

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 25, 1994

MEMORANDUM FOR: G. W. Cunningham, Technical Director

COPIES: Board Members

FROM: Robert F. Warther

SUBJECT: Report on Development and Implementation of S/RIDs at Hanford High Level Waste Storage Tanks

- 1. Purpose:** The Defense Nuclear Facilities Safety Board (DNFSB) staff reviewed the status of implementation of Recommendation 90-2 at the Hanford High Level Waste Storage Tank Farms from February 7, 1994 through February 10, 1994. Personnel participating in this review were DNFSB staff members F. Bamdad, T. Dwyer, R. Warther, and outside expert D. Boyd.
- 2. Summary:** Westinghouse Hanford Company (WHC) has worked very hard to develop Standards/Requirements Identification Documents (S/RIDs) for the Tank Farms. All Tank Farm S/RIDs were submitted to the Department of Energy (DOE) Office of Environmental Restoration and Waste Management (DOE-EM) for review by Subject Matter Experts (SMEs). The SMEs were personnel from Argonne National Laboratory and outside contractors. DOE-EM personnel have not reviewed any S/RIDs for adequacy. Neither DOE-EM nor Department of Energy, Office of Environment, Safety, and Health (DOE-EH) has approved the S/RIDs delivered by WHC. When asked, DOE Headquarters (DOE-HQ) personnel could not specify who was responsible for S/RIDs approval.

Of the 18 Tank Farms S/RIDs developed by WHC, only the Occupational Safety and Health S/RID has been reviewed at the direction of Department of Energy, Richland Operations Office (DOE-RL). DOE-RL personnel stated that their review of WHC S/RIDs was not necessary to ensure adequacy. DOE-RL has not issued any instructions or procedures to implement Recommendation 90-2. Of all the sites visited by the Board and its staff to evaluate implementation of Recommendation 90-2, this is the only site that has not issued a procedure or instruction to implement this recommendation. DOE-RL apparently recognized this deficiency, and in early February 1994 appointed an individual to oversee implementation of Recommendation 90-2.

WHC personnel have completed their review of all DOE orders applicable to the Hanford Tank Farms. Requirements from these orders, along with a limited number of other statements from NUREGs, consensus standards, and the Code of Federal Regulations

(CFRs) have been entered into the Westinghouse Requirements Identification Management System (WRIMS). This system will be made available on the Internet for use by Westinghouse Savannah River Company (WSRC) and Westinghouse Idaho Nuclear Company (WINCO). WHC has not yet developed a methodology to ensure the requirements contained in the S/RIDs are adequate for protection of public health and safety. WHC personnel recognized this as a deficiency and are working to develop a program to ensure adequacy. WHC personnel have initiated administrative compliance assessments (phase 1 assessments). The phase 1 assessments resulted in the initiation of a procedure overhaul program to ensure all S/RID requirements are contained in the operating procedures. WHC also initiated a pilot program for adherence compliance assessment (phase 2 assessment). This pilot program was limited in scope to the Conduct of Operations Area. Phase 2 assessments were not reviewed in detail during this visit.

3. **Background:** The DNFSB issued Recommendation 90-2 on March 8, 1990. The Secretary of Energy accepted this recommendation, and submitted an implementation plan with one approach for EM facilities, and a second approach for DOE Office of Defense Programs (DOE-DP) facilities. The DP approach was a "bottoms-up" approach that started with DOE Orders, and is now expanding to DOE standards, industry standards, and consensus standards.

EM's position was that existing Regulations, Rules, and DOE Orders may not be adequate for many EM facility missions, including decontamination & decommissioning (D&D) and environmental restoration (ER). As a result, EM proposed a top-down approach. EM personnel identified 18 technical areas needed to ensure EM facilities remain safe during operations and maintenance, D&D, and restoration activities. Management and Operating (M&O) contractors assigned to EM facilities are identifying standards from sources which may be required for, or may improve operation of EM facilities. These requirements and standards are collected and entered into S/RIDs. S/RIDs are the minimum set of requirements necessary to ensure protection of the environment and health and safety of the public and the workers.

4. **Discussion:** The DNFSB staff review was conducted in two parts. During the first part of the review, DOE-EM, DOE-RL and WHC personnel briefed the DNFSB staff on the status of S/RIDs development and implementation at the Hanford Tank Farms. During the second part of the review, DNFSB staff reviewed the contents of WHC S/RIDs. DOE personnel chose to not participate in the second part of the review. A detailed assessment of the adequacy of the Hanford Tank Farm S/RIDs could not be completed during this trip, and therefore will be provided at a later date.
 - a. S/RIDs Program at Hanford Tank Farms. WHC personnel have worked very hard to develop the Tank Farm S/RIDs. They demonstrated an S/RID database containing

requirements that can easily be added or deleted and applied at the site or facility level. Requirements for the 18 functional areas have been developed and entered into WRIMS. Over the next several months, WHC personnel will link the S/RID requirements with procedure numbers such that there is direct traceability from a requirement to a WHC procedure.

The primary information sources for the WHC Tank Farm S/RID requirements and standards include all DOE Orders of interest to the Board, other DOE orders in the WHC contract, portions of 10CFR, 29CFR, and 40CFR, and Washington State regulations. Specific references to some ANSI standards were included, and a very limited number of NUREGs were included. Very few requirements from industry and consensus standards have been entered into WRIMS at this time. The prioritization of information sources for Hanford S/RIDs is consistent with DOE's draft *Standards/Requirements Identification Document Development and Approval Instruction*. However, the DNFSB staff notes that DOE's original stated purpose for developing S/RIDs was to capture requirements and standards not contained in Orders and regulations. Therefore it is not clear that the purpose of Recommendation 90-2 has been met. The DNFSB staff has the following additional observations:

- i. The DNFSB staff observed a demonstration of WRIMS. With the exception of DOE-EH mentors, this demonstration was the first time that DOE personnel from either the Operations Office or Headquarters had seen the database of requirements.
- ii. Most of the Tank Farm S/RIDs reviewed by the technical staff quote specific paragraphs from the DOE order(s). The quotes are such that referenced information (e.g., figures, attachments, etc.) is not included in the S/RID. In some cases, the same requirement is listed multiple times. WHC personnel recognized this deficiency and are working toward resolution.
- iii. Most of the S/RID references are applicable to operations. WHC has not yet searched for references related to D&D or ER activities. Other applicable standards are not included in WRIMS. For example, the U.S. Environmental Protection Agency Data Quality Objectives (EPA-DQO) process standard is being used by Hanford Tank Farm personnel to characterize the tank contents, yet EPA standards were not included in the list of Requirement Source Documents. As a second example, DOE Order 5480.18A, *Accreditation of Performance Based Training for Category A Reactors and Nuclear Facilities*, was explicitly excluded from the list of S/RID references because WHC has requested an exemption from this order for the entire site.

- iv. WHC personnel stated that one of results of their administrative compliance self assessment (phase 1 assessment) was a realization that many local operating procedures required to implement S/RIDs had not been developed for the Hanford Tank Farms, and that other procedures were developed, but were applied at the site policy level rather than the facility-specific procedure level. As a result, WHC has implemented an upgrade program to correct these self assessment deficiencies. This self assessment and corrective action program is consistent with DOE Order 5700.6C and DP-AP-202, even though the latter instruction does not apply to Hanford Tank Farms.
 - v. WHC has not provided any Requests for Approval (RFAs) or compensatory measures for noncompliance with the S/RIDs. DOE-RL has not requested any RFAs, and a schedule for compliance with the S/RIDs or submission of RFAs has not been developed. It should be noted that neither DOE-HQ nor DOE-RL has issued a procedure to require submission of RFAs or consideration of compensatory measures in response to an S/RID noncompliance. See comment 4.d.i.
 - vi. WHC personnel provided an extensive report describing issues associated with S/RID development, implementation, and the results of their self assessments. Only the Executive Summary of this report has been reviewed by a limited number of DOE-RL personnel. It is noteworthy that the Operations Office Manager is one of the few individuals who reviewed the Executive Summary.
- b. S/RID Approval by DOE. DOE's draft *S/RID Development and Approval Instruction* states that S/RIDs will be approved by the "Secretarial Officer." However, this instruction does not specify who in DOE is responsible for approval of the S/RIDs. As a result, WHC has been placed in the position of implementing S/RIDs which have not been approved by DOE. The following was observed:
- i. DOE-RL did not review any S/RIDs, although they did commission an independent review of the Occupational Safety and Health (OSH) S/RID. The remaining S/RIDs were forwarded to DOE-EM for review by SMEs without input from the Field Office. This appears to conflict with DOE's draft *S/RID Development and Approval Instruction*, though this draft instruction is not clear on this point. No plans or specific milestones are in place to ensure DOE-RL personnel review the S/RIDs for technical content and adequacy. DOE-RL personnel stated that their review is not necessary to ensure the S/RIDs are adequate, but could not explain how they will ensure S/RIDs are implemented at the site without benefit of a technical review of the content.

- ii. DOE-EM personnel have not reviewed any S/RIDs documents submitted by WHC. All S/RIDs sent to DOE-EM for review have been delegated to contractor and Argonne National Lab personnel. EM personnel stated that they have only seven people dedicated to this project, and as a result, do not have sufficient resources to review or approve S/RIDs.
- iii. DOE-EM staff personnel have not recommended S/RIDs for approval by EM-1 because they are not sure of DOE-EH's role. According to personnel from DOE-EM, DOE-EH is not presently in the review chain for S/RIDs, and is not scheduled to review any S/RIDs.
- iv. DOE-HQ personnel stated that all S/RID reviewers had over fifteen years of experience in their field. However, DOE has not developed written guidance or standards specifying requirements for qualification as an SME. As a result, the pedigree of the SMEs is not documented. As S/RIDs development accelerates, this will become an increasingly important issue.
- v. Based on the transmittals between DOE-RL and WHC, it appears that Recommendation 90-2 will be implemented only at non-reactor category 1 and 2 nuclear facilities. A list of such facilities has been prepared by WHC and provided to DOE-RL. This list is not consistent with the Implementation Plan prepared in support of DOE Order 5480.23, *Nuclear Safety Analysis Reports*. Additionally, the DOE Order Implementation Plan was submitted to DOE-RL in October 1992 and has been neither approved nor disapproved.

In summary, the DNFSB staff observed that WHC is developing S/RIDs to satisfy the Recommendation 90-2 Implementation Plan, but neither DOE-HQ nor DOE-RL personnel are reviewing or approving these safety documents.

- c. Adherence Assessment Pilot Program. WHC initiated a pilot program to self-assess adherence with S/RIDs (phase 2 assessments). The scope of this pilot program was limited to the operations functional area, and restricted to notifications, operations turnover, required reading, operator aid posting, control of equipment and system status, and lockout and tagout. Forty-eight recommendations resulted from this self assessment. The following was noted:
 - i. WHC has developed and approved a procedure for phase 2 assessments. The Tank Farms are scheduled for complete phase 2 assessments using the S/RIDs by September 30, 1994.
 - ii. The scope of the assessments included attendance at meetings, observations of

shift activities, tours of facilities, assessments of communications, record reviews, and interviews of selected personnel.

iii. As observed at other sites, different assessors have differing standards of assessment, as reflected by the completed data sheets.

(1) In some cases, the data collected is not consistent with the S/RID requirement.

(2) Some of the reviews were very limited in scope. In a review of the lockout and tagout program, the assessor commented that, "All tagouts are in regulated areas so that inspections of placement were not practical." Inspections of tags and their placement are important elements of assessment and should be made in regulated areas.

d. Additional Observations. The following additional issues were identified during this review:

- i. DOE-RL personnel have not developed a procedure for implementing Board Recommendation 90-2, nor have they developed a self-assessment instruction. Of all the sites visited by the Board and its staff to evaluate implementation of Recommendation 90-2, this is the only one that does not have a documented approach. DOE-RL personnel could not state when these procedures will be developed.
- ii. A review of administrative (phase 1) compliance with S/RIDs has not been conducted by DOE-RL.
- iii. DOE-RL personnel have not been trained to review implementation of the S/RIDs. DOE-RL personnel did state that this will be performed in the future, but could not specify a date.
- iv. DOE-RL will not complete development and assessments of S/RIDs for the Operations Office itself until 1995.
- v. DOE-RL personnel stated that they will travel to other sites to review their programs prior to developing a procedure. This approach appears to prolong the development of and implementation of a DOE-RL procedure to implement Recommendation 90-2.
- vi. No plans exist to formally incorporate S/RIDs into the M&O contract. WHC

is reportedly using S/RIDs and being award fee evaluated (on a schedule-milestone basis only) based on the S/RIDs in spite of this failure to place S/RIDs into the contract.

- 5. Future Action.** The following actions were left outstanding as a result of this trip:
- a. EM-23 stated he will recommend some Hanford Tank Farm S/RIDs for approval by EM-1. In addition, EM-23 stated he will investigate DOE-EH responsibilities regarding approval of S/RIDs. DNFSB staff will follow the progress of these actions.
 - b. DNFSB staff personnel will meet with DOE-EH personnel to discuss their responsibilities regarding review and approval of S/RIDs.
 - c. DNFSB staff will follow-up with EM-23 personnel to identify the standards and requirements used by the SMEs to review the Hanford Tank Farm S/RIDs.
 - d. DNFSB staff will perform a detailed assessment of the adequacy of selected Hanford Tank Farms S/RIDs.