

XXXXXXXXXX  
Governor



XXXXXXXXXX  
Director

WM DOCKET CONTROL  
CENTER

STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

'85 APR 19 12:07 <sup>Mail Stop</sup> PV-11 • Olympia, Washington 98504 • (206) 459-6000  
April 9, 1985

WM Record File  
101.3

WM Project 10  
Docket No. \_\_\_\_\_  
PDR   
LPDR

Lee Olson, Project Manager  
BWIP, Richland Operations Office  
U.S. Department of Energy  
P.O. Box 550  
Richland, WA 99352

Distribution:  
WESTBROOK WRIGHT  
KENNEDY DRM CER  
(Return to WM, 623-SS) L3

Dear Lee:

**SUBJECT: Status Meetings, SLAR Proposal**

The Geosciences Project Status Meeting on April 4 was extremely worthwhile and, I believe, as useful to your staff and contractors as it was to the state and tribes. The two-way exchange of information and the ability to ask questions as they arise is far superior to "canned" briefings. We and the CERT contractors have extensive commercial mining and exploration experience which may enable Rockwell to enhance their site characterization activities over the next few years, and of course it is invaluable to us to know of plans and research findings in "real time".

Another good feature of these meetings is the ability to deliver references and recent reports to opposite numbers as soon as they are cleared and available. While documents do eventually get on accession lists, few of us have time to scan every listing, nor do the titles always indicate the relative importance of a report or its applicability to related fields of study. At the Thursday meeting there was quite a bit of note-taking in this regard on both sides of the table.

Over the past weeks I have delivered to your staff a number of maps and overlays dealing with regional tectonics, integrating geologic, geophysical and seismic data on a common cartographic base, as is done in exploration by mining and petroleum companies. We learned that you are adopting this practice, which I believe will prove very useful, and updating and improving on my maps, which I appreciate. Naturally we do not all agree on the interpretation of every map feature, but at least our discussions are now on an objective basis. The growing awareness that regional tectonics are not well understood, yet are critical to repository performance, leads to a specific proposal, as follows:

8506050745 850409  
PDR WASTE  
WM-10 PDR

1326

We have learned that the U.S. Geological Survey is contracting for inclusion of the Deaf Smith County and Nevada Test Site repository areas in its 1985 surveys by means of side-looking airborne radar (SLAR). While there is some SLAR coverage in Washington over parts of our mutual area of interest, it was done with the Westinghouse mapping radar, APS 97, which is more than twenty years old. I have used both the Westinghouse and newer radars in commercial surveys, and can assure you that equipment such as the Goodyear APQ 102 is vastly superior for geologic mapping. I assume that USGS is using the best available equipment (costs being about equal) and I assume USDOE is supporting the Texas and Nevada surveys. We would very much like to see Washington included in this year's program, and we propose that there are some very sound reasons for doing it in conjunction with the Nevada survey.

The most important reason is economy. Much of the cost of a survey is incurred before the aircraft leaves the ground. Design, setup and mobilization costs are substantial, while the addition of more flying hours is incremental and diminishing. High altitude jet aircraft are used, and could stage out of Nevada with only refuelling in Washington.

Another reasons for doing it now is to have the interpreted SLAR maps available to guide site characterization. We have seen photolineaments from LANDSAT and U-2 imagery that are consistent with mapped geology and geophysics, which means that "something" is present at the surface even in some areas of thick post-basalt cover. SLAR is often superior to even high-resolution photography for finding subtle surface expressions of subsurface faulting and jointing. It could lead to direct physical testing, e.g., trenching, or to accurately aimed surface geophysical surveys, and greatly economize staff time in the field.

We are pursuing costs and schedules with USGS and will advise you of our findings. I do not think the cost will be excessive; in 1980 one contractor proposed to fly all of the state of Alaska and do a good deal of post-flight map work for \$8 million.

Sincerely,



William A. Brewer  
Technical Director  
Office of High-Level  
Nuclear Waste Management

cc: Dave Dahlem, USDOE  
Ray Lasmanis, DNR  
Bob Wright, NRC