March 05, 2001

MEMORANDUM TO: Cynthia A. Carpenter, Chief
Generic Issues, Environmental, Financial
and Rulemaking Branch
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

FROM: Peter C. Wen, Project Manager**/RA/**
Generic Issues, Environmental, Financial
and Rulemaking Branch
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF FEBRUARY 16, 2001, MEETING WITH THE NUCLEAR ENERGY INSTITUTE AND ELECTRIC POWER RESEARCH INSTITUTE REGARDING PWR MATERIALS RELIABILITY PROJECT

On February 16, 2001, a public meeting was held at the Nuclear Regulatory Commission (NRC) offices in Rockville, Maryland, with NRC senior management and executives of the pressurized-water reactor (PWR) Materials Reliability Project (MRP). The MRP represents member utilities, the Electric Power Research Institute (EPRI), and the Nuclear Energy Institute (NEI) in dealing generically with PWR-specific technical issues. Attachment 1 lists attendees at the meeting and Attachment 2 contains the meeting agenda.

The meeting was held so that the MRP could inform NRC management of the status of the project activities, the schedule for product development, and anticipated NRC staff interactions in the coming years. Because of the concerns raised as a result of V.C. Summer's reactor coolant system hot-leg weld cracking, a major portion of time was devoted to this topic.

Following opening remarks by Mr. Brian Sheron of the Office of Nuclear Reactor Regulation, Mr. Jack Bailey of the MRP, provided the presentation on the MRP's objectives and structure. He stated that the objective of the MRP is to provide a single utility-directed oversight structure to proactively address and resolve, on a consistent industry-wide basis, PWR material-related issues. He indicated that the MRP will integrate NSSS Owners Group activities with the MRP activities. The MRP is divided into Issue Task Groups (ITG). The task groups are: Control Rod Drive Mechanism (CRDM)/Alloy 600 ITG; Fatigue ITG; Reactor Pressure Vessel Integrity ITG; and Reactor Pressure Vessel Internals ITG. Mr. Bailey's presentation materials are in Attachment 3.

Mr. Larry Mathews, Chairman of the MRP's Alloy 600 ITG, discussed the recent identified Alloy 82/182 weld cracking issue and industry planned activities. Mr. Mathews' presentation materials are in Attachment 4. The major points are as follows:

- The MRP A600 ITG has taken the lead in developing the industry plan.
- The task group has determined that the issue is not a near term safety issue.
- The MRP plans to complete its short term assessment in March 2001. The assessment plans are to demonstrate that continued operation with Alloy 82/182 welds is acceptable.
- The MRP is developing interim inspection guidance for near term outage plants (four plants are scheduled for the spring 2001 outage season).
- Longer term projects include assessment of all Alloy 600 and Alloy 82/182 applications in PWR primary systems, including inspection, repair, and mitigation. This more comprehensive assessment is expected to be completed in June 2001.

The staff provided the following comments:

- The staff agreed with the MRP's approach to have a safety assessment to demonstrate why continued operation is acceptable as industry's first priority.
- The staff indicated that the dialogue with industry on this subject is part of the newly implemented Generic Communication/Industry Initiative process. The staff stressed the importance of maintaining dialogue in order to make this process work.
- The staff will look into the MRP's request that NRC Headquarters maintain proper communication with the region and inspectors on the Alloy 82/182 weld cracking issues.
- The staff asked the MRP if there was going to be any experimental verification of the residual stresses in reference to the identified high residual stresses at VC Summer hot leg weld (having numerous repairs). The MRP replied this effort was part of its longer term plans.

Mr. Larry Mathews also presented the status of the Reactor Vessel Head Penetration Program. He discussed four active tasks (PWSCC mitigation and testing; survey of domestic PWSCC experience; PWSCC inspection and evaluation guidelines for reactor vessel head penetration nozzles; and EDF crack growth results for Alloy 182 weld metal) and six completed tasks (proceedings of the fifth EPRI workshop on Alloy 600 PWSCC; crack initiation testing of Alloy 600 reactor vessel head materials ranking heats and microstructure; crack growth rates of Alloy 600 reactor vessel head materials; crack growth rates of EDF Alloy 600 CRDM nozzles; crack growth rates of Alloy 182 weld metal; and predictive PWSCC model as a module for EPRI CHECWORKS.) His presentation materials are in Attachment 5.

Mr. Robert Robinson presented the status of the Fatigue ITG activities. He stated that the Fatigue ITG is working to provide a consistent set of guidelines for addressing piping thermal fatigue issues in small bore Class 1 piping attached to but unisolable from the RCS. The Task Group will also provide license renewal applicants with acceptable methods for the management of reactor water environmental effects on the fatigue life of metal components. His presentation materials are contained in Attachment 3.

Mr. Robert Robinson also presented the status of the project activities for the Reactor Pressure Vessel Integrity ITG and the Reactor Pressure Vessel Internals ITG. He indicated that the key program areas in the Reactor Pressure Vessel Integrity ITG include: re-evaluation of the pressurized thermal shock (PTS) screening criteria; Master Curve Approach for reactor pressure vessel integrity assessment; and support activities including: reactor pressure vessel material property database, pressure-temperature limit curve software, and Codes and Standards development (ASME and ASTM). He stated that the goal of the Reactor Pressure Vessel Internals ITG is to proactively manage reactor pressure vessel internals aging issues. His presentation materials are contained in Attachment 3.

During Mr. Robinson's presentation, the MRP asked the staff the status regarding the Kewaunee Master Curve request. The staff responded that the issuance of the associated safety evaluation was imminent. The staff asked the MRP if there were inspection guidelines available for baffle-to-former bolts (part of the Reactor Pressure Vessel Internals ITG activities) that can be utilized. The MRP stated that it will pursue this issue.

The staff will meet with the MRP in March 2001, when the MRP's short term safety assessment on the Alloy 82/182 weld cracking issue becomes available.

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Andrea Keim
L. B. Marsh
Eric Benner

NRC-NEI/EPRI MEETING on MRP ACTIVITIES
LIST OF ATTENDEES
February 16, 2001

NAME	ORGANIZATION
Roy Zimmerman	NRR
Brian Sheron	NRR
Jack Strosnider	NRR/DE
Dick Wessman	NRR/DE
Bill Bateman	NRR/DE/EMCB
Andrea Keim	NRR/DE/EMCB
John Fair	NRR/DE/EMEB
Ed Hackett	NRC/OCM/JSM
Stacey Resenberg	OEDO
Doug Kalinousky	RES/DET/MEB
Maitri Banerjee	NRR/DLPM/LPD2
L. B. Marsh	NRR/DRIP/REXB
Eric Benner	NRR/DRIP/REXB
Peter Wen	NRR/DRIP/RGEB
Jack Bailey	TVA
Mike Tuckman	Duke Energy
Tom Alley	Duke Energy
Jack Woodard	SNC
Larry Mathews	SNC
Rick Mullins	SNC
Dave Modeen	NEI
Alex Marion	NEI
Kurt Cozens	NEI
Ted Marston	EPRI
Avtar Singh	EPRI
Allan McIlree	EPRI
Jim Lang	EPRI
Albert Machiels	EPRI
Frank Ammirato	EPRI
Chuck Welty	EPRI
Gary Vine	EPRI
Vaughn Wagoner	CP&L
Dick Labott	PSE&G
James Bennetch	Dominion
Sherry Bernbqt	FPC
John Kneeland	Consumers Energy
Robert Huston	Licensing Support Services
Deann Raleigh	Lis. Scientech
Mokoto Kanda	Mitsubishi Heavy Industry
Motohisa Fujita	Kansai Electric Power
Robert Waselvs	SCE&G
Lynn Connor	Consultant

EPRI MRP Executive Group/NRC Senior Management Meeting
February 16, 2001
Room T-7A1

Agenda

1. Introduction and Opening Remarks	Brain Sheron, NRC Jack Bailey, MRP
2. Generic Implications of RCS Hot Leg Cracking	Larry Mathews
3. MRP Ongoing Activities:	Larry Mathews Mike Robinson

- Thermal Fatigue Cracking
- Reactor Pressure Vessel Integrity
- Reactor Vessel Internals
- Alloy 600 Issues

4. Discussion	All
5. Closing Comments	Brain Sheron, NRC Jack Bailey, MRP

Attachment 2