



SCAPA Source Term Working Group (STWG)

Highlights SCAPA STWG Teleconference 11-03 Wednesday, July 13, 2011, 2:00 p.m. EDT

Participants

Maurene Alai, LLNL NARAC	Amber Martin, URS SMS Oak Ridge
Dennis Armstrong, WSMS	Carl Mazzola, Shaw Environmental
Wayne Davis, WSMS	Mike O'Keefe, NSTec/NNSS
Dave Freshwater, NA-41	Jim Powers, NA-41
Cliff Glantz, PNNL	Melissa Thornton, URS SMS Oak Ridge
Aprill Jivelekas, Ascendent Engineering/Hanford	Susan Vosburg, SNL
Steve Lockett, NA-41	Michele Wolfgram, ORNL

Roll Call

Michele Wolfgram conducted a roll call. Fourteen working group members participated in the teleconference.

Administrative Matters

Michele stated that the paper developed by the STWG regarding applicability of the DOE TRU Standard (DOE-STD-5506-2007) in Emergency Planning Hazards Assessment (EPA) analysis has been posted on the STWG web site. It can be found under the "STWG Products and Papers" heading on the Source Term information webpage (<http://orise.orau.gov/emi/scapa/working-groups/source-term/source-term-information.htm>).

Old Business

STWG AI 09-03 (Activity Continuing): Respirable vs. Non-respirable Source Terms (Wayne Davis)

Wayne Davis is finalizing the recommendation paper discussing the use of non-respirable source terms to ensure that non-respirable dose impacts (e.g., ground shine) are being considered. The paper incorporates discussions regarding deposition velocities between DOE/HS-31 and the Defense Nuclear Facilities Safety Board (DNFSB). The main concern is with respect to releases of gamma-emitting radionuclides, where the dose is dependent on the combination of deposition velocity and respirable fraction. In these cases, what has previously been thought to be conservative (i.e., using a smaller deposition velocity) may not actually provide the most restrictive

results. The paper will be given by Denny Armstrong at the 11th Emergency Preparedness & Response Topical Meeting in Knoxville, TN on August 8-10, 2011.

STWG AI 09-05 (Activity Continuing): Dose Equivalent Curies (Dan Conners)

Michele reviewed the results of the survey that she conducted on the use of Dose Equivalent (DE) Curies to support emergency planning and plume modeling during real events. Some sites use it; but there are limitations and a work-around is sometimes needed. There is no singular hard and fast rule. Michele will put a discussion together on the limitations, show the survey, recommend that the method should be used at your own risk, and will send for STWG review. This may turn into a White Paper to emphasize cautions and possible applications (i.e., it is an effective tool for screening when you don't know the nature of your release). Wayne will add a response from Savannah River Site to the survey. April Jivelekas volunteered to provide information on how the code is being implemented at Hanford.

New Business

Michele discussed the new work items that were mentioned at the STWG Annual Meeting:

- **Multiple release scenarios from Beyond Design Basis Events (BDBE's):** This may become applicable to Category 1 and Category 2 nuclear facilities. Carl mentioned that some of this was addressed during the June 6–7, 2011 DOE/HSS workshop, which has been posted on the HSS website. It is too early to determine whether STWG should engage in this.
- **Use of ARCON96/RG 1.194:** Carl described the ARCON96 code that NRC developed for control habitability determinations and has endorsed its use to as near as 10 meters from the release rather than the other Gaussian codes that do not reach steady-state until 100 meters from the release. This could be useful for collocated worker EPHAs. Carl also mentioned that Steve Homann is looking into incorporating the empirical algorithms into HOTSPOT. NARAC looked into this in 2008 but could not do so since the ARCON96 expanded horizontal and vertical dispersion coefficients cannot work in a 3-dimensional Lagrangian Particle-In-Cell dispersion model. Cliff mentioned that the Consequence Assessment Modeling Working Group is a better suited place for this and will refer it to Jeremy Rishel for future consideration.
- **HOTSPOT deposition velocity:** HOTSPOT's non-respirable deposition velocity of 8 cm/sec needs some justification. Wayne mentioned that the deposition velocity dependency on particle size makes this an appropriate issue for the STWG. Carl stated that DOE/HSS has just released a Position Paper on deposition velocity that covers this subject in detail and can be very useful if the STWG takes this on. Michele will work with Chuck Rives, who originally introduced the subject, to develop an objective statement to define the issue better. This will be tracked as AI 11-01.

Next SCAPA STWG Meeting

The next STWG teleconference is tentatively scheduled for **September 14, 2011 at 2:00 p.m. EDT.**

Adjournment

The meeting adjourned at **2:31 p.m. EDT.** Michele thanked everyone for their time and contributions.