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WM DOCKET CONTROL CENTER
Hydrogeology • Mineral Resources Waste Management • Geological Engineering • Mine Hydrology

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Mr. Jeff Pohle
Division of Waste Management
Mail Stop 623-SS
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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Distribution:

Pohle

(Return to WM, 623-SS)

Dear Jeff:

This letter presents our list of issues that should be addressed during the review of a technical document. We suggest that the documents to be reviewed be broken down into four categories. These categories are 1) data documents, 2) data interpretation documents, 3) modeling documents, and 4) planning documents.

Certain aspects of the review should be consistent for all four categories. The complete reference citation for the document under review should be stated. The citation includes the title, authors, publishing house or report generating agency or corporation, date of issue, and the document number. The reviews also should identify the reviewer and the date that the review was completed. We believe that a summary is in order for each review. This summary should describe the type of document being reviewed. The purpose or objectives of the report under review and the conclusions stated by the authors of the report under review also should be stated in the summary.

The summary of a data document (1) should state what type of information or data that have been collected in the report under review. The location or locations from which the data were obtained should be included. The summary should identify the methods of testing and the methods of data collection that were used. Data analysis methods, if used, should be described in the summary. Culling procedures used to sort the data should be noted.

The summary of a data interpretation document (2) should include additional information not included in the data document summary. The review of the interpretation document should include a statement about the types of data that are being considered in the interpretation. The types of data evaluated in the document

under review include hydraulic head or fluid pressure data, chemistry data, transmissivity or hydraulic conductivity data, unsaturated flow properties if applicable, and geologic data. The summary should state the basis or bases for interpretation of the data; the basis or bases for interpretation can be mathematical, conceptual, physical or chemical relationships.

The summary of a modeling document (3) should state what conceptual model or models are being considered in the report under review. The summary should state briefly the areas designated for recharge and discharge, whether the model is steady state or transient, and what initial head conditions are imposed on the model. The values of recharge and discharge should be noted if they are quantified in the model. The methods used to represent recharge and discharge in the model should be stated. The geometry of the model should be described in both areal and vertical terms. The vertical designation of hydrostratigraphic units should be noted. The capability of the model should be stated regarding its ability to model either one, two, or three dimensions. Limitations on the capability of the model to simulate various flow conditions should be noted. These limitations include variable fluid density, transient or steady state flow, free or fixed surface, and seepage face flow. The summary should state whether the model simulates porous medium or fracture flow. The summary should state whether heterogeneities are considered. Techniques used to estimate values for input into the model should be stated. The summary also should state how model output (heads, velocities, travel times) are presented in the report under review.

Summary of a planning document (4) should describe the type of plans included in the report under review. The summary should state the justification for the plans or the purpose of the document under review. The summary should note the approach that is being used to achieve the objectives of the planning document. Plans should be compared to standard test procedures; the planned test procedures may be more easily discussed in a summary by comparison with standard test procedures. Special considerations that have been incorporated into the test plans should be noted. The sites encompass a variety of conditions that must be recognized in the test plans. These plans must address variable fluid temperature, total dissolved solids content, and dissolved gas concentrations. The summary should state how the assumptions of the test procedures compare to anticipated conditions at the test site.

We believe the document reviews should state in a brief paragraph the significance of the document or review to the waste management program. We believe that this topic may be difficult to address in some instances. It might be advisable to allow the option of not designating the significance to the waste

management program until the review has been considered by the NRC.

We believe that the review should comment on the topics discussed under the summary. Comments will fall under one of two basic categories. One category includes innovative work or directional changes in the program that reflect progress with respect to site characterization rational. The second category discusses the limitations or deficiencies of the report under review.

The deficiencies and limitations section of the reviews will vary based on the types of documents under review. This section of the data documents (1) review should address the documentation for the test methods and data analysis techniques. It is imperative that such documentation be included in the document under review so that the analysis procedures can be verified. Documentation for data culling procedures should be checked. In addition to evaluating the topics listed for summarization we believe that the data interpretation document (2) review also should state how the interpretation fits the current understanding of the hydrogeology at the site under consideration. We believe this review also should discuss the methods of validating the interpretation if possible. We believe that reviews of modeling documents (3) should answer the specific question of 'how well does the model fit the existing data'. We realize that such a question must be couched in terms of how the model was forced to fit the data. In many instances it is possible to make the model fit the existing data by using unjustifiable techniques. Documentation should be noted for all input into the model. We believe that reviews of planning documents (4) should answer the specific question of how the plans incorporated in the document under review will aid in the understanding of the hydrogeologic system at the sites.

We believe that the details we have noted are outlined essentially in the old WMGT document review sheet. We have broken the document types down into different categories than those incorporated in the aforementioned review sheet. We also have added some additional topics for consideration in the review based upon our breakdown of the types of reports that will be reviewed.

If you have any questions, please call.

Sincerely,



Roy E. Williams

REW:s1