



**Department of Energy**  
 Office of Civilian Radioactive Waste Management  
 Yucca Mountain Site Characterization Office  
 P.O. Box 98608  
 Las Vegas, NV 89193-8608

SEP 30 1996

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 for Yucca Mountain  
 Site Characterization Project  
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**EVALUATION OF RESPONSE TO DEFICIENCY REPORT (DR) YM-96-D-092  
 RESULTING FROM YUCCA MOUNTAIN QUALITY ASSURANCE (YMQA)  
 SURVEILLANCE YMP-SR-96-022**

The YMQA staff has evaluated the response to DR YM-96-D-092. The response has been determined to be unsatisfactory because of reasons stated in the enclosed DR.

An amended response is required to be submitted to this office within ten working days of the date of this letter. Send the original of your response to Deborah G. Sult, YMQA/QATSS, P.O. Box 98608, Mail Stop 455, Las Vegas, Nevada 89193-8608. If an extension to the due date is necessary, it must be requested in writing, with appropriate justification, prior to that date.

If you have any questions, please contact either Robert B. Constable at (702) 794-5580 or Daniel J. Tunney at (702) 794-1353.

*Robert B. Constable*

Richard E. Spence  
 Yucca Mountain Quality Assurance

YMQA:RBC-2742

Enclosure:  
 DR YM-96-D-092

- cc w/encl:  
 T. A. Wood, DOE/HQ (RW-14) FORS  
 J. G. Spraul, NRC, Washington, DC  
 S. W. Zimmerman, NWPO, Carson City, NV  
 R. L. Strickler, M&O, Vienna, VA  
 P. S. Hastings, M&O, Las Vegas, NV  
 B. R. Justice, M&O, Las Vegas, NV  
 R. P. Ruth, M&O, Las Vegas, NV  
 Records Processing Center

- cc w/o encl:  
 W. L. Belke, NRC, Las Vegas, NV  
 D. J. Tunney, YMQA/QATSS, Las Vegas, NV  
 D. G. Sult, YMQA/QATSS, Las Vegas, NV  
 D. G. Horton, DOE/OQA, Las Vegas, NV

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Recip: NMSS/HLU

**OFFICE OF CIVILIAN  
RADIOACTIVE WASTE MANAGEMENT  
U.S. DEPARTMENT OF ENERGY  
WASHINGTON, D.C.**

Performance Report  
 Deficiency Report  
 NO. YM-96-D-092  
 PAGE 1 OF 2 <sup>MT</sup> 4  
 QA: L

**PERFORMANCE/DEFICIENCY REPORT**

1 Controlling Document: YMP/JP 95-1, Revision 1 and BAB000000-01717-2200-00146, Revision 01	2 Related Report No. YMP-SR-96-022
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3 Responsible Organization: Civilian Radioactive Waste Management System Management and Operating Contractor	4 Discussed With: A. G. Burningham, D. L. Edwards, A. J. Mitchell, P. S. Hastings
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5 Requirement/Measurement Criteria:

a. Determination of Importance Evaluation BAB000000-01717-2200-0146, "Evaluation," fourth paragraph, sixth sentence, states, in part, "However, the use of tetrafluoroethane will have negligible potential for impact on the waste isolation capability of the geologic repository or the conduct or results of other site characterization testing, for the following reasons: the JP states that concentration of this organic tracer will only be a trace amount (30 ppm+/- 10 ppm)..."

b. Job Package YMP/JP 95-1, B.2.e.9 states, "Only SF<sub>6</sub> or SUVA-COLD MP (tetrafluoroethane) are approved for use as tracers in hydrochemistry tests and RBT; concentrations are limited to no more than 20 ppm and 30 ppm respectively with a target value of 1.5 ppm for SF<sub>6</sub> and 15 ppm for SUVA-COLD."

6 Description of Condition:

The limits on the use of tetrafluoroethane specified in job package YMP/JP 95-1 (target value of 15 ppm with no more than 30 ppm) conflict with those discussed in Determination of Importance Evaluation BAB000000-01717-2200-0146 (30 ppm+/- 10 ppm.)

7 Initiator Daniel J. Tunney <i>Daniel J. Tunney</i> Date <u>8/12/96</u>	9 Is condition an isolated occurrence? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown; Must be Yes if PR
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10 Recommended Action: (Not required for PR)

a. Determine the correct limitations for use of tetrafluoroethane, and revise the Job Package and/or Determination of Importance to be consistent in the specification of the limitations.

b. Evaluate whether similar conflicts exist, identify any similar deficiencies, and correct these.

c. Evaluate whether the deficient condition has an impact on any work performed and if affected, take appropriate corrective measures.

11 QA Review: QAR <i>Daniel J. Tunney</i> Date <u>8/12/96</u>	12 Response Due Date 20 Working Days From Issuance
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13 Affected Organization QA manager Issuance Approval: (QAR for PR) Printed Name <u>RESPERICE</u> Signature <i>[Signature]</i> Date <u>8-14-96</u>
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22 Corrective Action Verified QAR _____ Date _____	23 Closure Approved by: (N/A for PR) AOQAM _____ Date _____
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WASHINGTON, D.C.

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PERFORMANCE/DEFICIENCY REPORT RESPONSE

14 Remedial Actions:

Review has determined that no deficiency exists; therefore, no remedial actions are required. See Continuation Pages (following) for supporting information.

15 Extent of Condition: (Not required for PR)

No deficiency exists; therefore no description of "extent of condition" is required.

16 Root Cause Determination: (Not required for PR)

Required  Yes  No

Review has determined that no deficiency exists; therefore, no root cause determination is required.

17 Action to Preclude Recurrence: (Not required for PR)

Required  Yes  No

No deficiency exists; therefore no actions to preclude recurrence is required. Note, however, that the discussion of planned tracer concentration will be amended if/when the subject DIE is revised for other reasons.

18 Corrective Action Completion Due Date:

N/A

19 Response by:

Initial

Amended

Date

Phone

20 Response Accepted

QAR

Date

21 Response Accepted (N/A for PR):

AOQAM

Date

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RADIOACTIVE WASTE MANAGEMENT  
U.S. DEPARTMENT OF ENERGY  
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PR/DR CONTINUATION PAGE

Draft Job Package JP-95-1 (as attached to "Request to Review TPP 92-13 and JP 95-1," Mitchell to Distribution, July 31, 1995, indicated as Reference 1 in the subject DIE) indicated tracer use at 30+10 ppm of SUVA-COLD MP (tetrafluoroethane). The subject DIE states:

"Tracer gases (SF6 or tetrafluoroethane) are typically added to compressed air to avoid interference, during test configuration and setup, with the test(s) being fielded, based on PI-TCO coordination...As radial borehole drilling essentially comprises configuration of the radial borehole tests, the use of tracer is considered as part of protecting the validity/veracity of the test(s) being fielded, and as such is the responsibility of the PI(s) and outside the scope of this DIE...[T]he use of tetrafluoroethane will have negligible potential for impact on the waste isolation capability of the geologic repository or on the conduct or results of other site characterization testing, for the following reasons: the JP states that the concentration of this organic tracer will only be a trace amount (30 ppm  $\pm$  10 ppm); the tracer is gaseous; its use has been previously evaluated and approved for use (with no specific DIE-generated QA controls) in Surface-Based Testing drilling applications, and its use in radial boreholes in the subsurface ESF is sufficiently similar so as to be bounded by that evaluation; and only a limited number of radial boreholes are expected to be drilled."

In part on the basis of the discussion above, no controls were established on the use of tracer gas and, therefore, no DIE requirement or limit exists to be violated.

Revision 1 of JP 95-1 contains applicable DIE requirements and changes the SUVA-COLD concentration to a maximum of 30 ppm with a target concentration of 15 ppm, based on testing requirements. (Note that this limit is actually more conservative with regard to any potential impact than the value assumed in the DIE.)

It is the responsibility of the JP author to use the applicable inputs and ensure that they are adequate for use as input. The fact that the tracer concentrations discussed in the subject DIE are different from those in the final JP does not constitute a deficiency, based on the conclusion in the DIE that use of trace amounts in this application does not constitute an impact. Adjustment to trace amounts of such material therefore does not appreciably alter the assumptions or conclusions made in the DIE.

As part of this investigation, the subject DIE was reviewed, and the assumptions and conclusions therein were verified to be adequate. JP 95-1 was also verified to contain the applicable DIE controls. The variance in the planned tracer concentration (as compared against the originally assumed concentration) is not considered significant.

As a result of our investigation, and as indicated in Block 17, we have concluded that a deficient condition does not exist; therefore, no actions to preclude recurrence are required. As information, the discussion of planned tracer concentration will be amended if/when the subject DIE is revised for other reasons.

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QA: L

PR/DR CONTINUATION PAGE

Subject: Response to Deficiency Report (DR)YM-96-D-092

Reference: Letter LV.SED.RFW.09/96-092, Dated September 10, 1996, L. D. Foust to D. Sult

The CRWMS M&O response to the subject Deficiency Report indicates that the stated condition is not a deficiency and requests that the DR be voided. The Yucca Mountain Quality Assurance Division has evaluated and rejected the response. Specific reasons for rejection are as follows:

1. The explanation provided is inadequate. The response indicates that Draft Job Package JP 95-1 was used as a basis for developing the Determination of Importance Evaluation (DIE). The response does not provide an adequate explanation of why information from the approved job package was not incorporated. Revision 1 of this Job Package had an effective date of November 10, 1995 and was placed under controlled distribution on this same date. The preparation, review, check, and approval dates on the DIE Cover Sheet came after the Job Package was effective; these range in date from November 20, 1995, through November 30, 1995. At the time the DIE was developed, NLP-2-0, Revision 1, Paragraph 5.2.3 and Attachment V required the checker to verify that the best available input data are used, referenced appropriately, and are consistent with the referenced data source. The response should acknowledge the described condition as a deficiency which resulted from not using or checking the evaluation against the best available data.
2. The response should state whether similar conditions exist within this DIE or in other DIEs; and identify any similar conditions and any actions which will be taken to correct these. If the extent of condition warrants a root cause determination and action to preclude recurrence, this should be provided also.
3. All statements which indicate that no deficiency exists should be removed from the response. Blocks 14 through 17 of the DR and the last paragraph on the continuation page should be revised to remove this statement. New justification should be provided in Blocks 16 and 17 if a root cause determination or a action to preclude recurrence is not specified.
4. The notes (see Block 17 of the last paragraph of the continuation page) which indicate that the discussion of planned tracer concentration will be amended if/when the subject DIE is revised for other reasons should be removed. Either indicate that the DIE will be revised and a provide specific completion date or provide justification why it is not required to be revised. Further, it is not appropriate to discuss this in the Action to Preclude Recurrence block.
5. A corrective action completion date should be provided in Block 18.
6. Block 19 should include the signature, date and phone number of the responsible manager.

  
Daniel J. Tunney, QAR

9/24/96  
Date