

CENTER FOR NUCLEAR WASTE REGULATORY ANALYSES

MEETING REPORT

SUBJECT: Review of Safety Analysis Report for Vitrification Operations and High-Level Waste Interim Storage
20-5706-002

DATE/PLACE: Buffalo, New York
December 6-8, 1994

AUTHORS: Emil Tschoepe and Prasad Nair

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PERSONS PRESENT:

The participants were P. Nair and E. Tschoepe from the Center for Nuclear Waste Regulatory Analyses (CNWRA) and G. Comfort and K. Hardin from the Nuclear Regulatory Commission (NRC)-NMSS/HLW. Others attending included members of the combined review group and various WVDP personnel.

BACKGROUND AND PURPOSE OF MEETING:

The purpose of this meeting was to review the third batch of WVDP responses to the comments on the Draft WVDP Safety Analysis Report (SAR) for the Vitrification Operations and High-Level Waste Interim Storage (WVNS-SAR-003) generated by the NRC/CNWRA and the U.S. Department of Energy (DOE) Technical Review Group (TRG) and other DOE entities. The CNWRA is supporting the NRC in this SAR review.

The CNWRA's comments on the draft SAR were transmitted to the NRC on July 15, 1994, and the NRC subsequently combined CNWRA comments with NRC comments for transmittal to the DOE TRG. A joint Review Comment Record (RCR) was produced by the DOE TRG, and the RCR included comments from the NRC as well as the TRG and other DOE organizations (EH-11, EH-12, EH-331, EM-23, and EM-323). WVDP responses to 160 of these comments were reviewed during the initial meeting (October 4-6, 1994), and 177 additional comment responses were reviewed during the second meeting (November 1-3, 1994). A third batch of 101 responses were received from West Valley after that meeting, and these responses were reviewed and discussed at the subject (December) meeting in Buffalo. The revised RCR (dated December 2, 1994), which incorporates WVDP responses available as of that date, is available for review from the authors of this report.

SUMMARY OF PERTINENT POINTS:

Comments in the RCR were organized by order of the chapters in the Draft SAR-003, and discussions of comments also followed the order of the Draft SAR-003. NRC comments were retained separate from those of the various DOE review groups. Only those comments to which WVDP had most recently responded and those in open status from the previous meeting were discussed at the meeting, although discussions on general categories of comments and issues were also addressed. After acceptability of individual WVDP responses were discussed by each commenter, the discussion was opened to the entire

group in attendance. In some cases, the response to the comment was determined during discussion to be satisfactory, and judged to be "conditionally acceptable," pending appearance of the agreed resolution in the final SAR. For nonmandatory (editorial) comments, a satisfactory response to the comment allowed the comment to be categorized as "accepted." In other cases, when the WVDP response was determined to require addition or change to be satisfactory, the comment resolution status was left as "open."

The approach taken by the WVDP has changed over the course of the SAR joint review process. At the August and October 1994 RCR meetings, the WVDP assured the joint review group that all comments would receive a response. The joint review group indicated some skepticism at WVDP optimism, especially in light of the pace at which responses were received at the October meeting. At the November 1994 meeting, reviewers had been asked to identify those comments yet to receive a response which were "safety-related." Comments recommended for December response were categorized as "priority" instead of "safety-related" at the November meeting, in recognition that responses were expected for all comments. The NRC/CNWRA had re-emphasized that all remaining comments were expected to receive response, although that may not occur prior to the next RCR meeting. The prioritizing of remaining comments was in response to recognition that a large number of comments had not received response at the time of the meeting. To date, WVNS has responded to 440 of the total of over 800 comments in the RCR. At the meeting, 101 new WVNS responses were reviewed, leaving over 350 comments requiring WVNS response.

The meeting was conducted over 2 1/2 days. The first 2 days were dedicated to discussion of individual responses to prioritized comments and their status (accept, conditionally accept, or open). Individual reviewers and WVDP personnel met during breaks in the meeting to resolve "open" comments. It was apparent during those meetings that responses had been prepared for many of the comments yet to receive response by the review group, although such responses had not been presented in the RCR. The final half day was dedicated to discussions on status and disposition of the review and discussions on key issues for inclusion in the TRG final report on the review.

For the December meeting, the WVDP did not offer responses to 14 of the 29 NRC/CNWRA comments which had been included in the priority category, as well as a number of other similarly prioritized comments from other reviewers. Following is a summary of evaluations of comment responses to the "priority" NRC/CNWRA comments. To the right of each comment number is an indication of the response evaluation [RR=Response Required (i.e., no response from WVDP); A=Accept; CA=Conditionally Accept; O=Open].

- | | |
|---------|--|
| 5.0-017 | Concerns aging of the seismic joint between the two buildings. CA |
| 5.0-031 | Probability of occurrence for Design Basis Earthquake (DBE)—inconsistency between various numerical values called out in the SAR. RR |
| 5.0-050 | Entry of 0.6 DBE for crane rail and support clip. CA |
| 5.0-091 | Effect of failure of multiple in-cell cooler units and the corresponding cooling capacity. RR |
| 5.0-113 | Effect of natural gas explosion. O |

- 5.0-124 Closed-Loop Cooling Water: manual operation of cooling water for melter electrodes. **RR**
- 5.0-126 Chilled Water: adequacy of single air-cooled chiller in absence of water-cooled chillers. **CA**
- 5.0-145 Need for operator available in the permanent ventilation system (PVS) building to manually switch over power supply for Vitrification Facility Fire Alarm Control Panel (VFFACP). **CA**
- 5.0-156 Effect of deluge system on operability of diesel generator. **RR**
- 5.0-172 Effect of a local fire on availability of combustion air to the turbocharger for the diesel engine. **RR**
- 5.0-179 Need justification that the ventilation supply air (VSA) need not be seismically qualified. **RR**
- 5.0-184 High-efficiency particulate air (HEPA) filter integrity and potential for breach of secondary filter in similar fashion to breach of first filter. **RR**
- 5.0-186 HEPA filter integrity and potential for breach of secondary filter in similar fashion to breach of first filter. **RR**
- 5.0-198 Adequacy of gradient of piping runs. **RR**
- 5.0-204 Errors in Table C.5.2.3-1. **O**
- 5.0-206 No entries in Table C.5.2.3-1 should be < 1. **CA**
- 5.0-209 Entry for Pump column margin of safety > 0.5 DBE. **CA**
- 5.0-210 Margin of safety for Pump column is marginal. **O**
- 5.0-211 Margin of safety for tear of expansion bellows at Tank 8D-1 and 8D-2 is > 0.5 DBT—needs an explanation. **O**
- 5.0-212 Table C.5.2.6-2: Crane Rail and Support Clip Yield margin of safety of 0.6 DBE needs an explanation. **O**
- 5.0-216 Table C.5.5.3-2 entries with margin of safety of > 1.0 DBE need discussion. **O**
- 6.0-017 Suspension of solids/agitation. **RR**
- 6.0-025 Concerning melter electrode cooling (note the potential for glass migrating from the melter along the electrode path). **RR**

- 6.0-050 Collection or plating out of isotopes in ductwork. CA
- 6.0-104 Need for interlocks on electrode cooling. RR
- 8.0-012 Operational considerations with respect to 10 CFR Part 20. RR
- 8.0-017 Need for consideration of the high-level waste interim storage facility (HLWISF) as an area containing a large amount of radioactive material. A
- 8.0-022 Consideration of airborne particles from filters removed during maintenance. RR
- 9.0-022 Accident Analysis, Design Basis Accident, DBE. O

In addition to the above 29 comments, 84 comments originating from reviewers other than the NRC/CNWRA were identified for priority response, and 41 of those also did not receive a response by the time of the December meeting.

The WVDP plan for responding to comments not yet addressed by the end of the December meeting is to provide those responses as a package with no opportunity for the review group to evaluate the responses before the issuance of the SAR-003, which incorporates changes as a result of those responses.

IMPRESSIONS AND CONCLUSIONS:

The schedule set by the WVDP was overly optimistic, with the result that many comments did not receive responses for TRG evaluation and discussion. The Safety Evaluation Report (SER) will not benefit from the dialogue and evaluations of responses for all comments which had been planned and which would otherwise have been available.

PENDING ACTIONS:

A seismic analysis by EBASCO is expected to be complete by the end of calendar year 1994, and it is to be transmitted to the NRC/CNWRA when it is complete. A meeting with key WVDP personnel and NRC/CNWRA reviewers is expected to occur after that report has been reviewed, possibly in January, 1995.

A possible meeting with the Defense Nuclear Facilities Safety Board (DNFSB) is anticipated within the next month.

The SER on the Vitrification SAR-003 was initiated with the receipt of the revised SAR-003, but certain issues (such as the seismic analysis) cannot be resolved until further information is available from the WVDP.

RECOMMENDATIONS:

The NRC/CNWRA should plan to attend the follow-up meeting with WVDP on the EBASCO seismic analysis. The CNWRA should plan to attend the DNFSB meeting in support of the NRC. Development of the SER should accelerate in order to complete it in a timely manner.

PROBLEMS:

The schedule proposed by the WVDP for submittal of responses after the final RCR meeting may impact the schedule for developing the SER. A minimum of 3 months is required for preparation of the SER after completion of the SAR and receipt of critical technical materials.

SIGNATURES:



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Jan 13, 1995
Date



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