SCAPA PROGRAM TELECONFERENCE 06-07

WEDNESDAY, NOVEMBER 1, 2006; 10:30 AM-11:30 AM

Teleconference 06-07 Participants

Tom Bellinger, BWXT/Y-12

Dorothy Cohen, ORISE

Doug Craig, ATL International

Al Feldt, DOE/NA-41

Patricia Frankovitch, ANL

Jerry Gibeault, INL

Cliff Glantz, PNNL

Courtney Haggard, WSMS Mid-America

John Harris, OROO

Jim Jamison, SAIC

Sam Joh, ANL

Darrell Lake, INL

Dan Marsick, DOE/HSS-11

April Martin, WSMS Mid-America

Greg Martin, SAIC

Lori Martin, WSMS Mid-America

Pete Matonis, INL

Carl Mazzola. Shaw Environmental

Yvonne Mescall, NTS

Mike O'Keeffe, NTS

Katie Panek, ANL

Rocky Petrocchi, WGI

Bill Possidente, NTS

Judith Ryland, ORISE

Frank Roberto, INL

Brad Salmonson, INL

Dave Stuhan.

Richard Thomas, Intercet

Gail Van Gorp, ANL

Gus Vazquez, DOE/HSS-21

Kerry Ward, INL

Gary Winner, ANL

Michele Wolfgram, WSMS Mid-America

<u>Teleconference Highlights</u>

I. Roll Call

Carl Mazzola conducted a roll call and acknowledged that 33 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.

Twenty-one individuals participated in the previous SCAPA conference call. The conference calls in 2006 ranged from 19-33 participants, which reflect a strong baseline interest in the SCAPA program.

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 8/30/06 SCAPA Program Teleconference 06-06 has been issued and Dorothy Cohen will be posting it on the EMI SIG/SCAPA website.

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, 23 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 (EP & R): Carl Mazzola mentioned that the 10th EP & R meeting continues in the planning stages and will take place in Albuquerque, NM, March 8-12, 2008. A Call for Papers is under preparation. As soon as it is ready, it will be forwarded to the SCAPA and DMCC list serves. Paper reviews will occur during the summer 2007.

11th Meeting of the Nuclear Utility Meteorological Data Users Group (NUMUG): NUMUG, a users group of nuclear utility meteorologists who are involved in maintaining and operating meteorological monitoring programs, meteorological instrumentation vendors, and representatives from DOE/NNSA meteorological monitoring programs and the Nuclear Regulatory Commission (NRC) held their 11th Meeting in St. Louis, MO, October 11-13, 2006. DOE/NNSA representatives from BNL, SRS, YMPO, and Hanford were in attendance and the topic of SQA for meteorological data was presented by Cliff Glantz. Carl Mazzola presented on the DMCC Assist Visit Program and provided a progress report on the meteorological voluntary consensus standards. The NUMUG Steering Committee met and Carl Mazzola was elected the next NUMUG Chair for an 18-month term. Lastly, the ANSI/ANS-2.15 working group conducted its sixth meeting during that time and issued its first draft for internal review.

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 five 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. However, the session configuration will not emerge until after the TEEL SQA effort and the updated TEEL methodology documentation has been completed. No additional discussion took place during this teleconference. ACTIVITY PROCEEDING.

AI 05-03: Work on developing TEEL derivation documentation and traceability as part of SQA continues. Eduardo Donoso, a PNNL intern, performed code documentation work on the macros used to calculate TEEL values in the summer of 2005 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 that report in its follow-on work related to TEEL SQA and documentation. Cliff Glantz has provided final comments to both reports which will be issued by ATL International. Separately, Doug Craig and Ray Lux have completed their work on incorporating the new HCNs into the CMM and it has been sent to Rocky for review. This effort has not yet commenced (see AI 06-14). Cliff indicated that the next step is to develop a draft SQA Plan. ACTIVITY PROCEEDING.

AI 05-09: ATL has addressed the 1,553 comments to the May 12, 2006 draft and Vern McDougall issued a final draft in late-October. This draft is undergoing review and appears to be much better written than the initial draft. It is targeted for completion and release by December and January, as NA-41 has indicated its preference for a more expedited review this time. ACTIVITY PROCEEDING.

Al 05-10: TEELs have been derived for 360 new chemicals and are undergoing the new TAG TEEL Quality Assurance (QA) criteria of 100% review, as Po-Yung Lu has begun the QA work on 170 of the 360 completed chemicals. These will be added to TEELs Revision 22. Issuance of TEELs Revision 22 is targeted for January 2007 to accommodate the release of the 2007 ERPGs by AIHA and the 2006 AEGLs by EPA; since both of these chemical health indicators will affect the new TEELs. The new ERPGs should be on its web site by early January and the final AEGLs will likely be determined during the upcoming NAC AEGL meeting, December 11-13, 2006. Concurrent with the Revision 22 TEELs will be an update of the PAC data base to reflect AEGL and ERPG changes to specific chemicals.

TEELs Revision 23 was briefly discussed and it was stated that these new chemicals should follow a yearly cycle of development and review to incorporate the latest AEGLs and TEELs. **ACTIVITY PROCEEDING**.

AI 06-16: At an earlier teleconference, Mike O'Keeffe requested that columns for NFPA codes, dispersibility, vapor pressure at 25 degrees Centigrade, which are screening criteria, be included in the TEELs Revision 22 publication to assist the NNSA/DOE sites in their hazards screening work. In addition, Mike also requested that the TEEL values be presented in units of parts per million (ppm) in addition to milligrams per cubic meter. Although there was no commitment to do this with respect to the TEELs Revision 22 effort, ATL will be contacted to determine what it would take to include this information in the searchable TEELs data base. No further discussion at this teleconference. ACTIVITY PROCEEDING.

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

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

AI 04-23: At a previous teleconference, Rocky indicated that he is 50% complete on the development of HCNs for the approximately 300 TEEL Revision 20 new chemicals and Doug Craig has completed the QA work on the HCNs that have been completed. Work on the TEELs Revision 21 chemicals will commence after the Revision 20 work is completed. No completion date was stated for this project. It was suggested that all completed TEEL Revision 20 chemical HCNs be posted on the website. **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 was addressed in AI 06-13 (now closed). A draft is targeted for peer review by SCAPA members in September, 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. No further discussion took place during this teleconference. **ACTIVITY PROCEEDING**.

Al 06-07: NA-41 requested SCAPA to address the Chemical Mixture Methodology (CMM) issue associated with the release of dissimilar materials from separate and multiple containers. The assumption that the materials are released simultaneously, and a plume is formed that represents a mixture of the materials is very conservative. A second part of the action item is to define how the results of the CMM should best be used in emergency planning. Rocky Petrocchi had developed a response to this question on April 3, 2006 and Doug concurred on June 7, 2006. It was sent to Jim Fairobent and NA-41 has performed its review and provided a revised form of the original Petrocchi/Craig FAQ at a combined TAG and Support Contractors NA-41 meeting in late October. The revised FAQ (with minor modifications) will be placed on the SCAPA website. A similar FAQ will be drafted addressing how the CMM would best be used during an actual or simulated emergency response since the expectation is that it should be available for use in response if it was used in planning. The above discussion of meeting results was partly in reply to Mike O'Keeffe's request during this teleconference that the website be populated by a page that shows how the CMM can be used by emergency planners and emergency responders. **ACTIVITY PROCEEDING**.

AI 06-09: At an earlier teleconference, Rocky discussed the work associated with the variability of the health hazard standards rating systems (i.e., NFPA 704, HMIS, and SAX) that are in use. Since DOE O 151.1C requires the use of NFPA 704, these differences, if substantial, could adversely impact the DOE EP chemical hazards screening system. During this conference call, Rocky reported that he has now examined the Sax, HMIS, SRS, and two United Nations Economic Council for Europe systems and has determined that Sax and HMIS are significantly different from NFPA 704. This implies that using Sax or HMIS hazards ratings may screen some chemicals out of the DOE emergency preparedness system that should be screened in, thereby potentially degrading the screening and planning processes. The SRS system is based on the NFPA 704 system and is therefore assumed to be equivalent to NFPA. The current UN Model Regulations Packing Groups (I, II, and III) are identical to NFPA 4, 3, and 2 respectively and can be used interchangeably. However, one should notice the reversal of numbering direction in the two systems. The UN proposed Globally Harmonized System (GHS) is less aligned with NFPA 704. However, we expect that NFPA will revise their system when the GHS is implemented globally in a few years. These findings were presented at a combined TAG and Support Contractors NA-41 meeting in late October. A FAQ of the findings and recommendations will be prepared by Rocky and sent for NA-41 and SCAPA review at some time in the future. In addition, at the meeting NA-41 decided that it will not pursue the concept of a common hazards rating database and expects implementation of its DOE O 151.1C guidance on the subject. DOE/NNSA sites have the freedom to pursue other hazard rating systems, but would have the burden of proof to demonstrate their equivalency to the DOE order mandated NFPA 704 system. **ACTIVITY PROCEEDING.**

Al 06-10: At an earlier teleconference, it was noted 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, and that this may cause a significant disconnect with Emergency Planning (EP). As EP analysts begin to implement the CMM, and find chemical mixture release scenarios with significant consequences, SA analysts will likely 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. Rocky Petrocchi will be following up with Dick Englehart by contacting him and providing existing CMM documentation. **ACTIVITY PROCEEDING.**

AI 06-14: At an earlier teleconference, Rocky reported that the revision of the automated CMM Excel workbook including the expanded list of acute HCNs was initiated as part of the CMM revision. Doug and Rocky have performed an SQA review, and the revised file can be posted on the SCAPA website. **ACTIVITY PROCEEDING.**

AI 06-15: At an earlier teleconference, Rocky reported 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. Po-Yung Lu may also be able to assist in this effort. **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**.

Al 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 took place during this teleconference. **ACTIVITY PROCEEDING**.

AI 05-05: At earlier teleconferences, 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 near-field buildings, with additional spreading as it encounters far-field buildings in an urban complex environment. No additional discussion took place during this teleconference.

ACTIVITY PROCEEDING.

Al 05-07: At earlier teleconferences, Wayne Davis discussed the progress on determining an appropriate Dose Conversion Factor (DCF) to use in EPHAs and consequence assessment models. Wayne had indicated that in changing from ICRP-30 DCFs, DOE/NNSA sites have received the concurrence of Joel Rabofsky, DOE/EH-52, Office of Worker Protection Policies and Programs. Wayne has provided a copy of the letter that he received from DOE/EH-52 which documents this concurrence. Accordingly, any DOE/NNSA site can change its protocol and use ICRP-68/72 DCFs. Wayne also has been in contact with representatives of the Federal Radiological Monitoring and Assessment Program (FRMAP), who initially indicated that they do not object to this decision. In parallel, FRMAP has recently petitioned EPA to use ICRP 60/70 methodology for long-term applications. Carl Mazzola indicated that he had spoken to Ed Tupin, EPA, while in Pasadena, CA, and Ed stated that the new PAGs that are in interagency review, are using ICRP 68/72 dosimetery. Wayne continues to develop a White Paper for SCAPA review and will provide a summary of the findings to be posted on the SCAPA web page. **ACTIVITY PROCEEDING**.

Al 06-01: At earlier teleconferences, Cliff Glantz reported that 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. 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. Additional interactions between the SCAPA SQA Working Group and the DOE/EH Central Registry have strengthened their relationship. 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.

Cliff stated that the HOTSPOT code has been selected as the 8th model for inclusion in the DOE/EH Central registry Toolbox and several SCAPA members (i.e., Larry Campbell, Carl Mazzola, Wayne Davis, Cliff Glantz) have been working closely with Steve Homann, LLNL, the HOTSPOT developer. The team will be meeting with Steve at LLNL, November 15-17, 2006. Work on this effort is expected to be completed by December, 2006. **ACTIVITY PROCEEDING**.

Al 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**.

AI 06-11: At an earlier teleconference, Diana de la Rosa, Sandia National Laboratories (SNL), 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. An earlier benchmarking algorithm has been consulted, but may no longer be applicable as it is several years old. A questionnaire, developed by SNL for the rest of the DOE/NNSA emergency management community, will be sent out. This effort will be resuming in November, 2006. **ACTIVITY PROCEEDING**.

In a separate matter, Cliff mentioned that the NARAC iClient 2.0 is overdue. He will be contacting John Nasstrom to determine when it will be undergoing beta testing.

D. Biosafety Working Group (Dina Sassone, Chairman)

Frank Roberto led the discussion and provided an update on the following three BWG action items and activities.

Al 06-06: At an earlier teleconference, NA-41 requested BMG 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. NA-41 indicated that there is a need to determine what models are available and appropriate for predictions, especially for laboratory-size source terms. In addition, NA-41 stated a need 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 not likely be available for defining a Protective Action Criterion (PAC), there is a need to determine how the modeling results will be applied. This was discussed at the August 28, 2006 BWG teleconference and a plan to determine a response was formulated. Rocky Petrocchi presented an interesting and promising proposal using 50% infective dose (ID₅₀) values in the Appendix C of the 2004 Army Blue Book as a starting point. Lower ID ranges could be used for conservatism, if necessary. The Centers for Disease Control (CDC) web page was also searched for additional (ID₅₀) values. Dina Sassone will develop a one-page SCAPA project plan for submission to NA-41 to move forward with this project which may result in the development of infective dose values, or ranges, for various infectious agents. During this teleconference, Frank stated that the BWG is looking at a range of dispersion models, including probabilistic codes. The group has noted that the best models out there in the literature are associated with biological warfare and may not be applicable to release of select agents beyond secondary containment. ACTIVITY PROCEEDING.

Al 06-08: The BWG draft charter has been further refined and was discussed during the October 2006 BWG teleconference. The BWG members want to ensure that there are consistent guidelines to address all biological agents, not just select agents. The charter will be finalized shortly and posted on the web page. ACTIVITY PROCEEDING.

Al 06-17: Carl Mazzola indicated that he, Dave Freshwater, and Wayne Davis are involved in a new DOE initiative associated with nanotechnology and mentioned that several work areas of this new group would fit in well with the BWG since the body's immune system would treat the invasion of such materials as it would microorganisms. Frank Roberto concurred. Paul Wambach is championing this effort for DOE and Dan Marsick is also involved this new group, as well as the Biosurety Executive Team. This effort is being focused through the Energy Facility Contractor Group (EFCOG) Chemical Safety Working Group (CSWG), which met in Las Vegas on October 30, 2006. The CSWG Annual meeting is scheduled for March 15-17, 2007 at the Forrestal Building in DC. Rocky Petrocchi suggested that since nanomaterials brings in a host of new properties and new toxicity considerations, he envisioned "nanoTEELs" at some time in the future. After some discussion, it was agreed that there should be an interface between these two groups and that the BWG should select some links to post on the BWG web page. ACTIVITY PROCEEDING.

E. Source Term Working Group (Carl Mazzola, Acting Chairman)

Carl Mazzola led the discussion and provided an update on the following two STWG action items and activities.

Al 06-05: The Source Term Working Group (STWG) met during the EMI SIG Meeting and began to 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 continues to be populated and future tasks are being defined. Cliff Glantz announced that the first STWG teleconference will be scheduled for November 20, 2006. After the teleconference, several individuals indicated an interest in participating. **ACTIVITY PROCEEDING**.

AI 06-12: A STWG webpage has been initiated and Cliff Glantz has begun populating it. References to key source term documents will be posted, and a mechanism to ask the STWG questions will be set up on the website. Carl Mazzola mentioned that he is involved as a member of the Interagency Nuclear Safety Review Panel (INSRP) for the upcoming Mars Space Laboratory (MSL) launch and will have access to excellent declassified source term information which he will feed to the STWG and the STWG web page. ACTIVITY PROCEEDING.

IV. SCAPA Web Page Report

Cliff Glantz mentioned that the SCAPA web page has undergone a full redesign to increase its visual appeal and improve its functionality and gave kudos to Dorothy Cohen and her staff. It is scheduled to go online on November 3, 2006. There will be a placeholder for the STWG and the MSL information. The main Universal Resource Locator (URL) will not change.

V. EPA AEGLs/EPA PAGs/DHS PALs Status

Richard Thomas reported on EPA/AEGL and DHS/PAL activities:

AEGLs

There will be a National Advisory Committee (NAC) meeting on December 11-13, 2006 to review the draft Technical Support Documents (TSDs) that do not contain any human subject information pertinent to the development of AEGL values. Forty-six chemicals are under review. After the interim AEGLs are established, they will be published in the Federal Register and will undergo a 30-60 day comment period review.

PALs

ORNL is preparing for the next meeting which will be in Washington, DC from October 31, 2006 through November 3, 2006. After this meeting, the PALs will be ready to be issued for external review once it is determined how to best release them.

VI. AIHA ERPGs Status

Richard Thomas also reported on the Emergency Response Planning (ERP) Committee activities.

The ERP Committee will meet on December 14-16, 2006 to finalize the list of 18 substances to be included in the 2007 ERPG manual. Minutes of this meeting will be forwarded to Doug Craig and Cliff Glantz.

At an earlier teleconference, it was indicated that the meeting with the European Commission on the 22 case studies supporting the European Acute Emergency Threshold Levels (AETLs) has been delayed until January 2007. At this meeting, they will be looking at the AETL values which are one-hour exposure toxic endpoints that 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.

VII. IND/RDD/PAG Status

Gustavo Vazquez reported 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/HS-20 are on the working group. DHS is working to resolve the comments.

EPA PAGs

The new EPA PAGs were released for interagency review. This review period ends November 1, 2006. As previously indicated, EPA has selected ICRP 68/72 as a basis for the new PAG values.

VIII. Round Robin

NTS: Mike O'Keeffe asked what would happen if an event occurred for a chemical that had been screened out. Jim Jamison indicated that the purpose of screening is to limit releases that have to be addressed and that there is little to no prospect for these screened chemicals to cause an emergency. Thus, this is likely a hypothetical situation. Carl Mazzola mentioned that if it did happen, then the lessons learned from the response should feed back into the planning.

IX. Next SCAPA Conference Call

Carl Mazzola tentatively scheduled the 1st SCAPA Conference call of 2007 for **Tuesday**, **January 9, 2007 at 10:30 a.m. EDT**.

X. Adjournment

The teleconference was adjourned at **11:35 a.m. EDT**. Carl thanked everyone for their time and their contributions.

XI. SCAPA Program Action Item (AI) Status

Based on the information exchange from this teleconference, no Als were closed, and one new Al was opened, since the previous teleconference, making a total of 24 Als.

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

- Existing Als that are not closed are colored green;
- New Als are colored yellow; and,
- Als 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