

## **Public Meeting Summary**

On February 21 and 22, 2012, public meetings were conducted for the State-of-the-Art Reactor Consequence Analyses (SOARCA) project in Surry, Virginia and Delta, Pennsylvania. The SOARCA team presented an overview of the project including the findings of the study and answered public comments. The following is a summary of each meeting:

### **Surry (February 21, 2012)**

#### **NRC Affiliated Attendees (Affiliation):**

Jonathan Barr (U.S. Nuclear Regulatory Commission)  
Nathan Bixler (Sandia National Laboratories)  
Scott Burnell (U.S. Nuclear Regulatory Commission)  
Francis (Chip) Cameron (Zero Gravity Group, LLC)  
Richard Chang (U.S. Nuclear Regulatory Commission)  
Randy Gauntt (Sandia National Laboratories)  
Joe Jones (Sandia National Laboratories)  
Patricia Santiago (U.S. Nuclear Regulatory Commission)  
Jason Schaperow (U.S. Nuclear Regulatory Commission)  
Randy Sullivan (U.S. Nuclear Regulatory Commission)  
Steven Sanchez (U.S. Nuclear Regulatory Commission)

Chip Cameron, the meeting facilitator, introduced the U.S. Nuclear Regulatory Commission (NRC) staff and Sandia National Laboratories. He explained the purpose of the meeting and described the process for submitting formal comments.

Pat Santiago presented an overview of the NRC and described the activities of the NRC Office of Nuclear Regulatory Research. She explained that the NRC is accepting comments on Draft NUREG-1935, which is the SOARCA main report, and summarizes the analyses for the two pilot plants. The document will be updated with consideration of the comments received. The next steps include presenting SOARCA at the Regulatory Information Conference (RIC) and submission to the NRC's Commission in June of this year. Jason Schaperow presented an overview of the SOARCA project including a description of the accident sequence selection, the severe accident modeling, emergency planning, and the consequence analysis. Questions were then received from the audience.

Randy Sullivan noted that the study is draft and out for public comment and will be finalized after consideration of public comments.

Richard Chang explained that the SOARCA project included a formal review by independent technical experts. A summary letter from these technical experts provided a generally positive review over a broad range of expertise.

Randy Gauntt added that SOARCA was an application of cumulative knowledge and provides a re-baseline of severe accident analysis. SOARCA shows that we have the technology to better understand severe accidents. He also described the models as largely developed by Sandia National Laboratories for NRC and these began being built after Three Mile Island (TMI). After 2001, the tools began being used in a realistic and predictive manner.

## **Peach Bottom (February 22, 2012)**

### **NRC Affiliated Attendees (Affiliation)**

Jonathan Barr (U.S. Nuclear Regulatory Commission)  
Nathan Bixler (Sandia National Laboratories)  
Scott Burnell (U.S. Nuclear Regulatory Commission)  
Chris Cahill (U.S. Nuclear Regulatory Commission)  
Francis (Chip) Cameron (Zero Gravity Group, LLC)  
Richard Chang (U.S. Nuclear Regulatory Commission)  
Randy Gauntt (Sandia National Laboratories)  
Joe Jones (Sandia National Laboratories)  
Patricia Santiago (U.S. Nuclear Regulatory Commission)  
Jason Schaperow (U.S. Nuclear Regulatory Commission)  
Randy Sullivan (U.S. Nuclear Regulatory Commission)  
Samuel Hansell (U.S. Nuclear Regulatory Commission)  
Adam Ziedonis (U.S. Nuclear Regulatory Commission)  
Eliot Brener (U.S. Nuclear Regulatory Commission)  
Rebecca Schmidt (U.S. Nuclear Regulatory Commission)

Chip Cameron introduced the NRC staff and Sandia National Laboratories. He explained the purpose of the meeting and described the process for submitting formal comments.

Pat Santiago presented an overview of the NRC and described the activities of the NRC Office of Nuclear Regulatory Research. She explained that the NRC is accepting comments on Draft NUREG-1935, which is the SOARCA main report, and summarizes the analyses for the two pilot plants. The document will be updated with consideration of the comments received. The next steps include presenting SOARCA at the RIC and submission to the NRC's Commission in June of this year. Jason Schaperow presented an overview of the SOARCA project including a description of the accident sequence selection, the severe accident modeling, emergency planning, and the consequence analysis. Questions were then received from the audience. At the Peach Bottom meeting, multiple questions were asked together and several of them were from members of Beyond Nuclear, Peach Bottom Alliance and Three Mile Island Alert. A short summary of the responses from NRC staff are described below.

Randy Sullivan explained that when an evacuation time estimate (ETE) is developed, if return trips are required for buses, they are identified. Local authorities have plans for this and these plans are inspected by the Federal Emergency Management Agency. He also explained that the 10 mile emergency planning zone (EPZ) has been found adequate for implementation of initial protective actions. These protective actions can be expanded beyond 10 miles if local

authorities determine this is necessary. The local authorities know how to expand evacuation areas.

Jason Schaperow explained that seismic, wind and flooding are external events and were considered in the sequence selection. The seismic event was selected for the analysis.

Randy Sullivan discussed that the seismic analysis included consideration that roadways and bridges may fail. Within the Peach Bottom EPZ, there were only a few roadway infrastructure failures identified and these were found to be few and dispersed. Therefore, there was little effect on the ETE.

Randy Sullivan explained that NRC research found that large scale evacuations occur about once a month and this is documented in NUREG/CR-6864. These evacuations have been successful and protected the public. Since the accident at Three Mile Island (TMI), there have been 30 years of NRC emergency preparedness requirements and inspections at every nuclear site and FEMA has evaluated responsible civil authorities that support power plants. The NRC expects that emergency planning, developed after TMI, will be effective.

Randy Gauntt responded to questions within a presentation from Three Mile Island Alert that was generally focused on the MELCOR model. Randy Gauntt noted that MELCOR has been validated against other codes and physical models.

Randy Sullivan stated that SOARCA does not provide a basis to reduce the size of the EPZ. Rather, SOARCA shows that the existing emergency preparedness regulations are protective of public health and safety. He also explained that regulations require the capability to issue a protective action within about 30 minutes. The SOARCA project selected 45 minutes and found that actual exercise data showed this to be about right. SOARCA modeled evacuation beginning about 1 hour later. Randy explained that in reality evacuations occur as a distribution with some people leaving quickly and others taking more time. The consequence model used in SOARCA limited the level of detail to which these actions could be modeled. Jason added that SOARCA also included a sensitivity study that delayed the entire response by an additional 30 minutes.

Randy Sullivan discussed that new protective action guidance issued in December requires licensees to determine whether specialized public protective actions would be necessary for an accident that could result in a large early release. This guidance facilitates better focus on when evacuation may be needed.

At this point, Chip Cameron closed the meeting.