

Session 1: Workshop 1: Virtual Plumes

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Abstract:

Many state, local and licensee nuclear emergency response programs have adopted or shown interest in the Virtual Plumes software for simulating off-site field team plumes. Virtual Plumes was demonstrated during the 2007 NREP conference in conjunction with the State of New Jersey Bureau of Nuclear Engineering in a one hour breakout session. During that session, the focus was the effects of placing the participants in a realistic situation, using radiation simulation instruments and how it impacted the field team's response and the "non-perfect" data returned to assessment centers. The 2007 conference attendees did not have the opportunity to observe how a scenario is generated from start to finish and implemented in the field.

The focus of the 2009 workshop will be to demonstrate the full development of a scenario including the creation of a release point, predetermined survey points, entering drill data, verifying scenario response and demonstrating some of the lesser known functions within the program. Time will be allocated in order for participants to ask any technical related questions regarding the software and scenario development. During the scenario development phase, participants will observe the speed at which changes to scenario parameters can be implemented along with several other features which allow for customization of a scenario. Following the development of a scenario in the classroom setting, the workshop participants will be afforded the opportunity to run the drill; actually traversing the plume in a vehicle and observing instrument response. The workshop will provide the participants with the opportunity for a "hands on" experience blending concepts of scenario creation, development, and implementation into a single comprehensive demonstration. There is a unique opportunity for an interactive workshop session available during the 2009 NREP Conference. It is our intent to take full advantage of that opportunity during this proposed workshop. The Commonwealth of Pennsylvania's Bureau of Radiation Protection (BRP) will have their nuclear emergency response vehicles and drop probes on display throughout the conference for inspection by attendees. The BRP has graciously offered the use of these vehicles for the "real time" scenario testing and implementation phase of this workshop. The BRP response vehicles are equipped with a system that utilizes Virtual Plumes for drill and exercise simulation. Incorporating the use of the vehicles into the workshop will provide participants with an inimitable opportunity to actually see the scenario they created in the classroom setting implemented in the response vehicles.

Biographical Sketch of Paul Holland:

Paul Holland works for Exelon Nuclear Corporation as the Emergency Planning Radiological Controls Coordinator for the company's four Mid Atlantic sites. He is responsible for radiological issues relative to Emergency Planning at the sites and the company's Emergency Operations Facilities. His primary responsibilities include assisting in the development of Emergency Planning procedures and policies, development of off-site radiological drill data, performing radiological assessment training of protective measures and field team personnel and interfacing with state personnel for emergency planning radiological issues.

Mr. Holland holds degrees in Nuclear Power and Electronic Engineering. Prior to joining Exelon Corporation in 2002, Paul worked for American Electric Power for 21 years in Radiation Protection and four years in Emergency Planning at the Donald C. Cook Nuclear Plant in Michigan.

Biographical Sketch of Patrick Mulligan:

Patrick Mulligan is Manager of the Bureau of Nuclear Engineering (BNE) in the NJ DEP's Radiation Protection and Release Prevention Program. The BNE is responsible for addressing public health and safety issues as they relate to nuclear power generating stations that affect New Jersey. Pat's experience with the Bureau has been focused toward emergency response and preparedness. His responsibilities have included exercise scenario development, radioactive plume modeling, emergency responder training, and reviewing and commenting on federal and industry guidance documents. He provides technical assistance to the NJ State Police Office of Emergency Management for the review and revision of the state's radiological emergency response plan, procedures, and training program. Pat is the lead trainer within the state for radiation and health physics topics for nuclear power plants.

Mr. Mulligan holds an Associates Degree in Radiological Technology and a Bachelor of Science Degree in Radiation Physics from Fairleigh Dickinson University. Pat also holds a Master of Science Degree from NJIT in Environmental Policy Studies. Prior to coming to the state, Pat served as a member of the Fairleigh Dickinson University faculty, teaching courses in Biomedical Ethics, Radiation Physics, and Radiographic Anatomy. He is currently the Chair of the Council of Radiation Program Director' Committee on Emergency Response Planning and a member of the National REP Conference Committee.