NUCLEAR ENERGY INSTITUTE

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June 1, 2009

Mr. William F. Burton
Chief
Rulemaking, Guidance, and Advanced Reactors Branch
U.S. Nuclear Regulatory Commission
MS 6 C34
Washington, DC 20555-0001

Subject: Backfill ITAAC

Project Number: 689

Dear Mr. Burton:

The purpose of this letter is to document understandings from our May 8, 2009 public meeting with the staff to discuss generic ITAAC on shear wave velocity (SWV) and compaction for backfill under Category 1 structures. We believe it was a productive interaction that enabled us to identify points of agreement as well as areas needing additional discussion. These understandings are summarized in the enclosure.

In particular, we appreciate that the staff agreed to consider a proposed generic SWV ITAAC that provides for use of site-specific analyses to demonstrate seismic design adequacy in the event that a specific value for SWV in backfill is not achieved. The SWV ITAAC is unique due to the nature of the analyses, backfill installation processes, and test methods involved, which could lead to difficulty during the ITAAC implementation process. The SWV ITAAC is also unique because it is based on a generic Tier 1 Site Parameter, not a Tier 1 Design Requirement. Structuring the acceptance criteria in a way that recognizes the unique nature of SWV ITAAC could mitigate problems during construction while ensuring the adequacy of the seismic design.

SWV ITAAC considered to date require demonstration that a specific value for SWV in backfill is achieved. On May 8, we proposed a SWV ITAAC that requires a specified SWV to be achieved <u>or</u> demonstrated via site-specific analyses that seismic design is adequate based on the measured SWV. We believe the approach discussed with the staff on May 8 is appropriate and desirable for several reasons:

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- It provides assurance that completed backfill will support Category I structures with sufficient seismic design margin.
- It provides an appropriate basis for the staff's safety evaluation for COL (i.e., backfill must be demonstrated to be adequate by either meeting the SWV value specified in the ITAAC or by site-specific SSI and structural analyses using approved methodologies).
- It mitigates foreseeable problems resulting from the requirement for an ITAAC on SWV in a way that is technically appropriate.
- It is similar to other unique ITAAC such as Emergency Planning, which contains alternative success criteria for demonstrating adequacy of off-site emergency plans, and ASME piping reconciliation, which provides a path to deal with as-built designs that differ slightly from those approved. Similar to ASME Code rules governing piping design reconciliation, methodology previously approved by the NRC will be used for demonstrating seismic design adequacy in the event the specified SWV is not met in the completed backfill.

While we agree with the staff statements on May 8 that Section 52.98(f) provides a path (License Amendment) for deviating from the acceptance criterion of an ITAAC, we believe that ITAAC should be structured to mitigate foreseeable implementation problems whenever possible. Section 52.98(f) should not be relied upon to resolve issues that are recognized in advance and avoidable through appropriate structuring of ITAAC.

The alternative path included in the proposed SWV ITAAC specifies the design commitment and associated acceptance criterion in functional terms (demonstrate adequacy of seismic design). The required site-specific analyses would be performed using methodology that was previously approved in the DCD or FSAR. This approach is consistent with that being used by the NRC staff to approve plant-specific Technical Specifications lacking particular information. For example, in lieu of a specific setpoint, ISG-8 allows the applicant to commit to use an NRC-reviewed and approved methodology to determine the plant-specific value after the license is granted.

Like the NRC staff, applicants strongly prefer to satisfy the SWV ITAAC by demonstrating that the specified SWV is achieved in the completed backfill. Even without the need for a License Amendment, the alternative path of performing site-specific analyses is costly and calls for additional NRC inspection. The requirement to initiate the License Amendment process in the event the specified SWV is not met would add to these impacts. Of particular concern is the potential for an extended period of uncertainty during construction while the License Amendment request is processed, including consideration of any requests for hearing and the conduct of any hearing if contentions are admitted.

The generic SWV ITAAC we proposed on May 8 is identified in the enclosure. We believe the proposed ITAAC provides an effective and practical way to mitigate the concerns described above while ensuring the seismic design adequacy of new plants. We look forward to your feedback on this

issue. In addition, as discussed at the May 8 meeting, we understand that the staff will produce a meeting summary that will document the key points of discussion from our December 18, 2008 and May 8 meetings. We trust the enclosed summary provides helpful input in this regard.

If you have any questions, please contact me or Kimberly Keithline (202-739-8121, kak@nei.org).

Sincerely,

Russell J. Bell

Enclosure

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