

Office of Hanford Operations (EM-38)

Tank Waste Remediation System

FINAL STAFFING ANALYSIS REPORT

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.

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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 (PQSs) (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 hierarchical 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 longer 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

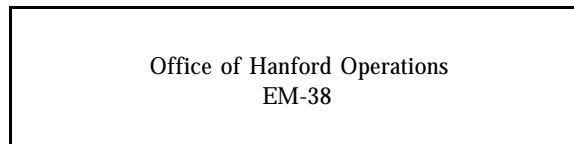
The EM-38 mission is to provide leadership, policy guidance, program budget direction, resources, strategic analyses, integration, evaluation, and representation and advocacy of Waste Management program activities within the purview of the Richland Operations Office. This mission encompasses all activities 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 - Functional Organization

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 1 on the following pages.

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	PRII1, PRII2	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	HSLWII, 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.

[TO OBTAIN HARDCOPIES OF ANY (or all) APPENDICES, CALL 202-586-3887]

APPENDIX A

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