



Department of Energy

Washington, DC 20585

March 18, 1997

97-0001030

RECEIVED

97 MAR 20 PM 2:11

DNF SAFETY BOARD

The Honorable John T. Conway
Chairman
Defense Nuclear Facilities Safety Board
625 Indiana Avenue, NW
Suite 700
Washington, D.C. 20004

Dear Mr. Chairman:

In Revision 1 of the Implementation Plan for Defense Nuclear Facilities Safety Board Recommendation 92-4, dated October 14, 1994, the Department of Energy established commitment 3.4g to prepare an analysis of the Headquarters, Office of Hanford Operations Tank Waste Remediation System staff. The purpose of the analysis was to identify the roles and responsibilities for Headquarters staff working on the Tank Waste Remediation System program. Enclosed is the Final Staffing Analysis Report.

While there have been some changes in the functions of the Headquarters and the field subsequent to the development of the Staffing Report, we expect to revisit staffing requirements following expected organizational changes in late spring or summer of 1997.

We have provided draft versions of the Headquarters Staffing Analysis to the appropriate members of your staff and have kept them apprised of our progress. We have incorporated several of their suggestions and appreciate their cooperation. The Department has completed the actions identified under this commitment and proposes closure of this commitment.

Thank you for your continued interest in the Tank Waste Remediation System program. If you have any questions or need additional information, please contact me at 202-586-7710.

Sincerely,

Alvin L. Alm
Assistant Secretary for
Environmental Management

Enclosure

cc:
M.B. Whitaker, Jr.



Office of Hanford Operations (EM-38)

Tank Waste Remediation System

FINAL STAFFING ANALYSIS REPORT

RECEIVED
97 MAR 20 PM 2:11
DNF SAFETY BOARD

January 1997

Executive Summary

The Department of Energy has completed its Final Staffing Analysis for the Tank Waste Remediation System (TWRS) Headquarters Office of Hanford Operations (EM-38) in response to the Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 92-4. This deliverable is the TWRS Headquarters Final Staffing Analysis Report and demonstrates completion of Commitment 3.4.g of the Department's *DNFSB Recommendation 92-4 Implementation Plan*, Revision 1, dated September 22, 1994 for EM-38.

The Department's 92-4 Implementation Plan contained several commitments related to TWRS HQ staffing. These commitments included a preliminary staffing analysis, identification of training needs, orientation training for TWRS staff, a final staffing analysis with a comparison of Position Qualification Standards to the 93-3 Technical Qualification Standards, and completion of identified training.

Several events affected the development of the TWRS HQ Final Staffing Analysis. These include the Secretary of Energy's Strategic Alignment Initiative, delegation of some decision authority to the Manager of Richland Operations Office, and development of the Department's Technical Qualification Standards Program in response to DNFSB Recommendation 93-3. These events caused roles, responsibilities, organizational structure, and individual Position Qualification Standards to change substantially from when the Preliminary Staffing Analysis was performed in 1994. Therefore, EM-38 identified the need to develop new Position Qualification Standards for the TWRS HQ organization based on the 93-3 Technical Qualification Standards, rather than comparing the Position Qualification Standards developed in 1994 to the Department's Technical Qualification Standards. This revised approach yielded a more robust staffing analysis to fulfill the requirements of commitment 3.4.g.

The process used to develop the EM-38 Position Qualification Standards includes:

- 1) Development of mission and functions statements to be used as the basis for the HQ work.
- 2) Development of an EM-38 responsibility matrix that identified the TWRS HQ organization's required the functions, tasks, and deliverables in a much finer level of detail.
- 3) Management review of the EM-38 responsibility matrix and assignment of functions, tasks, and deliverables into positions allocating the workload.
- 4) Assignment of requisite Technical Qualification Standards criteria for each function, task, and deliverable.

- 5) Development of Position Qualification Standards with identified Technical Qualification Standards criteria based on summation of the functions, tasks, and deliverables into positions and eliminating duplicate criteria.
- 6) Evaluation of qualifications of individuals assigned to the organization against the EM-38 Position Qualification Standards and identification of training needs.

The resulting EM-38 Position Qualification Standards are based on the Department's Technical Qualification Standards developed under DNFSB Recommendation 93-3, and are therefore also fully compliant with the Department's DNFSB 93-3 Technical Qualification Program requirements.

In summary, the staff assigned to the TWRS HQ organization is technically qualified, some additional training needs have been identified, the organization size is appropriate, and a mechanism has been developed that could serve to readily develop Position Qualification Standards for future realignment of the TWRS HQ organization.

TABLE OF CONTENTS

| | |
|---|----|
| 1.0 Introduction | 1 |
| 2.0 A Brief History | 4 |
| 3.0 HQ Staffing Analysis Process Description | 7 |
| 4.0 Position Qualification Standards | 14 |
| 5.0 Comparison of Personnel to Position Technical Qualification Standards | 20 |
| 6.0 Conclusion | 21 |

1.0 Introduction

Approximately 56 million gallons of radioactive waste from defense production of plutonium is stored in 177 underground tanks at the Hanford site. Most of these tanks are over 40 years old and are deteriorating. The task of safely retrieving and treating the Hanford tank waste and mitigating the associated risks is one of the most technically challenging and costly programs facing the Department of Energy.

On July 6, 1992, the Defense Nuclear Facilities Safety Board (DNFSB or "the Board") issued Recommendation 92-4 to the Department. The primary focus of Recommendation 92-4 was the Multi-Function Waste Tank Facility (MWTF), which was a project within the Tank Waste Remediation System (TWRS) at Hanford. DNFSB Recommendation 92-4 recommended, in part, that the Department *"establish a plan and methodology that results in a project management organization ... that assures that both DOE and the contractor organization have personnel of the technical and managerial competence to ensure effective project execution."* (Italics added)

The Department, in responding to Recommendation 92-4, noted that the issues identified by the Board were not limited to the MWTF project alone, and expanded the scope of its response to include all of TWRS.

In the Department's *DNFSB Recommendation 92-4 Implementation Plan*, Revision 1, dated September 22, 1994 (92-4 Implementation Plan), the Department committed to performing an analysis of the TWRS mission and functions to identify roles and responsibilities for staff at both DOE Headquarters and DOE Richland. This deliverable documents the Final Staffing Analysis performed for DOE TWRS Headquarters and demonstrates completion of Commitment 3.4.g of the 92-4 Implementation Plan. It includes descriptions of processes used to perform the following: an evaluation of roles and responsibilities of the TWRS Headquarters organization; a functional analysis to identify functions and tasks to discharge those responsibilities; a definition of requisite knowledge, skills, and abilities (Case) to fulfill those functions and perform those tasks; an allocation of those functions and tasks with associated Case into positions to form Position Qualifications Standards (PQSs); and an evaluation of personnel against the PQSs to identify needed training.

By performing this Final Staffing Analysis for the TWRS HQ organization, the Department demonstrates that the Federal Staff for the HQ Office of Hanford Operations (EM-38) is technically competent to perform their required job functions, and fully addresses the Board's concern about "technical and managerial competence to ensure effective project execution."

This Final Staffing Analysis Report is divided into several parts:

- 1) a brief discussion of internal and external factors affecting the TWRS Headquarters organization and responsibilities since the March 1994 completion of the TWRS HQ Preliminary Staffing Analysis (Section 2.0);
- 2) a description of the process used to separate mission and functions to form a set of requisite tasks, responsibilities, and functions needed for TWRS HQ organization; and a description of the method used to allocate tasks and functions into an organization (Section 3.0);
- 3) a discussion of the process used to assign Technical Qualification Standard criteria to functions and tasks and develop Position Qualification Standards (PQs) (Section 4.0); and
- 4) a discussion of the process used to compare assigned EM-38 personnel to Position Qualification Standards (Section 5.0).

Figure 1, Staffing Qualification and Training Process, was presented in the Department's DNFSB Recommendation 92-4 Implementation Plan, and illustrates the process by which the TWRS HQ Final Staffing Analysis was performed.

Several appendices are included to provide background information and specific details of previous documents.

- Appendix A: Selected text of 92-4, 93-3, and DOE's Implementation Plan
- Appendix B: Mission and Function Statement for EM-38
- Appendix C: Team Charters for EM-38
- Appendix D: Responsibility Matrix
- Appendix E: Text of DNFSB Recommendation 92-4

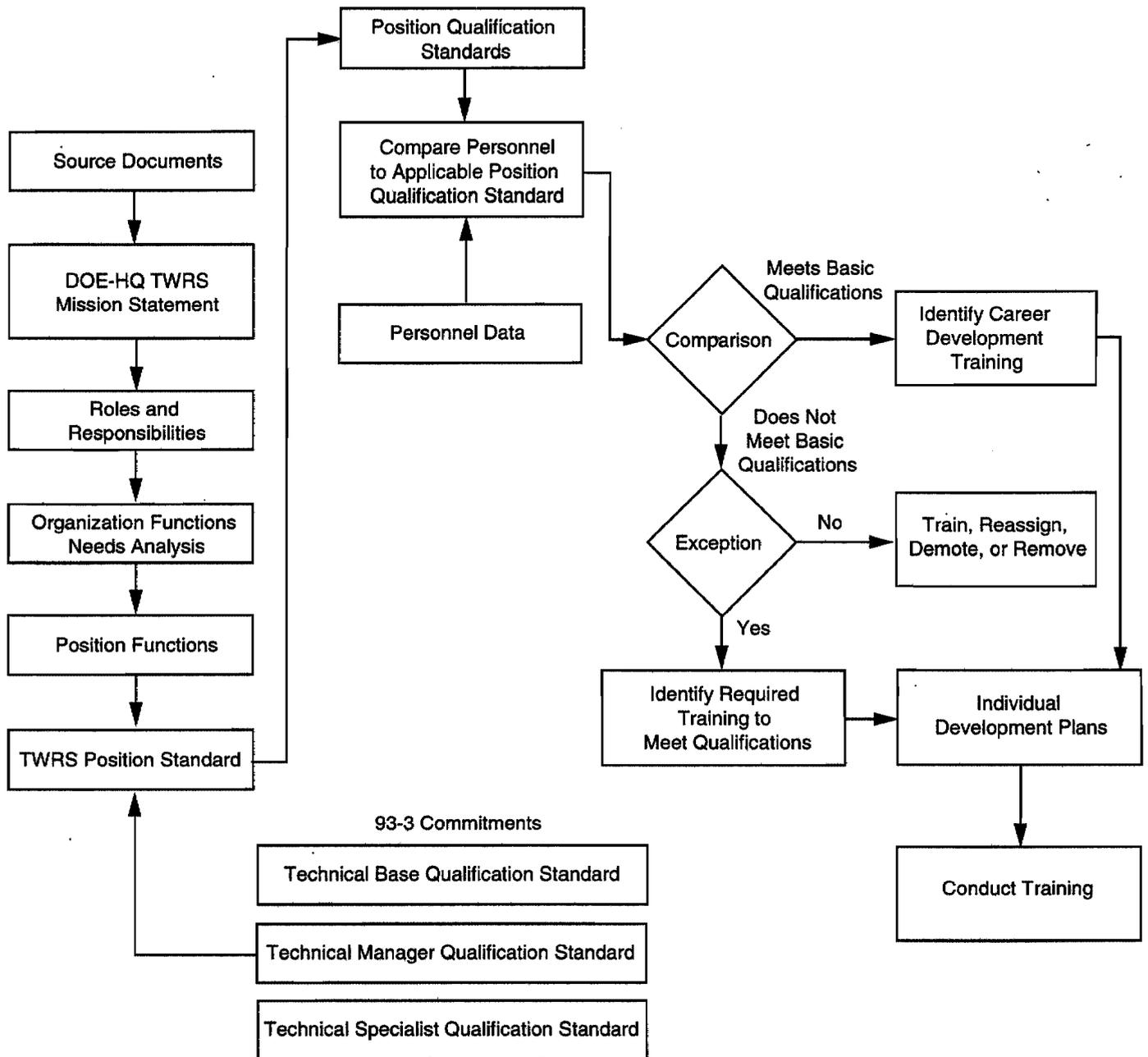


Figure 1. Staffing Qualification and Training Process

2.0 A Brief History

The Department's 92-4 Implementation Plan had several specific commitments related to TWRS HQ staffing analysis. These commitments were integrated to dovetail with related Departmental commitments under the Department's DNFSB Recommendation 93-3 Implementation Plan. Because the 93-3 Implementation Plan and the 92-4 Implementation Plan were being developed concurrently, the Department committed that the Final Staffing Analysis performed to satisfy DNFSB 92-4 Implementation Plan Commitment 3.4.g would include Position Qualification Standards based on relevant Technical Qualification Standards developed under the 93-3 Implementation Plan.

92-4 Implementation Plan Commitments

There are five commitments in the 92-4 Implementation Plan related to TWRS HQ staffing analysis and personnel qualification. These commitments are as follows.

Commitment 3.4.a required the Department to conduct a preliminary staffing analysis of the HQ organization providing oversight and program direction to the TWRS program. This organization was EM-36, the Office of Hanford Waste Management Operations. The preliminary staffing analysis was completed in March 1994, but was not submitted to the Board because of pending development and implementation of the DNFSB 93-3 Technical Qualification Standards.

Commitment 3.4.c required the Department to develop Individual Development Plans (IDPs) to identify required and career development training needs, based on the Preliminary Staffing Analysis, for HQ personnel in EM-36. These preliminary IDPs were completed in May 1994.

Commitment 3.4.f required that HQ personnel receive orientation training on the TWRS program. The initial orientation training was conducted for EM-36 personnel in October 1994.

Commitment 3.4.g required that the Department perform a Final Staffing Analysis for the TWRS HQ organization including comparison of DOE TWRS HQ Position Qualification Standards to 93-3 Implementation Plan Technical Qualification Standards. This report is the Department's deliverable in response to Commitment 3.4.g.

Commitment 3.4.h requires the completion of training consistent with individual development plans DOE HQ Federal staff to become fully qualified to fulfill their responsibilities.

Changes in HQ Roles and Responsibilities

In the last two years, the Department has instituted several measures that have had the effect of shifting substantial responsibilities for management of the TWRS program from Headquarters to the Field. This shift has been driven by the Secretary of Energy's Strategic Alignment Initiative, downsizing the Headquarters staff.

The Assistant Secretary for Environmental Management (EM-1) issued the *Handbook on Roles and Responsibilities for Environmental Management* (DOE-EM-0182) in July 1994 that specified Headquarters and Field responsibilities. Additionally, Headquarters delegated several decision responsibilities to the Manager, Richland Operations Office. The overall EM organization has been realigned and flattened, changing from a traditional hierarchial structure to a matrix/team concept. Realignment decreased the size of the TWRS HQ staff by more than one-third.

These changes within the Department resulted in some functions becoming Field responsibilities, other functions took slightly different emphasis, and other functions remained unchanged. DOE HQ delegated several tasks to transition authority to the Richland Operations Office. DOE HQ continued its role of management and oversight to evaluate how these tasks were handled by the Field. As the Field demonstrated its ability to accept these responsibilities, more tasks have been or will be delegated.

HQ management and oversight are required to manage the transition to Field approval authority, but this role at HQ will diminish as Hanford demonstrates its ability. For example, DOE HQ delegated the approval authority for Environmental Impact Statements for the Plutonium Finishing Plant Stabilization and for Management of Spent Nuclear Fuel from the K-Basins, but retained approval authority for the TWRS Environmental Impact Statement. Authority was partially delegated for Safety, i.e., Category 2 and Category 3 Safety documentation approval authority has been delegated to the Richland Operations Office Manager, but Category 1 Safety documentation remains with Headquarters. The Internal Review Board process continues to be a Headquarters function with Richland Operations Office having an increased role.

Two factors combined to cause DOE management to follow a modified approach to completing the TWRS HQ Final Staffing Analysis. First, the net effect of all the factors discussed above is that the roles, responsibilities, organizational structure, and individual position responsibilities of the current TWRS HQ organization are different from those in the spring of 1994 when the TWRS HQ Preliminary Staffing Analysis was completed. Position Qualification Standards from the TWRS HQ Preliminary Staffing Analysis were, in several cases, no long relevant and appropriate for the current TWRS HQ organization.

Second, the DNFSB 93-3 Technical Qualification Standards implement more specific and detailed technical qualification criteria with which to develop TWRS HQ Position Qualification Standards (PQSs) than the criteria used in the TWRS HQ Preliminary Staffing Analysis in 1994. Accordingly, DOE elected to modify its approach to commitment 3.4.g to provide a more robust TWRS HQ Final Staffing Analysis. Rather than comparing the PQSs developed in the Preliminary Staffing Analysis to 93-3 Technical Qualification Standards, DOE developed new PQSs for the TWRS HQ organization based upon the 93-3 TQS. While this is a slight departure from the original plan, using the 93-3 TQSs as a basis for defining positions represents a more logical and thorough approach.

3.0 HQ Staffing Analysis Process Description

The Headquarters organization responsible for oversight of TWRS is EM-38, the Office of Hanford Operations. One of the primary source documents for the TWRS mission is the TWRS Justification for Mission Need (JMN), dated December 1992. The work being performed at Hanford on the TWRS project defines the scope of the work to be performed at Headquarters. With the EM reorganization in the Fall of 1995, management determined that a smaller HQ staff was needed to carry out the functions of the TWRS Program. Accordingly, EM-38 prepared a mission statement using all of the source document information, reflecting the revised TWRS HQ organization roles and responsibilities.

Mission and Functions

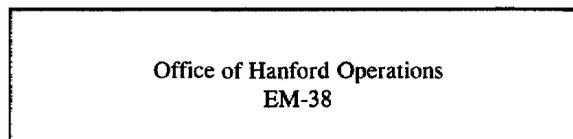
The EM-38 mission is to provide leadership, policy guidance, program budget direction, resources, strategic analyses, integration, evaluation, and representation and advocacy of Waste Management program activities within the purview of the Richland Operations Office. This mission encompasses all activities associated with treatment, storage, and disposal of all waste types (high-level, transuranic, mixed low-level, low-level, and hazardous). Functions Statements were then developed providing more detail of the EM-38 Mission. The specific functions can be itemized by the following short titles. Refer to Appendix B for exact wording.

- F1 Provide an organization to effectively implement the Waste Management program at Hanford.
- F2 Develop Headquarters policy, program guidance, and direction for the effective treatment, storage, and disposal of waste; approve technical, cost, and schedule baselines.
- F3 Promote integration and coordination of waste treatment, storage, and disposal activities with other sites.
- F4 Develop long range strategic planning based on options and analyses; provide recommendation and inputs to EM-30.
- F5 Formulate Waste Management budget; review site requests; prepare and defend budget.
- F6 Evaluate field programs through on-site reviews and assessments.
- F7 Identify and prioritize technical development requirements for cost-effective and timely success in treatment, storage, and disposal of waste.

- F8 Develop and implement performance measures.
- F9 Conduct program representation and advocacy functions.
- F10 Provide policy direction and overview of Tank Safety Program.

These functions provide the basis for the work EM-38 will perform. The specific details of how these functions apply to Hanford are then integrated with the specific HQ responsibilities that have to be performed for the Tank Waste Remediation System.

While DOE HQ was in the process of reorganization, a draft organization was prepared, based on the missions and functions, using the team concept. As the idea became more focused and crystallized, a draft organization for EM-38 was suggested including four teams: Tank Safety, TWRS, Solid/Liquid Waste, and Privatization. At the same time, several potential candidates were identified as Team Leaders with the task of formulating the work responsibilities for the team. Individuals were also identified as potential candidates for a particular organization. This process evolved over time, with several iterations and input from senior management. The proposed organization with identified potential positions is presented in Figure 2.



- Office Director
- Deputy Office Director
- Secretary
- Secretary
- TWRS Team Leader
- TWRS HLW Pretreatment/Technology Development
- TWRS Privatization
- TWRS Privatization
- TWRS Privatization
- TWRS Budget Formulation-Execution/Performance Measures/BEMR
- TWRS Strategic Planning/PEIS/Risk Management
- TWRS HLW Retrieval/Characterization
- TWRS Projects/Cost Reduction
- TWRS HLW/QA/RCRA
- Solid Waste Team Leader
- LLW Projects
- LLW/HAZ-SAN Off-Site Waste
- TRU Waste Minimization/Stakeholders
- MW Privatization
- RL Safety & Health
- FTEs: 20

Figure 2. Proposed Organization for EM-38

As the team concept became solidified, the TWRS and Tank Safety teams were merged into one team. The proposed Privatization Team for EM-38 evolved into an EM-30 Privatization Team. Team Leaders and potential team members were identified and team charters were drafted and approved for each of the three teams which comprise EM-38: Tank Waste Remediation System (TWRS) Team including Tank Safety, Hanford Solid/Liquid Waste Team, and the EM-30 Privatization Team. These team charters provided more detail of the EM-38 Mission and Functions Statements, including specific tasks and deliverables for each of the three EM-38 Teams. These tasks and deliverables are specific items that EM management identified as required deliverables to be used for team accountability. They serve as the core set of team responsibilities, but need amplification to become specific position responsibilities.

Responsibility Matrix

Following development and approval of the Team Charters, EM-38 management developed an *EM-38 Responsibility Matrix* to further define the required organizational functions and responsibilities. These responsibilities are subdivided to a greater level of detail than the specific Team Charter tasks and deliverables mentioned above, i.e., the Responsibility Matrix and the Tasks and Deliverables described above do not track item for item. The EM-38 Responsibility Matrix was developed as follows.

- 1) EM-38 management, with input from senior staff familiar with the TWRS program, developed a list of functions, tasks, and deliverables required of EM-38. This list of functions, tasks, and deliverables was based on the EM-38 Mission and Functions Statements, the Team Charters, and knowledge of tasks that a Headquarters office must perform in the course of a year.
- 2) The functions, tasks, and deliverables in the EM-38 Responsibility Matrix were then each assigned to one of the positions designated in the draft EM-38 organization.
- 3) Next, EM-38 management reviewed the aggregate list of functions, tasks, and deliverables assigned to each position, and reassigned responsibilities as necessary to balance workload and ensure that functions, tasks, and deliverables were assigned to EM-38 positions in appropriate and reasonable groupings.

Using the responsibility matrix and grouping tasks resulted in an approximate scope of work for each program manager. One example of this grouping follows.

Program Manager 6: Tank Safety - Functions and Deliverables

- Secretarial Safety Initiatives
- Tank Integrity
- Tank Safety Strategy
- Tank Safety Issues:
 - Criticality
 - Flammable Gas
 - High Heat Tanks
 - Organic Vapors
 - FeCN Safety
- 90-7
- Safety Analysis Reports/Safety Evaluation Reports
- Safety Basis
- USQ Resolutions
- Quality Assurance

Combining the work scope/position with the management decisions about the most workable way to organize the staff resulted in a draft organization, which is presented in Figure 3, along with position responsibilities. If a function or position responsibility requires more than one Federal staff person, the short term, non-recurring technical work can be supplemented with the use of contractors either from the National Laboratories or from support contractors.

TWRS HQ Organization Size

Identification of the size of an organization is generally included in a functional and organizational analysis. However, given the state of flux of the Department and the inherent administrative complexities, the size can only be an "estimate" based on previous knowledge, current staffing availability, and management determination.

The aggregate personnel resources available to the TWRS HQ organization must be sufficient in size to effectively handle the TWRS HQ organization's aggregate workload. Additionally, the Federal staff assigned to the TWRS HQ organization must be technically qualified to perform the functions and tasks as well as have the technical competency to direct contractors in their technical work. Where additional personnel resources are required due to workload, the Department has the option of (1) assigning additional Federal staff, or (2) augmenting the assigned Federal staff by contracting with national laboratories or contractors to assist in performing specific technical tasks. Reliance on national laboratory or contractor support to assist the Federal staff is considered appropriate where there is a short term, non-recurring need for a specific technical capability and technically qualified Federal staff to manage the contractor work are available. Otherwise, assignment of additional Federal staff to the organization may be appropriate.

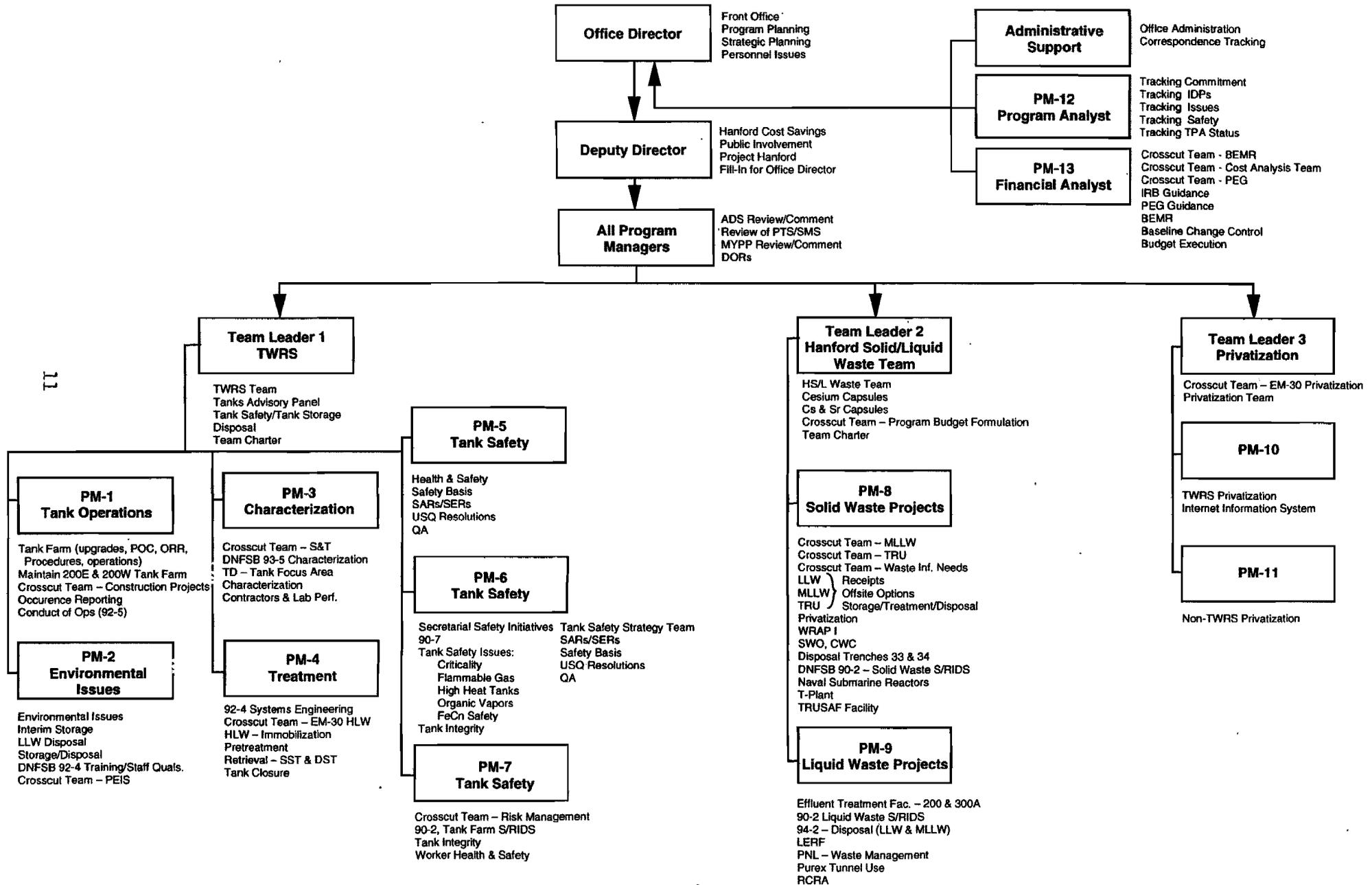


Figure 3. Organization by Function

The Department analyzed the workload of the TWRS HQ organization for Fiscal Year 1996, using the tasks and functions specified in the Responsibility Matrix, to assess whether the assigned Federal staff was adequate in size to perform the aggregate workload. This analysis was performed by:

- estimating the fraction of a full-time equivalent (FTE) that would be required to perform each identified task or function identified in the Responsibility Matrix,
- summing the total required FTEs for all tasks and functions to determine aggregate workload, and
- subtracting the number of allocated Federal personnel to determine additional technical support resources required.

The Federal staff allocated to the TWRS HQ organization during Fiscal Year 1996 was 20 FTEs. The aggregate workload requirement was approximately 38 FTEs, meaning that 18 FTEs of national laboratory and contractor support were also required.

Table 1 illustrates the distribution of the FTEs, both Federal and national laboratory/contractor, required to handle the Fiscal Year 1996 TWRS HQ organization workload.

Table 1. FY96 FTE Requirements for TWRS HQ Organization Workload

| TWRS HQ Organization Element | Required FTEs | Federal FTEs Allocated | Additional National Lab & Contractor FTEs Required |
|---|---------------|------------------------|--|
| Front Office [Office Director, Deputy OD, Baseline Manager, Program Analyst, Admin (2)] | 8.2 | 6 | 2.2 |
| TWRS Team (including tank safety) | 21.9 | 8 | 13.9 |
| Solid/Liquid Waste Team | 4.3 | 3 | 1.3 |
| Privatization Team | 3.6 | 3 | 0.6 |
| Organization Totals | 38.0 | 20 | 18.0 |

The majority of the Fiscal Year 1996 national laboratory and contractor support was required for (1) technical analysis to resolve tank safety issues, (2) technical support to establish an approved Basis for Interim Operations and Final Safety Analysis Report for the tank farm, (3) support to issue the TWRS Environmental Impact Statement, (4) systems engineering support to assist Hanford in implementing a robust systems engineering capability for TWRS, and (5) technical support to assist in evaluation and approval of the TWRS Systems Requirements Review Action Plan. Future requirements for national laboratory and contractor support will be determined based on evolving workload requirements.

EM-38 has been effectively operating with about 20 full-time equivalent Federal employees since January 1996 augmented by limited National laboratory and contractor support for specific tasks. This level of staffing is a substantial reduction from prior years and appears to have been appropriate for the FY96 TWRS HQ organization mission and work scope.

4.0 Position Qualification Standards

The next part of the TWRS HQ Staffing Analysis was conducted to develop a Position Qualification Standard (PQS) for each EM-38 position, based on the allocation of responsibilities to positions as determined in the organizational analysis. The PQS contains the detailed specification of technical knowledge, skills, and abilities an individual must master to be qualified to fill the position.

EM-38 management used the Department's established technical qualification process, developed in response to DNFSB Recommendation 93-3 and the TWRS Technical Qualification Standard. For each function, task, and deliverable specified in the EM-38 Responsibility Matrix, EM-38 determined the relevant Technical Qualification Standards, and the specific criteria within the TQs that were relevant to the specified function, task, or deliverable. These management determinations resulted in each responsibility being combined with specific Technical Qualification Standards. One example follows.

| Mission & Function | Team Charter | Function/Deliverable | General Base TQS Criteria | Environmental Compliance TQS Criteria | Waste Management TQS Criteria | TWRS TQS Criteria |
|--------------------|--------------|----------------------|---------------------------|---------------------------------------|---|---|
| F10 | TWRSII6 | FeCN Safety Issue | All | | 1.1, 1.2, 1.3, 1.5, 1.6, 1.7, 1.9, 1.10, 2.2, 4.6 | 1.3, 1.4, 2.1, 2.2, 2.3, 3.2, 3.3, 3.4, 4.2, 4.3, 4.6 |

Each position has multiple assigned functions, tasks, and responsibilities. Therefore, numerous criteria from the Technical Qualification Standards are applied to one position. When summed together and duplicate criteria eliminated, these criteria represent the knowledge, skills, and abilities needed for a particular position. The set of all criteria for all functions assigned to a position constitutes the Position Qualification Standard. One example of one position follows.

| Mission & Function | Team Charter | Function/Deliverable | General Base TQS Criteria | Environmental Compliance TQS Criteria | Waste Management TQS Criteria | TWRS TQS Criteria |
|-----------------------------|-------------------------|----------------------|---------------------------|---|--|---|
| M1, F1, F2, F4, F7, F9, F10 | TWRSI, TWRSII1, TWRSII4 | Characterization | All | 1.3, 1.4, 1.5, 1.6, 1.7, 1.13, 1.14, 1.15, 1.16 | 1.1, 1.2, 1.4, 1.5, 1.6, 1.8, 1.9, 1.10, 2.2, 2.3, 2.4, 2.8, 2.10, 2.13, 2.14, 2.18, 2.23, 2.24, 3.1, 4.1, 4.2, 4.5, 4.6, 4.10 | 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 4.1, 4.2, 4.4, 5.1, 5.3, 5.4, 5.5, 6.1, 7.1, 7.2, 7.3 |

The composite positions within EM-38 along with their respective criteria are presented in

Table 2. Position Qualification Standards

| Mission & Function | Team Charter | Function/Deliverable | Program Manager | General Base TQS Criteria | Environmental Compliance TQS Criteria | Waste Management TQS Criteria | TWRS TQS Criteria |
|---------------------------------|---|--|-----------------|---------------------------|---|---|---|
| F2, F4, F5, F7, F9, F10 | TWRSII1, TWRSII3, TWRSII5, TWRSII6, HSLWIII | Tank Operations | PM 1 | All | 1.3, 1.4, 1.5, 1.6, 1.7, 1.13, 1.14, 1.15, 1.16 | 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.9, 1.10, 2.2, 2.3, 2.8, 2.9, 2.10, 2.11, 2.13, 2.14, 2.18, 2.20, 2.23, 2.24, 3.1, 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9, 4.10 | 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 4.1, 5.1, 5.3, 6.1, 7.2 |
| M1, F1, F2, F3, F4, F7, F9, F10 | TWRSII1, TWRSII2, TWRSII4 | Environmental Issues | PM 2 | All | 1.3, 1.4, 1.5, 1.6, 1.7, 1.13, 1.14, 1.15, 1.16 | 1.1, 1.2, 1.4, 1.5, 1.6, 1.8, 1.9, 2.2, 2.3, 2.4, 2.8, 2.9, 2.10, 2.13, 2.14, 2.20, 2.23, 2.24, 3.1, 4.1, 4.6, 4.7, 4.8, 4.9, 4.10 | 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 3.1, 3.2, 3.3, 4.1, 4.2, 5.1, 5.3 |
| F3, F7, F8, F9, F10 | TWRSI, TWRSII1, TWRSII4 | Characterization Physical Scientist | PM 3 | All | 1.3, 1.4, 1.5, 1.6, 1.7, 1.13, 1.14, 1.15, 1.16 | 1.1, 1.2, 1.4, 1.5, 1.6, 1.8, 1.9, 1.10, 2.2, 2.3, 2.4, 2.8, 2.10, 2.13, 2.14, 2.18, 2.23, 2.24, 3.1, 4.1, 4.2, 4.5, 4.6, 4.10 | 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 4.1, 4.2, 4.4, 5.1, 5.3, 5.4, 5.5, 6.1, 7.1, 7.2, 7.3 |

Table 2. Position Qualification Standards

| Mission & Function | Team Charter | Function/Deliverable | Program Manager | General Base TQS Criteria | Environmental Compliance TQS Criteria | Waste Management TQS Criteria | TWRS TQS Criteria |
|-----------------------------|--|--------------------------------|-----------------|---------------------------|---|--|---|
| M1, F1, F2, F4, F7, F9, F10 | TWRSI, TWRSII2, TWRSII4, TWRSII5, TWRSII6, | Treatment Chemical Engineer | PM 4 | All | 1.3, 1.4, 1.5, 1.6, 1.7, 1.13, 1.14, 1.15, 1.16 | 1.1, 1.2, 1.4, 1.5, 1.6, 1.7, 1.9, 1.10, 2.2, 2.3, 2.4, 2.8, 2.9, 2.10, 2.11, 2.12, 2.13, 2.14, 2.18, 2.20, 2.22, 2.23, 2.24, 3.1, 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.10 | 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 4.1, 4.2, 4.4, 5.1, 5.3, 5.4, 5.5, 6.1, 7.1, 7.2, 7.3, 7.4 |
| M1, F1, F2, F3, F6, F10 | TWRSII2, TWRSII6, TWRSII7 | Tank Safety | PM 5 | All | 1.3, 1.4, 1.5, 1.6, 1.7, 1.13, 1.14, 1.15, 1.16 | 1.4, 1.5, 1.6, 1.9, 1.10 | 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 3.1, 3.2, 3.3, 3.4, 3.6, 4.2, 4.4, 5.1, 5.3, 5.4, 6.1, 7.1, 7.2, 7.3, 7.4 |
| F3, F4, F10 | TWRSII1, TWRSII2, TWRSII4, TWRSII6 | Tank Safety | PM 6 | All | 1.3, 1.4, 1.5, 1.6, 1.7, 1.13, 1.14, 1.15, 1.16 | 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 1.10, 2.2, 2.3, 2.4, 2.8, 2.9, 2.10, 2.13, 2.14, 2.18, 2.20, 2.23, 2.24, 3.1, 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9, 4.10 | 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 4.1, 4.2, 4.4, 5.1, 5.3, 5.4, 5.5, 6.1, 7.1, 7.2, 7.3, 7.4, 7.5 |
| F3, F8, F9, F10 | TWRSII3, TWRSII5, TWRSII6, TWRSII7 | Tank Safety | PM 7 | All | 1.5, 1.6, 1.7, 1.15, 1.16 | 1.1, 1.3, 1.7, 2.2, 2.8, 4.7, 4.8 | 3.5, 4.1, 5.5, 7.5 |

Table 2. Position Qualification Standards

| Mission & Function | Team Charter | Function/Deliverable | Program Manager | General Base TQS Criteria | Environmental Compliance TQS Criteria | Waste Management TQS Criteria | TWRS TQS Criteria |
|---------------------------------|---|---|-----------------|---------------------------|---|---|---|
| F1, F2, F4, F5, F7, F8, F9, F10 | HSLWII1, HSLWII2, HSLWIII, HSLWIII14, HSLWIII15, HSLWIII20 | Solid Waste Projects Waste Management Engineer | PM 8 | All | 1.4, 1.5, 1.6, 1.7, 1.13, 1.14, 1.15, 1.16 | 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 1.10, 2.2, 2.8, 2.9, 2.23, 2.24, 3.1, 4.1, 4.2, 4.4, 4.5, 4.6, 4.7, 4.8, 4.10 | 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 4.1, 4.2, 4.4, 5.1, 5.3, 5.4, 5.5, 6.1, 7.1, 7.2, 7.3, 7.4, 7.5 |
| F1, F5, F7, F8 | HSLWII2, HSLWIII10, HSLWIII12, HSLWIII16, HSLWIII17, HSLWIII18, HSLWIII20 | Liquid Waste Projects | PM 9 | All | 1.3, 1.4, 1.5, 1.6, 1.7, 1.13, 1.14, 1.15, 1.16 | 1.1, 1.2, 1.5, 1.6, 1.9, 2.3, 2.4, 2.8, 2.9, 2.10, 2.13, 2.14, 2.18, 2.22, 2.23, 2.24, 3.1, 4.6, 4.7, 4.8, 4.10 | 1.1, 1.3, 1.4, 2.1, 2.3, 3.2, 3.3, 3.4, 4.1, 5.1, 5.3, 5.4, 5.5, 6.1, 7.2, 7.5 |
| F3, F9 | PRI1, PRI2 | Privatization General Engineer | PM 10 | All | 1.4, 1.5, 1.6, 1.7, 1.13, 1.14, 1.15, 1.16 | 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 1.10, 2.3, 2.8, 2.9, 2.10, 2.11, 2.12, 2.13, 2.14, 2.18, 2.20, 2.22, 2.23, 2.24, 3.1, 4.1, 4.2, 4.4, 4.5.1, 4.6, 4.7, 4.8, 4.9, 4.10 | 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 4.1, 4.2, 4.4, 5.1, 5.3, 5.5, 6.1, 7.1, 7.2, 7.3, 7.4 |
| F3 | PRII6 | Privatization | PM 11 | All | 1.3, 1.4, 1.5, 1.6, 1.7, 1.13, 1.14, 1.15, 1.16 | 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 1.10, 2.2, 2.10, 2.11, 2.12, 2.13, 3.1, 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9, 4.10 | 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 4.1, 4.2, 5.1, 5.3, 5.4, 5.5, 6.1, 7.1, 7.2, 7.3, 7.4, 7.5 |

Table 2. Position Qualification Standards

| Mission & Function | Team Charter | Function/Deliverable | Program Manager | General Base TQS Criteria | Environmental Compliance TQS Criteria | Waste Management TQS Criteria | TWRS TQS Criteria |
|--------------------------------|---|----------------------|-----------------|---------------------------|---|--|--|
| F1, F3, F5, F9, F10 | HSLWII2, HSLWII, HSLWIII | Financial Analyst | PM 12 | All | | 3.1, 4.1, 4.2, 4.3, 4.4, 4.5 | |
| F1, F2, F4, F5 | TWRSII4 | Program Analyst | PM 13 | All | | 1.3, 3.1, 4.0, 4.1, 4.2, 4.5 | 5.5 |
| M1, F1, F2, F4, F7, F8, F10 | TWRSI, TWRSII, TWRSII2, TWRSII5, TWRSII6, TWRSIII | TWRS Chemist | Team Leader 1 | All | 1.3, 1.4, 1.5, 1.6, 1.7, 1.13, 1.14, 1.15, 1.16 | 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 1.10, 2.2, 2.3, 2.4, 2.8, 2.9, 2.10, 2.11, 2.12, 2.13, 2.14, 2.18, 2.20, 2.22, 2.23, 2.24, 3.1, 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9, 4.10 | 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 4.1, 4.2, 4.4, 5.1, 5.3, 5.4, 5.6, 6.1, 7.1, 7.2, 7.3, 7.4 |
| F1, F2, F3, F4, F5, F7, F8, F9 | HSLWI, HSLWII1, HSLWII2, HSLWIII, HSLWIII9, HSLWIII13 | Solid/Liquid Waste | Team Leader 2 | All | 1.3, 1.4, 1.5, 1.6, 1.7, 1.13, 1.14, 1.15, 1.16 | 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.9, 1.10, 2.2, 2.3, 2.4, 2.8, 2.9, 2.10, 2.11, 2.12, 2.13, 2.14, 2.18, 2.20, 2.23, 2.24, 3.1, 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.10 | 1.1, 1.2, 1.4, 1.5, 2.2, 2.3, 3.1, 3.2, 3.5, 5.1, 5.3, 5.4, 6.1, 7.1, 7.2, 7.5 |

Table 2. Position Qualification Standards

| Mission & Function | Team Charter | Function/Deliverable | Program Manager | General Base TQS Criteria | Environmental Compliance TQS Criteria | Waste Management TQS Criteria | TWRS TQS Criteria |
|--------------------|--------------------------|----------------------|-----------------|---------------------------|---|---|---|
| F3, F9 | PRI2 | Privatization | Team Leader 3 | All | 1.3, 1.4, 1.5, 1.6, 1.7, 1.13, 1.14, 1.15, 1.16 | 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.9, 1.10, 2.3, 2.4, 2.8, 2.9, 2.10, 2.13, 2.14, 2.18, 2.20, 2.22, 2.23, 2.24, 3.1, 4.1, 4.2, 4.5, 4.6, 4.7, 4.8, 4.10 | 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 3.1, 3.2, 3.3, 3.4, 3.6, 4.1, 4.2, 4.3, 5.1, 5.3, 5.4, 5.5, 6.1, 7.1, 7.2, 7.3, 7.5 |
| F4, F5, F9 | | | Deputy Director | All | 1.3, 1.4, 1.5, 1.6, 1.7, 1.13, 1.14, 1.15, 1.16 | 1.1, 1.2, 1.3, 1.4, 1.6, 1.9, 1.10, 2.2, 2.3, 2.8, 2.13, 2.18, 2.20, 2.23, 2.24, 3.1, 4.1, 4.2, 4.3, 4.4, 4.5, 4.7, 4.8, 4.10 | 1.5, 2.2, 3.4, 3.5, 4.1, 5.1, 5.3, 5.4, 5.5, 6.1, 7.1, 7.2, 7.4, 7.5 |
| M1, F3, F4, F8, F9 | HSLWIL, HSLWIII, HSLWII2 | | Office Director | All | 1.3, 1.4, 1.5, 1.6, 1.7, 1.14, 1.15, 1.16 | 1.1, 1.2, 1.3, 1.4, 1.7, 2.3, 2.4, 2.9, 2.10, 2.14, 2.20, 3.1, 4.6, 4.7, 4.8, 4.9, 4.10 | 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 3.1, 3.2, 3.3, 3.5, 4.1, 4.2, 4.4, 5.1, 5.3, 5.4, 5.5, 6.1, 7.1, 7.2, 7.3, 7.4, 7.5 |

5.0 Comparison of Personnel to Position Technical Qualification Standards

By following the staffing analysis process discussed in Sections 2.0 through 4.0, Position Qualification Standards for TWRS HQ were developed. The aggregate set of PQSs for the TWRS HQ organization identify the aggregate set of knowledge, skill, and abilities required to perform all tasks and functions necessary to fulfill the TWRS HQ mission. Furthermore, the PQS for each position in the TWRS HQ organization contains all 93-3 Technical Qualification Standard criteria required for an individual assigned to the position to be qualified to perform the tasks assigned to that position.

To assess the technical qualifications of individuals in the TWRS HQ organization to perform the duties assigned to each position, management evaluated the qualification of each individual against the PQS for their position in accordance with the Department's 93-3 Technical Qualification process. Whenever an individual was determined to need additional training to become fully qualified against a particular PQS criteria for their position, appropriate training was identified.

The specific process by which TWRS HQ management performed the comparison of personnel to the PQS for their position is as follows:

1. For each position in the TWRS HQ organization, a Technical Qualification Program Form 4 was completed to list all PQS criteria relevant to the position.
2. A Technical Qualification Program Form 3 was also prepared for management's use in assessing and documenting, for each PQS criteria, whether the individual demonstrated qualification against the criteria. Demonstration of qualification could be made through academic credentials, prior training, observed job performance, or other means. Where management determined the individual to be qualified, the determination also indicated the means by which qualification was demonstrated.
3. Where management determined that an individual needed further training to be fully qualified against a PQS criteria, an appropriate training course was identified and documented on the Individual Development Plan.
4. The aggregate training needs for each individual to become fully qualified against their PQS were documented on an Individual Development Plans in accordance with the Department's 93-3 process.

Following completion of the Individual Development Plans, management began scheduling TWRS HQ individuals to complete their required training to become fully qualified against the PQS criteria for their position. Training is scheduled to be complete by the end of Fiscal Year 1998.

6.0 Conclusion

In response to Defense Nuclear Safety Board Recommendation 92-4, the Department of Energy performed a Final Staffing Analysis for the DOE TWRS Headquarters organization (EM-38). The Final Staffing Analysis satisfies the Department's DNFSB 92-4 Implementation Plan commitment 3.4.g for the TWRS HQ organization, and explicitly incorporates the Technical Qualification Standards developed by the Department in response to DNFSB Recommendation 93-3. The conclusion of the TWRS HQ Final Staffing Analysis is that the staff is technically qualified, although the need for training to upgrade specific individuals' qualifications in specific technical areas was identified. The required training will be performed, and progress in completing this training will be reported under DNFSB 93-3.

The process by which the Department performed the TWRS HQ Final Staffing Analysis (1) began with an evaluation of mission needs, then (2) proceeded to analysis of mission and function requirements and Team Charter tasks and deliverables, (3) identified specific tasks and deliverables to satisfy those requirements in the form of an EM-38 Responsibility Matrix, (4) identified specific 93-3 Technical Qualification Standards criteria required to perform those tasks and develop the deliverables, and (5) prepared Position Qualification Standards by grouping the tasks and deliverables, along with their associated TQS criteria, into positions. The set of TWRS HQ Position Qualification Standards form the aggregate set of knowledge, skills, and abilities needed to perform the TWRS HQ mission. The Department, in accordance with its established DNFSB 93-3 Technical Qualification Program process for evaluating technical qualifications, evaluated individuals' qualifications against the TQS criteria to identify areas in which employees needed additional training to become fully qualified to perform their assigned duties.

Along with completing the DNFSB requirement for Commitment 3.4.g, the Department has successfully integrated senior management requirements for a matrix type organization using teams. Teams include DOE Federal employees with the requisite knowledge, skills, and abilities to solve the Department's most pressing needs. Supplementing the DOE Federal staff are qualified contractors who fill short term needs or provide specific required expertise. These contractors are managed by technically competent and qualified Federal staff.

The potential for further realignment and downsizing of the DOE HQ organization will continue into the future. The structure of the TWRS HQ Final Staffing Analysis data (mission and function to task or deliverable to related required knowledge, skill, and ability) forms a mechanism by which Position Qualification Standards can be developed in the future as the TWRS HQ organization evolves.

In summary, the staff assigned to the TWRS HQ organization is technically qualified, some additional training needs have been identified, the organization size is appropriate, and a mechanism has been developed that could serve to readily develop Position Qualification Standards for future realignment of the TWRS HQ organization.

APPENDIX A

Selected Text from 92-4, 93-3, and DOE's 92-4 Implementation Plan

RECEIVED
97 MAR 20 PM 2:11
DNF SAFETY BOARD

Defense Nuclear Facility Safety Board Recommendation 92-4 issued 7-6-92 states:

...the Board recommends the following to the Secretary of Energy:

1. Establish a plan and methodology that results in a project management organization for the MWTF (Multi-Function Waste Tank Facility) project team that assures that both DOE and the contractor organization have personnel of technical and managerial competence to ensure effective project execution. This should emphasize management aspects of the project necessary to ensure adequate protection of public health and safety and should include the integration of professional engineering and quality assurance as necessary into the project, the application of appropriate standards and approved Department of Energy requirements, and the establishment of clear lines of responsibility and accountability.

As part of the rejection to the Department of Energy's initial Implementation Plan, DNFSB stated in their comments attached to their letter of June 2, 1994:

- j. Clarify the Implementation Plan regarding exactly what will be in place when the Department's staffing analyses are completed, as part of Commitments 3.4.a and 3.4.b.

The Department of Energy responded to the initial recommendation in the Implementation Plan submitted and accepted by the DNFSB (*DNFSB Recommendation 92-4, Implementation Plan, Revision 1*, dated 9-22-94)

Commitment 3.4.a: Perform and document a Preliminary Staff Analysis of DOE-HQ (EM-36) personnel assigned to perform technical tasks related to the TWRS program.

Deliverable: DOE-HQ (EM-36) Preliminary Staff Analysis Report

Date Due: March 31, 1994 (Completed)

Note: This Report was not transmitted to DNFSB due to development of 93-3 Technical Qualification Standards.

Commitment 3.4.c: Develop Individual Development Plans (IDPs) for DOE-HQ (EM-36) personnel assigned to perform technical tasks related to the TWRS program. These IDPs will identify required and career development training.

Deliverable: DOE-HQ (EM-36) IDPs

Date Due: October 31, 1994 (Preliminary completed May 31, 1994)

Commitment 3.4.f: Familiarize HQ (EM-36) technical management and staff personnel with TWRS Management System Requirements through Orientation training.

Deliverable: HQ (EM-36) Orientation Report documenting status and initiation of orientation

Date Due: October 31, 1994

Commitment 3.4.g: Prepare the Final Staff Analysis including comparison of EM-36 and RL-TWRS Position Standard to DOE 93-3 Implementation Plan Qualification Standards.

Deliverable: Final Staff Analysis Documentation

Due Date: 90 days after delivery of 93-3 4.4.2, 4.4.3, 4.4.4 Qualification Standards

DNFSB issued Recommendation 93-3 on 6-1-93, specifically requesting DOE to:

(1) Perform an in-depth assessment of educational and experience requirements of key positions and develop both a short-term and long-term plan for key personnel development. Such assessment could include:

(a) Identification of qualifications (education and experience) required in key positions (above GS-14) in DOE Headquarters and field organizations with responsibilities for safely carrying out the defense nuclear program.

(b) Evaluation of incumbents for their ability to meet such qualifications.

(c) Evaluation of current availability within DOE of fully qualified personnel to fill these positions.

(2) Develop an action plan to meet needs thus identified.

The Department of Energy responded to these recommendations in the Implementation Plan submitted and accepted by the DNFSB (IP dated 11-4-93)

TASK 4: DOE TECHNICAL EMPLOYEE TRAINING AND QUALIFICATION

Commitment 4.4.2 - Develop and issue the General Technical Base Qualification Standard that covers appropriate disciplines.

Deliverable: General Technical Base Qualification Standard developed and issued for implementation

Date Due: August 1994

Commitment 4.4.3 - As a pilot program, develop and issue Technical Manager Qualification Standard that covers the technical and managerial competencies required to provide guidance

and direction to contractors and to manage technical programs.

Deliverable: Technical Manager Qualification Standard developed and issued for implementation

Date Due: October 1994

Commitment 4.4.4 - Develop and issue Technical Specialist Qualification Standard that contain Department-wide and facility/site/program specific requirements for a position.

Deliverable: Technical Specialist Qualification Standard developed and issued for implementation

Date Due: December 1994

APPENDIX B

Mission and Function Statement for EM-38

RECEIVED

97 MAR 20 PM 2:11

DNF SAFETY BOARD

THE OFFICE OF HANFORD OPERATIONS (EM-38)

MISSION

The Office of Hanford Operations is to provide leadership, policy and program budget direction and guidance, resource, strategic analyses, integration, evaluation, and representation and advocacy of waste management program activities within the purview of the Richland Operations Office. The Waste Management program encompasses all activities associated with the treatment, storage, transportation, and disposal of radioactive high-level, transuranic, and low-level radioactive waste; hazardous waste; mixed radioactive and hazardous waste; and sanitary waste in compliance with applicable internal and external program and environmental protection and safety and health

requirements. The Office also provides policy direction and guidance for the high-level radioactive waste storage safety program at Hanford.

Functions

1. Develops and directs an organization for the effective implementation of the Richland waste management program assuring that issues and problems are promptly brought to the attention of appropriate officials for resolution. Manages Headquarters human resources, contracts, and systems in support of this activity.
2. Develops Headquarters policy, program guidance and direction for the Richland waste management program, including resource levels and program priorities, to achieve an effective and efficient, technically sound, safe, and environmentally acceptable waste treatment, storage and disposal system. Approves technical, cost and schedule baselines, and reviews and approves major changes thereto, as appropriate.
3. Promotes integration and coordination of waste treatment, storage, and disposal activities with other sites to provide an effective and efficient program. Provides timely assistance to field organizations to ensure compliance with applicable national legislation and regulations and with internal and external requirements.
4. Develops strategies, options, analyses, and recommendations in support of policy development, long-range planning and cost effectiveness for the Richland waste management program. Provides input to Office of Waste Management strategic program plans, waste type program strategic program plans, and other Office of Environmental Management plans.

5. Formulates waste management budget requirements and allocations, as well as associated justification, documentation, and testimony for Richland. Reviews site requests and independently recommends waste management resource requirements and funding levels for Richland based on site and national policies and plans. Prepares and defends budget before Congress, OMB, and DOE-HQ as required.
6. Evaluates field programs through on-site reviews, visits, and assessments. Reviews progress and performance and provides guidance to assure accomplishment of program goals, objectives, and national priorities. Intervenes, as necessary, to achieve program goals, objectives, and priorities.
7. Identifies and prioritizes technology development, requirements and specific measures of success to ensure cost-effective and timely availability of treatment, storage, and disposal capability. Works through the various technology development focus areas and points-of-contact, as appropriate, to achieve program objectives.
8. Develops and implements performance measures to ensure a timely and cost effective program. Promotes and utilizes sound business management practices and program/project management systems to reduce costs and improve program management.
9. Conducts program representation and advocacy functions, including identification of representation needs and, acts as program advocate and liaison with appropriate DOE organizations and with Headquarters offices of other Federal Agencies to ensure acceptability of ongoing waste management plans, practices and procedures. Develops and disseminates information related to the program to internal and external stakeholders, as appropriate.
10. Provides policy direction and overview of the tank safety program at Richland. Approves safety analyses, as appropriate. Maintains secretarial safety issues and prepares reports on status and corrective actions. Addresses DNFSB recommendations in this area. Coordinates high-level waste issues with other sites, as appropriate.

APPENDIX C

Team Charters for EM-38

RECEIVED
97 MAR 20 PM 2:11
DNF SAFETY BOARD

**TEAM CHARTER FOR THE
EM-30 TANK WASTE REMEDIATION SYSTEM (TWRS) TEAM**

I. PURPOSE

The purpose of the HQ TWRS Team is to oversee the TWRS program and the overall safety program at Hanford. Specifically, the team maintains cognizance of all TWRS activities, formulates budgets, reviews cost and schedule performance, provides routine staff support for TWRS activities, provides the Headquarters interface with the Defense Nuclear Facilities Safety Board and other oversight organizations for TWRS, and oversees all safety-related issues at Hanford. This charter defines fundamental objectives of the TWRS HQ Team and deliverables that are used to measure progress toward meeting those objectives.

II. OBJECTIVES

The objective of the HQ TWRS Team is to maintain oversight and develop policy for the TWRS program through the following activities:

1. Maintain cognizance of the Safety, Operations, Retrieval, Treatment, Characterization, Management, and Technology Development portions of the TWRS Program. Maintain cognizance of analytical services operations and RCRA monitoring programs.
2. Monitor program cost and schedule performance.
3. Develop program budgets and schedules in conjunction with RL.
4. Provide a HQ interface for the TWRS program with EM management, other DOE organizations (e.g., EH), and DNFSB staff. Coordinate correspondence, reports, etc.
5. Develop overall TWRS policies in conjunction with RL.
6. Review long-term safety of tank farm and laboratory operations and approve closure of safety issues and corrective actions. Provide authoritative review of safety documentation requiring HQ approval or public release.
7. Participate in the safety review process to develop quality safety basis documentation through facilitation and technical analysis.

Overall objectives also include lowering costs while meeting program and legally mandated (e.g., TPA) goals.

III. DELIVERABLES

Objective 1.

- Participation in the TWRS Independent Cost Estimate review scheduled for April 1996.
- Quarterly program reviews in conjunction with visits to RL (at the end of each quarter).
- Provide briefings to EM management regarding technical basis for TWRS program elements and laboratory and RCRA monitoring (as requested).

Objective 2.

- Review monthly SMS and PTS reports. Discuss potential problems (e.g., 10 percent or more cost or schedule variance) with RL. Review expense and capital equipment spending to determine whether program is being operated consistent with current program objectives. (Monthly)
- Analysis, technical recommendations, options for the laboratory operations at RL. Identify deficiencies vis-a-vis DNFSB recommendations, and where possible, identify areas for increased efficiencies including:
 - Consolidation of laboratory services into one laboratory or two laboratories.
 - Use of off-site laboratory services.

Report and recommendations to EM and RL management regarding utilization of laboratory services (April 1996).

Objective 3.

- Cost analysis and assessments including the use of Risk Data Sheets (RDS) of programmatic risk needed to develop performance measures for the Hanford TWRS program and strategy to include:
 - Performance against technical schedule
 - Cost analysis and identification of problems
 - Performance of automated data systems
 - TWRS technology needs
- Prepare program execution guidance (PEG) for TWRS ADSs (August)
- Review TWRS ADSs (May)

- Review Multi-year Program Plans for consistency with PEG, overall program goals, projected budgets, Office of Waste Management strategy, and overall EM strategy (i.e., EM-40, EM-60). Provide specific milestones for inclusion into the MYPP (August).

Objective 4.

- Review, approve, and coordinate revised 93-5 Implementation Plan.
- Develop issue assessments (i.e., white papers) of selected topics for EM management.
- Review, approve, concur with deliverables and modifications associated with commitments to DNFSB Recommendation 93-5, 90-7 (December) and 92-4 (December).
- Facilitate and participate in reviews conducted by DNFSB Staff (December and as needed).
- Reply and coordinate inquires from Congress, DNFSB, DNFSB Staff, etc. (As needed).

Objective 5.

- Prepare policies and coordinate with RL regarding tank safety, characterization, retrieval, and operations.
- Issue policy regarding collection of characterization data including the development of a statistical model for cost vs. benefit of sampling as a primary tool for information gathering.

Objective 6.

- Review ORPS reports. Inform EM management promptly of unusual or emergency occurrences. (As needed)
- Perform long-term trending analysis of occurrences and recommend to RL changes in procedures or policies to correct deficiencies.
- Provide technical support and coordinate TWRS Authorization Basis and Final Safety Analysis Report (FSAR) and safety issue resolution.
- Provide technical support and coordinate TWRS EIS.

4

Specific activities include review of the ASA and preparation of detailed comments based on that review and analysis of issues identified through the Occurrence and Reporting Processing System.

Objective 7.

- Independent Technical Review and Analysis by the Tank Advisory Panel and subpanel meetings for the Hanford Site. (As required/requested)
- Technical analysis of seismic design and structural integrity criteria for use by DOE in standards and regulations (September).

IV. MEMBERSHIP:

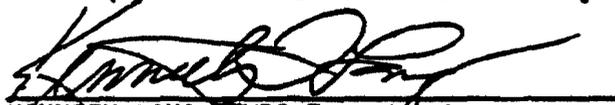
Team Leader: Ken Lang, EM-38
Dave Pepson, EM-38
Jim Poppiti, EM-38
Bill Haslebacher, EM-38
Tim Harms, EM-38
Thomas Wright, EM-38
Harry Calley, EM-38
Owen Thompson, EM-38

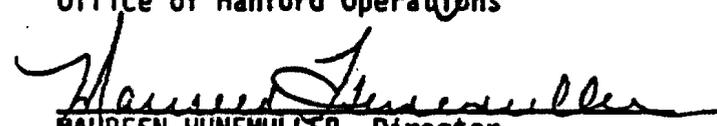
All team members are expected to spend at least 50 percent of their time as part of the TWRS Team.

V. SIGNATURE BLOCKS:

We, the undersigned, agree that the above Charter:

- (1) Is an accurate statement of the purposes, objectives, and deliverables of the TWRS Team.
- (2) Will enable the TWRS Team to function to the general benefit of the Office of Hanford Operations.
- (3) Will be reviewed annually.


KENNETH LANG, TWRS Team Leader
Office of Hanford Operations


MAUREEN HUNEMULLER, Director
Office of Hanford Operations

**DEPARTMENT OF ENERGY
OFFICE OF WASTE MANAGEMENT
OFFICE OF HANFORD OPERATIONS**

HANFORD SOLID/LIQUID WASTE TEAM

TEAM CHARTER

PURPOSE

To ensure safe, environmentally sound, efficient, and cost effective operation of Hanford solid/liquid waste management activities through integrated policy development, forward-looking strategic planning, informed advocacy, and proactive financial, managerial, and technical oversight.

OBJECTIVES

The Team will work in concert with the Richland Operations Office (RL) to ensure policies and strategies are in place to support the receipt, storage, treatment, decontamination, and disposal of solid radioactive and nonradioactive dangerous wastes, liquid effluents disposal, and PNL waste management activities at the Hanford Site. The Team will focus on ensuring these wastes are managed to reach final and cost effective disposal as soon as possible, and in a manner which integrates the needs of other DOE sites.

The Team will act with a national perspective in establishing policy, strategic guidance, priorities, and performance measures consistent with established EM program goals, funding, and stakeholder values and commitments. The Team will act as a demanding customer when monitoring and evaluating the performance of RL on baselines and requirements. As such, the Team will advise Senior Management of developing issues to facilitate corrective action. The Team will also act as an informed advocate of RL during interactions with offices inside & outside the EM Program.

DELIVERABLES

Deliverables will include contributions to the EM Program Execution Guidance, budget formulation and execution guidance, evaluation of RL budget and baseline submittals, Activity Data Sheets, Multi-Year Program Plans, procurement plans/strategies, periodic evaluation of RL Progress Tracking System reports, provide comments to 94-2 Implementation Plan, and promote significant cost savings without compromising minimum compliant safe operations.

Specifically, the Team will:

- Coordinate HQ's actions for the startup of Effluent Treatment Facility to fulfill two TPA Milestones by December 31, 1996 (completed).
- Authorize the settlement of ARECO damage claim related to the cesium capsules lease liability by September 30, 1996.
- Coordinate HQ's action to support completion of WRAP 1 (LLW/TRU waste sampling and packaging) construction by June 30, 1996.
- Coordinate HQ's actions to support contract award for MLLW Stabilization project (WRAP 2A) by September 30, 1996.

- Coordinate HQ's actions to support removal of all liquid wastes in the 324 High-Level Vault tanks by September 30, 1996.
- Coordinate HQ's actions to support removal and relocate all containerized remote-handled mixed waste from 324 B-Cell to the PUREX tunnel by September 30, 1996.
- Coordinate HQ's actions to support completion of spent fuel loadout and shipment from 324 B-Cell to FFTF by September 30, 1996.
- Coordinate HQ's action to support the inclusion of low-level waste disposal under Management and Integration Contract by September 30, 1996.
- Coordinate HQ's actions to support completion of commercial solid waste disposal alternative analysis by June 30, 1996.

MEMBERSHIP

Team membership will consist of:

- Gene Chou, Team Leader, Hanford Solid/Liquid Waste Team
- Rob Martinez, Hanford Solid Waste & Decontamination Operations/Projects, Privatization
- Lydia Chang, Hanford Liquid Effluents Operations/Projects, Waste Minimization, RCRA Surveillance and Monitoring activities, Hanford PNL Waste Management Activities

ISSUE/DISPUTE RESOLUTION

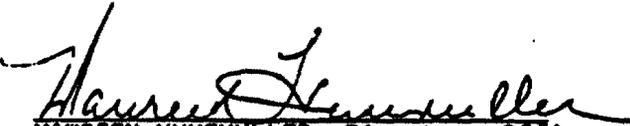
Decisions by the Team will be by consensus. Issues will be elevated to the Office Director if consensus cannot be reached. In cases where some Team members might not agree with the consensus position, a dissenting opinion may be presented to the Office Director. The Office Director may choose to elevate issues to higher levels of Management, as appropriate or necessary.

SIGNATURE BLOCK

We, the undersigned, agree that the above Charter:

- is an accurate statement of the purposes, objectives, and deliverables of the Team;
- will enable the Team to function to the general benefit of the Office of Hanford Operations; and
- will be reviewed annually.

 1/17/96
 GENE CHOU, Hanford Solid/Liquid Waste Team Leader


 MAUREEN HUNEMULLER, Director, Office of Hanford Operations

TEAM CHARTER FOR THE EM-30 PRIVATIZATION TEAM

I. PURPOSE

The Department of Energy (DOE) created the Office of Environmental Management (EM) in 1989 to centralize and prioritize environmental compliance and cleanup projects. EM responsibilities for treatment, storage, and preparation for disposal and final disposition of DOE waste so as to protect human health and safety and the environment were delegated to the Office of Waste Management. In 1995, the Assistant Secretary for Environmental Management directed that a privatization team be formed within EM with representatives from the Office of Waste Management (EM-30), the Office of Environmental Management (EM-40) and the Office of Facility Transition and Nuclear Materials Stabilization (EM-60). The purpose of the EM team is to provide Headquarters EM assistance to privatization efforts across the complex.

Mission

The mission of the Office of Hanford Waste Programs includes the responsibility for complex-wide privatization. This is a cross-cutting requirement. Technical expertise and leadership from this office and select representatives across all of EM-30 will assure management of the EM-30 privatization efforts in an appropriate manner which will gain public support, protect the environment, protect the safety of workers and public, and implement an economic waste management system.

EM-30 Privatization Team

The Office of Hanford Waste Programs includes persons knowledgeable with some of the aspects of privatization within EM. To be effective, these persons must interact with persons in other parts of the Office of Waste Management, as well as with other persons within EM and DOE. This interaction must be managed in an efficient and effective manner. The EM-30 Privatization Team is a means of formally managing, controlling, and utilizing the combined assets of the Office of Environmental Management to address planning and analysis issues related to waste management across all Departmental elements and activities.

II. OBJECTIVES

The goals of the EM-30 Privatization Team are to enhance communication, to coordinate activities, to inform management of critical issues, and to suggest priorities in support of DOE management of EM-30 privatization.

The objectives of the Team are to:

- Provide input, as requested, to the EM-30 privatization portion of the EM-30 strategic plan for DOE management,
- Provide input and review of various documents requested by Headquarters;

- Identify, analyze, and provide strategic options for issues that impact or impede the management of privatization;
- Recommend to management changes in privatization policy

Other privatization teams have been formed within the complex to include the Privatization Team at HQ EM, an ad-hoc private sector working group from the field, and a privatization group at the DOE level. The EM-30 Privatization Team will interact with these teams to keep them aware of its activities. This may be done by correspondence or by invitation to these other teams to send a representative to Team meetings.

III. DELIVERABLES

Although much Team work is likely to be informal, some work will result in a tangible product prepared either to satisfy a management request or a Charter need. For example, program assessments, suggested strategies, long-range plans, or newly discovered issues may be submitted to appropriate levels of EM for information, coordination, or decision. The principle near-term deliverable will be a training plan for Team members to develop necessary skills for privatization work, development of a standard format with instructions for each major site to report privatization information, and setting up an EM Internet location (URL) for HQ privatization information exchange.

| <u>Deliverable</u> | <u>Date Due</u> |
|---|-------------------|
| Training Plan | 15 March 1996 |
| Site Standard Form/ Instruction for Reporting Privatization Information | 28 February 1996 |
| Internet Site | 30 September 1996 |

The Team will assess annually the effectiveness of the current waste management program and recommend ways to improve it. Review and recommendations should include the areas of technical program, program management, integration with other DOE programs, outreach, and communications.

Functions

The Team will report its findings and recommendations, through the Team Leader, both formally (memoranda) and informally (meeting minutes) to EM-38 and EM-30.

The Team may find it useful to invite observers from relevant organizations to provide additional information and insight during discussion of a particular issue. However, only Team members will formulate recommendations.

The Leader may form working groups (either standing or *ad hoc*) to support Team needs, perform assigned tasks, and report to the Team.

The Team shall meet regularly for concise review of work status. As other needs arise, additional meetings can be called at the request of any member. A list of Team actions will be maintained on the INTERNET once a URL is established; each member is responsible for periodically consulting the action list.

Team members will communicate the needs of privatization to their respective organizations, act as coordination point of contact, and be an advocate for implementing privatization within EM-30. It is expected that an average of 20% of each member's time will be required.

IV. MEMBERSHIP

| | |
|-------|------------------------------|
| EM-32 | Ha Vu/Julie Ayres |
| EM-33 | Dave Erdman/Pramod Mallick |
| EM-34 | Michael Torbert |
| EM-35 | Josh Williams/Jennifer Sands |
| EM-36 | Jeff Williams/Ruth Zubajlo |
| EM-37 | Lou McGee |
| EM-38 | Denny Wynne/Craig Myler |

V. ISSUE RESOLUTION

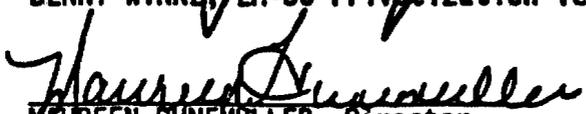
The Team will operate by consensus of a strong majority. If, while addressing a particular issue, consensus is not reached within a time period acceptable to the Team or the Leader, then a memorandum summarizing the position of the Team majority will be forwarded to EM-38 with a request for guidance or resolution. Any individual or Office may prepare a minority opinion, to be forwarded in a timely manner jointly or separately to the same distribution as the Team majority memorandum.

VI. SIGNATURE BLOCK

We agree that this Charter

- (1) is an accurate statement of the purposes, objectives, and deliverables of the EM-30 Privatization Team,
- (2) Will be reviewed annually.

 1/19/96
DENNY WYNNE, EM-30 Privatization Team

 1/19/96
MAUREEN HUNEMOLLER, Director
Office of Hanford Operations

APPENDIX D

Responsibility Matrix

RECEIVED
97 MAR 20 PM 2:11
DNF SAFETY BOARD

Responsibility Matrix

Function Title

TWRS TEAM (including Tank Safety)

TWRS MSA Mgmt. (ESAAB, etc.)

Health & Safety

QA

TWRS Management Systems

Program Integration

Environmental issues (EISs, EAs, etc.)

Crosscut Team Support - PEIS Team

TPA status monitoring for TWRS

DNFSB 92-4

92-4 Systems Engineering

92-4 Training/Staff Qual Status Tracking

SRR Action Plan Closeout

Crosscut Team Support - Science & Technology Development Team

TWRS Projects (Review/comment/process construction proj. data sheets, ESAAB, etc.)

Tank Storage

Characterization

Crosscut Team Support - EM-30 HLW Team

DNFSB 93-5

Tank Safety

FeCN Safety Issue

Flammable Gas

Organic Vapors

High Heat Tanks

DNFSB 90-7

Description of Records (DORs)/Document Change Control Request (DCRs)

Technology Development/Tank Focus Area

Chemical Reactions Sub-TAP

Tank Safety Strategy Team (TSST)

Worker Safety & Health

Safety & Health Sub-TAP

Tank Integrity/Seismic/Corrosion

EH Publications

Safety Basis

SARs/SERs

USQ resolutions

Criticality

Crosscut Team Support - Risk Management Team

Tank Farm Operations

Waste Volume Management

93-D-182, W-058, MP, Replacement of Cross-Site Transfer System

Maintain 200 East Tank Farm clean, safe, & stable

Maintain 200 West Tank Farm clean, safe, & stable

Responsibility Matrix

Occurrence Reporting

DNFSB 92-5 Conduct of Ops

DNFSB 90-2, Tank Farms S/RIDS

96-D-XXX, MSA, Tank Farm Restorations and Safe Operations (TFRSO)

Disposal

Retrieval

SST Retrieval

DST Retrieval

Tank Closure

94-D-407, W-211, MSA, Initial Tank Retrieval System (ITRS)

97-D-XXX, W-340, MSA, Tank 241-C-106 Manipulator Retrieval System

93-D-EXP, W-320, MP, Tank 106-C Sluicing

LLW

LLW Pretreatment

LLW Immobilization

96-RL-XXX, W-278, MSA, LLW Vitrification Facilities

HLW

HLW Pretreatment

HLW Immobilization

Storage/Disposal

Interim Storage

LLW Disposal

Cs & Sr Capsules

Solid/Liquid Waste Team

324 Building B-Cell Cleanout

Program Integration

Commitment Tracking

Public Involvement

DNFSB 90-2, Solid/Liquid Waste S/RIDS

Crosscut Team Support - Waste Information Needs Team

Crosscut Team Support - Mixed Low Level Waste Team

Crosscut Team Support - TRU Waste Team

Solid Waste Projects (Review/comment/process construction proj., data sheets, etc.)

91-D-171, Waste Receiving & Processing Facility (WRAP), Module 1

94-D-411, Solid Waste operations Complex (SWOC)

95-D-408, Phase II Effluent Treatment & Disposal Facility

Solid Waste Program

LLW Storage and Disposal

Central Waste Complex (CWC)

PUREX Tunnel Use

DNFSB 94-2

LLW Receipts

MLLW Storage, Treatment, Disposal

Privatization (Commercial Treatment Options)

Disposal Trenches 33 & 34

Responsibility Matrix

MLLW Receipt
TRU Storage, Treatment, & Disposal
TRUSAF Facility
WRAP 1 Facility operations
CH-TRU Retrieval
Other Wastes Treatment, Storage & Disposal
Alpha Caissons
Naval Submarine Reactors
Cesium Capsules (ARECO's)
Hazardous & Dangerous Waste Storage & Disposal
Offsite Disposal Options
Liquid Waste Program
Effluent Treatment Facility
300-Area Treated Effluent Facility
200-Area Treated Effluent Disposal Facility
Liquid Effluent Retention Facility (LERF)
340/307 Facilities
PNL (Waste management)
EM-38 Front Office
Program Formulation
Crosscut Team Support - Program Budget Formulation Team
IRB Guidance
PEG Guidance
MYPP Review/Comment
"Blueprint for Action and Cost Control at Hanford"
Hanford Cost Saving Plans
Project Hanford
Issues tracking/management (DNFSB, NAS, Others like IG, GAO, etc.)
Performance Measures ("Critical Few," waste type performance tracking, productivity, etc.)
TWRs Activity-Based Cost Estimate Reviews
Commitment Tracking
TPA status monitoring/commitment tracking
DNFSB commitment tracking/status monitoring
Safety initiative commitment tracking/status monitoring (Wyden Rept. to Congress, etc.)
Public Involvement/Outreach (Policy, legislative monitoring, regulators, Tribes, etc.)
Site Report Interface
BEMR Report
Crosscut Team Support - BEMR Team
BEMR support - TWRS
BEMR support - Sol/Liq Waste
Team Charter - TWRs
Team Charter - Solid Liquid Waste Team

Responsibility Matrix

EM-38 Performance Standards/Team Goals
Strategic Planning
Baseline Change Control
Technical Baseline Document Review
Budget Execution
Crosscut Team Support - Program Execution Team
Crosscut Team Support - Cost Analysis Team
Program Planning
Program Baseline Management
PTS/SMS Reviews (monthly)
Crosscut Team Support - Construction Projects Team
Privatization Team Leader
Hanford Privatization (non-TWRS)
Crosscut Team Support - EM-30 Privatization Team Lead
TWRS Privatization
Detailee to RL
ADS Review/Comment
FFMIA reports to S-1 on critical issues
Office Administration
Correspondence/action tracking (ES actions, internal EM, internal to EM-30, and EM-38)
Contractor and Lab performance monitoring
Personnel Admin (T&A, travel, performance evaluations, etc.)
IDPs/training tracking (92-4 and 93-3)
Interface with RW and NRC on TWRS issues
Monthly reviews of TWRS PTS/SMS reports
92-4 Training/Staff Qualification Program
TWRs Privatization coordination
TWRs Issues Tracking (NAS, TAP, DNFSB, etc.)
Tanks Advisory Panel (TAP)
Secretarial Safety Issues resolution oversight
Watch List Tank Oversight
Tank Farm Upgrades
Tank Farm ORR point of contact
Tank Farm Facility Rep. point of contact
Tank Farm Procedures and Operations status
Monthly reviews of Sol/Liq Waste PTS/SMS reports
DNFSB 90-2, Liquid Waste S/RIDS
Sol/Liq Waste Activity-Based Costing estimate review
T Plant (Site-wide Decon Services)
Liquid Waste Projects (Review/comment/process construction proj. data sheets, proj. val.
Training Program
Site Project Summaries/Projections
INTERNET Information System

Responsibility Matrix

Product and Cost Analysis

APPENDIX E

Text of DNFSB 92-4 Recommendation

RECEIVED
97 MAR 20 PM 2:11
DNF SAFETY BOARD

RECOMMENDATION 92-4 TO THE SECRETARY OF ENERGY
pursuant to 42 U.S.C. 2236a(5),
Atomic Energy Act of 1954, as amended.

Dated: July 6, 1992

As required by the Atomic Energy Act, the Defense Nuclear Facilities Safety Board (DNFSB), conducts reviews and evaluations of the design of new Department of Energy defense nuclear facilities before and during their construction. Under this statute, the DNFSB is also required to recommend to the Secretary of Energy, within a reasonable time, such modifications of the design as the DNFSB considers necessary to ensure adequate protection of public health and safety.

The Board has performed reviews of the Multi-Function Waste Tank Facility (MWTF) project to be located at the Hanford Site in the State of Washington. The MWTF is an element of the Hanford Tank Waste Remedial System (TWRS) Program which eventually will provide for the ultimate treatment and disposal of the Hanford Site tank waste. We have reviewed information received in the form of briefings and presentations by DOE Headquarters personnel, DOE Richland personnel, Westinghouse Hanford Company personnel, and Kaiser Engineers Hanford personnel as well as analysis of relevant documents. The Board's reviews to date have been concerned with such matters as the application of standards, including DOE orders and directives, and commercial nuclear industry practices as well as other aspects of the project which relate to ensuring adequate protection of the health and safety of the public.

The conceptual design of the MWTF project is now nearing completion. The Board believes that it is appropriate at this time to assure that the design of the MWTF and other new defense nuclear facilities incorporates engineering principles and approaches, detailed engineering criteria, and practices that are essential to ensure adequate protection of public health and safety. These include:

- o The design needs to be appropriately conservative with respect to safety.
- o The design bases (criteria) need to be clearly defined, coherent, and compatible with the facilities' perceived lifetime functions (i.e., Functional Design Criteria) and documented.
- o The design bases and the resulting facility design need to reflect and incorporate the requirements of appropriate standards as that term is used in the Board's enabling statute and thus including DOE orders and

directives and commercial nuclear practices, as well as any other factors that may be required for the safe and reliable operation of the facility throughout its entire life.

- o The design, construction, and start-up activities need to be performed by those who will ensure the completed project is of the quality necessary to provide adequate protection of public health and safety.
- o The design effort needs to be organized such that there is continuity through all phases (conceptual design, preliminary design, final design, construction, testing...) so that all aspects of the process that affect safety are clearly delineated and that line responsibility is clear.
- o The DOE organization responsible for the project needs to have technically qualified personnel in numbers sufficient to provide direction and guidance to contractors performing all phases of the effort and to assess the effectiveness of contractor efforts.
- o The project organization and operations need to reflect a clear and effective chain of command with responsibility, authority, and accountability clearly defined and assigned to individuals within the respective project organizations.
- o The functions and responsibilities of all DOE and contractor organizations involved in the project need to be delineated in writing in a single document.

The Board's view of the Hanford MWTf's conceptual design performed to date is that the design does not clearly present and delineate those aspects that ensure that the public health and safety can adequately be protected. In particular, the MWTf appears to be a project 1) without a well-defined mission or functional requirements (e.g., waste treatment or storage), 2) predetermined to consist of four one-million-gallon tanks regardless of their intended uses, and 3) managed without sufficient regard for technical issues and engineering involvement. The continuing phases of the design and construction are about to begin and the Board seeks to be assured that the design of the tanks as they are built incorporates the appropriate levels of nuclear safety. Further, the Board recognizes that many of the nuclear safety concepts and assurances would normally be provided in the series of facility

Safety Analysis Reports and would include design bases, safety system analyses, analysis methods and accident analyses. However, to ensure that appropriate nuclear safety characteristics are included in the design efforts, the Board recommends the following to the Secretary of Energy:

1. Establish a plan and methodology that results in a project management organization for the MWTF project team that assures that both DOE and the contractor organization have personnel of the technical and managerial competence to ensure effective project execution. This should emphasize management aspects of the project necessary to ensure adequate protection of public health and safety and should include the integration of professional engineering and quality assurance as necessary into the project, the application of appropriate standards and approved Department of Energy requirements, and the establishment of clear lines of responsibility and accountability.
2. Identify the design bases and engineering principles and approaches for the MWTF project that provide the data and rationale to show that the design for the MWTF conservatively meets the quantitative safety goals described in the Department's Nuclear Safety Policy (SEN-35-91). The Board believes that this would include items related to standards, identification of safety related items, detailed design bases, functional design criteria, and safety analyses.