CRWMS/M&O

Design Analysis Cover Sheet

Complete only applicable items.

(1.)

WBS: 1.2.6
QA: QA
Page: 1 Of: 6

2. DESIGN ANALYSIS TITLE			
REQUIREMENTS ALLOCATION ANALYSIS FOR NORTH RAMP EXCAVATION AND LAYOUT, CII: BABEAD000			
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12. REMARKS

NONE

Design Analysis Revision Record

Complete only applicable items.

(1.)

2. DESIGN ANALYSIS TITLE

REQUIREMENTS ALLOCATION ANALYSIS FOR NORTH RAMP EXCAVATION AND LAYOUT, CII: BABEAD000

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5. Revision No.	6. Pages Added	7. Pages Deleted	8. Description of Revision
00	7	0	Approved but not issued
01	0	0	Initial issue
			Editorial corrections throughout
			Add ESFDR Requirements: 3.2.1 M5a, 3.2.1 M5b,
			3.2.2.4 D9, 3.2.2.4 P, 3.2.2.4 S5, 3.2.2.6 E5, and 3.2.7
			Page 7 Add note 5. "TBD"
			Page 5 "TBD-094" to "TBD-098"
			Page 6 Add "5 (TBD-140)"
02	0	0	Editorial corrections throughout
			Add ESFDR Requirements: 3.2.1.4 C5, 3.2.9.4 D3, 3.3.1.4
			Delete 3.2.1.19.7 A, 3.2.1.19.7 B, and 3.2.1.19.9 C
03	0	0	Add 3.2.1 N (Design Basis to be Consistent), 3.2.1 Z1,
			3.2.1 Z2, 3.2.1.4 C (Maintain Data for SAR), 3.2.1.4 D,
			3.2.1.4 D, 3.2.1.25.6 A, 3.2.2.4 H, 3.2.2.4 H2
04	0	1	Editorial changes throughout
			Delete ESFDR Requirements: 3.2.1 P, 3.2.1 AC, and
			3.2.2.4 C8 (Per ESFDR Rev 01)
			Delete TBV-200, TBV-199, TBD-098, TBD-140, and
			TBD-096 (Per ESFDR Rev 01)
			Delete footnotes 1, 4, and 5 and renumber accordingly

1. PURPOSE

The purpose and objective of this analysis is to allocate all Exploratory Studies Facility Design Requirements (ESFDR) (Reference 8.1) applicable to Configuration Item (CI) North Ramp Excavation and Layout, Configuration Item Identifier (CII) BABEAD000.

2. QUALITY ASSURANCE

The quality assurance classification and controls for the North Ramp are presented in the Determination of Importance Evaluation (DIE) for Package 2C (See Reference 8.2). Sections 11.1 and 11.3 of the DIE provide the basis for classifying the North Ramp Excavated Opening as QA-1 and QA-2, and for establishing Q controls.

3. METHOD

Identify applicable requirements by detailed review of the ESFDR (Reference 8.1).

4. CODES AND STANDARDS

Not applicable.

5. DESIGN INPUTS

No design inputs other than the criteria identified in Section 6 are applicable to this analysis.

6. CRITERIA

ESFDR (Reference 8.1)

7. ASSUMPTIONS

Not applicable.

8. REFERENCES

8.1 YMP/CM-0019 REV 01, December 23, 1994, "Exploratory Studies Facility Design Requirements"

8.2 DI: BAB000000-01717-2200-00005, Rev. 03, "Determination of Importance Evaluation for ESF Package 2C."

9. COMPUTER PROGRAMS

No computer programs were used in this analysis.

10. DESIGN ANALYSIS

10.1 DEFINITION OF CI

The North Ramp is defined as an engineered opening that connects the North Portal with the subsurface. The ramp provides access to the targeted horizons for the development of subsurface excavations and subsurface testing operations.

The North Ramp will serve as the primary muck removal opening for test area development and will include site characterization test activities.

This section of the ramp will extend from approximately 60 m to approximately 2800 m.

The North Ramp layout addresses the horizontal and vertical alignment of the opening. The North Ramp excavation addresses concerns associated with the opening excavation utilizing a 7.62 m diameter Tunnel Boring Machine (TBM).

10.2 BOUNDARIES AND INTERFACES

The repository/Exploratory Studies Facility (ESF) interface constraints are given in ESFDR Section 3.2.1 and repository/ESF interface drawings are listed in ESFDR Appendix A.2.

The North Ramp shares physical interfaces with the following systems: North Portal, Main Drift, Linings and Ground Support, Furnishings, Operations Support Alcoves, Test Support Areas, Subsurface Power, Subsurface Communications, Subsurface Lighting, Subsurface Ventilation, Subsurface Water and Waste Water, Subsurface Compressed Air, TBM, Fire Protection, Subsurface Monitoring and Warning Systems, Integrated Data System, and muck, material and personnel handling systems.

The North Ramp shares functional interfaces with the following organizations: Test Coordinator's Office, ESF Surface Design, and Potential Repository Design Group.

Surface based testing is an interface to all construction activities in the ESF.

10.3 The requirements contained in the ESFDR (Reference 8.1) applicable to the North Ramp Excavation and Layout CII: BABEAD000, shall be as listed in Section 11, Conclusions.

11. CONCLUSIONS

The following ESFDR criteria (Reference 8.1) are applicable to CII: BABEAD000:

[3.2.1 C]
[3.2.1 D]
[3.2.1 H]
[3.2.1 H1a]
[3.2.1 H2d]
[3.2.1 H2e]
[3.2.1 H2e i]
[3.2.1 I1]
[3.2.1 I2]
[3.2.1 I4]
[3.2.1 J1]
[3.2.1 J3]
[3.2.1 J4]
[3.2.1 J5]
[3.2.1 J6]
[3.2.1 J8]
[3.2.1 J9]
[3.2.1 K]
[3.2.1 M]
[3.2.1 M1]
[3.2.1 M2]
[3.2.1 M3]
[3.2.1 M4]
[3.2.1 M5]
[3.2.1 M5a]
[3.2.1 M5b]
[3.2.1 M6]
[3.2.1 N]

[3.2.1 Q]
[3.2.1 R]
[3.2.1 S]
[3.2.1 T]
[3.2.1 W]
[3.2.1 W1]
[3.2.1 Z]
[3.2.1 Z1]
[3.2.1 Z2]
[3.2.1 AA2]
[3.2.1 AA4]
[3.2.1 AA5]
[3.2.1 AA6]
[3.2.1 AB]

[3.2.1.4]
[3.2.1.4 B1]
[3.2.1.4 B1a]
[3.2.1.4 B1b]
[3.2.1.4 B1b iii]
[3.2.1.4 B1b iv]
[3.2.1.4 B1b v]
[3.2.1.4 B2]
[3.2.1.4 B3]
[3.2.1.4 B4]
[3.2.1.4 C]
[3.2.1.4 C2]
[3.2.1.4 C5]
[3.2.1.4 D]
[3.2.1.9.3 C1]
[3.2.1.9.3 C1a]
[3.2.1.9.4 B5]
[3.2.1.9.4 C]
[3.2.1.9.4 C1]
[3.2.1.19.1 B]
[3.2.1.19.2 A]
[3.2.1.19.2 E1]
[3.2.1.19.2 E2]
[3.2.1.19.2 E3]
[3.2.1.19.3]
[3.2.1.19.3 B]
[3.2.1.19.5 A]
[3.2.1.25.6 A]
[3.2.1.25.6 B]
[3.2.1.28]
[3.2.2 B]
[3.2.2 C]
[3.2.2 D]
[3.2.2 D1]
[3.2.2 D2]
[3.2.2 D3]
[3.2.2 E]
[3.2.2 F]
[3.2.2 G]
[3.2.2 G1]
[3.2.2.4 A]
[3.2.2.4 A1]

[3.2.2.4 B2]
[3.2.2.4 C]
[3.2.2.4 C1]
[3.2.2.4 C3]
[3.2.2.4 C4]

[3.2.2.4 D]
[3.2.2.4 D2]
[3.2.2.4 D3]
[3.2.2.4 D5]
[3.2.2.4 D6]
[3.2.2.4 D9]
[3.2.2.4 E]
[3.2.2.4 F]
[3.2.2.4 F1]
[3.2.2.4 F3]
[3.2.2.4 F4]
[3.2.2.4 G]
[3.2.2.4 H]
[3.2.2.4 H1]
[3.2.2.4 H2]
[3.2.2.4 H4]
[3.2.2.4 I1]
[3.2.2.4 I3]
[3.2.2.4 I5]
[3.2.2.4 J]
[3.2.2.4 L]
[3.2.2.4 L1]
[3.2.2.4 L2]
[3.2.2.4 L7]
[3.2.2.4 M]
[3.2.2.4 P]
[3.2.2.4 P1] [1](TBV-201)
[3.2.2.4 Q]
[3.2.2.4 R]
[3.2.2.4 R1]
[3.2.2.4 S4]
[3.2.2.4 S5]
[3.2.2.4 S6]
[3.2.2.4 T]
[3.2.2.4 T1]
[3.2.2.4 U]
[3.2.2.4 U3]
[3.2.2.6 E5]
[3.2.7]
[3.2.9 A]
[3.2.9.4 D1] [2](TBD-097)
[3.2.9.4 D3]
[3.2.9.4 D4]
[3.2.9.4 E]
[3.2.9.4 E1]
[3.3.1.4]

1. TBV number not carried down to output documents. Work may proceed because any probe drilling employed in advance of TBM shall be performed under the direction of the Test Coordinator's Office and will not impact design. The TBV will be resolved, even though it will not appear on lower tier documents. The TBV remains open.

2. TBD number not carried down to output documents. Work may proceed using designs which contain suitable accommodation for such additional testing as may be required by the U.S. Nuclear Regulatory Commission, to the extent known at this time and which can be reasonably anticipated. The designs shall satisfy the intent of ESFDR (Reference 8.1) requirements in this respect. The TBD will be resolved, even though it will not appear on lower tier documents. The TBD remains open.

12. ATTACHMENTS

Not applicable.