



Emergency Management Issues (EMI)
Special Interest Group (SIG)

Highlights

HAZARDS ASSESSMENT SUBCOMMITTEE TELECONFERENCE 08-05

Wednesday, October 22, 2008; 2:00 PM Eastern Daylight Time

Participants:

Denny Armstrong, Washington Safety Management Solutions (WSMS)
Tom Bellinger, Y-12
Brian Baumann, Hanford
Ron Beaulieu, Lawrence Livermore National Laboratory (LLNL)
Brent Bowen, Pantex
Bud Bucci, Hanford
Dorothy Cohen, Oak Ridge Institute for Science and Education (ORISE)
Wayne Davis, WSMS
Dave Freshwater, DOE/NNSA Office of Emergency Management and Policy (NA-41)
Gerry Gibeault, Idaho National Laboratory (INL) (Subcommittee Chairman)
Reed Hodgins, Alpha-TRAC
Jim Jamison, Science Applications International Corporation (SAIC)
Vicki Locklear, DOE/NNSA Office of Emergency Management Implementation (NA-43)
Greg Martin, SAIC
Carl Mazzola, Shaw Environmental
Mike O'Keeffe, Nevada Test Site (NTS)
Rocky Petrocchi, Washington Group International (WGI)
Bill Possidente, NTS
Frank Roberto, INL
Brad Salmonson, INL
Gary Winner, Argonne National Laboratory (ANL)

Teleconference Highlights

I. Roll Call

Gerry Gibeault conducted a roll call and noted that 21 individuals from eight DOE/NNSA locations involved with the Hazards Assessment Subcommittee (HASubC) were present.

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II. Administrative Matters

The highlights from the August 19, 2008 meeting were accepted as presented. Gerry Gibeault mentioned that the minutes included additional information provided by Shana Peterson regarding the bases for screening out mercury and other low vapor pressure materials in hazards surveys using the guidance provided in DOE G 151.1-2, Technical Planning Basis, pages A-9 and A-10. With this modification, the minutes were accepted and may be posted on the HASubC website.

III. Action Item (AI) Update

Four open AIs (i.e., AI 08-04 through AI 08-07) were carried forward from the last teleconference and were discussed during the old business portion of this teleconference.

IV. Old Business

AI 08-04: Hazards Assessment Subcommittee Website: During the previous teleconference, Gerry Gibeault indicated that much of the information on the HASubC website is dated (e.g., 10-12 years old). Gerry has contacted Cliff Glantz who modernized the Subcommittee on Consequence Assessment and Protective Actions (SCAPA) and the DOE Meteorological Coordinating Council (DMCC) websites for ideas on how to upgrade the HASubC website. **CONTINUING ACTIVITY**

Gerry also encouraged everyone to join SharePoint.

AI 08-05: Mixed hazardous waste: During the previous teleconference, Jim Jamison was asked to share his work in progress on the following issue, "*How should emergency planning hazards assessments (EPHAs) analyze the non-radiological hazardous materials component in mixed hazardous waste?*" He declined since it is still under review by his client. Jim did indicate that existing guidance needs to be clarified. Related to this effort, Jim asked that the HASubC members send e-mails to him with information on what the larger community of analysts has done relative to dealing with chemical contaminants in mixed wastes.

Gerry reported on his recent e-mail correspondence with Michele Wolfgram who chairs the Subcommittee for Consequence Assessment and Protective Actions (SCAPA) Source Term Working Group (STWG). Michelle wrote that Jim's work on the mixed hazardous waste issue had been proposed to the STWG as well. Gerry replied saying that, per its charter, the



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HASubC should focus on sharing information, disseminating good practices, and continuous improvement.

Therefore, it would be appropriate for the STWG to work with Jim and then share progress and results with the HASubC. It was agreed that tasks like these need to be coordinated to avoid duplication of effort. **ACTIVITY CAN BE CLOSED**

AI 08-06: Cadmium metal: During the previous teleconference, the following matter was discussed: "*Cadmium metal has a relatively low boiling point. Should it be addressed in an EPHA, and if so, how?*" Jeff Long and Shana Peterson had both indicated that monolithic solids may be screened out as non-dispersive. However, Brad Salmonson stated his concern that, in a fire accident scenario, cadmium metal would volatilize into a cadmium oxide vapor. Brad asked if anyone had studied this issue and could recommend a reasonable Airborne Release Fraction (ARF) for this scenario. **CONTINUING ACTIVITY**

AI 08-07: Authorized Type B Shipments: During the previous teleconference, Gerry Gibeault mentioned that Jeff Long had recently learned that Department of Transportation (DOT) 6m drums, 20 WC containers, 21 WC containers will no longer be authorized for Type B shipments after October 1, 2008, per 69 FR 3632-3698. It is believed that this ruling should not have an adverse effect on EPHAs or hazards surveys. It was concluded that more information on this subject was needed to bring this issue to resolution.

Today's discussion turned to the question as to whether Material at Risk (MAR) can be excluded from hazard assessments and is this matter a problem at other sites besides Nevada Test Site (NTS). Jim Jamison asked for documentation and Ron Beaulieu referred to the Radioactive Material Packaging (RAMPAC) web page. Ron mentioned that this can be included in the MAR but then the analyst can assign a Damage Ratio (DR) of zero.

There was a brief discussion on 9975 storage containers remaining intact at the Device Assembly Facility (DAF). Mike O'Keeffe shared that these documents are old and Jim Jamison added that it was a legalistic approach. Gerry Gibeault mentioned that an existing FAQ, "Spent Nuclear Fuel Screening" provides some guidance on this subject. Wayne Davis shared that SRS had some drums that were going to expire and did not want to open them to recertify. Mike O'Keeffe will continue to look into this issue. **CONTINUING ACTIVITY**

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Frank Roberto, INL, discussed his work on EPHAs for the dispersal of biological and biotoxin materials. He mentioned that the draft report prepared by the SCAPA Biosafety Working Group (BWG) is nearly completed. The report estimates the relative severity of bioagents, and concludes that it is best determined by infectious dose (ID), since there is a lot of data around, especially for bacterial agents. Moreover, it gives a level of severity and has a risk group structure. Biological toxins are already considered as toxic chemicals, so the BWG is not actively considering them, although the BWG has formally requested TEELs for a list of 15 toxins. The report also looks into source term indoor models including Computation Fluid Dynamics (CFD) codes. Frank emphasized that Multizone Airflow and Contaminant Transport Analysis Software (CONTAM) and Conjunction of Multizone Infiltration Specialists (COMIS) are the most pragmatic codes right now since CFD modeling requires much more horsepower. The National Atmospheric Release Advisory Center (NARAC) hopes to integrate these indoor dispersion models into its system, possibly through a joint program with the National Institute of Standards and Technology (NIST).

Frank continued that there have been only a few papers that have looked at biological releases in indoor settings. A study by Lawrence Berkeley National Laboratory (LBNL) showed that for an anthrax release, that 75% of the material wound up on the floor. Thus reaerosolization is now predicted to be a major post-event source term vector. A possible protective action after an indoor anthrax release is to do nothing and let it settle out to avoid reaerosolization.

AI 08-08: Jim Jamison informed the HASubC that the Environmental Protection Agency (EPA) has nearly completed its program for developing Acute Exposure Guideline Limits (AEGLs). Jim is concerned that the final list of AEGLs may not include all the significant chemical hazards that are analyzed in the DOE site facility planning basis documents. Jim went on to explain the process where new chemical exposure values are requested by the EPA for development of AEGLs. In addition, he expressed his opinion that our community should at least inform the EPA if additional AEGLs are needed beyond those currently targeted by the EPA. To that end, Jim asked that the sites send him an e-mail listing potential candidates for additional AEGLs. He asked that the sites should submit planning basis chemicals that only have TEELs and no AEGLs. ANL, SRS, and NTS individuals indicated they would be providing lists of chemicals.

Dave Freshwater added that EPA has recently pushed back on a request from an agency outside of the United States and is having them justify their request based on toxicity and

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volatility. Accordingly, to get an AEGL developed, the DOE/NNSA sites may need to provide such justification. EPA will be completing its AEGL program in about two years. All AEGLs have 70-100 page technical information documents to support them. NA-41's goal is to move as many chemicals as possible from TEEL status to AEGL status. **CONTINUING ACTIVITY**

AI 08-09: Reed Hodgkin presented a white paper on density and particle size assumptions for modeling radiological releases using the INL Radiological Safety Analysis Computer (RSAC) transport and dispersion code. (See "Representation of Particulate Radionuclides for RSAC Modeling in Emergency Management Hazards Assessments [EMHAs]"). While Reed's paper considers actinide and volatile particulates, its primary focus is actinides particulate filtered releases versus unfiltered releases. The white paper makes the case that using actinide density and particulate size values as input to the RSAC program has little impact on the RSAC dose projections for any volatile particulates such as cesium that may be also present in the release.

Wayne Davis concurred in principal stating that there is no need to be concerned with cesium since there are no reactors that are operating at DOE/NNSA sites. The volatiles of interest are limited to iodine isotopes and use Nuclear Regulatory Commission (NRC) Regulatory Guide (RG) guidance. Reed is looking for a peer review of his white paper.

The discussion turned to deposition velocities for HOTSPOT modeling, where the value for the public is 1 micron Activity Median Aerodynamics Diameter (AMAD), and for the worker, 5 micron AMAD. **CONTINUING ACTIVITY**

VI. Round Robin Discussion

INL: Gerry Gibeault mentioned that on December 1, 2008 the BEA and CWI emergency management organizations will split. After Action: The BEA/CWI split has been delayed until December 15, 2008.

Hanford: Brian Baumann stated that there has been a major reorganization at Hanford based on the recent tank farm and remediation contractor awards. The emergency planning function is being protested. Dozens of EPHAs are being transitioned to DOE O 151.1C status with many more to go.

NTS/SPRO: Ron Beaulieu shared that EPHAs are moving to DOE O 151.1C status and that the Strategic Petroleum Reserve Office (SPRO) evaluated every one of 700+ constituents of all types of all petroleum products stored there.



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SRS: Wayne Davis stated that he was working on an EPHA to reduce hazards at the Mixed Oxide (MOX) Fuel Fabrication Facility (MFFF). In another analysis, he is using a non-conservative Airborne Release Fraction (ARF) for ball-milled Pu-238.

Wayne requested that as a line item for the next agenda, the HASubC should discuss how to address the possible conservatisms associated with a dilute mixture of gases with National Fire Protection Association (NFPA) 3 and NFPA 4 hazard ratings.

VII. Adjournment

The teleconference was adjourned at **3:00 p.m. EDT**. Gerry thanked everyone for their time and contributions.

VIII. Next HASubC Conference Call

The next HASubC teleconference will be scheduled on **Wednesday, December 17, 2008** at **2:00 pm EDT**.

IX. HASubC Action Item (AI) Status

Two new AIs were opened and one AI was closed as a result of the discussions in this teleconference, and there are presently five open AIs. AIs are not opened for simple tasks such as transmittal of information from one party to another.

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

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