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Department of Energy

Richland Operations Office
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91-PPB-371

FEB 14 1991

Mr. Paul T. Day
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U.S. Environmental Protection Agency
Region 10
712 Swift Boulevard, Suite 5, MSIN: B5-01
Richland, Washington 99352

Mr. Timothy L. Nord
Hanford Project Manager
State of Washington
Department of Ecology
Mail Stop PV-11
Olympia, Washington 98504-8711



Dear Messrs. Day and Nord:

ADDITIONAL COMMENT RESPONSES FOR THE 303-K RADIOACTIVE MIXED-WASTE STORAGE FACILITY CLOSURE PLAN NOTICE OF DEFICIENCY RESPONSE TABLE

Please find enclosed the additional responses for certain comments contained in the 303-K Radioactive Mixed-Waste Storage Facility Closure Plan Notice of Deficiency (NOD) Response Table. These additional responses were requested by the State of Washington Department of Ecology (Ecology) as a result of their review of the NOD response table. This information is being forwarded to the U.S. Environmental Protection Agency and Ecology in accordance with the February 14, 1991, schedule.

If you have any questions regarding this information, please contact Mr. C. E. Clark of the U.S. Department of Energy, Richland Operations Office on (509) 376-9333, or Ms. C. J. Geier of the Westinghouse Hanford Company on (509) 376-2237.

Sincerely,

EA Brecken
R. D. Izatt, Director
Environmental Restoration Division
Richland Operations Office

R E Lerch
R. E. Lerch, Manager
Environmental Division
Westinghouse Hanford Company

ERD:SLT



Enclosure:
303-K Facility Comment Responses

cc: D. L. Duncan, EPA, w/encl.
R. E. Lerch, WHC, w/o encl.
M. Lerchen, Ecology, w/encl.

91-1-21-90-03-17

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4.	<p>Page 2-1. The facility description is not clear as to the extent of modifications to the facility (i.e., dates when new asphalt was added, when additional lifts of concrete were added, etc.).</p> <p><u>Ecology Requirement:</u> A more detailed description of the facility must be provided.</p> <p>DOE-RL/WHC Response No. 1: The approximate dates for the various additional asphalt and concrete pads will be shown in a drawing.</p> <p>DOE-RL/WHC Response No. 2: The attached figure shows the dates when the various modifications to the 303-K Facility took place. This figure and additional text to introduce the figure will be added to the closure plan.</p>
7.	<p>Page 4-1, line 16. The waste receiving procedures are not adequately defined.</p> <p><u>Ecology Requirement:</u> Give a detailed discussion on the procedures used for acceptance of waste at the 303-K Facility. This must include any documentation available on verification of types of waste received at the unit. In other words, can it be verified that the waste identified in Table 4-1 are the only wastes sent to the unit, and if so, how?</p> <p>DOE-RL/WHC Response No 1: There were no detailed procedures used for acceptance of waste at the 303-K Facility since this facility serviced known manufacturing processes with known waste byproducts. All wastes and contaminated equipment from radiation areas or suspected to contain uranium were sent to the 303-K Facility. Most waste drums were sampled prior to transfer to the 303-K Facility although the analysis was not always received prior to moving to the 303-K Facility. A few drums were sampled after they were received in the 303-K Facility. These analyses were performed primarily to determine the content of uranium for accountability purposes or to determine if the radioactivity was naturally occurring. Wastes determined to contain <i>de minimis</i> quantities of uranium or natural occurring radioisotopes were moved to the 333 East Pad until proper permits were obtained and the waste was transferred out in less than 90 days. Records from 1987 to present are available at fuels operation for review to substantiate the waste codes contained in the RCRA Part A permit application.</p>

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Ecology Response No. 1: The information presented is not adequate for documenting that Table 4-1 covers all wastes sent to the unit.

Ecology Requirement: Edit the text and legend regarding this table to indicate it is not comprehensive. In addition, incorporate the text presented in the closure plan.

DOE-RL/WHC Response No. 2: A new table (attached) will be included in Chapter 4.0 showing the constituents used and stored in the 303-K Facility during the radioactive decontamination of equipment from 1953 to 1977. However, Table 4-1 is comprehensive and covers all the potentially hazardous constituents known to be stored or used at the facility. The new table will be evaluated to determine if any potentially hazardous constituents were omitted from Table 7-1.

12. Page 6-1, line 24. The text states the closure performance standard will be a health based standard. This is not appropriate.

Ecology Requirement: The closure standard for this facility will be background. All other citations of health based standards must be changed to background.

DOE-RL/WHC Response No. 1: A clearer definition of baseline and action levels in relationship to clean closure will be provided. The following paragraphs will be included in Chapter 6.0 of the closure plan. In addition, a flow chart showing the general closure strategy will be added.

"Three important terms in the following information on the 303-K Facility closure strategy are 'baseline,' 'baseline threshold,' and 'action levels.' Baseline is the set of analytical results of the local background samples. Baseline, therefore, refers to the population of constituent concentrations in the soil or building materials in the vicinity of the 303-K Facility that are not attributable to the 303-K Facility operations. Baseline threshold refers to concentrations that define an upper limit of the baseline population and is not to be confused with the average baseline concentration. Baseline threshold concentrations will be determined by statistical methods such as those described in *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Final Guidance* (EPA 1989), e.g., the tolerance interval approach to the analysis of variance.

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Action levels are the constituent concentration levels that will prompt an action of some type. These actions would include additional evaluation, cleanup, or deferral to the CERCLA process. Action level values include concentrations based on risk to human health and the environment, baseline threshold concentrations, or other appropriate cleanup criteria.

Clean closure will be accomplished by demonstrating that the constituents used in the 303-K Facility operations are not present above action levels. Reevaluation of the action levels will be considered if one or more of the action levels are exceeded by any of the compliance constituents listed in the table located in Section 7.3.2.2. This measure is proposed because contaminant concentrations for soil and concrete may exceed an action level; however, the concentrations may be significantly below any health or environmentally-based risk level. Any additional evaluation would be based on the following.

- The type and extent to which action levels are exceeded.
- The further assessment of health-based risk using toxicity criteria guidance such as the *EPA Integrated Risk Information System (IRIS) database (EPA 1989b)*, the *Human Health Evaluation Manual (EPA 1989a)*, the *Technical Information Memorandum (TIM) No. 86-1 (Ecology 1986)*, and other appropriate information.

If dangerous constituents are determined to exist in concentrations above action levels and reevaluation of action levels is not warranted, remediation of the soil will be evaluated under the CERCLA RI/FS process for the 300-FF-3 Operable Unit. Initial action levels for the constituents in the soil samples will be the baseline threshold values."

Baseline samples will be obtained within the 300-FF-3 Operable Unit.

An exposure scenario method, like the one provided for 2101-M Pond Closure Plan, will be used for the 303-K Facility Closure Plan. The actual analysis for the exposure scenario will be conducted when sample analyses are obtained. The scenario will provide the criteria for comparing element concentrations to the risk to human health and the environment. These factors will then be evaluated for clean closure.

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Ecology Response No. 1: The DOE-RL/WHC propose to include a number of paragraphs within the text in order to clarify the definitions of "baseline," "baseline threshold," and "action level." Any terms not defined should be defined in a section for acronyms, abbreviations, and definitions similar to that provided in Part B permit applications. How these concepts will be used in developing the cleanup strategy to be implemented after obtaining the results of the sampling and analysis at the unit should be provided in both the form of a narrative and flow chart in the appropriate sections of the closure plan. Ascertain whether or not these terms are appropriate within the requirements of Chapter 173-303 WAC, see the next paragraph for guidance.

The proposed test and clean closure objectives are not acceptable. The original requirement in Ecology's NOD stated that the closure standard for this facility will be background. From DOE-RL/WHC's response, it appears that clarification of this comment is necessary. Under WAC 173-303-610(2)(b), closure performance standard, the levels of dangerous waste or dangerous waste constituents or residues remaining after closure of a unit may not exceed background environmental levels or designation limits for clean closure. If these performance standards cannot be met, then the unit is subject to subsections (7) through (11) of WAC 173-303-610. Refer to WAC 173-303-610 for guidance.

The approach for the soil cleanup is unacceptable. The soil must be cleaned to at least area background levels (area background is defined in WAC 173-340-200), not baseline. A postclosure plan that provides for management of the unit within the CERCLA cleanup must be prepared.

Ecology Requirement: Compliance with the above is required.

DOE-RL/WHC Response No. 2: The terms "baseline" and "baseline threshold" will be replaced with the terms "local background" and "local background threshold." These terms and the term "action levels" will be included in the List of Terms section of the closure plan and defined as follows:

- Local background--The data set of chemical concentrations from samples obtained in the local vicinity of a facility. Samples within the facility will be compared to the local background data set to determine the presence or absence of contamination from the

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	<p>facility. In this case, the samples to determine the local background concentrations would be obtained within the 300-FF-3 Operable Unit.</p> <ul style="list-style-type: none"> • <u>Local background threshold</u>--Refers to the concentrations that define an upper limit of the local background population. It is not an average local background concentration. It is determined statistically (e.g., the tolerance interval approach to the analysis of variance). • <u>Action levels</u>--Chemical concentration levels that will prompt an action. Action level values will commonly be local background threshold concentrations and health and environmental based concentrations.

To facilitate closure, the 303-K Facility will be viewed as consisting of three components; the building, the floors and pads (concrete and asphalt), and the soil. These three components will be evaluated separately for closure of the facility. The building, concrete floor, and the concrete and asphalt pads will be decontaminated to local background or health based standards, or removed.

With the exception of an imminent danger, all necessary soil remediation will be accomplished under the CERCLA RI/FS process. If the soil within the 303-K Facility boundary is found to be contaminated (chemical concentrations above local background threshold and health based standards) from operations conducted (chemicals used or waste stored) in the 303-K Facility, the facility will not be considered closed until the remediation under CERCLA is complete. However, if chemical concentrations are below the local background threshold and health based standards, the 303-K Facility will be considered closed. As described in the Tri-Party Agreement, any source contamination in the soil from past operations (such as manufacturing fuel rods) in the 300 Area, will be evaluated and remediated under the CERCLA RI/FS process. Methods used to determine chemical concentrations for health based standards will be scientifically and technically defensible, e.g., the Model Toxic Control Act, WAC 173-340.

The paragraph starting with line 32 on page 6-1 will be changed as follows:

"If the concentration of any constituent identified in Chapter 7.0, Table 7-1, is above the initial action level (local background threshold), the action level will be reevaluated.

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This measure is proposed because contaminate concentrations for soil which may exceed an action level, may also be below any health or environmental-based risk level. Any additional evaluation would be based on 1) the type and extent to which the action levels are exceeded, and 2) assessment of health-based risk. Health-based risk standards will be scientifically and technically defensible and criteria guidance will be used such as the Model Toxic Control Act, WAC 173-340 (Ecology 1990), the EPA IRIS database (EPA 1989b), the Human Health Evaluation Manual (EPA 1989a), and other appropriate information. If dangerous constituents are determined to exist in the soil in concentrations above action levels, closure for the soil will be complete after the remediation of the 300-FF-3 Operable Unit under the CERCLA RI/FS process. With the exception of imminent hazard, all soil remediation will take place under the CERCLA RI/FS process for the 300-FF-3 Operable Unit."

The attached flow chart shows the closure strategy for the 303-K Facility.

Section 8.2, Postclosure Care, in the 303-K Facility closure plan will contain the following text.

"Postclosure care is generally required when a waste management facility cannot attain clean closure. At the 303-K Facility, underlying soils and groundwater may have been contaminated by waste generated during operations in the 300 Area. Under the Tri-Party Agreement, source contamination and groundwater will be investigated and remediated through the operable units under the CERCLA RI/FS process.

With the exception of an imminent health threat, all soil remediation will take place under the CERCLA RI/FS process. If the soil within the 303-K Facility boundary is found to be contaminated (chemical concentrations above local background threshold and health based standards) from operations conducted (chemicals used or waste stored) in the 303-K Facility, the facility will not be considered closed until the remediation under CERCLA is complete. During the time between closure of the building, floor, and pads and any soil remediation under CERCLA, steps will be taken to isolate any contamination.

Any data obtained from sampling and analyses during RCRA closure activities will be part of the record and included in the closure plan. This data will be taken into account and used

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during the CERCLA evaluation of the 300-FF-3 Operable Unit, as well as data collected specifically for the CERCLA evaluation.

Temporary covers will be installed, if necessary, to prevent migration of any contamination. The temporary covers would be less permeable than the surrounding soil and may be composed of constituents such as asphalt, clay, or a fixative spray. The existing facility floor and pads may be used as covers if they were found to be uncontaminated or were decontaminated. The exact nature of any covers would be determined at the time the need was identified and this information would be added to the closure plan. In addition, access to the areas of contamination would be controlled if necessary to protect personnel or prevent the migration of contamination.

During the period between closure and soil remediation under CERCLA, the facility area would be inspected at a minimum of once a week. This inspection would be combined with facility inspections presently conducted. The inspections would determine the need for maintenance of any temporary covers or other physical barriers. Any required maintenance would be performed by trained personnel from the Hanford Site."

14. Page 6-2, line 1. The concept of "baseline concentrations" is neither appropriate nor acceptable for a clean closure performance standard. This discussion should be directed towards a determination of background.

Baseline concentrations are appropriate to use for an interim cleanup level for soils prior to the 300-FF-3 Operable Unit investigation. Baseline may only be used for soils and the soils must be remediated to the baseline level via implementation of this closure plan.

Ecology Requirement: Rewrite this discussion to include background as the clean closure performance standard. The text should also be rewritten as appropriate to incorporate the concept of baseline as outlined previously. Refer to the 300 Area Solvent Evaporator (ASE) Closure Plan for further guidance.

DOE-RL/WHC Response No. 1: A definition of baseline will be added for clarification (see response number 12). However, the baseline (local background) will be used to determine if the soil, concrete floors and pad, and asphalt pads can be clean closed.

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	<p>Concrete slabs could have wide variations in concentrations of inorganic elements, depending where the cement and aggregate were obtained. Because of the potential for wide variations, a concrete background sample must be taken from the same pour.</p>
	<p>A concrete background sample will be obtained by taking a core of the concrete slab in an area where contamination is least likely and away from cracks or other potential pathways. The concrete slabs are approximately 6 inches thick. The core will be cut into four equal sections perpendicular to the core and analyzed. The analytical results from each section will be compared to determine the baseline for the concrete slab.</p>
	<p>The center and lower portion of a 6-inch concrete slab would not be contaminated from the operations conducted in the 303-K Facility even if the surface was contaminated by some method (i.e., spill), unless a pathway or crack existed. The contamination assessment conducted for the 300 ASE closure plan indicated that water with solvents would not penetrate the concrete more than 3/8 inch, and TCE and PCE no more than 2 millimeters under the scenario outlined. The scenario would be worse than a worse-case scenario in the 303-K Facility. This information will be included in the text.</p>
	<p><u>Ecology Response No. 1:</u> The DOE-RL/WHC proposes sole use of samples obtained within the 304 Concretion Unit for establishing background concrete contamination levels. This is not acceptable.</p>
	<p><u>Ecology Requirement:</u> Concrete samples from areas not subject to contamination must be used for establishing background concrete contamination values.</p>
	<p><u>DOE-RL/WHC Response No. 2:</u> Although the original proposal for obtaining background samples is valid, there may be problems in ensuring representative samples due to the aggregate in the concrete and in the number of samples necessary for statistical validity. An appropriate alternative method may be the Toxicity Characteristic Leaching Procedure (TCLP) to demonstrate the concentrations of constituents in the concrete are below regulatory concern, i.e., if they are below the TCLP regulatory limits, they are not deleterious to the environment or human health. The advantages to this approach would be the use of established procedures, fewer samples, less impact on the facility, and less uncertainty in the results.</p>

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| 16. | <p data-bbox="172 358 1649 451"><u>Pages 6-3/6-4, Figure 6-1.</u> Although the logic behind this flow chart is appropriate, the performance standard associated with the decision points is not appropriate (refer to comment numbers 1 and 12).</p> <p data-bbox="172 483 1500 516"><u>Ecology Requirement:</u> Redo the flow chart to show the appropriate closure standards.</p> <p data-bbox="172 548 1553 613">DOE-RL/WHC Response No. 1: Another flow chart will be included to show general closure strategy. See response numbers 1, 12, and 14.</p> <p data-bbox="172 646 1596 678">DOE-RL/WHC Response No. 2: The flow chart in Figure 6-1 has been revised and is attached.</p> |
| 17. | <p data-bbox="172 703 1649 795"><u>Page 6-5, line 15.</u> The statement that soil remediation will occur under the CERCLA process is premature. This decision will be made after evaluation of the sampling and analysis effort from the facility.</p> <p data-bbox="172 828 968 860"><u>Ecology Requirement:</u> Change the text accordingly.</p> <p data-bbox="172 893 1627 982">DOE-RL/WHC Response No. 1: The text will be revised to read "The decision on remediation of soil (clean to baseline or defer to CERCLA) will be made after sample analyses are obtained and evaluated."</p> <p data-bbox="172 1015 1553 1079"><u>Ecology Response No. 1:</u> The DOE-RL/WHC propose to revise the text to, "The decision on remediation of soil (clean to baseline or defer to CERCLA)..."</p> <p data-bbox="172 1112 1627 1177"><u>Ecology Requirement:</u> The soils must be remediated to at least area background contamination levels. See comment number 12.</p> <p data-bbox="172 1209 1585 1274">DOE-RL/WHC Response No. 2: With the exception of an imminent danger, all necessary soil remediation will be accomplished under the CERCLA RI/FS process. See response number 12.</p> |
| 21. | <p data-bbox="172 1304 1649 1390"><u>Page 7-1, line 12.</u> The text states that once closure activities begin, the waste inventory will be transferred to other sites on the Hanford Site. The text does not specify the locations or timing of this transfer.</p> |

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	<p><u>Ecology Requirement:</u> Specify the exact locations to which waste will be transferred and the timing of the transfer.</p> <p>DOE-RL/WHC Response No. 1: The text will be revised to read "After the closure plan is approved, containerized dangerous waste stored for more than 90 days will be transferred to the Central Waste Complex. This transfer will take place before initiation of the sampling plan."</p> <p><u>Ecology Response No. 1:</u> The DOE-RL/WHC propose a text revision to state, "... waste stored more than 90 days will be transferred..." This does not give all the information requested in the original comment. It is unacceptable to have dangerous waste stored in the same location in which closure activities are taking place.</p> <p><u>Ecology Requirement:</u> Specify the locations where waste will be transferred and the timing of the transfer for all waste stored at the unit, including waste stored less than 90 days.</p> <p>DOE-RL/WHC Response No. 2: The text will be revised to read "After the closure plan is approved and prior to any other closure activities, all waste stored at the 303-K Facility will be transferred to the Central Waste Complex for interim storage and future treatment or disposal."</p>
23.	<p><u>Page 7-3, line 7.</u> The text states that test methods used in the sampling and analysis plan will be "equivalent" to SW-846. This statement is not appropriate. The sampling and analysis plan must use the exact methods identified in SW-846. Only specific test variations which are approved by Ecology are acceptable.</p> <p><u>Ecology Requirement:</u> Specify the tests to be used will be those in SW-846. Further, identify the exact test methods to be used. Should DOE wish to use alternate test methods, follow the procedures outlined in WAC 173-303-910.</p> <p>DOE-RL/WHC Response No. 1: A table will be prepared indicating the methods to be used. Deviations from these methods will be fully described in the closure plan for review by Ecology.</p>

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	<p><u>Ecology Response No. 1:</u> The DOE-RL/WHC will describe any deviations from required test methods.</p>
	<p><u>Ecology Requirement:</u> Procedures for any test method which deviates from required test methods must be submitted to Ecology with a request for approval of the substitute method.</p>
	<p><u>DOE-RL/WHC Response No. 2:</u> Table 7-1 (attached) was revised to include analytical test methods.</p>
24.	<p><u>Page 7-3, line 11.</u> The text states that soil sampling will occur to a depth no deeper than 1 foot. There is no valid justification for this procedure (refer to comment number 32). Further, the constituents found at the 303-K Facility (particularly organic contaminants) have the ability to migrate to depths beyond 1 foot.</p>
	<p><u>Ecology Requirement:</u> Change this statement to include a more adequate soil sampling program. A 1-Foot sampling depth will not be accepted.</p>
	<p><u>DOE-RL/WHC Response No. 1:</u> Information to date suggests any potential organic or inorganic contamination from the 303-K Facility would be located in the uppermost part of the soil column. However, the soil sampling depth will be reevaluated using contamination scenarios and assessments similar to those presented in the 2101-M Pond Closure Plan. The objective of these assessments will be to determine the most likely location of any potential contamination from this facility in the soil column. The information will be presented and discussed with Ecology in a future unit managers meeting.</p>
	<p><u>Ecology Response No. 1:</u> Development of a soil sampling plan based on the 300 ASE is inappropriate; the 300 ASE is located on top of a burial ground.</p>
	<p><u>Ecology Requirement:</u> The soil sampling plan must address vadose zone contamination at this unit. Refer to the 2101-M Pond Closure Plan in development for guidance.</p>
	<p><u>DOE-RL/WHC Response No. 2:</u> The previous response referencing the 300 ASE closure plan was in error. The reference should have been to the 2101-M Pond Closure Plan.</p>

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	<p>It can be shown that concentrations of inorganic constituents added to the soil by sorption from an effluent containing even drinking water levels of these constituents are greatest in the upper few millimeters, and decreases with increased thickness of the soil column. Due to the well known process of sorption (Conway 1982, Freeze and Cherry 1979, CRC 1984), any contamination remaining in the soil would be the result of equilibrium reactions and/or irreversible sorption. In either case, residual contamination would be most concentrated in the uppermost part of the soil column, with rapidly decreasing concentrations downward. Therefore, the uppermost part of the soil column is most likely to contain contamination if it is present.</p>
	<p>It is also indicated that any contamination of the soil by organic solvents associated with the facility is likely to be small and, if present, dominate in the uppermost part of the soil column. The only pathway for the organic contaminants to the soil would have involved the transport of a very small fraction of any spill (no spills were reported) to the soil through cracks in the concrete floor. Due to the relatively small amount of potential contamination, the general lack of evaporation under the concrete floor, and the tendency for such small amounts to be retained in the soil, any potential organic contamination from this source is most likely to be present in the upper part of the soil column.</p>
	<p>Because the potential contamination from the 303-K Facility would remain in the upper part of the soil column, a maximum sampling depth of two feet would be adequate. During soil sampling, a sample will be obtained at the surface, at one foot, and two feet.</p>
25.	<p><u>Page 7-3, line 19.</u> The text states that the sampling and analysis program has been designed to determine if contaminants are present "that are regulated by Ecology." The <i>Federal Facility Agreement and Consent Order</i>, Section 6.3, states that treatment, storage, and/or disposal units will "normally close with consideration of all hazardous substances, which include radioactive constituents." The 303-K Facility closure plan must address all constituents present at the unit.</p>
	<p><u>Ecology Requirement:</u> Clarify the text to state that <u>all</u> hazardous constituents found at the 303-K Facility will be addressed in the closure plan.</p>

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	<p>DOE-RL/WHC Response No. 1: Analyses will be conducted for all of the dangerous waste constituents stored at the facility. These constituents are determined from operation records from the 303-K Facility. The text will be modified to reference WAC 173-303.</p> <p><u>Ecology Response No. 1:</u> The DOE-RL/WHC state that all of the dangerous waste constituents stored at the 303-K Facility are listed in Table 7-1.</p> <p><u>Ecology Requirement:</u> This table must be revised to list all constituents of concern. This includes any radioactive constituents. Refer to Section 6.3 of the <i>Hanford Federal Facility Agreement and Consent Order</i>. This requirement also applies to comment numbers 26 and 27.</p> <p>DOE-RL/WHC Response No. 2: The waste stored and the chemicals used over the life of the 303-K Facility are known. The newly added table (see response number 7) will be reevaluated to determine if any potentially hazardous substance was omitted from the compliance list (Table 7-1) of the closure plan. According to WAC 173-303-610, the facility is only responsible for potentially hazardous substances managed at the facility. Any contamination in the soil from operations in the 300 Area will be evaluated and remediated under the CERCLA RI/FS process for the 300-FF-3 Operable Unit. See response number 12.</p>
26.	<p><u>Page 7-3, line 24.</u> Refer to comment number 25 for clarification of constituents to be addressed.</p> <p><u>Ecology Requirement:</u> Clarify that all constituents in the 303-K Facility are subject to this closure plan.</p> <p>DOE-RL/WHC Response No. 1: The text will be revised to indicate that Table 7-1 lists all the dangerous waste constituents stored at the 303-K Facility.</p> <p>DOE-RL/WHC Response No. 2: See response numbers 12 and 25.</p>
27.	<p><u>Page 7-4, Table 7-1.</u> The text states that the sampling and analysis program has been designed to determine if contaminants are present "that are regulated by Ecology." The <i>Federal Facility Agreement and Consent Order</i>, Section 6.3, states that treatment, storage, and/or disposal units will "normally close with consideration of all hazardous substances,</p>

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	<p>which include radioactive constituents." The 303-K Facility closure plan must address all constituents present at the unit.</p> <p><u>Ecology Requirement:</u> Correct this table accordingly.</p> <p>DOE-RL/WHC Response No. 1: Table 7-1 includes all of the dangerous waste constituents stored at the 303-K Facility (see response numbers 25, 26, and 48).</p> <p>DOE-RL/WHC Response No. 2: See response numbers 12 and 25.</p>
28.	<p><u>Page 7-3, line 27.</u> The text discusses the use of baseline threshold levels and "other criteria." As discussed in comment number 14, baseline criteria (for soils only) and background (concrete, asphalt, and other building components) will be used for closure criteria.</p> <p><u>Ecology Requirement:</u> Clarify the text accordingly.</p> <p>DOE-RL/WHC Response No. 1: The text will be revised in accordance with the information provided in response numbers 1, 12, and 14.</p> <p>DOE-RL/WHC Response No. 2: The paragraph starting on page 3, line 27 will be deleted. The paragraph starting on page 3, line 24 will be changed as follows.</p> <p>"A list of potential contaminants at the 303-K Facility and action levels are provided in Table 7-1. The analytical results of Table 7-1 will be compared to local background threshold concentrations and health-based concentration limits as action levels."</p>
36.	<p><u>Page 7-14, line 1.</u> The text describes baseline soil sampling that will occur within the 300-FF-3 Operable Unit and near the 303-K Facility, however, no detail has been given.</p> <p><u>Ecology Requirement:</u> Exact soil sampling locations are required for the baseline sampling program. Provide a map with the appropriate level of detail necessary to accurately show the proposed baseline sampling locations.</p>

THE 303-K RADIOACTIVE MIXED-WASTE STORAGE FACILITY CLOSURE PLAN
NOD RESPONSE TABLEJanuary 24, 1991
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No.	Comment/Response
	<p>DOE-RL/WHC Response No. 1: A set of criteria for baseline values is currently under development in the 300 Area. This set of criteria is designed to ensure that the locations for baseline sampling will provide an accurate representation of local conditions. After the criteria have been developed, sampling locations will be selected and presented to Ecology. An appendix will be added to the closure plan with the baseline location criteria and the results of the baseline sampling.</p>
	<p><u>Ecology Response No. 1:</u> The DOE-RL/WHC are developing a set of criteria for baseline values in the 300 Area.</p>
	<p><u>Ecology Requirement:</u> The appropriate criteria is area background (see comment number 12). A plan for determining these values must be submitted to Ecology; it should include at least the sampling plan, a quality assurance/quality control plan, and a timetable for this effort. This plan may be submitted under separate cover and used for treatment, storage, and/or disposal units throughout the 300-FF-3 Operable Unit.</p>
	<p>DOE-RL/WHC Response No. 2: Local background threshold values will be based on soil samples obtained at ten locations within the 300-FF-3 Operable Unit. Samples will be taken at the surface, at one foot, and at two feet at each location. When the sample locations have been determined, they will be included in the closure plan. Local background samples will not be taken in places of obvious contamination from past operations conducted in the 3000 Area, however, any general contamination (if present) from past operations would be included. If general or source contamination exists, it would be from past practice operations and not from operations conducted in the 304 Facility. The Tri-Party Agreement states source contamination will be evaluated and remediated under the CERCLA/RI/FS process.</p>
	<p>The local background sample analyses results will be analyzed statistically, using the tolerance interval test, to determine if the chemical concentrations from each sample are from a "hot spot." The purpose of the tolerance interval approach is to define a concentration range from local background data, within which a large proportion of the monitoring observations should fall with high probability. Any "hot spots" would fall outside of this range and not be included in the determination of the local background threshold (the initial action level).</p>

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No.	Comment/Response
37.	<p><u>Page 7-14, line 16.</u> The text discusses the location for the soil sampling. The proposed area is to be within the boundary of the 303-K Facility. This is unacceptable. Baseline cannot be established from the treatment, storage, and/or disposal unit itself. Alternate locations must be provided.</p> <p><u>Ecology Requirement:</u> Locate and propose specific concrete and asphalt sampling locations which are not located within the boundaries of the 3030-K Facility and not impacted by past practices.</p> <p>DOE-RL/WHC Response No. 1: See the discussion of concrete and asphalt baseline sampling in response number 14.</p> <p><u>Ecology Response No. 1:</u> Concrete and asphalt samples obtained within a treatment, storage, and/or disposal unit will not be accepted for determination of background contamination values.</p> <p><u>Ecology Requirement:</u> Refer to comment number 14.</p> <p>DOE-RL/WHC Response No. 2: Asphalt and concrete samples will be handled in the same manner. See response number 14.</p>
49.	<p><u>Page 7-27, line 39.</u> The text states that a health and safety plan "will" be developed for the 303-K Facility sampling. This plan must be developed prior to approval of this plan.</p> <p><u>Ecology Requirement:</u> Include the site safety plan in this document.</p> <p>DOE-RL/WHC Response No. 1: The 303-K Facility Health and Safety Plan will be included in the closure plan. This plan is titled <i>Hazardous Waste Operation Permit</i> and will be prepared in accordance with EII 2.2, <i>Preparation of Hazardous Waste Operations Permit</i>.</p> <p>DOE-RL/WHC Response No. 2: A Site-Wide Health and Safety Plan is being prepared and will be referenced in the closure plan. In addition, the 303-K Facility specific health and safety plan will be prepared prior to sampling and added to the closure plan at that time. This plan is titled <i>Hazardous Waste Operation Permit</i> and will be prepared in accordance with</p>

THE 303-K RADIOACTIVE MIXED-WASTE STORAGE FACILITY CLOSURE PLAN
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No. _____ Comment/Response _____

EII 2.2, *Preparation of Hazardous Waste Operation Permit.*

50. Page 7-28, line 12. The text references methods in this plan for containerizing rinse water and excess samples, etc., but does not give a citation.

Ecology Requirement: Give the appropriate reference citation for the proposed methodology.

DOE-RL/WHC Response No. 1: Disposal procedures of unknown or suspect waste materials are controlled by EII 4.2, *Interim Control of Unknown, Suspected Hazardous and Mixed Waste.* A summary of this information will be included in the text.

DOE-RL/WHC Response No. 2: Disposal procedures of unknown or suspect waste materials are controlled by EII 4.2, *Interim Control of Unknown, Suspected Hazardous and Mixed Waste.*

Waste materials are designated as unknown waste when:

- Criteria for suspected hazardous waste is not met
- When accurate field readings are suspect.

Waste material will be designated as suspected hazardous waste based upon process knowledge of material that is known to have been discharged to the area under investigation, provided that:

- Direct instrumentation reading of organic vapor in excess of 10 ppm above background levels
- pH is less than 3 or greater than 12.

Unknown waste drums will be moved to a collection area until laboratory analysis and final designation. Excess sample material and decontamination fluids (rinse water) will be containerized in 55-gallon drums. Materials (rags, personal protective equipment, etc.) will be designated with the waste it contacts.

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NOD RESPONSE TABLE

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- | No. | Comment/Response |
|-----|--|
| 51. | <p><u>Page 7-28, line 16.</u> The text discusses the disposal of material within a 90-day period. The "90-day clock" starts upon generation of the waste. Excessive time for sampling and analysis time will not be allowed as an excess for storing waste onsite for greater than 90 days.</p> <p><u>Ecology Requirement:</u> Change the text accordingly.</p> <p>DOE-RL/WHC Response No. 1: Text will be modified to read "If the contaminants are found to be hazardous, arrangements will be made for proper offsite disposal of stored material within a 90-day period. The 90-day period will begin when the material is designated."</p> <p><u>Ecology Response No. 1:</u> The DOE-RL/WHC proposes revising the text to state, "The 90-day period will begin when the material is designated." As previously stated, the 90-day clock begins at the time of generation; counting the 90-day period from the time of designation is likely to result in noncompliance.</p> <p><u>Ecology Requirement:</u> Revise the text to state, "The 90-day period will begin when the material is <u>generated</u>."</p> <p>DOE-RL/WHC Response No. 2: Text will be modified to read "These 55-gallon steel containers will be stored in a designated area at the dangerous waste site until each container is full. When the container is full, the contents will be tested for dangerous waste. If the contents are found to be dangerous, arrangements will be made for proper disposal of the materials. The disposal will take place within a 90-day period after a container is full."</p> <p>According to WAC 173-303-200(2)(a)(b)(c) and EII 4.2, the 90-day accumulation start date begins the day a waste is first generated or the day a quantity of suspected hazardous waste is being accumulated in containers in a storage location equals 55 gallons.</p> |
| 53. | <p><u>Page 7-28.</u> The text briefly describes the training courses required for the 303-K Facility closure activities. This is not adequate.</p> <p><u>Ecology Requirement:</u> Describe the training course contents and list the training required for each job classification.</p> |

THE 303-K RADIOACTIVE MIXED-WASTE STORAGE FACILITY CLOSURE PLAN
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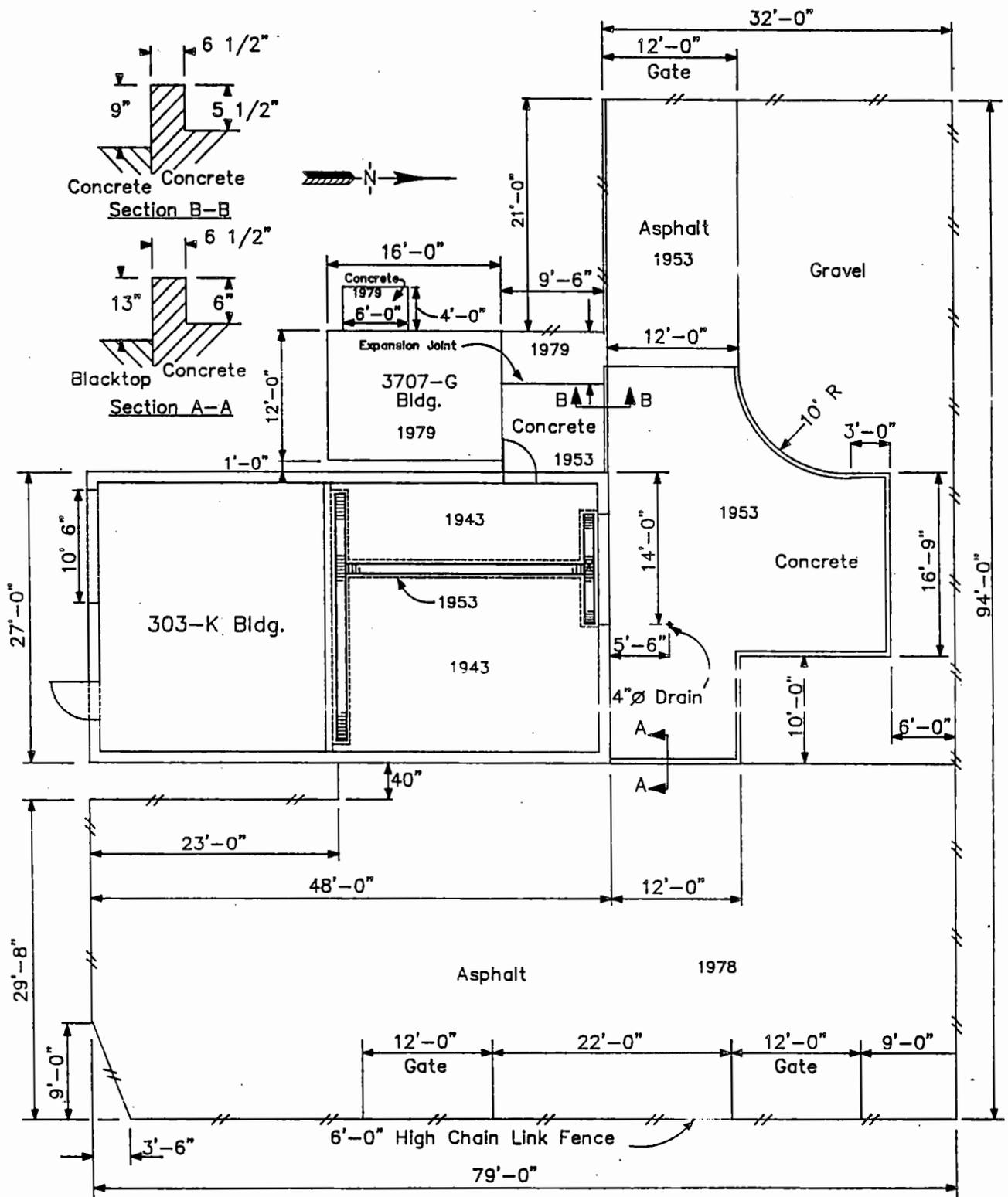
No.	Comment/Response
	<p>DOE-RL/WHC Response No. 1: The list of training procedures provided is adequate for this closure plan.</p>
	<p><u>Ecology Response No. 1:</u> Although Ecology requested information regarding training, the DOE-RL/WHC states that the information provided is, "adequate for this closure plan." The information presented is not adequate.</p>
	<p><u>Ecology Requirement:</u> Describe the course contents and list which training is required for individual job classifications.</p>
	<p>DOE-RL/WHC Response No. 2: The following text, table, and appendix will be added to the closure plan in the appropriate place.</p>
	<p>"All personnel at Westinghouse Hanford involved with the closure procedure of the 303-K Facility, will receive a level of dangerous waste training commensurate with their position. Personnel are generally placed into two job categories, Operations Manager and Supervisors (OM), and Nuclear Operators (NO).</p>
	<ul style="list-style-type: none"> • The OM is responsible for supervising, coordinating, and directing the activities of NO. • The NO is responsible for sampling, packaging, and handling of dangerous waste, nonradioactive, as well as radioactive material.
	<p>Table 7-4 (attached) contains a matrix that relate job categories to the individual training course. Appendix __ (attached) contains brief descriptions of selected training courses, including descriptions of the target audience, instructional technique, evaluation method, length of course, and frequency of retraining."</p>
56.	<p><u>Page 7-30, Section 7.6.</u> The text discusses the possibility of using an "interim cover." Only potential materials are discussed for this cover. This is not adequate.</p>
	<p><u>Ecology Requirement:</u> Specify the cover materials and design in detail. This must include design drawings and specifications.</p>

THE 303-K RADIOACTIVE MIXED-WASTE STORAGE FACILITY CLOSURE PLAN
NOD RESPONSE TABLE

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No.	Comment/Response
	<p>DOE-RL/WHC Response No. 1: The closure strategy for the 303-K Facility is clean closure. In the unlikely event the building and pads cannot be cleaned, the proposal is not to remove the building until CERCLA remediation; therefore, a cover design is not necessary. The first two sentences of this paragraph will be deleted.</p>
	<p><u>Ecology Response No. 1:</u> The DOE-RL/WHC state that in no case will a cover design be necessary. If it is determined after the sampling and analysis that it will be necessary for contaminated soils to be left in place until the CERCLA cleanup then a cover may be required; no other contaminated materials will be allowed to be left in place. This cover must be designed and approved prior to closure as part of the postclosure plan.</p>
	<p><u>Ecology Requirement:</u> Submit specifications for cover materials and design within the required postclosure plan. See comment number 62.</p>
	<p>DOE-RL/WHC Response No. 2: See the text to be added to Section 8.2, Postclosure Care, in response number 12.</p>
62.	<p><u>Page 8-2, Section 8.2.</u> A postclosure plan is not provided in the text. This is planned to be submitted with the CERCLA documents. This is not adequate.</p>
	<p><u>Ecology Requirement:</u> A postclosure plan must be provided.</p>
	<p>DOE-RL/WHC Response No. 1: A postclosure plan is not required unless the facility is not clean closed. If the soil is not clean closed, a section will be included in the closure plan describing the interim stabilization and care prior to remediation under the CERCLA RI/FS process.</p>
	<p><u>Ecology Response No. 1:</u> The DOE-RL/WHC state that they will not submit a postclosure plan. A postclosure plan is required, it should be presented in the form of an additional chapter to the closure plan with appendices as appropriate.</p>
	<p><u>Ecology Requirement:</u> A postclosure plan that provides for management of the unit within the CERCLA cleanup must be prepared and submitted to Ecology.</p>

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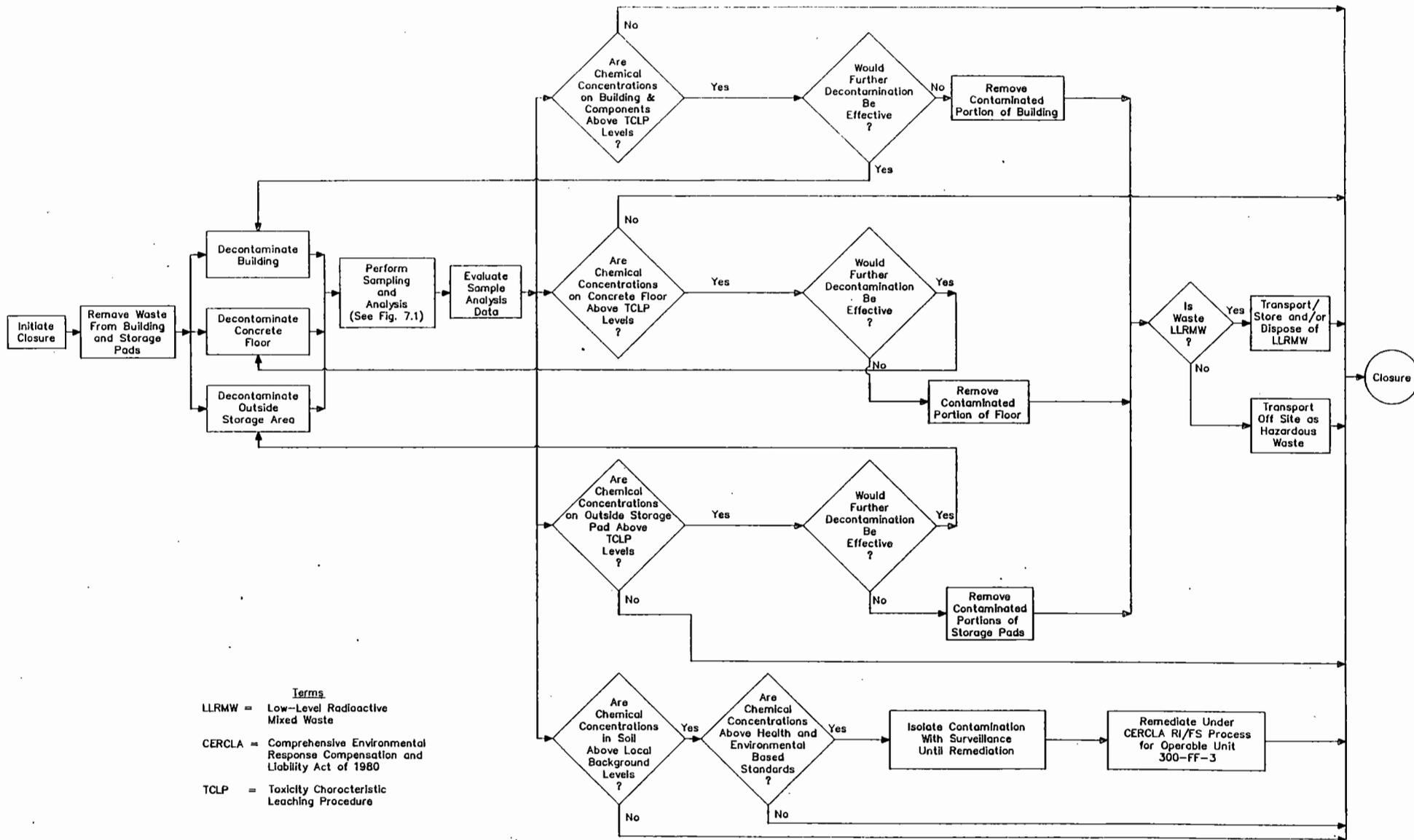
Dates Indicate Year of Installation of Surface Material.

Table _____. Materials Known to be Used or Stored in 303-K Building from 1953 to 1977.

<u>Process</u>	<u>Materials</u>
Radioactive decontamination of used aluminum spacers. (All used solutions and rinse water were discharged to the process sewer. Was known to contain small amounts of Zn-65, Zr-95, Nb-95, Sc-46, Fe-59, Co-60 and Co-58.)	Sodium hydroxide, NaOH. Sodium nitrate, NaNO ₃ .
Radioactive decontamination of equipment. (All used solutions and rinse water were discharged to the process sewer. Was known to contain small amounts of uranium and thorium.)	Steam. *Sodium aluminate solution, NaAlO ₂ . *Turco Aluminetch #2. *Diversey #202 Aluminum Cleaner. *American Equipment & Supply, All Purpose Synthetic Cleaner. *Diversey RX-1288. *Turco Alkaline Rust Remover. *Drums of unknown caustic material.

*See Table ____ for spectrochemical analysis and pH.

0
7
0
0
0
0
2
1
9



Terms
 LLRMW = Low-Level Radioactive Mixed Waste
 CERCLA = Comprehensive Environmental Response Compensation and Liability Act of 1980
 TCLP = Toxicity Characteristic Leaching Procedure

Table 7-4. Company-General Training Matrix.

Course	Target Audience		
	Type	OM	NO
Generator Hazards Safety Training	I	X	X
Hazardous Waste Worker Safety Training	I	X	X
Hazardous Waste Worker Safety Training, Refresher	C	X	X
Hazardous Materials/Waste Job Specific Training	I	X	X
Scott SKAPAK MSA PAPR	C	X	X
Self-Contained Breathing Apparatus (SCBA) Training	C	X	X
Radiation Safety Training	C	X	X
On-the-Job Training	C	X	X

OM - Operations Manager & Supervisors
 NO - Nuclear Operators
 I - Introductory Course
 C - Continuing Course
 X - Required Course

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B.1 COMPANY-GENERAL RULES

Title: Generator Hazards Safety Training

Description: Provides the dangerous material/waste worker with the fundamentals for safe use and disposal of dangerous materials.

Target Audience: Dangerous material and waste workers.

Technique: Classroom

Evaluation: Written Test

Length: 4 Hours

Frequency: 24 Months

Title: Hazardous Waste Worker Safety Training

Description: Provides the dangerous waste worker with the fundamentals of safety when working with dangerous waste.

Note: This course fulfills training requirements of 29 CFR 1910.120 requiring dangerous waste training of workers at all treatment, storage, and/or disposal facilities regulated under RCRA.

Target Audience: Dangerous material and waste workers.

Technique: Classroom and on-the-job training

Evaluation: Written Test

Length: 24 Hours

Frequency: Not Applicable

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Title: Hazardous Waste Worker Safety Training Refresher

Description: Provides the dangerous waste worker with a refresher in the fundamentals of safety when working with dangerous waste.

Note: This course fulfills training requirements of 29 CFR 1910.120 requiring dangerous waste training of workers at all treatment, storage, and/or disposal facilities regulated under RCRA.

Target Audience: Dangerous material and waste workers.

Technique: Classroom

Evaluation: Written Test

Length: 8 Hours

Frequency: 12 Months

Title: Hazardous Material/Waste Job-Specific Training

Description: Provides job-specific dangerous material/waste information. Two checklists may be obtained from safety training to help the supervisor/manager through this session with each employee.

Note: Not a classroom presentation--supervisor conducts this exercise with each employee using the checklists.

Target Audience: Employees who complete generator hazards safety training

Technique: On-the-job training

Evaluation: On-the-job training checklist

Length: Average - 2 Hours

Frequency: 12 Months

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9 1 1 2 1 9 0 0 3 7 5

Title: Scott SKAPAK MSA PAPR

Description: This class is designed to instruct employees in the proper use of the Scott "SKAPAK" for entry, exit or work in conditions immediately dangerous to life and health and to instruct employees to recognize and handle emergencies. This class also includes instructions in the use of MSA PAPR.

Target Audience: General, Safety, QA, OPS/OPRS, Management, Maintenance Engineering.

Technique: Classroom

Evaluation: Practical exam

Length: Approximately 2 Hours

Frequency: 12 months.

Title: Self-Contained Breathing Apparatus (SCBA) Annual Qualification

Description: Provides instructions in the proper use of a pressure-demand respirator in which breathing air is supplied from a cylinder carried on the user's back. The SCBA are typically used for emergency response situations in an atmosphere that is immediately dangerous to life or health.

Target Audience: General, Safety, OPS/OPRS, Maintenance.

Technique: Taught in a classroom using a slide projector and overhead.

Evaluation: Written and Practical Test

Length: Approximately 4 Hours

Frequency: 12 months.

Title: Radiation Safety Training

Description: A practical dress/undress demonstration is also required. Instructs radiation workers in the fundamentals of radiation protection and the proper procedures for monitoring exposures (ALARA). Training includes knowledge of the acute and chronic effects of exposure to radiation risks associated with occupational radiation exposure, mode of exposure, protective measures, instrumentation, monitoring programs, contamination control, personnel decontamination, warning signs and alarms, and responsibilities of employees and managers.

Target Audience: Radiation workers as defined in WHC-CM-4-10.

Technique: Taught in a classroom using a white board, appropriate audio/visual equipment.

Evaluation: Written exam and practical dress/undress

Length: Approximately 7 hours

Frequency: 24 months (Retraining under Course Number 020003).

Title: On-the-Job Training

Description: On-the-job training session under the supervision of an experienced person before full responsibilities may be assumed. In addition, all personnel on the hazardous waste site are required to have reviewed this Waste Sampling and Analysis Plan.

Target Audience: Nuclear Operators and Operations Management.

Technique: Classroom and on-the-job training.

Evaluation: Practical exercise and on-the-job training checklist.

Length: 40 Hours.

Frequency: 12 Months

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CORRESPONDENCE DISTRIBUTION COVERSHEET

Author: D. L. Banning, 376-1057 Addressee: R. D. Izatt, DOE-RL Correspondence No.: 9100239 R2

Subject: ADDITIONAL COMMENT RESPONSES FOR THE 303-K RADIOACTIVE MIXED-WASTE STORAGE FACILITY CLOSURE PLAN NOTICE OF DEFICIENCY RESPONSE TABLE

INTERNAL DISTRIBUTION

Approval	Date	Name	Location	w/att
		Correspondence Control	A3-01	X
		President's Office	B3-01	
x <i>DZB</i>	<i>2/1/91</i>	D. L. Banning	H4-57	X
		R. J. Bliss	B3-04	
		L. C. Brown	H4-51	X
		R. A. Carlson	H4-55	X
x <i>CGB</i>	<i>2/4/91</i>	C. J. Geier	H4-57	X
		K. R. Jordan	B3-51	X
		R. E. Lerch	B2-35	X
		L. L. Powers	B2-35	X
x <i>FAR II</i>	<i>2/1/91</i>	F. A. Ruck III	H4-57	X
		W. A. Skelly	H4-55	X
		T. B. Veneziano	B2-35	X
x <i>DJW</i>	<i>2/4/91</i>	D. J. Watson	X0-41	X
		E. A. Weakley	L6-28	X
		B. D. Williamson	B3-15	X
		EDMC/AR	H4-22	X
		DLB/LB	H4-57	X

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91121200177

CORRESPONDENCE DISTRIBUTION COVERSHEET

Author

Addressee

Correspondence No.

D. L. Banning, 376-1057

P. T. Day, EPA
T. L. Nord, Ecology

Incoming: 9100774
Reference #9100239 R2

Subject: ADDITIONAL COMMENT RESPONSES FOR THE 303-K RADIOACTIVE MIXED-WASTE STORAGE FACILITY CLOSURE PLAN NOTICE OF DEFICIENCY RESPONSE TABLE

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		R. A. Carlson	H4-55	
		C. J. Geier	H4-57	
		K. R. Jordan	B3-51	
		R. E. Lerch (Assignee)	B2-35	
		L. L. Powers	B2-35	
		F. A. Ruck III	H4-57	
		W. A. Skelly	H4-55	
		T. B. Veneziano	B2-35	
		D. J. Watson	X0-41	
		E. A. Weakley	L6-28	
		B. D. Williamson	B3-15	
		EDMC/AR	H4-22	
		DLB/LB	H4-57	

Attachment same as
Letter Number 9100239 R2



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