

**Statement of Professional Qualifications
On Yee, Reactor Systems Engineer,
Containment & Balance of Plant Branch
Japan Lessons Learned Division,
Office of Nuclear Reactor Regulation,
U.S., Nuclear Regulatory Commission**

Summary

Mr. Yee is a Reactor Systems Engineer in the Japan Lessons Learned Division, Containment & Balance of Plant Branch, in the Office of Nuclear Reactor Regulation. His official responsibilities include the technical, safety, and regulatory compliance reviews of a variety of balance-of-plant and mechanical engineering aspects associated with licensee actions directly related to their compliance with NRC Order EA-12-049, "Mitigating Strategies."

Mr. Yee was a Mechanical Engineer in the Division of License Renewal, Aging Management of Reactor Systems and Guidance Update Branch, in the Office of Nuclear Reactor Regulation. His official responsibilities included the technical, safety, and regulatory compliance reviews of a variety of mechanical engineering topics, including metal fatigue time-limited aging analyses and fatigue monitoring programs for applicants for license renewal.

Education:

B.S. Mechanical Engineering, Polytechnic University, Brooklyn, NY, 2005

Experience:

2013 – Present: Reactor Systems Engineer, USNRC Headquarters, Japan Lessons Learned Division

Perform reviews of licensee overall and final integrated plans, in response to NRC Order EA-12-049, for adding diverse and flexible mitigation strategies (FLEX) that will increase defense-in-depth for beyond-design-basis external event scenarios to address an extended loss of alternating current power and loss of normal access to the ultimate heat sink occurring simultaneously at all units on a site. Mr. Yee's work in the area of FLEX include auditing program basis documents, reviewing and assessing the relevant information in the overall integrated plans, performing walkdown of licensee strategies for FLEX and crafting audit questions and interviewing licensee staff when the overall integrated plan lacked information.

2007 – 2013: Mechanical Engineer, USNRC Headquarters, Division of License Renewal
Qualified License Renewal Technical Auditor: September 22, 2009
Qualified Team Leader: September 22, 2009

Performed reviews of multiple license renewal applications ("LRA"), including Indian Point Energy Center, Beaver Valley Power Station, Kewaunee Power Station, Crystal River Unit 3, Wolf Creek Generating Station, Cooper Nuclear Station Palo Verde Nuclear Generating Station, Salem Generating Station, Hope Creek Generating Station Columbia Generating Station, Limerick Generating Station, Callaway Plant and Duane Arnold Energy Center. Mr. Yee's work in the area of metal fatigue included auditing program basis documents, reviewing and assessing the relevant information in license renewal applications ("LRA"), and crafting requests for additional information when the LRA lacked information.

His review included the licensee's metal fatigue time-limited aging analyses of reactor vessel internals, ASME Code Class 1, 2 and 3 components, ANSI B31.1 "Power Piping" components,

reactor coolant environment effects on fatigue life of reactor coolant pressure boundary components and piping. The reviews he performed enabled the NRC to determine if how the licensees addressed metal fatigue, how the licensee proposed to address metal fatigue and the adequacy of any proposed aging management program (i.e. the fatigue management program).

He assessed how licensees used the guidance in NUREG/CR-6260, "Application of NUREG/CR-5999 Interim Fatigue Curves to Selected Nuclear Power Plant Components", NUREG/CR-5704, "Effects of LWR Coolant Environments on Fatigue Design Curves of Austenitic Stainless Steels," NUREG/CR-6583, "Effects of LWR Coolant Environments on Fatigue Design Curves of Carbon and Low-Alloy Steels" and NUREG/CR-6909, "Effect of LWR Coolant Environments on the Fatigue Life of Reactor Materials." Further, his reviews also considered NUREG-1800 "Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants" and NUREG-1801 "Generic Aging Lessons Learned (GALL) Report" to determine if the LRA demonstrated that the effects of aging will be adequately managed and meet the rules in 10 C.F.R. Part 54.

His primary work products included requests for additional information, audit reports and input to the draft and final safety evaluation reports. He was also a member of the on-site audit teams which evaluated the licensee's aging management reviews and aging management programs. The results of his reviews on metal fatigue are captured in the Staff's documents, including NUREG-1958 "Safety Evaluation Report Related to the License Renewal of Kewaunee Power Station", NUREG-1961 "Safety Evaluation Report Related to the License Renewal of Palo Verde Nuclear Generating Station, Units 1, 2, and 3", NUREG-1930 "Safety Evaluation Report Related to the License Renewal of Indian Point Nuclear Generating Unit Nos. 2 and 3", NUREG-2101 "Safety Evaluation Report Related to the License Renewal of Salem Nuclear Generating Station," NUREG-2102 "Safety Evaluation Report Related to the License Renewal of Hope Creek Generating Station," NUREG-2123 "Safety Evaluation Report Related to the License Renewal of Columbia Generating Station," and NUREG-2172 "Safety Evaluation Report Related to the License Renewal of Callaway Plant, Unit 1."

2005-2007: Nuclear Safety Professional Development Program

Performed rotational assignments in a variety of engineering disciplines, including mechanical engineering, plant safety systems, and inspection. He reviewed relief requests for In-Service Testing Requirements required by 10 CFR 50.55a(f) to determine if the licensee's proposed alternative is in accordance with 10 CFR 50.55a(a)(3)(i) ("the proposed alternative provides acceptable level of quality and safety") or 10 CFR 50.55a(a)(3)(ii), ("compliance with the requirements results in hardship or unusual difficulty without a compensating increase in the level of quality and safety"). Assignment to the Region I Office to assist in performing regional inspections. He participated in a Component Design Basis Inspection at the James A. Fitzpatrick Nuclear Plant that was performed in accordance with Inspection Procedure (IP) 71111.21 "Component Design Bases Inspection". He reviewed design basis and severe accident venting calculations, drawings, inservice test results, applicable design basis documents, and system health reports to ensure an air operated valve (AOV) will operate during design basis events, transient and accident conditions. He also participated in a Triennial Fire Protection Inspection at the Limerick Generating Station that was performed in accordance with IP 71111.05T "Fire Protection (Triennial)", in which he reviewed licensee procedures and programs to assess their effectiveness in preventing fires and controlling combustible loading within limits established in the fire hazard analysis. He assessed these documents to ensure they included appropriate reviews and controls to assess plant changes for potential impacts on the fire protection program and post-fire safe shutdown analysis and procedures. His input for these inspections are documented in Inspection Report No. 05000333/2007006 for the James

A. Fitzpatrick Nuclear Plant and Inspection Report No. 05000352/2007006 and 05000353/2007006 for the Limerick Generating Station.