VOLCANIC CHARACTERIZATION

JUN 18 1990

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SUBJECT: ACCEPTANCE AND START WORK REVIEW OF STUDY PLAN TITLED: CHARACTERIZATION OF VOLCANIC FEATURES

I have performed an acceptance and start work review of the referenced Study Plan using the guidance presented in the draft Study Plan and Procedure Review Plan, Sections 4.0 and 5.0. Based on this review, I recommend that DOE be informed that the NRC has no objections to starting the work outlined within this plan, provided that the required Quality Assurance Plan has been determined to be in place and operative. I also recommend that a detailed technical review of this plan be conducted. The bases for these recommendations are as follows.

Acceptance Review

1. While the Study Plan meets the spirit of the Level-of-Detail Agreement, some of the nonessential, specific information appears to have been relegated to the detailed procedures. This should not be allowed to delay substantive work by DOE as I do not consider that this affects the overall quality of the Study Plan. If a detailed technical review is conducted, I consider that the NRC should review certain specific detailed procedures, such as the Procedure for Volcanic Field Studies, TWS-EES-13-DP-606.

2. While not all references have been provided, those which are deemed critical for both the Acceptance Review and the Start-Work Review were available in the open literature. There are other references which will be needed during a detailed technical review.

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Start-Work Review

1. None of the work being proposed should affect the ability of the site to isolate high-level waste. There are no intrusive investigations which are being planned in the area of the underground repository.

2. There are no tests being planned in the area of the Exploratory Shaft Facility. Interference with other studies and tests has been considered and there is no interference which appear to be significant.

3. The Study Plan provides a adequate description of the required Quality Assurance Program, at the detail required for a Study Plan. As a result of the latest audit at Los Alamos (LAS Audit 90-01), however, it was determined that the Quality Assurance Program was not fully implemented in the area of software QA. This concern must be resolved before the DOE initiates those portions of this Study Plan which will require the use of software. In addition, both the DOE and the NRC noted concerns in the area of purchasing which should be resolved prior to initiating the corresponding portions of the Study Plan. This concern is self correcting, however, as Los Alamos will be unable to initiate additional purchasing prior to resolution of this concern. Therefore, those activities dependent on purchase agreements will only start after the purchasing concerns have been resolved.

4. There is no planned use of radioactive materials, except the possible use of radioactive source materials in standard downhole logging devices.

Recommendation for Detailed Technical Review

1. For this study to be carried out successfully, there will need to be intense coordination and integration with other studies being conducted by other project participants. This was an area of major concern during the SCP review, as is expressed in NUREG-1347. In general, the Study Plan does appear to portray the needed input and output links. However, in checking other study plans and information presented within the SCP, there does not appear to be consistency in the recognized links. For example, this Study Plan does not acknowledge that rock varnish dating will be used by the Quaternary Regional Hydrology Study Plan (YMP-USGS-S-8.3.1.5.2.1), nor does the Quaternary Regional Hydrology Study Plan reference this Study Plan. Therefore, while this Study Plan acknowledges the need for integration and coordination, there appear to be minor problems which still have to be addressed. It is my belief that this concern can best be addressed during a detailed technical review.

2. This study is using state-of-the-art procedures, and in some cases developing the state-of-the-art, to obtain the required information. The staff needs to fully understand the ramifications and limitations of these procedures to be able to fully evaluate and track ongoing work in this area. A detailed review of the Study Plan and associated procedures will provide the initial information necessary to assure staff understanding.

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3. This study is the primary activity which will gather data for evaluating the potential for volcanic disruption of the repository. In keeping with the Commission's intent of early identification of potential disqualifying conditions, as stated in NUREG-1347, this study should receive high priority by both DOE and NRC.

/S/

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