

M E M O R A N D U M

To: File, LANL, Red 93
From: Danny Katzman, DOE Oversight Program
Date: 2/22/93
Re: Omega West Reactor Update

George
*Also copy to
our program
FILE*

This memo summarizes activities to date at the Omega West Reactor at TA-2. This summary is derived from daily meetings held with LANL staff to discuss decisions and progress on strategies for locating the leak, and addressing interim and corrective actions.

2/11/93

Analytical results from a new alluvial monitoring well upstream of TA-2, and downstream of TA-41, were presented. The objective of the well is to determine if any of the tritium detected in the stream is from TA-41. The sample from the well showed no significant levels of tritium indicating that the levels of tritium detected in daily monitoring of the basement sump and adjacent stream is from TA-2.

Contrary to earlier indication, the mission is to bring the reactor back on line. The go-ahead will come from the assistant secretary of the DOE if all requirements are met. A post-reactor shutdown inspection of operating procedures revealed that staff in charge of operating the reactor were insufficiently trained. Training will be done prior to resuming operations.

An Omega West Reactor (OWR) Recovery Team was assigned the tasks of 1) find the leak and remediate it, and 2) get the proper documentation to restart the reactor.

The Recovery Team will generate two documents:

Document 1 Fluid Losses at OWR

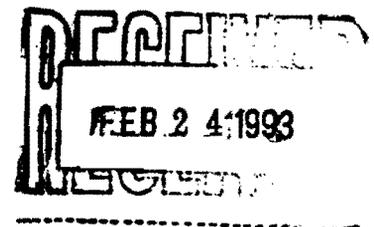
- Chronology of events
- Source of coolant loss
- Plan for stopping loss
- Environmental surveillance and historic tritium releases

Document 2 Recovery Plan

- I Bridge Safety and Analysis Review - justification for continued operations
- II Conduct of operations
- III Critical reactor parameters
- IV Physics model for the reactor
- V Internal operational readiness review



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VI DOE operational readiness review
VII Five-year plans for upgrades
VIII * Long-term environmental surveillance
* NMED recommendation that has been incorporated.

Task VIII will be a joint effort of EM-8, the ER Program, and the NMED. The needs that satisfy this action will be discussed and proposed to the Recovery Team.

Document 1 is scheduled for completion by March 5. An outline for Document 2 is required March 26.

The plan is to lower the fuel rods into the anti-criticality basket and drop the water level in the reactor tank. The destiny of the water was of concern to the State. The State position on this was to transfer the reactor coolant water to the rad lagoon at TA-53 for evaporation. The position of the Recovery Team (and EM-8) at present is to transfer the water to TA-50 for ultimate disposal into Mortandad Canyon.

2/12/93

Discussion centered on the destiny of the reactor coolant water that is scheduled to be drained in the next few days.

EM-7 and EM-8 prefer TA-50 and discharge into Mortandad Canyon and the ideal destiny for the water. It was argued that up to 50% of the water discharged into Mortandad Canyon would evaporate, the rest would infiltrate into the underlying tuff and effectively be stored. Part of the justification for using Mortandad Canyon is that 200 Ci already exist in storage in the canyon and that the release (1.3 Ci total) represents a very small contribution. I argued that 1.3 Ci also represents 10% of the total 1990 release into the canyon.

There was some discussion as to whether disposal in the rad lagoon at TA-53 would bring in RCRA regulations since the lagoons at TA-53 are part of a Closure Plan recently submitted to the NMED. The reactor water, however, it not regulated under RCRA. This issue was brought to the attention of Barbara Hoditschek.

A possible disadvantage of the TA-53 lagoon option is the need to transport the water via truck as opposed to the pipeline that goes directly to TA-50.

An interim measure was proposed. The water would be taken via pipeline to a temporary storage tank at TA-50 until a final decision was made regarding final disposal.

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The next goal is to remove 6000 gal from the reactor tank, and 2000 gal from the adjacent surge tank and test the various components for fluid loss. A certain amount of water is being left in the reactor tank as a shield around the fuel rods that remain in the reactor. Water will continue to circulate in the system with strictly controlled pH to prevent corrosion.

Sampling of the basement water, surface water adjacent to the reactor, and alluvial monitoring wells continues on a daily basis. Results are readily available and have been provided to the NMED with frequent updates.

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As of 2/22/93, the leak had been isolated to a limited portion of the circulation loop, although the precise location(s) have not been identified. A number of strategies are being discussed as to how to proceed in an efficient manner.

It was proposed by the State that two alluvial monitoring wells, LAOR-1 and LAOR-2, be sampled daily. These two wells represent the closest down gradient wells and are important for understanding how the tritiated water is moving throughout the alluvial system. It was also suggested that several more alluvial monitoring wells be placed around the perimeter of the apparent area of the leak. This would aid in tracking the plume and may provide some indication of where the leak is originating from.