Jeffrey C. Poehler
Senior Materials Engineer
Nuclear Regulatory Commission Staff

EDUCATION

Johns Hopkins University Baltimore, Maryland

Master's Degree, Materials Science & Engineering, May, 1999

Johns Hopkins University Baltimore, Maryland

Bachelor of Science, Materials Science & Engineering, May, 1987

WORK EXPERIENCE

March 2010-present - Nuclear Regulatory Commission, Rockville, Maryland

Senior Materials Engineer

Office of Nuclear Reactor Regulation, Division of Engineering, Vessel & Internals Integrity Branch

Perform technical reviews of various licensing applications, topical reports, and other submittals related to the integrity of the reactor vessel internals of commercial power reactors (pressurized water reactors and boiling water reactors). Types of reviews include power uprates, license renewal applications, relief requests, surveillance capsule schedule changes. Also reviewing topical reports related to reactor vessel and internals integrity. Technical areas include pressure-temperature limits, pressurized thermal shock, upper shelf energy, and reactor vessel internals degradation such as intergranular stress corrosion cracking, irradiation assisted stress corrosion cracking, reduction of fracture toughness, and void swelling. Review of technical basis for proposed rulemaking or generic guidance documents related to reactor vessel integrity.

- Lead technical reviewer for four plant-specific reactor vessel and internals inspection programs. Safety Evaluations have been issued for three of these reviews as of May, 2015.
- Lead technical staff in Division of Engineering for resolution of generic issues related to closure of action items from MRP-227-A.
- Completed safety evaluation inputs for two pressurized water reactor power uprate license amendments.
- Reviewed Pressurized Water Reactor Owner’s Group topical report related to acceptance criteria, methodology, and data requirements, for evaluation of inspection findings for reactor vessel internals (companion document to MRP-227).
- Member of team reviewing the technical basis for revision of 10 CFR 50 Appendix G, “Fracture Toughness Requirements.”
- Represented NRC as member of American Society of Mechanical Engineers, Boiler & Pressure Vessel Code groups:
    - Working Group, Operating Plant Criteria (Section XI)
    - Subgroup, Evaluation Standards (Section XI)

    - Task Group on Optimization of Ultrasonic Testing Requirements (Section XI)
- Reviewed and issued safety evaluations of several relief requests supported by fracture mechanics evaluations.
- Reviewed and wrote safety evaluations related to several license amendment requests to revise pressure-temperature limits.
- Prepared safety evaluation report inputs related to reactor vessel and internals integrity for operating license review of a pressurized water reactor.
- Completed safety evaluation inputs related to reactor vessel and internals integrity for a pressurized water reactor.

January 2008-March 2010 Nuclear Regulatory Commission, Rockville, Maryland

Materials Engineer

Office of New Reactors, Division of Engineering, Component Integrity, Performance and Testing Branch

Perform technical reviews of portions of combined operating license applications (COLAs) and design certification applications for new reactors pertaining to chemical engineering and materials engineering. Completed Safety Evaluation Report with Open Items inputs for a number of design certification application and combined operating license sections.

- Lead reviewer for pressurized water reactor sump strainer performance (GSI-191) chemical effects evaluation for US-EPR and US-APWR standard design certifications.
- Represented NRC on American Society for Mechanical Engineers Boiler & Pressure Vessel Code, Subgroup for Industry Experience for New Reactors (Section III and XI)

November 2005-January 2008 - Constellation Energy, Baltimore, Maryland

Principal Engineer/Senior Engineer

Constellation Generation Group, Corporate Engineering Department

Provided oversight for materials related programs at fleet nuclear sites, such as Alloy 600, Reactor Vessel Surveillance, and Reactor Vessel Internals Programs.

- Led several assessments of site engineering programs including BWR Vessel & Internals, Alloy 600, and Boric Acid Corrosion, at BWR and PWR sites.
- Developed the fleet flow accelerated corrosion procedure.
- Provided technical oversight and support for development of new site programs, such as R. E. Ginna Station Alloy 600 Program.
- Supported the Nine Mile Point License renewal project.
- Updated engineering report related to hydrogen water chemistry for Nine Mile Point.

September 2004 – October 2005 - Constellation Energy, Baltimore, Maryland

Technical Consultant

Constellation Power Generation, Generation Services Department, Laboratory Services Section

- Supported the Flow Accelerated Corrosion (FAC) Program for fossil fuel power plants including: outage inspection scope planning, report writing, and proposed improvements to susceptibility ratings system.
- Supported the Nine Mile Point license renewal project including:
    - Audit and inspection support, developing responses to NRC requests for additional information, and program development.
    - Revised the Alloy 600 Program Plan for Calvert Cliffs Nuclear Power Plant

April 2001- September 2004 Constellation Nuclear Services, Crofton, Maryland

Technical Consultant 2

- Developed aging management programs for nuclear power plants, including an "Alloy 600 Assessment" for a PWR plant.
- Revised Alloy 600 Program Plan for Calvert Cliffs Nuclear Power Plant.
- Developed a report assessing the material condition of the reactor vessel and internals and the associated aging management programs for determining a nuclear power plant's readiness for license renewal.
- Provided consulting on metallurgical and materials degradation issues to BWR and PWR plants.
- Prepared material aging effect inputs to a new license renewal database.
- Prepared and reviewed various license renewal products including Aging Management Review Reports and Time Limited Aging Analyses, for BWR and PWR plants.
- Represented Constellation at Electric Power Research Institute (EPRI) Materials Reliability Program Reactor Vessel Internals Issue Task Group.

October 1990 – April 2001 – Calvert Cliffs Nuclear Power Plant, Baltimore Gas & Electric Company, Lusby, Maryland

Senior Engineer/Engineer/Associate Engineer

- Performed failure analysis of power plant components, consulted on materials selection, material analysis, corrosion control, and failure prevention to plant engineering, design engineering, and maintenance.
- Assisted non-destructive evaluation personnel in evaluating material defects.
- Provided guidance on materials testing to the procurement group.
- Developed programs to address stress corrosion cracking of Inconel Alloy 600 reactor coolant system components, and thermal aging embrittlement of cast austenitic stainless steel components.
- Project team member on steam generator replacement project.
- Coordinated two destructive examinations of steam generator tubes.

September 1989 – September 1990- General Physics Corporation, Columbia, Maryland

Staff Scientist

Staff augmentation contractor at Baltimore Gas & Electric Materials Engineering & Analysis Unit (Baltimore, MD)

- Responsible for procedure writing and program development for Baltimore Gas & Electric Company's Materials Testing & Evaluation Program.
- Performed failure analysis of fossil and nuclear power plant components.

LICENSES

Professional Engineer, Metallurgical Engineering, State of Maryland

PROFESSIONAL PUBLICATIONS

- Poehler, J. C., Hardies, R.O., "Environmentally Influenced Fatigue Cracking of Alloy A-286 in Nuclear Reactor coolant Pump Bolting",, in Proceedings of the Eighth International Symposium on Environmental Degradation of Materials in Nuclear Power Systems, Water Reactors, August 10-14, 1997, Amelia Island , Florida
- Poehler, J.C., Bowman, M.E., "Aging Management Of Alloy 600 Reactor Coolant System Components At Calvert Cliffs Nuclear Power Plant", in Proceedings of the 2000 ASME Pressure Vessel and Piping Conference, Seattle, Washington, July 23-27, 2000