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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

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August 22, 2002

Mr. James E. Rasmussen
Office of River Protection
United States Department of Energy
P.O. Box 550, MSIN: H6-60
Richland, Washington 99352

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Dear Mr. Rasmussen:

EDMC

- Re: (1) Letter, J.E. Rasmussen, ORP, to M.A. Wilson, Ecology, "Submittal of M-23-23 Single-Shell Tank (SST) System Surveillance and Monitoring Functions and Requirements (F&R) Document for the State of Washington Department of Ecology (Ecology) Approval," 02-OMD-031, dated June 13, 2002.
- (2) Letter, J.J. Lyon, Ecology, to J.A. Rasmussen, ORP, "Review of Functions and Requirements Document RPP-9937, Revision A, Hanford Federal Facility Agreement and Consent Order Milestone M-23-23 Single Shell Tank System Leak Detection and Monitoring Document," dated July 26, 2002.

Thank you for submitting the M-23-23, "Single Shell Tank (SST) System Surveillance and Monitoring Functions and Requirements (F&R)" (RPP-9937, Revision A) document. Ecology considers the surveillance and monitoring of the SSTs, specifically RPP-9937, as an essential step in the United States Department of Energy (USDOE)-Office of River Protection's (ORP) mission to safely store, retrieve, and treat Hanford's tank waste and close the SST System.

In accordance with Hanford Federal Facility Agreement and Consent Order (HFFACO) Milestone M-23-23, the F&R document is to be submitted as a primary document. As such, Chapter 9 of the HFFACO Action Plan requires the lead regulatory agency to respond within forty-five (45) days or such extended period of time as the lead regulatory agency specifies by written notice. Ecology received the report on June 13, 2002, and on July 26, 2002, requested a thirty (30) day extension to complete the review of this document. This letter constitutes Ecology's response to USDOE's submittal.

Ecology considers the F&R document insufficient to meet the milestone requirements. Specifically, the report:

1. Failed to identify "the need for detection and monitoring system upgrades so as to achieve compliance with regulatory and DOE requirements." The report has made incorrect assumptions regarding Interim Stabilization and the requirements for Leak Detection (see

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attached Review Comment Record [RCR]). As defined, interim stabilization of a tank is not a valid criterion to evaluate the need or frequency of leak detection.

2. Has failed to either identify or include USDOE's "proposed change process for modifying specific component leak-detection instrumentation as component conditions (or instrumentation) changes," as required in your document, RPP-9645, Rev. 0 and M-23-22-T01.
3. Failed to specifically address, or propose, an implementation schedule for programmatic improvements or changes. Your submittal of the change control form stating "Complete negotiations" fails to meet the intent of the milestone. M-23-23 states that, "The...document shall also contain...a proposed implementation schedule for upgrades and programmatic changes, and a corresponding draft agreement change request." The report should prioritize, and propose a schedule for SST leak detection and monitoring changes. The draft HFFACO agreement submitted did not correspond to the proposed implementation schedule for the upgrades (or programmatic changes) that you identified.
4. Leak detection and monitoring requirements apply to tank systems until they are closed per Washington Administrative Code (WAC) 173-303-610. Any tank system component that is used to treat, store, or dispose of waste is subject to all regulatory requirements for tank systems including leak detection and/or closure. Therefore, USDOE's distinction between tank system components on the basis of whether they "actively" store waste conflicts with regulatory requirements and cannot be used to exempt any tank system component from leak detection requirements. RPP-9937 must be revised accordingly.
5. Some SSTs and components have no effective in-tank leak detection. USDOE has failed to demonstrate per 40 Code of Federal Regulations (CFR), Subpart J, 265.193(c) (3) and/or (d) (4) that existing and available leak detection technologies do not exist to accurately detect a leak in the SST System. Also, certain external tank leak detection technologies have the potential to detect leaks in the several hundred gallon range. To evaluate the need for upgrades, a description of existing and available leak detection technologies that were, or could, be used to detect a leak, should be addressed in RPP-9937.
6. A table with columns, correlating one to another, detailing and clarifying the leak detection and monitoring system for SSTs, IMUST's, vessels, and cells in miscellaneous structures and the proposed up-grades should be created. This should include a table with system status, detection mechanism, monitoring frequency, effectiveness, necessary improvements, and schedule for improvements.
7. The report should include a discussion of integrations with other ORP programs, with consideration of: (1) The on-going Hanford site research, evaluating alternative leak detection and monitoring systems; and (2) the SST Retrieval Program. Prior to the establishment of a proposed schedule, USDOE should consider alternative leak detection and monitoring systems and their applicability to the retrieval efforts. USDOE should include information and data to support the path forward for up-grades and programmatic changes.

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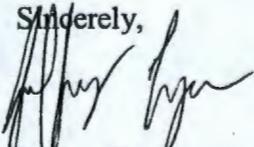
If existing systems are not compliant, USDOE and Ecology will negotiate a schedule for achieving compliance, and any additional measures needed to limit environmental impacts in the interim. Complete leak detection for all SST Systems will take time and money. A prioritized schedule for compliance should be generated. At a minimum, this proposed schedule should take into account tank retrieval sequence, confirmed status of systems, further characterization of unknown systems, vadose and groundwater information to assist in determining high and low risk infiltration areas, etc.

This milestone, which establishes the leak detection and monitoring functions and requirements for the SST System, is a step in creating safe storage of tank waste on the Hanford site. By your statement in the executive summary, the submitted document does not provide information to assure safe storage of wastes in the SSTs. It is our intention to ensure safe storage, and without adequate leak detection and monitoring, safe storage is jeopardized.

To assure that Ecology understands and agrees with your document assumptions and that the documents you submit meet the need of all parties, it is recommended that you initiate a cooperative dialogue and maintain adequate concurrence throughout the development and completion of these documents. The revision of RPP-9937 must satisfy all the concerns, issues, and actions described in the attached RCR.

Please contact me at (509) 736-3098 within one week to schedule a meeting for discussion of your concerns and suggestions, and begin our resolution process.

Sincerely,



Jeffery Lyon
Tank Waste Storage Project Manager
Nuclear Waste Program

sdb

cc: Dave Bartus, EPA
John Iani, EPA
Nick Ceto, USDOE
Ellen Mattlin, USDOE
Woody Russell, USDOE-ORP
Deb Williams, USDOE-ORP
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Jeff Hertzell, FH
Owen Kramer, FH
Ron Morrison, FH
John Cox, CTUIR
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Administrative Record: TWRS

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5. Document Number(s)/Title(s) RPP-9937 submitted per HFFACO Milestone M-23-23	6. Program/Project/ Building Number	7. Reviewer(s) Heggen (DH), Caggiano (JC), Wilson (BW), Brown (MB), DeWitt (KDW)	8. Organization/Group Nuclear Waste Program, Ecology	9. Location/Phone (509) 736-3098
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17. Comment Submittal Approval: 10. Agreement with indicated comment disposition(s) 11. CLOSED

Organization Manager (Optional)

Date

Reviewer/Point of Contact

Date

Reviewer/Point of Contact

Author/Originator

Author/Originator

12. Item	13. Comment(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/ resolve the discrepancy/problem indicated.)	14. Hold Point	15. Disposition (Provide justification if NOT accepted.)	16. Status
1.	<p>Section 4.1.1, item (2), Basis, links the ability to respond to a leak (specifically interim stabilization) to the regulatory requirement for leak detection.</p> <p>There is no regulatory language in either state or federal codes that provide for reduced leak detection due to reduced ability to respond to a detected leak. Each is a separate requirement. Interim stabilization should not be considered the ONLY possible response to leak, rather it is an intermediary step towards closure. In the case of a catastrophic tank failure, it is possible other actions may be needed</p>			

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	(i.e. retrieval, grout curtains, chemical stabilization, capping, engineered barriers, etc). Also, there are many reasons to monitor for leaks (i.e. impact to groundwater, worker safety, etc). For these reasons it is unacceptable for USDOE to link regulatory requirements for leak detection to regulatory requirements to respond to a leak. RPP-9937 is unacceptable as written and must be revised to delete leak response as a requirement for maintaining a leak detection system. (BW)			
2.	<p>Section B 4.0 of RPP-9937 advises that interim stabilization is the action to be taken in the event of a detected leak; therefore, an SST declared to be interim stabilized need not be provided with a leak detection system. Per this section, 102 of the 149 SSTs (68%) are not required to have leak detection monitoring. This section also states that tanks that have been interim stabilized contain less than 40K gallons of <u>drainable</u> liquid, therefore leak detection is no longer needed. The Interim Stabilization Criteria presented on page xii states that a SST system tank may be considered interim stabilized when up to 50K gallons of drainable liquids may remain in SSTs and up to 400 gallons may remain in "non single shell tanks."</p> <p>Leak detection requirements apply to tank systems storing hazardous waste until such systems are closed per RCRA requirements. Interim stabilization is an intermediary step towards RCRA tank closure and not an end-point unto itself. Also, there is no minimum leak amount in state or federal code that exempts a tank system from leak detection requirements. The regulatory requirement for leak</p>			

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	detection is to detect <u>any</u> leak. Therefore RPP-9937 must be revised to delete interim stabilization as the sole demonstration for reduced leak detection requirements and provide sufficient demonstration per 40CFR, Subpart J, 265.193(c)(3), (4) and (f) for reducing leak detection requirements. (BW)(MB)(DH)(JC)			
3.	RPP-9937 does not discuss whether SSTs that are interim stabilized in the future will also be considered exempt from leak detection monitoring. Therefore, for those tanks where interim stabilization is acceptable by Ecology for alternate leak detection requirements, RPP-9937 must be revised to describe the leak detection requirements for SSTs completing interim stabilization in the future. (BW)			
4.	Section B 4.0 describes the parameters beyond which leak detection would not be required for interim stabilized tanks (i.e. dry surface and no interstitial liquid above 24" from the bottom of a tank). However, the text lacks a discussion of what monitoring is in place to insure these parameters are maintained. Therefore RPP-9937 must be revised to describe the system in place to monitor and insure that conditions within each interim stabilized SST remain within the parameters for interim stabilization. (BW)			
5.	Definitions (page xii): This section defines "Interim Stabilization Criteria" and refers to procedure HNF-IP-0842. Section 3.1 of HNF-IP-0842 lists the steps to be taken to determine if a SST has been interim stabilized. In addition to pumping a SST to the specified limits a SST may be considered interim stabilized per this procedure if a major equipment failure has occurred, if engineering reviews			

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	<p>based on estimated waste volumes determine further pumping is not technically feasible or if cost/benefit analysis or ALARA concerns preclude further pumping. Also, interim stabilization criteria were based on older pump technology and it is likely that newer pumps would be able to retrieve additional tank liquids without the failure rates of the old pumps (i.e. Moyno down hole pump technology).</p> <p>Provide a listing of the 102 SSTs described in section B 4.0 which have been determined to be interim stabilized and no longer requiring leak detection by the following categories: 1) SSTs pumped to a final flow rate of 0.05 gpm and with less than 50K gallons of interstitial liquid remaining, 2) SSTs in which major equipment failure occurred resulting in interim stabilization, 3) SSTs in which calculated waste volumes determined interim stabilization had been completed and 4) SSTs in which engineer's evaluation determined that cost/benefit analysis, ALARA or other considerations resulted in completion of interim stabilization. Include the volumes of liquids remaining in each SST and an analysis of current (and developing) pump technology and the potential for application of such technologies to the SSTs. (DH)(BW)</p>			
6.	<p>Throughout RPP-9937 the term "active" is applied to tank system components determined by USDOE and its contractors to be used in support of various tank farm program functions (i.e. section 4.2). RPP-9937 then limits leak detection requirements to those components administratively determined by USDOE and its contractors to be "active" and exempts those components</p>			

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	<p>administratively determined to be "inactive" or "out-of-use" (i.e. section 4.3.2).</p> <p>Leak detection and monitoring requirements apply to tank systems until they are closed per WAC 173-303-610. Furthermore, any tank system component that is used to treat, stores or dispose of waste is subject to all regulatory requirements for tank systems including leak detection. Therefore USDOE's administrative determination of "active" is incorrect, conflicts with regulatory requirements and cannot be used to exempt any tank system component from leak detection requirements. RPP-9937 must be revised to clarify the regulatory meaning of active tank systems as described above. (JC)(BW)(MB)(DH)</p>			
7.	<p>Section 4.1.1 limits review of leak detection capability to those devices currently installed within the SST system. However, the regulatory reference to "existing detection technologies" includes all <u>existing and available</u> technologies.</p> <p>Currently installed leak detection equipment in the SSTs are limited at best, ineffective in many cases, and do not include all existing and available technologies. Some SSTs have no effective in-tank leak detection. Also, certain ex-tank technologies have the potential to detect leaks in the several hundred gallon-range. USDOE has failed to demonstrate per 40CFR, Subpart J, 265.193(c)(3) that existing and available leak detection technologies do not exist to accurately detect a leak in SSTs. Therefore, RPP-9937 is unacceptable as written and</p>			

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	must be revised to include a description of all existing and available leak detection technologies that could be used to detect a leak from SSTs. This description must include the current status of the USDOE's ex-tank LDM workshop down-select process. (DH)(BW)			
8.	<p>Section 3.0 divides the SST system into components governed by leak detection requirements and those components USDOE considers exempt from leak detection requirements.</p> <p>The ninth bullet on this page exempts the 242-S and T Evaporators from leak detection requirements based on their administrative status (i.e. standby/shutdown). However, these facilities have not been closed per RCRA requirements. Also, the Calendar Year 2001 Hanford Land Disposal Restrictions Report lists these facilities (in Appendix C, Pg C-15 of the 2001 LDR Report) as containing liquids and solids in process tanks that potentially may designate as mixed waste. The 2001 LDR Report includes a schedule (for CY 2004) to perform assessments of the storage status of the vessels within these facilities which would include quantification of liquid levels in vessels. Therefore, RPP-9937 must be revised to include the 242-S and T Evaporators as SST components requiring liquid level assessments to determine if leak detection will be needed. (BW)(JC)</p>			
9.	The number of Miscellaneous Underground Storage Tanks (MUSTs) provided in section 3.1.2 (19 MUSTs listed) does not correspond to either the number of MUSTs (40) reported to Ecology as administered by CHG during a March 2001 MUST inspection or the number of MUSTs (31) attributed to single-shell tank system in the			

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	monthly Tank Waste Summary Report (HNF-EP-0182). RPP-9937 must be revised to accurately list all MUSTs within the SST system including explanations for any discrepancies with HNF-EP-0182 and the SST Closure Plan (DOE/ORP-2001-18, Rev.0) and include plans for leak detection and monitoring for each MUST. (DH)(BW)			
10.	Section 3.1.4, (pg. 3-14) contains descriptions of three out-of-service facilities (244-TXR Vault, 244-UR Vault and 231-W-151 Vault) that are not monitored. The monthly Tank Waste Summary Report (HNF-EP-1087) lists the contents of 244-TXR as unknown; however, table B-44 indicates that the 244-UR and TXR tanks do not require monitoring. Page 3-13 states that records do not indicate if tanks in the 231-W-1512 vault receive monitoring. Ecology cannot be assured that tanks within these three vaults are empty; therefore, the waste must be characterized (265.199(a) or volumes measured. (MB)			
11.	<p>1) RPP-9937 lists catch tank 242-TA-R1 as an "inactive/out-of-use" catch tank (see appendix A, Pg A-6). Section 5.2.2 states that tanks in this category are only subject to leak detection requirements if interim stabilization requirements have not been met and if they are subject to intrusion. If these requirements have been met, the catch tank is subject only to visual monitoring once every five years as a "best management practice" or BMP, see section 4.1.1, B).</p> <p>A catch tank (241-TA-R1) is listed in table B-8, appendix B. However, Ecology believes this is a typographical error. Assuming tank 241-TA-R1 in appendix B actually corresponds to catch tank 242-TA-R1 listed in appendix A, this catch tank would be subject</p>			

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	<p>only to five-year monitoring as a BMP. The vault (242-TA) in which catch tank 242-TA-R1 is located is not listed in RPP-9937 at all (see section 3.1.6, pg 3-13 and appendix A, pg A-6).</p> <p>On August 1, 2002 Hanford Occurrence Report # RP-CHG-TANKFARM-2002-0083 was issued describing the discovery of ten feet of liquid within the 242-TA vault and that the 242-TA-R1 catch tank was floating off its foundation in the accumulated liquid.</p> <p>Considering this discovery, RPP-9937 must be revised to:</p> <ol style="list-style-type: none"> 1) explain why the 242-TA-R1 catch tank is listed in RPP-9937 but the 242-TA vault isn't. 2) explain and justify how the five year BMP monitoring frequency would support timely discovery of leaks within SST components, such as catch tanks and vaults, considering the findings of occurrence report # RP-CHG-TANKFARM-2002-0083. 3) describe what action will be taken per RPP-9937 requirements to address identification and removal of the liquid accumulated in the 242-TA vault considering that: a) the 242-TA vault isn't listed in RPP-9937, b) that, per leak response requirements of RPP-9937, the action to respond to a leak has already been taken (i.e. interim stabilization), and 3) per RPP-9937 leak detection isn't required for the 242-TA vault or its catch tank since the 242-TA-R1 catch tank is considered interim stabilized and not subject to intrusion. 4) confirm and correct the typo (listing of 242-TA-R1 catch tank in 			

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	<p>appendix A as 241-TA-R1 in appendix B).</p> <p>5) provide a listing of <u>all</u> catch tanks and <u>all</u> vaults in the SST system consistent with: a) the monthly Tank Waste Summary Report (HNF-EP-0182), b) SST Part A, c) the SST Closure Plan (DOE/ORP-2001-18, Rev. 0), and d) between all sections of RPP-9937 itself. This listing must include, in tabular form, the date of the most recent surveillance of liquid level within each catch tank and each vault, the volume and liquid level within each catch tank and each vault per most recent surveillance, a description of the surveillance methods and liquid level monitoring equipment in each catch tank and each vault, the frequency and method of liquid level monitoring in each catch tank and vault, and improvements to the surveillance and liquid level monitoring of each catch tank and vault sufficient to meet leak detection requirements of 40CFR, subpart J, 265.193(c)(3) and (4). (BW)</p>			
12.	<p>Section 3.1.4, Diversion Boxes (page 3-11, paragraph 2) states that diversion boxes receive transfer line drainage, thereby serving as containment for any drained liquid. Without knowledge of the status of secondary containment in every diversion box, Ecology cannot determine if they are compliant. Add text to explain which if any of them meet secondary containment requirements or what assessments will be done of their structures. (MB)</p>			
13.	<p>Table 3-2 (page 3-6) lists the date that a SST was declared a leaker and lists the waste type present in the tank at the time it was declared a leaker. The declaration may have occurred years after the tank leaked and thus the type of waste present in the tank may have been</p>			

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	different. For example, BX-102 is listed as being declared a leaker in 1971, but that's the date that waste spilled from an overfill in 1951 (U Recovery waste) actually reached a drywell where gross gamma logging detected the elevated gross gamma activity (incorrectly identified as Cs-137). There were probably also numerous leaks of various waste streams from piping feeding these tanks. This table is oversimplified and ought to be appropriately qualified. (JC)			
14.	Page 3-3, first paragraph, last sentence: Cascade lines were a major problem during historic tank farm operations because: a) the seal with the tank sidewall was often faulty and not liquid tight, b) lines became plugged leading to tank overfills (e.g., BX-102) and c) use of site-fabricated above ground transfer lines/equipment. Sludge accumulated in all tanks in a cascade, NOT just the first tank. Please correct. (JC)			
15.	Section 4.1.1 (page. 4-8, item 3, Requirement): Please explain how weekly monitoring satisfies the requirement to detect a leak within 24 hours. (JC)			
16.	Figure 4-3 (page 4-11): The first box indicates that there are 19 MUSTs holding a total of 8,260 gals. Simple division of 8,260 by 19 indicates that the average MUST contains 434 gals. Although some may be bigger, at least some must exceed 400 gallons. Explain and revise. (JC)			
17.	Section 4.1.3, 1, 2, Requirement (page 4-16): The basis for not requiring a response to a leak appears to be some internal procedure. Identify this procedure and justify its use for precluding leak			

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	detection. (JC)			
18.	<p>Section 5.1.1 Current Leak Detection & Monitoring; Pg 5-3: The last bullet on the page, "Groundwater Monitoring" states that groundwater monitoring requirements have been implemented through HFFACO Milestone 24-00 series.</p> <p>This is an inaccurate statement. Milestone M-24-00 has not been completed and the groundwater monitoring system in SST waste management areas is incomplete. Well installations per M-24-00 have been occurring at a pace that will take decades to complete. Further, a Compliance Monitoring Evaluation (CME) inspection completed by Ecology in December 2000 revealed serious deficiencies of the groundwater monitoring system in SST waste management areas (T & TX/TY waste management areas). These deficiencies have yet to be resolved.</p> <p>The original groundwater monitoring network was established when the groundwater flow direction, gradient, and water table were significantly different than at present. Consequently, some of the wells installed before 1995 and may now be either dry and/or no longer located up or down gradient. Additional groundwater monitoring wells have been constructed at SSTs since 1999 and some wells listed as active in 1999 are now dry because of the declining water table.</p> <p>Also, the SSTs are monitored under WAC 173-303-400 which</p>			

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	<p>references 40 CFR 265, Subpart F (interim-status standards). However, on page 5-4, the top three bullets reference a mix of final status and interim-status terminology. Under interim-status standards, those SST WMAs that have impacted groundwater go from indicator parameter monitoring to groundwater quality assessment monitoring. Five of the SST WMAs are in assessment monitoring status (WMAs B-BX-BY, S-SX, T, TX-TY and U). The SST system is proceeding directly to closure without applying for final status. Correct this information and make it current.</p> <p>Therefore, RPP-9937 must be revised to describe these limitations of the groundwater monitoring system as a component of a SST leak detection system while including current groundwater monitoring system data and configuration. (BW)(JC)</p>			
19.	Pg. 5-2, LOWs. What response occurs if there is a significant change in the profile in an LOW? Revise the document to clarify. (JC)			
20.	Pg. 5-3, Drywell Monitoring. The tool used to monitor drywells is a gross GAMMA logging tool that detects (or did detect when in operation) changes in the count rate from gamma-emitting radionuclides. Spectral gamma logging was performed as a baseline, and certain other wells were then re-logged. However, spectral gamma logging using the HPGe detector is not occurring on a regular basis. Some follow-on logging is conducted using an NaI tool. Please update and correct this information including a description of actions taken in response to a change in the logging profile? Please clarify what the response to such a change would be. (JC)			

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21.	<p>Appendix B, Pg. B-13. Drywells were historically logged with gross GAMMA logging systems to detect gamma-emitting radionuclides. Routine drywell monitoring ceased in 1994. Spectral gamma logging IS NOT routine; i.e., a baseline logging was performed in all accessible drywells and some follow-on logging has occurred. Some movement of gamma-emitting contaminants in the subsurface has been detected. What is being done for these cases? If you don't track this movement, then this is not monitoring. Please correct.</p> <p>Appendix B, Pg. B-13. State the limitations of drywell logging; i.e., the number, location, spacing and depth of boreholes, the tools used, the radius of investigation from the borehole, the frequency of logging, and the speed of the tool being moved in the borehole. Also include the limitation that this is a monitoring technique, NOT an effective leak detection technique that can detect a leak within 24 hrs except under the most unusual of circumstances. (JC)</p>			
22.	<p>Page 5-5, third bullet: Missing are details relating to the accuracy, error margins, all measurement parameters, etc. for the material (mass) balance monitoring process. Provide additional text describing the missing information. (DH)</p>			
23.	<p>Page 5-6, Section 5.1.3: The first paragraph mentions different interim stabilization requirements yet fails to describe the differences. Provide additional text and/or table comparing the old and new interim stabilization requirements. (DH)</p>			
24.	<p>Pg. 5-8, paragraph 2. Clarify the 40,000 gallons of waste; i.e., is it total waste, liquid waste, or some other category? (JC)</p>			
25.	<p>Pg. 5-8, paragraph 2. Liquid intrusion averaging 1,000 gal/yr is</p>			

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12. Item	13. Comment(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/ resolve the discrepancy/problem indicated.)	14. Hold Point	15. Disposition (Provide justification if NOT accepted.)	16. Status
	unacceptable. Provide a description of what is being done to control this problem? (JC)			
26.	Pg. 5-8, paragraph 2. Provide a publication date and a title/summary of RPP-10435, as it seems integral to the argument being made here. (JC)			
27.	<p>Table 6-2 shows a single cost that is reflected in Appendix C for tanks readily accessible through risers. Estimates of the cost of conducting a liquid waste volume assessment are grossly deficient. No attempt is made to address the costs if tanks have constraints to entry. Section 6.0 contains a single paragraph that addresses costs for ENRAF installation; the total cost shown (\$144K) does not match the estimate for installation in tank C-106 (\$132K). No supporting data are provided for either of the costs shown. The information provided is grossly insufficient for Ecology to evaluate the bases of the costs or to determine the impacts on compliance should inadequate funding be received for FY03.</p> <p>No identification of funding sources is made, even at the PBS level. Ecology cannot be assured that the funds will be available in FY03 because ORP is constrained by DOE HQ from revealing details of funding. Nothing assures this reviewer that the work will actually get done or that it will have any source of assured funding. The information is therefore unacceptable as submitted. (MB)</p>			
28.	The schedules provided in Section D for installation of an ENRAF and an LOW are not supported by detailed cost information in Appendix C. The schedules show installation in the first quarter of			

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	Federal Fiscal Year 2003 (Oct-Dec 2002). It appears from the schedules that all of the installations will be completed by the end of December 2002. The locations of the C-106 tank and the vault tanks would seem to imply that multiple crews will be conducting the installations. Without planning data to the contrary, Ecology will expect the entire volume measurement/ENRAF and LOW installations effort to be completed by 1 January 2003. Cost information should be provided for each installation then summed with ALL assumptions included. (MB)			
29.	The schedules in section D include activities such as mockup/training. Ecology cannot determine if such training is done for every installation or once. Without such information, Ecology cannot gauge the cost of installation accurately. (MB)			
30.	Executive Summary, Page iv, last para: Strike the statement "...monitoring for safe storage, ...are beyond the scope of this document." Part of the purpose of this document is to document "monitoring" activities for the SSTs. Monitoring for unfit-for-use underground storage tanks shall include monitoring for safe storage. Revise this document to include and describe safe storage monitoring. (DH)			
31.	Page 1-2, Last paragraph: Typo. Last sentence should read "This F&R document supports..." (DH)			
32.	Page 1-7, Fig. 1-4. Correct this figure to include a schematic of construction of tanks in the SX and A Tank Farms where the intersection of the sidewall and bottom is orthogonal, NOT dished.			

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12. Item	13. Comment(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/ resolve the discrepancy/problem indicated.)	14. Hold Point	15. Disposition (Provide justification if NOT accepted.)	16. Status
	Also, add information as to which tanks farms include tanks of the different capacities and constructions shown. (JC)			
33.	Page 6-1, Section 6.0, third paragraph: Explain why it costs \$79,000 to connect an ENRAF to the TMACS. (DH)			
34.	Pages 6-2 – 6-5, Tables 6-1, and 6-2. What is the basis of these cost estimates? (JC)			
35.	Page A-4 to A-5: Missing is a description of the destination of any liquid drainage for each At-Tank Pit. Provide the missing information. (DH)			
36.	Page A-5: Missing is a description of the status of each "Active" SST transfer line. Provide the missing description, including the nature of any secondary containment, the destination of any secondary containment drainage, and the specific type of leak detection used. (DH)			
37.	Section 3.0: Define how much and what kinds of additions were added to enhance storage life and is this still the best management practice. (KDW)			
38.	Section 3.0: Describe what types of heat producing radionuclides were removed, which were left and why. (KDW)			
39.	Section 4.3.2: List tank farm procedure for daily inspections. (KDW)			
40.	Section 5.1.2: How and why was the 30 minute response time for manual shutdown by operator determined. Is this the only fail safe. (KDW)			

