QUALITY ASSURANCE WORKING GROUP (VIDEO CONFERENCE)

Meeting Location: ***Hanford, WA will be the Lead Site for this Meeting in Conjunction with the ISM Conference***		
Room: ***Video Conference with Site Offices and Headquarters Offices***		
Agenda for September 13, 2011		
Time	**Topic**	**Lead**
12:00 – 12:30 pm (eastern)	Potential Revision to the Performance Indicator and Measurement Approach for Goal #5 of the Journey to Excellence Regarding Quality Assurance	Bob Murray (DOE-HQ)
12:30 – 1:00 pm (eastern)	Discussion of major changes and challenges with revision to the Corporate Quality Assurance Program, EM-QA-001	Larry Perkins (DOE-HQ)
1:00 – 1:30 pm (eastern)	Lessons Learned on Flow-down of Quality Requirements at Idaho's Sodium Bearing Waste Project Including Comparison to the Previous EM QA Corporate Board Deliverable on Flow-down of Quality Requirements	Greg Hayward (DOE-ID)
1:30-2:00 pm (eastern)	Break	
2:00 – 2:30 pm (eastern)	Status and Path forward for Training Focus Area and QA Resources Focus Area of the EM QA Corporate Board	Ken Armstrong (DOE-EMCBC) Bob Toro (DOE-HQ)
2:30 – 3:00 pm (eastern)	Status of MOU and Path Forward for Integration of JSEP and BMAC Programs	Christian Palay (DOE-HQ) Mike Mason (EFCOG)
3:00 – 3:30 pm (eastern)	Comparison of Engineering Practices Working Group and Quality Assurance Working Group	Charlie Kronvall (EFCOG/CHPRC)

U.S. DEPARTMENT OF ENERGY

Integrated Safety Management Champions Workshop

Quality Assurance Working Group

Potential Revision to the Performance Indicator and Measurement Approach
for
Goal #5 of the Journey to Excellence Regarding Quality Assurance

Bob Murray

Hanford, WA and Complex-wide VTC
September 13, 2011

EM Environmental Management
safety ❖ performance ❖ cleanup ❖ closure

FCOG *Energy Facility Contractors Group*

Potential Revision to JTE Goal #5

- ***JTE Safety*** **Goal #5: Improve safety, security and quality assurance towards a goal of zero accidents, incidents, and defects. (December 2010)**

- **Key Strategy to implementation:** *Ensure that EM sites and projects integrate safety, security and quality, and evaluate performance indicators that measure these functions, throughout the applicable life-cycle including procurement, design, engineering, construction, commissioning, operation, deactivation/decommissioning, and environmental restoration.*

- **Goal #5 key success indicator:** *Achieve and maintain zero cases where poor quality assurance practices by vendors, subcontractors, and prime contractors results in the installation of defective equipment or software within EM nuclear facilities.*

Potential Revision to JTE Goal #5

Goal # 5 Metric: *Ensure that at least 95% of the safety class and safety significant equipment/software installed during the fiscal year is not defective, suspect, or counterfeit*

Potential Issues/Concerns:

- Some type of graded approach is needed. Information on Safety Significant and Safety Class items is already available. Collecting additional data for performance indicators beyond the Safety Significant and Safety Class categories will likely result in additional cost.
- Defective components that were installed 5-10 years ago and found today are not an indication of a problem with the current site quality program.
- Care needs to be taken with respect to the definition of an "item." Some direction or guidance on how to count an item is needed to generate a consistent approach for the sites.
- There is no current concern on limiting the facilities analyzed by this metric.

Potential Revision to JTE Goal #5

Status:

1. Guidance has been provided from EM-23 to field QA managers as to how to measure this metric
2. Partial data collection indicates over 99% of defects have been caught prior to installation
3. Memorandum from EM-2 to field managers that formalizes this guidance and identifies scope of metric, i.e., safety-class and safety-significant components.
4. Most recent direction is for field to provide goal #5 metric data based upon best method defined by site.

General consensus from last goal #5 QA metric call was to revise the metric in FY12.

Potential Revision to JTE Goal #5

- Corporate QA performance metrics developed by EM QA Corporate Board. Approved on September 30, 2008.
  - Provide a method for consistent uniform basis to measure QA performance
  - Metrics are intended to be applied at the major contract level
  - Initially applied on an annual basis – currently used each year for the QA annual declaration
  - Color coding and numerical score grading options available
  - Uses SRP and QAP/QIP LOIs
- QA metrics can be tailored by targeting numerical summary results
- Option to focus each field manager's QA performance element on specific QA deficiencies from the prior year's annual declaration
- No extra work by field gathering data.
- Field Managers have already agreed to methodology for QA declaration.
- Focus on EM-HQ review to provide annual declaration and metric result feedback

Potential Revision to JTE Goal #5

- Summary:
  - Is this a reasonable approach?
  - How do we implement?
    a. One size fits all.
    b. Tailor to site manger based on prior year results.
  - If "b" does site develop the metric or HQ?
- Other considerations:
  - Sept 2011 S1 EM Review (Lehman Report)
    - Extraordinary efforts are made to report projects as green
    - NQA-1 requirements, ….. were given as a reason for increased cost and slipped schedules
    - There is a notable exception related to NQA-1 experience

U.S. DEPARTMENT OF ENERGY

Integrated Safety Management Champions Workshop

Quality Assurance Working Group

Revision to EM Corporate Quality Assurance Program (EM-QA-001)

Larry W. Perkins

Hanford, WA and Complex-wide VTC

September 13, 2011

EM Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

FCOG

Energy Facility Contractors Group

Background of EM-QA-001

- EM Corporate Quality Assurance Program (EM-QA-001) provides the basis to achieve quality and consistency across the EM complex
- EM-QA-001 was issued in October 20, 2008 and has been implemented at all EM site offices
- Requirements Incorporated in EM-QA-001
  - 10 CFR 830, Subpart A
  - DOE Order 414.1C
  - NQA-1-2004 with addenda through 2007 (memos provided to the field allow 2008 and 2009 versions of NQA-1 to be used)
  - Management Expectations

DOE Order 414.1D Revision

- DOE Order 414.1D was issued in April 2011
- EM implementation was clarified in an EM-2 memo in August 2011
  - Contractors: Issuance of the order does not modify or otherwise affect an approved contractual or regulatory obligation
  - EM HQ and DOE Field Offices: No changes to the existing quality programs will be required until EM-QA-001 has been revised to include DOE O 414.1D
  - Key changes were summarized in the memorandum
- EM QA Corporate Board has initiated a Focus Area to propose changes to EM-QA-001 for consideration by EM-23 management
- Target date to issue the revised EM-QA-001 is December 2011

Secretarial Review of EM Program & Projects

- Report Issued September 9, 2011
- Common themes identified by the committee
  - Accountability - Structure
  - Decision-making - Peer Review
  - Culture - Alignment
  - Stability
- Committees observations provide opportunities for improvement
- “A proactive strategic approach to these issues must be a top EM priority.”

Changes to EM-QA-001 for Discussion

- Update DOE O 414.1C to DOE O 414.1D
- Address the removal of the Corrective Action Management Program from DOE O 414.1D (maintain the program in the QAP by referencing DOE O 226.1)
- Address the version of NQA-1 to be used
  - NQA-1-2004 with addenda through 2007 (currently)
  - NQA-1-2008 and NQA-1a-2009 have been specifically approved for use (add)
- Enhance the discussion of Federal Training requirements (TQPs)
- Reference to IAEA-TEC-DOC-1169 and DOE G 414.1-2B for Suspect/Counterfeit Items (cancellation of DOE G 414.1-3)

Changes to EM-QA-001 for Discussion (cont.)

- Update discussion of the graded approach (currently references an EM QA Corporate Board deliverable as pending)
- Any additional enhancements identified as part of the Secretarial Review of EM Program & Projects
- Any lessons learned or other enhancements that have been identified by the site offices or contractors during the implementation and recent Phase 2 Self-Assessments

Discussion/Ideas/Enhancements/Lessons Learned for Consideration

U.S. DEPARTMENT OF ENERGY

Integrated Safety Management Champions Workshop

Quality Assurance Working Group

Lessons Learned
Sodium Bearing Waste Treatment Project
Procurement of AL6XN Piping

Dr. Greg Hayward

Hanford, WA
September 13, 2011

EM Environmental Management
safety ❖ performance ❖ cleanup ❖ closure

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Sodium Bearing Waste Treatment Project
Procurement of AL6XN Piping

- Contractors must ensure flow down of procurement quality assurance requirements to subcontractors and sub-tier subcontractors and vendors

- Procurement of safety significant items requires concerted effort to ensure effective execution, including

  a) precisely communicate the requirements and expectations

  b) conducting a vigorous evaluation of supplier technical and quality capabilities

  c) providing regular follow-up monitoring

Sodium Bearing Waste Treatment Project
Procurement of AL6XN Piping

- Communication with the supplier must include requirements flow down in procurement documents as well as a circumspect confirmation of the suppliers' understanding of these requirements

- Frequent, in-depth communication becomes paramount when working with suppliers that provide material and equipment to the private nuclear industry and to DOE

- Terminology differences and informal communications provide an avenue for misunderstanding between the supplier and the procuring organization

Sodium Bearing Waste Treatment Project Procurement of AL6XN Piping

- Timeline of events
  - In 2007, the Sodium Bearing Waste Treatment Project via a contract between CH2MHill-Washington Group, LLC (CWI) and Premier Technology, Inc. (PTI) ordered AL6XN (a special alloy--fully austenitic stainless steel) piping and components
  - These materials were procured for installation in the SBWT and serve a safety significant function in the SBWT facility.
  - The piping was fabricated by rolling a flat plate of AL6XN material and welding the seam.
  - The piping was designed to ASME B31.3, 2004
  - All material traceability and fabrication testing documentation was received as specified buy the purchasing documentation

Sodium Bearing Waste Treatment Project
Procurement of AL6XN Piping

- On 4/13/11 pipe fitters were conducting a piping change to one of the AL6XN pipe spools to make a dimensional adjustment for fit-up

- During this process, while conducting a dye penetrant test of a circumferential root weld, a small indication (lack of fusion) was found in the longitudinal piping seam weld.

- PTI subcontracted to Rolled Alloys to supply the pipe. Rolled Alloys subcontracted with Bristol Metals, LLC (Brismet) to fabricate the pipe from plate stock provided by Rolled Alloys

- ASTM B675 and B775 are the standards that govern the fabrication and testing of this pipe. 100% UT testing of the pipe weld was performed and docuemented but failed to identify this particular indication.

Sodium Bearing Waste Treatment Project
Procurement of AL6XN Piping

- The flow down of QA requirements
  - PTI to Rolled Alloys (RA) required NQA-1 basic Requirements
  - RA asked PTI if this was an ASME Section III procurement and the answer was no
  - Since the piping was not ASME Section III, RA did not flow down the QA requirements to its subcontractors

Sodium Bearing Waste Treatment Project
Procurement of AL6XN Piping

- **Analysis:**
  - The following causes were identified in the analysis
    - Failure to confirm that QA procurement requirements were clearly understood by suppliers and sub-suppliers.
      - *Lesson learned- QA oversight at all levels (CWI and PTI) was deficient as each organization should have discovered that over 30 purchase orders for safety significant piping did not contain appropriate QA procurement requirements. Augmented oversight during the execution of the purchase order should include both audit and shop inspection/surveillance for safety significant items.*

Sodium Bearing Waste Treatment Project
Procurement of AL6XN Piping

- **Analysis continued:**
  - Through informal and inconcise communications (via email), RA asked PTI if the procurement was an ASME Section III procurement. There was a failure to communicate that this NQA-1 procurement was for ASME B31.3 safety significant material.
    - *Lessons learned- Purchase orders, including change control, must be enforced as part of QA Program applications. E-mails between procurement organizations with respect to QA procurement requirements are not sufficient*
    - *It is important that communications with suppliers include discussions regarding QA requirements and how they relate to ASME Section III requirements*.

Sodium Bearing Waste Treatment Project
Procurement of AL6XN Piping

- **Analysis continued:**
  - Supplied pipe was 100% UT tested in accordance with ASTM B675-02, Section 5.2, Class 2 piping. This documented fabrication testing did not detect the seam weld defects.
  - SBWT contracted with third party to developed a UT technique that was used to identify mid-wall seam weld defects and size the indications (phased array).
    - Lesson Learned – The ASTM material specification testing is not able to detect a mid-wall weld defect

Sodium Bearing Waste Treatment Project
Procurement of AL6XN Piping

- **Description of Management Approved Actions Taken**
  - **Actions or Recommendations:**
    - Visit and review QA program and procurement requirements of Rolled Alloys and Rolled Alloys' sub-tier contractors
    - Develop Commercial Grade Dedication (CGD) plan to dedicate the affected pipe
    - Reviewed all procurements to Rolled Alloys to verify extent of conditions of failure to flow down requirements to sub vendors
    - Review other Safety Significant CWI and PTI procurements to verify extent of conditions of failure to flow requirements to sub vendors

Sodium Bearing Waste Treatment Project
Procurement of AL6XN Piping

- **Issues and Actions**

  - **ISSUE 1-** Defects in autogenously welded AL6XN pipe were not detected by ASTM material specification testing by specified NDE methods.

  - SBWT conducted pipe stress analysis to determine allowable flaw size

  - SBWT conducted phased array UT testing via a sampling plan, to determine fitness for service of the installed piping systems

Sodium Bearing Waste Treatment Project
Procurement of AL6XN Piping

ISSUE 2

- NQA-1 QA Program requirements not flowed down by sub supplier Rolled Alloys (RA) to suppliers of AL6XN pipe, pipe fittings and weld wire. Cause- confusion with terminology of ASME B31.3 safety significant vs. Section III and lack of follow up QA oversight.

- RA sub supplier QA Program bases.
  1. ASME III NCA 3800/NQA-1 including Allegheny Ludlum the provider of AL6XN plate material
  2. ISO 9001Registered
  3. Other

- QA visits to other suppliers to investigate QA/QC process controls with two having less than satisfactory results from a commercial grade survey review

Sodium Bearing Waste Treatment Project
Procurement of AL6XN Piping

Resolution Steps

- Accept material from NCA-3800 programs as equivalent to NQA-1.
- Accept material from ISO registered suppliers as equivalent for scope of supply based on gap analysis.
- Use survey visit reports to demonstrate satisfactory process controls/QA Programs to accept “as-is”
- For the two companies (Universal Outlets and Century Tubes) where surveys were not conclusive, perform additional verification of dimensional and document reviews

Sodium Bearing Waste Treatment Project
Procurement of AL6XN Piping

Current Status

- Field Sampling Verifications (PMI and NDE) completed for pipe and fittings with no indications identified
- Verification of PTI dimensional/document controls satisfactorily completed with no indications identified
- Vendor surveys completed satisfactorily
- Installed piping system was determined to be fit for service

Focus Group #3

Strategy for EM QA/QC Training

Members:

1. Ken Armstrong (EMCBC)
2. Bob Carter (WCH)
3. Bob Thompson (CH2M-WG)

Purpose:

- Re-evaluate the current approach to QA Training
- Assess the current needs and strategy for training
- Provide a report documenting a recommended path forward.

A Quick Status…

Completed Tasks…

Task #	Estimated Due Date	Task Description	Deliverable	Deliverable To Be Submitted to Project Managers
1	Complete	Planning/strategy session meeting with EMCBC	N/A	No
2	Complete	Submit an outline of the final report to the Board for approval. Outline assures that the needs of the Board are met by the final report.	Draft Final Report Outline	Yes

Immediate Tasks…

Task #	Estimated Due Date	Task Description	Deliverable	Deliverable To Be Submitted to Project Managers
3	Sept 2011	Determine the training needs (specialized and basic) for a trained QA specialists and personnel required to be familiar with the role of QA.	Needs Analysis	No
4	Sept 2011	Perform reviews of existing commercial training programs and summarize results	Summary of reviews	No
5	Oct 2011	Develop strategies for implementing the training program within EM	Strategy approach	Yes
6	Nov2011	Develop a final report on the recommended path forward/strategy for implementing the training program within EM.	Final Report	Yes
7	Nov 2011	Present the final report to the Corporate Board Members for endorsement.	N/A	No

Summary of Current Needs Based on Job Tasks and Performance Issues (DNFSB, ORPS, etc)

- **DOE Needs Based on Job analysis:**
  - Basic EM-QA-001 Training and NQA-1 Lead Auditor
  - Quality Assurance Functional Area Standard
- **DOE Needs Based on Performance Issues:**
  - QA Specialists Trained for SQA, CGD, S/CI, and procurement

- **DOE Contractor Needs based on Job analysis:**
  - Basic EM-QA-001 Training
  - Availability of Qualified/Certified QA/QE personnel, and clear EM approved graded approach for qualification of personnel
  - Additional needs may have to be assessed using a survey to the contractors ? ? ?
- **DOE Contractor Needs Based on Performance Issues:**
  - QA Specialists Trained for SQA, CGD, S/CI, and procurement

What's Next….

- ✓ Poll Some DOE Contractors for additional needs.
- ✓ Continue to develop catalog of existing commercial training programs.
- ✓ Begin developing strategies.

DOE QA Working Group Meeting
September 13, 2011

Focus Area #1

JSEP/BMAC Integration

SUCCESSES

1. The JSEP database is available for use
2. The JSEP database is loaded with audits and available for use
3. POCs have been trained on the use of the database and have access to the information
4. POCs have been identified and are engaging in the program
5. Two (2) audits have been successfully conducted using the JSEP program
6. JSEP and BMAC leadership are interacting and working toward the same set of goals

Information Technology Issues

Items 2, 6, 9, 10, 14, 17

Comparison of Databases:

- General Architecture
- Supplier Record
- Document Features
- Project Features
- Integration Features

- Twenty Nine (29) comparisons were made between the 2 databases within these 5 system areas.

Results: Both databases contain the necessary core functionality to support the JSEP/MASL programs. With the JSEP program being easier to revise if necessary.

Governance Issues

BMAC/EFCOG COMPARATIVE MATRIX

Item 1

BMAC - Audits are performed under individual site approved procedures supplemented with a BMAC process and checklists. Audits are primarily compliance based.

JSEP -All audits are performed and posted under one common procedure. Audits integrate both a compliance and a performance based process.

Results: Team leaders are charged with the responsibility to select the most efficient and practical process.

Governance – cont'd

Item 3

BMAC - Audits are performed using NQA-1, QC-1, ISO 17025, or PQR 1050/1060 requirements based on NNSA needs and opportunities for data sharing.

JSEP - Audits are performed using pre-established requirements using predetermined criterion as dictated by the sites and the applicable NQA-1, ISO 17025, etc. requirements for each commodity.

Results: Commonality in the way evaluations are conducted will be driven by the Team Leaders and as guided by the appropriate organizational (JSEP/BMAC) process.

Governance – cont'd

Item 8

BMAC - Zone audits actively encouraged.

JSEP - Audits are being performed with a preference toward team members located near the supplier.

Results: The integrated process will employ the most efficient method for supporting the audit schedule.

Item 10

BMAC - 8 NNSA site entities participating

JSEP - 49 entities participating

Governance – cont'd

Item 11

BMAC - Participation is required by BMAC COOs.

JSEP - Participation is expected to include DOE EM sites, NE, Office of Science and/or EFCOG members.

Results:

BMAC has a MOU which has been accepted and agreed upon by the sites.

JSEP has drafted a MOU and the process for rolling it out TBD at this meeting.

Governance – cont'd

Item 12

BMAC - No suppliers with open corrective actions are posted on the Supplier list.

JSEP - Suppliers with open corrective actions are posted and the postings include findings and recommendations.

Results: Audit reports will be posted with open corrective actions in order to provide appropriate information to the site participants.

Governance – cont'd

Item 15

BMAC - Single-site led assessments encouraged.

JSEP - Team formed via multiple site needs and populated with the members from multiple sites with consideration for the audit team to be comprised of participants located closest to the supplier.

Results: Both processes will co-exist with sites providing supporting information required as part of the procedural process.

Governance – cont'd

Item 16

BMAC - NNSA includes an SME only when necessary and/or funded.

JSEP - EFCOG includes SMEs on most assessments but specifically when the scope of the audit requires unique technical expertise needed to evaluate the implementation.

Results: Individual audit teams/sites will decide on a case-by-case basis the necessity for utilizing a SME.

Governance – cont'd

Item 18

BMAC – Audit reports are posted with Lead Auditor certifications.

JSEP – Audit reports are posted without Lead Auditor certifications part of the posting but those certifications are part of the documentation package.

Results: Lead Auditor certifications will be required to support the individual audits and will be maintained in the audit file.

Operational Issues

Items 4, 5, 7, 17

- Approved vs Evaluated

Results: Each site is required to perform their due diligence prior to placing a vendor on their ESL/ASL so the semantics of evaluated or approved become a non-issue.

- Databases with the audit results are essentially a "library" where sites can access information and determine the degree of application for their respective site.

- Databases and their associated information do **NOT** represent a substitute for performing the due diligence exercise.

RECOMMENDATIONS

1. Allow each DOE organization (EM & NNSA) continue to develop and populate their respective databases and allow access to the appropriate prime contracting personnel from EM, NNSA, NE, Office of Science sites.

2. EM/JSEP Lead continue to engage the site POCs.

3. Continue to work with NNSA personnel towards the integration of the tasks including shared resources and shared databases.

4. JSEP/NNSA Leads assume responsibility for ensuring the conduct of each audit satisfies the requirements of their defined process.

OBSTACLES

1. NNSA program populates database using data submitted by single site audit teams.
2. NNSA program uses multiple sites and multiple procedures to conduct audits.
3. The lack of DOE funds resources to manage the integration process and subsequent program.

ENGINEERING PRACTICES WORKING GROUP

CHAIR: CHARLES KRONVALL, CH2M HILL PLATEAU REMEDIATION COMPANY
VICE-CHAIR: CHERRI DEFIGH-PRICE, PARSONS (SALT WASTE PROCESSING FACILITY @ SRS)

INTRODUCTION

Vision – The vision is to provide a forum for continuous improvement in engineering-related areas of carrying out the Department of Energy (DOE) and National Nuclear Security Administration (NNSA) missions.

Purpose - The purpose of the Engineering Practices Working Group (EPWOG) is to promote engineering excellence in the execution of DOE missions by sharing best industrial practices, applying lessons learned and providing integrated recommendations to DOE officials and EFCOG contractor members.

Objectives – The EPWOG is committed to the following objectives:

- Enable the success of DOE missions in terms of high-quality engineering that supports program and project objectives in a cost effective and safe manner
- Provide a forum for exchange of ideas, needs, and wants among the DOE complex-wide engineers that:
  - increases awareness and involvement of senior contractor management
  - increases awareness and involvement of senior DOE management
  - increases awareness and involvement of middle and line management
  - Provides information bridges within the DOE, and
  - Provides proactive, value-added recommendations to the DOE
- Promote, coordinate, and facilitate the active exchange of successful engineering programs, practices, procedures, lessons learned, and other pertinent information of common interest to contractors and subcontractors
- Enhance collaboration among DOE contractors and encourage early involvement of complex-wide experts, in order to maximize the probability of success for unique engineering projects.
- Promote employee development in participating companies' engineering talent, by sharing management, training techniques, and technical information among EPWOG participants through mechanisms such as workshops, task groups, and seminars

Scope - The EPWOG's scope includes the areas of engineering practice that are associated with DOE facilities, programs, and capital acquisitions. Engineering practice is the application of engineering disciplines and processes as governed by national codes and standards, recognized quality standards, and DOE orders and regulations. This includes the application of engineering practices throughout the lifecycle of DOE facilities, including initial design and construction, commissioning, operation and maintenance, decommissioning, and closure.

MEMBERSHIP AND ORGANIZATION

MEMBERSHIP

There are total of approximately 220 members in EPWOG, including 65 members of the Working Group, and an additional 155 members in the six Subgroups and one Task Team. Some EPWOG members also participate in one or more of the Subgroups. 44 EFCOG member companies are represented on the EPWOG. In addition to participation by the core group of DOE Contractor representatives, several new member companies were welcomed to EPWOG this past year. E.g. ARES,

Epsilon, Hukari, Merrick, Pro2Serve, SAIC.

ORGANIZATION

Leadership in the EPWOG is comprised of:

Chair: Charles Kronvall, CH2MHill Plateau Remediation Company

Vice-Chair: Cherri Defigh-Price, Parsons (Salt Waste Processing Facility, Savannah River Site)

Secretary: Tobin Oruch, Los Alamos National Laboratory

There are six subgroups and one task team, with Chairs as follows:

- Cognizant System Engineer Subgroup Chair: Diane Cato, Washington River Protection Solutions
- Commercial Grade Item Dedication Subgroup Co-Chairs:
  - Dennis Weaver, Bechtel National (Hanford Waste Treatment Plant)
  - Don Zinter, Washington River Protection Solutions
- Configuration Management Subgroup Chair: Bob Cullum Washington TRU Solutions
- Fire Protection Subgroup Chair: Perry D'Antonio, Sandia National Laboratory
- Pressure Safety Subgroup Chair: Tom Etheridge, Oak Ridge National Laboratory
- Testing and Commissioning Subgroup Chair: Doug Messerli, Babcock & Wilcox Y-12
- DOE-STD-3024, "Content of System Design Descriptions" Task Team Chair: Cherri Defigh-Price, Parsons (Salt Waste Processing Facility, Savannah River Site)

During the past year, the Value Management subgroup was disbanded due to waning interest and lack of pressing issues relative to other areas, the Commercial Grade Dedication Task Team was upgraded to a subgroup, and the Pressure Safety Task Team was upgraded to a subgroup.

EFCOG Sponsoring Director: Roy Schepens, Parsons (transitioned to Joe Yanek, Fluor in October 2010)

DOE and NNSA Sponsors: James McConnell, NNSA; Chip Lagdon, DOE Office of Environmental Management; Rick Kendall, Office of Nuclear Energy; and, James O'Brien, Office of Health, Safety, and Security (HSS)

The parent EPWOG membership meets four times per year - twice via nation-wide teleconferences, and twice in person. At the meetings, subgroups and task teams report on progress, completed focus areas are closed and new focus areas are discussed, new task teams are formed and pertinent lessons are shared. In addition, issues and lessons learned of interest to the Complex are discussed and topical areas are selected for breakout sessions to take advantage of the face-to-face meetings for more interactive working level sessions versus only presentation formats during the meeting.

Subgroups and task teams meet on a regular basis. Upcoming meetings and results of past meetings are posted on the EPWOG web page (www.efcog.org/wg/ep/index.htm).

With regard to succession planning, EPWOG elections for officers are held each year. Informally, the Group has encouraged a transition from the Vice-Chair to Chair positions to ensure a smooth transition when leadership changes occur.

ACHIEVEMENTS

The EPWOG achieved the following during FY 2010:

Requests were received from NNSA and DOE's Office of Environmental Management, and from the EFCOG Board of Directors for support on several important initiatives. These included:

- Best Practice Commercial Grade Dedication documents have been prepared and are in review by EPWOG members. Documents include a draft commercial grade dedication procedure, a draft commercial grade survey procedure, and example dedication packages. Portions of these activities are being worked in partnership with the QA Subgroup of the Integrated Safety Management and Quality Assurance Working Group.
- The DOE National Training Center has been engaged to form a partnership for developing CGD, Cognizant System Engineer, and general engineering standards training courses.-
- Staff were provided to support the preparation and review of a revision to DOE-STD-3024, System Design Description Documents. In particular, the revision includes additional guidance to link SDDs to DOE-STD-1189, Integration of Safety into the Design Process, requirements.
- Best practice information to support implementation of DOE Order 420.1B, "Facility Safety", as applied to the cognizant system engineer and fire protection programs was developed. A significant undertaking is the development of a System Health Monitoring guidance Best Practice which is currently under review by the EPWOG.
- Fire protection requirements for confinement ventilation system were reviewed.
- Initial contacts with the California Polytechnic University at San Luis Obispo (Cal Poly SLO) fire protection engineering program were made related to establishing a career pipeline/mentoring relationship with the DOE and DOE Contractor companies. This initiative is being worked in partnership with the Human Capital Working Group.

The Value Management Subgroup was disbanded during the year due to waning interest and lack of pressing issues relative to other areas.

Best practices were posted for:

- Naming Conventions for Drawings, Specifications, Manuals, and Procedures (BP # 80, published 8/23/10)
- Elements of a Best Practice Safety Equipment List (BP# 81, published 8/23/10)
- Fire protection criteria for leased non-nuclear facilities - to improve the content of fire protection in the scope, reduce confusion, and define roles and responsibilities for fire protection when negotiating leased space. The best practice provides a tool to help ensure that the DOE contractor's leased facilities are more consistent and aligned to the appropriate level of fire protection to ensure the protection of workers, protection of government owned equipment to limits established by the DOE, and protection against unacceptable DOE program or mission interruption. (BP# 83, published 9/1/10)

Actions undertaken by the EPWOG to develop/compile additional best practice improvement recommendations and their status include cognizant system engineer documentation, including examples of system health reports, training, system performance monitoring and trending, system boundary documents, and system notebooks.

EPWOG supported DOE's HSS in the development of a new standard to provide guidance on design of safety instrumented systems. The standard is drawing from ANSI/ISA 84.00.01-2004, "Functional Safety: Safety Instrumented Systems for the Process Industry Sector." The proposed standard

received several comments during the informal review cycle and is undergoing comment resolution as of mid-October 2010.

The Fire Protection Subgroup continues to provide a forum for members to share information and lessons learned, discuss common issues, and to develop best practices. To support the efforts of the Subgroup, one meeting and monthly conference calls were held. The meeting was held in conjunction with the DOE/Contractor Fire Safety Workshop, May 2010 to best use limited resources.

EPWOG continued to aid DOE in support of DNFSB Recommendation 2008-1, "Safety Classification of Fire Protection Systems". In the previous year, EPWOG was instrumental in providing fire protection and design engineering support to develop interim guidance on the design of new safety class or safety significant fire protection systems. EPWOG continues to support HSS as needed in response to on-going discussions with the DNFSB staff.

The EPWOG has also has been involved in the update to DOE-STD-1066-99, "Fire Protection Design Criteria", including initiation of efforts to address fire protection design as it relates to confinement ventilation systems.

The Testing and Commissioning Subgroup continued to work on a comprehensive test program guidance document. The Subgroup has assigned development of specific sections of this standard/practice to Subgroup members. Thus far, two of the sections have been drafted. The Subgroup Chair and the two sections authors initiated an initial peer review of the submittals. Once the reviews are completed, the two sections will be sent to the remaining Subgroup members for their input.

The Cognizant System Engineer Subgroup held a meeting in May as part of the Annual DOE Facility Representative/Safety System Oversight workshop in Las Vegas, Nevada. Several candidate best practices were identified for further exploration, including one drafted on system health monitoring (as noted above) which has been in an extended review cycle.

The Pressure Safety Sub-Group continued its work to develop a standard understanding of the requirements of an effective pressure safety program as required by the Worker Safety and Health Program, 10 CFR 851 Appendix A Section 4.0. A pressure vessel SharePoint site, established for collaboration purposes, continues to be used frequently by members. This group is working to raise awareness of pressure safety program aspects and quickly accelerate sites with relatively new programs to experienced, soundly-based programs. The group has provided an excellent forum of contacts for members to communicate with more experienced sites on a real-time basis. A current initiative is development of an Implementation Guide for Pressure System Safety as specified in 10 CFR 851 Appendix A.4 using the sections of 10 CFR 851 Section A.4 as an outline: 4a – The General Program; 4b – Codes and Standards; and 4c – Equivalency. A team presented draft sections for group discussion. Also, for the coming year, the Group plans to conduct a pressure safety training course in conjunction with its next meeting.

A new initiative was kicked-off in October to assess potential benefits of forming an engineering analysis software team or group. The purpose of the team would be to explore potential cost savings in the areas of software quality assurance, software error sharing, user forums, and, potentially with sufficient common interest and applicability, establishment of suite of codes analogous to the safety analysis "tool box" codes.

PLANNING FOR THE YEAR AHEAD

EPWOG has the following activities planned for FY 2011:

- Follow-up activities related to health and safety assessments will be a key focus area for the EPWOG. The EPWOG is committed to preparing a minimum of three best practices, including some in this focus area. The actions and practices will be developed in concert with the HSS to achieve common expectations for CGD, configuration management, fire protection, andsystem engineering programs. This will continue the theme of teaming with DOE to improve engineering effectiveness in the complex.
- Follow-up on initial steps taken to incorporate an Engineering session into the annual Project Management Lessons Learned Workshop.
- Compile a listing of Engineering Software utilized at each of the major DOE sites. Use the listing to foster communication and error sharing between users of common codes, and grow the effort to promote efficiency and cost savings among members.
- As requested, provide assistance to the DOE-HQ led team evaluating Natural Phenomena Hazard criteria development and implementation.
- In the pressure safety area, plans include:
  - Continue interaction and information sharing;
  - Organize support for criteria for barrier design of pressure systems;
  - Seek HSS resolution of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code dates associated with 10 CFR 851; and,
  - Complete a draft of an Implementation Guide for Pressure System Safety as specified in 10 CFR 851 Appendix A.4 using the sections of 10 CFR 851 Section A.4 as an outline: 4a – The General Program; 4b – Codes and Standards; and 4c – Equivalency Sub-team
  - Conduct Pressure Safety Related training
- Continue to provide support to HSS in the resolution of comments for issuance of the revised DOE-STD-3024.
- Continue to support NNSA and DOE on the development of a technical position to address actions appropriate for potential significant HEPA filter loadings under fire scenarios
- In the fire protection area, plans include:
  - Benchmark site Authority Having Jurisdiction (AHJ) programs, particularly looking at roles, responsibilities, authorities and accountabilities
  - Benchmark fire barrier penetration seal configuration management practices
  - Benchmark of site fire protection design criteria (international codes vs. National Fire Protection Association)
  - Develop and post Fire Hazards Analysis Tool Box
  - Develop updated fire protection system and equipment inspection, testing and maintenance recommended frequencies
- Deliver two Configuration Management Training pilot sessions (scheduled for February 2011. Assess the need for roll-out of the training on a larger scale; if determined needed, support the NTC in delivery of the training to audience across the DOE complex. Goals previously established and planned were:
  - Develop and issue configuration management best practices. Candidate topics include:
    - Maintaining configuration management in work packages during decontamination and decommissioning (D&D)
    - Version and formal change control during design
    - Design deliverables at 30-60-90-100%
    - Final design documents and system design descriptions as design tools and deliverables
    - “As-built ”: definition (versus “as found”)

    - Title III services by the original architect-engineer
    - Software configuration management
    - Vendor information (formats, control, cataloging)
    - Major modifications to operating facilities – special considerations
- Provide best practice documents for the creation, implementation, and maintenance of an Nuclear Quality Assurance-1 compliant commercial grade item dedication program

LESSONS LEARNED

A positive aspect of the EPWOG and its Subgroups and Teams this year has been the continuation of communication among members. Members of EPWOG routinely communicate via e-mail and telephone. The EPWOG leadership holds regular (monthly) calls to status progress and to plan future activities. The EPWOG is used as a communication network for sharing information on emerging issues and trends, sharing newly released documents/formal lessons learned, and for seeking answers to day-to-day engineering questions/challenges. One way this is accomplished is through EPWOG's ftp site that provides members with procedures, standards, guides, and training material from around the Complex.

Members use EPWOG as a sounding forum on issues that arise in their locations. In the Fire Protection Subgroup, for example, communication within the DOE fire protection community has substantially increased, resulting in very positive response to the Subgroup and its activities. A challenging aspect of the Working Group and its Subgroups and Teams is the great diversity among the various members in how Engineering, Configuration Management, Testing, Pressure Safety System design and operation, Commercial Grade Item Dedication, and Fire Protection activities are organized and executed at their sites. Working Groups need to keep this in mind, to ensure value is maintained for all its members. The EPWOG website, and the very strong meeting minutes developed and distributed, are examples of communication tools used to distribute lessons learned and best practices to members.

Communication and teamwork with other Working Groups continues to increase. Partnerships with the QA Subgroup (CGD subgroup) and the Safety Analysis Working Group (DOE-STD-1189 implementation team) were continued. Partnering opportunities were initiated with the Human Capital and Project Management Working Groups. EPWOG members attended meetings held by the Energy and Infrastructure Working Group, the D&D Working Group, the Waste Management Working Group, and the Project Management Working Group. In addition to the specific examples listed above, several cross-cutting EPWOG items of importance to DOE and its cadre of contractors are being evaluated.

The recent October 2010 EPWOG meeting was held in Denver, away from a major DOE Site. Attendance was the largest of any EPWOG meeting in recent memory. The Lesson Learned may be that it is important to periodically hold meetings at locations that are geographically convenient/easy to access rather than at a specific DOE site. Recent practice has been to alternate between a DOE-HQ meeting and a DOE site location, that typically includes a field tour of an operating facility.

EFFECTIVENESS EVALUATION

The EPWOG has been effective during the past year, most notably in supporting DOE in several major initiatives for the complex. The EPWOG has been positively recognized by the DOE customers in these activities, demonstrating the benefit of the EFCOG and Working Group's close interaction with DOE. DOE recognition is reflected in the request for Working Group support on new initiatives. This interaction is increasing performance and effectiveness across the complex. The tasks being worked on by the group are issues that are significant and the output of the EPWOG is being used by member companies to enhance engineering effectiveness. Strong cross EPWOG interaction was evidenced throughout the year on numerous initiatives discussed above. In summary, the EPWOG activities and contributions in 2010 covered a broad spectrum of activities and the results were positively recognized by DOE. Members are enthusiastic with respect to the 2011 planned activities and significant contributions will be expected of EPWOG.

RECOMMENDATIONS

it is recommended that the EPWOG and its Subgroups/Task Teams continue their activities in support of DOE and the common interest of the contractor community in accordance with the 2011 plans.

The EPWOG is available to help support other critical initiatives of the EFCOG Board of Directors and DOE that may be identified during the upcoming year. To accomplish all tasks, robust member company interaction and involvement on major activities and effective integration among various Working Groups will be required.

EPWOG Subgroup Status

Group	Meeting Schedule	Recent Accomplishments	Plans for 6 months	Plans for 12 months	Best Practices
Commercial Grade Dedication	Next full meeting will most likely be September/October Point of Contact: Dennis Weaver 315-806-8114 dreamweaver2650@gmail.com Don Zinter 509-373-1416 Donald_D_Zinter@rl.gov	CGD documents are out for review, including a draft commercial grade dedication procedure, a dedication package procedure, and a dedication package example.	Provide a sample package(s) for review. Support Bill Smoot in drafting an EM guide for CGD. Coordinate with QA Working Group on identifying cooperative audit of commercial vendors. Facilitate transfer of general CGD training to the DOE NTC.	Continue 6 month activities.	Target is to have 3 Best Practices issued by the end of the FY 2012 Q1.
Configuration Management	The next conference call will be in November. Point of contact: Bob Cullum Bob.Cullum@wipp.ws 575-234-8683	CM Training conducted for February 16/17 at the DOE offices in Las Vegas and February 22/23 at the National Training Center in Albuquerque. Both classes had 24 attendees, including 7 EPWOG members. 5 new EPWOG members were identified. Presented an additional training class as part of the CSE meeting May 2/3. Issued Best Practice #105 - Improving Access to and Control of	Assess results of February training; evaluate for further delivery and dissemination.	Prepare/approve 1-2 Best Practices.	Issued Best Practice #105 - Improving Access to and Control of Database Information - 07/22/11. Plan on issuing 1-2 new best practices in FY2012.

EPWOG Subgroup Status

Group	Meeting Schedule	Recent Accomplishments	Plans for 6 months	Plans for 12 months	Best Practices
		Database Information - 07/22/11			
Fire Protection	Fourth Wednesday of the month; 12:00 – 1:00 mountain time (contact Perry D-Antonio pedanto@sandia.gov 505-844-7956 for more details)	• Supported revision of fire protection requirements in DOE O 420.1B; • Published one best practice • Led technical exchange with Cal Poly/SLO • Issued Best Practice #104 - Fire Protection Program Assessments - 07/22/11	• Continue to support Order 420.1C revision • Align DOE fire protection related standards to the Order • Develop contract language for leased space fire protection requirements.	• Define fire protection metrics; • Develop relationship with universities to enhance recruiting, training, and mentoring for DOE FPEs; • 2011 Fire Safety Conference planning	• Address fire protection requirements in facility lease agreements. • Risk-based fire protection program assessments • Conference Planning Guide • Issued Best Practice #104 - Fire Protection Program Assessments - 07/22/11 • Drafting additional best practices for group review.
Pressure Safety	Next face-to-face meeting will be in ~ 18 months. Teleconference information will be posted on the EPWOG web page. Point of Contact: Tom Etheridge etheridgejt@ornl.gov 865-574-0115	Conducted ASME B31.3 training course related to pressure safety March 29-31. Meeting details are posted on the EPWOG web page.	Follow-up on March Training/meeting actions. Evaluate possibility of seeking a request for a binding interpretive ruling per 10 CFR 851.7 concerning applicability of following the latest version of the ASME	Continue 6 month activities.	Potential Best Practice from the training course.

EPWOG Subgroup Status

Group	Meeting Schedule	Recent Accomplishments	Plans for 6 months	Plans for 12 months	Best Practices
			B&PV Code rather than the 2004 version.		
System Engineer	Holding monthly calls 1st W of each month. Points of Contact: Diane Cato and Gary Tarbet Diane_M_Cato@rl.gov 509-372-0103 Gary.Tarbet@inl.gov 208-533-7448	Started monthly call W 3/2. Working with NTC to develop CSE Training modules. Had limited participation at the DOE SSO/Fac Rep meeting May 2/3.	Continue monthly telephone call**s.** Evaluate methods for increasing participation in CSE subgroup.	Identify actions from the monthly telephone calls and the Annual Meeting. Develop R2A2 for Design Authorities/Cognizant System Engineers.	System Health Report Best Practice in final review. Expect to publish in FY 2011.
Testing	Plan to have a meeting sometime in the next 6 months Point of Contact; Doug Messerli messerlida@y12.doe.gov 865-576-7332	Started receiving input from members with their respective test programs. Developed an Outline for a Guide document.	Review test programs and pull best of these in developing the draft DOE Guide	Compile the draft test guide for internal subgroup review and comment.	
DOE-STD-3024, System Design Description Document	None scheduled at this time. cherri.defigh-price@parsons.com 803-617-9101	STD-3024 is awaiting approval.	Publish the revised standard. Evaluate the need to continue the task team during implementation.	Formally disband or reassign the taks team. Continue to support implementation of the revised standard.	May be opportunities for implementation and/or example best practices.
Engineering Software Toolbox	Information gathering is continuing. Point of Contact is Donna Bennett. Bennettdf@y-12.doe.gov 865-574-5839	Initial set of data (34 software programs) and contact information for several sites has been compiled. Supported Safety Software Communication	Continue data collections. Share information with Task Team Points of Contact. Provide June 9 on-line demonstration of SSCF and Central	Continue 6 month activities. Consider review of ANS 10.7 and/or development of a Safety Software QA Template.	

EPWOG Subgroup Status

Group	Meeting Schedule	Recent Accomplishments	Plans for 6 months	Plans for 12 months	Best Practices
		Forum (SSCF) and Central Registry presentation at the April 19/20 EPWOG meeting. A follow-on webinar was held.	Registry.		