

June 10, 2002

H. Lawrence McKague  
Element Manager, GLGP  
Center for Nuclear Waste Regulatory Analysis  
6220 Culebra Road  
San Antonio, Texas, 78228-5516

Subject: Review of Intermediate Milestone - Evaluation of Geophysical Information Used to Detect and Characterize Buried Volcanic Features in the Yucca Mountain Region (IM01402.461.215)

We have reviewed the subject report and find that it is both programmatically and technically acceptable. All members of the NRC staff who have read this report have commented that this is a well thought out, useful, and timely document. As indicated in the attachment, however, there are some areas of the report where we feel minor changes could clarify and make the document even more useful. These points have been discussed with Dr. B. Hill of your staff who has indicated that there should be no problem to incorporate these changes in the final report.

If there are any questions concerning this review please contact me at 301-415-8063 or by e-mail using [jst@nrc.gov](mailto:jst@nrc.gov).

Sincerely,  
/RA/

John S. Trapp  
Program Element Manager  
High-Level Waste Branch  
Division of Waste Management  
Office of Nuclear Material Safety  
and Safeguards

Enclosure: Comments on IM 01402.461.215

cc: E. Whitt  
B. Meehan  
L. Campbell  
J. Schlueter  
B. Hill (CNWRA)  
J. Stamatakos (CNWRA)  
W. Patrick (CNWRA)

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John S. Trapp  
Program Element Manager  
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Office of Nuclear Material Safety and Safeguards

cc: D. DeMarco  
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L. Campbell  
J. Schlueter  
B. Hill (CNWRA)  
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Attachment: As stated.

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**Comments on IM 01402.461.215**

1. Page 1-1, Paragraph 1. In the first sentence add the term “postclosure” before risk.
2. Page 1-2, Paragraph 4. Remove “during the original surveys”. The data was mislocated, but I believe that it was during the analysis, not during the survey.
3. Page 1-4, 1<sup>st</sup> full paragraph, last sentence. In the last phrase it would help the reader is there was a such as added to let the reader know what type of uncertainties are being discussed. For example, are the uncertainties in the next paragraph the ones being referenced?
4. Page 1-4, 2<sup>nd</sup> full paragraph, last sentence. The word “may” seems a little weak. Something like “appear to”, while still not definite, would seem to give a more accurate connotation.
5. Page 1-5, 1<sup>st</sup> sentence, last paragraph. This sentence appears to state that the DOE contractors are stating that the information can not be readily dismissed, whereas the CNWRA does not think this can be readily dismissed as the DOE contractors did. Please clarify.
6. Page 2-1, last paragraph. Anomalies “C,” “F-H” are interpreted as basaltic volcanoes, not known as volcanoes. Clarify.
7. Page 2-3, Figure 2-2, Text. The green outlines both known basalt and anomalies, but not all anomalies. Clarify text or figure.
8. Page 2-5, Figure 2-3. This figure needs work. Where is the bedrock geology? I can pick part of it out, but not all. Faults appear to be on, but are not labeled or identified as faults. Again, only select aeromagnetic anomalies are contoured (or is it correct to say that the contours of selected anomalies are shown)? The colors and their pattern are very confusing. Some of the color is related to gravity, some appears to be bedrock, but the reader can not tell. For example, what is the green pattern on the extreme eastern edge of the map south of 4070000? There are things trying to be shown, but this map, in its present state, detracts from the overall presentation of the report and needs work.
9. Most of the maps, including 2-7, 2-8, etc. The lines drawn around selected anomalies need to be explained.
10. Page 2-25, 1<sup>st</sup> bullet. As discussed in Section 2.4 there are things like sedimentation rates which could suggest the possibility that some of the anomalies are older than 5 MA. We do not have, however, sufficient information to say that any of the anomalies are definitely older than 5 MA. The third sentence in this bullet needs reworking.
11. Page 2-25, 3<sup>rd</sup> Paragraph, 2<sup>nd</sup> sentence. Suggest inserting “individual experts” before probability models.
12. Section 2.9. Suggest removing first sentence.
13. Page 2-26, Section 2.9. Strike the reference to Kotra et al.
14. Page 2-27, Last paragraph. Suggest something like: 1) adding “as expressed in the aeromagnetic data” after recurrence rates. 2) In the Second sentence start with “In addition, the

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scope and magnitude of the information discussed above has the potential....., 3. Strike the reference to Kotra et al., In the present last paragraph and add a new paragraph something like: "As part of the finalization of NUREG-1563 (Kotra et al., 1996), DOE noted that it was in substantial agreement with the guidance set forth in this technical position, including the provision to update elicited judgments, when warranted, based on the availability of new data or information (Op cit., p. 30). Although DOE integrated NUREG-1563 into its administrative procedures for conducting expert elicitations, it is not apparent to the staff how DOE will evaluate the new aeromagnetic survey data and other information discussed above in the context of the existing PVHA, including the extent to which the original PVHA authors would be involved in the decision-making concerning the potential need to update their original elicited judgments."

15. The Executive Summary concludes with a statement that "an update of the DOE probability elicitation appears necessary for acceptable use in licensing. " The NRC agrees with that statement. While this is justified by the information in section 2.9, this thought should be expressed in Section 3.