

14th International Conference on Environmental Degradation of Materials in Nuclear Power Systems-Water Reactors



August 23 - 27, 2009 • Virginia Beach, Virginia • Hilton Virginia Beach

Sponsors

American Nuclear Society
Materials Science and Technology Division

Co-Sponsors

NACE International
The Minerals Metals and Materials Society
in cooperation with the Canadian Nuclear Society

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Important Dates

ABSTRACTS DUE:	November 7, 2008
AUTHOR NOTIFICATION:	January 16, 2009
FULL PAPERS DUE:	April 10, 2009

Call For Papers

The American Nuclear (ANS) Society is proud to sponsor the 14th International Conference on Environmental Degradation of Materials in Nuclear Power Systems. This meeting will be held August 23-27 in Virginia Beach, Virginia. This is the fourteenth in the highly regarded series and promises to be another highly stimulating forum, which has offered insights into materials problems, new methods, and innovative techniques from an international perspective.

Technical Thrust

The safe and efficient operation of nuclear plants is a necessity for long-term power production without increased global carbon burden. Materials technology is a key foundation upon which the nuclear technology of today prospers and the technology of tomorrow will succeed. Environmentally-induced materials degradation represents a significant fraction of materials related problems in today's nuclear power plant operation. Under extended lifetimes of 60, 80 or more years, understanding materials degradation will be even more important as these issues are of concern for both economic and safety considerations. Understanding today's materials problems is also critical for the future in advanced light water reactor as well as fusion reactors. The purpose of this conference is to foster an exchange of ideas about such problems and their remedies in nuclear power plants with water coolants of today and the future.

Conference Format

The conference will follow a similar format to the previous thirteen meetings in this series. Scientists, engineers, and regulators concerned with the environmental degradation process (corrosion, mechanical, thermal, and radiation) will exchange views and present recent results through a combination of invited and contributed presentations. The conference is intended to be of interest to utility engineers and consultants involved in the design, construction, operation, and regulation of water reactors as well as researchers concerned with the fundamental nature of materials degradation in reactor systems. Papers are sought from representatives of reactor vendors, utilities, research laboratories, universities, and regulatory bodies worldwide.

Submission of Abstracts

Abstracts of no more than 150 words MUST be submitted on the ANS web site at:
www.ans.org/meetings/envdeg

Acceptable formats include ASCII text, HTML, Word, and/or PDF. The abstract must be informative and of printable quality for review purposes as well as for inclusion in the abstract book and preliminary program.

Full papers are due on April 10, 2009. Authors will be provided guidelines for full paper presentation at the time of author notification (January 16, 2009). Full Papers will be due on April 10, 2009.

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CONFERENCE TOPICS

Papers are solicited in the following topic areas:

Special Sessions on Emerging Issues

- Deformation Structures in Nickel-base Alloys
- Crack Initiation

Emerging Issues for Extended Reactor Operations

- Risk-Based Degradation Management for Extended Service
- Modeling of Corrosion Processes and Probabilistic Analysis
- Synergistic Impacts on LWR Materials in Extended Operating Period
- Remedial or Mitigating Measures for Extended Component Operations

Primary and Secondary-Side Degradation of Reactor Components

- Stress Corrosion Cracking
- Corrosion Fatigue
- Flow Accelerated Corrosion
- Fouling
- Irradiation-assisted stress corrosion cracking
- Other Corrosion
- Practical experience with weldments

Irradiation Effects on Microstructure

- Irradiated Microstructure Evolution
- Mechanical Property Changes
- Void Swelling

Operational Experience

- Environmental Degradation Problems
- Weld Repair
- Life Management
- Regulatory Issues

Other Important Areas

- Water Chemistry Issues and Control
- Spent Fuel and Radioactive Waste Disposal
- Emerging Issues Associated with Cold Working
- Embrittlement of RPV Steels

Degradation in Advanced Water Cooled Nuclear Energy Systems

- GenIV Supercritical Water-Cooled Reactors
- Water Cooled Fusion Reactor Systems
- Other Advanced Water-cooled Designs

Systems Covered include:

- Reactor Vessels
- Steam Generators and Heat Exchangers
- Fuel Storage Containers
- Fuel Cladding and Irradiated Components
- Piping
- Core Internals
- Balance of Plant

Materials Covered:

- Nickel Base Alloys
- Stainless Steels
- Zircalloys
- Pressure Vessel Steels
- Other