

January 27, 2006

MEMORANDUM TO: Jennifer L. Uhle, Chief
Materials Engineering Branch, RES

FROM: Joseph Muscara, Senior Technical Advisor **/RA/**
Materials Engineering Branch. RES

SUBJECT: MEETING SUMMARY FOR THE PUBLIC MEETING WITH
INDUSTRY TO DISCUSS COOPERATION ON PROACTIVE
MATERIALS DEGRADATION RESEARCH

On January 17, 2006 the RES staff held a meeting at NRC headquarters in Rockville, Maryland with representatives of the Nuclear Energy Institute (NEI) and of the Electric Power Research Institute (EPRI) to discuss industry and NRC research activities related to proactive materials degradation management (PMDM) and the potential and means for collaboration in this research program area.

Mr. Robin Dyle from Southern Nuclear Operating Company presented the industry's activities related to PMDM. He discussed the "Industry Initiative on Management of Materials Issues" and the related guideline. The guideline requires the development and periodic updating of a strategic plan that identifies the industry's high priority materials degradation issues. To help develop the strategic plan the industry has developed a "Materials Degradation Matrix", and "Issue Management Tables." The Materials Degradation Matrix identifies the materials used in major systems and components of light water reactors, the potential degradation mechanisms that apply, and whether industry has research programs in place to adequately understand the degradation mechanisms. The Issue Management Tables identify the components, materials, degradation mechanisms, and locations where failures could occur; the consequences of failure are evaluated along with inspection capabilities, mitigation technologies, and repair or replacement options. Based on this information, knowledge gaps and needs are identified, and work is planned and prioritized to eliminate the gaps. A report that contains the results from the Issue Management Table process for boiling water reactors (BWRs) has been prepared and is undergoing industry review. This report will be made available to NRC in the Summer of 2006. Mr. Dyle indicated that a similar report is being developed for pressurized water reactors (PWRs) but that it lags the BWR report by several months. Mr. Dyle also discussed the industry's current major materials research programs and budgets for 2004, and 2005. A copy of Mr. Dyle's presentation view graphs is enclosed.

Dr. Robin Jones from EPRI made a presentation on future cooperation and suggested an approach for NRC and industry cooperation on PMDM research. Dr. Jones indicated that the cooperation could be conducted under an existing memorandum of understanding between EPRI and NRC's Office of Nuclear Regulatory Research (RES). In this proposal, the NRC would review and comment on industry's evaluation of the knowledge gaps and priorities as determined from the Issue Management Tables, joint priorities would be established, and the highest priority research conducted cooperatively between EPRI and NRC. Dr. Jones also

discussed the make-up of EPRI's international utility membership and the fact that many international utility members already contribute to much of EPRI's materials research programs. A copy of Dr. Jones's presentation view graphs is enclosed.

Dr. Joseph Muscara of NRC made a presentation related to NRC's research activities in proactive materials degradation assessment. Dr. Muscara discussed a recently completed NRC study to identify components in BWRs and PWRs that may be susceptible to future materials degradation. He provided the bases and criteria for the study using a Phenomena Identification and Ranking Table Process which incorporated as a central feature the elicitation of an expert panel. Some example results were presented. Dr. Muscara indicated that a final report on this work would be ready for publication in June of 2006. Dr. Muscara also discussed NRC research activities related to evaluations of inservice inspection effectiveness and risk ranking of susceptible components. Dr. Muscara finally discussed NRC activities and progress toward establishing an international research group and program for cooperatively conducting and sharing research results to allow the implementation of PMDM programs. A copy of Dr. Muscara's presentation view graphs is enclosed.

The meeting concluded with the agreement to schedule a follow-up meeting to begin detailed discussions and review of potential research programs and cooperation between EPRI and NRC related to PMDM research.

Enclosures:

1. List of Attendees for January 17, 2006 Public Meeting
2. Copy of presentation view graphs for Mr. Robin Dyle's Presentation
3. Copy of presentation view graphs for Dr. Robin Jones' Presentation
4. Copy of presentation view graphs for Dr. Joseph Muscara's Presentation

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DATE	1/27/06	1/27/06	1/27/06

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**List of Attendees for January 17, 2006 Public Meeting
on
Cooperation in Proactive Materials Degradation Management Research**

NAME	ORGANIZATION
Hipólito González	NRC/RES
Joe Muscara	NRC/RES
Todd Mintz	NRC/RES
Andrea lee	NRC/RES
Bill Cullen	NRC/RES
Ted Sullivan	NRC/NRR
Gary Vine	EPRI
Alex Marion	NEI
Robin Jones	EPRI
Jim Riley	NEI
Ken Karwoski	NRC/NRR
Cayetano Santos	NRC/ACRS
Steven Dolley	Platts/ Inside NRC
Rao Gutti	Westinghouse
Amy Hull	NRC/NRR
Jennifer Uhle	NRC/RES
Jim Wiggins	NRC/RES
Robin Dyle	SNC