



Highlights
DMCC Program Teleconference 11-04
September 20, 2011, 12:30 p.m. EDT

Participants

- Tom Bellinger, Y-12
Kevin Birdwell, ORNL
John Ciolek, AlphaTRAC
Kirk Clawson, ARL FRD
Dorothy Cohen, ORISE
Dave Freshwater, NA-41
Cliff Glantz, PNNL
Erik Kabela, SRNL
Carl Mazzola, Shaw Environmental
Margaret McCalla, OFCM
John Merrick, DOE/SR (Retired)
Jeremy Rishel, PNNL
Walt Schalk, ARLSORD/NNSS
Gus Vazquez, HS-22
Steve Vigeant, Shaw Environmental
Tony Wegrecki, LLNL

Roll Call

Carl Mazzola conducted a roll call and called the fourth 2011 DMCC teleconference to order. Sixteen program-involved individuals participated.

Assist Visit Status

Carl Mazzola briefly discussed the status of the DMCC Assist Visit (AV) program. Since the last teleconference, there are no new assist visits to report. However, Carl visited Tony Wegrecki, the LLNL meteorological program manager, on September 14 and conducted a DMCC consultation. Carl will provide a brief report on some of the observations and recommendations associated with the 52-meter meteorological tower.

The following provides a status of the assist visit program, which was not discussed during the teleconference:

Table with 2 columns: Site, DMCC Assist Visit Status. Rows include Brookhaven National Laboratory (BNL), Hanford, and Idaho National Laboratory (INL).



Site	DMCC Assist Visit Status
<b>Lawrence Livermore National Laboratory (LLNL)</b>	A consultation was performed on September 14, 2011.
<b>Los Alamos National Laboratory (LANL)</b>	Scot Johnson postponed his request to have a follow-up AV in the summer 2010 by two years until summer 2012, which will be six years since the initial AV in August 2006.
<b>Nevada National Security Site (NNSS)</b>	The last AV was conducted in September 2007.
<b>Oak Ridge National Laboratory (ORNL)</b>	Kevin Birdwell continues to address the 23 observations and recommendations from the March 24-25, 2009 AV.
<b>Pantex</b>	The last AV was conducted in 1997.
<b>Sandia National Laboratory (SNL)</b>	The last AV was in 2003. DMCC will combine SNL with LANL in 2012 if SNL agrees to a follow-up AV. Walt Schalk is in contact with Gina Deola.
<b>Savannah River National Laboratory (SRNL)</b>	Chuck Hunter continues to address the 11 observations and recommendations from the June 2009 AV, which were well received by both DOE and SRNL stakeholders.
<b>Y-12</b>	Tom Bellinger continues to address the 24 observations and recommendations from the May 24-25, 2008 AV.

### DMCC Web Page Status

Carl Mazzola stated that highlights of the previous teleconferences are available on the DMCC portion of the EMI SIG website.

A suggestion has been made to compile and post a history of the DMCC on the website for the benefit of new DMCC members. Work has not yet begun on this activity.

### DMCC Projects and Activities

Carl Mazzola mentioned that seven DMCC Program activities are active, and the progress on these, as appropriate, will be discussed during the teleconference.

#### ***AI 06-12: Meteorological Monitoring Software (Activity can be closed)***

At earlier teleconferences, Cliff Glantz reported that when the SQA review is completed for the consequence assessment models selected as candidates for inclusion in the SCAPA Modeling Toolbox, attention will turn to developing DMCC SQA guidance for meteorological software. It was decided to close this activity until this becomes active.



### ***Meeting with NA-41***

Walt and Carl met with Jim Fairbent on August 25, 2011, to review the DMCC accomplishments of FY11 and discuss plans for FY12. Highlights follow:

#### **Update of Recent DMCC Activities**

1. LLNL meteorologist, Tony Wegrecki, became involved in last DMCC teleconference. He is planning to do a self-assessment of the monitoring program with augmentation by one DMCC member.
2. Last DMCC conference call was July 2011. Generally, 10-12 meteorologists participate.
3. Agreement with Erik Kabela's e-mail message about restructuring the DMCC annual meeting. Since there are only three hours to work with, it would not be productive to cover things that are addressed during each conference call. Instead, having guest speakers from the area that the DMCC is held is more beneficial. The 2012 EMI SIG Meeting will be in Seattle, WA, and NOAA Hazmat will be contacted to discuss ALOHA. The local Weather Field Office (WFO) will also be contacted. Erik will assist in the development of the agenda.
4. There were no assist visits in 2011. LANL and possibly SNL are planned for 2012.
5. The Hanford 2008 Assist Visit was of great value in transition of the operational meteorological program from PNNL to Mission Services Alliance (MSA).
6. It may be useful to develop technical papers in a manner that the SCAPA Source Term Working Group (STWG) does.
7. Develop a DMCC briefing package to help orient newcomers.

#### **Meeting with HS-22 (August 25, 2011)**

DOE O 458.1 has been issued giving HS-22 official oversight of site meteorological programs. Details on a DMCC leadership meeting with HS-22 are provided below:

#### **FY12 Planning**

1. DMCC will meet at the EMI SIG conference in Seattle, WA on May 7, 2012.
2. 12<sup>th</sup> EP & R Topical Meeting will be sponsored by SRS Local Section and held at either Charleston, SC or Savannah, GA in the September 2013-March 2014 timeframe;
3. ANS voluntary consensus standards effort is moving forward on many fronts. (See below for current status)

### ***Meeting with HS-22: DOE EH-0173 Update and DOE O 458.1 (Activity proceeding)***

Carl and Walt presented the Assist Visit program to HS-22 (i.e., Gus Vazquez, Edward Regnier and Tom Traceski) on August 25, 2011. HS-22 has previously partially-funded two assist visits (i.e., Y-12, BNL). The meeting involved discussion on how the DMCC can partner with HS-22 on technical assistance efforts with respect to meteorological programs. The following bulleted items present opportunities for synergy:

1. DOE/EH-0173T Chapter 5 meteorology section needs to be updated now that DOE O 458.1 has been issued. DMCC developed a revision to that chapter in 2005 which closely aligns with ANSI/ANS-3.11(2005). DMCC can assist with the update of that chapter and provide a peer review of the entire document which may be recast into either a handbook or standard.
2. DMCC meteorological monitoring self-assessment tool can be adopted by HS-22 and used by field elements. It may be recast into a handbook.
3. DMCC can modify its self-assessment tool for the meteorological aspects of consequence assessment to address CAP-88 PC and other environmental compliance atmospheric dispersion models that require the usage of meteorological data under HS-22 purview.
4. DMCC can support HS-22 clarification of DOE O 458.1 meteorological program elements in response to field element requests by helping develop white papers, FAQs, and technical guidance.
5. DMCC can augment meteorological program and dispersion modeling self-assessments, or conduct assist visits at DOE/NNSA sites.
6. DMCC can develop protocols for the use of meteorological data with respect to environmental compliance application (e.g., Clean Air Act AERMOD data bases, Clean Water Act rainfall monitoring for storm water management).
7. DMCC's involvement in the ANS voluntary consensus standards process can be leveraged by HS-22. DMCC is involved in a number of ANSI/ANS standards efforts that are related to meteorological data acquisition and its application (these efforts are described in the next section).

Gus Vazquez provided a status on the DOE EH-0173T update which has become a companion to DOE O 458.1, *Radiation Protection of the Public and the Environment* that was issued in February 2011. DOE/EH-0173T guidance is currently being revised into a DOE Standard to align with the new order to ensure consistency with DOE O 458.1. Training through a webinar is being planned.

### **Status of Related Federal/Private Sector Programs**

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#### ***AI 04-11: Meteorological Monitoring and Meteorological Modeling Voluntary Consensus Standards (VCSs)***

DMCC members are involved in the development and maintenance of eight national voluntary consensus standards (VCSs) with the American Nuclear Society (ANS) as the Standards Development Organization (SDO). The following is a status of each of these eight standards development efforts:



The following is a status of each of these eight standards development efforts:

<b>ANSI/ANS-2.3 (Mazzola)</b>	Issued on April 22, 2011; supporting the Natural Phenomena Hazard (NPH) DOE standard (i.e., DOE-STD-1020-2011).	<b>Activity Completed</b>
<b>ANSI/ANS-2.15 (Ciolek)</b>	ANS-24 concurrence review provided valuable comments that have been incorporated into latest draft. It will soon be in 60-day NFSC consensus review and ballot.	<b>Activity Proceeding</b>
<b>ANSI/ANS-2.16 (Ciolek/Rishel)</b>	WG kickoff meeting concurrent with June 2011 NUMUG meeting. A needs assessment for both DOE and NRC was completed. First draft of outline is imminent. James O'Brien, HS-30 has joined WG.	<b>Activity Proceeding</b>
<b>ANSI/ANS-2.21 (Vigeant)</b>	ANSI/ANS-2.21 NFSC consensus review comments have been resolved and it is at ballot. Publication is expected by early-2012.	<b>Activity Proceeding</b>
<b>ANSI/ANS-2.31 (Mazzola/Schalk)</b>	WG has been formed, and Walt Schalk and Carl Mazzola are members. WG populated with both meteorologists and hydrologists. Kick-off meeting will be in Cleveland, OH, October 13, 2011.	<b>Activity Proceeding</b>
<b>ANSI/ANS-3.8.10 (Ciolek/Rishel)</b>	The ANS-2.15 working group will begin ANS-3.8.10 for emergency response consequence assessment after it sends ANS-2.16 for consensus review. This standard should be developed much faster since there are a lot of similarities with ANS-2.16. John Merrick volunteered to be on the working group.	<b>Activity Proceeding</b>
<b>ANSI/ANS-3.11 (Parker)</b>	ANSI/ANS-3.11 has been reaffirmed and will not reach its 5-year sunset until the end of 2015. Matt Parker held a meeting of this WG to begin the revision process at the NUMUG meeting and the WG is looking at developing additional criteria to be applied to meteorological networks. Gus Vazquez has interest in participating in the WG.	<b>Activity Proceeding</b>
<b>ANSI/ANS-58.25 (Mazzola)</b>	The standard associated with Level III probabilistic risk assessments that address both meteorological data (Section 4.7) and atmospheric transport and diffusion models (Section 4.8) for risk-informed safety evaluations is in RISC consensus review. Many comments have been received and the standard is not expected to be issued until late-2012. WG will be meeting in late-October, 2011 in Chicago and early-November in Washington DC to resolve the many comments it received.	<b>Activity Proceeding</b>



NNSA/DOE Site Initiatives

**Meteorological Monitoring Self-Assessment Tool (Activity can be closed)**

The Meteorological Monitoring Self-Assessment Tool was posted on the DMCC website (<http://orise.orau.gov/emi/dmcc/products.htm>). The tool has been revised to include DOE O 458.1 in the performance criteria and to also make it consistent with the recently-issued Consequence Assessment Self-Assessment Tool.

**AI 09-01 Forecast Models on GPU Software (Activity proceeding)**

Kirk Clawson indicated that the ARLFRD proposal with Boise State University (BSU) to develop a NVIDIA GPU version of HYSPLIT based on Computational Fluid Dynamics (CFD) was accepted and funded. A graduate student from BSU will be assisting Rick Eckman in this study. John Ciolek reported that CAPARS is being redeveloped for GPU architecture. WRF is also be optimized for GPU usage using Portland Group compilers, which have proven to be a good analysis tool.

**AI 09-08 Cyber Security White Paper (Activity proceeding)**

Cliff Glantz is attending a cybersecurity conference and will be developing a White Paper to show how the new cyber security requirements for safety, security, and emergency preparedness systems may be applicable for use at DOE/NNSA nuclear facilities and their meteorological programs. A technical paper was presented at the 11<sup>th</sup> EP & R Topical meeting, which will be reconfigured into the White Paper.

**AI 10-01 ORNL Meteorological Tower site Encroachment (Activity can be closed)**

Kevin Birdwell had earlier requested available guidance that is associated with erecting new meteorological towers and what pitfalls to avoid. Projected changes to the ORNL footprint are resulting in encroachments on existing meteorological tower sites. Kevin mentioned that the delay of some capital projects has somewhat mitigated the problems with encroachment. It was decided to close this activity.

**Round Robin**

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The following was shared during the round robin discussion:

DOE Site	Presenter	Discussion
Hanford	Jeremy Rishel	PNNL-MSA transition of meteorological monitoring program operations is now complete. Data reception is still somewhat tenuous; especially with respect to data availability at PNNL. The Hanford Met station administrator is working with PNNL to address this problem.
INL	Kirk Clawson	HYSPLIT GPU study.
LLNL	Tony Wegrecki	Program is in a continuous improvement mode. Improving QA/QC data processing techniques. Many improvements to LLNL web site which delivers all data to customers.

DOE Site	Presenter	Discussion
		<p>Obtaining a redundant computer for data acquisition process to ensure high percentage of data delivery.</p> <p>Planning to do a self-assessment with the DMCC tool.</p>
<b>NNSS</b>	Walt Schalk	<p>Supported two experiments that involved balloon-launching and forecasting</p> <p>New facility on the Nevada National Security Site (NNSS). Met with owners to scope out meteorological program support which will include new mesonet station.</p> <p>Procured new SODAR for December 2011 delivery</p> <p>Looking to replace Vaisala-Handar 555's which are no longer being supported. Campbell Data Logger appears to be a good candidate.</p> <p>Right-sized MEDA towers from 32 to 20 to respond to small NTS footprint and operational needs.</p> <p>Moved 3 out of 4 lightning sensors to optimize lightning detection and reporting system.</p>
<b>ORNL</b>	Kevin Birdwell	<p>The EDAS ORNL meteorological data processing system is being upgraded with AirVision which will greatly improve data delivery to all customers.</p> <p>Encroachment problem with new capital projects has been mitigated due to delay in the execution of these projects.</p> <p>Obtained a much newer Remtech SODAR from Pennsylvania Power &amp; Light for \$15,000.</p> <p>There was an EF-0 tornado at the end of Bear Creek Road. It was only the second documented tornado at the Oak Ridge Reservation.</p> <p>The Spallation Neutron Source needs relative humidity, temperature, and wind data near Chestnut Ridge. Arrangements are being made to acquire data from an existing tower nearby.</p>
<b>SRNL</b>	Erik Kabela	<p>Addressing three issues with surface roughness, including: (1) use of the MACCS2 code; (2) deposition velocity; and, (3) urban dispersion coefficients.</p>
<b>Y-12</b>	Tom Bellinger	<p>Provided a tour of the Moorestown National Weather Service as part of the storm sentry project.</p> <p>Commissioned a new 25-meter instrumented meteorological tower for Tennessee Valley Authority's use in licensing Small Modular Reactors (SMRs) at the old Clinch River Breeder Reactor site. This will provide another data point for Y-12 and ORNL.</p> <p>Evaluated the Oak Ridge ASOS.</p> <p>Gave a paper at the NUMUG meeting on the calmest site where 2/3 of the time, the winds are calm.</p>



## New Business and New Issues

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### 12<sup>th</sup> EP & R Topical Meeting

Planning for the 12<sup>th</sup> EP & R topical meeting has begun. It will be sponsored by the Savannah River Site (SRS) local section and held in either Charleston, SC or Savannah, GA in late-2013.

Sessions of interest to DMCC members include:

1. Software Quality Assessment for EP & R Models;
2. Hazard Assessments;
3. Severe Weather Planning for Key Facilities; and,
4. Consequence Assessment Modeling for EP & R.

### Restructuring DMCC Teleconference Calls

Walt had earlier sent out a "strawman-discussion starter-thought provoker" and requested that each participant send comments. In addition to changing the format of the annual DMCC meeting, Walt wanted to know whether there is merit in changing the format of the teleconferences.

### 26<sup>th</sup> EMI SIG Meeting/20<sup>th</sup> DMCC Meeting

Walt mentioned that the next EMI SIG meeting, in which the DMCC meeting will take place, has been established. The EMI SIG Meeting will be at the Renaissance Hotel, Seattle, WA, on May 14-17, 2012. The 20<sup>th</sup> DMCC Meeting will be held from 7:30 am-10:30 am on May 14, 2012.

Walt will be working with Erik Kabela on a new format for the annual DMCC meeting. Walt and Erik plan to reconfigure the meeting focus that will spend much less time on DMCC business matters and more time on technical presentations; especially from professionals that are located near the meeting venue. Since the next DMCC meeting is in Seattle, WA, NOAA Hazmat will be invited. Mark Miller (NOAA NOS, Seattle) who manages the Areal Locations of Hazardous Atmospheres (ALOHA) chemical consequence code, has already been contacted and agreed to participate. Erik will work with Walt and Carl in developing the DMCC agenda for the May 2012 meeting.

The HOTSPOT Workshop and Computer Practicum will likely be offered again on Thursday, May 18, 2012.

### Next DMCC Conference Call

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The next DMCC Conference call is scheduled for **Tuesday, November 15, 2011 at 12:30 p.m. EST**. All 2011 DMCC conference calls are scheduled to be conducted on the third Tuesday of every odd month, with the exception of May, unless circumstances dictate otherwise.

About 10 days before the next teleconference, DMCC leads will be asked to provide a status on the business matters, which will be sent out with the agenda and invitation. This will allow more time for the Round Robin portion of the teleconference.

### Adjournment

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The teleconference adjourned at **1:30 p.m. EDT**. Carl and Walt thanked everyone for their contributions.



## **DMCC Program Action Item (AI) Status**

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Based on the information exchange from the DMCC Meeting and this teleconference, no new activities were opened, and three were closed. The number of DMCC activities is now four.

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

- **Existing AIs that are not closed are colored green.**
- **New AIs are colored yellow.**
- **AIs to be closed are colored blue.**

Carl Mazzola will update the DMCC activities list based on the information exchange from this conference call.

Respectfully Submitted,

Carl Mazzola



**DOE Meteorological Coordinating Council  
(DMCC)**

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

Respectfully Submitted,  
**Carl Mazzola**