

APR 24 2000

ENGINEERING DATA TRANSMITTAL

Page 1 of 1  
1. EDT 629527

2. To: (Receiving Organization) Distribution		3. From: (Originating Organization) Readiness to Proceed		4. Related EDT No.: N/A	
5. Proj./Prog./Dept./Div.: Tank Waste Retrieval and Disposal		6. Design Authority/Design Agent/Cog. Engr.: R. D. Wojtasek		7. Purchase Order No.: N/A	
8. Originator Remarks: Document supercedes HNF-2020				9. Equip./Component No.: N/A	
				10. System/Bldg./Facility: N/A	
				12. Major Assm. Dwg. No.: N/A	
11. Receiver Remarks:		11A. Design Baseline Document? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		13. Permit/Permit Application No.: N/A	
				14. Required Response Date: N/A	

15. DATA TRANSMITTED					(F)	(G)	(H)	(I)
(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	Approval Designator	Reason for Transmittal	Originator Disposition	Receiver Disposition
1	RPP-6224		0	Evaluation Criteria to Deliverables Crosswalk for the Tank Farm Contractor	N/A	2		

16. KEY			
Approval Designator (F)	Reason for Transmittal (G)		Disposition (H) & (I)
E, S, Q, D OR N/A (See WHC-CM-3-5, Sec. 12.7)	1. Approval 2. Release 3. Information	4. Review 5. Post-Review 6. Dist. (Receipt Acknow. Required)	1. Approved 2. Approved w/comment 3. Disapproved w/comment 4. Reviewed no/comment 5. Reviewed w/comment 6. Receipt acknowledged

17. SIGNATURE/DISTRIBUTION (See Approval Designator for required signatures)											
(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN	(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN
		Design Authority									
		Design Agent									
2	1	Cog. Eng. R.D. Wojtasek	<i>RD Wojtasek</i>	4/22/00							
2	1	Cog. Mgr. C.R. Hutchins	<i>CR Hutchins</i>	4/22/00							
		QA									
		Safety									
		Env.									

18. <i>RD Wojtasek</i> RD Wojtasek Signature of EDT Originator Date 4/22/00		19. <i>RD Wojtasek</i> RD Wojtasek Authorized Representative for Receiving Organization Date 4/22/00		20. <i>RD Wojtasek for</i> CR Hutchins Design Authority/Cognizant Manager Date 4/22/00		21. DOE APPROVAL (if required) Ctrl No. N/A <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/comments <input type="checkbox"/> Disapproved w/comments	
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# **Evaluation Criteria to Deliverables Crosswalk for the Tank Farm Contractor**

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

**CH2MHILL**  
*Hanford Group, Inc.*

Richland, Washington

Contractor for the U.S. Department of Energy  
Office of River Protection under Contract DE-AC06-99RL14047

Approved for Public Release; Further Dissemination Unlimited

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RPP-6224,  
RWO.

# Evaluation Criteria to Deliverables Crosswalk for the Tank Farm Contractor (supercedes HNF-2020)

CH2M HILL Hanford Group, Inc.

Richland, WA 99352  
U.S. Department of Energy Contract DE-AC06-96RL13200

EDT/ECN: 629527	UC: 2030
Org Code: 71300	Charge Code: 108521/AA3
B&R Code: EW3130010	Total Pages: 146


Key Words: TWRS, Retrieval and Disposal Mission, Readiness-To-Proceed

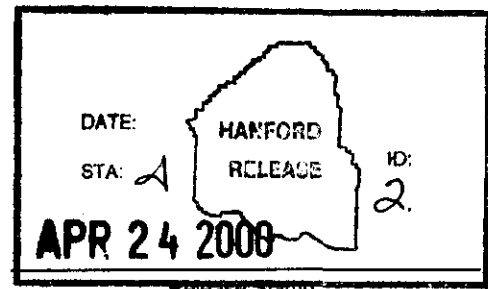
## Abstract:

Before the Office of River Protection can authorize proceeding with Phase 1B, the Tank Farm Contractor (TFC) must demonstrate readiness to retrieve and deliver the waste to the privatization contractor and to receive and dispose of the products and by-products returned from treatment. The TFC has organized their plans for providing these support services into the within the River Protection Project.

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Release Approval  
4/24/00  
Date



Approved For Public Release

# **Evaluation Criteria to Deliverables Crosswalk for the Tank Farm Contractor**

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Date Published  
April 2000

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

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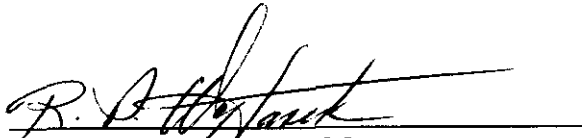
Contractor for the U.S. Department of Energy  
Office of River Protection under Contract DE-AC06-99RL14047

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Document Title: **Evaluation Criteria to Deliverables Crosswalk  
for the Tank Farm Contractor**

Approved by:

  
R. D. Wojtasek, Project Manager  
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4/22/00  
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Table 1 – CRAD Requirements to CHG Deliverables Crosswalk

Table 2 – DOE O 425.1, Minimum Core Requirements to CHG Deliverables Crosswalk

Table 3 – Privatization Contractor Interface Control Documents to CHG Deliverables Crosswalk

Table 4 – External Independent Review Group Line of Inquiry to CHG Deliverables Crosswalk

## LIST OF TERMS

BNFL	BNFL Inc. (Privatization Contractor)
CHG	CH2M HILL Hanford Group, Inc.
CRAD	criteria review assessment document
DOE	U.S. Department of Energy
EIR	External Independent Review (Group)
ICD	interface control document
IHLW	immobilized high-level waste
ILAW	immobilized low-activity waste
IPT	Integrated Product/Process Team
LCAM	life-cycle asset management
LOI	line of inquiry
MOA	Memoranda of Agreement
MP	management plan
ORP	Office of River Protection
POL	policy
PRO	procedure
RPP	River Protection Project
RTP	Readiness to Proceed
TBR	Technical Basis Requirements
TFC	Tank Farm Contractor

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## EVALUATION CRITERIA TO DELIVERABLES CROSSWALK FOR THE TANK FARM CONTRACTOR

### 1.0 PURPOSE

The purpose of this document is to provide assurance, by use of a crosswalk to CH2M HILL Hanford Group, Inc. (CHG) documentation, that CHG planning and execution documents for the Tank Farm Contractor (TFC) portion of the River Protection Project (RPP) fully and satisfactorily address each of the review criteria that have been proposed by the U.S. Department of Energy (DOE), Office of River Protection (ORP) and the DOE External Independent Review (EIR) Group. In addition, this document provides crosswalks to CHG documents to demonstrate that appropriate planning is in place to meet the requirements of the Privatization Contractor at the interface and to satisfy the minimum core requirements of the DOE O 425.1, *Life Cycle Asset Management* (LCAM).

### 2.0 REQUIREMENTS CROSSWALKS

#### 2.1 CROSSWALK DEVELOPMENT

Fiscal Year 2000 Performance Incentive No. ORP4.5.1, Revision No. 1, dated February 9, 2000, to the *CH2M HILL Hanford Group, Inc., Contract No. DE-AC06-99RL14047* (ORP 2000), requires that CHG submit a memorandum by April 24, 2000, declaring Readiness to Proceed (RTP) with Phase 1 of the RPP and states that the Contractor's RTP will be assessed for deficiencies using, among other things, the criteria review assessment documents (CRADs) developed by ORP. This document provides several crosswalks to show the trail of documentation that demonstrates compliance with the CRAD evaluation criteria used by ORP and the lines of inquiry (LOI) used by the EIR Group to assess CHG's RTP.

Beginning with DOE O 430.1 (LCAM), the ORP has developed a series of CRADs that tailor the LCAM requirements to the RPP mission for use in conducting the RTP evaluation. The DOE O 430.1 addresses the preconceptual-through-turnover phases of a project life cycle. The DOE O 425.1, *Startup and Restart of Nuclear Facilities*, and the 20 associated minimum core requirements for startup and restart address the operations and maintenance phase of a project life cycle. Table 1 identifies the CHG documentation that demonstrates compliance with the CRAD expectations. CRAD criteria, subcriteria, and expectations are shown on the left side of Table 1. The documents that demonstrate satisfaction of each of the CRAD expectations are listed across the top of the table. It should be noted that many of the documents listed existed before this RTP effort and were not created or modified for RTP. Some of the documents listed are generic representations of the documents used to execute the TFC responsibilities. Those documents are defined as follows:

- Level 0 Logics – The highest level logic diagram used to illustrate the sequence of major activities in the RPP.
- Level 1 Logics – The second-level logic diagram used to illustrate the sequence of activities required to deliver each batch of feed to BNFL Inc. (BNFL).

- MOAs – Memoranda of Agreement (MOA) used to define the services that will be provided to CHG by outside contractors such as Fluor Hanford, Inc.
- TBRs – Technical Basis Requirements (TBR) used to describe the work scope, resources, and schedule requirements for a defined unit of work scope.
- ICDs - Interface Control Documents (ICDs) used to define the interface requirements between BNFL and CHG.
- IPTs – Integrated Product/Process Teams (IPT) used by ORP to identify and resolve interface issues between BNFL and CHG.
- HNF-PROs, POLs, MPs, and RPP-PROs – The Hanford Site or RPP procedures (PROs), policies (POLs), and management plans (MPs).
- Tri-Party Agreement – The agreement between the DOE, the U.S. Environmental Protection Agency, and the State of Washington on the timing and extent of cleanup of the Hanford Site (*Hanford Federal Facility Agreement and Consent Order* [Ecology et al. 1996]).
- Project Execution/Management Plans – The project-specific versions of the project execution plans or project management plans.
- Project Systems Engineering Documents – Systems engineering documents used at the project level.

An example table is provided to illustrate the use of the tables in this crosswalk.

CRAD Number	CRAD Expectation	Configuration Management Plan	Programmatic Baseline Summary	Level 0 Logics	TBRs
4.1.1.2	CHG has a system to ensure that changes to the master schedule are passed down to and integrated with the intermediate schedule and similarly to the detail schedules.	X			X
4.1.2.1	CHG has updated the schedules to identify the constraints and decision points for work accomplishment, to provide critical path visibility, and to depict progress against the schedule baseline.		X	X	
4.1.3.1	The schedule activities are logically driven to determine the critical path.		X	X	X

**Example Table**

The table is used as follows:

- To identify the CRADs that are addressed by each document, look vertically down the columns for the X's. For example, this table shows that the Programmatic Baseline Summary addresses some aspect of CRADs 4.1.2.1 and 4.1.3.1, and the TBRs address some aspects of CRADs 4.1.1.2 and 4.1.3.1.
- To identify the documents that, taken together, satisfy any individual CRAD, look horizontally across the line with the CRAD in it. For example, this table shows that CRAD 4.1.1.2 is satisfied by the Configuration Management Plan and the TBRs, and that CRAD 4.1.3.1 is satisfied by the Programmatic Baseline Summary, the Level 0 Logics, and the TBRs. Many of the documents identified may answer only a small part of the CRAD or provide reference to the document that addresses the subject in more detail. It should be kept in mind that this illustration is only a sample of the crosswalk and does not provide complete answers for these CRADs.

In those cases where individual documents that demonstrate compliance are not listed across the top of the table, the documents are listed in the additional documents column on the right. Note that, although some of the CRAD expectations seem to be written to apply only to ORP, CHG recognizes that the expectation also could apply to CHG. Therefore, Table 1 identifies the CHG documents that demonstrate compliance with those expectations. Table 2 identifies those documents that demonstrate compliance with the minimum core requirements of DOE O 425.1.

In addition to the core requirements in the LCAM and DOE O 425.1, a series of ICDs between CHG and BNFL identify the actions that CHG must take to support the Privatization Contractor facility development and operation. Table 3 provides a crosswalk between the ICD requirements and the CHG documentation that supports compliance with those requirements.

Finally, DOE Headquarters has chartered an EIR Group to conduct a review of the technical, contractual, financial, and regulatory aspects of RPP to evaluate the readiness of the RPP to proceed with the Phase 1, Part B-2 decision. The EIR Group is conducting its on-site review in two parts. The EIR Group's Task A, which has been completed, determined the readiness of RPP to undergo the detailed review in Task B and developed the detailed LOIs and the plan for the detailed review. Task B will comprise the detailed review. The final product will be an independent report to DOE Headquarters on the readiness of the RPP, including BNFL and CHG, to proceed with the Phase 1, Part B-2 decision. Table 4 provides a crosswalk among the LOIs that will be used by the EIR Group in Task B of their review, the CRADs developed by the ORP that address each LOI, and the CHG documents that provide evidence that CHG satisfies each of the LOIs. Note that, although some of the LOIs are written to apply only to ORP or BNFL, CHG recognizes that the LOIs also could apply to CHG. Therefore, Table 4 identifies the CHG documents that demonstrate compliance with those LOIs.

## 2.2 CROSSWALK VALIDATION

The CRAD and LOI crosswalks, Tables 1 and 4, were developed by consulting with knowledgeable personnel involved in the various disciplines and were reviewed by the CHG RTP management team. A final validation of the resulting crosswalks was performed by having

the authors of each of the documents listed in the crosswalks conduct vertical and horizontal reviews. For the vertical reviews, the document authors checked each location where their documents were cited as evidence of satisfying a CRAD expectation or an LOI to ensure that the documents addressed that item. For the horizontal review, one document author was assigned for each CRAD expectation and each LOI and assigned responsibility for conducting a review among all of the authors of the documents cited in that horizontal line to ensure that the documents fully addressed the expectation or LOI and that the documents were consistent with each other.

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**TABLES**

**GUIDANCE AND REQUIREMENTS TO DELIVERABLES CROSSWALK**





Table 1. CRAD Requirement to CHG Deliverables Crosswalk. (23 Sheets)  
CRAD 1.0 - Project Management (4 Sheets)

[illegible]





**Table 1. CRAD Requirement to CHG Deliverables Crosswalk. (23 Sheets)  
CRAD 2.0 - Project Mission (1 Sheet)**

[illegible]

Table 1. CRAD Requirement to CHG Deliverables Crosswalk. (23 Sheets)  
CRAD 3.0 - Project Work Scope (4 Sheets)

Criterion		DOE Expectation		Implementation Document	
Number	Criterion/Specific Consideration	Number	Narrative		
3.0	CRAD 3.0 - PROJECT WORK SCOPE				
3.1	Technical Work Scope				
3.1.1	Systems Engineering and Process Verification – Is the contractor using a systems engineering approach for design of the feed delivery system? Is this approach effective?				
3.1.1	Has CHG provided a systems engineered technical baseline including functional and operational requirements compatible with ORP's technical baseline?	3.1.1.1	CHG has provided a technical baseline including functional and operational requirements based on ORP guidance and direction.		
3.1.2	Has CHG demonstrated the technical expertise to successfully execute the feed delivery scheme?	3.1.2.1	CHG has demonstrated the technical expertise as evidenced by Program planning documentation, technical reports and design documentation and operations history.		
3.1.3	Has CHG identified activities, including science and technology activities that are necessary to support design, permitting, construction and operation of feed delivery systems?	3.1.3.1	Known technical risks have been identified and mitigation plans appropriately developed for the waste feed delivery program.		
3.1.3.2		3.1.3.2	CHG has defined technology insertion points in the MYWP.		
3.1.3.3		3.1.3.3	Test and evaluation requirements are identified.		
3.1.4	Has CHG planned a viable feed delivery system consistent with ORP technical guidance and requirements	3.1.4.1	CHG has planned a feed delivery system that includes necessary and sufficient contingencies, redundancies, and preparedness for responding to credible failures and upset conditions in line for initial feed delivery of each envelope.		
3.2	Conceptual Design – For the item Construction projects, has the conceptual design confirmed and developed the preferred alternative and established the work scope and planning documentation that are necessary to proceed into the execution phase?				
3.2.1	Has CHG generated the information necessary to proceed with definitive design?	3.2.1.1	CHG has completed the Conceptual Design including construction planning requirements and has defined the project work scope.		
3.2.2	Has CHG identified long lead items requiring early procurement and established plans to acquire those materials?	3.2.2.1	CHG had identified the procurement items requiring special lead time (or other special procurement issues) and has established the mechanism to acquire those materials.		
3.2.3	Has CHG developed a procurement and subcontracting strategy and plan consistent with the baseline schedule?	3.2.3.1	CHG has developed a procurement and subcontracted services strategy.		
3.2.4	Has CHG established plans for mobilization of the construction work force?	3.2.4.1	CHG has established time phase requirements for construction labor and assessed the availability of required labor sources.		
3.2.5	Has CHG completed construction reviews of the design that demonstrate constructability of the design?	3.2.5.1	CHG has completed and documented constructability reviews of the facility design.		









Table 1. CRAD Requirement to CHG Deliverables Crosswalk. (23 Sheets)  
CRAD 4.0 - Project Schedule (5 Sheets)

DOE Expectation			Implementation Document		Additional Documents	
Criterion Number	Criterion/Specific Consideration	Number	Narrative	DRM Project Execution Plan, DOE/ERP-2000-10	DRM Project Execution Plan, HNF-8017	Additional Documents
4.4.2	is the implemented schedule control process efficient and effective?	4.4.2.1	Project performance is being reported regularly and corrective measures identified in accordance with approved CHG project control procedures and tracked to closure.			Monthly CHG reports to ORP & critical path analysis letter
4.4.3	Have critical paths been determined?	4.4.3.1	Critical paths for each individual project have been determined and are used to focus management attention and resources on specific activities to maintain each project's schedule.			
		4.4.3.2	A critical path for the entire CHG work activity has been determined and is used to focus management attention and resources on specific work activities to maintain the overall project schedule.			
		4.4.3.3	CHG has the capability to estimate the impact of compressed time frames, concurrent activities, potential conflicts and other time critical schedule elements.			
4.5	Achievability of Schedule - Is there a high likelihood that the CHG schedule can be met?					
4.5.1	Are the schedule activities tied to associated cost and scope?	4.5.1.1	A well-defined and logical WBS has activities in the schedule.			
4.5.2	Are the activities and logic identified for interfaces with PMMC sub-contractors?	4.5.2.1	Interfaces between CHG and external organizations are clearly identified and all external organizations agree with the associated activities, resource loading, and logic.			
		4.5.2.2	Memorandums of Understanding, contracts, or similar agreements are in place between CHG and PMMC sub-contractor organizations for the appropriate interfaces.			
4.5.3	Is the quantity of resources assigned to the scheduled activities reasonable for the timeframe (duration) allotted to the activity?	4.5.3.1	Resource loading is comparable to that used by other contractors for projects of similar size and technical complexity.			
4.5.4	Are risks associated with meeting the schedule managed per the CHG Risk Management Procedure?	4.5.4.1	CHG has a risk management list for each project where schedule risks are maintained and mitigating actions are identified and implemented.			
		4.5.4.2	CHG has a critical risk management list for the entire CHG project where critical schedule risks are maintained and mitigating actions are identified and implemented.			
4.6	Design/Construction Planning - Is the CHG schedule for construction of the project effective in meeting the schedule requirements with minimal risk of cost/schedule overrun and ensuring project success?					
4.6.1	Has CHG generated the information necessary to proceed with detailed design and initial construction?	4.6.1.1	CHG had completed all construction-planning requirements defined in FY-2000 MYWP.			
4.6.2	Has CHG identified long-lead items requiring early procurement and established plans to acquire those materials (e.g., exotic materials, uniquely designed and limited supply items)?	4.6.2.1	CHG has identified the long-lead procurement items and has established the procurement mechanism to acquire those materials.			
4.6.3	Has CHG developed a procurement and subcontracting strategy and plan consistent with the baseline schedule?	4.6.3.1	CHG has developed a procurement and subcontracted services strategy and plan to support the baseline construction schedule.			
4.6.4	Has CHG identified labor resource needs and assessed their availability?	4.6.4.1	CHG has estimated time phased requirements for construction labor and assessed the availability of required labor sources.			
4.6.5	Has CHG established plans for mobilization of the construction work force?	4.6.5.1	CHG has established a realistic construction plan and construction mobilization plan.			

**Table 1. CRAD Requirement to CHG Deliverables Crosswalk. (23 Sheets)**  
**CRAD 4.0 - Project Schedule (5 Sheets)**

[illegible]

Table 1. CRAD Requirement to CHG Deliverables Crosswalk. (23 Sheets)  
CRAD 4.0 - Project Schedule (5 Sheets)

[illegible]





**Table 1. CRAD Requirement to CHG Deliverables Crosswalk. (23 Sheets)  
CRAD 5.0 - Project Cost (2 Sheets)**

Criterion Number	Criterion/Specific Consideration	DOE Expectation		Additional Documents
		Number	Narrative	
5.2.9	Have the recommendations from audits/reviews conducted over the last 2 years been incorporated, as appropriate, into the development of the LCC?	5.2.9.1	There is a documented process tracking changes to scope, cost, schedule, and funding and its impact on the LCC.	<p>Contractor response to FM-20 ICE Report dated Aug 8, 1996.</p> <p>Contractor statused ICE responses/Accions dated Aug 20, 1996.</p> <p>Letter 9954011R1 Contractor Response dated June 30, 1999.</p>
5.2.8	Is there a documented process tracking changes to scope, cost, schedule, and funding and its impact on the LCC?	5.2.8.1	There is a documented process tracking changes to scope, cost, schedule, and funding and its impact on the LCC.	<p>Mission Analysis Report, DOE/ORP-2000-10</p> <p>RFP Administration, HNF-IP-0842</p> <p>Waste Feed Delivery Plan, HNF-1881</p> <p>ILAW Disposal Plan HNF-1517</p> <p>AB Amendment Task Plan HNF-1722</p> <p>Health and Safety Program Description HNF-IP-0842, Vol. IX</p> <p>Infrastructure Plan HNF-1882</p> <p>HLW Storage Plan HNF-1751</p> <p>Environmental Program Description, RPP-1773</p> <p>QA Program Description HNF-IP-0842, Vol. XI</p> <p>Sys. Eng. Mgmt Plan HNF-SD-WM-SEMP-002</p> <p>Risk Mgmt. Procedure, HNF-IP-0842, Vol. IV, Sec 2.6</p> <p>HRA Sampling Plan, RPP-8114</p> <p>Configuration Mgmt. Plan HNF-1900</p> <p>Engineering Plan HNF-1947</p> <p>Technical Baseline Sum. Desc. HNF-1901</p> <p>Programmatic Baseline Summary HNF-1848</p> <p>Level 0 Logistics</p> <p>Level 1 Logistics</p> <p>AGAs and Trade Studies</p> <p>MOAs</p> <p>TBRs</p> <p>ICDs</p> <p>IPTs</p> <p>Acquisition and Contracting Plan, RPP-6113</p> <p>Memo of RTP w/Phase 1, RPP-6118</p> <p>HNF PROs, POLs, &amp; MPAs, RPP PROs</p> <p>Tri-Party Agreement</p> <p>ISMS Description, RPP-MP-003</p> <p>Mission Summary Diagram, RPP-5742 &amp; 5836</p> <p>Project Execution/Management Plans</p> <p>Financial Analysis, HNF-2017</p> <p>Project System Engineering Documents</p> <p>TWRS S/RIO, HNF-SD-MP-SRIO-001</p> <p>RPP Major Facility Technical Interface Plan, RPP-SD-WM-SP-012</p> <p>Operations and Utilization Plan, RPP-SD-WM-SP-012</p>



Table 1. CRAD Requirement to CHG Deliverables Crosswalk. (23 Sheets)  
CRAD 7.0 - Project ESH-Q-EIR (4 Sheets)

[illegible]

Table 1. CRAD Requirement to CHG Deliverables Crosswalk. (23 Sheets)  
CRAD 7.0 - Project ESH-Q-EIR (4 Sheets)

Criterion Number	Criterion/Specific Consideration	Number	Narrative	DOE Expectation	Implementation Document
7.3	CRAD-7.0 - ESH&Q				
7.3.1	Does CHG have an adequate AS for waste storage and transfer?	7.3.1.1	CHG has completed FSAR AS transition.		
7.3.2	Is the AS adequately implemented?	7.3.2.1	CHG has effectively completed implementation of all FSAR Phase I implementation open items and agreed on the disposition of the FSAR Phase II and Phase III items including its schedule and cost.		
7.3.3	Are plans in place to amend the AS to support waste feed delivery and associated projects?	7.3.3.1	CHG has a detailed plan and licensing strategy in place to amend the AS to support waste feed delivery and associated projects.		
7.3.4	Is there an adequate Unreviewed Safety Question (USQ) process in place?	7.3.4.1	CHG has an adequate USQ process implemented to comply with DOE Order 5480.21 requirements.		
7.3.5	Are procedures in place for review of the AS documents?	7.3.5.1	CHG has AS document review procedures in place.		
7.3.6	Is there an independent review of the safety analysis documents?	7.3.6.1	CHG has a process in place to have an independent review of the safety analysis documents.		
7.3.7	Does CHG have management infrastructure, processes, and procedural guidance necessary to provide a timely review of the FSAR and all AS documents?	7.3.7.1	CHG management has processes and procedural guidance necessary to review the FSAR and all AS documentation.		
7.3.8	Does CHG have adequate staff with appropriate skills to provide for review and approval of the AS in a timely manner?	7.3.8.1	CHG has adequate staff with appropriate skills to provide for review and approval of the FSAR in a timely manner.		
7.3.9	Does CHG have an adequate AS management structure in place e.g. AS docket, AS library, document management systems, configuration control systems, etc.?	7.3.9.1	CHG has an adequate AS management structure in place (AS docket, AS library, document management systems, configuration control systems, etc.).		
7.3.10	Are ORP authorities and responsibilities clearly outlined and assigned, with adequate staff to perform the required activities to oversight the FSAR?	7.3.10.1	ORP has management infrastructure (e.g. processes, procedures, staff) adequate for providing timely review and approval of documents.		
7.4	Occupational Safety Concerns—Has the detailed compliance plan been reviewed and revised as appropriate, and has it been implemented?				
7.4.1	Does the occupational health and safety program effectively implement DOE rules, orders, and policies?	7.4.1.1	DOE expectations include full implementation of the DOE rules, orders, and policies as related to occupational safety issues associated with operations and activities in the tank farms.		

**Table 1. CRAD Requirement to CHG Deliverables Crosswalk. (23 Sheets)  
CRAD 7.0 - Project ESH-Q-EIR (4 Sheets)**

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Table 1. CRAD Requirement to CHG Deliverables Crosswalk. (23 Sheets)  
CRAD 7.0 - Project ESH-Q-EIR (4 Sheets)

CRAD-7.0 - ESH&Q		DOE Expectation		Implementation Document		Additional Documents	
Criterion Number	Criterion/Specific Consideration	Number	Narrative				
7.7	Permits, Licenses and Regulatory Approval - Have applicable permits, licenses, and regulatory approvals been obtained and have milestone dates for pending and new application been reviewed and revised as appropriate?						
7.7.1	Does the RPP operate under a DOE approved SRID? Are applicable environmental requirements in Sections 16 and 20?	7.7.1.1	The RPP does operate under a DOE approved SRID. Applicable environmental requirements are in Sections 16 and 20.	X			HNF-SO-MP-SRID-001, Rev. 2 Secs 16 & 20
7.7.2	Does the RPP permitting program identify and schedule all permits needed to support feed delivery?	7.7.2.1	The RPP permitting program does identify and schedule all permits needed to support feed delivery.			X	
7.7.3	Are sufficient funds allocated in the annual planning schedule to prepare planned permits within cost and on schedule?	7.7.3.1	Sufficient funds are allocated in the annual planning schedule to prepare planned permits within cost and on schedule.				
7.7.4	Is out year planning to identify needed permits done so these are assured to be in the RPP annual planning process?	7.7.4.1	Out year planning to identify needed permits is done so these are assured to be in the RPP annual planning process.				
7.7.5	Does the RPP Authorization Envelope contain all approved environmental permits? Is a listing of such routinely generated?	7.7.5.1	The RPP Authorization Envelope does contain all approved environmental permits. A listing of such is routinely generated.				Waste Feed Delivery Environmental Permits and Approval Plan, HNF 2401, Rev 1 Project TBR's
7.7.6	Does BNEF and RPP have sufficient interface control agreements to ensure waste feed delivery on time and within cost?	7.7.6.1	BNEF and RPP do have sufficient interface control agreements to ensure waste feed delivery on time and within cost.				Waste Feed Delivery Environmental Permits and Approval Plan, HNF 2401, Rev 1 HNF 4474 Rev 3
7.7.7	Does RPP have procedures to ensure that permit approval conditions are implemented in the field?	7.7.7.1	RPP does have procedures to ensure that permit approval conditions are implemented in the field.				-ICD's 15, 19, 20 & 28 Volume VI, Section 1.2
7.8	Quality Assurance Program						
7.8.1	Do we have an adequate Quality Assurance Program (QAP) for waste storage and transfer?	7.8.1.1	CHG has completed the QAP for waste storage and transfer.			X	
7.8.2	Is the QAP adequately implemented?	7.8.2.1	CHG has effectively implemented all QAP requirements into auditable QA programs and procedures.			X	
7.8.3	Are plans in place to update the QAP as needed to support waste feed delivery and associated projects?	7.8.3.1	CHG has a detailed plan in place to amend the QAP to support waste feed delivery and associated projects.			X	
7.8.4	Are procedures in place for surveillance and audits of the implementation of the contractor QA programs?	7.8.4.1	CHG has an adequate audit and surveillance program to assure compliance with the requirements of the QAP.			X	
7.8.5	Are appropriate Price Anderson Amendment Act coordination and program oversight functions established?	7.8.5.1	Are appropriate Price Anderson Amendment Act coordination and program oversight functions established?			X	Guidance For The Determination Of Significance And Reportability Of 10 CFR 835 Potential Noncompliances Price-Anderson Amendments Act (PAAA), HNF-1960

Table 1. CRAD Requirement to CHG Deliverables Crosswalk. (23 Sheets)  
CRAD 8.0 - Project Risk (1 Sheet)

CRAD 6.0 - PROJECT RISK				DOE Expectation		Implementation Document																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
Criterion Number	Criterion/Specific Consideration	Number	Narrative			Mission Analysis Report, DOE/ORP-2000-10	RPP Administration, HNF-IP-0842	Waste Feed Delivery Plan, HNF-1881	LLAW Disposal Plan HNF-1517	AB Amendment Task Plan HNF-1722	Health and Safety Program Description HNF-IP-0842, Vol. IX	Infrastructure Plan HNF-1882	HLW Storage Plan HNF-1751	Environmental Program Description, RPP-1773	QA Program Description HNF-IP-0842, Vol. XI	Risk Mgmt. Procedures HNF-IP-0842, Vol. IV, Sec 2.6	HTR Starting Plan, RPP-6114	Configuration Mgmt. Plan HNF-1900	Engineering Plan HNF-1947	Technical Baseline Sum. Desc. HNF-1901	Programmatic Baseline Summary HNF-1948	Level 0 Logics	Level 1 Logics	AGAs and Trade Studies RPP, FY2000 MYWP Summary, RPP-5044	MOAs TBRs	ICDs	IPAs	Acquisition and Contracting Plan, RPP-6113	HNF PROs, POLs & MPAs, RPP PROs	T/Party Agreement	ISMS Description, RPP-MP-003	Mission Summary Diagram, RPP-5742 & -5836	Financial Analysis, HNF-2017	Project System Engineering Documents	TWRS S/RID, HNF-SD-MP-SRID-001	RPP Major Facility Technical Interface Plan, RPP-SD-WM-SP-012	Operations and Utilization Plan, RPP-SD-WM-SP-012	Additional Documents																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
9.1	Project Risk Management - Does CHG have a risk management program in place necessary for successful management of the lifecycle of the project?	9.1.1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														</

Table 1. CRAD Requirement to CHG Deliverables Crosswalk. (23 Sheets)  
CRAD 9.0 - Project Communications (1 Sheet)

Criterion Number	CRAD 9.0 - COMMUNICATIONS	DOE Expectation	Implementation Document	Comments
9.1	Criterion-Specific Consideration: Stakeholders - What are the Office of River Protection Office of Communications Best Practices?			
9.1.1	Does the ORP Office of Communications have a plan and strategy for dealing with "government-related" communications efforts?	9.1.1.1	Mission Analysis Report, DOE/ORP-2000-10	ORP Responsibility
9.1.2	Does the ORP Office of Communications have a plan and strategy for dealing with "non-governmental" entities in its communications efforts?	9.1.2.1	Drain Project Execution Plan, HNF-5017	ORP Responsibility
9.1.3	Has the ORP Office of Communications developed clear definitions of "Stakeholders" and "Public Involvement"?	9.1.3.1	RPP Administration, HNF-40-0842	ORP Responsibility
9.1.4	Does the ORP Office of Communications have an Outreach Program in place to educate employees, Stakeholders, and the public?	9.1.4.1	Waste Feed Delivery Plan, HNF-40-0842	ORP Responsibility
9.1.5	Are there ongoing evaluation activities to assess the effectiveness of the Outreach Program?	9.1.5.1	ILAW Disposal Plan, HNF-1881	ORP Responsibility
9.1.6	Is there a Policy of Openness that fosters continuing dialog and provides access and opportunities for interested parties to become familiar with the project?	9.1.6.1	AG Amendment Task Plan HNF-1722	ORP Responsibility
9.2	Public Involvement - Is a Public Involvement program, which meets legally mandated requirements, in place?			
9.2.1	Does the Office of River Protection Office of Communications have a list of legally mandated requirements?	9.2.1.1	Health and Safety Program Description HNF-40-0842, Vol. IX	ORP Responsibility
9.2.2	What are the BNEF, CH2M/Hill, Regulations, and ORP roles and responsibilities for meeting these requirements, and who has the lead?	9.2.2.1	Infrastructure Plan HNF-1882	ORP Responsibility
9.2.3	What is the time-line to implement required Public Involvement activities?	9.2.3.1	HLW Storage Plan HNF-1751	ORP Responsibility

Table 2. DOE Order 425.1, Minimum Core Requirements to CHG Deliverable Crosswalk. (2 Sheets)

Number	DOE Order 425.1 Core Requirement	Implementation Document																																			
		RPP Mission Analysis Report, DOE/ORP-2000-10	RPP Administration, HNF-IP-0842	Waste Feed Delivery Plan, HNF-IP-0842	ILAW Disposal Plan, HNF-1581	AB Amendment Task Plan HNF-1517	Health and Safety Program Description HNF-1722	Infrastructure Plan HNF-1582	MLW Storage Plan HNF-1751	Environmental Program Description, RPP-1773	QA Program Plan HNF-IP-0842, Vol. XI	Sys. Eng. Mgmt Plan HNF-SD-WM-SEMP-002	Risk Mgmt Procedure, HNF-IP-0842, Vol. IV, Sec 2.8	HIN Staffing Plan, RPP-6114	Configuration Mgmt Plan HNF-1900	Engineering Plan HNF-1947	Technical Baseline Sum. Desc. HNF-1901	Programmatic Baseline Summary HNF-1948	Level 0 Logics	AGAs and Trade Studies	MOAs	TRAs	ICDs	IPAs	Acquisition and Contracting Plan, RPP-6113	Memo of RTP w/Phase I, RPP-6118	HNF PROs, POLs, & MPAs, RPP PROs	Tri-Party Agreement	ISMS Description, RPP-MP-003	Mission Summary Diagram, RPP-5743 & -5836	Financial Analysis, HNF-2017	Project System Engineering Documents	TWAS S/RID, HNF-SD-MP-SRID-001	RPP Major Facility Technical Interface Ref. Key	Operations and Utilization Plan, RPP-SD-WM-SF-012	Comments	
1	Procedures and Safety Limits - There are adequate and correct procedures and safety limits for operating the process systems and utility systems.		X																																		HNF-IP-0842, Vol. I, Sec 2.1 HNF-PRO-569 HNF-PRO-228 HNF-PRO-223
2	Training and Qualification Programs - Training and qualification programs for operations and operations support personnel have been established, documented, and implemented. (The training and qualification program encompasses the range of duties and activities required to be performed.)		X																								X										HNF-IP-0842, Vol. I, Sec 2.11 HNF-IP-0842, Vol. III, Sec. 3.1, 4.1, 7.1, 7.2, 7.5 HNF-IP-0842, Vol. IX, Sec 1.1, 4.1 HNF-PRO-065, 074, 153, 170, 171, 172, 175, 176, 177, 249, 424, 576
3	Level of Operator Knowledge - Level of knowledge of operations and operations support personnel is adequate based on reviews of examinations and examination results and selected interviews of operating and operations support personnel.		X																								X										HNF-IP-0842, Vol. III, Sec 7.3, 7.5 HNF-PRO-153, 170, 176, 177, 249
4	Safety Documentation - Facility safety documentation is in place that describes the "safety envelope" of the facility. The safety documentation should characterize the hazards/risks associated with the facility and should identify mitigating measures (systems, procedures, administrative controls, etc.) that protect workers and the public from those hazards/risks. Safety systems and systems essential to worker and public safety are defined and a system to maintain control over the design and modification of facilities and safety-related utility systems is established.		X																								X										HNF-IP-0842, Vol. IV, Sec 3.4.5, 5.4, 5.6, 5.7, 5.8, 5.10 HNF-PRO-062, 705 RPP-PRO-228, 233, 440, 540, 700, 702, 703, 704, 705
5	Safety System Operation - A program is in place to confirm and periodically reconfirm the condition and operability of safety systems, including safety related process systems and safety related utility systems. This includes examinations of records of tests and calibration of safety system and other instruments that monitor limiting conditions of operation or that satisfy Technical Safety Requirements. All systems are currently operable and in a satisfactory condition.		X																								X										HNF-IP-0842, Vol. I, Sec. 2.1, 2.4, 3.21 HNF-IP-0842, Vol. IV, Sec 1.2, 2.1, 4.28, 5.2, 5.6 HNF-IP-0842, Vol.5, Sec 6.2, 7.1, 7.2, 7.3 RPP-PRO-052, 060, 067, 069, 072, 229, 410, 653
6	Audit Safety Deficiencies - A process has been established to identify, evaluate, and resolve deficiencies and recommendations made by oversight groups, official review teams, audit organizations, and the operating contractor.		X																								X										HNF-IP-0842, Vol. I, Sec. 2.4 RPP-PRO-052, 060, 067, 069, 410, 653
7	Safe Operations and Conformance with DOE Orders - Formal agreements establishing requirements are in place between the operating contractor and DOE via the contract or other enforceable mechanism, which govern the safe operations of the facility. A systematic review of the facility's conformance to these requirements has been performed. These requirements have been implemented in the facility, or compensatory measures are in place, and formally agreed to during the period of implementation. The compensatory measures and the implementation period are approved by DOE.		X																								X										HNF-IP-0842, Vol. I, Sec. 6.3 RPP-PRO-285
8	Operational Support Services - Management programs are established, sufficient numbers of qualified personnel are provided, and adequate facilities and equipment are available to ensure operational support services (e.g., training, maintenance, waste management, environmental protection, industrial safety and hygiene, radiological protection and health physics, emergency preparedness, fire protection, quality assurance, criticality safety, and engineering) are adequate for operations.																																				HNF-IP-0842, Vol. I, Sec. 2.1, 2.11, 3.11, 3.21, 3.29, 3.30, 3.32, 3.45, 4.2 HNF-IP-0842, Vol. III, Sec. 3.1, 7.1, 7.2, 10.3, 10.10 HNF-IP-0842, Vol. IV, Sec. 4.22, 5.8 HNF-IP-0842, Vol. IV, Sec. 3.1 HNF-IP-0842, Vol. VI, Sec. 1.2, 2.2, 4.1, 5.6 HNF-IP-0842, Vol. VII, Sec. 1.1 HNF-IP-0842, Vol. IX, Sec. 5.1 HNF-IP-0842, Vol. XI, Sec. 1.1 RPP-PRO-084, 101, 115, 120, 153, 157, 170, 172, 175, 234, 350, 351, 424, 436, 451, 452, 453, 459, 540, 541, 1618, 1619, 1621, 1629 HNF-PRO-171, 175
9	Emergency Drill Program - A routine and emergency operations drill program, including program records, has been established and implemented.		X																								X										RPP-PRO-424
10	Startup Test Program - An adequate startup or restart test program has been developed that includes adequate plans for needed operations testing to simultaneously confirm operability of equipment, the viability of procedures, and the training of operators.																											X									HNF-IP-0842, Vol. II, Sec. 2.8, 4.8 HNF-IP-0842, Vol. III, Sec 10.8 HNF-IP-0842, Vol. IV, Sec 4.26, 5.4 RPP-PRO-072, 229, 440, 572 HNF-PRO-062, 552 HNF-IP-0815, 0816
11	Safety Responsibilities - Functions, assignments, responsibilities, and reporting relationships are clearly defined, understood, and effectively implemented with line management responsibility for control of safety.																											X									HNF-IP-0842, Vol. I, Sec 3.1 HNF-IP-0842, Vol. II, Sec. 4.1.1 RPP-PRO-3468, 4616













**Table 3. Privatization Contractor Interface Control Documents to CHG Deliverables Crosswalk. (20 Sheets)**  
ICD-05/CD-06 (3 Sheets)

[illegible]









**Table 3. Privatization Contractor Interface Control Documents to CHG Deliverables Crosswalk. (20 Sheets)**  
**ICD-11/ICD-12 (2 Sheets)**

[illegible]





**Table 3. Privatization Contractor Interface Control Documents to CHG Deliverables Crosswalk. (20 Sheets)**  
ICD-15 (2 Sheets)

[illegible]

Table 3. Privatization Contractor Interface Control Documents to CHG Deliverables Crosswalk. (20 Sheets)  
ICD-15 (2 Sheets)

[illegible]







**Table 3. Privatization Contractor Interface Control Documents to CHG Deliverables Crosswalk. (20 Sheets)**  
ICD-22/ICD-25/ICD-26 (2 Sheets)

[illegible]



**Table 4. External Independent Review Team Line of Inquiry to CHG Deliverables Crosswalk. (18 Sheets)**

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Table 4. External Independent Review Team Line of Inquiry to CHG Deliverables Crosswalk. (18 Sheets)  
Nuclear Regulatory Requirements (3 Sheets)

Implementation Document																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Level	Nuclear Regulatory Requirements	LOI #	Lines of Inquiry	CHG	DOE/ORP	RPP Mission Analysis Report, DOE/ORP-2000-10	RPP Administration, HNF-IP-0842	Waste Feed Delivery Plan, HNF-1081	AB Amendment Plan HNF-1517	Health and Safety Program Description HNF-1722	Infrastructure Plan HNF-1882	HLW Storage Plan HNF-1751	Environmental Program Description, RPP-1773	QA Program Plan HNF-IP-0842, Vol. XI	Sys. Eng. Mgmt Plan HNF-SD-WM-SEMP-002	Risk Mgmt Procedures, HNF-IP-0842, Vol. IV, Sec 2.6	HR Staffing Plan, RPP-8114	Configuration Mgmt Plan HNF-1800	Engineering Plan HNF-1847	Technical Baseline Sum. Desc., HNF-1901	Programmatic Baseline Summary HNF-1948	Level 0 Logics	Level 1 Logics	AGAs and Trade Studies	RPP, FY2000 MYWP Summary, RPP-3044	MOAs	TBRs	JCDs	IPTs	Acquisition and Contracting Plan, RPP-8113	Memo of RTP w/Phase I, RPP-6116	HNF PROs, POLs, & MAs, RPP PROs	Tri-Party Agreement	ISMS Description, RPP-MP-003	Mission Summary Diagram, RPP-5743 & -5836	Financial Analysis, HNF-2017	Project System Engineering Documents	Project Summary, HNF-SD-MP-SRD-001	RPP Major Facility Technical Interface Ref. Key	Operations and Utilization Plan, RPP-SD-WM-SP-012	Comments																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
N1	Standard Requirement Identification and Documentation System (SRIDS) (Have SRIDS been identified and implemented?)	NR1	Verify compliance	7.1 7.7.1		X	Vol. I, Sec 6.4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														</

Table 4. External Independent Review Team Line of Inquiry to CHG Deliverables Crosswalk. (18 Sheets)  
Nuclear Regulatory Requirements (3 Sheets)

Level	Nuclear Regulatory Requirements	LOI #	Lines of Inquiry	CRAD(s)	Implementation Document																							Comments
		LOI #		N/A																								
		NR15	Compare the plan and procedures for regulatory oversight of RPP privatization against the Corrective Action/Enforcement Action Program RL/REG-98-06.																									
		NR16	Review mechanism to handle deficiencies and non-compliance	N/A																								
		NR17	Review MOA and MOU for Regulatory Unit and BNFL contractual requirements.	N/A																								
		NR18	Review Regulatory Unit governing documentation	N/A																								
		NR19	The RU is unique in DOE. Why?	N/A																								
		NR20	Does RU have sufficient authority? What are the lines of authority? What is the resolution process for disputes? Between DOE and BNFL? Between Operations Officer? Between DOE Departments?	N/A																								
		NR21	How is DOE ORP strengthening RU's interface with other regulatory agencies?	N/A																								
		NR22	How is DOE RI strengthening RU's interface with other regulatory agencies?	N/A																								
		NR23	How is DOE HQ strengthening/supporting RU's interfaces with other regulatory agencies?	N/A																								
		NR24	What does the Memorandum of Agreement between DOE EN and DOE EM cover?	N/A																								
		NR25	What does the Memorandum of Understanding cover?	N/A																								
		NR26	The original contractual language between DOE and BNFL did not precisely describe regulatory needs. Does it work for the RU to use Position Papers to provide clear guidance and expand on the original contract? Is there contractual language that felt to be inadequate?	N/A																								
		NR27	What has been incorporated into the contract, e.g., papers on Backfit and authorization?	N/A																								
		NR28	How is the RU tuning around the impression that DOE is inattentive to its responsibilities and blames the contractor?	N/A																								
		NR29	Are there enough people in the RU for the upcoming reviews, given that the reviews have fixed deadlines?	N/A																								
		NR30	Pressure to meet the schedule may force bad decisions. How will RU reviews catch these?	N/A																								
		NR31	What actions does the RU take to correct an issue/finding? (Choose an issue and walk through the steps taken until it was resolved.)	N/A																								
		NR32	If the RU brings in outside specialists or expertise, how can they be easily integrated into the RU team?	N/A																								
		NR33	Explore exposure guidelines and dose to worker. Provide additional details.	N/A																								
		NR34	How are the RU inspections assessing BNFL with regards to the Authorization Basis?	N/A																								
		NR35	What aspects of design are detailed in the Authorization Basis?	N/A																								
		NR36	Is the BNFL Authorization Basis up-to-date? Are appropriate standards incorporated? How can they verify this?	N/A																								
		NR37	Does BNFL Authorization Basis meet with RU approval?	N/A																								
		NR38	How many risks are currently being considered?	N/A																								
		NR39	Which are being used by BNFL in the worst case scenarios for radiation dose engineering design control/mitigation?	N/A																								
		NR40	How do they determine Richland's readiness to handle emergencies?	N/A																								
		NR41	How do they determine ORP's readiness to handle emergencies?	N/A																								
		NR42	How do they determine BNFL's readiness to address emergencies?	N/A																								
		NR43	How do they determine CHG's ability to address emergencies?	N/A																								

Table 4. External Independent Review Team Line of Inquiry to CHG Deliverables Crosswalk. (18 Sheets)  
Nuclear Regulatory Requirements (3 Sheets)

Nuclear Regulatory Requirements (3 Sheets)				
Implementation Document				
Level	LOI #	Lines of Inquiry	CRAD(s)	Comments
	NR44	Does BNFL's process address the handling of and responding to emergencies? How do they verify this?	N/A	
	NR45	Does CHG has have an ability to address explosive gas generation/collection in pipelines/tanks? How do they verify this?	N/A	CHG has documents to control, but this is unrelated to RU
	NR46	How is BNFL addressing any process changes if found after B-2 decision to proceed?	N/A	
	NR47	How is RU gearing up to review these documents?	N/A	
	NR48	Who in ORP will review the HAR and how long will it take?	N/A	
	NR49	If Dr. Clark Gibbs left the RU, who would become the champion?	N/A	
	NR50	Who is BNFL's regulatory champion?	N/A	
	NR51	Who is CHG's regulatory champion?		CHG documents apply, but this is unrelated to RU.
	NR52	What is the public response to the RU? How is this measured?	N/A	

Table 4. External Independent Review Team Line of Inquiry to CHG Deliverables Crosswalk. (18 Sheets)  
Technical Processes (Vitrification) (2 Sheets)

Level	Documentation	LOI #	Lines of Inquiry	CRAD(s)	CHG	DOE/ ORP	Comments
T1	Are the Process Verification Testing and Product Qualification Deliverables completed and available?	TP1	Does the Process Verification Testing Program cover the appropriate range of activities?	N/A			
			Does the Product Qualification testing meet the testing requirements of the 4 feed envelopes?	N/A			
			Are these programs linked to the overall schedule in sufficient detail to permit good analysis of program requirements?	N/A			
			Have the appropriate QA checks been incorporated to assure traceable documentation?	N/A			
			Are the functional requirements applicable to the appropriate design areas?	N/A			
			Review functional requirements for a selected portion of the process.	N/A			
			Are the codes and standards for all design disciplines included?	N/A			
			Are all the disciplines covered in the Standards Document?	N/A			
			Are the documents readily available to the using personnel?	N/A			
			Are the Functional Specifications sufficiently detailed to assure good design direction?	N/A			
T2	Have the functional requirements for the processing facility been defined?	TP2	Are the documents readily available to the using personnel?	N/A			
			Is the document approved?	N/A			
			Does the document cover all the Waste Acceptance Product Specification requirements?	N/A			
			Has implementation logic been developed that delineates tasks and responsibilities?	N/A			
			Does the process cover all project aspects	N/A			
				N/A			
				N/A			
				N/A			
				N/A			
				N/A			
T3	Are all the codes and standards to be utilized in the facility design established?	TP3	Are the 3 LAW material balances integrated with the HAW material balance?	N/A			
			Are the R & D programs associated with the difficult process steps?	N/A			
			Does a knowledge profile exist for each process step showing current base line and development needs?	N/A			
			Does an integrated material balance exist including recycle streams?	N/A			
			Are critical process data available for process control?	N/A			
			Do the dispositions appear appropriate for the concern?	N/A			
			Does the program follow the recommendations through the implementation actions?	N/A			
			Review actions taken as a result of earlier independent reviews and operating experience from other DOE sites.	N/A			
			Has a formal risk assessment been made for each process step?	N/A			
			Have alternative systems/approaches been evaluated for high risk technology? What is status of alternatives?	N/A			
T4	Is the Engineering and Design Standards Requirements Document completed and available?	TP4	Are the 3 LAW material balances integrated with the HAW material balance?	N/A			
			Are the R & D programs associated with the difficult process steps?	N/A			
			Does a knowledge profile exist for each process step showing current base line and development needs?	N/A			
			Does an integrated material balance exist including recycle streams?	N/A			
			Are critical process data available for process control?	N/A			
			Do the dispositions appear appropriate for the concern?	N/A			
			Does the program follow the recommendations through the implementation actions?	N/A			
			Review actions taken as a result of earlier independent reviews and operating experience from other DOE sites.	N/A			
			Has a formal risk assessment been made for each process step?	N/A			
			Have alternative systems/approaches been evaluated for high risk technology? What is status of alternatives?	N/A			
T5	Are the Functional Specifications completed and available?	TP5	Are the 3 LAW material balances integrated with the HAW material balance?	N/A			
			Are the R & D programs associated with the difficult process steps?	N/A			
			Does a knowledge profile exist for each process step showing current base line and development needs?	N/A			
			Does an integrated material balance exist including recycle streams?	N/A			
			Are critical process data available for process control?	N/A			
			Do the dispositions appear appropriate for the concern?	N/A			
			Does the program follow the recommendations through the implementation actions?	N/A			
			Review actions taken as a result of earlier independent reviews and operating experience from other DOE sites.	N/A			
			Has a formal risk assessment been made for each process step?	N/A			
			Have alternative systems/approaches been evaluated for high risk technology? What is status of alternatives?	N/A			
T6	Is the Waste Form Compliance Plan (WCP) Final HLW completed and available?	TP6	Are the 3 LAW material balances integrated with the HAW material balance?	N/A			
			Are the R & D programs associated with the difficult process steps?	N/A			
			Does a knowledge profile exist for each process step showing current base line and development needs?	N/A			
			Does an integrated material balance exist including recycle streams?	N/A			
			Are critical process data available for process control?	N/A			
			Do the dispositions appear appropriate for the concern?	N/A			
			Does the program follow the recommendations through the implementation actions?	N/A			
			Review actions taken as a result of earlier independent reviews and operating experience from other DOE sites.	N/A			
			Has a formal risk assessment been made for each process step?	N/A			
			Have alternative systems/approaches been evaluated for high risk technology? What is status of alternatives?	N/A			
T6A	Is there a formal Configuration Control Program	TP7	Are the 3 LAW material balances integrated with the HAW material balance?	N/A			
			Are the R & D programs associated with the difficult process steps?	N/A			
			Does a knowledge profile exist for each process step showing current base line and development needs?	N/A			
			Does an integrated material balance exist including recycle streams?	N/A			
			Are critical process data available for process control?	N/A			
			Do the dispositions appear appropriate for the concern?	N/A			
			Does the program follow the recommendations through the implementation actions?	N/A			
			Review actions taken as a result of earlier independent reviews and operating experience from other DOE sites.	N/A			
			Has a formal risk assessment been made for each process step?	N/A			
			Have alternative systems/approaches been evaluated for high risk technology? What is status of alternatives?	N/A			
T7	Has the expected performance for processing the four (4) waste envelopes been defined?	TP8	Are the 3 LAW material balances integrated with the HAW material balance?	N/A			
			Are the R & D programs associated with the difficult process steps?	N/A			
			Does a knowledge profile exist for each process step showing current base line and development needs?	N/A			
			Does an integrated material balance exist including recycle streams?	N/A			
			Are critical process data available for process control?	N/A			
			Do the dispositions appear appropriate for the concern?	N/A			
			Does the program follow the recommendations through the implementation actions?	N/A			
			Review actions taken as a result of earlier independent reviews and operating experience from other DOE sites.	N/A			
			Has a formal risk assessment been made for each process step?	N/A			
			Have alternative systems/approaches been evaluated for high risk technology? What is status of alternatives?	N/A			
T8	Is there a formalized technical logic outlining the approach to deal with the critical issues associated with technical processing (vitrification) of the THRS wastes?	TP9	Are the 3 LAW material balances integrated with the HAW material balance?	N/A			
			Are the R & D programs associated with the difficult process steps?	N/A			
			Does a knowledge profile exist for each process step showing current base line and development needs?	N/A			
			Does an integrated material balance exist including recycle streams?	N/A			
			Are critical process data available for process control?	N/A			
			Do the dispositions appear appropriate for the concern?	N/A			
			Does the program follow the recommendations through the implementation actions?	N/A			
			Review actions taken as a result of earlier independent reviews and operating experience from other DOE sites.	N/A			
			Has a formal risk assessment been made for each process step?	N/A			
			Have alternative systems/approaches been evaluated for high risk technology? What is status of alternatives?	N/A			
T9	Is a complete process flow sheet available for technical processes (vitrification)?	TP10	Are the 3 LAW material balances integrated with the HAW material balance?	N/A			
			Are the R & D programs associated with the difficult process steps?	N/A			
			Does a knowledge profile exist for each process step showing current base line and development needs?	N/A			
			Does an integrated material balance exist including recycle streams?	N/A			
			Are critical process data available for process control?	N/A			
			Do the dispositions appear appropriate for the concern?	N/A			
			Does the program follow the recommendations through the implementation actions?	N/A			
			Review actions taken as a result of earlier independent reviews and operating experience from other DOE sites.	N/A			
			Has a formal risk assessment been made for each process step?	N/A			
			Have alternative systems/approaches been evaluated for high risk technology? What is status of alternatives?	N/A			
T10	Have other major internal and external technical reviews been conducted to date on the BNF1 technical processes? Are summaries of the findings available? Is there a formalized system to track and respond to comments and recommendations?	TP11	Are the 3 LAW material balances integrated with the HAW material balance?	N/A			
			Are the R & D programs associated with the difficult process steps?	N/A			
			Does a knowledge profile exist for each process step showing current base line and development needs?	N/A			
			Does an integrated material balance exist including recycle streams?	N/A			
			Are critical process data available for process control?	N/A			
			Do the dispositions appear appropriate for the concern?	N/A			
			Does the program follow the recommendations through the implementation actions?	N/A			
			Review actions taken as a result of earlier independent reviews and operating experience from other DOE sites.	N/A			
			Has a formal risk assessment been made for each process step?	N/A			
			Have alternative systems/approaches been evaluated for high risk technology? What is status of alternatives?	N/A			
T11	Have the key process vulnerabilities been analyzed, and have options to work around problems been identified?	TP12	Are the 3 LAW material balances integrated with the HAW material balance?	N/A			
			Are the R & D programs associated with the difficult process steps?	N/A			
			Does a knowledge profile exist for each process step showing current base line and development needs?	N/A			
			Does an integrated material balance exist including recycle streams?	N/A			
			Are critical process data available for process control?	N/A			
			Do the dispositions appear appropriate for the concern?	N/A			
			Does the program follow the recommendations through the implementation actions?	N/A			
			Review actions taken as a result of earlier independent reviews and operating experience from other DOE sites.	N/A			
			Has a formal risk assessment been made for each process step?	N/A			
			Have alternative systems/approaches been evaluated for high risk technology? What is status of alternatives?	N/A			
T11			Are the 3 LAW material balances integrated with the HAW material balance?	N/A			
			Are the R & D programs associated with the difficult process steps?	N/A			
			Does a knowledge profile exist for each process step showing current base line and development needs?	N/A			
			Does an integrated material balance exist including recycle streams?	N/A			
			Are critical process data available for process control?	N/A			
			Do the dispositions appear appropriate for the concern?	N/A			
			Does the program follow the recommendations through the implementation actions?	N/A			
			Review actions taken as a result of earlier independent reviews and operating experience from other DOE sites.	N/A			
			Has a formal risk assessment been made for each process step?	N/A			
			Have alternative systems/approaches been evaluated for high risk technology? What is status of alternatives?	N/A			

Table 4. External Independent Review Team Line of Inquiry to CHG Deliverables Crosswalk. (18 Sheets)  
Technical Processes (Vitrification) (2 Sheets)

Level	Documentation	LOI #	Lines of Inquiry	CHG	ORP	DOE	Comments
T12	Program Management Has integration of design/operation/support been established?		TP24 At what point in the design is RAMI implemented?	N/A			Mission Analysis Report, DOE/ORP-2000-10
			TP25 What is the frequency of reviews? Are formal minutes kept?	N/A			Draft Project Execution Plan, HNF-6017
			TP26 Is a list of open items kept and dispositioned?	N/A			RPP Administration, HNF-IP-0842
			TP27 How are they integrated into the design needs?				Waste Feed Delivery Plan, HNF-IP-0842
			TP28 How are they integrated into the overall schedule?	N/A			ILAW Disposal Plan, HNF-1981
T13	Is there an integrated program schedule which includes the key activities of all the organizations involved in the ORP technical processes?		TP29 Are there any significant open items/technical issues unresolved?	N/A			AB Amendment Task Plan HNF-1722
			TP30 Have the responsibilities for each organization been delineated?	N/A			Health and Safety Program Description HNF-IP-0842, Vol. IX
			TP31 Are the authority/responsibility relationships appropriate for prompt resolution of problems?	N/A			Infrastructure Plan HNF-1882
			TP32 At what level of the organization are team coordinations formalized?	N/A			INLW Storage Plan HNF-1751
			TP33 Are procedures formalized to ensure proper involvement at all steps of R&D?	N/A			Environmental Program Description, RPP-1773
T15	Are clear lines of authority/responsibility for each ORP organization/entity established and documented?		TP34 Are P&D sub contractors controlled through formalized scopes of work?	N/A			QA Program Description HNF-IP-0842, Vol. XI
			TP35 Is there a formalized interface agreement between all disciplines?	N/A			Sys. Eng. Mgmt Plan HNF-SD-WM-SEMP-002
			TP36 Are cross-cut teams appointed to process areas to minimize rework?	N/A			Risk Mgmt Procedure, HNF-IP-0842, Vol. IV, Sec 2.6
			TP37 Does a resource loaded schedule exist? Does it meet project decision point requirements?	N/A			HR Staffing Plan, RPP-6114
			TP38 What are staffing plans as the project progresses?	N/A			Configuration Mgmt. Plan HNF-1900
T16	Program Integration Are detailed interface agreements between the various entities involved in the technical processes defined and documented?		TP39 Are the organizations self supporting in their needs?	N/A			Engineering Plan HNF-1947
			TP40 What is the manager to supervisor ratio?	N/A			Technical Baseline Sum. Desc. HNF-1901
			TP41 What is the supervisor to worker ratio?	N/A			Programmatic Baseline Summary HNF-1946
			TP42 What is the technician/draftsman support level?	N/A			Level 0 Logics
			TP43 What is the administrative support percentage?	N/A			Level 1 Logics
T17	Project Personnel Are current projected levels of staff adequate to fulfill the requirements of the BNFL program for technical processes?		TP44 Are there formalized training programs for the respective functions?	N/A			AGA's and Trade Studies
			TP45 What is the QA staffing and experience?	N/A			RPP, FY2000 MYWP Summary, RPP-5044
							MOA's
							TBRs
							ICDs
T18	Are the staff appropriately trained and educated to fulfill project requirements?						IPFs
							Acquisition and Contracting Plan, RPP-6113
							Memo of RTP w/Phase 1, RPP-6118
							HNF PROs, POLs, & MPA, RPP PROs
							Tri-Party Agreement
							ISMS Description, RPP-MP-003
							Mission Summary Diagram, RPP-5742 & -5836
							Project Execution/Management Plans
							Financial Analysis, HNF-2017
							Project System Engineering Documents
							TWRS S/RID, HNF-SD-MP-SRID-001
							RPP Major Facility Technical Interface Ref. Key
							Operations and Utilization Plan, RPP-SD-WM-SP-012

**Table 4. External Independent Review Team Line of Inquiry to CHG Deliverables Crosswalk. (18 Sheets)**  
**Environmental (1 Sheet)**

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Table 4. External Independent Review Team Line of Inquiry to CHG Deliverables Crosswalk. (18 Sheets)  
Facilities and Construction (5 Sheets)

Facilities and Construction									
Level	Documentation	LOI #	Lines of Inquiry	CRAD(s) CHG DOE/ ORP	Implementation Document	Comments			
FC1	DOE-HQ (EM, EH, PC, CI) Management Are management plans developed to accomplish required reviews?	F1	Are DOE-HQ Readiness to Proceed Criteria and Evaluation in a HQ management Plan or documented? (to assure appropriate criteria and readiness)	N/A					
			Are HQ personnel personally reviewing the BNFL deliverables? (to assure deliverable copies and/or travel arrangements and facilities needed to support scheduled reviews, concurrence, approvals have been incorporated in HQ planning)	N/A					
			Does HQ support the B-2 Summary Level Flow Path 2000? (to assess HQ leadership/champion(s), personnel buy-in and commitment, understanding of responsibilities, resource requirements to support schedule, and the impact if an Acquisition Advisory Board is convened)	N/A					
FC2	Are required review organizations identified?	F2							
FC3	Are responsibilities and authorities identified?	F3							
FC4 FC5	Have resource requirements been identified? Are interfaces with ORP and RL established?	F4	Do the HQ, ORP & RL communication plans support the schedule and review requirements? (to assure critical path cognizance over facilities and construction have adequate pre-knowledge of required information thus supporting expedited review and approval schedules)	N/A N/A					
FC6 FC7 FC8	DOE-RL/FDH Scope of Work Are deliverables defined to support the program? Are standards and performance criteria defined? Are baseline schedules and critical paths identified?	F5	Are cost and schedules baseline, updated and monitored? Are critical paths identified and monitored? (to assure baseline cost estimates and schedules exist and are updated; critical path(s) have been determined; costs and schedules are monitored and trended; funding requirements/sources have been defined and committed. WBS is used, required infrastructure and support services are timely to support RPP mission; contingencies are incorporated)	N/A					
FC9	Are baseline cost estimates developed and funding sources identified?	F6	Is funding adequate and committed to support the mission?	N/A					
FC10	Are interfaces with other facilities and contractors established?	F7	Do all the documents that define interfaces/infrastructure support requirements exist? If so where? (to assure infrastructure support requirements and standards are adequately defined and scheduled)	N/A					
FC11	Has a WBS been developed?	F8	Are there documents defining WBS? (to assure compatibility with Integrated WBS)	N/A					
FC12	Management Has a management plan been developed to accomplish the required work?	F9	Are RL/FDH Management controls and standards appropriate to support RPP? (to assess management plans and procedures support of RPP; consistency and implementation of engineering, design and construction standards throughout RL/FDH applicable projects and across interfaces; incorporation and adequacy of change control and configuration management and their integration with other elements of the program)	N/A					
FC13 FC14	Is there a formal process for change control? Is there a corrective action/tracking/close-out program?	F10	Have Corrective Action Programs addressed previous review and audit findings? (to assess implementation and close-out of findings/recommendations from previous/other reviews [including self-assessments] and how these items are addressed in a lessons-learned environment to help minimize and/or highlight repeat items; evaluate root cause analyses, if any are appropriate)	N/A					
FC15 FC16	Is there a structured organization? Are organization responsibilities and authorities established?			N/A N/A					

Table 4. External Independent Review Team Line of Inquiry to CHG Deliverables Crosswalk (18 Sheets)  
Facilities and Construction (5 Sheets)

Implementation Document				Comments														
Level	Facilities and Construction	LOI #	Lines of Inquiry	CRAD(s)														
FC17	Is there a risk management program?	F11	Are risk management results being used? (to assess incorporation of risk management as an element of project management, facility design and construction management and the roll-up of the RUFHD program to the RPP integrated risk management)	N/A														
FC18	Have RTP criteria been established/evaluated?	F12	Was RUFHD Readiness to Proceed Criteria and Evaluation adequate? (to assure appropriate criteria and readiness)	N/A														
FC19	Personnel Are personnel trained and qualified?	F13	Is there an established training program that ensures a qualified-continued resource of personnel? (to assess backgrounds, qualifications and training of personnel core competencies; continuity of direction and "corporate memory" to contribute to program success)	N/A														
			Have resource studies been completed to assure required support staff? (to assess resource/staffing studies and plans assuring adequate support; critical skills and contingency planning; integration of resource needs planning with other parts of RPP)															
FC20	Are resource requirements identified?	F14		N/A														
Integration See ORP																		
ORP																		
FC21	Scope of Work Are contractor/ORP deliverables defined to support the program?			N/A														
FC22	Are contractor/ORP standards and performance criteria defined?																	
FC23	Are contractor/ORP baseline schedules and critical parts identified?			N/A														
FC24	Are contractor/ORP baseline cost estimates developed and funding sources identified?			N/A														
FC25	Are contractor/ORP interfaces defined?			N/A														
FC26	Has a contractor/ORP WBS been developed?	F15	Are there documents defining WBS? (to assure compatibility with integrated WBS)	N/A														
Management																		
FC27	Has a management plan been developed to accomplish the required work?			N/A														
FC28	Is there a formal process for change control?			N/A														
FC29	Is there a corrective action/tracking/close-out program?	F16	Have Corrective Action Programs addressed previous review and audit findings? (to assess implementation and close-out of findings/recommendations from previous/other reviews [including self-assessments] and how these items are addressed in a lessons-learned environment to help minimize and/or highlight repeat items; evaluate root cause analyses, if any are appropriate)	N/A														
FC30	Is there a structured organization?			N/A														
FC31	Are organization responsibilities and authorities established?			N/A														
FC32	Is there a risk management program			N/A														
FC33	Does organization support oversight/monitoring role?			N/A														
FC34	Have RTP criteria been established/evaluated	F17	Was RUFHD Readiness to Proceed Criteria and Evaluation adequate? (to assure appropriate criteria and readiness)	N/A														
FC35	Personnel Are personnel trained and qualified?	F18	Is there an established training program that ensures a qualified-continued resource of personnel? (to assess backgrounds, qualifications and training of personnel core competencies; continuity of direction and "corporate memory" to contribute to program success)	N/A														
FC36	Are resource requirements identified?	F19	How will future personnel resource requirements be handled?	N/A														

Table 4. External Independent Review Team Line of Inquiry to CHG Deliverables Crosswalk. (18 Sheets)

Facilities and Construction (5 Sheets)								
Facilities and Construction			Implementation Document			CRAD(e)		
Level	Integration	LOI #	Lines of Inquiry	Implementation Document				
FC37	Has an integrated management plan been developed?	F20	Are the PIO efforts proceeding as scheduled? (to assess the schedules/progress/success in integrating management plans, change controls, cost estimates, schedules, monitoring and trending, contingency planning, WBS use, standards requirements, configuration management, resource studies and planning; assure that efforts are timely and beneficial to ensuring the mutual success of all parties and accomplishment of the RPP overall mission)	Mission Analysis Report, DOE/ORP-2000-10	Draft Project Execution Plan, HNF-6017	RPP Administration, HNF-IP-0842	Waste Feed Delivery Plan, HNF-IP-0842	ILAW Disposal Plan, HNF-1861
FC38	Has an integrated schedule and critical path been developed?	F21	Are integrated cost and schedules baseline, updated and maintained? Are integrated critical paths identified and monitored? (to assure baseline cost estimates and schedules, specifically supporting ORP, exist and are updated; critical path(s) have been determined; costs and schedules are monitored and trended; funding requirements/sources have been defined and committed; WBS is used; contingencies are incorporated)	AB Amendment Task Plan HNF-1722	Health and Safety Program Description HNF-IP-0842, Vol. IX	Infrastructure Plan HNF-1882	HLW Storage Plan HNF-1761	Environmental Program Description, RPP-1773
FC39	Has program integrated risk management been developed?	F22	Has risk management integration been completed?	Sys. Eng. Mgmt Plan HNF-SD-WM-SEMP-002	Risk Mgmt. Procedure, HNF-IP-0842, Vol. IV, Sec 2.6	Hir Staffing Plan, RPP-6114	Configuration Mgmt Plan HNF-1900	Engineering Plan HNF-1947
FC40	Are required interfaces identified and appropriate controlling documents (ICDs, MOUs) established?	F23	Does the OIRP Communication plans support schedule and review requirements? (to assure all parties participating in, and necessary for the success of, the RPP have established lines of communication; integrated RPP, as well as individual participant, critical paths and priorities are communicated and understood; integrated RPP vision and goals, as well as individual participant vision and goals are communicated to all levels; and all personnel are working to assure the mutual success of all parties and the overall success of the RPP)	Technical Baseline Sum. Desc, HNF-1901	Programmatic Baseline Summary HNF-1948	Level 0 Logistics	Level 1 Logistics	AGA's and Trade Studies
FC41	Are integrated resource needs established?			RPP, FY2000 MYWP Summary, RPP-5044	MOA's	TBRs	ICDs	IP's
FC42	Scope of Work Are deliverables defined to support the program?	F24	We will review selected BNF deliverables. (to assess management, standards, controls, facility engineering and design, schedules, construction planning, and interfaces meeting mission needs and requirements)	Acquisition and Contracting Plan, RPP-6113	Memo of RTP w/Phase I, RPP-6116	HNF PROs, POLs, & MPs, RPP PROs	Tri-Party Agreement	ISMS Description, RPP-MP-003
FC43	Are standards and performance criteria defined?			Mission Summary Diagram, RPP-5742 & -5836	Project Execution/Management Plans	Financial Analysis, HNF-2017	Project System Engineering Documents	TWRS SRID, HNF-SD-MP-SRID-001
FC44	Are baseline schedules and critical paths identified?			Operations and Utilization Plan, RPP-SD-WM-SP-012	Operations and Utilization Plan, RPP-SD-WM-SP-012	RPP Major Facility Technical Interface Ref. Key		
FC45	Are baseline cost estimates developed and funding requirements identified?							
FC46	Are interfaces with other facilities and contractors established?							
FC47	Has a WBS been developed?	F25	Are there documents defining WBS? (to assure compatibility with integrated WBS)					
FC48	Management Has a management plan been developed to accomplish the required work?	F26	Are BNF management processes, procedures, controls and standards, supplementary to the deliverables, supporting of a quality facility-design and construction? (to assess processes, procedures, controls, standards, review/self-assessments, change control and configuration management ensuring quality facility design, engineering and construction planning)					
FC49	Is there a formal process for change control?							
FC50	Is there a corrective action/tracking/close-out program?	F27	Have Corrective Action Programs addressed previous review and audit findings? (to assess implementation and close-out of findings/recommendations from previous/other reviews including QA audits and self-assessments) and how these items are addressed in a lessons-learned environment to help minimize and/or highlight repeat items; evaluate root cause analyses, if any, are appropriate)					
FC51	Is there a structured organization?							
FC52	Are organization responsibilities and authorities established?							

**Table 4. External Independent Review Team Line of Inquiry to CHG Deliverables Crosswalk. (18 Sheets)**

Level		Facilities and Construction		LOI #		Lines of Inquiry		CRAD(s)		Mission Analysis Report, DOE/ORP-2000-10		Implementation Document		Comments	
FC53	Is there a risk management program?	F28	Are the risk management results being used? (to assess incorporation of risk management as an element of project management, facility design, engineering and construction management and the roll-up of the BNFL program to the RPP integrated risk management)	N/A											
FC54	Have RTP criteria been established/evaluated?	F29	Was the Readiness to Proceed Criteria and Evaluation adequate? (to assure appropriate criteria and readiness)	N/A											
FC55	Are personnel trained and qualified?	F30	Is there an established training program that ensures a qualified-continued resource of personnel? (to assess backgrounds, qualifications and training of personnel, core competencies; continuity of direction and "corporate memory" to contribute to program success)	N/A											
FC56	Are resource requirements identified?	F31	Have resource studies been completed to assure required support staff? (to assess resource/staffing studies and plans assuring adequate support, critical skills and contingency planning, integration of resource needs planning with other parts of RPP)	N/A											
	Integration														
	See ORP														
	CHG														
FC57	Scope of Work														
FC58	Are deliverables defined to support the program?														
	Are standards and performance criteria defined?	F32	Where are the standards and performance criteria defined for the tank waste characterization and control, and facility safety? (to assess the program for waste characterization including qualification and certification activities; waste/tank feed sequencing; addition, deletion and control of tanks and wastes in the base program; program/process to ensure continued confidence in knowledge of characterization if there are waste additions; open Uses affecting the tanks and facilities to support the RPP; status/disposition, if any, of any NCS concerns)												
FC59	Are baseline schedules and critical paths identified?	F33	Are the baseline schedules and critical paths identified so that the cost estimates and schedules are monitored and trended? (to assure baseline cost estimates and schedules exist and are updated; critical path(s), in particular for line item projects, have been determined; cost and schedule monitoring and trending; funding requirements/sources have been defined and committed; WBS is used; required waste delivery capabilities, infrastructure and support services are timely to support RPP mission; contingencies are incorporated). Are there any unique materials or equipment required? (to assure adequate consideration of lead-times necessary for materials and equipment; and the ability to provide equipment and deliver wastes to meet interface and infrastructure requirements and support the overall success of the RPP)												
FC60	Are baseline cost estimates developed and funding sources identified?	F34	Are there any unique materials or equipment required? (to assure adequate consideration of lead-times necessary for materials and equipment; and the ability to provide equipment and deliver wastes to meet interface and infrastructure requirements and support the overall success of the RPP)	5.1 5.2 6.1											
	Are interfaces with other facilities and contractors established?	F35	Is funding adequate and committed to support the mission?												
FC61		F36	Where are the documents that define waste delivery, interface and infrastructure support requirements? (to assure waste delivery and other support requirements and standards are adequately defined and scheduled).	1.5 4.9											
- DOE Contract with CHG, River Protection Project, DE-AC06-99RL14047 - WFD TPM Assessment Plan, HNF-3943 Level 1 & 2 specifications for validated projects															
CH2M HILL Hanford Group, Inc. Corporation Acquisition Plan, (CHG-0001343) March 14, 2000															
HNF-IP-0842 Vol. IV, sec. 2.8. Interface Control Level 1 & 2 specifications for validated projects															

Table 4. External Independent Review Team Line of Inquiry to CHG Deliverables Crosswalk. (18 Sheets)

		Facilities and Construction (5 Sheets)		Implementation Document		Comments	
Level	Line of Inquiry	LOI #	CRAD(C)	1.1, 2 1.5, 2	1.6	1.4	1.3
FC52	Has a WBS been developed?						
FC53	Management Has a management plan been developed to accomplish the required work?	F37					
FC54	Is there a formal process for change control?						
FC55	Is there a corrective action/tracking/clos-out program?	F38					
FC56	Is there a structured organization?						
FC57	Are organization responsibilities and authorities established?						
FC58	Is there a risk management program?	F39					
FC59	Have RTP criteria been established/evaluated?	F40					
FC70	Personnel Are personnel trained and qualified?	F41					
FC71	Are resource requirements identified?	F42					

Table 4. External Independent Review Team Line of Inquiry to CHG Deliverables Crosswalk. (18 Sheets)  
Business and Finance (2 Sheets)

Implementation Document			CRAD(s)		Lines of Inquiry	LOI #	Criteria	Level
			CHG	DOE/ ORP				
B1	Business & Finance	Financial Projections Have Baseline Projections been prepared for the River Protection Project (RPP)?			BF1 Have Contingencies been included in the Plan?			
					BF2 Has there been an independent review of the financial model assumptions?			
					BF3 Have the financial and cost impacts of regulatory changes been analyzed?			
					BF4 Is there a system to trade costs?			
					BF5 Has the system for determining the best deal for the government been well explained?			
					BF6 Are the Life Cycle costs calculated properly and presented in the Report to Congress?			
					BF7 Have Government Vs Private Financing Alternatives been analyzed?			
					BF8 Has the overall Financing Structure been analyzed, including debt vs. equity tradeoffs?			
					BF9 Have alternative financing options been considered?			
					BF10 What is the optimal debt structure - long term, medium term, short term.?			
B2	Business & Finance	Is there a system for Evaluating and Negotiating the Financing?			BF11 Have hedges been considered for any foreign currency risks?			
					BF12 Is there a system for evaluating and hedging interest rate risk, including various interest rate scenarios?			
					BF13 Is there a system for monitoring repayment, terms and conditions of debt?			
					BF14 Is there a high level understanding of financing plan(s)?			
					BF15 Is there an overall understanding of financing plan(s) by various levels within DOE-HQ and ORP?			
					BF16 Has there been an independent review of the financing assumptions?			
					BF17 Have Probabilistic rate estimates been performed?			
					BF18 Is there a mechanism for evaluating benefits vs. costs of private financing?			
					BF19 Is there a ceiling on what you are willing to pay for private financing? How was this determined?			
					BF20 Are both DOE-HQ and ORP engaged in the Request for Budget Authority (BA)?			
B3	Business & Finance	Is the Budget sufficient to fund the project?			BF21 Will the Budget Appropriation cover any unwind costs for the debt of any financial products used for hedging?			
					BF22 Does the budget request match the requirements of the bidder?			
					BF23 Is there an Appropriation Schedule which matches the terms of the project?			
					BF24 Are there funding baselines and line items in the budget appropriation for each entity?			
					BF25 Have Contingencies been considered?			
					BF26 Have Cancellation Terms been considered?			
					BF27 Has a Probabilistic appropriations schedule been developed?			
					BF28 Is there a method to track cost against budget and work progress?			
					BF29 Have Probabilistic cost estimates been developed?			
					BF30 Is there a standard against which costs are measured?			
B4	Business & Finance	Risk Analysis Is a detailed risk analysis being performed by ORP?			BF31 Are the assumptions and assumed probabilities of events occurring consistent? Realistic? Complete?			
					BF32 Have all assumptions been reviewed with appropriate parties?			

Table 4. External Independent Review Team Line of Inquiry to CHG Deliverables Crosswalk. (18 Sheets)  
Business and Finance (2 Sheets)

Implementation Document			CRAD(s)		LOI #	Criteria	Level
Business & Finance	Mission Analysis Report, DOE/RP-2000-10	RPP Administration, HNF-IP-0042			Business & Finance	LOI #1 Has the Contractor Risk been analyzed?	N/A
	Draft Project Execution Plan, DOE/RP-2000-10						
	Waste Feed Delivery Plan, HNF-IP-0042						
	ILAW Disposal Plan, HNF-IP-1517						
	AB Amendment Task Plan HNF-IP-1722						
	Health and Safety Program Description HNF-IP-0042, Vol. IX						
	Infrastructure Plan HNF-IP-1882						
	HLW Storage Plan HNF-IP-1751						
	Environmental Program Description, RPP-1773						
	QA Program Description HNF-IP-0042, Vol. XI						
	Sys. Eng. Mgmt Plan HNF-SD-WM-SEMP-002						
	Risk Mgmt. Procedure, HNF-IP-0042, Vol. IV, Sec 2.6						
	HR Staffing Plan, RPP-6114						
	Configuration Mgmt. Plan HNF-1900						
	Engineering Plan HNF-1947						
	Technical Baseline Sum. Desc. HNF-1901						
	Programmatic Baseline Summary HNF-1946						
	Level 0 Logics						
	Level 1 Logics						
	AGA's and Trade Studies						
	RPP, FY2000 MYWP Summary, RPP-5044						
TBR's							
ICDs							
IP's							
Acquisition and Contracting Plan, RPP-6113							
Memo of RTP w/Phase I, RPP-6118							
HNF PRO's, POL's, & MFP's, RPP PRO's							
Tri-Party Agreement							
ISMS Description, RPP-4IP-003							
Mission Summary Diagram, RPP-5742 & -5836							
Project Execution/Management Plans							
Financial Analysis, HNF-2017							
Project System Engineering Documents							
TWRS S/RID, HNF-SD-MP-SRID-001							
RPP Major Facility Technical Interface Ref. Key							
Operations and Utilization Plan, RPP-SD-WM-SP-012							
Comments							



**Table 4. External Independent Review Team Line of Inquiry to CHG Deliverables Crosswalk. (18 Sheets)**

Level	Waste Processing	LOI #	Lines of Inquiry	CRAD(s)	W11	W12	W13	W14	W15	W16	W17	W18
W9	Have the four (4) waste envelopes been qualified for waste processing?	NW17	What level of site staff support (FTE) is required?	N/A								
W10	Is the waste feed delivery system (pipeline feed) design completed?	NW18	Is the characterization of the early tanks complete? Does the schedule for the other tanks appear appropriate?	3.6 4.1								
W11	Is the waste feed delivery system (pipeline feed) design completed?	NW19	Have samples been taken and waste forms prepared from the candidate tanks?	3.6								
W12	Is the waste feed delivery system (pipeline feed) design completed?	NW20	Do pipelines exist for the early transfer requirements? If not, are they scheduled for completion?	3.3								
W13	Is the waste feed delivery system (pipeline feed) design completed?	NW21	Do the rest of the facility requirements appear to be in line with the use requirements?	1.1								
W14	Is there a formalized technical logic outlining the approach to deal with the critical issues associated with processing the TMRS waste?	NW22	Are the technical programs scheduled to resolve deficiencies inline with the system requirements?	3.1.3								
W15	Is a complete process flow sheet available for waste processing?	NW23	Does an integrated material balance exist including recycle streams?									
W16	Have other major internal and external technical reviews been conducted to date the TMRS waste processing? Are the results of the findings probable? Is there a formalized system to track and respond to comments and recommendations?	NW24	Are critical process data available for process control?									
W17	Does the program follow the recommendations through to implementation actions?	NW25	Do the dispositions appear appropriate for the concern?									
W18	Review actions taken as a result of earlier independent reviews and operating experience from other DOE sites.	NW26	Does the program follow the recommendations through to implementation actions?									
W19	Has the waste existing process been defined?	NW27	Is the plan sufficient to meet schedule needs?	N/A								
W20	Is it anticipated that the treated waste will meet Land Disposal Restrictions?	NW28	Are the appropriate groups involved with plan resolutions?	N/A								
W21	Has the waste acceptance criteria for LAW been defined?	NW29	Does the plan meet the regulations?	N/A								
W22	Has the waste acceptance criteria for LAW been defined?	NW30	Is the schedule being consistent with the Assessment requirements?	7.7								
W23	Has the waste acceptance criteria for LAW been defined?	NW31	Is the schedule being consistent with the Integrated Schedule?	4.10								
W24	Has the waste acceptance criteria for LAW been defined?	NW32	Is there a schedule for permitting of all new facilities and facilities which require permit modification?	4.10 7.7								
W25	Has integration of design/operation/support been established?	NW33	At what point in the design is RAMI implemented?	7.6.3								
W26	What are frequency of reviews? Are formal minutes kept?	NW34	What are frequency of reviews? Are formal minutes kept?	7.6.2								
W27	Is a list of open items kept and dispositioned?	NW35	Is a list of open items kept and dispositioned?	7.6.2								
W28	Is there an integrated program schedule which indicates the key activities of all the organizations involved in the ORP waste processing program?	NW36	How are they integrated into the design needs?	7.6.3								

**Table 4. External Independent Review Team Line of Inquiry to CHG Deliverables Crosswalk. (18 Sheets)**  
**Waste Processing (3 Sheets)**

Level	Waste Processing	LOI #	Lines of Inquiry	CRAD(h)	Comments
W20	Are clear lines of authority/responsibility for each ORP organization/entity established and documented?	NW39	How are they integrated into the overall schedule?	4.10	
		NW40	Are there any significant open items/technical issues unresolved?	7.6	
		NW41	Have the responsibilities for each organization been delineated?	1.3	
		NW42	Are the authority/responsibility relationships appropriate for prompt resolution of problems?	1.3 7.6.3	
		NW43	At what level of the organization are team contributions formalized?	7.6.3	
W21	Program Integration Are detailed interface agreements between the various entities involved in the waste processing defined and documented?	NW44	Are procedures formalized to ensure proper involvement at all steps of R&D?	1.5 2.2.1 3.1.3 4.9	
		NW45	Are R&D sub contractions controlled through formalized scopes of work?	2.2.1 3.1.3	
		NW46	Is there a formalized interface agreement between all disciplines?	1.5 4.9	
		NW47	Are cross-cut teams appointed to process areas to minimize rework?	1.5 4.9	
		NW48	Does a resource loaded schedule exist? Does it meet project decision point requirements?	4.5.3 4.8.1	
W22	Project Personnel Are current projected levels of staff adequate to fulfill the requirements of the TWHS waste processing program?	NW49	What are staffing plans as project progresses?	4.8.1	
		NW50	Are the organizations self supporting in their needs?	4.8.1	
		NW51	What is the manager to supervisor ratio?	4.8.1	
		NW52	What is the supervisor to worker ratio?	4.8.1	
		NW53	What is the technician/draftsman support level?	4.8.1	
W23	WHS staff have appropriate level of training and education to fulfill project requirements?	NW54	What is the administrative support percentage?	4.8.1	
		NW55	Are there formalized training programs for the respective functions?	4.8.1	





