

## **SCAPA PROGRAM TELECONFERENCE 06-05**

**TUESDAY, JULY 26, 2006; 10:30 AM-11:30 AM**

### **Teleconference 06-05 Participants**

**Tom Bellinger, BWXT/Y-12**  
**Cindy Brizes, DOE/SR**  
**Jeng Chang, NA-41**  
**Dorothy Cohen, ORISE**  
**Doug Craig, ATL International**  
**Wayne Davis, WSRC**  
**Jerry Gibeault, INL**  
**Cliff Glantz, PNNL**  
**Chuck Hunter, SRNL**  
**Jim Jamison, SAIC**  
**Carl Mazzola, Shaw Environmental**  
**Mike O’Keeffe, Bechtel-Nevada**  
**Bill Possidente, Bechtel-Nevada**  
**Cristy Renner, Portsmouth**  
**Frank Roberto, INL**  
**Brad Salmonson, INL**  
**Richard Thomas, Intercet**  
**Kerry Ward, INL**  
**Gary Winner, ANL**

### **Teleconference Highlights**

#### **I. Roll Call**

Carl Mazzola conducted a roll call and acknowledged that 19 individuals involved in the SCAPA program were present. The teleconference was called to order and Carl thanked Dorothy Cohen for setting up the teleconference call.

During the previous SCAPA conference call, 23 individuals participated in the SCAPA teleconference.

#### **II. Administrative Matters**

Carl Mazzola led the discussion on various SCAPA administrative matters.

**Previous Teleconference Highlights:** Carl Mazzola stated that the final highlights from the 6/20/06 SCAPA Program Teleconference 06-04 has been issued and Dorothy Cohen will be posting it on the EMI SIG/SCAPA website.

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**SCAPA Action Item Status:** Carl Mazzola briefly discussed the latest updated SCAPA Program Action Item (AI) listing. Progress on closure continues since the last teleconference. At the time of this teleconference, 22 action items still remain open. The progress on many of these AIs will be discussed in today's conference call.

**American Nuclear Society (ANS) Topical Meetings on Emergency Preparedness & Response:** Carl Mazzola mentioned that the 9<sup>th</sup> Topical Meeting on EP & R was the most successful from a revenue viewpoint as \$90,000 in revenues were generated from the February 2006 meeting in Salt Lake City, UT. The meeting had many technical papers submitted and presented by SCAPA members.

The 10<sup>th</sup> EP & R meeting is in the planning stages and will take place in Albuquerque, NM, March 8-12, 2006. A Call for Papers is under preparation.

**III. SCAPA Working Group Activities**

**A. Chemical Exposures Working Group (CEWG) (Doug Craig, Chairman)**

Doug Craig led the discussion and provided an update on the following four CEWG action items and activities.

**AI 04-53:** A special session regarding the effect of SQA guidance on TEEL and Chemical Mixture Methodology (CMM) software will likely be submitted to the EMI SIG Steering Committee for the 2007 EMI SIG meeting. This information may also be configured into a presentation at the 2007 SCAPA meeting. The session configuration will not emerge until after the TEEL SQA effort and the updated TEEL methodology documentation has been completed. No additional discussion at this teleconference. **ACTIVITY PROCEEDING.**

**AI 05-03:** Work on developing TEEL derivation documentation and traceability as part of SQA continues. During the summer of 2005, Eduardo Donoso, a PNNL intern, performed code documentation work on the macros used to calculate TEEL values and also performed line-by-line checks of the macros to ensure that they are consistent with the published TEEL methodology. Doug Craig and Ray Lux completed final reviews and modifications of the draft Donoso report and ATL International used the draft Donoso report in its follow-on work related to TEEL SQA and documentation. Cliff Glantz is reviewing both reports which will be issued by ATL International. Separately, Doug Craig and Ray Lux are working on incorporating the new HCNs into the CMM. **ACTIVITY PROCEEDING.**

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**AI 05-09:** Ernie Harr, who was not available for the teleconference, had earlier reported on the status of the TEEL documentation and database project. Doug Craig mentioned that ATL is addressing the 1,553 comments to the May 12, 2006 draft and the target for publication of the TEEL document is at the end of July 2006. **ACTIVITY PROCEEDING.**

**AI 05-10:** The Revision 22 TEEL effort for 358 new chemicals is progressing with 189 completed so far. Doug mentioned that he should have the remaining 169 chemicals completed and ready for the new TAG TEEL Quality Assurance (QA) criteria of 100% review by the end of August. Carl inquired whether the QA process on the 189 chemicals could begin now so that the Revision 22 TEELs would be able to be published in a timely manner. Cliff Glantz mentioned that Rocky Petrocchi may be too busy to begin this work, but Po-Yung Lu is available. Cliff will check with Po-Yung whether he could begin the QA work on the 189 completed chemicals as soon as possible.

Doug also mentioned that the Occupational Safety and Health Administration (OSHA) chromium VI values for 35 separate chemicals will be incorporated into the TEEL Revision 22 effort. **ACTIVITY PROCEEDING.**

**B. Chemical Mixtures Working Group (Doug Craig, Chairman)**

Rocky Petrocchi was unavailable for the teleconference, but provided information to Carl Mazzola to update the following eight CMWG action items and activities.

**AI 04-23:** Rocky indicated that he is now 55% complete on the development of HCNs for the approximately 300 TEEL Revision 20 new chemicals. Work on the TEELs Revision 21 chemicals will commence after the Revision 20 work is completed. No completion date was stated for this project. **ACTIVITY PROCEEDING.**

**AI 04-44:** Rocky continues his work on the HCN methodology paper and is incorporating the revised CMM with the new acute HCNs which is being addressed in AI 06-13. A draft, which was originally scheduled for March 2006, is targeted for peer review by SCAPA members in August, 2006. The paper will be submitted to the *Journal of Applied Toxicology* for publication once SCAPA has finished its review and Rocky has incorporated comments. **ACTIVITY PROCEEDING.**

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**AI 06-07:** NA-41 requested SCAPA to address the following mixture methodology issue: The mixture methodology is being applied to source terms involving the release of dissimilar materials from separate and multiple containers. The basic assumption, in order to apply the mixture methodology, is that the materials are released simultaneously, and a plume is formed that represents a mixture of the materials. This is a very conservative assumption, but may be the only one that will yield consequence estimates. It is very important that the limits on the application of this methodology be addressed; assuming, of course, that any exist. Also, in a practical sense, how should the results of the mixture methodology best be used in emergency planning? Rocky Petrocchi developed a response to this question on April 3, 2006 and Doug concurred on June 7, 2006. It was sent to Jim Fairbent and is presently under NA-41 review. **ACTIVITY PROCEEDING.**

**AI 06-09:** Rocky discussed the work done so far towards resolution of an issue associated with health hazard standards ratings. The three health hazard rating systems (i.e., NFPA 704, HMIS, and SAX) that are in use are all very different from one another, and DOE O 151.1C requires the use of NFPA 704. These differences, if substantial, could adversely impact the DOE EP chemical hazard screening system. Rocky has begun to examine the differences between the health hazard ratings and preliminary results of side-by-side health hazard criteria comparisons show significant difference between NFPA 704 and Sax criteria; implying that some chemicals may be screened out of the DOE emergency preparedness system that should be screened out, thereby potentially degrading the screening process. Rocky plans to examine the HMIS system (HHR criteria in hand) and possibly the JT Baker and Sigma-Aldrich systems also (if these companies will release their HHR criteria) to determine if they are different from NFPA 704. A White Paper of the findings and recommendations will be prepared and sent for SCAPA review at some time in the future. **ACTIVITY PROCEEDING.**

**AI 06-10:** The DOE/NNSA Safety Analysis (SA) community is not using the CMM in their 10 CFR 830-driven Documented Safety Analyses (DSAs) which is a non-conservative practice. This may cause a significant disconnect with Emergency Planning (EP) as EP analysts begin to implement the CMM in response to guidance in a draft Emergency Management Guide (EMG), and find chemical mixture release scenarios with significant consequences whereas SA analysts will not. The lack of consistent regulatory drivers is the primary issue. Carl Mazzola brought this message to Dick Englehart, during a recent standards meeting in Reno, NV on June 5, 2006 and he was very receptive to learn more about the CMM. Dick is the DOE/EH representative to the Safety Analysis Working Group (SAWG) of the Energy Facility Contractor Group (EFCOG), which addresses such matters. Dick indicated that he would speak to Jim Fairbent about this the next opportunity that he was in Forrestal. Rocky Petrocchi will be following up with Dick Englehart by contacting him and providing existing CMM documentation. No additional discussion at this teleconference. **ACTIVITY PROCEEDING.**

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**AI 06-14:** Rocky reported that the revision of the automated CMM Excel workbook to include the expanded list of acute HCNs was initiated as part of the CMM revision now that work on AI 06-13 was completed. Doug and Rocky will perform an appropriate SQA review before posting the revised file on the SCAPA website. **ACTIVITY PROCEEDING.**

**AI 06-15:** After changes to the CMM HCN development procedure are implemented, Doug and Rocky are to prioritize the current 2,234 HCN-developed chemicals in TEELs Revision 19 that are affected by new acute HCNs and review them in data base references to determine if a chronic HCN was used as a surrogate for an acute effect. These are to be revised as necessary. At the same time, a 2004 task will be incorporated to review and revise older HCN 4.00 chemicals having similar issues. No additional discussion at this teleconference. **ACTIVITY PROCEEDING.**

**C. Consequence Assessment Modeling Working Group (Cliff Glantz, Chairman)**

Cliff Glantz led the discussion and provided an update on the following seven CAMWG action items and activities.

**AI 03-08:** John Nasstrom is still working to create technical documentation for the NARAC system. No additional discussion at this teleconference. **ACTIVITY PROCEEDING.**

**AI 04-39:** At earlier teleconferences, there was discussion on the need to identify other issues that the CAMWG should address beyond the toolbox and the NARAC User's Advisory Group. The toolbox interface is a significant effort which is still dominating the work of the CAMWG. No additional discussion at this teleconference. **ACTIVITY PROCEEDING.**

**AI 05-05:** At an earlier teleconference, there was significant discussion on NARAC ingestion of the ARCON96 model. John Nasstrom plans to use this information and combine it with other work associated with a Department of Homeland Security (DHS) urban diffusion program that he is working with Jerry Allwine, PNNL. The modeling will consider initial plume spreading when intersecting the near-field buildings, with additional spreading as it encounters far-field buildings in an urban complex environment. No additional discussion at this teleconference. **ACTIVITY PROCEEDING.**

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**AI 05-07:** Wayne Davis discussed the progress on determining an appropriate dose conversion factor (DCF) to use in EPHAs and consequence assessment models. Many DOE/NNSA sites still use the ICRP-30 DCFs, while some use the ICRP-68/72 DCFs, while others are considering using the upcoming ICRP-90 DCFs. Wayne indicated that changing from ICRP-30 DCFs at DOE/NNSA sites required the concurrence of Joel Rabofsky, DOE/EH-52, Office of Worker Protection Policies and Programs. That concurrence was applied for and subsequently granted for a DOE/NNSA site to change its protocol and use ICRP-72 DCFs. Wayne will provide a copy of the letter that he received from DOE/EH-52 which documents this concurrence. Wayne indicated that he had contacted Christina Edwards and Norris Johnson to get a perspective from the Federal Radiological Monitoring and Assessment Program (FRMAP), but has not yet received a response from them. Wayne also shared that the Savannah River Site (SRS) has already received permission to switch to ICRP-72 for its safety analysis work and onsite dose calculations. The change to ICRP-72 reduces the doses from Pu-238 and Pu-239 compounds by a factor of five, but has a negligible effect on uranium-based compounds. A slight 1% increase in tritium was noted. Wayne is in the process of developing a White Paper for SCAPA review and will also provide a summary of the findings to be posted on the SCAPA web page. **ACTIVITY PROCEEDING.**

**AI 06-01:** At earlier teleconferences, Cliff Glantz reported that the teleconference with DOE/EH in April 2006 raised more questions about SQA requirements than it answered. At the heart of the matter, there is still considerable uncertainty about the appropriate SQA Levels (as defined in the DOE O 414.1C and DOE G 414.1-4) that should be assigned to different types of consequence assessment models, as DOE/EH is making no distinction between the amount of SQA required for Central Registry Toolbox models and those models that are not in the toolbox. This is a concern because of the huge effort required to bring even simple models into compliance with the SQA requirements for the Central Registry Toolbox (i.e., the gap analyses DOE/EH commissioned indicated that each of the simple models initially selected for the toolbox would require an average of over \$300,000 in additional SQA work). Cliff has proposed that models used for EPHA safety planning activities should require substantially more SQA than those models whose use could not appreciably impact human health and safety (e.g., Emergency Operation Center models used to deploy field teams toward promising monitoring locations or to identify offsite areas that are impacted at levels where short-term exposures pose no threat to human health and safety). One of the solid outcomes from that teleconference with DOE/EH is that SCAPA is encouraging the inclusion into the Central Registry Toolbox of codes that are widely used for Emergency Preparedness Hazards Assessments (EPHA) (i.e., HOTSPOT).

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Cliff reported that additional interactions between the SCAPA SQA Working Group and the DOE/EH Central Registry have taken place and the interfaces between these entities is strengthening. Cliff has developed simplified guidance which may be adopted by the Registry that will help DOE/NNSA sites determine which of their software is Level A, B, or C. For example, software that is needed to maintain radiological material in a safe configuration is clearly Level A. Debra Sparkman, DOE/EH has expressed her appreciation for this SCAPA product.

Cliff reported that PNNL is presently writing internal guidance for its staff on how to implement DOE O 414.1C for safety software, inclusive of consequence assessment modeling. When it is completed, Cliff will present it to SCAPA.

Cliff also indicated that the HOTSPOT code was selected as the 8<sup>th</sup> model for inclusion in the DOE/EH Central registry Toolbox and several SCAPA members (i.e., Larry Campbell, Carl Mazzola, Wayne Davis) will be on the review team. Cliff Glantz is the software sponsor and the evaluation team will work closely with Steve Homann, LLNL, the HOTSPOT developer. Work on this effort will begin shortly and continue into October, 2006. **ACTIVITY PROCEEDING.**

**AI 06/02:** At an earlier teleconference, it was noted that as part of the UF<sub>6</sub> effort, Michele Baker noted that NARAC does not use a straight-line Gaussian model for F-stability classes at very low wind speeds. Brenda Pobanz and Michelle Baker are separately running simulations with NARAC to determine the differences between NARAC and other codes at stable low wind speed conditions. No further discussion at this meeting. **ACTIVITY PROCEEDING.**

**AI 06-11:** Earlier, Diana de la Rosa, a Sandia National Laboratory (SNL) emergency planner, asked SCAPA to assist SNL in benchmarking its Consequence Assessment Team (CAT). The SNL team is clearly understaffed, but SNL emergency management needs to know what the right size should be relative to its hazards assessment and consequence assessment program. Marie Dunkle, who developed a benchmarking algorithm several years ago, has been consulted and was asked to provide feedback to SCAPA. A questionnaire, developed by SNL for the rest of the DOE/NNSA emergency management community, will be sent out for additional input, if the benchmarking guidance does not resolve the matter. Cliff will call Diana to see if she has received any materials from Marie yet. **ACTIVITY PROCEEDING.**

**D. Biosafety Working Group (Dina Sassone, Chairman)**

Cliff Glantz led the discussion for Dina Sassone and provided an update on the following two BWG action items and activities.



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**AI 06-06:** At an earlier teleconference, a new action item, opened per request of NA-41 to address the transport and dispersion of biological agents/toxins released from DOE/NNSA biosafety facilities, which was left as an open subject in the Biosafety EMG, was briefly discussed. Per NA-41, there is a need to determine what models are available and appropriate for predictions, especially for lab size source terms and not production quantities. In addition, it needs to be ascertained as to what are the limitations of the Gaussian models, and what other modeling tools are available or being developed. Lastly, because a level of severity will likely not be available for defining a Protective Action Criterion (PAC), there is a need to determine how the modeling results will be best used? This was discussed at the BWG meeting. There will be a BWG teleconference within the next few weeks to further discuss this and formulate a plan to determine a response. No additional discussion at this teleconference. **ACTIVITY PROCEEDING.**

**AI 06-08:** Dina Sassone has developed a draft charter which is presently under review by the BWG. This will also be a topic for the upcoming BWG teleconference. Cliff Glantz has provided comments to the draft Charter. **ACTIVITY PROCEEDING.**

Comments were submitted to NA-41 on the Biosafety EMG, but a later version has not yet been issued.

Frank Roberto shared that INL had an inspection by the Centers for Disease Control (CDC) last week. They looked at the INL Incident Response Plan (IRP) and had no critical comments. CDC did indicate that the IRP should reference the site emergency plan.

**E. Source Term Working Group (Cliff Glantz, Acting Chairman)**

**AI 06-05:** At an earlier teleconference, Carl Mazzola stated that the Source Term Working Group (STWG) would be meeting during the EMI SIG Meeting and would look into different aspects of source term inclusive of quantifying source terms for a full spectrum of releases, the five-factor formula (ANSI/ANS-5.10), particle size distribution work being performed at SNL, chemical phenomenology for pressurized liquid, non-pressurized liquid and pressurized gas releases, choked flow, etc. The STWG did meet and discussed various different products and issues it could work on. The STWG is being populated and future tasks are being defined. Carl invited others on this teleconference that had expertise in this area, to populate the STWG. **ACTIVITY PROCEEDING.**



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**AI 06-12:** At the May 3, 2006 STWG meeting, there was discussion that there is a lot of source term information in the literature and various sites were doing source term work, but none of it was shared or in an easily accessible document. Accordingly, a STWG webpage will be initiated. STWG members will provide copies or references to key source term documents that can be shared with other SCAPA members, and these documents and references will be posted on the SCAPA website. A mechanism to ask the STWG source term questions will be set up on the SCAPA website. No additional discussion at this teleconference. **ACTIVITY PROCEEDING.**

**IV. SCAPA Web Page Report**

Cliff Glantz mentioned that several SCAPA web page updates were being planned and that recent meeting minutes and the SCAPA and DMCC reports will be posted.

Cliff also stated that a new STWG page is being planned and will be implemented soon. Lastly, the contact list has been updated.

**V. EPA AEGLs/EPA PAGs/DHS PALs Status**

Richard Thomas reported for Po-Yung Lu on EPA/AEGL and DHS/PAL activities:

- **AEGLs:** The human toxicology issue has not been resolved and is awaiting the final rule on protection in human research to be issued. There are more than 12,000 comments received so far on the proposed rule and EPA attorneys are awaiting their resolution. Clearly, the matter associated with not using human toxicology studies for AEGL development is a long way from resolution. There will be a National Advisory Committee (NAC) meeting in Washington, DC on September 6-8, to review the draft Technical Support Documents (TSDs) that do not contain any human subject information pertinent to the development of AEGL values. There are only 4-5 chemicals that do not contain studies related to human toxicological studies and interim AEGLs could be approved for those substances at that meeting. After the interim AEGLs are established they will be published in the Federal Register (FR) and will undergo a 30-60 day comment period review. Should there be new interim AEGLs prior to the publication of the Revision 22 TEELs, they will be provided to Doug Craig to ensure their integration.

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- **PALs**: The first Provisional Advisory Levels (PAL) meeting of the Expert Consultation Panel Meeting for PALs took place in April 4-6, 2006 at Cincinnati, OH. The Standing Operating Procedures (SOP), PAL definitions and Technical Support Documents (TSD) of seven G-agents that followed existing CDC guidance were discussed. The second PAL meeting took place on June 26-29 at Las Vegas, NV to continue discussion on the SOP and TSD G-agents. There will be a meeting at the DHS Research Center this month to continue the process and then two review cycles on the technical support documents will take place. In October, 2006, the group will meet again and the PALs will be issued for external review.

Gustavo Vazquez was not available to report on the two initiatives regarding PAGs. Listed below is the status of these initiatives:

- **IND and RDD PAGs**: The PAGs for Improvised Nuclear Devices (INDs) and Radiological Dispersal Devices (RDDs) were issued by DHS in a Federal Register notice on January 3, 2006 (FR 71 No. 1), as draft guidance for interim use and the comment period had been extended to April 14, 2006. Andy Wallo and Steve Domotor of DOE/EH-41 are on the working group.
- **EPA PAGs**: The new EPA PAGs have been drafted, and at a June 6, 2006 meeting, the EPA project manager mentioned that they may be released for interagency review in July 2006.

## **VI. AIHA ERPGs Status**

Richard Thomas reported on the ERPG Committee activities.

The Emergency Response Planning (ERP) Committee met on June 22-23 in Washington, DC.

There will be another ERP Committee meeting on September 11-12, 2006 in Denver, CO to finalize the list of 16-17 substances to be included in the 2007 ERPG manual. Minutes of this meeting will be forwarded to Doug Craig and Cliff Glantz.

No further discussion on the meeting with the European Commission on the 22 case studies supporting the European Acute Emergency Threshold Levels (AETLs). At this meeting, they will be looking at the AETL values which are one-hour exposure toxic endpoints, which have been developed as a collaborative effort between Australia, Belgium, France, Germany and the United Kingdom. The ERP Committee will be considering ways to coordinate ERPG development with both AEGL and AETL development activities.

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**VII. New Business**

No new business was brought to the floor.

**VIII. Next SCAPA Conference Call**

Carl Mazzola tentatively scheduled the 6<sup>th</sup> SCAPA Conference call of 2006 for **Wednesday, August 30, 2006 at 10:30 a.m. EDT.**

**IX. Adjournment**

The teleconference was adjourned at **11:30 a.m. EDT.** Carl thanked everyone for their time and their contributions.

**X. SCAPA Program Action Item (AI) Status**

Based on the information exchange from this teleconference, no AIs were closed, and no new AIs were opened, since the previous teleconference.

The color-coding system used in the teleconference highlights are as follows:

- Existing AIs that are not closed are colored green;
- New AIs are colored yellow; and,
- AIs to be closed are colored blue.

Carl Mazzola will update the SCAPA action item list based on the information exchange from this conference call.

Respectfully Submitted,

*Carl Mazzola*

Carl Mazzola