UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

January 4, 2000

Ms. Lynnette Hendricks, Director
Plant Support, Nuclear Generation
Division
Nuclear Energy Institute
1776 I Street NW, Suite 400
Washington, DC 20006-3708

SUBJECT: RESPONSE TO LETTER DATED AUGUST 24, 2000

Dear Ms. Hendricks:

I am responding to your August 24, 2000, letter, in which you submitted a document entitled "Dry Storage Cask Weld Flaw Acceptance Criteria" and announced that the Nuclear Energy Institute (NEI) plans to publish it. That submittal intended to provide additional guidance in establishing flaw acceptance criteria for ultrasonic testing (UT) of austenitic stainless steel closure welds of dry cask storage canisters, as currently described in the U.S. Nuclear Regulatory Commission's (NRC) Interim Staff Guidance (ISG) No. 4, Rev. 1. That letter was a follow-up to a public meeting between NEI and NRC held on February 29, 2000, as documented in a meeting summary dated April 5, 2000, and was the subject of a teleconference between the NRC, NEI, Electrical Power Research Institute, et al., on November 3, 2000.

The ISGs are intended to provide the NRC staff guidance on issues that have not yet been incorporated in standard review plan (SRP) and are intended to provide consistency between staff reviews. Like the SRPs, ISGs define an approach acceptable to the staff and are not intended to preclude other alternatives that may also be acceptable. ISG-4, Rev.1, does provide guidance on UT acceptance criteria by referring to ASME Code Section III, Division 1, Subsection NB-5332 for the pre-service examination requirements. However, the dry cask storage canisters, which form the confinement boundary of the spent fuel, do not have a Code specifically written for them, and the guidance provided was a attempt to provide some relief from Section III design and fabrication requirements which typically don't allow Code components to be built with defects in them. Generally, Code components wouldn't be expected to experience flaws in the welds until after the component has been placed into service and has experienced operational loadings, typically at the end of a ten year period, and then the flaws would be evaluated in accordance with ASME Code Section XI requirements using fracture mechanics techniques. ISG-4, Rev.1, was developed, recognizing that the canister is actually placed in service once the closure weld is made and to minimize worker dose by providing some relief from fabrication UT acceptance standards of ASME NB-5331.

As stated in the meeting summary dated April 5, 2000, the Spent Fuel Project Office (SFPO) staff agrees, in principle, with the approach of using fracture mechanics to establish UT acceptance criteria for the storage canister closure weld. However, the staff does not agree that the UT acceptance criteria be based on the largest possible cracks that can be justified via fracture mechanics. According to the submitted NEI paper, flaws that exceed one half of weld

thickness would be found acceptable. As proposed, this approach could result in the use of UT to justify poor welding practice and is contrary to quality workmanship and good welding practice. Also, the SFPO staff is concerned that using such a large UT acceptance criteria would appear to create a substantial difference in the acceptable flaw sizes that ensure quality workmanship and good welding practices for the closure weld and the rest of the welds in the confinement boundary.

We would be amenable to continue to work with you in the establishment of an UT acceptance standard for the closure weld. However, it is our understanding, that the ASME is preparing a revision to ASME Section III, Division 3 Code, to include the storage canisters and will be issued soon. This initiative was described by a high ranking official within ASME at a NRC/NEI workshop as being on the fast track, at one time thought to be issued in late 2000. Since this activity is currently under development within the Code consensus process, it may be advantageous for the NRC and NEI to work within the ASME Code consensus process to ensure that these canisters meet all Code requirements, thereby permitting “stamping” and an ANI presence in the fabrication shops.

Sincerely,

***/RA/***

M. Wayne Hodges, Deputy Director
Technical Review Directorate
Spent Fuel Project Office
Office of Nuclear Material Safety
and Safeguards

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Sincerely,

*(Original Signed by:)*

M. Wayne Hodges, Deputy Director
Technical Review Directorate
Spent Fuel Project Office
Office of Nuclear Material Safety
and Safeguards

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