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April 1, 2014

MEMORANDUM TO: Donald Helton, Senior Reliability and Risk Engineer  
Probabilistic Risk Assessment Branch  
Division of Risk Analysis  
Office of Nuclear Regulatory Research

FROM: Robert Kahler, Chief */RA/*  
Inspection and Regulatory Improvements Branch  
Division of Preparedness and Response  
Office of Nuclear Security and Incident Response

SUBJECT: RASCAL 4.3 DOSE CALCULATIONS IN SUPPORT OF VOGTLE  
LEVEL 3 PROBABILISTIC RISK ASSESSMENT PROJECT

This memorandum transmits the results of severe accident dose projections performed in support of the Vogtle Level 3 Probabilistic Risk Assessment (PRA) Project. The Office of Nuclear Security and Incident Response (NSIR)/Division of Preparedness and Response (DPR) staff performed these site boundary dose calculations to aid in the determination of entry into severe accident management guidelines (SAMG) as described in Enclosure 1. The staff performed these calculations using the Radiological Assessment System for Consequence Analysis (RASCAL) code version 4.3.

Enclosure 1 contains a background discussion provided by the Office of Nuclear Regulatory Research/Division of Risk Analysis staff on the use of dose-based triggers for entry into SAMGs; the parameters of the requested calculational combinations to support the analysis; and the results of the dose calculations provided by NSIR/DPR staff. Enclosure 2 contains SAMG entry flowcharts for various weather scenarios. Enclosure 3 contains the approach used in RASCAL 4.3 to set up the calculational combinations as specified in Enclosure 1. Questions regarding this effort may be directed to the staff contact below.

Enclosures:

1. SAMG Use of Dose-Based Triggers (Non-Public)
2. SAMG Entry Flowcharts
3. RASCAL 4.3 Inputs for Site Boundary Dose Projections

The document transmitted herewith contains sensitive unclassified information. When separated from Enclosure 1, this document is decontrolled.

CONTACT: Todd Smith, NSIR/DPR  
301-287-3744

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