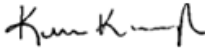




UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

August 10, 2021

MEMORANDUM TO: Chris Miller, Director
Division of Reactor Oversight
Office of Nuclear Reactor Regulation

FROM: Kerri A. Kavanagh, Chief  Signed by Kavanagh, Kerri
Quality Assurance and Vendor Inspection Branch on 08/10/21
Division of Reactor Oversight
Office of Nuclear Reactor Regulation

SUBJECT: TRIP REPORT BY THE NUCLEAR REGULATORY COMMISSION
STAFF VIRTUAL MDEP VENDOR INSPECTION AT FRAMATOME
SAINT-MARCEL FRANCE, SESSIONS 1 & 2

On May 2, 2021 through May 6, 2021 (Session 1) and June 28, 2021 through July 02, 2021 (Session 2), Aaron Armstrong, of the Office of Nuclear Reactor Regulation, Division of Reactor Oversight, Quality Assurance and Vendor Inspection Branch, and John Honcharik, of the Office of Nuclear Reactor Regulation, Division of New and Renewed Licenses (DNRL), Piping and Head Penetrations Branch, participated on a virtual Multinational Design Evaluation Program (MDEP) Vendor Inspection Cooperation Working Group (VICWG) of Framatome in Saint Marcel, France. The inspection was led by the French regulator, French Nuclear Safety Authority (ASN), and included inspectors from France, United Kingdom, Finland, South Africa, and the US. The purpose of this MDEP inspection was to obtain more information on the issues identified with Framatome's post weld heat treatment and welding processes.

CONTACT: Aaron Armstrong, NRR/DRO/IQVB
(301) 415-8396

Enclosure:
NRC International Trip Report

SUBJECT: TRIP REPORT BY THE NUCLEAR REGULATORY COMMISSION STAFF
VIRTUAL MDEP VENDOR INSPECTION AT FRAMATOME SAINT-MARCEL
FRANCE, SESSIONS 1 & 2 Dated: August 10, 2021

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NAME	AArmstrong	KKavanagh
DATE	8/5/2021	8/10/2021

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NRC INTERNATIONAL TRIP REPORT

Traveler, Office, Division:

Aaron Armstrong, Reactor Operations Engineer, Office of Nuclear Reactor Regulation (NRR), Division of Reactor Oversight (DRO), Quality Assurance and Vendor Inspection Branch (IQVB)

Honcharik, John, Senior Materials Engineer, Piping and Head Penetrations Branch (NPHP) Division of New and Renewed Licenses (DNRL), Office of Nuclear Reactor Regulation (NRR)

Subject:

TRIP REPORT BY THE NUCLEAR REGULATORY COMMISSION STAFF VIRTUAL MDEP VENDOR INSPECTION AT FRAMATOME SAINT-MARCEL FRANCE, SESSIONS 1 & 2

Date of Travel and Countries/Organizations Visited:

Virtual Session 1: May 02, 2021 through May 06, 2021 at Saint Marcel, France - Framatome

Virtual Session 2: June 28, 2021 through July 02, 2021 at Saint Marcel, France - Framatome

Background/Purpose

From May 02, 2021 through May 06, 2021 and June 28, 2021 through July 02, 2021 the NRC inspectors participated in a Joint Multinational Design Evaluation Program (MDEP) Vendor Inspection Cooperation Working Group (VICWG) inspection Framatome at Saint Marcel, France. MDEP VICWG inspections are a tool to gain vendor performance insights with efficiencies gained by sharing inspection resources from the participating regulators. The MDEP VICWG document used in the implementation of this inspection was:

- MDEP Protocol VICWG-01, "Common Position: Witnessed, Joint, and Multinational Vendor Inspection Protocol," Version, 1 Dated November 4, 2020

The MDEP VICWG inspection focused on Framatome oversight of its Quality Improvement Plan (QIP) and Post Weld Heat Treatment (PWHT) deviations identified at the Saint Marcel plant from 2000 until 2015. Framatome presentations discussed Framatome's manufacturing processes, quality assurance (QA)/quality management (QM) system, and oversight of Framatome activities. The MDEP VICWG inspectors reviewed Framatome documentation and procedures, conducted interviews of Framatome personnel, watched a virtual walk down of Framatome's manufacturing shop, and virtual observed Framatome's welding operations.

The purpose of this MDEP multinational vendor inspection is to evaluate the ability of Framatome to ensure that the equipment delivered from its Saint-Marcel site meet the applicable participating regulator's requirements. Framatome manufactures heavy nuclear island components including nuclear reactor vessels, steam generators, pressurizers, reactor coolant pumps, and primary piping that connects the reactor to the steam generators. The Saint-Marcel site is dedicated to the assembly of vessels, steam generators, pressurizers, and primary piping. The Saint-Marcel site identified technical issues in 2019 with their PWHT (electrical resistance

and blankets process) involving several global nuclear customers. These identified issues are applicable to past USA, Finland, and France projects, as well as ongoing France and United Kingdom projects. The MDEP VICWG inspection team consisted of 7 ASN (The French Nuclear Safety Authority) inspectors, 5 ONR (Office for Nuclear Regulation, United Kingdom) inspectors, 2 NRC inspectors (Nuclear Regulatory Commission, United States), 2 NRR inspectors (National Nuclear Regulator, South Africa) and 1 STUK inspector (Radiation and Nuclear Safety Authority, Finland) inspectors.

Summary of MDEP Inspection as it Relates to US Licensees:

The NRC inspectors were able to review and evaluate Framatome's 10 CFR Part 21 evaluations for affected U.S. nuclear power plants. The NRC inspectors also selected and reviewed applicable criterion of Appendix B to 10 CFR Part 50, which included corrective actions, special process, and audits. This report addresses both sessions of the MDEP inspection. Framatome discussed with the NRC inspectors that currently there are no US basic components on order or under construction at the time of this inspection.

The NRC reviewed the current basis for the PWHT (below minimum required temperature) evaluations of the steam generator (SG) and pressurizer components for ANO Unit 1, Callaway, Millstone Unit 2, Prairie Island Unit 2, Salem Unit 2, and St. Lucie Units 1 and 2. The NRC inspectors confirmed Framatome performed specific material testing related to fracture toughness of the material with PWHT below the minimum required temperature, however, the additional generic material testing of low temperature PWHT is ongoing to confirm the analyses, accuracies and margins used in the initial evaluations are acceptable.

Conclusion:

The NRC inspectors noted challenges and limitations associated with performing a virtual inspection which included documentation availability at the time of the inspection. The implementation of special process procedures, including welding, could not be easily verified due to the virtual inspection providing limited access to both the special processes being performed and the implementing procedures. Due to the industrial setting, background noise obscured the shop employee's ability to effectively communicate with the virtual inspectors which inhibited the desired inspection results. There were logistical issues in performing the inspection remotely which affected the quality of the evidence gathered compared to what would be expected during an in-person inspection. Nonetheless, the inspection did provide information of the ongoing testing and QIP being implemented by Framatome. No findings of significance were identified for the limited documents available for NRC inspectors.