

May 11, 2015

MEMORANDUM TO: Anthony J. Mendiola, Chief
Licensing Processes Branch
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

FROM: William MacFee, General Engineer **/RA/**
Licensing Processes Branch
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF APRIL 16, 2015, MEETING WITH MITSUBISHI
NUCLEAR ENERGY SYSTEMS ON PEENING ACTIVITIES

On April 16, 2015, staff from the U.S. Nuclear Regulatory Commission (NRC) met with representatives from Mitsubishi Nuclear Energy System Systems (MNES), Wolf Creek Nuclear Generating Station, and Calloway Nuclear Power Plant. The purpose of the meeting was to discuss MNES peening activities as they relate to Material Reliability Program (MRP)-335, Revision 1, "Topical Report for Primary Water Stress Corrosion Cracking Mitigation by Surface Stress Improvement." Publically-available meeting information can be found in the Agencywide Documents Access and Management System (ADAMS) package for the meeting under ADAMS Accession No. ML15057A020.

In its introductory remarks, the NRC staff stated that the purpose of the meeting was to provide information on peening technology to aid the NRC staff's understanding of the technology.

The NRC staff continued that this meeting was outside of the scope of the MRP-335 review. It noted that the discussions at this meeting helped the NRC staff understand what licensees could do to peen. If a licensee filed a relief request, then the peening methods discussed at this meeting could be one approach used to support the relief request.

MNES detailed the technology of water jet peening including where the technology would be applied. Using international experience and experiments, MNES summarized the effect of peening on preventing stress corrosion cracking for various materials. MNES identified important parameters for water jet peening applications and how the implementation would be monitored and documented. MNES also presented experience gained from the use of the technology in Japan. Further, MNES explained implementation of water jet peening from the system setup within the plant to the implementation strategy of using a "Special Process" under Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Appendix B.

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Questions from the NRC staff and answers by MNES were informative in nature. In response to a question about whether peening could be done under 10 CFR 50.59, the NRC staff responded that the issue was currently under review.

No regulatory positions were taken or commitments made as a result of the presentation and questions.

Four action items were identified in the meeting. The first was for the transmission of a letter of surveillance relief from a Japanese Utility for NRC staff reference. The second is in regards to MNES providing more data on an accurate way to measure residual stress. The third was providing more data on the parameters used in cyclic testing from MNES experiments. The fourth was submitting a Weibull plot shown from MNES tests.

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