



**Highlights**  
**STWG Teleconference 10-02**  
**March 11, 2010, 2:00 p.m. EST**

**Participants**

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Dennis Armstrong, WSMS  
Wayne Davis, WSMS  
Dave Freshwater, NA-41  
Cliff Glantz, PNNL  
John Harris, DOE-ORO  
Aprill Jivelekas, WSMS  
Mister McDonnell, NSTec

Mike O'Keefee, NSTec  
Bill Possidente, NSTec  
Chuck Rives, BattellePantex  
Brad Salmonson, INL  
Jonathan Tapia, LANL  
Michele Wolfram, ORNL

**Roll Call**

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Michele Wolfram conducted a roll call, acknowledged that 13 professionals were present, and called the teleconference to order.

**Administrative Matters**

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**Annual EMI SIG Meeting:** A number of presentations from the STWG will be made during the HASubC and SCAPA meetings on Monday, May 3, 2010:

1. *Spray Leak* by Jim Jamison; 10:20–10:40 a.m., (HASubC), related to AI 08-02
2. *DOE TRU Standard* by Courtney Haggard and Aprill Jivelekas; 10:40–11:00 a.m., (HASubC), related to AI 08-01
3. *Leak Path Factor (LPF)* by Chuck Rives; 1:05–1:25 p.m. (SCAPA), related to AI 09-04
4. *Non-respirable Source Term* by Wayne Davis, 1:25–1:45 p.m., (SCAPA), related to AI 09-03.

**Annual STWG Meeting:** The STWG meeting will be held on Tuesday, May 4, 2010, from 7:00–8:00 a.m. The agenda consists of discussion of new and old business; path forward on presentations given, and a panel discussion on LPFs using Chuck Rives' SCAPA presentation as an introduction.

## Old Business

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**STWG AI 08-01**: The final disposition of a draft STWG paper on the DOE TRU Standard (DOE-STD-5506-2007) and its potential applications to Emergency Planning Hazards Assessments (EPHAs) awaits review completion by Dr. Jim Powers, NA-41. **ACTIVITY CONTINUING.**

**STWG AI 08-02**: Jim Jamison (Hanford) will seek STWG review on his draft FAQ which is intended to address the non-radiological vs. radiological health effects issue. He will give a presentation at the HASubC meeting. After discussion a path forward will be determined at the STWG meeting. **ACTIVITY CONTINUING.**

**STWG AI 09-01**: Earlier, Wayne Davis sent out an example for comment of how SRS handles criticality source terms and modeling. Although Wayne did not receive additional comments, the paper did stimulate discussion on whether the criticality event should include prompt dose. Wayne indicated that he is only looking at the inhalation dose from plume exposure and would not suggest looking at the prompt dose from these events. In the past, direct dose was considered because it was part of the Total Effective Dose Estimate definition. More recently, the focus is limited to the plume exposure pathway to support emergency preparedness decision-making. Michele stated that the EPHAs for facilities at ORNL currently evaluate direct dose from not only criticality events, but also loss of shielding events and that an argument is being developed against that practice. Mike O'Keefe pointed out that direct dose is not an important parameter from the standpoint of DOE151.1C, and it is not used to determine the classification of an event. Moreover, an unplanned nuclear criticality event is defined as an Operational Emergency and is not further classified. Wayne suggests that direct dose is more of a worker health and safety concern when there is a loss of shielding event. Chuck Rives commented that direct dose concerns could be identified in the Hazards Survey but do not need to be the basis for classification of events. Mike indicated that direct dose could come into play in emergency response decision-making when decisions are made regarding shelter- in- place or evacuation. For example, it may be better to evacuate into a plume of mixed fission products than to take cover and continue to experience a direct dose from an unshielded source. When modeling criticality impacts, Wayne is only looking at the airborne release of noble gases and iodine, as other mixed fission products are less important. The STWG decided it was acceptable to post Wayne Davis' *White Paper of Criticality Source Terms* on the SCAPA website for informational purposes only. Once the paper is posted, this action will be closed. **ACTIVITY CONTINUING.**

**STWG AI 09-02**: During an earlier teleconference, Wayne Davis sent a paper on general ball-milled Pu-238 characteristics and how SRS handles the material. Wayne discussed that the issue revolves around the use of non-conservative *respirable fractions* because the characteristics of the material are unusual and not widely known. Carl Mazzola indicated that the National Aeronautical and Space Administration (NASA) uses Pu-238 in its Radioisotope Thermoelectric Generators on deep space probes and large payloads to Mars. He asked his NASA counterparts, on the 2011 Mars Science Laboratory launch, for information that would be helpful. Although no specific comments were offered. The STWG decided it was acceptable to post the ball-milled Pu-238

reference paper on the SCAPA website for informational purposes. Once the paper is posted, this action will be closed. **ACTIVITY CONTINUING.**

**STWG AI 09-03:** At an earlier teleconference, Wayne Davis indicated that he is developing a paper discussing the use of non-respirable source terms to ensure that non-respirable dose impacts (e.g., ground shine) are being considered. Wayne emphasized that this is not limited to emergency management, but that the safety basis organization is also interested since they generally only model the respirable source terms as well. Wayne will make a presentation at the SCAPA meeting and a path forward for this item will be determined at the STWG meeting. If time allows, Wayne will send the paper accompanying the presentation to the STWG for review before the annual meeting. **ACTIVITY CONTINUING.**

**STWG AI 09-04:** During an earlier teleconference, Chuck Rives indicated that he was finding information sources on Leak Protection Factors (LPFs) to be quite sparse. Since DOE G 151.1-1 gives some flexibility in the determination of LPFs, more information on this topic would be useful. The overall project goal for this project is to compile available information on LPFs into a living document with periodic updates. Chuck has found other structural aspects of a building that, although not exactly LPFs, do affect the release from a secondary barrier (e.g., evaporation rates inside a building) and submitted a presentation proposal for a panel discussion at the annual EMI SIG meeting. The intent of this forum is for panel members to discuss how LPF data are used at their sites. This panel currently includes Phil Pfeiffer (INL), Susan Vosburg (SNL), Michele Wolfgram (ORNL), and Chuck Rives (Pantex). Chuck solicits ideas for topics to be discussed by each of the panel members. This item will be discussed in more detail at the STWG meeting to be held at the EMI SIG conference. **ACTIVITY CONTINUING.**

**STWG AI 09-05:** Someone at Hanford is still needed to lead an effort to develop an objective statement on the use of Dose Equivalent (DE) Curies "to support emergency planning and plume modeling during 'real events.'" Brian Baumann, originally raised this issue and was assigned to lead the activity, but he and his successor, Dan Conners, were transferred to new assignments outside of the Hanford EP Program. Dan Conners is now back with the EP Program and Cliff Glantz will approach him about his taking over the leadership role on this issue. **ACTIVITY CONTINUING.**

## **New Business**

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No new business was brought up on the call. Michele reminded everyone that the annual meeting is a good place to bring ideas for new business next year.

### **Next SCAPA STWG Meeting**

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The next SCAPA STWG teleconference is scheduled for **July 8, 2010**, at **2:00 p.m. EDT**. The STWG will meet at the EMI SIG on **May 4, 2010**.

### **Adjournment**

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The meeting adjourned at **2:30 p.m. EST**. Michele thanked everyone for their time and their contributions.