



**Energy Facility Contractors Group  
Engineering Practices Working Group (EPWOG)**

**Telecon of 7/16/03 – Minutes**

The Working Group held a teleconference on July 16, 2003 lasting 1.5 hours.

**++ SUMMARY OF KEY ACTION ITEMS FOR MEMBERS ++**

- Review SME/POC Matrix categories and input by **July 23** to Oruch
- Self-nominate for Chair, V. Chair, and Secretary by **July 31** to Mathews
- Task groups for Commissioning and Engineering Performance Metrics begin work

**Agenda**

AGENDA

1. Point of Contact Matrix -- Our First Deliverable
2. Choose Other Issues to take on this Calendar Year
3. Prepare for Election of Officers and Succession Planning
4. Plan the October meeting in Washington, DC

**Participation**

Dwayne Coburn, PNNL	Dave Eichelberger, WGI	Tom Etheridge, ORNL
Marty Fallier, BNL	Sean Fargo, FH	John Gertsen, Y-12
Bob Knudsen, KSL	David Lowe, CH2M HILL	Toney Mathews, Framatome ANP, Co-Chair
Tom Monahan/Jim McAndrews, SRS	Herb Mumford/Bob Hill, INEEL	Tobin Oruch, LANL, Co-Chair
Barbara Quivey, LLNL	Donna Rigau, NREL	Daniel Steinberg/Shelly Freid, BN
Debby Tate, ANL-W	Louis Vanacore, Jacobs	Jim Whitcraft, YMP
Jim Rispoli, DOE Sponsor	Richard Lewis, SRS, Fire Protection Subgroup Chair	Bob Cullum, WIPP, CM Subgroup Chair

Following is a summary of what transpired.

Mathews welcomed the callers to EPWOG's first meeting, and callers introduced themselves.

### **Agenda Item 1: SME/Point-of-Contact Matrix -- Our First Deliverable**

Oruch discussed the background on the matrix (draft attached):

- that the Standards group (ESWOG) had developed a standards SME matrix a year ago;
- that attendees of the May organizational meeting of EPWOG thought expanding that to engineering practices/functions would be useful for promoting working-level communication between peers and from EPWOG downward (and potentially for forming focused task teams quickly if EPWOG had need to do this);
- that completing early was “low-hanging fruit;” and
- that ESWOG had quickly brainstormed the new categories over lunch.

There was discussion on whether people listed as SMEs required any related qualifications; the point was made that identifying matrix as POCs would maximize participation. Another option is letting people self-identify as SMEs as an option.

Oruch then asked members for input on the categories. Some input was received and others committed to **review and send input on categories and SME/POC question by July 23**. Oruch will then finalize matrix categories and send entire table out to EPWOG for populating with additional names. Once complete it will be webposted.

Jim Rispoli noted that DOE had recently signed a DOE-wide subscription to the Whole Building Design Guide (WBDG) and the Construction Criteria Base (CCB). An explanatory DOE-cast announcement is coming in a few weeks [this was communicated to ESWOG members after the EPWOG telecon].

WBDG home: <http://www.wbdg.org/>; CCB home: <http://www.ccb.org/html/home.html>

### **Agenda Item 2: Choose Other Issues to take on this Calendar Year**

Mathews discussed how a number of possible tasks were contemplated at the May organizational meeting of EPWOG, and that it was reasonable that we tackle one or two this year. The May ideas were:

- Engineering Performance Metrics
- Commissioning
  - Engineering, Project, Operations Transition
  - Integration of Safety Analysis Elements (Fire Protection, Criticality, Hazards Analysis, etc.)
- Graded Approach Techniques (Nuclear and Non-nuclear)
- Acquisition Methods for Outside Engineering Services
- Conduct of Engineering (Best Practices)
  - Systems Engineer
  - Design Authority
- Attract/Retain New Engineers
- Challenge Existing Sub-Groups
  - Engineering Standards

- Fire Protection
- Configuration Management

Preferences for various items were voiced. Bob Cullum, CM Subgroup chair, indicated that group would tackle the three CM-related ideas from May:

1. Design Basis Reconstitution - how far to go? The issue is with existing plant modifications where the plant has little or no design basis information. In the process of designing modifications to systems or structures in such plants, the general approach has been to establish a design basis for the scope of the modification. The difficulty is with deciding how far to go beyond the immediate boundary of the modification. For example, a mechanical piping system, do you develop a design basis for the entire piping system? What about interfacing piping systems, electrical power, and I&C?
2. Document Control and Records Management - what to keep, what not to keep? What is the retention time? How do you define the distinction regarding nuclear vs. non-nuclear (graded approach)? What document back-up requirements should be considered? (Commercial nuclear plants have a remote, secure back-up for vital records.) One of the lab representatives in attendance noted that if they had a major fire their facilities' engineering records could be wiped out.
3. Phasing out Configuration Management requirements for D&D work - guidelines needed for consistency. This should consider plant systems and structures being removed or modified for D&D as well as temporary systems and structures being installed as part of the D&D process. The concern is that CM is being applied indiscriminately during the D&D process, which results in inefficiency. CM may be maintained when not necessary and not maintained when it should be.

[NOTE: While not mentioned in the call, the Engineering Standards and Fire Protection Subgroups are also working several issues.]

Ultimately, two additional tasks were selected, and volunteers for each with a chair were identified (NOTE: others can still volunteer to participate):

1. Engineering Performance Metrics:

David Lowe, Chair	Barbara Quivey
Tom Monahon	Herb Mumford

2. Commissioning

Tom Etheridge, Chair	John Gertsen
Marty Fallier	Jim Whitcraft
Dwayne Coburn	

The October meeting agenda includes time for these teams to present results.

Regarding best practices, Oruch noted that the EFCOG homepage Best Practices link is the official location for this in the DOE complex, that there is placeholder for engineering

practices, and that members can and should submit practices to Mathews/Oruch for consideration independent of the EPWOG consensus efforts that are beginning.

### **Agenda Item 3: Prepare for Election of Officers and Succession Planning**

Mathews discussed that he and Oruch had been selected as acting co-chairs in May, and that elections at the end of the October meeting were appropriate (after people got to know each other). The new officers would begin serving January 1. A Chair, Vice-Chair (who would step-up to Chair if the Chair vacated), and possibly a Secretary were needed. **Members were asked to nominate themselves for these positions to Mathews by the end of July.**

### **Agenda Item 4: Plan the October Meeting in Washington, DC**

Mathews discussed the upcoming meeting, noted that Washington would enhance DOE interactions and equalize the travel burden to east coasters (after Albuquerque in May). Rispoli indicated he could no longer attend during the targeted period.

Several members indicated a desire for the longer, 1.5-day option; it would allow additional discussions and still allow members to get home on the second day. Several were interested having DNFSB interaction. Consequently, **the meeting will be October 21 (all day) and October 22 (morning only)**. The draft agenda is attached.

### **Other Items of Note**

The EPWOG website is up. It has the latest roster of members and a good engineering-related Links page (comments welcome).

<http://www.efcog.org/workgroups/epwog/index.htm>

### **Attachments**

SME/POC Matrix Category Proposal  
October 21-22 DC Meeting Agenda draft

Minutes recorded by Tobin Oruch; completed 7/21/03.



Energy Facility Contractors Group

## Engineering Practices Working Group (EPWOG) Areas of Expertise Categories

Please comment on categories by 7/18 or during telecon to Tobin Oruch, [oruch@lanl.gov](mailto:oruch@lanl.gov), 505-665-8475 (fax 665-1723). Actual SME names from member companies/sites will be requested at a later date.

### Background

An “Areas of Expertise” category listing is being developed as a first action of the newly formed EPWOG. Once consensus on the categories has been reached, members will be asked to submit the names of contacts at their installations for these categories.

The names will be collected and webposted in much the same way as the discipline-oriented SME listing produced by the Engineering Standards group (ESWOG), or very possibly combined with that listing currently at <http://www.efcog.org/publication/WG%20Minutes/epwog-es/SME%20List.doc>

The existing ESWOG discipline listing includes these categories:

Architectural	Piping, Valves, and Vessels
CADD	Pressure Protection
Civil	Process
Electrical	Radiological
Energy Mgmt (with link to Energy Eff WG)	Remote Systems
Eng Stds Program (with link to ESWOG Roster)	Roofing
Fire (notes existence of FP Task Group)	Security
Geotech	Safety Class (delete in lieu of Nuclear or Graded Approach category?)
Hoisting and Rigging (should Maint WG have an SME list with this category instead?)	Spare Parts (should Maint WG have an SME list with this category instead?)
HVAC/Filtration	Structural
I&C	Surveying
Machine Design	Telecommunications
Material Handling	Utilities/Exterior Infrastructure
Mechanical	Waste
Mining	Welding
Nuclear/Nuclear Specialties	

**Proposed Additional, Functional SME Categories for Compiling Contacts:**

<b>CODE</b>	<b>FUNCTIONAL SME CATEGORY</b>	<b>ALIASES</b>	<b>SCOPE OF EXPERTISE</b> <b>This is the individual that best understands the processes of those producing or performing....</b>
CE	Chief Engineer	N/A	Is responsible for technical adequacy of design and, generally, system engineering for systems under his/her responsibility. Generally each institution has one (Site Ch Engr), but it's also possible to have one per division and/or one per discipline (e.g., Ch. Structural Engr).
CoR	Code of Record Maintenance SME	Backfit Policy SME	...the policy or procedure dictating when an existing SSC must be upgraded to meet current design standards, particularly when that system is being modified (or when the delta in code compliance is discovered).
Cx	Commissioning SME	N/A	... review and inspection specs and plans, reviews, reports, O&M manual binders. Most effective when it occurs throughout the project life as a QA/review function.
CoE	Conduct of Engg SME	N/A	... practices relating to the activities of both System and Design Engineers. May have more detailed procedural knowledge than Chief Engineer but does not necessarily have the authorities and responsibilities of the Chief.
CM	Configuration Management SME	N/A	...practices for maintaining the technical baseline of a facility (design basis, design outputs) through change control and records management.
Const	Construction Engg SME	N/A	...inspection reports. Can be either Title III services (Design Agency role) but more often simply oversight for Owner.
Cost	Cost Engg SME	N/A	.... estimates.
D&D	D&D SME	N/A	....plans and specs for decontaminating and demolishing.
DA	Design Authority SME	N/A	.... Design reviews; approves design basis changes; may be responsible for SDDs
DE	Design Engg SME	*Proj Engg SME; *Facility Engg SME if designing for facilities	.... Scopes of Work, Project Mgmt Plans, and design outputs - studies, calcs, drawings, and specs. This is a Design Agency function. "Those Producing" are generally discipline-oriented engineers, designers, and drafters (e.g., electrical, mechanical, structural...)
GA	Graded Approach SME	SRS's Safety Class SME?	...the procedures that define the eng rigor required for various systems depending on their importance to safety. This drives the level of QA applied.
NS	Nuclear Safety Engg SME	Criticality Safety Engg	...calcs and reports. More of a discipline specialty like Mechanical. Criticality Safety Engg is a sub-specialty.
PCE	Plant or Component Engg SME	N/A	.... some portion of the responsibilities of a System Engineer, but not all. (E.g., Plant Engr would not do all the rigorous nuclear-related tasks). Generally also has less authority than SE, and less technical training and work.

CODE	FUNCTIONAL SME CATEGORY	ALIASES	SCOPE OF EXPERTISE This is the individual that best understands the processes of those producing or performing....
PrE	Process Engg SME	N/A	...PFDs, P&IDs, material balances, perhaps SDDs. More of a discipline specialty like Mechanical. Classic ChE work (though rarely done by ChE's within DOE complex).
R&D	R&D Engg SME	Programmatic Engg	.... can have many functions, generally close design/tech support to scientists (PhDs) or actually performs experiments. Includes software development in some cases (e.g., LabView, other codes).
SAFE	Safety Engg SME	N/A	... audits and reports. Called engineering, but generally not highly technical and not performed by degreed engineers.
PLAN	Site Planning SME	N/A	....site or campus plans, sometimes 5 or 10-year Comprehensive Site Plans. Work is frequently done by an architect.
S/T	Startup/Test SME	N/A	... startup/test plans and reports. Generally only occurs late in a project. May be part of an ORR.
SD	Sustainable Design SME	N/A	... strategies to minimize energy and environmental impact in building materials and construction methods. Knowledgeable in <u>LEED</u> strategies, though may not be a LEED Accredited Professional.
SE	System Engg SME	*Cognizant Engg *Cog. Syst. Engg * Facility Engg * Ops Suppt Eng *Manufacturing Engg	.... the day-to-day activities satisfying <u>DOE O 420.1A</u> Section 4.5, System Engineer Program – i.e., producing tech reviews, USQs, evaluation reports, design input, mission functional and performance (or operational) requirements, etc. SEs are generally degreed engineers that are first considered experts/SMEs on those systems assigned to them, not necessarily in which discipline they may be schooled.
SsE	SystemS Engg SME (sic)		....interdisciplinary approach and means to enable the realization of successful systems...focuses on defining customer needs and required functionality early in the development cycle, documenting requirements, then proceeding with design synthesis and system validation while considering the complete problem..... ( <a href="http://www.incose.org/whatis.html">http://www.incose.org/whatis.html</a> )

## AGENDA

### Agenda Option 2

#### **First day (Oct. 21)**

- I. Introductions and 5 Min. Site/Company Engineering Accomplishment Share  
By Each Contractor Organization Represented 2 ½ hr.
- II. Review EPWOG 2003 Accomplishments 1 hour
  - A. Sub-Group Chairpersons' Report
    - 1. Configuration Management
    - 2. Fire Protection
    - 3. Engineering Standards
  - B. EPWOG Report
- III. Presentations on Selected Topics 2 ½ hr.
  - A. By a Volunteer EPWOG Member
  - B. Subject Areas From Major Issues List
  - C. Invited Speaker
  - D. DNFSB Guest Speaker
- IV. Set Goals and Plans for 2004 2 hours
  - A. Brief Brainstorming
  - B. Breakout Groups
  - C. Report and Selection

#### **Second Day (October 22)**

- V. Roundtable with DOE Sponsors 1 hour
- VI. Conclude 2004 Goal Setting and Assignments 1 hour
- VII. Discussion of a DOE Item of Interest 2 hours
  - A. Item Suggested/Requested by DOE
  - B. Discussion in Preparation for Providing Formal Feedback
  - C. Assignment for follow-up and Formal Report
- VII. Adjourn noon

*Notes:* 1. Invite Chairpersons of Project Management and Maintenance Working Groups.  
2. Start at 08:00 and end at 17:00 on October 21, 1 hour lunch;  
End at noon on October 22.  
3. Advantage is time to learn about each other's work and share lessons learned, plus more variety in speaker opportunities; disadvantage is a day and a half meeting.