

August 17, 2005

MEMORANDUM TO: Eileen McKenna, Acting Program Director
Reactor Policy and Rulemaking Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

FROM: David T. Diec, Project Manager */RA/*
Reactor Policy and Rulemaking Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF AUGUST 4, 2005 MEETING WITH NUCLEAR ENERGY
INSTITUTE AND MATERIALS RELIABILITY PROGRAM ON BUTT
WELD INSPECTION AND EVALUATION GUIDELINES AND LEAK
BEFORE BREAK

On August 4, 2005, Nuclear Regulatory Commission (NRC) staff met with representatives of the Nuclear Energy Institute and industry in a public category 2 meeting at NRC headquarters in Rockville, Maryland. A list of meeting attendees and slides used for the presentation at this meeting are in Attachment 1 (ML052270162) of this memorandum.

At this meeting, industry presented its summary of inspection and evaluation guidance Materials Reliability Program (MRP-139) for the volumetric and visual inspections of dissimilar metal butt welds in PWR piping and of Leak-Before-Break (LBB) analysis, MRP-140 (ADAMS ML052140050). NEI stated that MRP-139 would be issued to the PWR fleet as mandatory under the NEI 03-08 initiative and would augment inspection beyond ASME Section XI requirements to provide reasonable assurance that the potential of reactor coolant system leakage is minimized, thereby, ensuring a continued safe operation. The MRP-139 would require licensees to implement inspection schedules and requirements to monitor condition of butt welds, track the occurrence of degradation, detect onset of increased initiation as plants age, collect information on crack growth rates, and validate models.

Industry presented a discussion of MRP-140 and concluded that while primary water stress corrosion cracking (PWSCC) is an active degradation mechanism for Alloy 82/182 welds, observed pipe cracks have been small and primarily axial. Also, a PWSCC leakage path is more tortuous than fatigue cracks used in previous LBB evaluations, such that the technical basis for the use of LBB remains strong based on adequate time between leakage detection and growth to critical flaw size to allow safe shutdown of a plant. NEI also indicated that inspection requirements for Alloy 600 locations within the RCS boundary are under consideration and the Materials Reliability Program committee is evaluating ASME Code Case N-722 for further consideration. NEI expects that guidance for Alloy 600 components to be developed by the end of the year.

The staff raised concerns regarding the need to develop a process to identify current applicable plant's relief requests relative to the requirements of MRP-139, and a regulatory framework to ensure that the MRP-139 program is enforceable and effective. At a conclusion of the meeting, the staff indicated that industry's mandatory commitment to implement MRP-139 is a step in the right direction and the staff would continue to engage industry to develop consensus resolutions for these issues.

After responding to public questions and comments, the staff adjourned the meeting.

Project No. 689

Attachments:

- (1) List of meeting attendees
- (2) Presentation slides used at meeting

cc: w/atts: See list

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Project No. 689

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