

March 2, 2006

Mr. Alex Marion, Senior Director of Engineering
Nuclear Energy Institute, Nuclear Generation Division
1776 I Street, NW
Washington, DC 20006-3708

Dear Mr. Marion,

This responds to your letter of February 10, 2006, to Mr. James E. Dyer, in which you discuss the actions taken by the industry to address concerns over primary water stress corrosion cracking (PWSCC) in reactor coolant system (RCS) dissimilar metal butt welds in pressurized water reactors. In your letter, you point out the actions taken by the Materials Reliability Program (MRP) under the MRP-139, "Primary System Piping Butt Weld Inspection and Evaluation Guidelines." The Nuclear Regulatory Commission (NRC) staff recognizes and acknowledges the actions taken by the industry to develop and issue MRP-139 under the "mandatory" implementation framework of NEI 03-08. The implementation of these guidelines is a significant positive action to address PWSCC concerns.

The industry actions to develop and implement the MRP-139 inspections facilitated the NRC staff electing to pursue the deliberative process of codification of requirements involving all stakeholders rather than initiating other reactive regulatory actions. The NRC staff believes that the approach of working with the American Society of Mechanical Engineers (ASME) to revise inspection requirements and subsequently revise 10 CFR 50.55a is necessary, in the best interest of the public health and safety, and publicly transparent.

The ASME Code inspection requirements are incorporated by reference in 10 CFR 50.55a and provide a regulatory foundation for assuring the integrity of pressure retaining components. However, the current ASME Code requirements for inspection of Alloy 82/182 butt welds are not frequent enough to ensure Code allowable limits will continue to be met in the event that PWSCC initiates. This conclusion is based on crack growth rates developed by EPRI and the ASME Code maximum flaw depth allowable limit of 75% through wall. The NRC staff believes that the ASME Code requirements need to be revised to ensure that Code allowable limits will not be exceeded, leakage does not occur, and any potential long part-through-wall flaws are detected before reaching a critical flaw size.

The NRC sent a letter to ASME on December 20, 2005, which requested that ASME address the inspection of RCS dissimilar metal welds for PWSCC. At an ASME meeting on February 13, 2006, representatives from the NRC staff and industry presented their views on codification of inspection requirements for these welds. As you are aware, on February 14, 2006, the ASME Subcommittee XI Executive Committee agreed that the ASME Code requirements need to be revised and approved moving forward to develop an ASME Code Case on appropriate inspection frequency requirements for the RCS dissimilar metal butt welds.

Your letter notes that MRP-139 guidance is based on managing degradation as a means of ensuring the integrity of the primary system and that the ASME Code is based on pressure integrity, a more basic standard with greater safety significance. By distinguishing between system integrity and pressure integrity, the NEI letter implies that the ASME Code is concerned with structural integrity and not necessarily intended to ensure leakage integrity as well. Further, your letter indicates that it would not be appropriate to include the MRP-139 guidance in the ASME Code as this would fundamentally change the basis of the affected Code sections in a way that is not consistent with other Code requirements. It is clear that Code allowable limits and inspection frequencies are intended to provide both structural and leakage integrity and, therefore, the Code is an appropriate vehicle for establishing degradation detection requirements before piping integrity is challenged, recognizing that Code inspection frequencies occasionally need to be revised to reflect new findings and operating experience.

Further, your letter indicates that NEI continues to believe that the NRC's use of the ASME Code process as a way of imposing new regulatory requirements, based on industry guidelines implemented under the industry's Materials Initiative, is unnecessary and may act as a disincentive to future voluntary industry actions enhancing safety and plant reliability.

As discussed at the February 6, 2006, Commission Briefing on Materials Degradation Issues and Fuel Reliability, the NRC will pursue regulatory action whenever operating experience or new information emerges indicating shortcomings in the regulatory foundation for assuring public health and safety. There may be additional cases in the future, similar to PWSCC in reactor coolant system butt welds, where the NRC concludes that it is necessary to develop new requirements on an issue, even though it is being addressed by industry guidelines. The shift away from an NRC reactive approach is facilitated through these proactive initiatives. We regard this type of cooperation as a vehicle to success.

One aspect of successful cooperation involves the ability of participants in the ASME Code process to have access to all available information, including industry reports, when developing Code cases or other revisions to the ASME Code. We understand the financial interests implicit in the development by industry of proprietary information. However, resolution of proprietary concerns will have to be addressed in cases where information of this type is needed to support Code development. During the senior management meeting held at the NRC on February 22, 2006, representatives of the industry's Materials Reliability Program affirmed their willingness to assist in the development of the code case and its technical basis, including resolution of the proprietary concerns.

A. Marion

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We appreciate NEI's proactive involvement in identification and resolution of materials degradation issues including the impact of PWSCC on dissimilar metal butt welds. If you have any questions regarding this information, please contact me.

Sincerely,

/RA/

John A. Grobe, Director
Division of Component Integrity
Office of Nuclear Reactor Regulation

cc: K. Balkey, Vice President, ASME Nuclear Codes and Standards
G. Park, Chairman, ASME Subcommittee on Nuclear Inservice Inspection
J. Ling, Associate Executive Director, ASME Codes and Standards
K. Ennis, Director, Nuclear Codes and Standards
P. McCullough, V.P. Accreditation, Institute of Nuclear Power Operations
G. L. Vine, Executive Director, Washington Representative, EPRI
R. L. Dyle, Southern Company
M. Robinson, Chair, MRP Issue Integration Group
J. Gasser, Executive Chair of PWR Materials Management Program
D. Modeen, Chief Nuclear Officer, Electric Power Research Institute

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