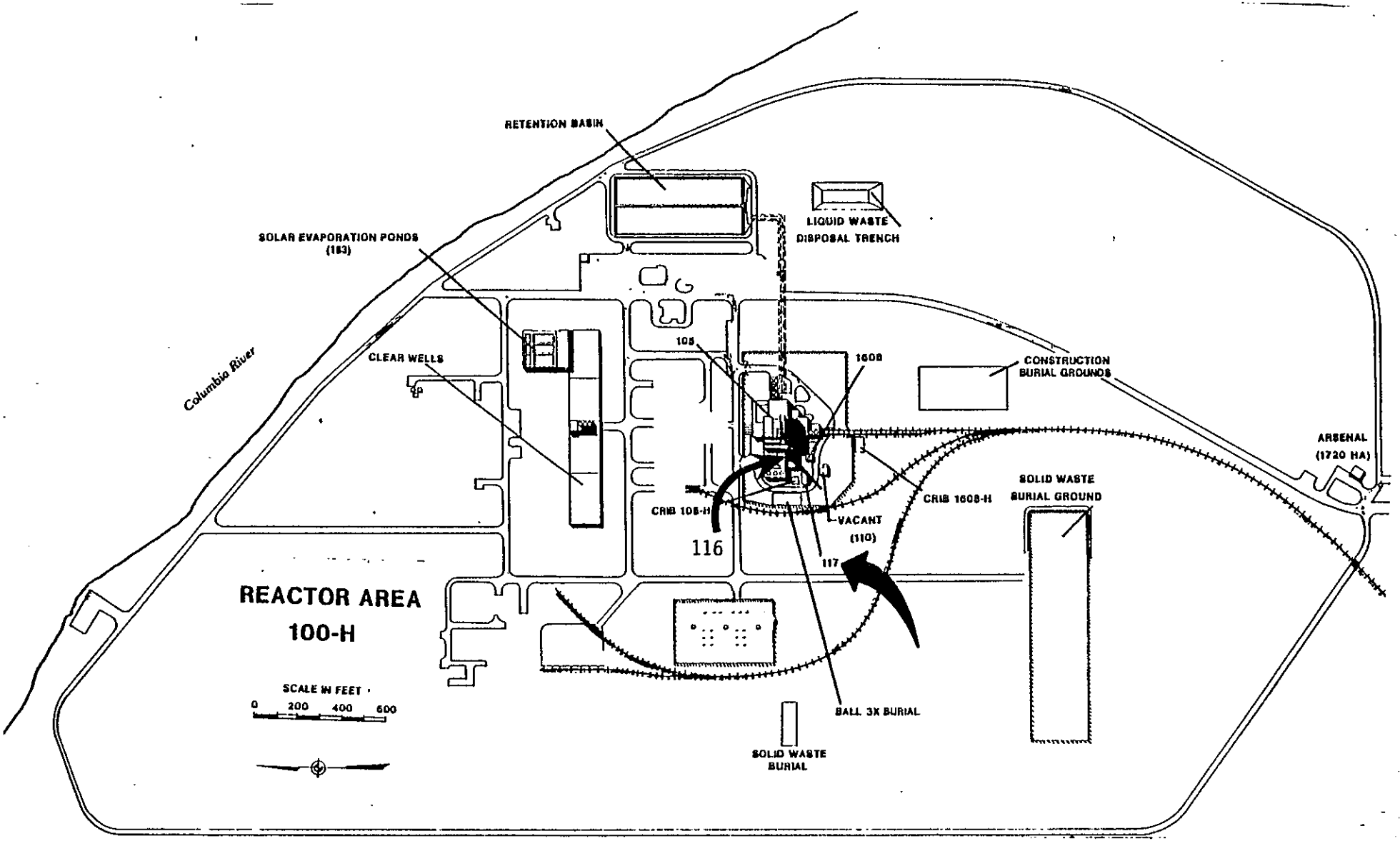


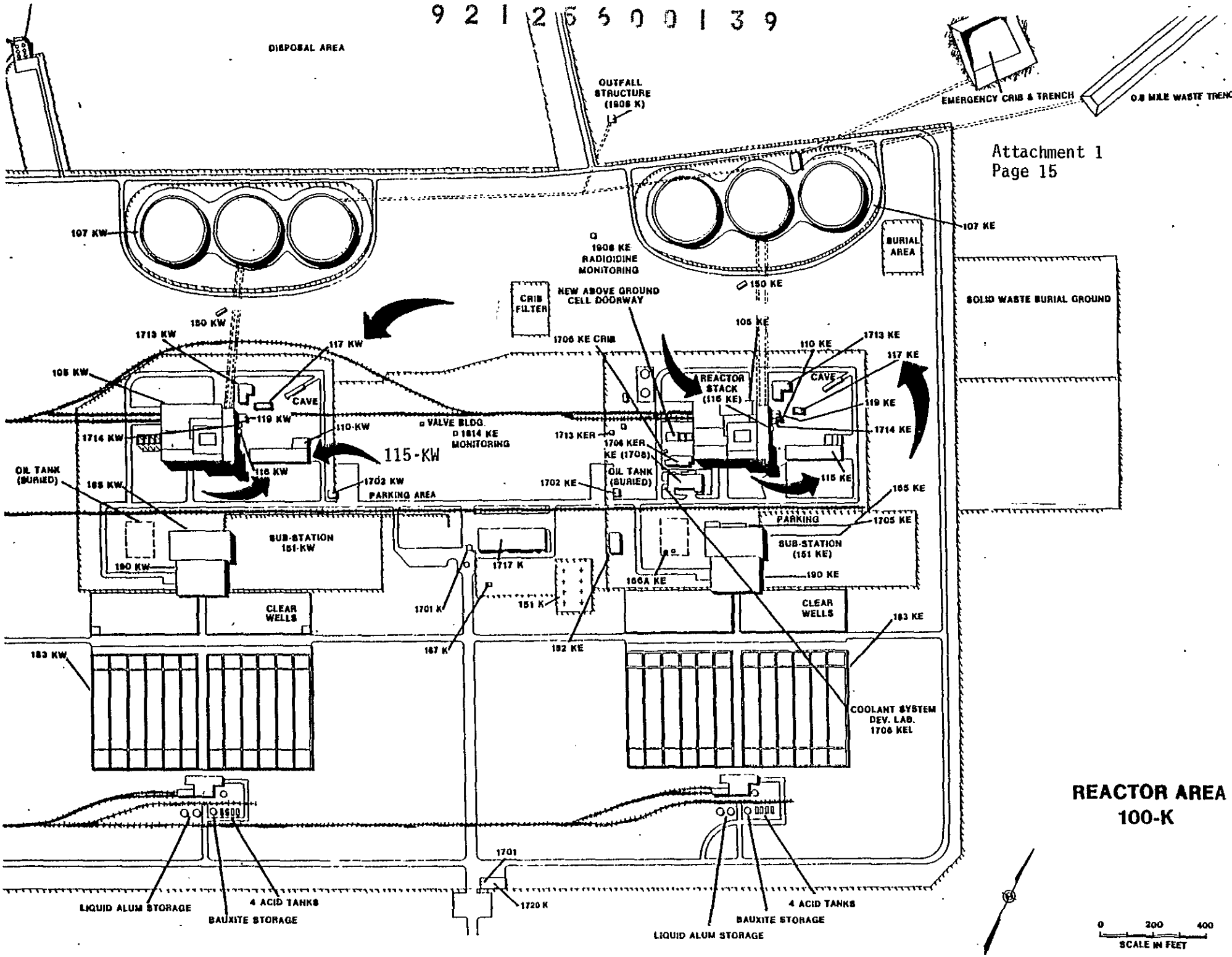
REACTOR AREAS
100-B & 100-C

SCALE IN FEET
0 200 400 600


OUTFALL STRUCTURE (1904)
LIQUID WASTE DISPOSAL TRENCHES
107 D
107-DR
188 D
Columbia River
1713 D
1722 D
181 D
182 D
1703 D
105 D
190 D
184-DA
1704-D
1701-DA
108-D CRIBS
103 D
105-D STORAGE BASIN TRENCH
190-DA ANNEX
117 D
185 D
116 D
1608-D
116 D
CONSTRUCTION BURIAL GROUND
189 D
185 D
110 D
105 DR
1608 DR
1701 DA
151 D
SOLID WASTE BURIAL GROUND
CASK STORAGE PAD
116 DR
119 DR
117 DR
WASH-OUT BASIN
105-DR GAS LOOP BURIAL GROUND
STORAGE AREA CRIBS
190 DR
ORIGINAL SOLID WASTE BURIAL GROUND
BALL 3X BURIAL
REACTOR AREAS
100-D & 100-DR
0 200 400 800
SCALE IN FEET


Columbia River
107-F
Rupture
Overflow
Crib
LEWIS CANAL
105 F
1717 F
1701 FA
#2 BURIAL GROUND
117 F
116 F
118 F
108 F
CRIB
(115)
SOLID WASTE #1
BURIAL GROUND
BURIAL GROUND #3
CRIB
(105)
1608 F
STORAGE
BASIN TRENCH
(105)
ASH DISPOSAL BASIN
(188)
1608 Liquid
Waste Crib
REACTOR AREA
100-F
0
300
600
SCALE IN FEET
Strontium
Gardens


RETENTION BASIN
LIQUID WASTE
DISPOSAL TRENCH
SOLAR EVAPORATION PONDS
(183)
Columbia River
CLEAR WELLS
105
1608
CONSTRUCTION
BURIAL GROUNDS
ARSENAL
(1720 HA)
SOLID WASTE
BURIAL GROUND
CRIB 108-H
CRIB 1608-H
VACANT
(110)
116
117
REACTOR AREA
100-H
SCALE IN FEET
0 200 400 600
BALL 3X BURIAL
SOLID WASTE
BURIAL



REACTOR AREA
100-K

0 200 400
SCALE IN FEET

Environmental Evaluation Checklist

Potential Environmental Impacts - A detailed explanation of all "yes" answers is required.

	CONSTRUCTION		OPERATION *	
	Yes	No	Yes	No
1. Air. Will the proposed project/activity:				
a. Result in any gaseous discharges to the environment? (If yes, provide description, physical/chemical characterization.)	___	X	___	X
b. Result in any particulate or droplet releases to the environment?	___	X	___	X
c. Result in any thermal discharges to the atmosphere?	___	X	___	X
d. Cause any other atmospheric disturbance?	___	X	___	X
e. Violate any Federal/State or Local emission standards?	___	X	___	X
f. Be subject to Federal or State standards of performance for new stationary sources? (see 40 CFR 60, WAC 173-400-115)	___	X	___	X
g. Violate any applicable ambient air quality standards (e.g. CO, hydrocarbons, particulates, NO_2, etc.)?	___	X	___	X
2. Water. Will the proposed project/activity:				
a. Result in any liquid discharges to the environment? (If yes, provide description, physical chemical characterization.)	___	X	___	X
b. Discharge heat to surface or subsurface water?	___	X	___	X
c. Alter stream flow rates?	___	X	___	X

* Since the construction and operations categories are not appropriate, for these activities the operation category will be used to represent decontamination and decommissioning operations.

				CONS Ye
X		X	3. Land Use. Will the Project:	
X		X	a. Conflict with existing zoning or land use?	
X		X	b. Be located on the 100-year or 500-year floodplain (EO 11988)?	
X		X	c. Be located on wetlands (EO 11990)?	
X		X	d. Generate a volume of solid waste for disposal?	
X		X	(1) Hazardous 40 CFR 260-265?	
			(2) Radioactive?	
			(3) Other?	
X		X	e. Cause erosion?	
X		X	f. Be located on an Arid Land Ecology Reserve?	
			g. Conflict with National Environmental Policy Act activities?	
			h. Impact prime or unique farmland?	
			4. General. Will the proposed project/activity:	
			a. Be subject to any other Federal, state or local environmental regulations not otherwise addressed in this checklist?	
			b. Increase noise levels?	
			c. Impact archaeological or historic sites?	
			d. Require use of carcinogens, pesticides or toxic substances?	
			e. Impact wildlife or habitat (terrestrial or aquatic)?	
			f. Affect endangered species or critical habitat?	

	CONSTRUCTION		OPERATION	
	Yes	No	Yes	No
3. Land Use. Will the Project:				
a. Conflict with existing zoning or land use?	___	X	___	X
b. Be located on the 100-year or 500-year floodplain (EO 11988)?	___	X	X	___
c. Be located on wetlands (EO 11990)?	___	X	___	X
d. Generate a volume of solid waste for disposal?	___	X	X	___
(1) Hazardous 40 CFR 260-265?	___	X	X	___
(2) Radioactive?	___	X	X	___
(3) Other?	___	X	X	___
e. Cause erosion?	___	X	___	X
f. Be located on an Arid Land Ecology Reserve?	___	X	___	X
g. Conflict with National Environmental Policy Act activities?	___	X	___	X
h. Impact prime or unique farmland?	___	X	___	X
4. General. Will the proposed project/activity:				
a. Be subject to any other Federal, state or local environmental regulations not otherwise addressed in this checklist?	___	X	___	X
b. Increase noise levels?	___	X	X	___
c. Impact archaeological or historic sites?	___	X	___	X
d. Require use of carcinogens, pesticides or toxic substances?	___	X	___	X
e. Impact wildlife or habitat (terrestrial or aquatic)?	___	X	___	X
f. Affect endangered species or critical habitat?	___	X	___	X

	CONSTRUCTION		OPERATION	
	Yes	No	Yes	No
g. Require long-term commitment of nonrenewable resources?	___	X	___	X
h. Require new utilities or modifications to existing utilities?	___	X	___	X
i. Increase offsite radiation dose?	___	X	___	X
j. Impair recreation?	___	X	___	X
k. Require modifications to the site-wide Environmental Surveillance Program?	___	X	___	X