



Subcommittee on Consequence Assessment
and Protective Actions (SCAPA)
Consequence Assessment Modeling Working
Group (CAMWG)

Highlights
CAMWG TELECONFERENCE 09-01
Thursday, October 1, 2009; 2:00 PM EDT

Participants:

Maureen Alai, LLNL/NARAC
Dennis Armstrong, WSMS
John Ciolek, Alpha-TRAC
Wayne Davis, WSMS
Rick Eckman, INL
Cliff Glantz, PNNL
Erik Kabela, SRNL
Steve Lockett, NA-41

Carl Mazzola, Shaw Environmental
Mister McDonnell, NTS/NSTec
Mike O’Keeffe, NTS/NSTec
Phil Pfeiffer, INL
Bill Possidente, NTS/NSTec
Jeremy Rishel, PNNL
Melissa Thornton, WSMS Mid-America
Hoyt Walker, LLNL NARAC

I. Roll Call

Carl Mazzola conducted a roll call and acknowledged that 16 individuals were present, and the teleconference was called to order.

II. Administrative Matters

Jeremy Rishel welcomed everyone to the first CAMWG teleconference.

III. Old Business

Since this was the first teleconference, there was no old business.

IV. New Business

SCAPA SQA Guidance and the SCAPA Toolbox: Cliff Glantz provided a master vision of the SCAPA Software Quality Assurance (SQA) initiative by discussing the past events that led the working group to this point. DOE O 414.1C and DOE G 414.1-4 were issued several years ago to address safety-related software. However, the definition of safety software was broad and nebulous. The DOE/HS Central Registry was created in 2004 to manage codes that are in its safety software toolbox. These codes are ALOHA, EPICODE, CFAST, MACCS2, GENII, MELCOR and GENII, with HOTSPOT in the evaluation phase.

Applying safety software guidance to consequence assessment models that only perform safety-related or non-safety functions would have negative implications in terms of the usage and continuing technological innovation of consequence assessment software that support the DOE/NNSA complex. To overcome this situation, significant work was done to develop a separate guidance document for safety-related and non-safety software. This SCAPA SQA guidance would apply an appropriately



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graded approach for consequence assessment software that supports emergency preparedness and response functions at DOE/NNSA sites.

The SCAPA guidance document will provide the SQA requirements for accepting software into a SCAPA Toolbox for Consequence Assessment Models that perform safety-related or non-safety functions. Legacy codes with a proven track record of performance would be grandfathered into the SCAPA Toolbox. However, all future model development would have to be conducted in accordance with the SCAPA SQA guidance. For all models entering the SCAPA Toolbox, an SQA gap analysis will be conducted. The model development community sees this as a reasonable approach.

Draft SQA Document: Cliff Glantz and Jeremy Rishel discussed the 34-page draft SQA Guidance Document that was sent to the CAMWG on September 29, 2009. This document is about the same size as the DOE guide for safety software (~46 pages in length) and contains approximately the same level of detail. The goal is to provide a basic and consistent set of SQA expectations that all software products could meet. Model developers may supplement these with additional site, company, and programmatic requirements.

SCAPA reviewers of the draft SQA guidance document should consider only technical aspects. A revised draft, incorporating initial PNNL technical comments, will be sent out on October 7, for an in-depth SCAPA peer review, with comments due to the authors by October 14. Document approval by NA-41 is expected by the end of October, with issuance shortly thereafter. As the user community gleans experience with the SQA guidelines, constructive feedback can be provided and incorporated into the document. This feedback process should benefit the document users while enhancing the quality and usability of the guidance document.

Once the SCAPA SQA guidance is issued, consequence assessment model developers will be asked to perform an SQA gap analysis on their software. The CAMWG would like to receive this gap analysis by the end of CY09. Each software product's gap analysis will be reviewed by 2 or 3 WG members, who will provide feedback on the adequacy and completeness of the analysis. The long range plan is to have software developers close any substantial SQA gaps uncovered by this effort by September 30, 2010.

It is hoped that other software products supported by NA-41 will adopt the SCAPA SQA guidance. This includes codes associated with the development and presentation of PAC/TEEL and the Chemical Mixture Methodology information; and meteorological data acquisition, processing, and communication software that is used to provide input for consequence assessment models.

ACTIVITY CONTINUING

Populating the SCAPA Toolbox: CAM developers will provide summary information on their software for posting on the SCAPA Consequence Assessment Modeling Toolbox webpage. This will include summary descriptions of models and capabilities, a link to model websites and its SQA documentation, a self-evaluation of how well the software complies with SQA requirements, plus a review of where SQA gaps exist and how they will be filled.

When John Ciolek and Rick Eckman sought to clarify the scope of the SCAPA SQA guidance relative to support software (e.g., GIS and meteorological software), Cliff suggested that primary efforts focus on the core software for the models and review supporting software in the future. The next draft of



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the SCAPA SQA guide will provide more information. Questions will continue to be asked and addressed as people become more familiar with the content of the guidance document. **ACTIVITY CONTINUING**

V. NARAC News

HOTSPOT and DOE/HS Central Registry: Hoyt Walker updated the project status, as follows: In November 2006, a DOE/HS team, including three SCAPA members, evaluated HOTSPOT according to DOE O 414.1C and DOE G 414.1–4 and indicated that five specific critical recommendations needed to be fulfilled before HOTSPOT qualifies to be in the DOE/HS Central Registry toolbox. Steve Homann and the NARAC modelers are developing the necessary documentation for a formal response to the latest round of DOE/HS questions to be sent in one–two weeks. Based on DOE/HS feedback, the documents will be finalized and HOTSPOT will become the 8th Central Registry toolbox code. **ACTIVITY CONTINUING**

Recent NARAC Developments: Hoyt discussed the availability of NARAC Web version 2.2, which includes capabilities to calculate plume rise from energetic events (e.g., fires), user-specific airborne release fractions and release fractions, stack emissions, and mouseover capabilities to determine concentrations at any point in the plume. The latter is valuable for field monitoring and survey determinations.

NARAC FAQs: Hoyt mentioned that John Nasstrom has drafted four FAQs associated with NARAC, which are presently under review by SCAPA. **ACTIVITY CONTINUING**

VI. News from Other Model Developers

CAPARS: John Ciolek shared that CAPARS, the ORNL consequence assessment model, has developed a source term algorithm for explosions in response to a HS-63 audit finding.

HYSPLIT: Rick Eckman mentioned that INL is transitioning to a NOAA HYSPLIT model. Present effort is to develop a user interface for supporting Emergency Operations Center (EOC) activities. However, interfaces with the INL RSAC-7 radiological dose code are still limited.

DUSTRAN: Jeremy Rishel briefly discussed the DUSTRAN code that ingrates CALPUFF/CALMET and plans to put in AERMOD.

PAVAN: Jeremy also mentioned that PNNL has updated the NRC model PAVAN to use hourly data.

VII. Round Robin

Time was not available to conduct a round robin.

VIII. Next SCAPA CAMWG Meeting

The next SCAPA CAMWG teleconference is scheduled for **November 12, 2009, at 2:00 p.m. EST.**



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IX. Adjournment

The meeting was adjourned at **3:00 p.m. EDT.**