PDR-1
LPDR-1 (n-10(2)) 101

MAY 07 1987

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MEMORANDUM FOR: Paul Hildenbrand, Hanford Site Project Manager
Operations Branch
Division of High-Level Waste Management

THROUGH: Tilak Verma, Acting Section Leader
Technical Review Branch
Division of High-Level Waste Management

FROM: Neil M. Coleman, Hydrogeologist
Technical Review Branch
Division of High-Level Waste Management

SUBJECT: HYDROLOGY STAFF EVALUATION OF THE HANFORD PRE-ES HYDROLOGIC TESTING PROGRAM (NRC/DOE MEETING, APRIL 1987, RICHLAND, WA)

In response to your request, enclosed is the Hydrology staff's evaluation of the pre-ES hydrologic testing program for the Hanford Site. Our assessment is based primarily on a review of the information made available by DOE prior to and during the meeting and a comparison of DOE's general strategy with the intent of NRC's Site Technical Position 1.1 on hydrologic testing. Topics to be pursued in detail during future interactions are also identified.

ORIGINAL SIGNED BY

Neil M. Coleman, Hydrogeologist
Technical Review Branch
Division of High-Level Waste Management

Enclosure: As Stated

cc: Browning
Bell
Ballard
Linehan
Johnson

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HYDROLOGY STAFF EVALUATION OF THE
HANFORD PRE-ES HYDROLOGIC TESTING PROGRAM
NRC/DOE Meeting, April, 1987
Richland, WA

After a review of DOE's proposed pre-ES hydrologic testing program at Hanford, we consider that Option "D" provides a reasonable approach for the next step in hydrologic characterization of the site. Overall, the program should provide a better understanding of the hydrogeology of the Hanford site. However, additional testing, such as Option "E", or other testing as appropriate, will be required to satisfy the information needs of STP 1.1."

The following key points in DOE's proposed pre-ES testing are consistent with the intent of NRC's STP 1.1:

- Large-scale, multiple-well pump tests are proposed for several flow tops, which can provide estimates of bulk values of hydrologic parameters on the repository scale;
- Large-scale hydraulic stress testing will begin in basalt flow tops of the Grande Ronde Formation;
- In addition to the piezometer clusters at DC-19, -20, -22, and -23, DOE has proposed the construction of four additional piezometer cluster sites (DC-24, -25, -32, and -33);
- The DOE has agreed to consult with NRC and other parties at key points in the testing program.

It should be noted that the scope of DOE's proposed hydrologic test plan covers only the period preceding sinking of the ES. STP 1.1, on the other hand, is intended to provide general guidance on an overall scheme of hydrologic testing for the Hanford site. Other tests, such as those described under Option "E", may be needed in addition to the testing discussed under Option "D". Based on initial testing, the DOE must determine whether the additional testing (i. e., additional tracer tests and multi-well tests at locations other than the RRL-2 cluster) is needed prior to sinking the ES. STP 1.1 does provide guidance to DOE regarding the potential effects of ES construction on hydrologic testing, as cited below:

> "The staff considers that it would be prudent for BWIP to avoid major perturbations to the groundwater system during the period of hydraulic testing. If major perturbations do occur, for example, from the sinking of the exploratory shaft, it will be necessary for BWIP to determine the effects on the groundwater system or to demonstrate again that a piezometric baseline exists before continuing with hydraulic testing."

TOPICS FOR FUTURE INTERACTIONS: Several topics, such as piezometer integrity and problems with the Westbay installation, need to be resolved by the DOE prior to the onset of actual testing. Also, DOE has not yet provided detailed test plans to the NRC or other parties. These are currently being prepared, along with decision criteria for all major decision points listed in the schedule for the pre-ES test program. Further, the bases for locating the new cluster sites DC-32 and -33 will be provided to NRC prior to pre-test interaction. Their approximate locations as presented by DOE are tentative.

MAY 07 1987

OFFICIAL CONCURRENCE AND DISTRIBUTION RECORD

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Operations Branch
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CONCURRENCES

ORGANIZATION/CONCUREE	INITIALS	DATE CONCURRED
HLTR/ N. Coleman	NMC	87/05/07
HLTR/ T. Verma	TBV	87/05/07

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