

October 10, 2002

MEMORANDUM TO: Terence L. Chan, Chief  
Materials Inspection Section  
Materials and Chemical Engineering Branch  
Division of Engineering

FROM: Donald G. Naujock, Metallurgist /RA/  
Materials Inspection Section  
Materials and Chemical Engineering Branch  
Division of Engineering

SUBJECT: SUMMARY OF PUBLIC MEETING HELD SEPTEMBER 6, 2002, WITH  
EPRI- PDI REPRESENTATIVES (TAC NO. MB6244)

On September 6, 2002, the staff participated in a public meeting with representatives from the Electric Power Research Institute (EPRI) - Performance Demonstration Initiative (PDI) program at the NRC, Rockville, Maryland. The purpose of the meeting was to discuss PDI's approach for implementing Appendix VIII, "Performance Demonstration for Ultrasonic Examination Systems," Section XI of the American Society of Mechanical Engineers, *Boiler and Pressure Vessel Code* (Code). The subjects discussed were the status of Supplement 10 specimens and qualifications, expansion of Supplement 10 for site specific configurations, combining Supplements 2, 3, and 10 qualifications for inside diameter pipe examinations, and vessel-to-nozzle coverage criteria. The meeting is a continuation of formal dialog between NRC and the industry on PDI's implementation of Appendix VIII. The dialog provides opportunities to discuss testing difficulties, review PDI's program methodology for the selected supplements, and address issues regarding the ASME Code. The meeting participants and agenda are listed in Attachment 1. Handouts provided by PDI for selected items in the agenda are provided in Attachments 2 through 4.

I. Status of Supplement 10 Specimens and Qualifications

PDI presented a handout (Attachment 2) titled, "Performance Demonstration Initiative Dissimilar Metal Weld Program Update," of the status and issues with dissimilar metal weld (DMW) qualifications. PDI has received 60% of the specimens with the rest expected by the end of September. The specimens should be completely validated for configuration and flaw dimensions by the end of October.

The preliminary results using automated phased array underwater technology were encouraging for detecting circumferential flaws from the inside surface of DMW in pipe. PDI expressed concerns on the sizing of unprepped flaws and the detection of axial flaws. Demonstrations were performed from both sides of the weld and in four directions.

The preliminary results using automated examination techniques to perform examinations from the outside pipe surface have demonstrated limited capabilities. However, manual examinations performed from the outside pipe surface to detect flaws are in need of extensive work. The preliminary results for manual depth sizing of flaws were not very promising. The

DMW demonstrations performed from the outside surface were single sided because the majority of field examinations only have access from one side of the weld.

## II. Site Specific Expansion of Supplement 10

There was insufficient time to discuss site specific applications of Supplement 10 expansion criteria. Instead of delaying this topic for the next meeting with the staff, PDI will present the topic at the Task Group on Appendix VIII, Section XI, ASME meeting scheduled for September 10, 2002, at the Westin Hotel, Hollywood, FL. The staff has representation on the Task Group on Appendix VIII.

## III. Combining Supplements 2, 3, and 10 Qualifications

PDI presented a handout (Attachment 3) titled, "Supplement 14 - Qualification Requirements for Coordinated Supplement 2 and 3 Qualification Performed from the Inside Surface." The staff made several editorial comments and asked for clarification on the acceptance criteria. The handout listed absolute tolerances for sizing acceptance vs. RMS values which are being used for other supplements. PDI and the staff agreed that RMS values are acceptable provided a hierarchical level of difficulty is used for grouping and analyzing the results. The hierarchical level of difficulty is associated with Supplement 10 performance demonstration being the most difficult, followed by Supplement 2 performance demonstrations and finally by Supplement 3 performance demonstrations. To satisfy the hierarchical approach, the sizing results from Supplements 10 and 2 are combined and Supplements 10 and 3 are combined. Each combined set is evaluated for its RMS which is compared with the appropriate acceptance criterion.

## IV. Vessel-to-Nozzle Coverage Criteria

PDI presented a handout (Attachment 4) titled, "White Paper [Reactor Pressure Vessel] RPV Nozzle-to-Shell Examination Coverage and Scan Directions." Because of time constraints, this topic received only limited discussion. The staff's views on examination coverage differs from the discussion presented in the white paper. However, the staff agrees with PDI that for procedure, equipment and personnel qualifications, the criteria in 10 CFR 50.55a(b)(2)(K) applies.

CONTACT: D. G. Naujock, EMCB/DE  
415-2767

Attachments: As stated:

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PUBLIC MEETING WITH EPRI-PDI, SEPTEMBER 6, 2002

NAME	TITLE	ORGANIZATION
Donald Naujock	Metallurgist	NRC:NRR
Terence Chan	Section Chief	NRC:NRR
Jeff Hixon	Materials Engineer	NRC:RES
Steve Doctor	Senior Staff Engineer	PNNL (Phone Conferencing)
Carl Latiolais	Project Manager	EPRI
Mike Gothard	RPV Project Manager	EPRI
Randy Linden	PDI Vice Chairman	PPC
Larry Becker	Program Manager	EPRI
Guy M. Bratton	PDI Chairman	Entergy

**MEETING AGENDA**

Friday, September 6, 2002

1. Reactor pressure vessel-to-nozzle coverage criteria.
2. Building on Supplement 10 qualifications with additional criteria for other qualifications.
  - a. Site specific expansion criteria.
  - b. Combined Supplement 2, 3, and 10 qualifications for inside diameter pipe examinations.
3. Other items of interest.
4. Public comment.
5. Adjourn.