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OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT
ANALYSIS/MODEL COVER SHEET

1. QA: L

Complete Only Applicable Items

2. ☑ Analysis	☑ Engineering	3. ☐ Model	☐ Conceptual Model Documentation
	☐ Performance Assessment		☐ Model Documentation
	☐ Scientific		☐ Model Validation Documentation

4. Title:
Classification of the MGR Waste Package Remediation System

5. Document Identifier (including Rev. No. and Change No., if applicable):
ANL-WPR-SE-000001 REV 00

6. Total Attachments:	7. Attachment Numbers - No. of Pages in Each:
Three (3)	I-1, II-4, III-16

	Printed Name	Signature	Date
8. Originator	Scott E. Salzman	Scott E Salzman	8/30/99
9. Checker	Kelvin J. Montague	Kelvin J Montague	8/30/99
10. Lead/Supervisor	Thomas D. Dunn	Thomas D Dunn	8/30/99
1. Responsible Manager	Dealis W. Gwyn	Dealis W. Gwyn	8/31/99

12. Remarks:
This analysis contains the following To Be Verified design input: TBV-459 & TBV-1196

The document number for this analysis was previously BCB000000-01717-0200-00017 REV00.

This analysis bases the classification of Monitored Geologic Repository structures, systems and components on the criteria of proposed rule 10 CFR 63 (64 FR 8640). A review has determined that the changes made to proposed rule 10 CFR 63 by Interim Guidance Pending Issuance of New U. S. Nuclear Regulatory Commission (NRC) Regulations for Yucca Mountain, Nevada (Dyer 1999) do not impact the classifications made in this analysis.

OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT
ANALYSIS/MODEL REVISION RECORD

Complete Only Applicable Items

2. Analysis or Model Title:
Classification of MGR Waste Package Remediation System

3. Document Identifier (including Rev. No. and Change No., if applicable):
ANL-WPR-SE-000001 REV 00

4. Revision/Change No.	5. Description of Revision/Change
00	Initial issue. This system specific analysis was performed to supersede the applicable portion of B00000000-01717-0200-00134 Rev 01 (CRWMS M&O 1998d).

CONTENTS

Tables

1. PURPOSE

The purpose of this analysis is to document the Quality Assurance (QA) classification of the Monitored Geologic Repository (MGR) waste package remediation system structures, systems and components (SSCs) performed by the MGR Safety Assurance Department. This analysis also provides the basis for revision of YMP/90-55Q, *Q-List* (YMP 1998). The Q-List identifies those MGR SSCs subject to the requirements of DOE/RW-0333P, *Quality Assurance Requirements and Description* (QARD) (DOE 1998).

This QA classification incorporates the current MGR design and the results of the *Preliminary Preclosure Design Basis Event Calculations for the Monitored Geologic Repository* (CRWMS M&O 1998a).

2. QUALITY ASSURANCE

This analysis is subject to the requirements of the QARD (DOE 1998) as determined by procedures QAP-2-0, *Conduct of Activities*, and NLP-3-18, *Documentation of QA Controls on Drawings, Specifications, Design Analyses, and Technical Documents*. *Design Basis Event Definition & Analysis/QA Classification Analysis (1.2.1.11) Activity Evaluation* (CRWMS M&O 1999a) presents the QAP-2-0 activity evaluation addressing the QA classification of MGR SSCs. This analysis is performed in accordance with procedures QAP-2-3, *Classification of Permanent Items*, and AP-3.10Q, *Analyses and Models*, and provides input to the design of SSCs included on the Q-List (YMP 1998). Unverified design inputs are identified and tracked in accordance with NLP-3-15, *To Be Verified (TBV) and To Be Determined (TBD) Monitoring System*.

3. COMPUTER SOFTWARE AND MODEL USAGE

This analysis uses no software which is required to be controlled in accordance with procedure AP-SI.1Q, *Software Management*.

4. INPUTS

4.1 PARAMETERS

The offsite radiological consequences of MGR Category 1 and 2 design basis events (DBEs), as calculated in *Preliminary Preclosure Design Basis Event Calculations for the Monitored Geologic Repository* (CRWMS M&O 1998a), are utilized in the QA classification of MGR SSCs. In addition, more realistic radionuclide release fractions have been developed for use in the evaluation of MGR Category 1 and 2 DBEs. These release fractions have been incorporated into the preliminary DBE calculations (CRWMS M&O 1998a) for use in this classification analysis as documented in a QAP-3-12 Design Input Transmittal (CRWMS M&O 1999c). These results represent a conservative evaluation of MGR DBEs and the best information available.

As discussed in Section 6.1 of this analysis, NUREG-1318, *Technical Position on Items and Activities in the High-Level Waste Geologic Repository Program Subject to Quality Assurance Requirements* (NRC 1998, Section 4.2(a)) allows the use of engineering judgement and conservative bounding assumptions in the QA classification of facility SSCs when data sources are limited. The use of preliminary accident analysis results in the QA classification of MGR SSCs is allowed by Attachment 3 of procedure YAP-2.7Q, *Item Classification and Maintenance of the Q-List,* and Section 5.1.3 of procedure QAP-2-3. Procedure YAP-2.7Q directs the use of the highest level of detail available to support the conclusion of the QA classification analysis and QAP-2-3 directs the use of the best available design information. The use of preliminary release fractions is tracked by TBV-1196 and is discussed further in Section 5.3.

4.2 CRITERIA

The criteria used in the QA classification of MGR SSCs are provided in procedure QAP-2-3 as discussed in Section 6.1. These criteria satisfy the requirement of Section 2.2.2, *Classifying Items*, of DOE/RW-0333P (DOE 1998).

4.3 CODES, STANDARDS, AND REGULATIONS

10 CFR (Code of Federal Regulations) 20. Energy: Standards for Protection Against Radiation. January 1, 1999.

64 FR (Federal Register) 8640. Disposal of High-Level Radioactive Wastes in a Proposed Geologic Repository at Yucca Mountain, Nevada. Proposed rule 10 CFR 63.

NRC (U. S. Nuclear Regulatory Commission) 1998. *Technical Position on Items and Activities in the High-Level Waste Geologic Repository Program Subject to Quality Assurance Requirements.* NUREG-1318. April 1988. Washington, D.C.: U.S. Nuclear Regulatory Commission.

5. ASSUMPTIONS

The following assumptions are made in the performance of this analysis.

5.1 This analysis assumes that system design, architecture and functions are established by the *Waste Package Remediation System Description Document* (CRWMS M&O 1998c). This analysis also assumes that the MGR architecture is established by *Monitored Geologic Repository Architecture* (CRWMS M&O 1999b) and that MGR operations and architecture are described by *Monitored Geologic Repository Concept of Operations* (CRWMS M&O 1998b). These documents represent the best available MGR design information. This assumption is utilized in Section 6.2 to define the waste package remediation system design configuration and SSC functions.

5.2 The 10 CFR Part 63 definition of *Important to Safety* invokes the 10 CFR Part 20 radiation exposure limits for Category 1 DBEs. However, the analysis of occupational exposures as a result of Category 1 DBEs has not been performed to date. This analysis assumes that the radiation doses to facility workers as the result of Category 1 DBEs associated with the assembly transfer system, do not exceed the occupational dose limits of 10 CFR Part 20, Subpart C. This assumption is based upon protection of facility workers against external exposures by installed radiation shielding and internal exposures by the confinement functions of the Waste Handling Building (WHB) System and the WHB Ventilation System. This assumption is utilized in Section 6.4 for the classification of waste package remediation system SSCs. (TBV-459)

5.3 The QA classification results presented in Section 7.0 assume the incorporation of preliminary release fractions (CRWMS M&O 1999c) into the MGR DBE calculations (CRWMS M&O 1998a). These release fractions represent the best available information and the use of them is tracked by TBV-1196.

6. ANALYSIS

6.1 METHOD

The basic process for classifying permanent MGR SSCs is provided by procedure QAP-2-3. Guidance provided by procedure YAP-2.7Q is also used in this analysis. The process consists of establishing the configuration and function of MGR SSCs and the effect of the SSC on MGR radiological safety. This information is then evaluated against criteria provided in QAP-2-3 to determine the QA classification of the particular item. The classification criteria are provided in the form of checklists in procedure QAP-2-3. A copy of these criteria checklists is provided in Attachment II. The following classification categories are specified by QAP-2-3 to meet the requirements of Section 2 of the QARD (DOE 1998).

Quality Level 1 (QL-1) Those SSCs whose failure could *directly* result in a condition adversely affecting public safety. These items have a high safety or waste isolation significance.

Quality Level 2 (QL-2) Those SSCs whose failure or malfunction could *indirectly* result in a condition adversely affecting public safety, or whose *direct* failure would result in consequences in excess of normal operational limits. These items have a low safety or waste isolation significance.

Quality Level 3 (QL-3) Those SSCs whose failure or malfunction would not significantly impact public or worker safety, including those defense-in-depth design features intended to keep doses ALARA (As Low As Reasonably Achievable). These items have a minor impact on public and worker safety and waste isolation.

Conventional Quality (CQ) Those SSCs not meeting any of the criteria for Quality Levels 1, 2, or 3. Conventional quality items are not subject to the requirements of

QARD.

This analysis method is based on an iterative design-classification process where each analysis iteration is considered a final product for that phase of design. In this case, the system design and the DBE analysis (CRWMS M&O 1998a) are evaluated to determine which of the system's SSCs require design control under the QA program. The analysis presented in this document, therefore, will be reevaluated as necessary using a methodology appropriate to the level of DBE analysis and system design detail. This approach is consistent with NUREG-1318, *Technical Position on Items and Activities in the High-Level Waste Geologic Repository Program Subject to Quality Assurance Requirements* (NRC 1998, Section 4.2(a)), which allows engineering judgement and conservative bounding assumptions to be used in cases where data are limited.

6.2 MGR DESIGN CONFIGURATION AND ARCHITECTURE

Prior to the QA classification of MGR SSCs, the system design configuration as well as the function of system's SSCs are established. This classification analysis is based upon the system design and functions as established by the System Description Document (SDD) (CRWMS M&O 1998c) and the MGR Concept of Operations (CRWMS M&O 1998b). In the process of QA classification, if two or more subsystems perform similar functions or are similarly classified, these subsystems are classified as a group under the higher level system and not listed individually.

6.3 DESIGN BASIS EVENT ANALYSIS

A preliminary analysis of MGR DBEs (CRWMS M&O 1998a) has been performed to determine the effects of internal and external events on facility radiological safety and is utilized by this analysis in the classification of MGR SSCs. The DBE analysis addresses both the DBE frequencies and dose consequences at the site boundary. This analysis utilizes the results of the DBE analysis to evaluate MGR SSCs against the classification criteria of procedure QAP-2-3.

6.4 QUALITY ASSURANCE CLASSIFICATION OF MGR SSCs

A preliminary analysis of MGR DBEs (CRWMS M&O 1998a) has been performed to determine the effects of internal and external events on facility radiological safety and is utilized by this analysis in the classification of MGR SSCs. The DBE analysis addresses both the DBE frequencies and dose consequences at the site boundary. As discussed in Section 4.1, revised release fractions have been incorporated into the preliminary DBE calculations (CRWMS M&O 1998a) for use in this classification analysis.

This analysis utilizes the results of the DBE analysis to evaluate MGR SSCs against the classification criteria of procedure QAP-2-3.

7. CONCLUSIONS

7.1 MGR QA CLASSIFICATION

The results of this QA classification analysis are provided in Table 1. As the design of the MGR proceeds and further DBE analyses of MGR hazards are performed, this classification analysis will be reviewed for impact and revised as necessary. The MGR classification checklists included in procedure QAP-2-3 are reproduced in Attachment II. The basis for the classification evaluation is provided in Attachment III.

Table 1 Waste Package Remediation System QA Classification

Waste Package Remediation System (WPR)	QL-1	QL-2	QL-3	CQ	TBV
Control & Tracking System		X			N/A
Decontamination System		X			N/A
Handling/Transfer System					
Bridge Crane/Hoist		X			N/A
Hot Cell Manipulator		X			N/A
Lid Handling & Transfer Equipment		X			N/A
WP/DC Inspection/Sampling System				X	N/A
WP/DC Transport System				X	459, 1196
DC/WP Weld Preparation & Opening System		X			N/A

7.2 IMPACT OF UNVERIFIED DATA

7.2.1 TBV-459

This analysis assumes that the radiation doses to facility workers as the result of Category 1 DBEs associated with the waste package remediation system do not exceed the occupational dose limits of 10 CFR Part 20, Subpart C.

The basis of this assumption is provided in Section 5.2. TBV-459 requires that future DBE analysis verify this assumption. If the assumptions addressed by TBV-459 cannot be verified by MGR DBE analysis, the WP/DC transport system may be reclassified as QL-3.

7.2.2 TBV-1196

The QA classification results presented in Section 7.0 assume the incorporation of preliminary release fractions (CRWMS M&O 1999c) into the MGR DBE analysis (CRWMS M&O 1998a). Additional DBE analysis is required to verify the radiological doses calculated using the preliminary release fractions. The impact of not verifying these doses may include reclassification of the WP/DC transport system from CQ to QL-2 or QL-1.

8. REFERENCES

8.1 DOCUMENTS CITED

CRWMS M&O (Civilian Radioactive Waste Management System Management and Operating Contractor) 1998a. *Preliminary Preclosure Design Basis Event Calculations for the Monitored Geologic Repository.* BC0000000-01717-0210-00001 REV 00. Las Vegas, Nevada: CRWMS M&O. ACC: MOL.19981002.0001.

CRWMS M&O 1998b. *Monitored Geologic Repository Concept of Operations.* B00000000-01717-4200-00004 REV 02. Las Vegas, Nevada: CRWMS M&O. ACC: MOL.19980810.0283.

CRWMS M&O 1998c. *Waste Package Remediation System Description Document.* BCB000000-01717-1705-00032, REV 00. Las Vegas, Nevada: CRWMS M&O. ACC: MOL.19980904.0541.

CRWMS M&O 1998d. *Classification of the Preliminary MGDS Repository Design.* B00000000-01717-0200-00134 REV 01. Las Vegas, Nevada: CRWMS M&O. ACC: MOL.19981103.0546.

CRWMS M&O 1999a. *Design Basis Event Definition & Analysis/QA Classification Analysis (1.2.1.11) Activity Evaluation.* Las Vegas, Nevada: CRWMS M&O. ACC: MOL.19990325.0008.

CRWMS M&O 1999b. *Monitored Geologic Repository Architecture.* B00000000-01717-5700-00011 REV 02 ICN 01. Las Vegas, Nevada: CRWMS M&O. ACC: MOL.19990713.0203.

CRWMS M&O 1999c. *Monitored Geologic Repository (MGR) Design Basis Event (DBE) Dose Calculation Incorporating Revised Release Fractions and Source Terms.* SEI-SEI-99225.Ta. Las Vegas, Nevada: CRWMS M&O. ACC: MOL.19990624.0091.

DOE 1998. *Quality Assurance Requirements and Description.* DOE/RW-0333P, Rev. 8. Washington D.C.: U.S. Department of Energy, Office of Civilian Radioactive Waste Management. ACC: MOL.19980601.0022.

Dyer, J.R. 1999. *Interim Guidance Pending Issuance of New U. S. Nuclear Regulatory Commission (NRC) Regulations for Yucca Mountain, Nevada.* Letter from J. Russell Dyer (DOE) to D. R. Wilkins (YMP), June 18, 1999. OL&RC:AVG:1435. ACC: MOL.19990623.0026 and MOL.19990623.0027.

YMP (Yucca Mountain Site Characterization Project) 1998. *Q-List.* YMP/90-55Q, Rev. 5. Las Vegas, Nevada: Yucca Mountain Site Characterization Office. ACC: MOL.19980513.0132.

8.2 CODES, STANDARDS, AND REGULATIONS

10 CFR (Code of Federal Regulations) 20. Energy: Standards for Protection Against Radiation. January 1, 1999.

64 FR (Federal Register) 8640. Disposal of High-Level Radioactive Wastes in a Proposed Geologic Repository at Yucca Mountain, Nevada. Proposed rule 10 CFR 63.

NRC (U. S. Nuclear Regulatory Commission) 1998. *Technical Position on Items and Activities in the High-Level Waste Geologic Repository Program Subject to Quality Assurance Requirements*. NUREG-1318. April 1988. Washington, D.C.: U.S. Nuclear Regulatory Commission.

8.3 PROCEDURES

AP-3.10Q, Rev. 0, ICN 0. *Analyses and Models*. ACC: MOL.19990225.0335.

AP-SI.1Q, Rev. 1, ICN 0. *Software Management*. ACC: MOL.19990520.0164.

NLP-3-15, Rev. 5. *To Be Verified (TBV) and To Be Determined (TBD) Monitoring System.* ACC: MOL.19981117.0148.

NLP-3-18, Rev. 04. *Documentation of QA Controls on Drawings, Specifications, Design Analyses, and Technical Document*. ACC: MOL.19960611.0170.

QAP-2-0, Rev. 5. *Conduct of Activities*. ACC: MOL.19980826.0209.

QAP-2-3, Rev. 10. *Classification of Permanent Items*. ACC: MOL.19990316.0006.

YAP-2.7Q, Rev. 1, ICN 1. *Item Classification and Maintenance of the Q-List.* ACC: MOL.19990115.0065.

9. ATTACHMENTS

Attachment I	Acronyms
Attachment II	MGR Classification Checklists
Attachment III	MGR QA Classification

Attachment I

Acronyms

ALARA	As Low As Reasonably Achievable
CFR	Code of Federal Regulations
CQ	Conventional Quality
CRWMS	Civilian Radioactive Waste Management System
DBE	Design Basis Event
DC	Disposal Container
DOE	U. S. Department of Energy
M&O	Management and Operating Contractor
MGR	Monitored Geologic Repository
NLP	Nevada Line Procedure
NRC	U. S. Nuclear Regulatory Commission
QA	Quality Assurance
QAP	Quality Administrative Procedure
QARD	Quality Assurance Requirements and Description
QL	Quality Level
SDD	System Description Document
SSCs	Structures, Systems, and Components
TBD	To Be Determined
TBV	To Be Verified
TEDE	Total Effective Dose Equivalent
WP	Waste Package
YAP	YMP Administrative Procedure
YMP	Yucca Mountain Site Characterization Project

Attachment II MGR Classification Checklists

CRWMS/M&O

Importance to Safety or Waste Isolation Evaluation Pre-Screening Checklist

Complete only applicable items.

QA: L

Page: 1 Of: 1

1. Classification Analysis I.D.:	2. SDD/SSC Evaluated:
3. Description of SDD/SSC (or reference):	

Yes	No		
4.		PS1. Is the item directly or indirectly relied upon to provide one of the following Important to Safety functions for radioactive wastes received or handled?	
		a.	Confinement or containment
		b.	Criticality control
		c.	Shielding
		d.	Heat transfer
		e.	Structural integrity
		f.	Operations support necessary for waste handling safety (refer to Quality Level 3 checklists in Attachments II, III, or IV for guidance)
5.		PS2. Is the item directly or indirectly relied upon to provide an Important to Waste Isolation function?	
6.		Do the answers to Blocks 4 and 5 indicate the need for an Importance to Safety evaluation?	

7. Comments/Justification:

QAP-2-3 (Effective 05/26/1999) 0972 (Rev. 05/06/1999)

Attachment II MGR Classification Checklists

CRWMS/M&O

Importance to Safety or Waste Isolation Evaluation for MGR

Complete only applicable items.

QA: L

Page: 1 Of: 4

1. Classification Analysis I.D.:	2. SDD/SSC Evaluated:
3. Description of SDD/SSC (or reference):	

MGR Quality Level 1 Checklist

Yes	No		
4.			Preclosure Phase:
		1.1.	Can failure of the item directly result in loss of waste package containment or criticality control for the spent nuclear fuel, high-level wastes, or other radioactive materials received for emplacement at the MGR?
		1.2.	Is the item required to prevent or mitigate a Category 1 DBE that could result in offsite doses greater than or equal to 100 mrem Total Effective Dose Equivalent (TEDE), per event, to any member of the public located on or beyond the site boundary [10 CFR 63.111(b)(1) and 20.1301(a)(1)]? Category 1 DBE "per event" limits are interpreted as the sum of the normal operating dose and anticipated operational occurrences plus the consequences from any single additional low frequency Category 1 DBE. This sum is stated on an annual basis and consistent with 10 CFR 63.111(a) or 10 CFR 20.
		1.3.	Is the item required to prevent or mitigate a Category 2 DBE that could result in offsite doses greater than or equal to 5 rem TEDE, 50 rem combined deep dose equivalent and committed dose equivalent to any individual organ or tissue (other than the lens of the eye), 15 rem dose equivalent to the lens of the eye, or 50 rem shallow dose equivalent to the skin, per event [10 CFR 63.111(b)(2)] to any individual located on or beyond any point on the boundary of the site?
5.			Postclosure Phase:
		1.4.	Does the item perform a waste isolation function that is required to meet the performance objectives in 10 CFR 63.113(b) by:
		a.	forming part of the natural barriers or an engineered barrier system required by 10 CFR 63.113(a)?
		b.	being directly credited in the performance assessments required by 10 CFR 63.113(c) and 10 CFR 63.113(d) to demonstrate the ability of the geologic repository to limit expected annual dose to the average member of the critical group to less than 25 mrem TEDE at any time during the first 10,000 years after permanent closure?
6.			Do the answers to Blocks 4 and 5 qualify the item as a Quality Level 1 item?

7. Comments/Justification:

QAP-2-3 (Effective 05/26/1999) 0973 (Rev. 05/06/1999)

Attachment II MGR Classification Checklists

CRWMS/M&O

Importance to Safety or Waste Isolation Evaluation for MGR

Complete only applicable items.

QA: L

Page: 2 Of: 4

MGR Quality Level 2 Checklist

Yes	No	
8.		Preclosure Phase: 2.1. Does the item function to provide control and management (i.e., collection and/or confinement) of site-generated liquid, gaseous, or solid low-level or mixed radioactive waste? NOTE: Systems with trace concentration of radionuclides, the failure of which could result in offsite doses less than 0.25 mrem per year, are not considered to perform radioactive waste management or control functions for the purpose of this quality level determination.
		2.2. Does the item provide fire detection, fire suppression, or otherwise protect the important-to-radiological safety or waste isolation functions of Quality Level 1 SSCs from the hazards of a fire?
		2.3. As a result of a DBE, could consequential failure of the item, which is not intended to perform a Quality Level 1 radiological safety function, prevent Quality Level 1 SSCs from performing their intended radiological safety function?
		2.4. Is the item required to prevent or mitigate a Category 1 DBE that could result in offsite doses greater than or equal to 25 mrem TEDE, per event, to any member of the public located on or beyond the site boundary [10 CFR 63.111(a) and 10 CFR 20.1301(á)(1)]? Category 1 DBE "per event" limits are interpreted as the sum of the normal operating dose and anticipated operational occurrences plus the consequences from any single additional low frequency Category 1 DBE. This sum is stated on an annual basis and consistent with 10 CFR 63.111(a) or 10 CFR 20.
		2.5. Is the item, in conjunction with an additional item or administrative control (i.e., indirect impact), required to prevent or mitigate a Category 1 DBE that could result in offsite doses greater than or equal to 100 mrem TEDE, per event, to any member of the public located on or beyond the site boundary? Category 1 DBE "per event" limits are interpreted as the sum of the normal operating dose and anticipated operational occurrences plus the consequences from any single additional low frequency Category 1 DBE. This sum is stated on an annual basis and consistent with 10 CFR 63.111(a) or 10 CFR 20.
		2.6. Is the item, in conjunction with an additional item or administrative control (i.e., indirect impact), required to prevent or mitigate a Category 2 DBE that could result in offsite doses greater than or equal to 5 rem TEDE, 50 rem combined deep dose equivalent and committed dose equivalent to any individual organ or tissue (other than the lens of the eye), 15 rem dose equivalent to the lens of the eye, or 50 rem shallow dose equivalent to the skin, per event, to any individual located on or beyond any point on the boundary of the site?
9.		Postclosure Phase: 2.7. As a result of a DBE, could consequential failure of the item, which is not intended to perform a Quality Level 1 waste isolation function, result in: a. the inability of Quality Level 1 engineered barriers to perform their intended long-term waste isolation function in the postclosure phase?
		b. long-term changes to the hydrological characteristics of natural barriers by creating significant ponding or the possibility of drainage into the postclosure underground?
		c. the introduction of fluids or other materials that could adversely affect the long-term geo-mechanical characteristics of natural barriers in the postclosure phase?
		d. compromising the ability of the natural barriers to isolate waste in the postclosure phase?
10.		Do the answers to Blocks 8 and 9 qualify the item as a Quality Level 2 item?

Attachment II MGR Classification Checklists

CRWMS/M&O

Importance to Safety or Waste Isolation Evaluation for MGR

Complete only applicable items.

QA: L

Page: 4 Of: 4

MGR Quality Level 3 Checklist

Yes	No		
12.			Preclosure Phase:
		3.1.	Does the item function to provide an alarm to warn of significant increases in radiation levels or concentrations of radioactive material?
		3.2.	Does the item function to monitor variables to verify that operating conditions are within technical specification limits?
		3.3.	Is the item used in MGR emergency response to provide prompt evacuation of personnel, or to monitor variables used in helping to determine the cause or consequences of DBEs (during post-accident investigations)?
		3.4.	Does the item function as a part of the radiological, meteorological, or environmental monitoring systems required to assess radionuclide release or dispersion following a DBE?
		3.5.	Is the item part of the design or design objectives for keeping levels of radioactive material in effluent to unrestricted areas as low as practicable during normal operations?
		3.6.	Is the item required to limit onsite worker doses from normal operations and during Category 1 DBEs, including planned recovery operations, to less than 5 rem per year TEDE, 50 rem per year combined deep dose equivalent and committed dose equivalent to any individual organ or tissue (other than the lens of the eye), 15 rem per year dose equivalent to the lens of the eye, or 50 rem per year shallow dose equivalent to the skin or any extremity?
13.			Do the answers to Block 12 qualify the item as a Quality Level 3 item?

14. Comments/Justification:

QAP-2-3 (Effective 05/26/1999) 0973 (Rev. 05/06/1999)

WPR
Waste Package Remediation System

SSC: Control and Tracking System
Level 3: N/A
Level 4: N/A

WPR
QL1 ☐
PS1 ☑ QL2 ☑
PS2 ☐ QL3 ☐
PS CQ ☐ CQ ☐

Q-List Rationale

SDD / SSC Reference: CRWMS M&O 1998c
TBVs Applicable to this Item: N/A

Pre-Screen - Importance to Safety or Waste Isolation Evaluation

	Yes	No		Rationale:
PS1	☐	☑	a	The control and tracking system provides for the control of waste package remediation equipment. The control and tracking system is relied upon to provide operations support necessary for waste handling safety.
	☐	☑	b.	
	☐	☑	c.	
	☐	☑	d.	
	☐	☑	e.	
	☑	☐	f.	
PS2	☐	☑		The control and tracking system is not directly or indirectly relied upon to provide an Important to Waste Isolation function.

Note: A Yes answer has been selected for either PS1 or PS2, therefore, the item is subject to QARD requirements. An Importance to Safety or Waste Isolation evaluation is required. Please continue with the evaluation checklists below.

QL1 - Quality Level 1: High Safety or Waste Isolation Significance

	Yes	No		Rationale:
1.1	☐	☑		Failure of the control and tracking system does not directly result in loss of waste package containment or criticality control.
	☐	☑		The control and tracking system is not required to prevent or mitigate a Category 1 DBE that could result in offsite doses greater than or equal to 100 mrem total effective dose equivalent (TEDE).
1.3	☐	☑		The control and tracking system is not required to prevent or mitigate a Category 2 DBE that could result in offsite doses greater than or equal to 5 rem TEDE, 50 rem combined deep and committed dose equivalents to any individual organ or tissue, 15 rem to the lens of the eye, or 50 rem shallow dose equivalent to the skin.
1.4	☐	☑	a.	The canister transfer system does not perform a waste isolation function.
	☐	☑	b.	

QL2 - Quality Level 2: Low Safety or Waste Isolation Significance

	Yes	No	Rationale:
2.1	☑	☐	This SSC supports waste package remediation system site-generated radioactive waste control functions.
2.2	☐	☑	This SSC does not perform a fire protection function.
2.3	☐	☑	Failure of the control and tracking system as a result of a DBE is not expected to result in an interaction with other QL1 SSCs or impair their capability to perform their intended radiological safety function.

Q-List Rationale

2.4	☐	☑	This item is not required to prevent or mitigate a Category 1 DBE that could result in offsite doses greater than or equal to 25 mrem TEDE.
2.5	☐	☑	This item, in conjunction with an additional item or administrative control (i.e., indirect impact), is not required to prevent or mitigate a Category 1 DBE that could result in offsite doses greater than or 100 mrem TEDE.
2.6	☐	☑	This item, in conjunction with an additional item or administrative control (i.e., indirect impact), is not required to prevent or mitigate a Category 2 DBE that could result in offsite doses greater than or equal to 5 rem TEDE, 50 rem combined deep and committed dose equivalents to any individual organ or tissue, 15 rem to the lens of the eye, or 50 rem shallow dose equivalent to the skin.
2.7	☐	☑ a.	Failure of the control and tracking system as a result of a DBE is not expected to result in an interaction with other QL1 High Waste Isolation Significant SSCs or compromise their ability to perform their intended waste isolation function.
	☐	☑ b.	
	☐	☑ c.	
	☐	☑ d.	

QL3 - Quality Level 3: Minor Safety Significance or Occupational Exposure Significance

	Yes	No	Rationale:
3.1	☐	☐	N/A
3.2	☐	☐	N/A
3.3	☐	☐	N/A
3.4	☐	☐	N/A
3.5	☐	☐	N/A
3.6	☐	☐	N/A

WPR
ste Package Remediation System

SSC: Decontamination System
Level 3: N/A
Level 4: N/A

WPR
QL1 ☐
PS1 ☑ QL2 ☑
PS2 ☐ QL3 ☐
PS CQ ☐ CQ ☐

Q-List Rationale

SDD / SSC Reference: CRWMS M&O 1998c **TBVs Applicable to this Item:** N/A

Pre-Screen - Importance to Safety or Waste Isolation Evaluation

	Yes	No		Rationale:
PS1	☐	☑	a	The decontamination system is used to decontaminate DCs, WPs and waste package remediation system hot cell equipment. The system is relied upon to provide operations support necessary for waste handling safety.
	☐	☑	b.	
	☐	☑	c.	
	☐	☑	d.	
	☐	☑	e.	
	☑	☐	f.	
PS2	☐	☑		This item is not directly or indirectly relied upon to provide an Important to Waste Isolation function.

Note: A Yes answer has been selected for either PS1 or PS2, therefore, the item is subject to QARD requirements. An Importance to Safety or Waste Isolation evaluation is required. Please continue with the evaluation checklists below.

QL1 - Quality Level 1: High Safety or Waste Isolation Significance

	Yes	No		Rationale:
1.1	☐	☑		Failure of the decontamination system does not directly result in loss of waste package containment or criticality control.
1.2	☐	☑		The decontamination system is not required to prevent or mitigate a Category 1 DBE that could result in offsite doses greater than or equal to 100 mrem total effective dose equivalent (TEDE).
1.3	☐	☑		The decontamination system is not required to prevent or mitigate a Category 2 DBE that could result in offsite doses greater than or equal to 5 rem TEDE, 50 rem combined deep and committed dose equivalents to any individual organ or tissue, 15 rem to the lens of the eye, or 50 rem shallow dose equivalent to the skin.
1.4	☐	☑	a.	The decontamination system does not perform a waste isolation function.
	☐	☑	b.	

QL2 - Quality Level 2: Low Safety or Waste Isolation Significance

	Yes	No	Rationale:
2.1	☑	☐	The decontamination system controls and manages the radioactive wastes generated during system decontamination operations.
2.2	☐	☑	This SSC does not perform a fire protection function.
2.3	☐	☑	Failure of the decontamination system as a result of a DBE is not expected to result in an interaction with other QL1 SSCs or impair their capability to perform their intended radiological safety function.

Q-List Rationale

2.4	☐	☑	This item is not required to prevent or mitigate a Category 1 DBE that could result in offsite doses greater than or equal to 25 mrem TEDE.
2.5	☐	☑	This item, in conjunction with an additional item or administrative control (i.e., indirect impact), is not required to prevent or mitigate a Category 1 DBE that could result in offsite doses greater than or 100 mrem TEDE.
2.6	☐	☑	This item, in conjunction with an additional item or administrative control (i.e., indirect impact), is not required to prevent or mitigate a Category 2 DBE that could result in offsite doses greater than or equal to 5 rem TEDE, 50 rem combined deep and committed dose equivalents to any individual organ or tissue, 15 rem to the lens of the eye, or 50 rem shallow dose equivalent to the skin.
2.7	☐	☑ a.	Failure of this SSC as a result of a DBE will not compromise the ability of QL1 High Waste Isolation Significant SSCs to perform their intended waste isolation function.
	☐	☑ b.	
	☐	☑ c.	
	☐	☑ d.	

QL3 - Quality Level 3: Minor Safety Significance or Occupational Exposure Significance

	Yes	No	Rationale:
3.1	☐	☐	N/A
3.2	☐	☐	N/A
3.3	☐	☐	N/A
3.4	☐	☐	N/A
3.5	☐	☐	N/A
3.6	☐	☐	N/A

WPR
ste Package Remediation System

SSC: Handling/Transfer System
Level 3: Bridge Crane/Hoist
Level 4: N/A

WPR
QL1 ☐
PS1 ☑ QL2 ☑
PS2 ☐ QL3 ☐
PS CQ ☐ CQ ☐

Q-List Rationale

SDD / SSC Reference: CRWMS M&O 1998c **TBVs Applicable to this Item:** N/A

Pre-Screen - Importance to Safety or Waste Isolation Evaluation

	Yes	No		Rationale:
PS1	☐	☑	a	The bridge crane/hoist performs auxiliary hoist and lift functions to support waste package remediation operations. The hoist does not directly lift high level radioactive wastes. The system is relied upon to provide operations support necessary for waste handling safety.
	☐	☑	b.	
	☐	☑	c.	
	☐	☑	d.	
	☐	☑	e.	
	☑	☐	f.	
PS2	☐	☑		This item is not directly or indirectly relied upon to provide an Important to Waste Isolation function.

Note: A Yes answer has been selected for either PS1 or PS2, therefore, the item is subject to QARD requirements. An Importance to Safety or Waste Isolation evaluation is required. Please continue with the evaluation checklists below.

QL1 - Quality Level 1: High Safety or Waste Isolation Significance

	Yes	No		Rationale:
1.1	☐	☑		Failure of the bridge crane/hoist does not directly result in loss of waste package containment or criticality control.
	☐	☑		The bridge crane/hoist is not required to prevent or mitigate a Category 1 DBE that could result in offsite doses greater than or equal to 100 mrem total effective dose equivalent (TEDE).
1.3	☐	☑		The bridge crane/hoist is not required to prevent or mitigate a Category 2 DBE that could result in offsite doses greater than or equal to 5 rem TEDE, 50 rem combined deep and committed dose equivalents to any individual organ or tissue, 15 rem to the lens of the eye, or 50 rem shallow dose equivalent to the skin.
1.4	☐	☑	a.	The bridge crane/hoist does not perform a waste isolation function.
	☐	☑	b.	

QL2 - Quality Level 2: Low Safety or Waste Isolation Significance

	Yes	No	Rationale:
2.1	☐	☑	This SSC does not perform a site-generated radioactive waste control function.
2.2	☐	☑	This SSC does not perform a fire protection function.
2.3	☑	☐	Failure of a bridge crane/hoist as a result of a DBE could impair the capability of QL-1 SSCs to perform their intended radiological safety function. Failure could cause an interaction with a DC/WP and the contained radioactive waste.

Q-List Rationale

2.4	☐	☑	This item is not required to prevent or mitigate a Category 1 DBE that could result in offsite doses greater than or equal to 25 mrem TEDE.
2.5	☐	☑	This item, in conjunction with an additional item or administrative control (i.e., indirect impact), is not required to prevent or mitigate a Category 1 DBE that could result in offsite doses greater than or 100 mrem TEDE.
2.6	☐	☑	This item, in conjunction with an additional item or administrative control (i.e., indirect impact), is not required to prevent or mitigate a Category 2 DBE that could result in offsite doses greater than or equal to 5 rem TEDE, 50 rem combined deep and committed dose equivalents to any individual organ or tissue, 15 rem to the lens of the eye, or 50 rem shallow dose equivalent to the skin.
2.7	☐	☑ a. ☑ b. ☑ c. ☑ d.	Failure of this SSC as a result of a DBE will not compromise the ability of QL1 High Waste Isolation Significant SSCs to perform their intended waste isolation function.

QL3 - Quality Level 3: Minor Safety Significance or Occupational Exposure Significance

	Yes	No	Rationale:
3.1	☐	☐	N/A
3.2	☐	☐	N/A
3.3	☐	☐	N/A
3.4	☐	☐	N/A
3.5	☐	☐	N/A
3.6	☐	☐	N/A

WPR
Waste Package Remediation System

SSC: Handling/Transfer System
Level 3: Hot Cell Manipulator
Level 4: N/A

WPR
QL1 ☐
PS1 ☐ QL2 ☐
PS2 ☐ QL3 ☐
PS CQ ☑ CQ ☑

Q-List Rationale

SDD / SSC Reference: CRWMS M&O 1998c
TBVs Applicable to this Item: N/A

Pre-Screen - Importance to Safety or Waste Isolation Evaluation

	Yes	No		Rationale:
PS1	☐	☑	a	The hot cell manipulator provides remote operating capability in the system hot cell. The manipulator does not handle high level radioactive wastes. Shielding is provided to maintain facility operator radiation doses within the limits of 10 CFR 63.111(a)(1) and As Low As Reasonably Achievable (ALARA). This item is not relied upon to provide operations support necessary for waste handling safety.
	☐	☑	b.	
	☐	☑	c.	
	☐	☑	d.	
	☐	☑	e.	
	☐	☑	f.	
PS2	☐	☑		This item is not directly or indirectly relied upon to provide an Important to Waste Isolation function.

Note: If only No answers are given, the item is not subject to QARD requirements. The item is classified as Conventional Quality and an Importance to Safety or Waste Isolation evaluation is not required. Stop Here.

QL1 - Quality Level 1: High Safety or Waste Isolation Significance

	Yes	No		Rationale:
1.1	☐	☐		N/A
	☐	☐		N/A
1.3	☐	☐		N/A
1.4	☐	☐	a.	N/A
	☐	☐	b.	

QL2 - Quality Level 2: Low Safety or Waste Isolation Significance

	Yes	No	Rationale:
2.1	☐	☐	N/A
2.2	☐	☐	N/A
2.3	☐	☐	N/A

Q-List Rationale

2.4	☐	☐	N/A
2.5	☐	☐	N/A
2.6	☐	☐	N/A
2.7	☐	☐ a.	N/A
	☐	☐ b.	
	☐	☐ c.	
	☐	☐ d.	

QL3 - Quality Level 3: Minor Safety Significance or Occupational Exposure Significance

	Yes	No	Rationale:
3.1	☐	☐	N/A
3.2	☐	☐	N/A
3.3	☐	☐	N/A
3.4	☐	☐	N/A
3.5	☐	☐	N/A
3.6	☐	☐	N/A

Q-List Rationale

SDD / SSC Reference: CRWMS M&O 1998c

TBVs Applicable to this Item: N/A

Pre-Screen - Importance to Safety or Waste Isolation Evaluation

	Yes	No		Rationale:
PS1	☐	☑	a	The lid handling and transfer equipment supports DC lid removal operations in the hot cell. The equipment does not handle SNF, HLW or the associated containers. This item is not relied upon to provide operations support necessary for waste handling safety.
	☐	☑	b.	
	☐	☑	c.	
	☐	☑	d.	
	☐	☑	e.	
	☐	☑	f.	
PS2	☐	☑		This item is not directly or indirectly relied upon to provide an Important to Waste Isolation function.

Note: If only No answers are given, the item is not subject to QARD requirements. The item is classified as Conventional Quality and an Importance to Safety or Waste Isolation evaluation is not required. Stop Here.

QL1 - Quality Level 1: High Safety or Waste Isolation Significance

	Yes	No		Rationale:
1.1	☐	☐		N/A
1.2	☐	☐		N/A
1.3	☐	☐		N/A
1.4	☐	☐	a.	N/A
	☐	☐	b.	

QL2 - Quality Level 2: Low Safety or Waste Isolation Significance

	Yes	No	Rationale:
2.1	☐	☐	N/A
2.2	☐	☐	N/A
2.3	☐	☐	N/A

Q-List Rationale

2.4	☐	☐	N/A
2.5	☐	☐	N/A
2.6	☐	☐	N/A
2.7	☐	☐ a.	N/A
	☐	☐ b.	
	☐	☐ c.	
	☐	☐ d.	

QL3 - Quality Level 3: Minor Safety Significance or Occupational Exposure Significance

	Yes	No	Rationale:
3.1	☐	☐	N/A
3.2	☐	☐	N/A
3.3	☐	☐	N/A
3.4	☐	☐	N/A
3.5	☐	☐	N/A
3.6	☐	☐	N/A

WPR
Waste Package Remediation System

SSC: WP/DC Inspection/Sampling System

Level 3: N/A

Level 4: N/A

WPR

QL1 ☐
PS1 ☐ QL2 ☐
PS2 ☐ QL3 ☐
PS CQ ☑ CQ ☑

Q-List Rationale

SDD / SSC Reference: CRWMS M&O 1998c

TBVs Applicable to this Item: N/A

Pre-Screen - Importance to Safety or Waste Isolation Evaluation

	Yes	No		Rationale:
PS1	☐	☑	a	The inspection/sampling system provides remote operating capability in the system hot cell. The WP/DC weld preparation and opening system performs WP opening operations prior to sampling. Shielding is provided to maintain facility operator radiation doses within the limits of 10 CFR 63.111(a)(1) and As Low As Reasonably Achievable (ALARA). This item is not relied upon to provide operations support necessary for waste handling safety.
	☐	☑	b.	
	☐	☑	c.	
	☐	☑	d.	
	☐	☑	e.	
	☐	☑	f.	
PS2	☐	☑		This item is not directly or indirectly relied upon to provide an Important to Waste Isolation function.

Note: If only No answers are given, the item is not subject to QARD requirements. The item is classified as Conventional Quality and an Importance to Safety or Waste Isolation evaluation is not required. Stop Here.

QL1 - Quality Level 1: High Safety or Waste Isolation Significance

	Yes	No		Rationale:
1.1	☐	☐		N/A
	☐	☐		N/A
1.3	☐	☐		N/A
1.4	☐	☐	a.	N/A
	☐	☐	b.	

QL2 - Quality Level 2: Low Safety or Waste Isolation Significance

	Yes	No	Rationale:
2.1	☐	☐	N/A
2.2	☐	☐	N/A
2.3	☐	☐	N/A

Q-List Rationale

2.4	☐	☐	N/A
2.5	☐	☐	N/A
2.6	☐	☐	N/A
2.7	☐	☐ a.	N/A
	☐	☐ b.	
	☐	☐ c.	
	☐	☐ d.	

QL3 - Quality Level 3: Minor Safety Significance or Occupational Exposure Significance

	Yes	No	Rationale:
3.1	☐	☐	N/A
3.2	☐	☐	N/A
3.3	☐	☐	N/A
3.4	☐	☐	N/A
3.5	☐	☐	N/A
3.6	☐	☐	N/A

WPR
Waste Package Remediation System

SSC: WP/DC Transport System

Level 3: N/A

Level 4: N/A

WPR

QL1 ☐
PS1 ☑ QL2 ☐
PS2 ☐ QL3 ☐
PS CQ ☐ CQ ☑

Q-List Rationale

SDD / SSC Reference: CRWMS M&O 1998c

TBVs Applicable to this Item: 459, 1196

Pre-Screen - Importance to Safety or Waste Isolation Evaluation

	Yes	No		Rationale:
PS1	☐	☑	a	The WP/DC transport system consists of a transfer cart and power supply. The system transfers WPs/DCs between the DC handling area and the waste package remediation hot cell. The WP/DC transport system is relied upon to provide operations support necessary for waste handling safety.
	☐	☑	b.	
	☐	☑	c.	
	☐	☑	d.	
	☐	☑	e.	
	☑	☐	f.	
PS2	☐	☑		This item is not directly or indirectly relied upon to provide an Important to Waste Isolation function.

Note: A Yes answer has been selected for either PS1 or PS2, therefore, the item is subject to QARD requirements. An Importance to Safety or Waste Isolation evaluation is required. Please continue with the evaluation checklists below.

QL1 - Quality Level 1: High Safety or Waste Isolation Significance

	Yes	No		Rationale:
1.1	☐	☑		Failure of the WP/DC transport system does not directly result in loss of waste package containment or criticality control.
	☐	☑		The WP/DC transport system is not required to prevent or mitigate a Category 1 DBE that could result in offsite doses greater than or equal to 100 mrem total effective dose equivalent (TEDE). Assumption 5.3, TBV-1196
1.3	☐	☑		The WP/DC transport system is not required to prevent or mitigate a Category 2 DBE that could result in offsite doses greater than or equal to 5 rem TEDE, 50 rem combined deep and committed dose equivalents to any individual organ or tissue, 15 rem to the lens of the eye, or 50 rem shallow dose equivalent to the skin. Assumption 5.3, TBV-1196
1.4	☐	☑	a.	The WP/DC transport system does not perform a waste isolation function.
	☐	☑	b.	

QL2 - Quality Level 2: Low Safety or Waste Isolation Significance

	Yes	No	Rationale:
2.1	☐	☑	This SSC does not collect, contain, or monitor any site-generated radioactive waste.
2.2	☐	☑	This SSC does not perform a fire protection function.
2.3	☐	☑	Failure of the DC transport system as a result of a DBE is not expected to result in an interaction with other QL1 SSCs or impair their capability to perform their intended radiological safety function.

Q-List Rationale

2.4	☐	☑	This item is not required to prevent or mitigate a Category 1 DBE that could result in offsite doses greater than or equal to 25 mrem TEDE. Assumption 5.3, TBV-1196
2.5	☐	☑	This item, in conjunction with an additional item or administrative control (i.e., indirect impact), is not required to prevent or mitigate a Category 1 DBE that could result in offsite doses greater than or 100 mrem TEDE. Assumption 5.3, TBV-1196
2.6	☐	☑	This item, in conjunction with an additional item or administrative control (i.e., indirect impact), is not required to prevent or mitigate a Category 2 DBE that could result in offsite doses greater than or equal to 5 rem TEDE, 50 rem combined deep and committed dose equivalents to any individual organ or tissue, 15 rem to the lens of the eye, or 50 rem shallow dose equivalent to the skin. Assumption 5.3, TBV-1196
2.7	☐	☑ a. ☐ ☑ b. ☐ ☑ c. ☐ ☑ d.	Failure of this SSC as a result of a DBE will not compromise the ability of QL1 High Waste Isolation Significant SSCs to perform their intended waste isolation function.

QL3 - Quality Level 3: Minor Safety Significance or Occupational Exposure Significance

	Yes	No	Rationale:
3.1	☐	☑	This item does not function to provide an alarm to warn of significant increases in radiation levels or concentrations of radioactive materials.
3.2	☐	☑	This item does not function to monitor variables to verify that operating conditions are within technical specifications.
3.3	☐	☑	This item is not used in MGR emergency response to provide prompt evacuation of personnel, or to monitor variables used in helping to determine the cause or consequences of DBEs (during post accident investigations).
3.4	☐	☑	This item does not function as part of the radiological, meteorological, or environmental monitoring systems required to assess radionuclide release or dispersion following a DBE.
3.5	☐	☑	This item is not part of the design or design objectives for keeping levels of radioactive material in effluent to unrestricted areas as low as practicable during normal operations.
3.6	☐	☑	This item is not required during normal operations, Category I DBEs, and planned recovery actions to limit onsite worker doses to less than 5 rem TEDE, 50 rem combined deep and committed dose equivalents to any individual organ or tissue, 15 rem to the lens of the eye, or 50 rem shallow dose equivalent to the skin. Assumption 5.2, TBV-459

WPR
Waste Package Remediation System

SSC: WP/DC Weld Preparation and Opening System

Level 3: N/A

Level 4: N/A

WPR

QL1 ☐
PS1 ☑ QL2 ☑
PS2 ☐ QL3 ☐
PS CQ ☐ CQ ☐

Q-List Rationale

SDD / SSC Reference: CRWMS M&O 1998c **TBVs Applicable to this Item:** N/A

Pre-Screen - Importance to Safety or Waste Isolation Evaluation

	Yes	No		Rationale:
PS1	☐	☑	a	The disposal container (DC)/waste package (WP) weld preparation and opening system removes the DC/WP lid closure welds and prepares the DC for reweld as applicable. The system is relied upon to provide operations support necessary for waste handling safety.
	☐	☑	b.	
	☐	☑	c.	
	☐	☑	d.	
	☐	☑	e.	
	☑	☐	f.	
PS2	☐	☑		This item is not directly or indirectly relied upon to provide an Important to Waste Isolation function.

Note: A Yes answer has been selected for either PS1 or PS2, therefore, the item is subject to QARD requirements. An Importance to Safety or Waste Isolation evaluation is required. Please continue with the evaluation checklists below.

QL1 - Quality Level 1: High Safety or Waste Isolation Significance

	Yes	No		Rationale:
1.1	☐	☑		Failure of the weld preparation and opening system does not directly result in loss of waste package containment or criticality control.
1.2	☐	☑		The weld preparation and opening system is not required to prevent or mitigate a Category 1 DBE that could result in offsite doses greater than or equal to 100 mrem total effective dose equivalent (TEDE).
1.3	☐	☑		The weld preparation and opening system is not required to prevent or mitigate a Category 2 DBE that could result in offsite doses greater than or equal to 5 rem TEDE, 50 rem combined deep and committed dose equivalents to any individual organ or tissue, 15 rem to the lens of the eye, or 50 rem shallow dose equivalent to the skin.
1.4	☐	☑	a.	The weld preparation and opening system does not perform a waste isolation function.
	☐	☑	b.	

QL2 - Quality Level 2: Low Safety or Waste Isolation Significance

	Yes	No	Rationale:
2.1	☑	☐	The weld preparation and opening system may be required to collect radiologically contaminated metal chips generated during lid removal operations.
2.2	☐	☑	This SSC does not perform a fire protection function.
2.3	☐	☑	Failure of the weld preparation and opening system as a result of a DBE is not expected to result in an interaction with other QL1 SSCs or impair their capability to perform their intended radiological safety function.

Q-List Rationale

2.4	☐	☑	This item is not required to prevent or mitigate a Category 1 DBE that could result in offsite doses greater than or equal to 25 mrem TEDE.
2.5	☐	☑	This item, in conjunction with an additional item or administrative control (i.e., indirect impact), is not required to prevent or mitigate a Category 1 DBE that could result in offsite doses greater than or 100 mrem TEDE.
2.6	☐	☑	This item, in conjunction with an additional item or administrative control (i.e., indirect impact), is not required to prevent or mitigate a Category 2 DBE that could result in offsite doses greater than or equal to 5 rem TEDE, 50 rem combined deep and committed dose equivalents to any individual organ or tissue, 15 rem to the lens of the eye, or 50 rem shallow dose equivalent to the skin.
2.7	☐	☑ a.	Failure of this SSC as a result of a DBE will not compromise the ability of QL1 High Waste Isolation Significant SSCs to perform their intended waste isolation function.
	☐	☑ b.	
	☐	☑ c.	
	☐	☑ d.	

QL3 - Quality Level 3: Minor Safety Significance or Occupational Exposure Significance

	Yes	No	Rationale:
3.1	☐	☐	N/A
3.2	☐	☐	N/A
3.3	☐	☐	N/A
3.4	☐	☐	N/A
3.5	☐	☐	N/A
3.6	☐	☐	N/A