

## **EFCOG Electrical Safety Subgroup**

### **Minutes of Teleconference – November 20, 2013**

Greg Christensen called the meeting to order at 9:00 AM MST.

#### **Summer workshop at NREL July 14-18**

- Proposed Working groups – the first working will be changed into DC Transmission and Generation, to include wind and solar...Lloyd will change all working group descriptions – and will work with chairs to develop good descriptions. All other working groups will remain the same.
- Registration page – Greg requested that everyone re-register for the workshop.
- Conference Approval issue – no definite answer – but plan that the meeting doesn't need to be reevaluated or entered into the conference management planner. Mike Hicks said that there will be a final determination before the December meeting. Greg has requested that the National EFCOG chair obtain a designation for all future conferences as "operational" in order to obtain a permanent exemption from the conference management requirements.
- Other comments:
  - Lloyd Gordon recommended that all participants look at the agenda, as the timing has changed – with committee outbriefs on Friday. Greg identified that the original speakers will have right of first refusal.
  - LLNL requested that we confirm that the conference should be held in the summer... and the consensus was that anytime in the summer was acceptable.

#### **Electrical Safety Month**

- Theme: Marc stated that the theme for Electrical Safety Month 2014 was equipment safety. Lloyd recommended including counterfeit and recalled equipment in the discussion. Greg also asked to include "substandard" – lowest bid / lowest cost – international equipment – that didn't do what it even was supposed to do (chart of true costs).
- Additional Comments: Greg also noted that INL had 11 events most of which were caused by a failure to fully follow all the relevant procedures (LOTO, HEC, WP&C etc.). Marc noted that this was also a common thread across the complex, but a multi-themed approach with limited resources may result in a less-than-acceptable product. Greg asked for an updated after a week or so on how many people have asked to be a part of the process.

#### **Recent Events:**

- Lloyd identified that there have been several concerns at LANL around the zero energy verification (based on 6 events in 2 years), with the most recent occurring the previous Friday.
- Marc discussed a recent event that involved a worker receiving a shock from an unlisted battery charger, noting that the battery charger did not even have any manufacturer information on it. General discussion followed, including a discussion of the process by which equipment is purchased and brought into the lab. General consensus was that some procedural barrier is necessary to prevent this type of equipment from entering the laboratory.

- Mike Utes discussed a shock that occurred at Fermilab on Oct 29. A technical specialist was working in a service building on the Main Injector accelerator– leaning both hands against the rack when he received a shock in his right hand sufficient to cause his hand to clench. He noted that a system failure occurred. The machine had shutdown – his hand had contacted a large, unconnected coax cable – he received the shock as he touched it, and probably pushed the cable connector into the rack and grounded the system. The ground fault detection system trips at a 20 ma ground fault. At the other end of the cable in the tunnel, the outer insulation of the cable had flaked off due to radiation exposure and was resting on the quad bus (which was at about 600 v at the time of the trip according to the datalogger) – transmitting the quad bus voltage to the outer conductor of the coax cable. The site scored the event at 330, but Lloyd suggested that they evaluate the scoring based on the complexity of the waveform.

**Monthly report - Skip Searfoss:** Skip reported that there were 15 events in October (averaging 13.3 occurrences/month - 12.8 last year). Trend since January was a steady increase through June, then a decline. The lowest number was in December of 2012, from a high of 22 events in December. Running average since 2008 was 11.5. 4 shocks in October (2.7/month) – 29 reported events, with 30 in 2012. Around 73% of the events happened to non-Electrical Workers – seeing lowest numbers for shock since 2009 for Electrical Workers. There appears to be an increase associated with plugging/unplugging equipment. Two intrusion events (average is 2) for the month. Slight increase since June, but overall decrease since 2009. 5 LOTO events in October – 4/month average – steady increase since January, but the overall trend since 2009 is falling. Distribution of LOTO events by worker – 44% involved Electrical Workers (EW), 19% non-EW, remaining are subcontractors (6% non-EW). 3 reported near misses, with an increase from May – August, but the trend since 2010 has been decreasing. It appears that overall severity will increase slightly, with index going up to 22.9 for the complex. 108 days since last high severity event.

### **Open Discussion:**

- Marc Williams asked if anyone was performing a gap analysis on the 2014 NFPA 70 (National Electrical Code), noting that SNL had started. Both INL and LANL agreed to assist. The final gap analysis will be reviewed and posted as a best practice.

PNNL asked about adopting the 2015 70E. There was a general discussion surrounding adoption and the role of the local field office in accepting the site's determination. Greg noted that there was a best practice on the EFCOG home page that included the adoption analysis for both the 2009 and 2012 NFPA 70E standards.

The meeting was adjourned at 9:47 AM MST.

### **Action Items:**

- Mike Hicks will finalize exemption determination of workshop before next meeting.

- Marc Williams will provide a list of participants to Greg Christensen for Electrical Safety Month after the upcoming holiday.

**Attendees:**

Max Wright	Pantex	Eva Clark	SNL
Jerald Kinz	Hanford	Bill DeHope	LLNL
Heath Garrison	NREL	Jon Gault	NREL
Marc Williams	SNL	John Hjortshoj	Ames
Brian Sautter	SRS	Kevin Kennedy	Hanford WTP
Paul Chapman	Y-12	Troy McCuskey	NREL
Pat Tran	DOE HS-12	Terry Meisinger	DOE HQ HS-41
George Powell	NTS	Timothy Snow	NREL
Mike Hicks	DOE INL	Dennis Tuckness	INL
Greg Christensen	INL	Gary Dreifuerst	Contractor
John Pearson	ORISE	Mike Utes	Fermilab
Nasser Dehkordi	PNNL	Rosalie Brown	DOE – Science
Ajit Gwal	DNFSB	Sal Sferazza	NREL
Bob Eason	ORNL	Paul Daugherty	PORTS
Joe Kilar	ANL	Jonathan Swanks	ORNL
Michael Phillips	ICP	Jack George	Hanford
Stephen Crow	CHPRC/RL	Rocky Johnson	Hanford WTP
Mark McNellis	SNL	Mark Mathews	ORNL
Peter McNutt	NREL	Dennis Chew	LLNL
Skip Searfoss	DOE HQ	Vernon Phinney	INL