INL/EXT-15-34701
Revision 2

Final Design Report for the RH LLW Disposal Facility (RDF) Project

Project File: 31055

September 2015

The INL is a U.S. Department of Energy National Laboratory
operated by Battelle Energy Alliance

Final Design Report for the RH LLW Disposal Facility (RDF) Project

INL/EXT-15-34701
Revision 2

Project File: 31055
September 2015

Approved by:

B. Welty Project Manager	9/9/15 Date
G.R. Tarbet Design Authority	9-8-2015 Date
S.L. Austad Project Engineer	9-9-2015 Date

REVISION LOG

Rev.	Date	Affected Pages	Revision Description
0	3/2015	All	New document
1	5/2015	All	Added document numbers, Construction Quality Insp Plans, Cask Seismic Stability Evaluation
2	7/2015	All	Updated revision numbers for vault documents that were revised by Areva. Added Transition to Ops Plan, and draft POA.

CONTENTS

FINAL DESIGN REPORT FOR THE RH LLW DISPOSALFACILITY (RDF) PROJECT

1. Overview

The RH LLW Disposal Facility (RDF) Project was designed by AREVA Federal Services (AFS) and the design process was managed by Battelle Energy Alliance (BEA) for the Department of Energy (DOE). The final design report for the RDF Project is a compilation of the documents and deliverables listed in Appendix A.

2. Review Process

A preliminary review (60%) kickoff was held on November 3, 2014. The review was conducted using the BEA electronic change request (eCR) review system. Comments and resolutions for the preliminary review are included in eCR 627027 as "Review Number 1." A final design review (90%) kickoff was held on December 10, 2014. The review process used the electronic eCR system to track comments, resolutions, and acceptance. DOE review of the design documentation was completed in March 2015, with authorization granted to proceed with infrastructure construction received March 26, 2015. Several outstanding comments related to the vault system/cask-to-vault adapting structure design remained to be resolved. Following BEA review of updated vault system/cask-to-vault adapting structure design documentation, the vault system/cask-to-vault adapting structure design documentation was provided to DOE for review in July 2015 and all comments resolved. Copies of review comments (as applicable) are available in the project file.

3. Final Design Report Documents

Components of the final design are organized into four main sections: General, Infrastructure, Vault System, and Ancillary Equipment. Deliverables generally include drawings (DRAW); construction, fabrication, or performance specifications (SPC); vendor data schedules (VDS); calculations (CALC); and engineering information reports (EIR). Drawings and specifications are contractual documents between AFS and their construction subcontractors. Vendor data schedules provide instruction to the construction subcontractors for construction submittals such as product data, operational and maintenance manuals, etc. Calculations and EIRs provide design documentation information.

3.1 General Deliverables

Updated Project Definition Rating Index (PDRI): The PDRI was updated to reflect the status at CD 2/3.

Construction Safety and Health Plan (TOC-732): Consists of the Subcontractor Requirements Manual (SRM) effective documents list, the 1000-, 2000-, and 8000- series requirements documents form the SRM.

Code of Record (INL/EXT-10-20044): The Code of Record was updated to reflect the actual scope of building types and materials used in the final design of the project.

Technical and Functional Requirements (TFR-483): This TFR documents the requirements to which the RDF was designed.

Design-Build-Operate Performance Specification (SPC-1437): This performance specification, in addition to the TFR, documents the design requirements for the RDF.

AFS Constructability Review: AFS coordinated a constructability review during the final design review. The review was conducted by Curt Ulferts, a construction consultant to AFS, and DelHur Industries, a teaming partner to AFS on the Project.

BEA Constructability Review (INL/EXT-15-34586): As a supplement to the AFS constructability report, BEA prepared an additional report to document the constructability review process that was implemented to insure that an effective constructability review was performed and that all requirements of DOE Order 413.3-9, "U.S. Department of Energy Project Review Guide for Capital Asset Projects," in regards to this process have been addressed for the Remote-Handled Low-Level Waste Disposal Facility (RDF).

Construction Plan: This plan describes the approach that AFS will employ to systematically plan for, construct and deliver the RDF, thus ensuring that the nuclear safety, quality, specifications, and contract requirements are satisfied in full.

LFRG Approval of Design-Build Approach: This letter, dated June 2012, was to formally summarize/document the LFRG's assessment of the current situation with respect to the existing Performance Assessment (PA) assumptions; and 2) outline our recommendations on how best to proceed in terms of LFRG collaboration as you work towards final facility design and construction.

Preliminary Disposal Authorization Statement: Included is the Preliminary Disposal Authorization Statement for the INL RDF, dated April 2012.

Interim Cover Considerations Report: This white paper solicited input to ensure "all of the" potential impacts to operations and hydrologic and other issues associated with the interim cover were considered during the 90% design review.

Approved Construction Field Problems (CFPs) and Project Addendums: Included in the final design report are the approved CFPs that document any scope or requirement changes to the project contract documents and the project addendums.

Startup Plan for the Remote Handled Low-Level Waste Disposal Facility (PLN-4967): This Startup Plan was developed to meet the requirements of Core Requirement 11 in DOE O 425.1D and follows the requirements for a startup plan identified in DOE-STD-3006-2010. The startup plan ensures management oversight to verify personnel performance, procedure viability, and equipment operability and is developed in accordance with Section 5.3 of DOE G 413.3-9 to confirm the ability of the facility to operate by assessing and verifying system performance, environmental permit conditions, and safety requirements. This plan is not a final design review deliverable and is not shown on the list in Appendix A.

Contractor Operational Readiness Review (ORR) Plan of Action for the Remote Handled Low-Level Waste Disposal Facility (RDF) (PLN-4966): This draft document provides a Plan of Action (POA) to identify the applicable core requirements, describe the activities necessary to perform a Contractor Operational Readiness Review (CORR) and provide the criteria to verify readiness for the operation of the Remote-Handled (RH) Low-Level Waste (LLW) Disposal Facility.

Remote Handled Low-Level Waste Facility (RDF) Transition to Operations Plan (PLN-4862): This document serves as the top-level implementation plan for transition of RDF from project/construction management to MFC Operations.

3.2 Infrastructure Deliverables

The Project Infrastructure Deliverables include drawings; performance and construction specifications; calculations; engineering information records (EIRs); and vendor data schedules. The construction scope is divided into several different specification and drawing packages to complement the construction and bidding strategy. Stand-alone performance specifications will be used to procure the design and fabrication of the metal building systems for the Admin and Maintenance Buildings. Stand-alone performance specifications procure the design and installation of the fire alarm and fire sprinkler systems for the buildings. The scope of each document is described below.

3.2.1 Review Comments and Resolutions

Infrastructure Review Comments and Resolutions: Included are the BEA 60% and 90% review comments and resolutions from the electronic eCR review system.

3.2.2 Drawings

Infrastructure Drawings (788748 – 788912): The infrastructure drawings include the construction drawings for the installation of the buildings, site work including surface grading, sediment and erosion control, fencing, roadwork, monitoring wells, exterior lighting, and utilities.

3.2.3 Construction Specifications

Admin Building Construction Specification (RH LLW-SPC-00006 / SPC-1858): This specification accompanies the Infrastructure Drawings and includes the installation of the Admin Building, including architectural scope, HVAC, piping, plumbing fixtures, lighting, power distribution, lightning protection, and telecom/data.

Maintenance Building Construction Specification (RH LLW-SPC-00007 / SPC-1859): This specification accompanies the Infrastructure Drawings and includes the installation of the Maintenance Building, including architectural and structural scope, HVAC, piping, plumbing fixtures, lighting, power distribution, lightning protection, and telecom/data.

General Site Construction Specification (RH LLW-SPC-00008 / SPC-1860): This specification includes underground utilities (potable, sewer, fire water, electrical, telecom, data, and security), and site work (fencing, sidewalks and slabs, road work, surface grading). This specification will also accompany the Infrastructure Drawings.

Infrastructure Vendor Data Schedules: Included are the vendor data schedules for each specification.

3.2.4 Performance Specifications

Admin Building Performance Specification (RH LLW-SPC-00001 / SPC-1861): The Admin Building structure will be a pre-fabricated metal building system, comprised of rigid and portal frames enclosed with metal roofing and metal wall panels. The Admin Building will also have column-supported canopies for protecting exterior doorways. This specification includes design, analysis, shop drawings, and fabrication of the building metal building system, metal wall panels, and metal roofing. This specification does not include installation of the metal building system.

Maintenance Building Performance Specification (RH LLW-SPC-00002 / SPC-1862): The Maintenance Building structure will be a pre-fabricated metal building system, comprised of rigid and portal frames enclosed with metal roofing and metal wall panels. The Maintenance Building will also have column-supported canopies for protecting exterior doorways. This specification includes design, analysis, shop drawings, and fabrication of the building metal building system, metal wall panels, and metal roofing. This specification does not include installation of the metal building system.

Fire Sprinkler Performance Specification (RH LLW-SPC-00003 / SPC-1863): Specification scope includes design, analysis, shop drawings, material, fabrication, and installation of the fire sprinkler system for the Maintenance Building.

Fire Alarm Performance Specification (RH LLW-SPC-00004 / SPC-1864): This specification includes the requirements for design, shop drawings, material, and installation of the project fire alarm system.

3.2.5 Design Support Information

Admin and Maintenance Buildings Foundation Calculations (RH LLW-CALC-00003 / ECAR-2892): The calculations document the foundation design for both buildings, consisting of reinforced concrete footings, grade walls, and concrete slab-on-grade floors.

Electrical Calculation (RH LLW-CALC-00007 / ECAR-2812): This calculation documents the electrical distribution design established in the SKM modeling.

Mechanical Design Calculation (RH LLW-CALC-00008 / ECAR-2813): This document includes the sizing studies for the plumbing and HVAC systems for the new buildings and includes equipment data sheets for specific components used in the mechanical design. It also documents the building energy analyses, water usage documentation.

Civil Design Calculation (RH LLW-CALC-00010 / ECAR-2815): Calculations include roadway structural section design, vault yard layout design, and storm drain swale sizing.

Electrical Design Support Calculation (RH LLW-CALC-00011 / ECAR-2816): This calculation includes the lightning risk assessment for the Admin and Maintenance Buildings and photometric assessments for the building interiors and exteriors.

Architectural Design Support Detail (RH LLW-EIR-00002 / TEV-2454): This engineering information record includes the building code analysis, daylighting analysis, and architectural energy conservation analysis.

SKM Electrical Design Model Results: The SKM native model files were transmitted to BEA and reviewed. Included in this deliverable are various analysis reports generated by BEA indicating that appropriate sizes and ratings have been used for breakers, fuses, cables, and transformers.

3.2.6 Miscellaneous

Utilities Tie-in Subsurface Investigation Report: Included in the subsurface investigation report for the utilities tie-in.

USQ Evaluation for Utilities Tie-in Installation (ATR Complex-USQ-2014-539): A USQ has been performed for the tie-in to the ATR utility systems (fire water, potable water, power, etc.)

Building Septic System Permit: Copies of the Septic System Permit application and approval forms have been provided for information.

Infrastructure Construction Quality Verification Plans for the RH LLW Disposal Facility (RH LLW-EIR-00020 / PLN-4995): This document presents the infrastructure construction quality verification plans for the construction phase.

3.3 Vault System Deliverables

The vault system consists of the prefabricated, precast concrete vaults and vault plugs, and the vault backfill material. The precast vaults fabrication is performed in accordance with a vault fabrication construction specification and vault fabrication drawings. Installation is performed in accordance with the vault installation specifications and drawings.

3.3.1 Review Comments and Resolutions

Vault Review Comments and Resolutions: Included are the BEA 90% review comments and resolutions for the vault documents from the electronic eCR review system.

3.3.2 Drawings

Vault Installation Drawings (RH LLW-DRAW-0001 – 0016 / 788643 – 788658): Scope of drawings package includes installation of prefabricated, precast vaults and vault backfill material.

Vault Fabrication Shop Drawings (Vendor Data): These drawings include the shop drawings to which the precast vaults will be fabricated.

3.3.3 Construction Specifications

Construction Specification – Vault Fabrication (RH LLW-SPC-00005 / SPC-1857): Scope includes fabrication of the precast concrete vaults.

Construction Specification – Vault Installation (RH LLW-SPC-00014 / SPC-1910): Scope includes installation of the precast concrete vaults and vault backfill materials, including pea gravel, controlled low-strength material, drainage course, and native alluvium.

Vault Vendor Data Schedules: Vendor data schedules, which summarize the required vendor data that the constructor is required to submit, are included for each vault specification.

3.3.4 Design Support Information

Vault System Design Description (SDD-410): Provides the system design description as required for Hazard Category 2 nuclear facility safety systems. SDDs identify the requirements associated with structures, systems, and components, explains why those requirements exist (that is, provides the bases for the requirements), and describes the features of the system design provided to meet those requirements. As part of a configuration management change control process, the SDD helps ensure consistency among the engineering requirements for systems, the actual installed physical configuration, and the associated documentation.

Vault System Structural Design (RH LLW-CALC-00001 / ECAR-2810): The purpose of this calculation is to document the structural design of the RH-LLW pre-cast concrete disposal vaults for the required dead, live, and seismic loads including code-driven combinations thereof.

Vault System Minimum Reinforcement and Lifting Lug Design (RH LLW-CALC-00005 / ECAR-2744): This set of calculations documents the detailed design of the precast concrete RH-LLW Disposal Vault System including minimum reinforcement and lifting lug design.

Vault Plug and CVAS Shielding Analysis (RH LLW-CALC-00006 / ECAR-2747): This document provides shielding calculations for the Remote Handled Low Level Waste (RH-LLW) including:

1. Calculation of shielding provided by the five foot vault plug.
2. Calculation of exposure rates from most limiting operational steps associated with ancillary equipment.
3. Estimation of source terms from historical contact canister dose rates.

3.3.5 Concrete Mix Design

Vault Concrete Safety-Related Test Plan (RH LLW-TEST-00001 / PLN-4955): This test plan provides the requirements for testing safety related characteristics of the concrete mix design provided in AFS Document RH LLW-EIR-00001, Vault Concrete Mix Design. The mix tested was developed in accordance with BEA Specification SPC-1437. The mix design was tested to ensure safety-related parameters are provided to support the vault plug design and shielding calculations.

Vault Concrete Durability Test Plan (RH LLW-TEST-00002 / PLN-4867): This test plan provides the requirements for testing the Concrete Mix Design provided in AFS Document RH LLW-EIR-00001, RH LLW Vault Concrete Mix Design. The mix tested was developed in accordance with BEA Specification SPC-1437. The mix design was tested to provide parameters to support strength and durability requirements for the vault components.

Vault Concrete Compliance Test Plan (RH LLW-TEST-00003 / PLN-4956): This plan is applicable to the precast concrete for the vault components including the CVASs. The test requirements provided in this document will be used for preparation of detailed test and inspection procedures.

Vault Concrete Mix Design Report (RH LLW-EIR-00001 / PLN-4953): This document documents the precast vault concrete mix design.

Vault Concrete Safety-Related Design Parameters (RH LLW-EIR-00013 / PLN-4954): This document discusses the Safety Related parameters associated with vault concrete and provides the safety-related test results. The concrete durability parameters are provided in RH LLW-EIR-00014, Vault Concrete Durability Report.

Vault Concrete Selection Report (RH LLW-EIR-00014 / PLN-4952): The purpose of this evaluation is to provide the explanation for selection of the concrete mix designs to be used for the RH LLW precast concrete disposal vaults.

Vault Hydraulic and Concrete Performance Analysis: This document provides quantitative assessments of vault area hydraulic and concrete performance for precast concrete vault components. The analyses are provided to evaluate the final vault area and concrete design against the requirements of the Design-Build-Operate Performance Specification (SPC-1437, 2011).

3.3.6 Miscellaneous

Vault Array Summary Table (RH LLW-EIR-00015): This table is an updated version of the vault scope table provided in the TFR.

Vault and Cask-to-Vault Adapting Structures (CVAS) Fabrication Quality Verification Plan (RH LLW-EIR-00021 / PLN-4957): This document describes the vault and Cask-to-Vault Adapting Structure (CVAS) fabrication quality verification plan.

Vault Installation Quality Verification Plan (RH LLW-EIR-00022 / PLN-4994): This document describes the vault installation quality verification plan.

3.4 Ancillary Equipment Deliverables

3.4.1 Review Comments & Resolutions

Ancillary Equipment Review Comments and Resolutions: Included are the 90% BEA design review comments and resolutions from the electronic eCR review system.

3.4.2 Drawings

Ancillary Equipment Drawings (791350 – 791353): Includes CVAS drawings for the HFEF-5 and Modified FTC casks, and the arrangement and alignment guide drawings for the NuPac 14-210L cask.

3.4.3 Design Support Information

Seismic Stability Evaluation of the RH LLW Casks (RH LLW-CALC-00013 / ECAR-2878): This calculation serves as an evaluation of the seismic stability of the fire RDF casks including HFEF-5, Modified FTC, Large Concept Cask, NuPac 14-210L, and 55-ton casks.

AREVA Crane Analysis Report and BEA Recommendation: This report provides an analysis of alternatives to the existing Manitowoc 3900W crane. Included is the BEA letter summarizing the recommendation for the preferred alternative to the Manitowoc crane to support RDF operations.

3.5 Summary

The design meets the requirements as specified in the T&FR 483 and the SPC-1437 as verified by internal BEA design reviews and DOE design review.

Appendix A

RH LLW Disposal Facility Project Final Design Package

RH LLW Disposal Project Final Design Package

Deliverable	Rev.	Folder	AREVA Document #	BEA Document # (if applicable)
General				
Updated Project Definition Rating Index (PDRI)	N/A	\1-General\A-PDRI	N/A	N/A
Construction Safety & Health Plan (site SRM)	N/A	\1-General\B-Construction Safety & Health Plan	N/A	TOC-732
Code of Record Update	7	\1-General\C-Code of Record	N/A	INL/EXT-10-20044
Technical and Functional Requirements Update	5	\1-General\D-TFR	N/A	TFR-483
Design-Build-Operate Performance Specification	0	\1-General\E-Design Building Specification	N/A	SPC-1437
AFS Constructability Review	N/A	\1-General\F-Constructability Review	N/A	N/A
BEA Constructability Review	0	\1-General\F-BEA Constructability Review	N/A	INL/EXT-15-34586
Construction Plan	0	\1-General\G-Construction Plan	RH- LLW-CNP-0001	N/A
LFRG Approval of Design-Build Approach	N/A	\1-General\H-LFRG Approval	N/A	N/A
Preliminary Disposal Authorization Statement	N/A	\1-General\I-Prelim Disposal Auth	N/A	N/A
Interim Cover Considerations Report		\1-General\J-Interim Cover Considerations	N/A	N/A
Contract Addendums	N/A	\1-General\K-CFPs & Addendums	N/A	N/A
Approved Construction Field Problems (CFPs)	N/A	\1-General\K-CFPs & Addendums	N/A	N/A
Startup Plan for the Remote Handled Low-Level Waste Disposal Facility	0	\1-General\L-Startup Plan	N/A	PLN-4967
Contractor Operational Readiness Review (ORR) Plan of Action for the Remote Handled Low-Level Waste Disposal Facility (RDF)	DRAFT	\1-General\M-Contractor ORR Plan	N/A	PLN-4966
Remote Handled Low-Level Waste Facility (RDF) Transition to Operations Plan	DRAFT	\1-General\N-Transition to Ops Plan	N/A	PLN-4862
Infrastructure				
Review Comments & Resolutions				

Deliverable	Rev.	Folder	AREVA Document #	BEA Document # (if applicable)
Infrastructure Review Comments & Resolutions	N/A	\2-Infrastructure_Review Comments & Resolutions\	N/A	N/A
Drawings				
Infrastructure Drawings	0	\2-Infrastructure\A-Infrastructure Drawings\	RH LLW-DRAW-0030 – 0194	INL Drawing 788748 - 788912
Construction Specifications				
Admin Building Construction Specification	0	\2-Infrastructure\B-Construction Specs\	RH LLW-SPC-00006	SPC-1858
Maintenance Building Construction Specification	0	\2-Infrastructure\B-Construction Specs\	RH LLW-SPC-00007	SPC-1859
General Site Construction Specification	0	\2-Infrastructure\B-Construction Specs\	RH LLW-SPC-00008	SPC-1860
Vendor Data Schedules	0	\2-Infrastructure\B-Construction Specs\		
Performance Specifications				
Admin Building Performance Specification	0	\2-Infrastructure\C- Performance Specs\	RH LLW-SPC-00001	SPC-1861
Maintenance Building Performance Specification	0	\2-Infrastructure\C- Performance Specs\	RH LLW-SPC-00002	SPC-1862
Fire Sprinkler Performance Specification	0	\2-Infrastructure\C- Performance Specs\	RH LLW-SPC-00003	SPC-1863
Fire Alarm Performance Specification	0	\2-Infrastructure\C- Performance Specs\	RH LLW-SPC-00004	SPC-1864
Design Support Information				
Administration/Maintenance Building Foundation Design	0	\2-Infrastructure\D-Design Support Information\	RH LLW-CALC-00003	ECAR-2892
Electrical Design Support Information	0	\2-Infrastructure\D-Design Support Information\	RH LLW-CALC-00007	ECAR-2812
Mechanical Design Support Information	0	\2-Infrastructure\D-Design Support Information\	RH LLW-CALC-00008	ECAR-2813
Civil Design Calculation	1	\2-Infrastructure\D-Design Support Information\	RH LLW-CALC-00010	ECAR-2815
Architectural Design Support Detail	0	\2-Infrastructure\D-Design Support Information\	RH LLW-EIR-00002	TEV-2454
SKM Electrical Design Model Results	0	\2-Infrastructure\D-Design Support Information\	N/A	N/A
Miscellaneous				
Utilities Tie-in Subsurface Investigation Report	N/A	\2-Infrastructure\E-Misc.	N/A	N/A
USQ Evaluation for Utilities Tie-in Installation	0	\2-Infrastructure\E-Misc.	N/A	ATR Complex-USQ-2014-539
Building Septic System Permit	N/A	\2-Infrastructure\E-Misc.	N/A	N/A
Infrastructure Construction Quality Verification Plans	0	\2-Infrastructure\E-Misc.	RH LLW-EIR-00020	PLN-4995

Deliverable	Rev.	Folder	AREVA Document #	BEA Document # (if applicable)
Vault System				
Review Comments & Resolutions				
Vault System Review Comments & Resolutions	N/A	\3-Vaults_Review Comments & Resolutions\	N/A	N/A
Drawings				
Vault Installation Drawings	varies	\3-Vaults\A- Vault System Drawings\	RH LLW-DRAW-0001 - 0016	INL Drawing 788643 – 788658
Vault Fabrication Shop Drawings	varies	\3-Vaults\A- Vault System Drawings\	RH LLW-DRAW-0200 - 220	N/A
Construction Specifications				
Vault Construction Specification - Vault Fabrication	2	\3-Vaults\B-Specifications\	RH LLW-SPC-00005	SPC-1857
Vault Construction Specification - Vault Installation	2	\3-Vaults\B-Specifications\	RH LLW-SPC-00014	SPC-1910
Vendor Data Schedules	1	\3-Vaults\B-Specifications\		
Design Support Information				
System Design Description	2	\3-Vaults\C-Design Support Information\	N/A	SDD-410
Vault System Structural Design	2	\3-Vaults\C-Design Support Information\	RH-LLW-CALC-00001	ECAR-2810
Vault System Minimum Reinforcement and Lifting Lug Design	2	\3-Vaults\C-Design Support Information\	RH-LLW-CALC-00005	ECAR-2744
Vault Plug and CVAS Shielding Analysis	2	\3-Vaults\C-Design Support Information\	RH LLW-CALC-00006	ECAR-2747
Concrete Mix Design & Related Documents				
Vault Concrete Safety-Related Test Plan	0	\3-Vaults\D-Concrete Documents\	RH LLW-TEST-00001	PLN-4955
Vault Concrete Durability Test Plan	0	\3-Vaults\D-Concrete Documents\	RH LLW-TEST-00002	PLN-4867
Vault Compliance Test Plan	3	\3-Vaults\D-Concrete Documents\	RH LLW-TEST-00003	PLN-4956
Vault Concrete Mix Design Report:	2	\3-Vaults\D-Concrete Documents\	RH LLW-EIR-00001	PLN-4953
Vault Concrete Safety-Related Design Parameters	2	\3-Vaults\D-Concrete Documents\	RH LLW-EIR-00013	PLN-4954
Vault Concrete Selection Report	1	\3-Vaults\D-Concrete Documents\	RH LLW-EIR-00014	PLN-4952
Vault Hydraulic and Concrete Performance Analysis	N/A	\3-Vaults\D-Concrete Documents\	N/A	N/A
Miscellaneous				
Vault Array Summary Table	1	\3-Vaults\E-Misc.\	RH LLW-EIR-00015	N/A
Vault and CVAS Fabrication Quality	2	\3-Vaults\E-Misc.\	RH LLW-EIR-00021	PLN-4957

Deliverable	Rev.	Folder	AREVA Document #	BEA Document # (if applicable)
Verification Plan				
Vault Installation Quality Verification Plan	2	\3-Vaults\E-Misc.\	RH LLW-EIR-00022	PLN-4994
Ancillary Equipment				
Review Comments & Resolutions				
Ancillary Equipment Review Comments & Resolutions	N/A	\4-Ancillary Equipment_Review Comments & Resolutions\	N/A	N/A
Drawings				
Ancillary Equipment Drawings	varies	\4-Ancillary Equipment\A-Design Drawings\	RH LLW-DRAW-0230 - 0242	INL Drawing 791350 - 791353
Design Support Information				
Cask Seismic Stability Evaluation	1	\4-Ancillary Equipment\B-Design Support Information\	RH LLW-CALC-00013	ECAR-2878
Manitowoc Crane Report	0	\4-Ancillary Equipment\C-Crane Report\	N/A	TEV-2339