

NRR-PMDAPEm Resource

From: Feintuch, Karl
Sent: Tuesday, July 31, 2012 2:24 PM
To: Feintuch, Karl
Subject: ME8503 verbal relief script read on April 30, 2012 - Re: Socket Weld Repair
Attachments: ME8503 Verbal Authorization scripts for Socket Weld Repair 30April2012 Rev 3.docx

Attached is the script used on April 30, 2012, to authorized use of an alternative repair method associated with ME8503. The procedure was not successful. The associated application in Serial Nos. 12-319 series letters was withdrawn.

Subsequently, the application to accomplish the repair in the Serial Nos. 12-324 letters resulted in the authorization whose script was read on May 5, 2012 (separately documented).

Hearing Identifier: NRR_PMDA
Email Number: 433

Mail Envelope Properties (26E42474DB238C408C94990815A02F0996A50DEC71)

Subject: ME8503 verbal relief script read on April 30, 2012 - Re: Socket Weld Repair
Sent Date: 7/31/2012 2:24:26 PM
Received Date: 7/31/2012 2:24:28 PM
From: Feintuch, Karl

Created By: Karl.Feintuch@nrc.gov

Recipients:
"Feintuch, Karl" <Karl.Feintuch@nrc.gov>
Tracking Status: None

Post Office: HQCLSTR01.nrc.gov

Files	Size	Date & Time
MESSAGE	428	7/31/2012 2:24:28 PM
ME8503 Verbal Authorization scripts for Socket Weld Repair 30April2012 Rev 3.docx		
20593		

Options

Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

ME8503 - Scripts read to licensee for verbal authorization of proposed alternative per Licensee's "12-319" series submittals. The scripts were read in a conference call on April 30, 2012 beginning at 0230 (2:30 AM) ET.

Script of EPNB Branch Chief (Jay Collins – Acting)

By letter dated April 29, 2012, Dominion Energy Kewaunee, Inc., the licensee, proposed an alternative (RR-2-3) to Appendix IX of Section XI of the American Society of Mechanical Engineer's Boiler and Pressure Vessel (ASME) Code to allow installation of a mechanical clamp on a containment pressure boundary weld and relieve the requirement to perform a volumetric examination. The licensee proposes this alternative during the current spring 2012 refueling outage at the Kewaunee Power Station (KPS). The licensee states that the mechanical clamp will only be in place until the plant can transition from Mode 5 to Mode 4, isolate the leaking component and then initiate an ASME Code compliant repair. The licensee also provided information on the hardship involved with performing the reactor core offload, which the licensee assessed as an option. Therefore the licensee requested authorization of their proposed alternative under the requirements of Title 10 of the Code of Federal Regulations Part 50 (10 CFR 50) 55a(a)(3)(ii).

The staff reviewed the licensee's proposed alternative under the requirements of 10 CFR 50.55a(a)(3)(ii), such that;

"Compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety."

Without the proposed alternative, the licensee stated that they would need to return the plant to a refueling mode, remove the reactor head, remove the upper core internals and offload the core into the spent fuel pool. The licensee estimated the radiation dose for this activity to be approximately 8 REM. The staff finds the radiological dose and risk associated with this evolution, including the handling of fuel, to be significantly larger than that expected to be associated with the installation of a mechanical clamping device meeting system design temperature and pressure. Therefore the staff finds the licensee has identified sufficient hardship under 10 CFR 50.55a(a)(3)(ii).

The licensee proposed to install a mechanical clamp at the degraded socket weld (sockolet) to support its structural integrity. The mechanical clamp is designed to meet the requirements of Article IX of the ASME Code, Section XI, with two exceptions, use of the device at the containment boundary under Article IX-1000(c)(2) and monitoring requirements under Article IX-6000(a). The staff reviewed the licensee's Temporary Modification Package 2012-11, Enclosure 1 of the submittal. and found the licensee's design meets the requirements of Appendix IX. In the design of the mechanical clamp, the licensee assumed the socket weld has a 360 degree, 100% through wall flaw. The staff finds this to be a bounding assumption because the clamp will be design to support the full loading of the weld joint and associated ¾ inch pipe. As an additional measure, the licensee will install a fillet weld between the clamp and

the ¾ inch pipe to ensure that the ¾ inch pipe will not eject from the socket. Therefore, the staff finds the licensee's design will provide reasonable assurance of structural integrity.

To support the leakage integrity of the degraded weld, the licensee proposed to inject a sealant into the mechanical clamp enclosure to minimize the leakage. The licensee stated that the sealant has low concentration of halogens (e.g., chlorides). The staff finds that this factor along with the short duration of application will limit the potential for stress corrosion cracking of the stainless steel piping, and is therefore acceptable in this limited application.

The licensee proposed not to perform ultrasonic examination of the clamp area in accordance with Article IX-6000(a). In this specific case, the NRC staff finds this deviation acceptable because of the short duration of the proposed relief request. The clamp will be removed from the socket weld within days of installation. Due to the short term of this application and its conservative design, the staff finds the required ultrasonic examination is not necessary as any potential degradation mechanism should not affect the structural integrity of the system and clamping device. In addition, the licensee has committed to perform visual examination of the degraded socket weld area every 12 hours to ensure the structural and leakage integrity of the temporary repair.

On the basis of the above evaluation, the NRC staff finds that the proposed alternative will provide reasonable assurance that the structural integrity and leakage integrity of the degraded socket weld will be maintained during Mode 4 and Mode 5.

----- abbreviations and notes -----

EPNB = Piping and NDE Branch

NDE = non-destructive examination

EPNB Branch Chief = Tim Lupold

REM = measure of absorbed radiation dose (Roentgen Equivalent Man)

mREM = milliREM (0.001 REM)

Script of DORL Branch Chief (Istvan "Steve" Frankl – acting)

As Acting Chief of the Office of Nuclear Reactor Regulation's Plant Licensing Branch III-1, I concur with the conclusions of the Piping and Nondestructive Examination Branch (EPNB).

Based on these conclusions, I conclude that the alternative proposed in the licensee's letter dated April 29, 2012 as supplemented by letter dated April 30, 2012, will provide an acceptable level of quality and safety.

Therefore, the licensee's proposed alternative, RR 2-3, is authorized pursuant to 10 CFR 50.55a(a)(3)(ii) at Kewaunee Power Station during the Spring 2012 refueling outage while the plant is in Modes 5 and 4 only. We expect to follow up formally in writing in the near future.

===== End Frankl script =====