RL-675 (03/99)

United States Government **Department of Energy**

memorandum

Office of River Protection

DATE: JAN 1 3 2012

REPLY TO ATTN OF: ENS:JHW 12-ENS-0001

SUBJECT: THE U.S. DEPARTMENT OF ENERGY (DOE), OFFICE OF RIVER PROTECTION (ORP) 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 2011," dated October 13, 2011.

In response to your memorandum dated October 13, 2011, attached is the ORP Annual Workforce Analysis and Staffing Plan Report for Calendar Year (CY) 2011. The subject report was prepared in accordance with your guidance and represents the necessary resources required to provide oversight and ensure safe operations of ORP's assigned nuclear facilities. This report is submitted in support of the Federal Technical Capability Panel's biannual report to the Secretary of Energy.

ORP began CY 2011, with an authorized headcount ceiling of 151 employees. ORP presently stands at 153 employees, two less than our authorized ceiling of 155. Of this total staff of 153 employees, 106 employees are classified as technical staff as defined in DOE O 426.1, Change-1, "Federal Technical Capability."

If you have any questions, please contact me, or your staff may contact ORP's FTCP Agent, James H. Wicks at (509) 376-3522.

Scott L. Samuelson, Manager
Office of River Protection

Attachment

Attachment
to
12-ENS-0001

Annual Workforce Analysis and Staffing Plan Report

(total # of pages, 6, excluding this page)

Annual Workforce Analysis and Staffing Plan Report
as of December 31, 2011
U.S. Department of Energy (DOE), Office of River Protection (ORP)
Richland, WA

Section One: Current Mission and Potential Changes:

The River Protection Project mission is to safely retrieve and treat Hanford's tank waste and close the Tank Farms (TF) to protect the Columbia River. This mission statement includes the maintenance of TF's safe operating activities, upgrade of the TF infrastructure to deliver waste feed to the Waste Treatment and Immobilization Plant (WTP), completion of construction, commissioning, and startup of the WTP, operation of the 222S Analytical Services and Testing Laboratory, and operation of the 242A TF Evaporator.

1. Current Mission Technical Challenges:

- DOE ORP is composed of two major projects, specifically the TF and the WTP projects. The TF contractor, Washington River Protection Solutions LLC (WRPS) employs 1397 personnel. Bechtel National, Inc. (BNI) employs 3175 personnel at the WTP and Advanced Technologies and Laboratories International, Inc. (ATL) employs 72 personnel at the 222S Laboratory. This represents a total contractor to Federal staff oversight ratio of approximately 30 to 1. The demands of oversight and project management of the largest DOE construction site and operating and revitalizing an aging infrastructure and facilities at the TF place substantial demands on the ORP technical and nuclear safety staffs.

- The WTP project is entering the project phase defined by system turnover from construction to testing and design validation leading to commissioning. This new phase demands Federal staff oversight to validate designs, adjudicate deltas between hazards and controls, and verify test results against design criteria for the next several years to support the approach to operations in year 2019, and with potential early operations in 2016.

- Near-term activities in TF include Single-Shell Tank retrieval, systems upgrade planning, and interim tank closure activities. Technical resources may increase over the next five years to support supplemental waste treatment, development, and installation of waste feed delivery systems, and commissioning of the WTP. Additionally, staff oversight of tank waste retrievals and assessment of new retrieval technologies, designed to remove a larger percentage of tank waste, will increase the scope of responsibilities for both the technical and project staff. Additionally, a growing amount of work, dedicated to the development of strategies to reduce the lifecycle risk associated with operating the TF beyond its designed life is underway.

- Resolution of significant technical issues supporting the final design of the WTP, specifically:
  - Mitigation of the postulated consequence of Hydrogen in Piping and Ancillary Vessels events in the WTP,
  - Identification of technically appropriate WTP spray leak scenario methodology by Health Safety & Security, and

- Resolution of the technical issues surrounding effective WTP vessel mixing and Pulse Jet Mixer test program.

2. ***Potential Future Challenges to Mission Affecting Technical Staffing:***

- Tank Farm Operation is projectized into an operations and retrieval organization. The retrieval team retrieves single-shelled waste storage tanks on a prescribed schedule and is responsible to improve the efficiency and effectiveness of the retrieval process. The goal is to increase the number of tanks retrieved per year and the effectiveness of the retrieval process. The growth in infrastructure and potential construction projects may create a staffing demand beyond the existing human capital plan.

- WTP technical staffing levels and their training/qualification needs may tax the training budget and available training resources as the plant moves from design-construct to commissioning. Because of the workload and complexity of the WTP project, ORP has increased the number of Federal Project Managers and assigned Deputy Federal Project Managers to keep pace with technical and project controls issues.

- ORP has established an integrated project team under a new Senior Executive Service position titled the WTP Startup & Commissioning Integration Assistant Manager. This new organization will staff from existing resources and grow as the demand for mission integration between WTP and TF increases.

- The Nuclear Safety staff is at its authorized end-strength. Over the next three years, review of new Documented Safety Analyses and development of the associated Safety Evaluation Reports, will tax the Nuclear Safety organization for addition resources for at least three years. The formation of a core team to begin this process will start early in 2012.

Section Two - Site Characterization Table

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

HC1 __0__

HC2 __4__

1. WTP High-Level Waste (HLW) Facility
2. WTP Pretreatment (PT) Facility
3. Tank Farm
4. 242A Evaporator

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HC3 __3__

1. WTP Low-Activity Waste (LAW) Facility
2. WTP Laboratory (LAB)
3. 222S LAB

Note: While the WTP facilities are classified according to their eventual hazard classifications, the project is today a non-radiological construction site described as CD-3.

Number of Radiological Facilities: __0__

Number of High or Moderate Hazard Non-Nuclear Facilities: __1__

1. WTP Balance of Facility (BOF)

Number of Low Hazard Non-Nuclear Facilities: __0__

Number of DSA: __3__

1. Tank Farms
2. 242A Evaporator
3. 222S LAB

Number of PDSA: __5__

- WTP Facilities:
    1. PT Facility
    2. HLW
    3. LAW
    4. LAB
    5. BOF

Number of Safety Systems:

- Tank Farms – 8
- 242A Evaporator – 2
- 222S Analytical Laboratory – 0
- WTP – 87

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

- WTP (BNI) = 3175
- Tank Farm and 242A Evaporator (WRPS) = 1397
- 222S Laboratory (ATL) = 72

Number of ORP Federal Office FTEs: 155 authorized, 153 onboard

The technical staff accounts for 106 of the total 155 ORP authorized headcount.

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Section Two – Technical Staffing Summary Table

	For All Facilities		
Technical Capability	Number of Full-Time Equivalents (FTE) Needed	Number of FTEs Onboard	Comments
Senior Technical Safety Managers	12	12	10 - qualified, mission required, 2- mission required, in-training, 1- qualified, not mission required, 3- not mission required, in-training
Safety System Oversight Personnel	7	7	2-Tank Farms (TF), 4-Waste Treatment and Immobilization Plant (WTP)
Facility Representatives	15	14	9-TF, 5-WTP + 1 open Posting
Other Technical Capabilities:			
Aviation Safety Manager	0	0	Functional Area Qualification (FAQ) not applicable to ORP Mission
Aviation Safety Officer	0	0	FAQ not applicable to ORP Mission
Chemical Processing	4	4	Unchanged from 2010
Civil/Structural Engineering	2	2	1-TF, 1-WTP
Construction Management	0	0	Project Management decision to retain this FAQ within scope of WTP FacReps qualifications.
Criticality Safety	4	4	This number includes the Nuclear Safety Division Director.
Deactivation & Decommissioning	0	0	FAQ not applicable to ORP Mission (Richland Operations Office [RL] scope)
Electrical Systems	2	2	Unchanged from 2010
Emergency Management	0	0	Emergency Management managed for Hanford Site by RL
Environmental Compliance	3	3	Unchanged from 2010
Environmental Restoration	0	0	FAQ not applicable to ORP Mission
Facility Maintenance Mgmt	0	0	Maintenance Management FAQ responsibility assigned to Systems Safety Oversight (SSO)
Fire Protection Engineering	1	1	Unchanged from 2010
Industrial Hygiene	2	2	Unchanged from 2010
Instrumentation & Control	2	1	1 WTP Software Engineer is onboard who qualified software Quality Assurance, but presently a Federal Technical Capability Panel (FTCP) FAQ for Software does not exist.
Mechanical Systems	7	7	3-TF, 4-WTP
NNSA Packaging Cert. Engineer	0	0	FAQ not applicable to ORP Mission
Nuclear Explosive	0	0	FAQ not applicable to ORP Mission
Nuclear Safety Specialist (NSS)	9	9	Increase of 1 during 2011
Occupational Safety	1	1	Unchanged from 2010
Quality Assurance	5	5	Unchanged from 2010
Radiation Protection	2	2	Internally identified one additional FAQ who is qualifying.
Safeguards & Security	0	0	Safeguards and Security is managed by RL
Safety Software Quality Assurance	0	0	QA personnel complete both QA and SQA FAQs
Technical Program Manager	2	2	Unchanged from 2010
Technical Training	1	0	Technical requirements assigned to FTCP Agent.
Transportation & Traffic Mgmt	0	0	FAQ not applicable to ORP Mission
Waste Management	11	11	Unchanged from 2010
Weapons QA	0	0	FAQ not applicable to ORP Mission
Federal Project Directors	14	14	5-Tank Farms, 9-WTP

Section Three: Current shortages and plans for filling them

The following identifies existing gaps in technical staffing necessary to meet the current needs of the WTP and TF projects:

- 1 Facility Representative backfilling a position vacated by promotion to a WTP Engineering supervisor.

ORP continues to negotiate with Environmental Management Headquarters to identify potential end-strength to meet the needs of the WTP approach to commissioning and an accelerating pace of TF operations.

Section Four: Projected shortage/surplus over next five years

Fifteen percent (15%) of the current 153 workforce are eligible to retire. An additional 25% will be eligible to retire in the next 5 years. The last two year's attrition has been low due to the instability of the general economy and the stability of the local economy. ORP is projecting 1% - 2% attrition in 2012, following 5% attrition in 2011. At the beginning of Fiscal Year (FY) 2011, ORP received authority to offer a Voluntary Separation Incentive Payment to eligible employees. The Voluntary Early Retirement Authority was previously approved and was extended through September 30, 2011. Projected demand over the next 5 years is a requirement to increase staffing to 181 FTEs to support the WTP as it transitions to commissioning and operation. ORP will need to hire approximately 83 new employees through FY 2016, to fill new vacancies and backfill projected attrition. Almost two-thirds of these will be in the engineering and science fields, which can be difficult to recruit due to high technical qualification requirements and high demand from the private sector, which is described in ORP's FY 2012-2016, Human Capital Management Plan. Staffing needs for the next five years will include expertise related to contracting, engineering, construction, commissioning, and operations for the WTP, TF, and Start-up and Commissioning Integration project.

Section Five: General comments or recommendations related to the Technical Staffing

One Functional Area Qualification (FAQ) necessity, which is emerging from WTP and TF, is that of Software Engineer. The field of Electrical Engineering is morphing into four (4) unique areas: Electrical System (power distribution systems), Instrumentation and Control, Electrical Safety (including those systems and processes that ensure electrical isolation), and Software Engineering. ORP believes that a FAQ specifically developed for Software Engineers is warranted based on the number and complexity of modern system and component control systems meeting demanding requirements of environmental qualification.

To date, ORP has been successful in hiring technically talented engineers from the United States 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; understand a robust testing program, configuration management, and who possess a strong sense of nuclear safety culture. This is especially true as the WTP progresses toward commissioning and as TF transitions to routine waste delivery from its safe-storage mission. This is a narrowly focused technical skillset, which is becoming increasingly competitive as the reality of resurgence in commercial nuclear plant construction becomes a reality.