

NRR-DMPSPEm Resource

From: Sweet Sheryl A <shsweet@WCNOC.com>
Sent: Tuesday, July 24, 2018 2:22 PM
To: Singal, Balwant
Cc: Taylor, Nick; Tsao, John
Subject: [External_Sender] FW: Wolf Creek Relief Request

Please see below:

From: Meredith David B
Sent: Tuesday, July 24, 2018 1:15 PM
To: Sweet Sheryl A; Isch Jeffrey R; Hafenstine Cynthia R; Rudeen Jim K
Cc: Mand Daljit S; Herrman Paul J; Knust Jason B; Hinterweger Kyle A; Barraza Alan J
Subject: RE: Wolf Creek Relief Request

Additions to the new statements includes.

Thanks,
Dave Meredith, PE
Design Engineering
ext. 8498

From: Meredith David B
Sent: Tuesday, July 24, 2018 11:05 AM
To: Sweet Sheryl A; Isch Jeffrey R; Hafenstine Cynthia R; Rudeen Jim K
Cc: Mand Daljit S; Herrman Paul J; Knust Jason B; Hinterweger Kyle A; Barraza Alan J
Subject: RE: Wolf Creek Relief Request

Provided are the responses for the NRC questions. Attached is the sketch requested by the NRC.

DRAFT
REQUEST FOR ADDITIONAL INFORMATION
RELIEF REQUEST FROM ASME CODE N-666-1
ALTERNATE REPAIR OF ESSENTIAL SERVICE WATER PIPING
WOLF CREEK GENERATING STATION, Unit 1
DOCKET NO. 50-482

1. Discuss why Section 3, "Applicable Code Requirement", does not include ASME Code, Section XI, IWA-4000 as the applicable code requirement in addition to Code Case N-666-1. Specifically, IWA IWA-4611.1(a) states, "Defects shall be removed in Accordance with IWA-4422.1. A defect is considered removed when it has been reduced to an acceptable size." The NRC staff notes that based on the regulatory path, relief should be requested from the primary requirement i.e., ASME Code, Section XI, IWA-4000. Code Case N-666-1 is a secondary requirement to perform the weld overlay repair.

WCNOC Response: Section 2 of the Request will include relief form IWA-4000, of the ASME Code, Section XI.

2. Code Case N-666-1 has drawings of a typical socket weld. However, provide drawings (hand sketch is acceptable) of the socket weld and associated drain line at Wolf Creek (how the socket weld joins the drain line to the main pipe).

WCNOC Response: Drawing/sketches of the current configuration, the proposed weld overlay, and the adjacent pipe wall as-found and minimum wall thickness.

3. Discuss why there is no date on the top of the cover letter of the submittal. Also on the cover letter, 10 CFR 50.55(z)(2) should be 10 CFR 50.55a(z)(2).

WCNOC Response: The letter will include the dates and correct the reference to 10 CFR 50.55a(z)(2).

4. Under the "Degradation Mechanism" section of the relief request the licensee stated that "...it is most likely that the corrosion initiated the flaw and reduced the wall thickness to a point where fatigue propagated the flaw through wall..." Code Case N-666-1 is only applicable to piping with the vibration fatigue degradation mechanism. Because corrosion is a potential degradation mechanism as discussed in the relief request, discuss whether relief will also be requested for the use of Code Case N-666-1 on a pipe having corrosion degradation mechanism in addition to the relief from the carbon content provision.

WCNOC Response:

From N-666-1, Paragraph 1(d), it states in part, "Prior to performing a repair, the Owner shall verify that the pipe base material adjacent to the socket weld requiring overlay meets the required minimum wall thickness." The intent of this requirement is that the Owner verifies that the pipe wall thickness where the overlay will be applied is not less than the minimum required wall thickness. Ultrasonic examination was performed on the piping starting at the toe of the socket weld and extending to the downstream valve EGV0029. The as-found wall thickness no less than 0.157 in and the calculated minimum required wall thickness is 0.143 in. The piping location where the weld overlay will be installed is greater than the minimum required wall thickness.

In addition, this requirement is applicable to the piping not within the socket fitting since a through wall flaw at the toe of the socket weld the pipe wall thickness is zero. In addition, for a fatigue crack, the crack length may extend nearly full circumference before penetrating through wall. Thus, the remaining piping in the socket may provide minimal or no load carrying capacity.

From the radiograph there appears to be corrosion of the connecting piping within the socket fitting, including the socket weld, but not of the socket. Since vibration is present in the connection, once the material thickness in the socket weld was sufficiently reduced, a crack may have initiated and propagated through the remaining weld. This aligns with the Reply stating that the Code Case is applicable to cracked or leaking socket welds resulting from vibration fatigue.

In addition, WCNOC requests relief from N-666-1:

- 1) Paragraph 1(d), specifically the pipe wall thickness within the socket welded coupling is unknown.**
- 2) Paragraph 2(a), specifically the failure mechanism is a result of vibration fatigue.**

5. The "Examination and Testing" section (Page 8) of the relief request states that "...walk downs will be used to identify leakage post installation..." Discuss the frequency of the walkdowns.

WCNOC Response: Walk downs will completed at least once per 12-hour shift to identify potential leakage post repair.

6. Paragraph 2(b) of N-666-1 states that "...If review of the design, operating history, and changes to the piping system indicates that the current system configuration has not been changed for one or more fuel cycles, the weld overlay shall be acceptable until the next refueling outage, if no action is taken to reduce the vibration to acceptable levels. If corrective action is taken that reduces the vibration to acceptable levels, the weld overlay shall be acceptable for the remaining life of the piping system. If the time to failure of the original socket weld was less than one fuel cycle, corrective action that reduces the vibration to acceptable levels must be taken. Vibration acceptance standards shall be in accordance with ASME-OMb-S/G-2002, Part 3..." (a) Discuss whether the proposed weld overlay will be a permanent repair or temporary repair to the next refueling outage. (b) If the proposed alternative is a permanent repair, discuss the corrective action as specified in paragraph 2(b) above.

WCNOC Response: The weld overlay will be removed from service prior to the end of refueling outage 23, scheduled for the fall of 2019. The socket weld connection will be reworked/repared to meet the requirements of the ASME Code.

7. The "Duration of Proposed Alternative" Section of the relief request states that the duration for the proposed activity is though refueling outage 23 scheduled for the fall of 2019. Clarify whether this means that the weld overlay will be removed and the socket weld will be repaired in accordance with the ASME Code in the fall of 2019

WCNOC Response: See response to question 6.

From: Meredith David B
Sent: Tuesday, July 24, 2018 10:49 AM
To: Sweet Sheryl A; Isch Jeffrey R; Hafenstine Cynthia R; Rudeen Jim K; Mand Daljit S; Herrman Paul J; Knust Jason B; Hinterweger Kyle A; Barraza Alan J
Subject: RE: Wolf Creek Relief Request
Importance: High

Answers to the NRC questions below in red. Please review and let me know if there are any changes/additions.

Thanks,
Dave Meredith, PE
Design Engineering
ext. 8498

From: Sweet Sheryl A
Sent: Tuesday, July 24, 2018 7:53 AM
To: Mccoy Jaime H
Cc: Isch Jeffrey R; Carlson Eric D; East Tim F; Stucker Bill J; Greenfield Tyler N; Edwards James L; Hafenstine Cynthia R; Rudeen Jim K; Meredith David B; Mand Daljit S; Gholson David M; Herrman Paul J; Knust Jason B; Hinterweger Kyle A; Barraza Alan J
Subject: FW: Wolf Creek Relief Request

RAIs from Balwant:

From: Singal, Balwant [<mailto:Balwant.Singal@nrc.gov>]

Sent: Tuesday, July 24, 2018 7:47 AM

To: Sweet Sheryl A; Rudeen Jim K

Cc: Hafenstine Cynthia R; Pascarelli, Robert; Tsao, John; Ruffin, Steve; Taylor, Nick

Subject: Wolf Creek Relief Request

Sheryl,

Following are the Draft RAI questions the NRC staff would like to discuss with your staff during the call at 9:30 AM.

Thanks.

DRAFT
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RELIEF REQUEST FROM ASME CODE N-666-1
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WCNOC Response: See response to question 6.

Balwant K. Singal
Senior Project Manager (Diablo Canyon and Wolf Creek)
Nuclear Regulatory Commission
Division of Operating Reactor Licensing
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Hearing Identifier: NRR_DMPS
Email Number: 492

Mail Envelope Properties (044977CFBDA20A4685C177ECB66C5B9744DCC1)

Subject: [External_Sender] FW: Wolf Creek Relief Request
Sent Date: 7/24/2018 2:21:41 PM
Received Date: 7/24/2018 2:22:03 PM
From: Sweet Sheryl A

Created By: shsweet@WCNOC.com

Recipients:

"Taylor, Nick" <Nick.Taylor@nrc.gov>

Tracking Status: None

"Tsao, John" <John.Tsao@nrc.gov>

Tracking Status: None

"Singal, Balwant" <Balwant.Singal@nrc.gov>

Tracking Status: None

Post Office: WC-E2010.wcnoc.com

Files	Size	Date & Time
MESSAGE	14106	7/24/2018 2:22:03 PM

Options

Priority: Standard

Return Notification: No

Reply Requested: No

Sensitivity: Normal

Expiration Date:

Recipients Received: