

**EFCOG Electrical Safety Subgroup  
Fall 2008 Meeting Minutes  
October 7 – 9, 2008, Las Vegas DOE Site Office  
Submitted by Jackie McAlhaney**

**Attendees**

James Durnan	Sal Sferrazza	Bobby Gray
Jeff Jensen	Jackie McAlhaney	Mark McNellis
Lloyd Gordon	Keith Gershon	Gary Dreifuerst
Mike Hicks	Pat Zona	Pat Tran, DOE-HQ
Greg Christensen	Jim Luhring	Paul Chapman
David Inskeep	Don Bourcier	Bryan Drennan
Earnest Hamm	Jeff Williams	Tommy Martinez
Steve Baca	David Anderson	Bobby Sparks
Don Harvey, DOE-HQ		

**Introduction**

Lloyd Gordon kicked off the meeting on Tuesday morning and welcomed everyone. Lloyd introduced the 2008 officers and then requested each attendee introduce himself. Lloyd discussed the 2008 initiatives and the results of the workshop sessions on arc flash, CFR 851, DC hazard and the DOE Electrical Safety Handbook. He emphasized that much was accomplished in 2008 but the Handbook still needed some work by the subgroup before submitting to DOE for the REVCOM process. Lloyd further explained that a small team had met all day on Monday to review comments for the Handbook revision and his intention was to complete the review during this week. Lloyd also informed the group that we would elect officers this week and develop initiatives for 2009.

**General Discussion**

Bobby Gray discussed the 851 Enforcement presentation by Kathy McCarty, DOE-HS, from the ESH morning session and proposed that DOE take a more active role in the NFPA code making process. Bobby said he would further discuss this topic with Kathy to get the DOE involved in committee participation. Bobby also informed the group about the new article in NFPA 70E for R&D equipment but explained that we need to further develop it through new proposals to the committee.

Lloyd and Mark discussed how we need to work with other EFCOG subgroups in a cross disciplinary initiative to develop consistent approaches for electrical safety. For example, AED's are not consistently used throughout the complex due to site specific reasons. Gary Dreifuerst mentioned that one site does not use AED's because of security issues with the memory boards. Jackie

McAlhaney indicated that SRS has only implemented AED's on a limited basis for EMT's and strenuous duty work. Bobby Gray proposed that we work with the EFCOG Occupational Medicine subgroup to develop a consistent policy and implementation approach for AED's within the complex.

Sal Sferrazza summarized the 2008 workshop held in July in Golden Colorado and reviewed lessons learned from planning this event. (See slides titled "Lessons Learned conference" on the EFCOG ES&H meeting page: <http://www.efcog.org/wg/esh/events/Fall08mtg/ESHWGfall08mtginfo.htm>).

Jackie McAlhaney informed the group that the presentations from the workshop were available on the EFCOG page and demonstrated how to find this page. Bobby Gray mentioned that the 2009 workshop will be held next October in Hanford and indicated that he already had commitments from some of the presenters.

### **Arc Flash Calculations and Training**

Jackie McAlhaney presented the results of the arc flash calculation workshop group and proposed that we develop a best practice using this information. The group agreed to this approach and Jackie will develop a draft best practice and provide to the group for feedback. Jackie also discussed an initiative by the Corps of Engineers to develop a new arc flash hazard guidance document. He indicated that the Corps wanted to partner with our EFCOG group on this initiative and were willing to let us use the final document as input to a new chapter in our Handbook or as a stand-alone reference document. A draft of the document was provided to the group for review with good feedback. Jackie will continue to be the focal point with the Corps for this effort and provide drafts to the group as the document is further developed and finalized for publication. (See slides titled "Working Group #1-Subgroup 1" on EFCOG page)

Mark McNellis covered the workshop session on arc flash training and recommended we develop three training modules that could be used to train electrical workers, subcontractors, engineers, and non-electrical workers on arc flash hazards and controls. The three modules would consist of 1) arc flash characteristics, 2) NFPA 70E requirements and 3) calculations. Modules 1 and 2 were assigned to Paul Chapman for development and Module 3 to Jackie McAlhaney and Steve Baca. Mark McNellis will continue as overall lead for this initiative. (See slides titled "Working Group #1-Subgroup 2" on EFCOG page)

Mark also showed two videos that were developed at Sandia to promote electrical safety awareness. One video focused on safe use of electrical cord and plug connections and the other on electrical shocks. Mark said both videos could be used within the complex and agreed to post them to the EFCOG or Electrical Safety Center of Excellence website.

## **CFR 851 Issues**

Bryan Drennan discussed the feedback from the CFR 851 workshop group and discussed subcontractor flow-down requirements. He also discussed issues with legacy electrical systems and dated standards and requirements. Bryan proposed that a common approach/best practice be developed to capture the results of this workshop. (See slides titled "Working Group #2-10 CFR 851" on EFCOG page)

## **DOE Electrical Safety Handbook Revision**

Lloyd Gordon discussed the status of the Handbook revision and emphasized that we need a formal review process to control future changes. Lloyd also indicated that DOE feels the Handbook revision needs to be "polished" before REVCOM and suggested that the review team continue all week to disposition comments.

Lloyd also emphasized that we need to continue to support and improve the Center of Excellence website. He asked for feedback on new initiatives for the group and how the COE can be further expanded as a resource. The following suggestions were provided in a brainstorming session:

- A defined process for submitting, reviewing and approving proposals for future revisions to the DOE Electrical Safety Handbook
- Minimum standards and requirements
- Situations not covered by codes/standards (R&D, D&D, unique equipment)
- AHJ process/electrical safety program models
- Implementation of codes and standards and guidance
- Acceptance criteria
- Consistent interpretations
- Qualification requirements
- Links to resources for qualifications and training
- Policies on AED's, GFCI testing, labeling arc flash
- Hazard analysis process models
- Arc flash calculation methods, including for DC and pulse power
- Subsurface investigation techniques and technology improvements

Bobby Gray agreed to develop a process to solicit, review and control future changes to the Handbook. Ernie Hamm, Jeff Jensen, Bryan Drennan and Jim Durnan agreed to support Bobby with developing this draft program.

Lloyd also discussed the electrical safety training that was developed at request of National Training Center for the DOE field offices. Lloyd explained that classes were scheduled during the year but were canceled due to lack of interest. Mike Hicks said that the schedule was not published in the NTC catalog so field offices were not aware of the training. Don Harvey expressed that Frank Russo supports continuation of this training and that Frank will discuss with NTC.

### **Future of NFPA Committee**

Bobby Gray informed the group that the NFPA 70E committee may eventually be subdivided into panels similar to what is done for the NEC committee. Bobby indicated that DOE should support this initiative so we can play a larger role in future changes to this document. Bobby emphasized that we should continue to provide proposals to the committee and consider additional participation on NFPA standards committee. He has scheduled Mark Ode to provide a training session at the 2009 workshop on developing proposals for NEC standards.

### **Subsurface Investigation**

Greg Christensen, Dave Inskeep and Clark Scott discussed the need to establish a standing subcommittee for subsurface investigation. This group would continue development of best practices that was initiated at the SRS Hidden Hazards workshop last year. The Electrical Safety Subgroup agreed to proceed with a new subcommittee and requested Dave Inskeep to form this team and initiate a draft model for subsurface investigation support and practices. (See slides titled "Subsurface Investigations" on EFCOG page)

### **ESI Goal Setting**

Mike Hicks presented a methodology that was recently used at Idaho to establish a site goal for the electrical safety index. Mike suggested that all sites consider and use a similar method to develop a goal for their site. (See slides titled "ESI Goal Determination" on EFCOG page)

### **DC Electrical Hazard**

Keith Gershon reviewed a task matrix that was developed for DC power systems at the workshop in July. Keith will continue to lead and work with this group (DC power systems subcommittee) to expand this matrix since current national standards do not provide much guidance on DC systems. Bobby Gray suggested that one of the first tasks for this group is to issue some specific guidance on working on and around UPS type batteries since many of the sites use and maintain these type systems. Keith agreed and will work with his subcommittee to develop and publish guidance for working on battery systems. (See slides titled "DC System Considerations" on EFCOG page)

## **Occurrence Investigation Checklist**

Tommy Martinez, LANL, presented a checklist that can be used when investigating an electrical event to capture the information for the severity tool. The group agreed that this checklist would be a valuable tool and suggested that we include it with other severity tool resources on the COE website. Lloyd will add this tool to the website. (See slides titled "Occurrence Investigation Checklist" on EFCOG page)

## **Election of 2009 Vice Chairman and Officer-at-Large**

Jackie McAlhaney informed the group that only one nomination was received to fulfill the election of an officer for the Officer-at-Large position and the Vice Chairman position as defined in our charter. This nomination was to retain the incumbents in these positions for another year. After much discussion about revising the charter to allow the Secretary and Officer-at-Large to serve a term of 2 years, the nominator rescinded his action. Nominations were then accepted from the floor and voted on by majority vote. Bobby Gray was elected for the Officer-at-Large position and Jackie McAlhaney as the Vice Chairman for 2009.

The 2009 officers will be as follows:

Mark McNellis	Chairman
Jackie McAlhaney	Vice Chairman
Dave Mills	Secretary
Bobby Gray	Officer at large
Chair Emeritus	Lloyd Gordon

## **Action Plan for 2009**

The 2008 accomplishments were summarized and will be used in input into the Annual EFCOG report:

- DOE Electrical Safety Handbook
- 2008 Meeting/Workshop
- Held Spring and Fall Meetings
- Held monthly telephone conferences
- Maintained and improved Center of Excellence

An action plan was also developed by the group for 2009. Lloyd and Mark will present this plan to the ESH group. The 2009 plan consists of:

- Deliverables
  - DOE Electrical Safety Handbook Publication
  - Publish a Best Practice on Arc Flash Calculations

- Spring Meeting (with IEEE) - February 2009
- Fall Workshop - October 2009
- Publish Best Practice for CFR851 issues
- Develop model for subsurface investigation program
- Refine tools for use of Severity Ranking Tool (continue to work with ORPS)
  
- Continuing Projects
  - Maintain and add to Center of Excellence website
  - Develop Interactions with other EFCOG groups
  - Continue DC subcommittee
  - Monthly telephone conferences
  
- New Projects
  - NFPA standards - promote more membership and proposals from DOE sites
  - Partner with Army Corps of Engineers on “Arc Flash Hazard Guidance” document
  - Publish arc flash training modules
  - Develop process to manage future DOE Electrical Safety Handbook
  - Work with EFCOG Occupational Medicine to develop position for AED use at sites
  - Update ISA 102 standards committee and initiate 1 - 2 new standards

The meeting was adjourned at 1730 Mountain Time on October 15.

The Electrical Safety Handbook team met throughout the week and continued to meet on October 16 to review and disposition comments. Pat Tran agreed to extend the schedule for submission of the Handbook revision to November 14 to allow the team to disposition all comments. The Handbook team adjourned at 1300 on October 16. Lloyd and Bobby Gray will disposition remaining comments and Lloyd will submit revision to Pat Tran by November 14.