

SCAPA PROGRAM TELECONFERENCE 06-04
TUESDAY, JUNE 20, 2006; 10:30 AM-11:45 AM

Participants:

- Jeng Chang, NA-41
- Dorothy Cohen, ORISE
- Doug Craig, ATL International
- Wayne Davis, WSRC
- Jerry Gibeault, INL
- Cliff Glantz, PNNL
- Jim Hardy, Connecticut Department of Homeland Security
- Ernie Harr, ATL International
- John Harris, OROO
- Eva Hickey, PNNL
- Earl Hughes, DOE/EH-21
- Chuck Hunter, SRNL
- Po-Yung Lu, ORNL
- Lori Manis, ORNL
- Pete Matonis, INL
- Carl Mazzola, Shaw Environmental
- Mike O’Keeffe, Bechtel-Neveada
- Rocky Petrocchi, WGI
- Bill Possidente, Bechtel-Nevada
- Frank Roberto, INL
- Judith Ryland, ORISE
- Richard Thomas, Intercet
- Gustavo Vazquez, EH-41

Teleconference Highlights

I. Roll Call

Carl Mazzola conducted a roll call and acknowledged that 23 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 3/28/06 SCAPA Program Teleconference 06-03 has been issued and Dorothy Cohen will be posting it on the EMI SIG/SCAPA website.

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Recap of EMI SIG and SCAPA meetings: Carl Mazzola and Cliff Glantz recapped last month's EMI SIG and SCAPA meetings. During the May 1-4, 2006 period, there was a meeting of the DOE Meteorological Coordinating Council (DMCC), the SCAPA Meeting, separate meetings of the SCAPA Working Groups including the Chemical Exposure Working Group (CEWG)/Chemical Mixtures Working Group (CMWG), TEELs Advisory Group (TAG), Consequence Assessment Modeling Working Group (CAMWG), Biosafety Working Group (BWG), and the first meeting of the Source Term Working Group (STWG) in more than 10 years. In addition, the NARAC User's Advisory Group met. Lastly, there were two special SCAPA sessions within the EMI SIG Meeting on the Role of the Biosafety Officer and Software Quality Assurance (SQA).

DMCC and SCAPA Reports: Carl Mazzola has completed an 88-page report of the SCAPA meeting and a 44-page report of the DMCC Meeting, which will be posted on the EMI SIG web page the week of June 26, 2006. The 23 presentations for the SCAPA meeting and the 11 presentations for the DMCC meeting have already been posted on the EMI SIG web page.

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 and SCAPA meeting. At the time of this teleconference, 20 action items still remain open. Several new action items were opened up during the EMI SIG and SCAPA meetings in Las Vegas, NV, May 2-4, 2006. Each of these will be discussed in today's conference call.

III. SCAPA Working Group Activities

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

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

AI 04-53: There was some discussion on the upcoming session a future EMI SIG meeting regarding the effect of SQA guidance on TEEL and Chemical Mixture Methodology (CMM) software. However, the details of the session will not emerge until after the TEEL SQA effort and the updated TEEL methodology documentation has been completed. This session will be targeted for submission to EMI SIG Steering Committee for inclusion in the agenda of the 2007 EMI SIG meeting. It may also be a talk in the 2007 SCAPA meeting. **ACTIVITY PROCEEDING.**

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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 will provide final comments and the report will be issued by ATL International. **ACTIVITY PROCEEDING.**

AI 05-09: Jim Weeks made a presentation on the project during the SCAPA meeting. Ernie Harr reported on the status of the TEEL documentation and database project and indicated that 1,553 comments were received through May 12, 2006 from 11 reviewers, and these were put on a spreadsheet and sorted. Some of the comments are basic concept-related. Jim Weeks will be discussing the resolution of the comments with TAG later in the month. Due to the extensiveness of the comments, the target for publication of the TEEL document has slipped six weeks and now is mid-July 2006.

With respect to the searchable TEELs data base, Ernie reported that access spreadsheets with macros have been developed and a draft document that describes the architecture of the spreadsheets and macros has been completed. **ACTIVITY PROCEEDING.**

AI 05-10: The Revision 22 TEEL effort for 358 new chemicals is progressing and is now targeted for publication in October 2006. Doug cautioned that the new TAG TEEL Quality Assurance (QA) criteria of 100% review would likely slow down the production process. **ACTIVITY PROCEEDING.**

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

Rocky Petrocchi led the discussion and provided an update on the following eight CMWG action items and activities.

AI 04-23: Rocky indicated that he is now 40% 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.**

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

AI 06-07: NA-41 had requested SCAPA to look into 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. This response will be sent to Cliff Glantz for further SCAPA review. **ACTIVITY PROCEEDING.**

AI 06-09: During the CEWG/CMWG meeting, Rocky presented an issue associated with health hazard standards ratings. There are three health hazard rating systems (i.e., NFPA, HMIS, and SAX) in use, all of which are very different from one another. Rocky emphasized that DOE O 151.1C requires the use of NFPA 704. There was some discussion relative to proposed 10 CFR 851 and its health hazard requirements, and that NFPA 704 was dropped in the final rulemaking of 10 CFR 851. Earl Hughes indicated that it may have been dropped since if you codify a specific standard, you will always have to change the enabling regulation every time the standard changes, which is a cumbersome process. The objective of this action item is to examine the differences between the health hazard ratings and make recommendations accordingly. **ACTIVITY PROCEEDING.**

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AI 06-10: At the May 2, 2006 CEWG/CMWG meeting, there was discussion that 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 will cause a significant disconnect with Emergency Planning (EP) as EP analysts begins to implement the CMM in response to guidance in a draft Emergency Management Guide (EMG), and finds 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 Fairobent 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. **ACTIVITY PROCEEDING.**

AI 06-13: At the May 2, 2006 TAG meeting, and subsequent approval by NA-41 on May 23 2006, it was determined that a revision to the CMM was needed. There is a need to incorporate new acute HCNs into the existing HCN development methodology priority list, and use it to develop HCNs for all chemicals added to the TEEL list after TEELs Revision 19. Some chronic HCNs were used as surrogates for acute effects in the past due to the lack of acute-effect HCNs. The chronic HCNs are not as applicable as the acute HCNs for emergency management applications. Since that meeting, Rocky and Doug have revised the CMM procedure for HCN development incorporating the new acute HCNs. The new CMM HCN development procedure is now ready for the development of HCNs for Revision 20 and 21 TEELs and to revise HCNs for affected chemicals from earlier TEEL revisions. **THIS ACTION ITEM WILL BE CLOSED.**

AI 06-14: At the May 2, 2006 TAG meeting, a task to revise the automated CMM Excel workbook to include the expanded list of acute HCNs was initiated as part of the CMM revision. Doug and Rocky will perform an appropriate SQA review before posting the revised file on the SCAPA website. **ACTIVITY PROCEEDING.**

AI 06-15: At the May 2, 2006 TAG meeting, and subsequent approval by NA-41 on May 23 2006, it was determined that 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. **ACTIVITY PROCEEDING.**

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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. This was discussed at the CAMWG Meeting during the EMI SIG Meeting. **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.**

AI 05-07: At previous teleconferences, Wayne Davis discussed the need to determine an appropriate dose conversion factor (DCF) to use in EPHAs and consequence assessment models. Many DOE/NNSA sites use the ICRP-30 DCFs, while some use the ICRP-68/72 DCFs, while others are considering using the upcoming ICRP-90 DCFs. Wayne had earlier shared to the group that any change from ICRP-30 DCFs will require the concurrence of Joel Rabofsky, DOE/EH-52, Office of Worker Protection Policies and Programs, and that such concurrences would be on a case-by-case basis. Wayne was pleased to report that in a recent conversation with EH-52, Rabofsky supports the SCAPA position statement that states the appropriateness of using the newer DCFs in emergency planning applications. Wayne will be contacting Christina Edwards and Norris Johnson to get a perspective from the Federal Radiological Monitoring and Assessment Program (FRMAP). **ACTIVITY PROCEEDING.**

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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). Cliff reported that more work had been conducted by the SCAPA SQA Working Group since the call inclusive of more interaction with the DOE/EH Central Registry. At the EMI SIG meeting, the SQA working group discussed this at length with Deb Sparkman (DOE/EH) during a 90-minute EMI SIG Special Session on SQA.

During this teleconference, Cliff reported that PNNL is presently writing guidance for its staff on how to implement DOE O 414.1C for safety software and is working closely with Debra Sparkman on this task. In addition, the HOTSPOT code was selected as the 8th model for inclusion in the DOE/EH Central registry Toolbox and several SCAPA members will be on the review team. **ACTIVITY PROCEEDING.**

AI 06/02: At an earlier teleconference, it was noted that as part of the UF₆ 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.**

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AI 06-11: At the May 2, 2006 CAMWG meeting, Diana de la Rosa, a 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 will be providing 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.

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.

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. **ACTIVITY PROCEEDING.**

AI 06-08: At the April 16, 2006 BWG teleconference the need for a charter was discussed. 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. **ACTIVITY PROCEEDING.**

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. **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. **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.

V. EPA AEGLs/EPA PAGs/DHS PALs Status

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

- **AEGLs:** 30-40 of the 150 chemicals under National Academy of Sciences (NAS) preparation will now be moving forward as the human toxicology issue has been partially resolved. There will be a National Advisory Committee (NAC) meeting in late August to review the draft Technical Support Documents (TSDs) that do not contain any human subject information pertinent to the development of AEGL values. The issue of human subject information is still under intense debate. After the interim AEGLs are established they will be published in the Federal Register (FR) and will undergo a 30-60 day comment period. Usually 20 interim AEGLs are established each year, and the goal is to have a 4- to 5-month turnaround time for each set of AEGLs. 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.
- **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 TSD of G-agents were discussed. The second PAL meeting is scheduled for June 26-29 at Las Vegas, NV to continue discuss on the SOP and TSD G-agents. It is a public meeting, any person interested in attending the meeting should contact PAL Project Officer at EPA is Femi Adeshina, 202-564-1539, Adeshina.femi@epa.gov. Carl Mazzola asked Mike O'Keeffe or Bill Possidente to possibly attend since the meeting was local to them.

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Gustavo Vazquez reported on the two initiatives regarding PAGs.:

- **IND and RDD PAGs:** At an earlier teleconference, Gus indicated that 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. No additional discussion during this teleconference.
- **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 next Emergency Response Planning (ERP) Committee meeting is scheduled for June 22-23 in Washington, DC. Nine compounds will be reviewed during that meeting, while five compounds have already been approved in 2006. There will be another ERP Committee meeting on September 21-22, 2006 at a venue to be determined to meet 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.

Richard also welcomed Rocky Petrocchi as a new member of the ERP Committee.

VII. New Business

Mike O'Keeffe inquired whether the CMM could address a chemical release combined with a stack release of another chemical. Although Doug Craig indicated that the CMM can address this particular scenario, Carl Mazzola emphasized that such a scenario is beyond the scope of an EPHA.

VIII. Next SCAPA Conference Call

Carl Mazzola tentatively scheduled the 5th SCAPA Conference call of 2006 for **Wednesday, July 26, 2006 at 10:30 a.m. EDT.**

IX. Adjournment

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The teleconference was adjourned at **11:44 a.m.** Carl thanked everyone for their time and their contributions.

X. SCAPA Program Action Item (AI) Status

Based on the information exchange from this teleconference, one AI was closed, and seven 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