SCAPA Consequence Assessment Modeling Toolbox

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- Others are welcome to participate

Objectives of the Working Group

- [illegible]e use of improved, quality assured, [illegible]marked consequence assessment [illegible]echniques within the DOE complex
- Promote common methods, tools, and standards for consequence assessment modeling
- Plan for future needs, requirements, and missions
- Promote innovation and technology transfer
- Advocate awareness of appropriate consequence assessment modeling capabilities and the benefits of adopting such methods.

Placeholder Toolbox

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Modeling Toolbox

The purpose of the Modeling Toolbox is to provide information on consequence assessment models that are in use across the DOE complex. The initial objective is to provide information on relatively simple models ("basic modeling tools") that have the following characteristics:

- They are in relatively common use across the complex.
- They can easily be applied at any DOE site.
- They are readily available at little or no cost. Of primary interest are models that can be easily downloaded from a publicly accessible website.
- They have readily accessible documentation (e.g., a downloadable user's guide).

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In additional, information is also provided on more sophisticated modeling tools ("advanced modeling tools") that might not meet one or more of the above criteria and might require a significant investment in time and resources to install and learn to use.

Basic Modeling Tools

Some basic modeling tools include:

Hotspot The Hotspot Health Physics codes were created to provide emergency response personnel and emergency planners with a fast, field-portable set of software tools for evaluating incidents involving radioactive material. The model software is also used for safety-analysis of facilities handling nuclear material. Hotspot provides a fast and usually conservative means for estimation of the radiation effects associated with the short-term (less than 24 hours) atmospheric release of radioactive materials. The Hotspot codes have been developed for the Windows 95/98/00/NT/XP operating systems.

Toolbox Developments

- [redacted]vas held with the DOE Central Registry [redacted]earn more about their toolbox
- [redacted] Registry provides a repository for computer codes that are used to support safety analyses and evaluations of DOE facilities and establish the safety basis for DOE operations.
- To date, six codes have been identified as Central Registry toolbox codes: ALOHA, CFAST, EPICODE, GENII, MACCS2, and MELCOR. Other models (e.g., HOTSPOT) will be considered in the near future for inclusion in the Central Registry toolbox.

More on the Central Registry

- Registry is developing guidance on ility of each model, default inputs, and ditions for using the codes.
- Focus is on QA – a gap analysis is being performed on each toolbox code to determine the actions needed to bring the code into compliance with SQA criteria
- While code owners are responsible for ensuring that the codes are properly maintained, the Central Registry works to ensure that adequate support is provided for software quality assurance.

Central Registry (cont)

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- Central Registry is well funded and staffed by DOE staff and full-time contractors.

More on CAM Toolbox Development

- [redacted]ation is very important for “safety [redacted]or emergency response applications, [redacted]nportant but is only one of the factors that our toolbox should consider in selecting appropriate models.
- Should we limit a site’s choice of consequence assessment models for emergency response based on potential SQA gaps?
- What can we do with our limited resources to tackle QA issues?

Current Thinking / Next Steps

- [illegible]ctions for “safety codes” and those that [illegible] emergency response / research codes
- [illegible]ety codes that are approved by the Central Registry (i.e., meet SQA requirements)
- Provide information on codes used by DOE Sites and HQ (e.g., using information sources such as OFCM products)
- Provide links to webpages and documents that provide more information
- Work to set appropriate QA standards for emergency response codes