September 21, 2012

Mr. Joseph E. Pollock, Executive Director
Nuclear Operations
Nuclear Energy Institute
1776 I Street, NW
Washington, DC 20006

SUBJECT: STRATEGIES FOR MITIGATING RADIOLOGICAL RELEASES IN SEVERE ACCIDENTS

Dear Mr. Pollock,

In a letter dated May 15, 2012, the Nuclear Energy Institute (NEI) requested that the U.S. Nuclear Regulatory Commission (NRC) staff evaluate the merits of requiring containment filtered vents as part of a more comprehensive analysis that considers other alternatives for precluding and mitigating potential radiological releases from core damage events. On June 14, 2012, NEI provided an update and additional details on mitigating radiological releases, including some preliminary observations stemming from the industry's evaluations. In the June 14th letter, NEI stated that any evaluation of alternatives should include a review of the variety of strategies that are based on existing severe accident management guidelines. The staff understands that the industry has been studying several strategies to retain radionuclides in BWR Mark I and Mark II containments.

On August 8, 2012, the Electric Power Research Institute (EPRI) participated in a public meeting with the NRC staff. EPRI presented information on computer modeling and analysis conducted to support potential strategies for mitigating radiological releases in severe accidents in Mark I and Mark II containments. The EPRI modeling and analysis were intended to support demonstration that decontamination factors greater than 1000 were achievable, predominately through existing design features and operator actions, such as optimally timed and repeated operation of wetwell and drywell vent paths. However, the feasibility of successfully executing such an approach with a high degree of reliability in a severe accident environment, including consideration of potential operator errors and equipment failures, would need to be demonstrated by industry to provide NRC with reasonable assurance that such decontamination factors are achievable. In addition, topics such as the necessary instrumentation, training, and procedures would need to be discussed, along with the range of potential accident sequences and attendant conditions to which this filtering strategy applies. Additionally, the potential for hydrogen gas buildup in the venting line, as a result of condensation of water vapor between repeated venting cycles, would also need to be resolved.

The staff supports a holistic approach to severe accident management for Mark I and Mark II containments to further enhance defense-in-depth and addresses the uncertainties in the likelihood of accidents, human performance, and the plant's response. We look forward to receiving the ERPI report when it becomes available, and if the industry has alternative filtering strategies supported by sufficient information to provide reasonable assurance that a decontamination factor of 1000 are achievable, we will consider the industry's input as we develop the notation vote paper for the Commission. To ensure timely consideration of any industry strategies or proposals, we request that you provide any additional information by October 5, 2012. Please do not hesitate to contact me if you have any questions.

Sincerely,

/RA by Robert M. Taylor for/

David L. Skeen, Director
Japan Lessons-Learned Project Directorate
Office of Nuclear Reactor Regulation

cc: S. Kraft