

United States Government

Department of Energy
Office of River Protection

memorandum

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DATE:

REPLY TO
ATTN OF:

ORP:JHW 14-ORP-0003

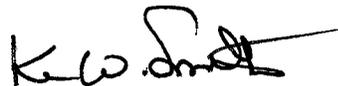
SUBJECT: THE U.S. DEPARTMENT OF ENERGY, OFFICE OF RIVER PROTECTION
ANNUAL WORKFORCE ANALYSIS AND STAFFING PLAN REPORT

TO: Karen L. Boardman, Chairperson
Federal Technical Capabilities Panel

Reference: Memorandum from K. L. Boardman to Distribution, "Annual Workforce Analysis and Staffing Plan Report for Calendar Year 2013," dated October 11, 2013.

As required by the U.S. Department of Energy Order 426.1, Change 1, *Federal Technical Competency*, and the above reference, attached is the Office of River Protections (ORP) Annual Workforce Analysis and Staffing Plan Report for Calendar Year 2013. The subject report was prepared in accordance with the guidance and represents the necessary technical resources required to provide oversight of operations conducted in ORP's assigned nuclear facilities. This report is in support of the Federal Technical Capability Panel's (FTCP) biannual report to the Secretary of Energy.

If you have any questions, please contact James H. Wicks, Jr., FTCP Agent, at (509) 376-3522.



Kevin W. Smith
Manager

Attachment

Attachment
to
14-ORP-0003

Annual Workforce Analysis and Staffing Plan Report

**Annual Workforce Analysis and Staffing Plan Report
as of December 31, 2013
U.S. Department of Energy, Office of River Protection Richland, Washington**

Section One: Current Mission and Potential Changes

Our Mission is to safeguard the nuclear waste stored in Hanford's 177 underground waste storage tanks, and to manage the waste safely and responsibly until it can be treated in the Waste Treatment and Immobilization Plant (WTP) for final disposition.

1. Current Mission Technical Challenges:

- The U.S. Department of Energy (DOE), Office of River Protection (ORP) is composed of two major projects, specifically the Tank Farms and the WTP Projects. The tank farms contractor, Washington River Protection Solutions LLC (WRPS) employs 1,523 personnel. Bechtel National, Inc. (BNI) is responsible for the design and construction of the WTP and employs 2,360 personnel. Advanced Technologies and Laboratories International, Inc. employs 80 personnel at the 222-S Laboratory. The contractor to Federal staff ratio is approximately 30 to 1. The ratio increases to 40 to 1 when comparing the engineering staffs. The result is a substantial task-demand on the ORP technical, quality assurance, and nuclear safety staff personnel.
- The WTP is entering the project phase defined by system turnover, testing, and design validation. This places a significant demand on the Federal technical and project staff oversight over the next several years as the project anticipates operations commencing in 2019. BNI completed its first year of hazards analysis, supporting the creation of the draft Documented Safety Analysis for the combined Analytical Laboratory (LAB), the Balance of Facilities (BOF), and the Low-Activity Waste (LAW) Facility Vitrification Plant, collectively known as the LBL Facility. ORP's Safety Basis Review Team is providing oversight of the hazards analysis process.
- Near-term activities in tank farms include single-shell tank retrievals, systems upgrades, and interim tank closure activities. Improving the efficiency and effectiveness of tank retrieval is the present technical challenge for the tank farm's contractor over the next five years, depending on the budget, to support supplemental waste treatment designs and installation of waste feed delivery systems to support commissioning of the WTP. Additionally, staff oversight and assessment of tank waste retrievals and assessment of new retrieval technologies have increased the scope of responsibilities for both the Federal technical and project staffs.

2. Potential Future Challenges to Mission Affecting Technical Staffing:

- ORP's staffing needs for the next five years have been identified. The risk is that the identified staffing needs will not be realized because funding for either the Federal staff or contracted technical support to meet those identified needs will not be forthcoming. DOE Office of Environmental Management (EM) has authorized 12 positions for 2014 hiring actions. This number represents a combination of back-fills as a result of promotions and retirements and to increase strength of the quality assurance and engineering divisions.

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U.S. Department of Energy, Office of River Protection Richland, Washington

- Over the next five years, depending on approved appropriations supplemental waste treatment designs and installation of waste feed delivery systems to support commissioning of the WTP will tax the existing tank farm contractor's technical staff.
- The near future technical challenges facing the WTP completion of design and construction is the resolution of outstanding technical issues including resolution of pumping performance and mixing by pulse-jet mixers, verification of adequate safety design for the prevention of hydrogen accumulation, and other well documented and tracked technical issues.

Section Two: Site Characterization Table

Number of Hazard Category 1, 2, or 3 Nuclear Facilities:

- Hazard Category 1 facility: Zero
- Hazard Category 2 facilities: Five
 1. WTP High-Level Waste Facility (under construction)
 2. WTP Pretreatment Facility (under construction)
 3. WTP LAW Vitrification Plant
 4. Tank farms
 5. 242-A Evaporator
- Hazard Category 3 facilities: One
 1. 222-S Laboratory.

Note: While the WTP facilities are classified above according to their eventual hazard classifications, the project today is a non-radiological construction project categorized as Critical Decision 3.

Number of Radiological Facilities: Zero

Number of High or Moderate Hazard Nonnuclear Facilities: One

1. WTP BOF (under construction).

Number of Low Hazard Non-Nuclear Facilities: Zero

Number of Documented Safety Analysis: Three

1. Tank farms
2. 242-A Evaporator
3. 222-S Laboratory.

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Number of Preliminary Documented Safety Analysis: Five

- WTP facilities:
 1. Pretreatment Facility
 2. High-Level Waste Vitrification Plant
 3. LAW Vitrification Plant
 4. LAB
 5. BOF.

Number of Safety Systems:

- Tank farms: 10 (increase of two since 2012 report)
- 242-A Evaporator: 7 (increase of five with the installation of new safety systems)
- 222-S LAB: 0
- WTP: 87.

Number of Site Contractor Full-Time Equivalents (FTE):

- BNI WTP: 2,360
- WRPS tank farms personnel including the 242-A Evaporator staff and the System One Project: 1,462
- WRPS staff at the 222-S LAB: 61
- Advanced Technologies and Laboratories International, Inc., 222-S LAB: 80.

Number of ORP Federal Office FTEs:

- 147 authorized

Note: The technical staff accounts for 101 employees of the total-147 ORP authorized headcount.

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Section Three: Technical Staffing

Table 1. Technical Staffing Summary Table. (2 pages)

Technical Capability	For All Facilities ¹		Comments
	Number of FTEs Needed ¹	Number of FTEs Onboard ¹	
Senior Technical Safety Managers	13	13	12 fully qualified STSMs and 1 in qualification
Safety System Oversight Personnel	6	6	5 WTP Engineering engineers have been assigned to qualify SSO to support WTP commissioning, testing, and startup
Facility Representatives	12	12	Decreased by two due to promotions from 2012 report
Other Technical Capabilities:			
Aviation Safety Manager	0	0	Not applicable to ORP Mission
Aviation Safety Officer	0	0	Not applicable to ORP Mission
Chemical Processing	4	4	Decreased by one from 2012 report
Civil/Structural Engineering	2	2	Unchanged from 2012 report
Confinement Ventilation and Process Gas Treatment	2	2	New FAQ. Author of new FAQ onboard and one SSO with 30 years ventilation experience
Construction Management	0	0	Construction management FAQ within scope of WTP facility representatives qualification
Criticality Safety	5	5	The five criticality safety engineers are dual qualified as nuclear safety specialists. Nuclear Safety Division director also qualified as criticality safety engineer
Deactivation and Decommissioning	0	0	Not applicable to ORP Mission
Electrical Systems	3	2	Decreased by one since 2012 report
Emergency Management	0	0	Emergency management managed for Hanford Site by RL
Environmental Compliance	2	2	Decreased by one
Environmental Restoration	0	0	FAQ not applicable to ORP Mission
Facility Maintenance Mgt.	1	0	Responsibility assigned to SSO
Fire Protection Engineering	1	1	Unchanged from 2012 report
Industrial Hygiene	2	2	Unchanged from 2012 report
Instrumentation and Control	2	1	Unchanged from 2012 report
Mechanical Systems	8	8	Decreased by one from 2012 report
NNSA Packaging Certified Engineer	0	0	Not applicable to ORP Mission
Nuclear Explosive	0	0	Not applicable to ORP Mission
Nuclear Safety Specialist	8	8	Two authorized billets to be filled 2014
Occupational Safety	2	2	Increase of one from 2012 report
Quality Assurance	5	5	Three authorized billets to be filled in 2014
Radiation Protection	2	2	Unchanged from 2012 report
Safeguards & Security	0	0	Safeguards and security managed for ORP by RL
Safety Software QA	5	5	QA personnel complete both QA and SQA FAQs
Technical Program Manager	3	3	Increase of one from 2012 report
Technical Training	1	1	Technical Training FAQ requirements assigned to FTCP agent

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Table 1. Technical Staffing Summary Table. (2 pages)

Technical Capability	For All Facilities ¹		Comments
	Number of FTEs Needed ¹	Number of FTEs Onboard ¹	
Transportation and Traffic Management	0	0	Not applicable to ORP Mission
Waste Management	10	10	Unchanged from 2012 report
Weapons QA	0	0	Not applicable to ORP Mission
Federal Project Directors ²	11	11	Decreased by three from 2012 report

¹ These columns identify the number of FTEs needed to perform the Federal Safety Assurance function for your site or office based on potential facility and operational hazards.

² Federal project managers/directors are not qualified via the Technical Qualification Program, but are qualified in accordance with the Project Management Career Development Program.

- FAQ = frequently asked question.
- FTCP = Federal Technical Capability Program.
- FTE = full-time employee.
- NNSA = National Nuclear Security Administration.
- ORP = U.S. Department of Energy, Office of River Protection.
- QA = quality assurance.
- RL = U.S. Department of Energy, Richland Operations Office.
- SQA = Software Quality Assurance.
- SSO = safety system oversight.
- STSM = senior technical safety manager.
- WTP = Waste Treatment and Immobilization Plant.

Section Four: Current Shortages and Plans for Filling Them

The following identifies existing shortfalls in technical staffing to meet the current needs of the WTP and Tank Farms Projects:

- One facility representative backfilling a position vacated by promotion to a WTP engineering supervisor
- Two new nuclear safety specialists
- One backfill and two new quality assurance engineers.

ORP continues to negotiate with DOE-EM leadership to identify scope-based, end-strength requirements to meet the demands of the WTP commissioning, accelerating tempo of tank farms operations, and projected interim pretreatment of waste and waste feed delivery systems to meet an aggressive WTP startup schedule.

Section Five: Projected Shortage/Surplus Over Next Five Years

Fifteen percent of the current 147 Federal staff is eligible to retire. An additional 22 percent will become eligible in the next five years. Overall, 37 percent of the ORP workforce will be eligible to retire in five years. ORP is projecting 6 percent attrition in fiscal year 2014, following 10 percent attrition from fiscal year 2013. Projected organizational requirement increases, over the next 5 years, would require an additional 56 FTEs to support the WTP as it transitions to

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commissioning and operation. ORP's current FTE ceiling is 147, ORP management continues to collaborate with DOE-EM to increase its FTE ceiling in order to meet the needs of the WTP as it approaches commissioning and an accelerated pace in tank farms operations.

Section Six: General Comments Related to Technical Staffing

To date, ORP has been successful in hiring technically talented engineers from the U.S. Navy's Nuclear Propulsion Program, Army Corps of Engineers, and local Hanford Site contractors who are seeking a broader career opportunity. ORP recognizes that it must have experienced engineers who are capable of reviewing designs for compliance with technical standards, have oversight of a robust testing program, configuration management, and possess a strong sense of safety culture. This criterion is especially true as the WTP progresses toward commissioning and tank farms transitions to routine waste delivery from its safe-storage mission. This is a narrowly focused technical skillset and is becoming increasingly competitive as the resurgence of commercial nuclear power plants becomes a reality. Additionally, budget constraints and the challenges of limited hiring authority makes resource-loading a large construction project with adequately prepared personnel a significant challenge.