

June 10, 1997

Mr. Ronald A. Milner, Director  
for Program Management and Integration  
Office of Civilian Radioactive Waste Management  
U.S. Department of Energy, RW 30  
1000 Independence Avenue, S.W.  
Washington, DC 20585

SUBJECT: MINUTES OF THE MAY 12, 1997, QUALITY ASSURANCE MEETING

Dear Mr. Milner:

Enclosed are the minutes of the May 12, 1997, Quality Assurance meeting between the staff of the U. S. Nuclear Regulatory Commission and representatives of the U.S. Department of Energy (DOE). The purpose of the meeting was to discuss items of mutual interest regarding QA and those areas leading toward or contributing to resolution of NRC Key Technical Issues of DOE's site characterization program for Yucca Mountain. The meeting was a video conference between DOE headquarters in Washington, D.C. and NRC headquarters in Rockville, Maryland, DOE office in Las Vegas, Nevada. Representatives from the DOE contractors; United States Nuclear Waste Technical Review Board; Clark County, Nevada; Nye County, Nevada; and State of Nevada also attended this meeting.

If you have any questions regarding this letter, please contact William L. Belke of my staff. Mr. Belke can be reached at (702) 388-6125.

Sincerely,

[Original signed by:]

Michael J. Bell, Chief  
Performance Assessment and HLW  
Integration Branch  
Division of Waste Management  
Office of Nuclear Material Safety  
and Safeguards

Enclosure: As stated

cc: See attached list

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DATE	06/10/97	06/10/97	06/11/97						

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

June 10, 1997

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If you have any questions regarding this letter, please contact William L. Belke of my staff. Mr. Belke can be reached at (702) 388-6125.

Sincerely,

A handwritten signature in cursive script that reads "Michael J. Bell".

Michael J. Bell, Chief  
Performance Assessment and HLW  
Integration Branch  
Division of Waste Management  
Office of Nuclear Material Safety  
and Safeguards

Enclosure: As stated

cc: See attached list

Letter to R. Milner dated: June 10, 1997

cc: W. Barnes, YMPO  
S. Brocoum, YMPO  
A. Gil, YMPO  
C. Einberg, DOE/Wash, DC  
W. Barnard, NWTRB  
B. Russo, EPA  
D. Weigel, GAO  
R. Holden, NCAI  
T. Burton, NIEC  
J. Lyznicky, AMA  
B. Mettam, Inyo County, CA  
V. Poe, Mineral County, NV  
L. Fiorenzi, Eureka County, NV  
J. Regan, Churchill County, NV  
R. Loux, State of Nevada  
C. Johnson, State of Nevada  
B. Price, NV Leg. Committee  
J. Meder, NV Leg. Counsel Bureau  
M. Murphy, Nye County, NV  
L. Bradshaw, Nye County, NV  
P. Niedzielski-Eichner, Nye County, NV  
N. Stellavato, Nye County, NV  
M. Baughman, Lincoln County, NV  
D. Bechtel, Clark County, NV  
R. Williams, Lander County, NV  
W. Cameron, White Pine County, NV  
J. Hoffman, Esmeralda County, NV  
R. Arnold, Pahrump, NV

MINUTES OF THE MAY 12, 1997,  
U. S. NUCLEAR REGULATORY COMMISSION/U. S. DEPARTMENT OF ENERGY  
QUALITY ASSURANCE MEETING

On May 12, 1997, staff of the U.S. Nuclear Commission and U.S. Department of Energy (DOE) held a quality assurance (QA) videoconference meeting in Washington D.C., and Las Vegas, NV. The purpose of the meeting was to discuss items of mutual interest regarding Quality Assurance (QA) and those areas leading toward or contributing to resolution of NRC Key Technical Issues of DOE's site characterization program for Yucca Mountain. The meeting was a videoconference between DOE headquarters in Washington, D.C. and NRC headquarters in Rockville, Maryland, DOE office in Las Vegas, Nevada. Representatives from the DOE contractors; United States Nuclear Waste Technical Review Board; Clark County, Nevada; Nye County, Nevada; and State of Nevada also attended this meeting. A list of attendee's is provided as Attachment 1 and the agenda is provided as Attachment 2.

**Status of Open Items**

The meeting opened with the introduction of attendees followed by the discussion of the NRC QA Open Items List. Attachment 3 provides the list and current status of these Open Items. Seven of the remaining ten open items require NRC response, and the remaining three are awaiting DOE action and response to NRC. All of the QA open items are aimed at improving input and acquisition of data for the NRC KTI resolution effort. The actions taken to resolve these Open Items are described in the paragraphs below.

Open Items 1, 2, and 3, from the On-site Representative's (OR's) QA perspective, these items can be closed. The technical portion of these items are still under review and an Appendix 7 type meeting or equivalent, may be necessary to obtain additional understanding to address any outstanding concerns.

Open Items 4, 5, and 6, pertaining to the License Application Annotated Outline will be formally closed by an NRC letter to DOE in the near future.

For Open Item 7, Technical Effectiveness of the USGS Program, there are three key USGS documents that are currently under detailed technical review by DOE. If this review yields no significant technical deficiencies, this open item will be closed.

Open Item 8, data qualification, is discussed later in this summary. Open Item 9, Level of Work Products surfaced from an NRC Observation Audit of Los Alamos Laboratory. The response to this Open Item is being prepared and should be closed before the next QA meeting between NRC/DOE.

The last Open Item, 11, pertaining to statistical analysis, requires a minor clarification to the DOE QARD to avoid misinterpreting the QARD in this area. The proposed change has been discussed between the OR and DOE and, this Open Item should also be closed before the next NRC/DOE QA meeting.

**Data Qualification**

For Data Qualification, Open Item 8, DOE organized a work group to improve the process for

data qualification. This improved process was presented to NRC at this meeting (See Attachment 4) and is currently being reviewed by NRC. Pending the results of this review, an Appendix 7 type meeting or equivalent, may also be necessary. This improved process will also require a revision to the DOE's Quality Assurance and Requirements Document (QARD). The Nye County representative questioned why old data is being qualified when the objective was to use the qualified data collected under an approved/accepted QA program. DOE indicated that the percentage of non-qualified data requiring qualification for license application will be low. DOE also stated that the revised QARD will be explicit in instructing the user of when or when not to qualify data.

In regard to the proposed Appendix 7 type meeting to further pursue the subject of data qualification, the representative from the State of Nevada commented that she does not receive notifications of when Appendix 7 meetings are held and that she is "barred" from attending these meetings. The representatives from Nye and Clark Counties indicated that they have not received notice of Appendix 7 meetings, as well. Although meetings in accordance with Appendix 7 of the NRC/DOE procedural agreement do not require notification of or participation by state, county, or tribal representatives, NRC has notified representatives of impending Appendix 7 meetings and have allowed participation as observers in those meetings. As a result of these comments and upon subsequent consideration, the NRC staff is proposing this topic as an agenda item for the next management meeting.

### **Overview of the Transition Plan**

DOE presented an overview of the recent consolidation of the QA function into a single function instead of being fragmented into several organizations and laboratories (see attachment 5). The second phase of this consolidation effort is due for completion in early June of 1997. The final or third phase of this transition is scheduled for implementation in October 1997. The OR had previously questioned whether DOE, with its existing QA personnel, has the necessary disciplines to accurately monitor the consolidated functions, especially the activities being performed by the National Laboratories. DOE responded that they would be looking at the activities performed by the various organizations and then supplement their staff activities with the necessary personnel with the required disciplines to monitor these activities. The OR has had the opportunity to overview the resumes describing the education and experience of five personnel. Based on this review, the OR feels that these newly hired personnel are qualified to monitor the activities in the required disciplines.

### **Status of QARD Revisions.**

A brief summary of the Revision 6 and proposed Revision 7 changes to the DOE QARD were presented (See Attachment 6). DOE stated that the Revision 6 changes were incorporated in response to previous NRC comments on Revision 5. NRC had not received Revision 6 to date and DOE indicated that Revision 6 should be received by NRC shortly. The OR will review these revisions and document the results in a letter to DOE.

### **Status of Response to Management Assessment Recommendations**

The FY 1996 QA Management Assessment to determine the adequacy and effectiveness of the Quality Assurance Program was initiated in February 1996 and completed in September 1996. The final report of this assessment contained several recommendations. DOE indicated that the response to these recommendations is in the final review stage and should be released shortly.

### Trend Program

The NRC inquired whether any revisions are planned to the current trending program to detect adverse trends of a similar nature at an earlier time frame. DOE replied they are looking into this area for possible ways to improve it. DOE also emphasized that with the consolidation effort, OQA would be utilizing a single trend coordinator. This would ensure consistency in applying trend codes and would improve the process of detecting adverse trends at an earlier stage.

### Oversight Functions of the State of Nevada

The QA oversight functions of the State of NV and NRC were discussed. Nevada indicated that its participation in the program depends on the amount of funding it needs to receive to continue involvement.

### NRC QA Involvement

NRC acknowledged recent impacts on its QA staff and is utilizing QA staff of the NRC in general as needed. NRC stated that it has posted a QA position to augment its QA effort. At present, there are three applicant submittals being reviewed. NRC staff also noted that QA documents should be addressed to Michael J. Bell, Branch Chief, Performance Assessment and HLW Integration Branch, NRC.

### 10 CFR Part 21

In a letter to NRC dated March 18, 1997, (A. Brownstein to J. Thoma), DOE described its intent to implement the requirements of 10 CFR Part 21. The NRC recognized DOE's voluntary commitment to apply Part 21 to its HLW program. In addition, NRC notes DOE's position that Part 21 will not formally apply to the HLW program until DOE becomes a licensee for a repository or interim storage facility. The NRC pointed out that it was not aware of any basis to dispute DOE's position, based on informal discussions with NRC's Office of General Council. However, since DOE voluntarily committed to evaluate and report in accordance with Part 21, failure to do so could be the basis for a notice of non-compliance by the NRC staff. This action would not be a notice of violation, because there is no violation of an NRC requirement, unless NRC formally declares Part 21 a requirement. The NRC also indicated that it intends to review DOE's Part 21 procedures, as resources permit, and provide feedback. At this meeting, DOE specifically requested a documented response from NRC on whether 10 CFR Part 21 was applicable to the precicensing phase of the potential repository or centralized interim storage facility.

### Graded Approach Efforts Proposed Revision to Q-List

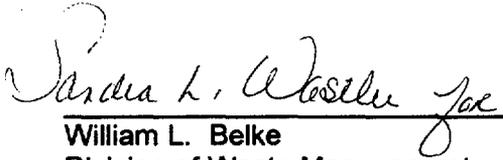
The last two agenda items discussed were DOE's graded QA approach efforts and the proposed revisions to the items underneath the purview of the QA program (Q-List). Attachment 7 provides the handouts for this discussion. DOE explained that the previous Q-List methodology listed almost all the items in its program as quality-related and that this list was difficult to use. With the new methodology, less than half the items are listed and the list is much easier to use with greater visibility and accessibility to the user. From the OR perspective this effort represents a significant improvement over the previous methodology. It is similar to the type listing and methodology used for nuclear reactors. The NRC questioned whether functional analysis was part of the revised methodology to identify the safety significance. The response to this inquiry was that functional analysis was a part of the new methodology. At this time, the new

methodology does not address the input used for modeling but may be considered in the future.

**Closing Remarks**

In the closing remarks, DOE requested that future QA meetings be scheduled based on need rather than on a periodic basis. NRC management agreed to this request. The Nye County representative indicated that there was no direct access to the Q-list database and the hope that they would be able to tie into the database soon. There were no additional issues noted by representatives of the State of Nevada or affected units of local government.

The meeting was adjourned at 12:30 p.m. EST.



William L. Belke  
Division of Waste Management  
Office of Nuclear Material  
Safety and Safeguards  
Nuclear Regulatory Commission



Frederick C. Rodgers  
Regulatory Integration Division  
Office of Civilian Radioactive  
Waste Management  
U. S. Department of Energy

**ATTACHMENT 1**

**FINAL AGENDA**  
**NRC/DOE QUALITY ASSURANCE MEETING**

May 12, 1997

VideoConference: DOE/LV, Blue Room and NRC Headquarters, T2B3

8:00 AM PST (11:00 EST)

- **OPENING REMARKS** ALL
  
- **QA TOPICS**
  - Status of Open Items NRC/DOE
  - Overview of Transition Plan DOE
  - Status of QARD Revisions DOE
  - Data Qualification DOE
  - Status of Response to Management Assessment Recommendations DOE
  - Trend Program DOE
  - Oversight Functions of the State of Nevada NV
  - NRC QA Involvement NRC
  - 10 CFR Part 21 NRC
  - Graded Approach Efforts DOE/NRC
  - Proposed Revisions to the Q List DOE
  
- **CLOSING REMARKS** ALL
  
- **ADJOURN**

10:30 PM PST (1:30 PM EST)

ATTACHMENT 2

**NRC-DOE QUALITY ASSURANCE MEETING ATTENDANCE LIST**

May 12, 1997

Videoconference between  
DOE Las Vegas/YMSCO  
NRC/Rockville

<b>PRINTED NAME</b>	<b>ORGANIZATION/COMPANY</b>	<b>PHONE</b>
Bill Belke	NRC	702-388-6125
Jim Blaylock	DOE	702-794-1420
Mario R. Diaz	DOE	702-794-1489
Susan Zimmerman	NV/NWPO	702-687-3744
Catherine E. Hampton	DOE	702-794-1387
John O. Thoma	NRC	301-415-7293
Jim Schmit	QATSS	702-794-1472
Dan Tunney	QATSS	702-794-1353
Chad Glenn	NRC	702-388-6125
Nick Stallavato	Nye County	702-295-6142
April Gil	DOE/YMSCO/AML	702-795-5578
Woody Hudson	QATSS	702-794-1490
Richard Kettche	QATSS	702-794-1412
Tom Bjerstedt	DOE/YMSCO/AMVA	702-794-1362
E. von Teisenhausen	Clark County	702-455-5184
Susan B. Jones	DOE	702-794-5519
Ken Ashe	M&O	702-295-5563
Emily Reiter	QATSS	702-794-5013
Jim Compton	DOE/YMP/AML	702-794-5434
Albert Williams	DOE/OQA	702-794-5580
Mary McDaniels	QATSS	702-794-1468
Sandra Wastler	NRC	301-415-6724
Donald Horton	DOE/OQA	702-794-5568
Sidney Crawford	Self	301-515-6398
Woody Chu	NWTRB	703-235-4473
Kien Chang	NRC	301-415-6612
Fred Rodgers	DOE	202-586-9313
Bob Clark	DOE	702-794-5583
Mysore Nataraja	NRC	301-415-6724

**ATTACHMENT 3**

N= WAITING NRC ACTION    O= NO FURTHER ACTION NEEDED  
 D= WAITING DOE ACTION

	ISSUE	REFERENCE	STATUS
1	M&O DESIGN CONTROL PROGRAM	BERNERO TO DREYFUS LTR. 10/13/94	OPEN (N)
2	POTENTIAL OF CONSTRUCTION WORK TO IMPACT SITE CHARACTERIZATION OR THE WASTE CAPABILITY OF THE SITE	BERNERO TO DREYFUS LTR. 10/13/94	OPEN (N)
3	REQUEST FOR MORE DETAILS REGARDING QA CONCERNS AS WELL AS THE DESIGN OF THE ESF	BERNERO TO DREYFUS LTR. 10/13/94	OPEN (N)
4	LICENSE APPLICATION ANNOTATED OUTLINE (LAAO) INCOMPLETE AND EDITORIALY POOR	HOLONICH TO MILNER LTR. 8/15/95	OPEN (N)
5	LAAO CHAPTER 10 HEADINGS DO NOT REFLECT NRC GUIDANCE	HOLONICH TO MILNER LTR. 8/15/95	OPEN (N)
6	QUALITY CONTROLS APPLIED TO THE LAAO	HOLONICH TO MILNER LTR. 8/15/95	OPEN (N)
7	USGS TECHNICAL PROGRAM EFFECTIVENESS	HOLONICH TO MILNER LTR. 11/2/95	OPEN (D)
8	DATA QUALIFICATION	AUSTIN TO MILNER LTR. 3/18/96	OPEN (N)
9	LEVEL OF QUALITY OF WORK PRODUCTS	AUSTIN TO MILNER LTR. 10/24/96	OPEN (D)
10	EXEMPTION OS STATISTICAL ANALYSIS PROGRAMS FROM QA REQUIREMENTS	OBSERVER INQUIRY OF 11/12/96	CLOSED SEE #11 BELOW
11	DOE QARD SUPPLEMENT I GUIDANCE/REQUIREMENTS UNCLEAR FOR STATISTICAL ANALYSIS PROGRAM	SECTION 4.0 OF NRC ON-SITE FEB. 1997 REPORT	OPEN (D)

NRC QA ISSUES 1-10 WERE PRESENTED/DISCUSSED AT THE 12/5/96 QA MEETING.

ISSUE 11 HAS BEEN ADDED SINCE THAT MEETING, THEREBY CLOSING ISSUE 10 SINCE THIS PROBLEM INVOLVES A LARGER PROBLEM THAN THE ORIGINAL OBSERVER INQUIRY

NOTE: ALL THE ABOVE QA COMMENTS ARE DIRECTLY RELATED TOWARD IMPROVING INPUT AND ACQUISITION OF DATA FOR THE NRC KTI EFFORTS

**RESOLUTION STATUS OF THE NRC OPEN QA ISSUES****ISSUE      STATUS**

- 1,2,3      DOE responded to NRC in its September 25, 1996, letter (Broccoum to Bell). In general the QA portion is considered acceptable based on: 1) the NRC November 14, 1994, verification exercise; 2) revisions improvements to the overall design process; 3) the recent DOE QA Transition Plan, NRC observations of DOE audits/surveillances of the design process and; 4) meeting and observations of the design process by the ORs. The technical portion for this open item is presently being reviewed. An Appendix 7 meeting may be necessary (M. Nataraja NRC Technical Lead)
- 4,5,6      DOE responded to NRC in its March 21, 1997, letter (Broccoum to Thoma). In this letter, DOE indicates that the LAAO development will be terminated. It is also indicated that, should a repository licensing application be recommended in the future, information from the LAAO may be used in addition to other current NRC guidance. Should DOE submit such documentation in the future, the NRC comments that surfaced during its review of the DOE LAAO submittal will be considered. NRC will document response to March 21, 1997 letter and forward to DOE.
- 7            DOE has initiated a comprehensive technical review of three key USGS technical documents. Should this review yield no major technical deficiencies, NRC will close this item at a subsequent QA meeting and in the monthly OR Report.
- 8            In late 1996, in response to the NRC August 19, 1996, letter (Austin to Broccoum), DOE organized a working group for improving the requirements and process for qualification of existing data. This was tracked by the ORs, will be presented at the 5/12/97 QA meeting, and discussed at an Appendix 7 type meeting if necessary. From the OR perspective, this revised methodology appears to be responsive to the NRC position expressed in the above August 19, 1996 letter. Should the review by the NRC HQ staff of this revised methodology be acceptable, this open item will be closed in a subsequent QA meeting and in the monthly OR Report.
- 9            As a result of the LANL audit, DOE wrote 4 Deficiency Reports. Corrective action to close these Deficiency Reports is scheduled for completion in July 1997. If this corrective action satisfactorily addresses the NRC Open Item, it can be closed.

10       Closed

11       DOE has discussed the content of a future proposed clarification to the QARD for this open item with the ORs. This may be discussed at the 5/12/97, QA meeting. From the OR perspective, this proposed QARD clarification should close this open item.

**ATTACHMENT 4**

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# Improvements to Requirements and Process for Qualification of Existing Data

By:

Thomas W. Bjerstedt

DOE/NRC QA Management Meeting

May 12, 1997

# Topics

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- Problem Definition
- Working Group Approach
- Status
- Similarities/Differences from QARD R5
- Next Steps

# Define the Problem

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- 1988 NRC guidance on data qualification (DQ) was difficult to interpret, QARD commits to that guidance
- Despite DQ exercises in 1992, 93, 95; clarification of current requirements and redefinition of the process are needed to cost and schedule DQ for licensing
  - » Difficulties have been encountered exercising our DQ procedures, and DOE has recognized where improvements could be made
  - » DOE resolved to improve QARD requirements and procedural controls rather than debate what NRC's guidance meant in 1988, or means today.

# DQWG Charter

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- Seek improvements in requirements and/or procedural controls for qualifying existing data to ease implementation burdens that now exist
- Membership composed of DOE, OQA, M&O, and MTS staff

# Scope of DQWG Charter

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- Look at past experiences,
  - » discussions of NRC intent or interpretation
    - technical exchange w/ NRC on DQ 9/27/95
    - letters and feedback in 1995-96
- Look at lessons learned from,
  - » QARD requirements
  - » procedural implementation
  - » audit experiences

# Findings

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- QARD controls on the circumstances when data need qualification must be clarified
- Resolve to take advantage of the flexibility in NUREG to present alternatives
- YMSCO's current procedural controls are not well enough defined to implement qualification options, revisions are needed

# Current Status

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- Agreement reached between OQA and technical elements on intent and philosophy for QARD changes; revision (rev. 8)
- A revision to QARD Supplement III has been prepared that establishes if data needs to be qualified, through categorization criteria and usage (qualified, accepted, and existing) followed by when to qualify, and by what means

# Similarities to QARD R5

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- How to qualify still relies on the options identified in NUREG-1298
- QARD commitment to the NUREG still in place

# Differences from QARD R5

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- Focus for licensing is whether or not data was collected/developed in a way that can be technically defended, and how it is used, (i.e. does it directly address waste isolation or health and safety issues?)
- When to qualify was addressed in changes to Supplement III that are part of QARD R6

# Differences (con't)

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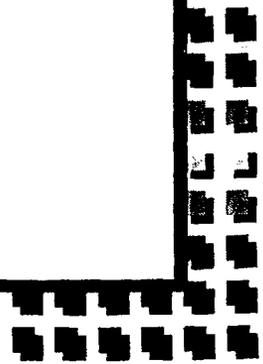
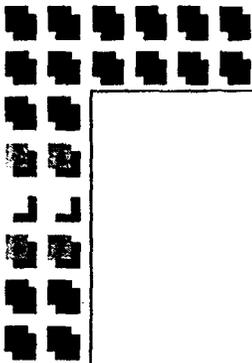
- Category of “accepted data” from authoritative sources does not need qualification
- Qualification is a measurement of technical adequacy, not a pass/fail threshold
- Technical review, as distinguished from peer review in the NUREG-1298, is recognized as another option to qualify

# Next Steps

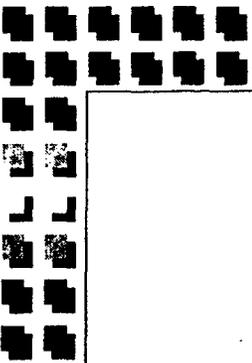
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- Introduce QARD changes to ORs, 5/4
- Introduce DAR for QARD revision, 5/9
- Hold Appendix 7 meeting to explain changes, June-July
- Begin review of existing procedures for needed changes under new QARD framework

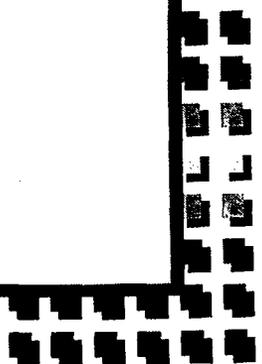
**ATTACHMENT 5**

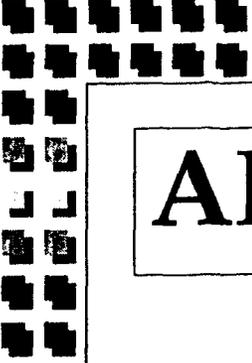


# CONSOLIDATION OF THE QA FUNCTION



## PURPOSE:

- \* INCREASE LICENSEE INVOLVEMENT
  - \* ELIMINATE REDUNDANCY
  - \* COST SAVINGS
- 



# AFFECTED ORGANIZATIONS

\* M & O

\* NATIONAL LABORATORIES

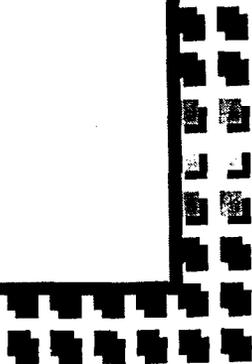
- LANL

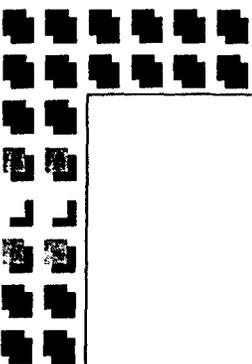
- LBNL

- LLNL

- SNL

\* USGS





# TRANSITION PLANNING

## PHASED APPROACH

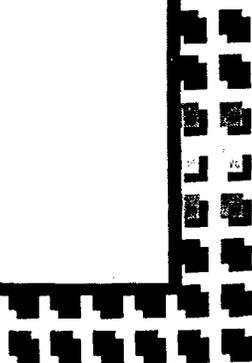
### \* PHASE A

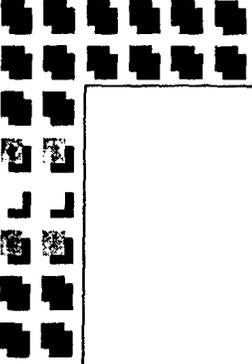
- SURVEILLANCE (EXCEPT K/PB)

### \* PHASE B

- QA FUNCTION (EXCEPT K/PB)
- EA FUNCTION

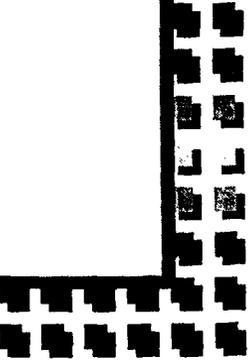
### \* PHASE C

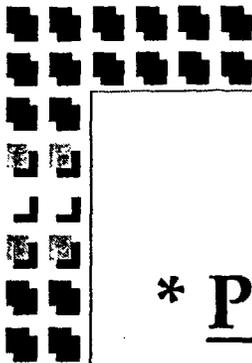
- K/PB QA FUNCTION
- 



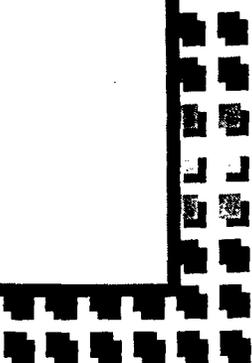
# QA FUNCTION

THOSE ACTIVITIES WHICH THE QARD  
REQUIRES QA ORGANIZATION  
INVOLVEMENT

- \* QA MANAGEMENT & PLANNING
  - \* QA PROGRAM DEVELOPMENT
  - \* QA VERIFICATION
  - \* FIELD QA/QC
  - \* QUALITY ENGINEERING
- 



## TRANSITION STATUS

- \* PHASE A - IMPLEMENTED 2/1/97
    - OQA ATTENDING M&O OPERATIONS MANAGERS STAFF MEETINGS
  
  - \* PHASE B - IMPLEMENT 6/2/97
    - QARD REVISION APPROVED 4/9/97
    - PROCEDURE REVISIONS 90% COMPLETE
    - TRANSITION PLAN APPROVED 4/28/97
    - OPEN ITEM LIST
    - MEETINGS WITH M&O MANAGERS
    - QA STAFF IN PLACE AT NATIONAL LABS AND USGS
- 

# AFFECTED DOCUMENTS

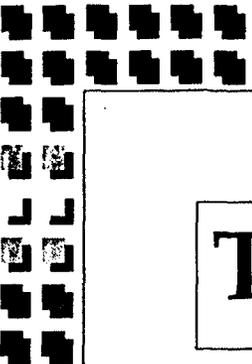
\* PHASE A - NONE

\* PHASE B - IDENTIFIED IN TRANSITION PLAN

• QARD - MINOR REVISION TO SECTION 1, 2, 3 & 7

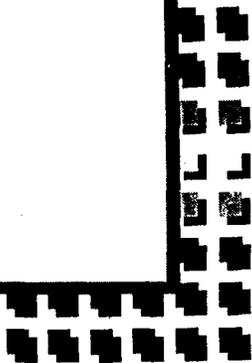
• IMPLEMENTING DOCUMENTS

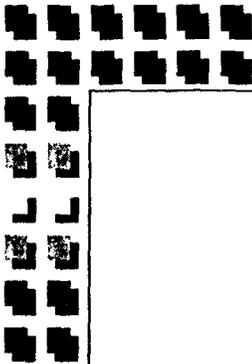
OCRWM	7
M&O	22
LANL	5
LBNL	7
LLNL	7
SNL	9
KIEWIT-P/B	7
<u>USGS</u>	<u>10</u>
TOTAL	74



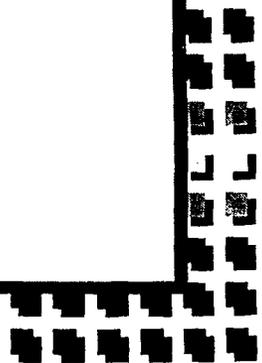
# TRANSITION STATUS

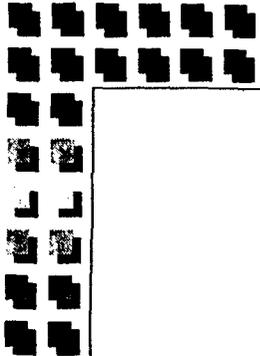
(Continued)

- \* PHASE C - IMPLEMENT 10/1/97
    - REVIEWING CONTRACTUAL DOCUMENTS
    - DEVELOPING TRANSITION PLAN
- 

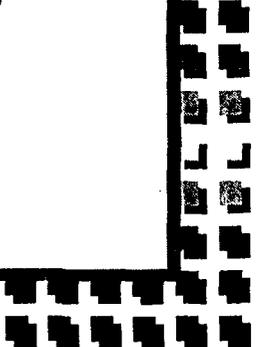


## **EA FUNCTION**

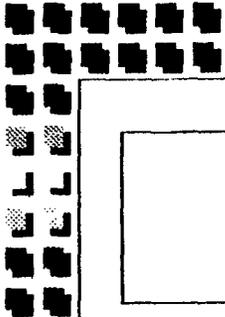
- \* ACTIVITIES PREVIOUSLY PERFORMED BY QA ORGANIZATION WHICH ARE NOT A QA FUNCTION**
  - AND**
  - \* REVIEWS PERFORMED BY LINE ORGANIZATION TO ENSURE PRODUCT QUALITY**
- 



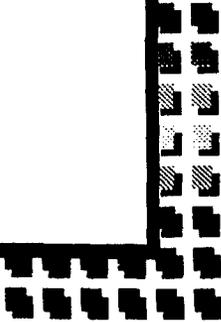
**MEETING WITH AFFECTED  
ORGANIZATIONS (12/96 - 1/97)**

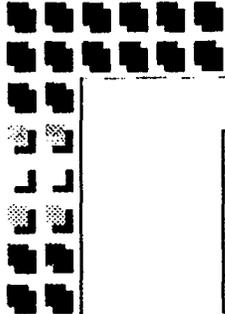
- \* DELIVERABLE IMPACTS**
  - \* IMPLEMENTING DOCUMENT  
CHANGES**
  - \* NON-QA FUNCTION ACTIVITIES  
PERFORMED BY QA**
- 

ATTACHMENT 6



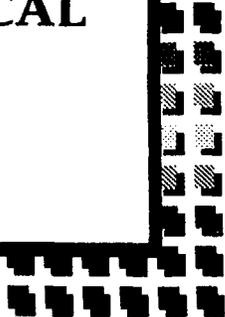
**QUALITY ASSURANCE REQUIREMENTS  
AND DESCRIPTION, REVISION 6**

- **SECTION 3.0, DESIGN CONTROL**  
- REVISED SUBSECTION 3.2.3, "DESIGN ANALYSES," TO REINSTATE REQUIREMENT OF DESIGN CALCULATIONS.
  - **SECTION 6.0, DOCUMENT CONTROL**  
- REVISED TO ELIMINATE INCONSISTENCY WITH SUBSECTION 2.2.10.
  - **SECTION 17.0 AND GLOSSARY**  
- DELETED THE TERM "AUTHENTICATION."
- 



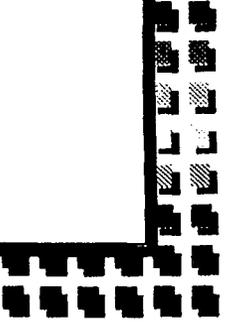
**QUALITY ASSURANCE REQUIREMENTS  
AND DESCRIPTION, REVISION 6 (Cont.)**

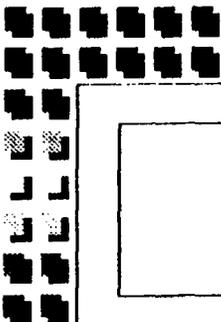
**• SUPPLEMENT III, SCIENTIFIC INVESTIGATION**

- **CLARIFIED THAT DATA ARE REQUIRED TO BE IDENTIFIED IN A MANNER THAT PROVIDES TRACEABILITY TO QUALIFICATION STATUS.**
  - **CLARIFIED DATA REVIEW REQUIREMENTS.**
  - **ADDED REQUIREMENT FOR REVIEW OF TECHNICAL REPORTS.**
- 

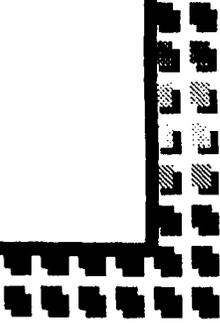


**QUALITY ASSURANCE REQUIREMENTS  
AND DESCRIPTION, REVISION 6 (Cont.)**

- PROVIDED TIMING FOR QUALIFICATION OF UNQUALIFIED DATA RELIED UPON TO ADDRESS SAFETY AND WASTE ISOLATION ISSUES.**
  - CLARIFIED MODEL VALIDATION REQUIREMENTS.**
- 

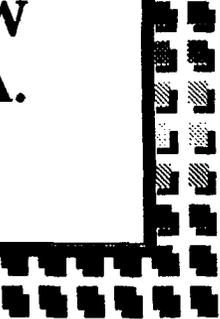


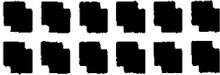
**QUALITY ASSURANCE REQUIREMENTS  
AND DESCRIPTION, REVISION 7**

- **SECTION 1.0, ORGANIZATION**  
- REVISED DUE TO THE OCRWM REORGANIZATION AND TRANSITION OF QA FUNCTIONS.
  
  - **SECTION 2.0, QA PROGRAM**  
- REVISED SUBSECTION 2.2.1, "QA PROGRAM DOCUMENTS" AND SUBSECTION 2.2.10, "DOCUMENT REVIEW" TO PROVIDE FOR THE TRANSITION OF QA FUNCTIONS TO OQA.
- 

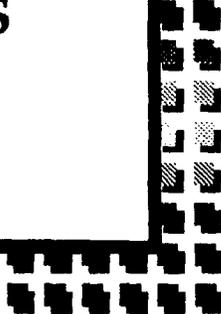


**QUALITY ASSURANCE REQUIREMENTS  
AND DESCRIPTION, REVISION 7 (Cont.)**

- **SECTION 3.0, DESIGN CONTROL**
    - REVISED 3.2.4, "DESIGN VERIFICATION" TO ALLOW FOR THE TRANSITION OF QA FUNCTIONS TO OQA.
  
  - **SECTION 7.0, CONTROL OF PURCHASED ITEMS AND SERVICES**
    - REVISED 7.2.2 "SOURCE EVALUATION" TO ALLOW FOR THE TRANSITION OF QA FUNCTIONS TO OQA.
- 



**QUALITY ASSURANCE REQUIREMENTS  
AND DESCRIPTION, REVISION 7 (Cont.)**

- **APPENDIX B, STORAGE & TRANSPORTATION**  
- CLARIFIED THAT NRC ACCEPTED 10 CFR 71 AND 10 CFR 72 QA PROGRAMS ARE ACCEPTABLE FOR "ANCILLARY EQUIPMENT."
  - **APPENDIX C, MINED GEOLOGIC DISPOSAL SYSTEM**  
- CLARIFIED REQUIREMENTS FOR PROCUREMENT OF ANALYTICAL SERVICES IN SUPPORT OF MGDS SCIENTIFIC INVESTIGATIONS.
- 

ATTACHMENT 7

# **FY97 Revisions to the Q-List**

- **Planned as a “major” revision**
- **Targeted perceived shortcomings**
  - **Based on user experience**
  - **Assessments and Reviews**
  - **Advances in Design Maturity**
- **Desire to make Q-List more “accessible”**

# Old Q-List Attributes

- **95% of the Items Classified as “Q”**
  - Classified by Direct Inclusion
  - Bases Were Suspect due to Lack of Analysis
- **Changes Were Difficult**
  - Technical Publications Process Used for Changes
  - Costly and Time Consuming
- **Visibility was Limited**
  - Difficult to Demonstrate for Customer/User
  - Hard to Follow

# **Old Q-List Impacts**

- **Out of Date**
- **Costly to Maintain**
- **Difficult Tool to Use**
- **High Percentage of “Q-ness” had Potential Cost Impacts**

# **New Q-List Attributes**

- **43% of the Items Classified as “Q”**
  - Classified by Functional Analysis
  - YAP-2.7Q Classification to Provide LA Bases
- **Changes are Convenient**
  - Computer Database with Controlled Access
  - Cost Effective and Quick
- **Visibility Virtually Unlimited**
  - On Line (Lotus Notes)
  - View Only Access Available

# **New Q-List Impacts**

- **Up to Date**
  - New Configuration (SDDs, SSCs)
- **Easy to Maintain**
  - Computer Based Changes
- **Better Tool**
  - Easy to Use
  - Convenient
- **Improved Potential Cost Impact**
  - Saved Approximately 50% over Old Q-List

SDD	SSC	QA-1	QA-2	QA-3	QA-4	QA-5	QA-6	QA-7
<b>SS20 Subsurface Water Collection/Removal System</b>								
	Sumps	Y	Y	Y	N	Y	N	Y
	Pumping Stations	Y	Y	Y	N	Y	N	Y
	Pumps	Y	Y	Y	N	Y	N	Y
	Valves/Piping	Y	Y	Y	N	Y	N	Y
	Monitoring and Control Devices	Y	Y	Y	N	Y	N	N
	Settling Pond/Treatment System	N	N	Y	N	N	N	Y
<b>SS21 Waste Retrieval System</b>								
	Retrieval Gantry	Y	N	N	N	Y	N	N
	Waste Package Transporter	Y	N	N	N	Y	N	Y
	Shielding	Y	N	N	N	Y	N	Y
	Rail Subsystem	Y	N	N	N	Y	N	N
	Docking Subsystem	Y	N	N	N	Y	N	N
	Remote Control Subsystem	Y	N	N	N	Y	N	N
	Locomotives/Rolling Stock	Y	N	N	N	Y	N	N
	Emergency Recovery Equipment	Y	N	N	N	N	N	N
	Emplacement Drift Remediation Eq	Y	N	N	N	Y	N	N
<b>SS24 Subsurface Emplacement Transportation System</b>								
	Rail Subsystem for Personnel & Equ	N	N	N	N	N	N	(Non-Q)
	Rolling Stock	N	N	N	N	N	N	(Non-Q)
	Locomotives	N	N	N	N	Y	N	N
	Control Devices	N	N	N	N	Y	N	N
<b>SS25 Subsurface Excavation System</b>								
	Primary Mechanical Excavation Sub	N	N	N	N	N	N	(Non-Q)
	Secondary Mechanical Excavation	N	N	N	N	N	N	(Non-Q)
	Drill & Blast Subsystem	N	N	N	N	N	N	(Non-Q)
<b>SS26 Subsurface Fire Suppression System</b>								
	Fire Sprinkler Subsystem	N	Y	N	Y	Y	N	N
	Non-Liquid (Halon/Other Chemical)	N	N	N	Y	Y	N	N
<b>SU01 MGDS Site Layout</b>								
	Offsite	N	N	N	N	N	N	(Non-Q)
	Site	N	N	N	N	N	N	(Non-Q)
	Development Area	N	N	N	N	N	N	(Non-Q)
	Emplacement	N	N	N	N	N	N	(Non-Q)
	South Portal	N	N	N	N	N	N	(Non-Q)
	North Portal	N	N	N	N	N	N	(Non-Q)
<b>SU02 Waste Handling Facility System</b>								
	General Lighting Subsystems	N	N	N	N	N	N	(Non-Q)
	Structural Subsystems	Y	N	N	Y	Y	N	Y
	Monitor and Control	N	N	N	N	N	N	(Non-Q)
	Decontamination Chemicals	N	N	Y	N	N	N	Y
	Nitrogen Gas	N	N	N	N	Y	N	N
	General Plumbing Subsystems	N	N	N	N	N	N	(Non-Q)
	Helium Gas	N	N	N	N	N	N	(Non-Q)
<b>SU04 Radiological Waste Treatment Facility System</b>								
	Selective Alpha Air Monitoring	N	N	N	N	N	N	Y
	Neutralizing Agents	N	N	N	N	N	N	(Non-Q)
	Fire Sprinkler	N	N	N	Y	Y	N	N
	Helium Gas	N	N	N	N	N	N	(Non-Q)
	General Lighting Subsystems	N	N	N	N	N	N	(Non-Q)
	General Plumbing Subsystems	N	N	N	N	N	N	(Non-Q)
	Decontamination Chemicals	N	N	Y	N	N	N	Y
	Structural Subsystems	Y	N	N	N	Y	N	Y
	Solidifying Agents	N	N	Y	N	N	N	N

SDD	SSC	QA-1	QA-2	QA-3	QA-4	QA-5	QA-6	QA-7	
	Electrical Power Distribution	N	N	N	N	N	N	N	(Non-Q)
	UPS Power	Y	N	N	N	Y	Y	N	
	Nitrogen Gas	N	N	N	N	N	N	N	(Non-Q)
	Neutron-Criticality Monitoring	N	N	N	N	N	N	Y	
	Surface Contamination Scanning	N	N	Y	N	N	N	Y	
<b>SU05</b>	<b>Carrier Staging Shed System</b>								
	Blowers, Ducts, Air Filtration Units,	N	N	N	N	N	N	N	(Non-Q)
	Structural Subsystems	N	N	N	Y	Y	N	Y	
	Selective Alpha Air Monitoring	N	N	N	N	N	N	Y	
	Temperature Control	N	N	N	N	N	N	N	(Non-Q)
	Surface Contamination Scanning	N	N	Y	N	N	N	Y	
	General Plumbing Subsystems	N	N	N	N	N	N	N	(Non-Q)
	General Lighting Subsystems	N	N	N	N	N	N	N	(Non-Q)
	Smoke and Heat Detection	N	N	N	Y	N	N	N	
	Duct Fire Detection	N	N	N	Y	N	N	N	
	Neutron-Criticality Monitoring	N	N	N	N	N	N	Y	
	Fire Sprinkler	N	N	N	Y	N	N	N	
<b>SU08</b>	<b>Carrier Staging Shed Material Handling System</b>								
	Personnel Barrier Handling	N	N	N	N	N	N	N	(Non-Q)
	Impact Limiter Handling	N	N	N	N	N	N	N	(Non-Q)
	Cask and Carrier Inspection and Sur	N	N	N	N	N	N	N	(Non-Q)
	Local Data Systems and Controls	N	N	N	N	N	N	N	(Non-Q)
<b>SU09</b>	<b>Cask/Canister Handling System</b>								
	Local Controls	Y	N	N	N	N	N	N	
	Tooling	Y	N	N	N	N	N	N	
	Decontamination	N	N	Y	N	N	N	Y	
	Dual Purpose Canister Opening	Y	N	N	N	N	N	N	
	Cask Opening	Y	N	N	N	N	N	N	
	Maintenance	N	N	N	N	N	N	N	(Non-Q)
	Cask/Canister Preparation	Y	N	N	N	N	N	N	
	Transporters	Y	N	N	N	Y	N	N	
<b>SU10</b>	<b>Uncanistered Waste Transfer System</b>								
	Decontamination	N	N	Y	N	N	N	Y	
	Maintenance	N	N	N	N	N	N	N	(Non-Q)
	Local Controls	Y	N	N	N	N	N	N	
	Transporters	Y	N	N	N	Y	N	N	
	Tooling	Y	N	N	N	N	N	N	
	Uncanistered Waste Transfer	Y	N	N	N	Y	N	N	
	Lag Storage	Y	N	N	N	N	N	N	
<b>SU11</b>	<b>Canistered Waste Transfer System</b>								
	Maintenance	N	N	N	N	N	N	N	(Non-Q)
	Decontamination	N	N	Y	N	N	N	Y	
	Local Controls	Y	N	N	N	N	N	N	
	Transporters	Y	N	N	N	Y	N	N	
	Tooling	Y	N	N	N	N	N	N	
	Lag Storage	Y	N	N	N	N	N	N	
	Canistered Waste Transfer	Y	N	N	N	Y	N	N	
<b>SU12</b>	<b>Waste Package Remediation System</b>								
	Interface to DC Handling System	Y	N	N	N	Y	N	N	
	Examination	Y	N	N	N	N	N	N	
	Lid Removal	Y	N	N	N	Y	N	N	
	Container Opening	Y	N	N	N	Y	N	N	
<b>SU13</b>	<b>Disposal Container Handling System</b>								
	DC Lifting	Y	N	N	N	Y	N	N	





SDD	SSC	QA-1	QA-2	QA-3	QA-4	QA-5	QA-6	QA-7	
	Vehicles	N	N	N	N	N	N	N	(Non-Q)
	Parking Facilities	N	N	N	N	N	N	N	(Non-Q)
<b>WP01</b>	<b>Uncanistered SNF Disposal Container</b>								
	SNF Assembly Supports	Y	Y	N	N	N	N	N	
	Inner Barrier and Inner Barrier Lid	Y	Y	N	N	N	N	Y	
	Outer Barrier and Outer Barrier Lid	Y	Y	N	N	N	N	Y	
	Filler and Criticality Components	Y	Y	N	N	N	N	N	
<b>WP02</b>	<b>Canistered SNF Disposal Container</b>								
	Inner Barrier and Inner Barrier Lid	Y	Y	N	N	N	N	Y	
	Outer Barrier and Outer Barrier Lid	Y	Y	N	N	N	N	Y	
<b>WP03</b>	<b>High Level Waste Disposal Container</b>								
	HLW Canister Supports	Y	Y	N	N	N	N	N	
	Inner Barrier and Inner Barrier Lid	Y	Y	N	N	N	N	Y	
	Outer Barrier and Outer Barrier Lid	Y	Y	N	N	N	N	Y	
<b>WP04</b>	<b>DOE Waste Forms Disposal Container</b>								
	DOE Waste Form Supports	Y	Y	N	N	N	N	N	
	Inner Barrier and Inner Barrier Lid	Y	Y	N	N	N	N	Y	
	Outer Barrier and Outer Barrier Lid	Y	Y	N	N	N	N	Y	
	Filler and Criticality Components	Y	Y	N	N	N	N	N	

NOTE: INFORMATION ONLY - BASED ON ANALYSIS IN PROGRESS/IN REVIEW

## FUNCTIONAL ANALYSIS OF SSCs

SDD NAME: Waste Retrieval System  
SDD Number: SS21  
SSC NAME: Remote Control Subsystem

### QA-1 - Important to Radiological Safety:

- 1.1 Is the SSC required to provide reasonable assurance that high-level waste can be received, handled, packaged, stored, emplaced, and retrieved without exceeding the federal limits?

 Y  
 N

**Rationale:** The waste retrieval system removes some or all of the waste packages from the retrieval drifts and transports them to the surface. This system includes any special equipment necessary to enable retrieval operations to occur in the underground. The remote control subsystem is part of this equipment necessary for the safe retrieval of the waste package.

- 1.2 Is the SSC required to function to prevent, mitigate, or monitor a credible Design Basis Event which would otherwise result in a radioactive release above the federal limits?

 Y  
 N

**Rationale:** The waste retrieval system remote control subsystem maybe required to function as designed to prevent a credible DBE (such as an unloading accident, rail accident, or handling/positioning accident) that could result in a DBE that exceeds federal limits.

- 1.3 Will the direct failure of the SSC result in a credible Design Basis Event which would lead to a radioactive release above the federal limits?

 Y  
 N

**Rationale:** Failure of the remote control subsystem while it is being used could lead to a DBE (such as an unloading accident, waste package drop, rail accident, handling/positioning accident, etc.) that could lead to a radioactive release that exceeds federal limits.

### QA-2 - Important to Waste Isolation:

- 2.1 Does the SSC perform a waste isolation function by forming part of the natural or engineered barriers?

 Y  
 N

**Rationale:** The waste retrieval system remote control subsystem is not part of the natural or engineered barriers and does not perform waste isolation functions.

- 2.2 Can direct failure of the SSC significantly affect the hydrological, geochemical, or geomechanical characteristics of the natural or engineered barriers which may prevent them

from performing their waste isolation function?

 Y  
 N

**Rationale:** Direct failure of the remote control subsystem will not affect the characteristics of the natural or engineered barriers such that they cannot perform their waste isolation functions.

### QA-3 - Important to Radioactive Waste Control:

3.1 Is the function of the SSC designed for collection, containment, and/or monitoring of site-generated radioactive waste?

 Y  
 N

**Rationale:** The waste retrieval system remote control subsystem is not associated with site-generated radioactive waste.

### QA-4 - Important to Fire Protection:

4.1 Does the SSC protect QA-1 or QA-2 SSCs from the effects of fire?

 Y  
 N

**Rationale:** The waste retrieval system remote control subsystem is not associated with fire protection functions.

### QA-5 - Important to Potential Interaction:

5.1 As a result of a Design Basis Event, could failure of the SSC impair the capability of QA-1 or QA-2 SSCs from performing their radiological safety or waste isolation function?

 Y  
 N

**Rationale:** Failure of the waste retrieval system remote control subsystem as a result of a DBE could impair the ability of QA-1/2 SSCs from performing their radiological safety and waste isolation functions.

### QA-6 - Important to Physical Protection of Facility and Materials:

6.1 Does the SSCs function provide detection or alarm of unauthorized intrusion or unauthorized explosive materials in the restricted area?

 Y  
 N

**Rationale:** The waste retrieval system (and the remote control subsystem that is part of this system) are not associated with detection or alarm of unauthorized intrusion or unauthorized explosive materials in the restricted area.

6.2 Is the SSCs function required for special nuclear material accountability?

Y  
 N

**Rationale:** The waste retrieval system (and the remote control subsystem) are not associated with special nuclear material accountability.

### QA-7 - Important to Occupational Radiological Exposure:

- 7.1 Does the SSC provide personnel radiation shielding, reduce dose rates in radioactive areas, or require personnel access into radiation areas by its own radioactive source term?

 Y  
 N

**Rationale:** The waste retrieval system remote control subsystem does not provide radiation shielding, dose rate reduction, and does not have its own radioactive source term.

- 7.2 Is the SSC a permanently installed radiation monitor which monitors areas for personnel radiation protection?

 Y  
 N

**Rationale:** The waste retrieval system remote control subsystem is not a radiation monitor and is not associated with personnel radiation monitoring.

**Previous QA Classification** (This question is for historical and traceability purposes only. A "yes" answer to this question does not provide inclusion to the Q-List.)

- 8.0 Are there other factors, such as previous analyses, a body of consensus, or by *direct inclusion*, that led to the previous conclusion that this SSC is important to radiological safety (QA-1) or waste isolation (QA-2)?

 Y  
 N

**Rationale:** This SSC is contained on the Q-List by direct inclusion for the Underground Service and Utility Systems, SSA 3.5.12 Waste Emplacement and Retrieval System, as QA-1.



SDD	SSC	QA-1	QA-2	QA-3	QA-4	QA-5	QA-6	QA-7	
	Fixtures	N	N	N	N	N	N	N	(Non-Q)
<b>SS08</b>	<b>Subsurface Compressed Air System</b>								
	Compressed Air Distribution System	N	N	N	N	N	N	N	(Non-Q)
<b>SS09</b>	<b>Subsurface Water Distribution System</b>								
	Pumps	N	N	N	Y	N	N	N	
	Pumping Stations	N	N	N	Y	N	N	N	
	Valves/Piping	N	N	N	Y	Y	N	N	
	Monitoring and Control Devices	N	N	N	Y	N	N	N	
<b>SS10</b>	<b>Subsurface Safety and Monitoring System</b>								
	Temperature, Humidity, and Dust C	N	N	N	N	N	N	N	(Non-Q)
	Water Level Indicators	N	N	N	N	N	N	N	(Non-Q)
	Electric Current Meters	N	N	N	N	N	N	N	(Non-Q)
	Radiation Monitors	Y	N	N	N	N	N	Y	
<b>SS12</b>	<b>Subsurface Operational Monitoring System</b>								
	Non-Radiological Air Monitoring	N	N	N	N	N	N	N	(Non-Q)
	Temperature Monitoring	N	N	N	N	N	N	N	(Non-Q)
	Particulate/Fume Monitoring	N	N	N	N	N	N	Y	
	Atmosphere Monitoring	N	N	N	N	N	N	N	(Non-Q)
<b>SS14</b>	<b>Performance Confirmation System</b>								
	Monitoring Systems	N	Y	N	N	N	N	N	
	Data Acquisition and Analysis System	N	Y	N	N	N	N	N	
<b>SS15</b>	<b>Muck Handling System</b>								
	Subsurface Primary and Secondary	N	N	N	N	N	N	N	(Non-Q)
	Surface Muck Handling	N	N	N	N	N	N	N	(Non-Q)
	Support Structure	N	N	N	N	N	N	N	(Non-Q)
	Control Devices	N	N	N	N	N	N	N	(Non-Q)
	Conveyors	N	N	N	N	N	N	N	(Non-Q)
	LHDs	N	N	N	N	N	N	N	(Non-Q)
	Trucks	N	N	N	N	N	N	N	(Non-Q)
	Transfer Stations	N	N	N	N	N	N	N	(Non-Q)
	Supply Control Subsystem	N	N	N	N	N	N	N	(Non-Q)
<b>SS16</b>	<b>Subsurface Development Transportation System</b>								
	Rail Subsystem for Personnel & Equ	N	N	N	N	N	N	N	(Non-Q)
	Rolling Stock	N	N	N	N	N	N	N	(Non-Q)
	Locomotives	N	N	N	N	N	N	N	(Non-Q)
	Control Devices	N	N	N	N	N	N	N	(Non-Q)
<b>SS17</b>	<b>Waste Emplacement System</b>								
	Waste Package Transporter	Y	N	N	N	Y	N	Y	
	Rail Subsystem	Y	N	N	N	Y	N	N	
	Locomotives	Y	N	N	N	Y	N	N	
	Shielding	Y	N	N	N	Y	N	Y	
	Switching Devices	Y	N	N	N	Y	N	N	
	Emplacement Gantry	Y	N	N	N	Y	N	N	
	Docking Subsystem	Y	N	N	N	Y	N	N	
	Off-Normal Event Recovery Subsys	Y	N	N	N	N	N	N	
	Remote Control Subsystems	Y	N	N	N	Y	N	Y	
<b>SS18</b>	<b>Backfill Emplacement System</b>								
	Material Segregation Subsystem	N	N	N	N	N	N	N	(Non-Q)
	Storage and Blending Subsystem	N	N	N	N	N	N	N	(Non-Q)
	Material Transportation Subsystem	N	N	N	N	N	N	N	(Non-Q)
	Conveying Subsystem	N	N	N	N	N	N	N	(Non-Q)
	Material Placement Subsystem	N	N	N	N	N	N	N	(Non-Q)
<b>SS19</b>	<b>Subsurface Closure and Seal System</b>								
	Composite Seal Material Selection	N	N	N	N	Y	Y	N	