May 23, 2012

Mr. Rodney McCullum
Director, Used Fuel Programs
Nuclear Energy Institute
1776 I Street, NW, Suite 400
Washington, DC 20006

SUBJECT: RESPONSE TO NUCLEAR ENERGY INSTITUTE LETTER DATED FEBRUARY 28, 2012, REGARDING THE INDUSTRY POSITION ON SECONDARY IMPACT CONSIDERATIONS FOR TRANSPORTATION CASKS

Dear Mr. McCullum:

By letter dated February 28, 2012, the Nuclear Energy Institute (NEI) provided the industry position on secondary impact considerations for transportation casks. NEI notes that it appears the Nuclear Regulatory Commission (NRC) has been using Requests for Additional Information (RAIs) to "impose a new generic position" to address the potential for secondary impacts during transportation accidents. In addition, NEI expresses technical and regulatory concerns with secondary impact consideration and concludes that the existing regulations ensure adequate protection of public health and safety.

The RAI process has not been used to impose a new generic position. We recognize that the orientation of the contents inside the transportation package during a free drop test has not been traditionally addressed by the NRC staff. However, the staff has asked applicants for new spent nuclear fuel (SNF) transportation package designs to address this issue because of the potential ramming effect of the SNF into the internal containment system during low-probability transportation crash events. Your letter is similar in nature to a letter received from NAC, International (NAC), which requested clarification on secondary impact evaluations as they relate to NAC's upcoming Model No. MAGNATRAN license application. The NRC response to NAC dated May 3, 2012 (ML121250358), explains that this issue may affect previously-approved transportation packages; thus, it is being referred to the agency's Generic Issues (GI) Program. This program uses a five-stage approach to first identify, accept, and screen the generic issue, and subsequently perform the safety/risk and regulatory assessments. Possible outcomes of the GI Program may include no additional regulatory action, changes to implementing guidance, changes to the existing regulations, and/or applicable backfit considerations for approved designs.

As the issue of secondary impact is being evaluated via the GI Program, the NRC staff will not require gaps that may be present during horizontal transportation, to be analyzed in the vertical hypothetical accident condition (HAC) drop test analysis. However, applicants have the option to design their packages and evaluate for secondary impacts, similar to recently-approved package designs that incorporated design features such as internal spacers to minimize the possible gaps within the package and/or strengthened cask bolts to withstand the delayed

secondary impact effects. As previously mentioned, the safety/risk assessment conducted as part of the GI Program may lead to rulemaking or other generic actions to assure continued safety. Thus, although this issue may not be evaluated in upcoming licensing actions, the issue may be revisited for transportation packages in the future, under appropriate agency processes (e.g., as part of renewal application, or via generic communication).

NEI states in its letter:

> In addition, it is very difficult to have the best estimate ½" gap when you consider the fabrication tolerance of the cask, various fuel assembly lengths, burnup vs. radiation growth, and the thermal growth due to hot/cold and heat loads. Therefore, use of spacers may introduce a new potential accident, e.g., crushing assemblies when installing the lid, since the elongation of some assemblies may not be predictable. The spacer would be loaded into the cask and an unexpected elongated assembly could be crushed unknowingly when the lid is installed on top of the spacer.

There are certified storage and transportation designs which currently may use fuel spacers for various design and operational needs. We request that you provide available information on this potential accident vulnerability, including cask designs and specific fuel designs of concern. In addition, please provide any fuel loading operational experience that indicates unexpected growth or elevation of SNF in cask systems, or suspected crushing of fuel assemblies. In an effort to facilitate further examination of this potential safety issue, please provide this information as soon as practicable. We appreciate the views and concerns raised in your letter, as well as any additional insights on potential risks with the use of fuel spacers.

If you have any questions in this matter, please contact the Licensing Branch Chief, Michael Waters, at 301-492-3300.

Sincerely,

/RA/
Douglas W. Weaver, Deputy Director
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety
and Safeguards

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