Jim Henschel
WTP Project Director

Contractor Oversight

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Defense Nuclear Facilities Safety Board

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U.S. Department of Energy
Office of River Protection

Bechtel National, Inc.
Safety – Quality

Oversight

Design    Procurement    Construction
WTP Project Success Factors

-- Safety
  -- Quality
    -- Compliance
      -- Technical
        -- Schedule
          -- Cost
Oversight Hierarchy

DOE Client/Regulators

Quality Assurance Organization

External Self-Assessments

Industrial and Academic Reviews

Corporate Oversight of Safety, Quality and Technical

Management/Self-Assessments

Supervisory Check

Second-Party Check

Worker Self-Check

QA Independent Audits/Surveillance

DOE DNFSB EPA WA Ecology, Health

Functional/Line Organization
Requirements Flow To Assessment Process

Contract Commitments

- 10CFR 830 Subpart A
- NQA-1-1989
- DOE/RW-0333P
- DOE Order 414.1A

ISMS DOE P 450.4

ISMS Description

Project QA Manual

Authorization Basis

DOE P 450.5, Line Environment, Safety and Health Oversight

Project Policies/Procedures (Implementing Documents)

Management Assessments

Independent Assessments
Contractor quality and safety expectations

- Identify deficiencies and opportunities for improvement
- Develop corrective actions that fix the issue and prevent recurrences
- Maintain a continuous-improvement approach
- Deliver a project that meets objectives of safety, quality, compliance, technical, cost, and schedule

*ISMS is an intrinsic value*
WTP Self-Assessments

Self-Assessments performed in 2003

- 105 Management Assessments, including Engineering, Construction, Procurement, QA, Training, Operations, Industrial Safety, Environment & Nuclear Safety, Research & Technology

- 10 Project QA Audits completed; 3 in progress

- 730 Project QA Surveillances of project activities and corrective action follow-ups

- 87 Supplier QA Program Qualification Audits and Surveys

- 706 Supplier Quality Verification visits
WTP External Self-Assessments

Utilizing corporate, industrial and academic experts

- Engineering and Nuclear Safety – 60 assessments, ~10,000 hours
- Construction – 10 assessments, ~ 800 job-hours
- Procurement – 6,000 job-hours
- Research and Technology – 3 Peer Reviews, 380 hours
Identification of Findings

January 2003 through November 2003

Percentage of rolling total

Self Identified: 93%
DOE and Regulators: 7%

Number of findings

Total: 216
- Identified by others: 12
- Identified by QA: 54
- Identified by line mgt.: 150
2003 improvements in WTP Assessment Program

Working with the DNFSB and DOE:

- Increased quality and depth of Self-Assessments
- Increased utilization of technical experts

Our Assessment Program meets DOE proposed Policy 226.1
WTP Internal Oversight – Technical Staffing

WTP is an Engineer-Procure-Construct project, not a Management and Operations contract. More than 1,100 engineers on the job.

Technical skills are already in place for:

- Engineering
- Research & Technology
- Construction
- Commissioning
- Procurement
- Safety Assurance
- Quality Assurance

Oversight staff have a mix of both technical and programmatic competencies to support the performance of assessments.
Oversight Organization Staffing

Quality Assurance
- Registered Professional Engineers
- Degreed Engineers – MS and BS
- Former NRC Licensed Senior Reactor Operators
- Extensive QA/QC engineering, construction & operations experience
- Current staff of 46 Quality Assurance Engineers, 40 Quality Control Inspectors and 31 Shop Inspectors

Safety Assurance
- Registered Professional and degreed Engineers
- Certified Safety Professionals, Industrial Hygienists, Health Physicists
- Fire Protection Engineers
- Current staff of 29 Safety Assurance Engineers
WTP Corrective Action Program

- Independent from other Hanford contractors and DOE-RL office
- Fully integrated within the project
  - accessible by all employees
  - provides real-time data—web-based
- Driven by senior management
  - Quality Safety Council chaired by Project Director
- Tracking and analysis reveals trends for improvements
- Mature process
  - quarterly trend reports
  - annual corporate assessments
  - includes Root Cause Analysis as a sub-process
    (now in Six-Sigma analysis)
Condition Identified
(Anyone Working At Or For the WTP May Initiate)

Condition Adverse To Quality (CAR)

Screen For Significance And/or PAAA Reportable

Valid CAR

Return To Originator With Reason For Not Validating

NOTE:
• Extensions To Response Due Date Or Implementation Target Date Require Project Director Approval.
• All CARS Are Trended

Yes

Significant/ PAAA CAR

No

Perform a Causal Analysis

Perform a Root Cause Analysis

Responsible Organization Develops Corrective Action Plan (CAP)
• Remedial
• Investigative
• Preventive

Implement CAP

Verify Satisfactory Completion of CAP
WTP Corrective Action Program

- Anyone working for or at the Waste Treatment Project may initiate a:
  - Condition Adverse to Quality Report (CAR) or
  - Recommendation and Issue Tracking Action Item (RITS)
- All CARs are reviewed for significance and PAAA applicability
- Root Cause Analysis is performed for all significant or PAAA CARs
- Causal Analysis is performed for all other CARs
- Only Project Director can grant extensions for response or target implementation dates
- All Corrective Action Plans (CAPS) independently verified for complete implementation
- All CARs trended for common cause and/or opportunities for continuous improvement
- Corrective Action Program is evaluated by DOE-ORP twice/year with positive results
Challenges

- Qualified Suppliers
  - Few domestic suppliers have established NQA-1 programs
  - Domestic supplier capacity insufficient for project needs
  - Foreign supplier programs usually limited to ISO-9000
  - Small number of qualified suppliers impacts competitive bidding process
  - Sub-tier supplier qualifications
Challenges

- **Qualified Suppliers**
  - 90% of suppliers evaluated for Q procurements require BNI assistance
  - Average of 4 QA Manual submittals before meeting procurement requirements
  - QA Manual reviews average 8 job-hours
  - Average 2-to-3 visits to a supplier for qualification
    - Visits average 80 job-hours each to get on Approved Supplier List
  - Average of 3 problem resolution visits after award
    - Supplier visits average 40 job-hours

  (not including shop inspections)
Summary

- WTP project has a robust Self-Assessment process in place
- Self-Identification of findings is encouraged and fostered
- Process incorporates and expects continuous improvement
- Bechtel National, Inc. works with DOE and regulators to improve the quality of final product and ensure the WTP works as advertised