

**EFCOG – ENGINEERING PRACTICES WORKING GROUP**  
**Fire Protection Sub Group**  
**Meeting Minutes**  
**6/6/2005**  
**Las Vegas, Nevada**

A meeting of the EFCOG Fire Protection Sub Group was conducted on 6/6/2005 from 1300 until approximately 1630 hours Pacific Time with Fire Protection personnel from Department of Energy (DOE) sites across the country. The agenda for the meeting is shown in Attachment 1. There was excellent turnout at the meeting with 12 sites and DOE-HQ represented. There was good, interactive discussion on the agenda topics and information was exchanged that appeared to be of interest to a number of participants.

Following is a recap of the agenda items covered:

**I. Introduction of Attendees**

The meeting was called to order. Everyone was asked to introduce themselves. A sign-in sheet was passed around. The list of attendees is shown in Attachment 2.

The agenda was reviewed and no changes were made.

**II. Agenda**

**Lightning Protection Systems Maintenance**

A question was asked as to what sites were doing regarding maintenance of lightning protection systems. Another question was if any sites had been asked by the Defense Nuclear Facilities Safety Board (DNFSB) what they were doing in the area of lightning protection system maintenance. Oakridge National Laboratory (ORNL) and Savannah River Site (SRS) said they had been asked about lightning protection system maintenance by the DNFSB. ORNL said they didn't have any real issues with what they were doing. SRS is looking at current procedures to determine what corrective actions may be required. Pantex provided information that they have a disciplined lightning protection inspection and maintenance program due to the frequency of lightning strikes in their area. In some instances daily checks are completed on lightning protection systems.

At issue is the fact that the inspection and maintenance requirements for lightning protection systems are included in Appendix B of NFPA 780 - Standard for the Installation of Lightning Protection Systems which is not considered a part of the requirements of the standard.

There was some discussion on the fact that NFPA 780 is open to interpretation on when a lightning protection system is required.

No action was taken on this topic. The discussion was for information only. If anyone has additional comments or information they are encouraged to provide that to the group.

**Reliability Centered Maintenance**

SRS began the discussion by talking about current initiatives to change the frequency of monthly emergency light, exit sign and fire extinguisher inspections to quarterly based on an analysis of failure modes and frequency of failures. Comment was made that OSHA requires a monthly fire extinguisher inspection in addition to NFPA 10 – Standard for Portable Fire Extinguishers. Any change to the monthly inspection frequency may require a review of the OSHA requirement. Idaho National Environmental and

Engineering Laboratory (INEEL) stated that they were already doing quarterly fire extinguisher inspections. As part of the justification to go to a quarterly inspection frequency they are required to do an annual trend evaluation of failures.

ORNL stated that they have relaxed some of the inspection requirements for water based suppression system as stated in NFPA 25 - Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems. Specifically, some monthly, quarterly and semi-annual inspections are not done at the frequency specified in NFPA 25. This change was justified based on frequency of failures and problems noted. Annual trending of failures is required to ensure that the reduced frequency of inspection/testing is not negatively impacting system reliability.

Some discussion was held regarding the primary failure mode for emergency lights. Specifically, battery problems and the fact that batteries often are unable to maintain lighting for the full 90 minutes specified in NFPA 101- Life Safety Code. A comment was made that it appears that if a battery is subjected to a full drain during a loss of power event that the rate of failure increases substantially due to the batteries not recovering when power is restored.

The Waste Isolation Pilot Project (WIPP), SRS and other sites have either blanket exemptions or facility specific exemptions to get relief from the 90 minute requirement for emergency lighting based on the actual egress times required. WIPP requires 45 minutes for their emergency lights in all facilities. SRS has been granted relief from the 90 minute requirement on specific facilities for which justification has been provided to the local DOE.

During the discussion on emergency lighting, a question was asked if any site had a standard policy that a facility should be evacuated on loss of power. No one knew of a policy that states when a power outage occurs that everyone should leave the building. This becomes important if the emergency lights come on and people do not leave until the lights begin to fail. The issue then becomes one of being able to safely evacuate a darkened building.

Action for this topic is left to the individual sites to determine what they can and want to do in the area of Reliability Centered Maintenance. In addition, any site considering a change to quarterly fire extinguisher inspections should ensure that the OSHA requirement will not be an issue. Finally, each site may want to consider establishing a protocol on building evacuations during power failures.

### **Lessons Learned and Status of D&D at Rocky Flats**

Bill Boyce and Bruce Campbell provided the update on the status of D&D at Rocky Flats. The D&D effort is nearly complete. Expectation is that the site will be closed in the November- December timeframe. The Fire Department will cease operations on June 30, 2005. Fire response will be provided by a local paid fire department. Medical will be handled by an ambulance stationed on site 24 hours a day. Fire Department equipment has mostly been claimed by other sites.

Power has been shutoff at the site. Power needs are being met with portable generators.

A wireless fire alarm/detection system installed several years ago proved to be very successful during D&D.

Life Safety was a primary driver. In some instances, holes were cut in building walls to provide additional egress paths. One problem encountered when walls are removed is the confusion caused when familiar "landmarks" are gone.

Advice from Bruce was that every fire event should be thoroughly investigated to avoid more expensive follow-up efforts. When investigations were done in a cursory manner, the follow-up investigation driven by external groups proved to be very expensive.

Other sites that said they are involved in D&D include INEEL, SRS and Oak Ridge.

### **Roundtable Discussion on Implementation of NFPA 1710**

The discussion on the implementation of NFPA 1710 - Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments was intended to determine how sites were either meeting the requirements of the standard or what exemptions may be in place. At this time, according to Bill Boyce, DOE-HQ has not seen any exemptions against NFPA 1710. Bill suggested that each site coordinate with their local DOE representatives to determine how to document non-compliance with the standard. It was suggested that sites with a Baseline Needs Assessment (BNA) use that as a basis for justifying staffing and response times. The thought would be to use the BNA when writing an Equivalency seeking relief from the requirements of NFPA 1710.

Action for this issue is for each site to determine how best to document how they will meet the intent of NFPA 1710. This should be done via discussions with the local DOE representatives. As sites make progress on this issue it is requested they share any pertinent information with the rest of the complex.

### **Update on American Glovebox Society Design Standard for Fire Protection**

Eric Gosswiller provided an update on the development of an American Glovebox Society Fire Protection standard for glove boxes. Eric reported that the standard is probably 1 - 1/2 to 2 years away from being approved. The Fire Protection Subgroup may be part of the peer review process when draft is ready.

A short discussion was held involving the use of polycarbonate materials in glove boxes. According to Eric, the standard will address this material, but that section has not yet been written.

### **Site Reports**

Site reports were provided by the attendees present. Some of the highlights included:  
Hanford (Dave Mertz) – Hanford uses a permit system that may be of interest to other sites. Hanford also has a list of criteria on what is required to deactivate fire protection systems.

Nevada Test Site (Kam Ng) – NTS is pushing for code analysis for new design. That is, what code and what was the basis for the code used in new design.

Idaho National Laboratory (Eric Gosswiller) – Argonne National Laboratory West has consolidated with INL. INL is rolling out a new chemical inventory system. Also looking at implementing an electronic impairment system (SRS volunteered to share their electronic impairment system with INL).

Y-12 (Ryan Williams) – Both D&D and new construction active at Y-12.

Oakridge National Laboratory (Jeff Sipes) – Initiative in place to have “owners” accept and implement fire protection requirements. Also working to gain consistency in FHA's to have a reference to system description information in SDD's rather than repeating information in FHA.

Kansas City Plant (Brian Jansen) – Recently addressed egress problems in basement of facility with new aisle way and double egress doors.

Waste Isolation (Howard Brown) – Combustible loading controls a major part of Fire Protection effort. Implementing new Issues Management program. Employee awareness training appears to be paying off. Underground areas present unique issues.

Lawrence Berkley National Laboratory (Gary Piermettei) – Recently completed a revision to their BNA that recognized availability of county resources. Using fire extinguisher scanning system for inventory and inspection. Looking at establishing a protocol on response to unusual odors.

Fermi (James Priest) – Have set up a barcode system for all pieces of fire protection equipment on-site. Some new underground facilities have been added. All areas are sprinklered and have detection and 2-hour safe areas have been created.

### **Identification of Group Initiatives**

A review of what had been discussed during the meeting was completed with the intent of identifying issues that the Fire Protection Subgroup would address in the coming year. Three areas were identified as areas of interest. They are:

Implementation of NFPA 1710 – Each site will need to address with their local Department of Energy representative how to get relief from the requirements of NFPA 1710. Most sites should be able to use their BNA as a basis for an equivalency.

NFPA Technical Committee Representatives – Want to improve communication between technical committee members and the various DOE sites. Want to look at expanding membership on committees of interest to the DOE complex. Need to be careful that any change to committee representation does not impact current subcontractor or DOE members. Richard Lewis of SRS has volunteered to lead this effort.

Combine DOE Fire Safety Workshop and NFPA Convention – Work with DOE-HQ to coordinate the timing of the DOE Fire Safety Workshop and the NFPA Convention.

### **III. Around the Table/Closing Comments**

The meeting was closed with a call for questions or comments.

**Attachment 1**  
**Agenda for Fire Protection Subgroup Meeting**  
**June 6, 2005**  
**1300 Hours**  
**The Hotel at Mandalay Bay**  
**Conference Room Mahogany B**

<b>Time</b>	<b>Activity</b>	<b>Responsibility</b>
<b>1300</b>	Welcome and Introductions	<b>Rich Lewis</b>
<b>1310</b>	Lightning Protection Systems Maintenance – What Are You Doing at Your Site?	<b>Rich Lewis</b>
<b>1315</b>	Reliability Centered Maintenance – Current Initiatives	<b>Rich Lewis</b> <b>Group</b> <b>Discussion</b>
<b>1330</b>	Lessons Learned and Status of D&D at Rocky Flats	<b>Bruce Campbell</b>
<b>1350</b>	Roundtable Discussion on Implementation of NFPA 1710 and Exemptions Sites May Have in Place	<b>Eric Gosswiller</b> <b>Group</b> <b>Discussion</b>
<b>1420</b>	Break	
<b>1420</b>	Update on American Glovebox Society Design Standard for Glovebox Fire Protection	<b>Eric Gosswiller</b>
<b>1445</b>	Site Reports – Initiatives/Best Practices and Questions	<b>Group Members</b>
<b>1600</b>	Identification of New Initiatives and Leads for Each Initiative	<b>Group Members</b>
<b>1630</b>	Closing Comments/Adjourn	<b>Rich Lewis</b>

**Attachment 2  
EFCOG Meeting Participants**

Name	Location
Rick Huckfeldt	Hanford
Dave Mertz	Hanford
Kam Ng	Nevada Test Site
Dennis Appel	Nevada Test Site
Roy Nelson	Idaho National Laboratory
Eric Gosswiller	Idaho National Laboratory
Bill Boyce	DOE-HQ/EM
Ryan Williams	Oakridge – Y-12
Jeff Sipes	Oakridge National Laboratory
Jeff Hancock	Pantex
Brian Jansen	Kansas City Plant
James Priest	Fermi National Accelerator Laboratory
Jim Boyce	Portsmouth
Howard Brown	Waste Isolation Pilot Project
Gary Piermattei	Lawrence Berkley National Laboratory
Bruce Campbell	Rocky Flats
Todd Matteson	Savannah River Site
James Harris	Savannah River Site
Richard Lewis	Savannah River Site