

NRR-PMDAPEm Resource

From: Feintuch, Karl
Sent: Monday, June 18, 2012 1:02 PM
To: Feintuch, Karl
Subject: FW: ME8503 Socket Weld Repair Relief Request body of knowledge
Attachments: ME8503 - R-2-3, SN 12-319 ltrs - Record of verbal relief conveyed 0230 ET 30Apr2012 .docx; ME8503 - R-2-4, SN 12-324 ltrs - Record of verbal relief conveyed 0030 ET 05May2012 .docx; Verbal Authorization for Kewaunee 4-29-2012 Rev 3.docx

This email message is a record of the events associated with response to a relief request for a socket weld repair under TAC ME8503.

Supplementary information concerning dates are assembled here for convenience and as defined second below:

04-29-2012 = Letter 12-319
04-30-2012 = Letter 12-319A
04-30-2012 = Verbal Relief conference call at 2:30 AM
05-01-2012 = Letter 12-319B
05-01-2012 = Letter 12-319C
05-03-2012 = Letter 12-324
05-04-2012 = Letter 12-324A
05-05-2012 = Verbal Relief conference call at 12:30 AM

From: Feintuch, Karl
Sent: Tuesday, June 12, 2012 6:36 PM
To: Wallace, Jay
Cc: Tsao, John; Alley, David; Collins, Jay
Subject: ME8503 S[ocket Weld Repair Relief Request body of knowledge

We should do one SE. As described below the licensee retracted the request after attempting a satisfactory supplement to the original relief request. The information below and attached should help with understanding and explaining events. In addition I made a CD-R of the individual pieces of information that moved back and forth (nearly 60 items – photos, system diagrams, sketches, data sheets, etc).

The licensee's efforts were in two series of letters associated with the two relief efforts:

Serial No. (SN) 12-319 letters supported the R-2-3 effort:

- SN 12-319 = Original request
- SN 12-319A = RAI Response
- SN 12-319B = Supplement
- SN 12-319D = Retraction

Serial No. (SN) 12-324 letters supported the R-2-4 effort:

- SN 12-324 = Original request
- SN 12-324A = RAI Response

Because of the blurred transition plus the overlap of knowledge and information that applied to either and both events, I retained the single TAC ME8503 to address the cost of achieving the single goal.

I intend to enter into ADAMS this email message and the 2 attached files that record the chronologies. Each chronology ends (reading from bottom to top) with the scripts (both for 12-319 events and Frankl's for 12-324 events).

Dave, if you provide your script, I can also make up the "12-324" record to be like the "12-319" records for the ADAMS records.

Regarding the CD-R, you can select items to be entered into ADAMS, if not already incorporated into the licensee's submittals. I would suggest attaching items in small groups with an explanatory email. I will provide the CD-R to John to circulate.

Karl

From: Wallace, Jay
Sent: Tuesday, June 12, 2012 1:57 PM
To: Feintuch, Karl
Cc: Tsao, John; Alley, David; Collins, Jay
Subject: Kewaunee SE

Karl,
I was just in the process of gathering all of the information that I need to begin writing the SE for the RHR socket weld repair when I realized that there was an initial relief request/SE that was verbally issued before I became involved. Since the verbal was issued for the first RR (RR-2-3), I assume that the initial RR was not withdrawn. I have just talked with John Tsao (who performed the evaluation of the initial RR) and he has not yet written an SE. This brings me to my question: should John and I collaborate on one SE that covers both relief requests (RR-2-3 and RR-2-4) or should we be doing 2 separate SEs?

Please let us know how you want to proceed.

Thanks,
Jay

Hearing Identifier: NRR_PMDA
Email Number: 395

Mail Envelope Properties (Karl.Feintuch@nrc.gov20120618130100)

Subject: FW: ME8503 Socket Weld Repair Relief Request body of knowledge
Sent Date: 6/18/2012 1:01:46 PM
Received Date: 6/18/2012 1:01:00 PM
From: Feintuch, Karl

Created By: Karl.Feintuch@nrc.gov

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

Post Office:

Files	Size	Date & Time
MESSAGE	3429	6/18/2012 1:01:00 PM
ME8503 - R-2-3, SN 12-319 ltrs - Record of verbal relief conveyed 0230 ET 30Apr2012 .docx 3989787		
ME8503 - R-2-4, SN 12-324 ltrs - Record of verbal relief conveyed 0030 ET 05May2012 .docx 1548782		
Verbal Authorization for Kewaunee 4-29-2012 Rev 3.docx		20277

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

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 sockolet. 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.

Script of DORL Branch Chief

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.

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In reverse chronological order, activities leading to the decisions above follow.

=====update 2012-04-30-0300 ET =====

Erratum – reference to Serial No. 11-603 should have been to 12-319

At 0230 ET HOO hosted both NRC and DEC staff on a joint bridge line to provide the NRC decision, after NRC staff review of the supplement designated by Dominion Energy Kewaunee (DEK) as 12-319A to application designated as 12-319.

Attendance:

For NRC: Robert Krsek, Karl Feintuch, Dave Hills, Istvan Frankl and Jay Collins

For DEK: Breen, et al

The NRC staff determined that the supplement 12-319A was responsive to the items requested by NRC staff. Those request for additional information (RAI) items by NRC staff are documented and paired with the responses by DEK in supplement 12-319A.

Acting Branch Chief Jay Collins provided the decision for the Piping and NDE Branch and Acting Branch Chief Istvan ("Steve") Frankl provided the decision for Plant Licensing Branch 3-1. The NRC approved the proposal by the licensee, DEK.

The text of these decisions will be submitted to the record when assembled by PM Feintuch.

There were no questions concerning the decision. The meeting concluded at approximately 0240 ET.

The following activities will take place to complete the processing of this action:

- 1 – A TAC number to identify this project and assemble its costs has been requested and will be disseminated in an update to this record.
- 2 – A final copy of this text will be submitted as a record of the event.
- 3 – The scripts used by the Jay Collins and Istvan Frankl will be placed in the record.
- 4 – Supplement 12-319A will be submitted to the Document Control Desk for an ADAMS Accession Number.
- 5 – Signed original copies of documents 12-319 and 12-319A will be provided to the Document Control Desk.
- 6 – The action will be processed to completion as a relief request under Instruction LIC-102 Rev. 2

=====update 2012-04-30-0158 ET =====

A conference call with the licensee at 2200 ET was held to discuss their application ML12120A004 dated 4/29/2012, designated by DEK as Serial No. **11-603**, which addressed the socket weld repair.

Attending were:

For NRC – Krsek, Feintuch, Hill, Ulses, Collins, Lyon, Tsao

For DEK – Breene, Olsen, Hanna, McNamara, and others as identified

From their review of ML12120A004, NRC staff identified 3 issues to which the licensee is to provide answers in a written supplement. The supplement is to document both the request and the response to each item.

Response was provided at approximately 0150 ET on 4/30/2012. NRC staff will review the supplement and conference call with the licensee at 0230 ET.

The supplement, identified by DEK as Serial No. 12-319A dated 4/30/2012 is attached.



RAI Response
R-2-3 (4-30-2012..)

=====update 2012-04-29-1315 ET =====

Further Revised schedule today for application submittal from licensee and subsequent meetings:

1400 ET = Planned submittal by licensee

1745 ET = Caucus on HOO Bridge Line 800-449-3694 / 301-816-5100

1800 ET = Recorded call with licensee

Further, I will call the HOO when the application is in hand to (1) notify the concurring principal BCs and supporting Reviewers (Collins, Ulses, Frankl, Tsao, Lyon) to look for application in email and (2) notify HOO to expect our Caucus at 1745 ET.

TIP: If you need to confer with each other from home, call the HOO to be connected.

I based this update on following message from Rob Krsek:

From: Krsek, Robert
Sent: Sunday, April 29, 2012 1:11 PM
To: Alley, David; Barclay, Kevin; Collins, Jay; Feintuch, Karl; Frankl, Istvan; Hills, David; Holmberg, Mel; Lupold, Timothy; Lyon, Warren; Patel, Jigar; Riemer, Kenneth; Shah, Nirodh; Tsao, John; Ulses, Anthony
Cc: Shear, Gary
Subject: One Hour Shift In Kewaunee Submittal Times.
Importance: High

Good Afternoon,

Based on further review of the TMod and Submittal by the licensee, the licensee has requested that times for today be shifted back again one hour.

They plan to make the submittal by 13:00 Central time (14:00 Eastern) and we will have the call at 17:00 Central time (18:00 Eastern). That would mean we would all call into the bridge 15 minutes prior to our recorded call with the licensee.

Thanks,

Robert G. Krsek
[contact info below]

=====update 2012-04-29-1015 ET =====

Revised schedule today for application submittal from licensee and subsequent meetings:

1300 ET = Planned submittal by licensee

1645 ET = Caucus on HOO Bridge Line 800-449-3694 / 301-816-5100

1700 ET = Recorded call with licensee

Based on following message from Rob Krsek

From: Krsek, Robert
Sent: Sunday, April 29, 2012 9:29 AM
To: Alley, David; Barclay, Kevin; Collins, Jay; Feintuch, Karl; Frankl, Istvan; Hills, David; Holmberg, Mel; Lupold, Timothy; Lyon, Warren; Patel, Jigar; Riemer, Kenneth; Shah, Nirodh; Tsao, John; Ulses, Anthony
Cc: Shear, Gary
Subject: Change in Timeframe for Receipt of Kewaunee Submittal and Conference Call
Importance: High

Good Morning,

Based on further review of the TMod and Submittal by the licensee, the licensee has requested that times for today be shifted back. They are confident that these new times will not change. I have added the voting feature to this email to either accept or reject the proposed new times, so please do so if you are actively participating.

They plan to make the submittal by Noon Central time (13:00 Eastern) and would like the call to be at 16:00 Central time (17:00 Eastern). That would mean we would all call into the bridge 15 minutes prior to our recorded call with the licensee. I believe this will also resolve any conflict that we may have with the DORL Branch Chief's travel times.

The largest change they have made to the design is as follows:

As an added measure of safety, in addition to the two #10-24 set screws, tightened to 36-in lbs (these screws tighten onto the 3/4" pipe between the leaking sockolet fitting and RHR-600 to prevent ejection of the 3/4" pipe) they have elected to add a hub clamp that will be attached to the 3/4" pipe using a full circumferential structural 3/16" fillet weld. They believe, the weld, in conjunction with the set screws, is more than adequate to restrain the separation thrust, which they calculated to 520 lbf.

Thanks,

Robert G. Krsek

Senior Resident Inspector

NRC Kewaunee Resident Office

Phone: 920.388.3156

Pager: 920.305.0411

Cell: 920.265.7480

=====update 2012-04-29-0900 ET =====

No application document yet from licensee. I will distribute it when received. A copy will go on the HQ "S" drive location mentioned earlier.

I am close to my maximum allowed memory for email. Recipients without access to the "S" drive should place needed attachments in a folder for themselves.

Karl Feintuch

Calls anytime to 415-3079 route to cell phone

=====update 2012-04-28-2335 ET =====

Planned schedule for 4/29/2012:

0900 ET = Expect application for proposed alternative

1000-1030 ET = Feintuch to poll EPNB, SRXB, LPL3-1 BCs, Reviewers for tentative opinion, plans to concur.

1245 ET = Caucus concerning decision; discuss potential RAIs

1300 ET = Talk with licensee staff to schedule concur or discuss RAIs and RAI response schedule

1230-1430 ET = BC Frankl not in contact

Karl Feintuch

Calls anytime to 415-3079 route to cell phone

=====update 2012-04-28-2135 ET =====

The submittal expected at 2400 CT (0100 ET) will now be delivered at 0800 CT (0900 ET). NRC staff should call the HOO at 1245 ET to caucus before the 1300 ET meeting with the licensee. The agenda of the 1300 ET meeting is to agree that the application is satisfactory or to ask for RAI items.

If a verbal authorization is to be granted, NRC staff has to coordinate availability for the purpose: LPL3-1 BC Frankl is not in cell phone range on Sunday 1230-1430 ET.

You will receive the application when available as an update.

Message from Rob Krsek

The Plant Manager has just informed me that they have discovered an issue during their review of Team Inc.'s proposed design that will require rework. They do not believe the set screws they discussed on the call are strong enough. They are working through a variety of options to finalize the designs.

AS such, the licensee intends to email the submittal to the NRC at approximately 8:00 a.m. Central (9:00 a.m. Eastern). They would also like to entertain a call at Noon Central (13:00 Eastern).

If the time changes, I will inform everyone.

Attached is a one page summary of current plant status

Robert G. Krsek

Senior Resident Inspector
NRC Kewaunee Resident Office
Phone: 920.388.3156
Pager: 920.305.0411
Cell: 920.265.7480

Attending the 1700 ET meeting were:

For NRC: Jay Collins, Jigar Patel, Dave Hills, Mel Holmberg, John Tsao, Warren Lyon, Anthony Ulses, Istvan (Steve) Frankl, Robert Krsek

For DEK:

Roy Simmons	Plant Manager
Stew Yuen	Director – KPS Engineering
Jeff Stafford	Acting Director – Safety and Licensing
Tim Olson	Engineering Programs Manager
Tom Breene	Licensing Manager
Dan Brown	Shift Manager
Tim Hanna	Engineering Programs Supervisor
Craig Sly	Licensing Engineer
Rick Repshas	Licensing Engineer

=====update 2012-04-28-1645 ET =====

Attending at 1300 ET were:

NRR = Lyon, Collins, Frankl, Patel, Grover, Harrison, Feintuch
Region 3 = Holmberg, Lara, Shah, Riemer, Hills
Senior Resident on site = Krsek
(Please notify of missed attendees, who will be added.)

Documents below and attached were discussed as part of a briefing by Krsek to understand the design, the issue, and the licensee's approach.

The licensee plans a discussion of their intentions at 1700 ET.

=====update 2012-04-28-1310 ET =====

From: Krsek, Robert

Sent: Saturday, April 28, 2012 12:13 PM

To: Lara, Julio; Holmberg, Mel; Hills, David; Shah, Nirodh; Tsao, John

Cc: Riemer, Kenneth; Barclay, Kevin; Lupold, Timothy; Alley, David; Feintuch, Karl; Patel, Jigar; Harrison, Donnie; Collins, Jay; Ulses, Anthony; Lyon, Warren; Elliott, Robert; Frankl, Istvan; Grover, Ravinder

Subject: Information For Kewaunee Noon Phone Call

Here is the latest information for the call, including a simple system diagram and the correct version of the code.

Also, so we are all on the same page with respect to Kewaunee's License Basis for the code:

Kewaunee is still committed to the 1998 version of Section XI, as amended by the 2000 update. Therefore, for the licensee's "Proposed Alternative," vice relief request, we are talking about 1998 Section XI, Division I, Section IWA-4133. IWA-4133, then directs you to Appendix IX. And Appendix IX has the same exact verbiage as Code Case N-523-2 dated October 2000. The annulled version of Code Case N-523-2 (2004) that was [i]ncorporated into the 2004 Code and is referenced in Regulatory Guide 1.147 has the same exact prohibition on the use of clamps on a piping system that forms a containment boundary.

My plan for the call is to cover the following:

- Current Plant Status
- Current Issue with the throughwall leak on RHR-600
- Current Timetable for Licensee Proposed Resolution and interaction with the NRC
- Discussion of Any staff
- Concerns with the Current Licensee Proposal.

Call into the HOO at 301.816.5100 and ask for the Kewaunee Bridge. Currently the licensee will not have the information available for a call until later this afternoon 15:00-16:00 Central Time.

Thanks for your help and assistance.

Robert G. Krsek

Senior Resident Inspector

NRC Kewaunee Resident Office

Phone: 920.388.3156

Pager: 920.305.0411

Cell: 920.265.7480



IWA-4133.pdf



RHR-600 pic#2.jpg



50_72.pdf



RHR_Diagram.pdf

=====update 2012-04-28-1245 ET =====

Reminder: call in 15 minutes.

Calls to 301-415-3079 will go to my cell phone during the call, if you have a problem. Mute the conference call, if we talk.



Code Case
N-523-2.pdf



RHR-600 picture
(labeled, 4-2...



RHR-600 pic#2.jpg

===== update 2012-04-28-1100 ET =====

Our immediate goal is to get the appropriate participation to an **internal NRC conference call at 1:00 PM ET (noon CT) via Bridge Line = HQ HOO - 800-449-3694 / 301-816-5100**

Based upon the information provided by Rob Krsek (SRI – Kewaunee) I identified the following cognizant persons and had a short bridge line discussion or individual conversation or left a message with:

Lupold referral to Alley, Collins, Tsao for EPNB

Frankl BC for LPL3-1 (Feintuch)

Ulses and Lyon for SRXB

Elliott and Grover for STSB (Re: TS 3.4.7)

Harrison and Patel for APLA (in case there is, or should be, risk-informed review)

Primary contact is Karl Feintuch PM, LPL3-1

Calls to 301-415-3079 route to cell phone 443-610-3999

Call if you need to be serviced by personal email

HQ personnel = Go to **S:\Kewaunee\HQ S drive MExxxx Ke Relief Request - Socket Weld Repair** for documents duplicated on this Outlook invitation or too big for it.

My technical point of contact at the site is Senior Resident Rob Krsek, who is invited to this Outlook invitation.

All = Forward this invitation as appropriate to others. They will post to the invitee list. Send me documents to be distributed as updates. Documents will also go into the HQ S drive folder.

Call me as needed.

Karl

-----Status April 28, 2012 12:24 AM -----

From: Krsek, Robert

Sent: Saturday, April 28, 2012 12:24 AM

To: Holmberg, Mel; Hills, David; Feintuch, Karl; Lara, Julio; Riemer, Kenneth

Cc: Shah, Nirodh; Ziolkowski, Michael; Bilik, Tom; Barclay, Kevin

Subject: Update On Kewaunee with Both RHR Trains Inoperable

Good evening again everyone,

Plant status has not changed.

On my way home, the Licensing Manager, Tom Breene, called me and informed me that Engineering had reviewed my question on Containment Boundary with respect to Code Case N532-2 and concurred that they could not apply the code case without prior NRC approval. Therefore, their course of action to address the issue has changed.

They now intend to seek Regulatory Relief from the NRC to utilize Code Case N532-2 to utilize a clamp as a temporary repair. The temporary repair would be in place to change Modes from the current Mode 5 to Mode 4, so that they make effect a permanent repair to the socket weld upstream of Valve RHR-600.

In Mode 4, the licensee would be able to take RHR-decay heat removal out of service, split the RHR trains for ECCS injection while aligning the one required operable RHR train for ECCS injection, and then isolate the RHR train with the leak for a permanent repair while in Mode 4. Mode 4 TS only requires 1 ECCS train operable, and per the T.S. on RCS, with two RCS loops in service and the associated RCPs running, they would be able to take RHR out of the decay heat mode. With respect to Containment in Mode 4, they currently believe, they could isolate this affected RHR train and maintain containment operability.

The licensee believes that Mode 4 is the safest condition to effect the repair, because they would not have to rely on RHR in the decay heat removal mode to remove decay heat. Remember this leak is in piping that is common to both RHR trains, when RHR is aligned for decay heat removal. When RHR is aligned for ECCS injection, the leak on this line is train specific. I would say the licensee's assessment here is reasonable, but I also offer for thought that: 1) decay heat removal is currently at its lowest value it will be (1/3 of the core is fresh new unirradiated fuel without decay heat) - if they have problems with the valves isolating that section of line for weld repairs their only other option would be to offload the core; and, 2) the leak does not appear to be in any type of imminent failure based on my past experience with Code Class boundary leakage - I would venture to guess they will find an inadequate root pass on the socket weld.

If they had to go down in Modes to effect a repair on Valve RHR-600, Technical Specifications and their Safe Shutdown Risk Assessments would require a full core offload AND RHR would have to be relied upon as the primary means of decay heat removal, as it is now.

The design and fabrication of the clamp will most likely take 24-36 hours as a minimum, so the licensee would most likely be looking for an initial phone call with us sometime tomorrow on days.

We will plan on the noon call tomorrow. Mel, if you read this before I get in, could you please send this email and the previous email to your NRR counterparts? Otherwise I will do so in the morning when I get in.

Karl, I will call you first thing tomorrow morning.

Have a good night!

rob

From: Krsek, Robert
Sent: Friday, April 27, 2012 10:47 PM
To: Holmberg, Mel; Hills, David; Lara, Julio; Feintuch, Karl; Shah, Nirodh
Cc: Riemer, Kenneth; Barclay, Kevin; Bilik, Tom
Subject: Kewaunee Class 2 Through-Wall Leak on 3/4" Socket Weld for RHR Injection Piping, A Containment Boundary

Thanks again for everyone's time this evening. Attached is the information I stated I would provide: Code Case N-523-2 along with Table 5.2-3 of the FSAR; and two pictures of the active leak discovered this afternoon.

Current Plant Condition is Mode 5, with the Reactor Coolant System at 350 psig and approximately 165 degrees Fahrenheit. Safe Shutdown Assessment Color Overall is Yellow because both RHR trains are available.

The plant is currently in TSAC 3.4.7.C.1 and 3.4.7.C.2 **because neither required RHR loop is Operable**, due to the discovery this afternoon that a 3/4" RHR sampling line (off the common discharge 10-inch RHR decay heat removal piping – in ECCS mod this is the B train RHR injection piping), which is Class 2 piping has a currently unisolable through wall leak at the toe of the socket weld (estimated to be 1.3 gallons per minute based on lowering VCT level) upstream of valve RHR-600. The TSAC requires operations to suspend all operations that would cause a dilution to be suspended (which they have done) and to initiate actions to restore RHR immediately. They also cannot change Modes and site management has further decreed that RCS pressure and temperature will be maintained at current levels. Operations is in the process of making the required 10 CFR 50.72 report.

The licensee's current path is to pursue clamping of the pipe in accordance with ASME Code Case N-523-2. However, from my reading of the Code Case (as you corroborated on the call), since this pipe was potentially a containment boundary (as it is the RHR injection piping post accident during recirculation), the Code Case may not apply.

Since our call I have verified in the FSAR that this is most probably a containment boundary (see the FSAR table attached as the last page to the .pdf I have sent with the code case). Per our call I have:

- 1) Referenced them to the correct version of N-523-2;
- 2) Discussed with plant management that we typically do not see code cases applied when the plant is shutdown; and,
- 3) Informed them that it would appear that application of Code Case N-523-2 without prior NRC approval would be in violation of the Code, because the FSAR appears to

classify this line as a containment boundary and Code Case N-523-2 explicitly prohibits use for piping that forms the containment boundary.

The licensee is currently reviewing our questions. I anticipate they will conclude overnight that the Regulatory Involvement may be required either to utilize the code case for this application or to request approval to change Modes to a higher Mode to allow RHR decay heat removal to be removed from service (because this is common to both lines) to allow for repair/restoration.

Once the licensee has answered the questions to their satisfaction and reached a decision on a course of action, they will contact me to initiate further discussions and I in turn, will contact you.

Unless you are needed sooner, we will plan on our scheduled noon call on Saturday April 28th through the HOO. I will setup the bridge.

Would you like me to forward this email to Jay Collins and Tim Lupold of NRR as a fyi measure?

Thanks again for your help tonight,

Robert G. Krsek

Senior Resident Inspector

NRC Kewaunee Resident Office

Phone: 920.388.3156

Pager: 920.305.0411

ME8503 – Script read to convey decision on proposed alternative as described in Kewaunee Power Station “12-324” series submittals. Decision conveyed on May 5, 2012, 0030 (12:30 AM) ET

Script from DORL Branch Chief

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 May 3, 2012 as supplemented by letter dated May 4, 2012, provides reasonable assurance of structural integrity and leak tightness of the subject component and that complying with the specified requirement would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

Therefore, the licensee’s proposed alternative, RR 2-4, is authorized pursuant to 10 CFR 50.55a(a)(3)(ii) at Kewaunee Power Station until May 12, 2012, while the plant is in Modes 5 and 4 only.

All other ASME Code, Section XI requirements for which relief was not specifically requested and approved in this relief request remain applicable, including third party review by the Authorized Nuclear Inservice Inspector.

We expect to follow up formally in writing in the near future.

=====
Attendance at May 5, 2012 conference call

NRC attendance

Istvan Frankl, Robert Krsek, Karl Feintuch, Dave Alley, Jay Wallace, Jay Collins

Dominion Kewaunee attendance

A. J. Jordan, Jack Gadzala, Tim Olson, Dave Irlbeck, Jeff Stafford, Bill Behrendt, Brad Gauger, Jane Marean, John Palmer, Mark Wilcox

=====

Record of Kewaunee submittals used as basis for Decision conveyed on May 5, 2012

The “12-319” series documents were used for relief action prior to damage to pipe by welding process. The “12-324” series documents document the welding damage event and the subsequent revision to the proposed process to perform a permanent repair

===== emails explaining the “12-319” and “12-324” series documents =====

From: Feintuch, Karl

Sent: Thursday, May 10, 2012 6:01 PM

To: Tsao, John

Subject: ME8503 FW: Kewaunee 10 CFR 50.55a Request 2-4

You had requested Word Versions of the Relief Request we processed this past weekend. Recollect the "12-319 series" documents were prior to damage done during welding and were withdrawn. The "12-324" documents attached (application and RAI response) were acted upon this past weekend by Alley and Frankl.

=====

From: Jack Gadzala [mailto:jack.gadzala@dom.com]

Sent: Thursday, May 10, 2012 3:40 PM

To: Feintuch, Karl

Subject: Kewaunee 10 CFR 50.55a Request 2-4

Karl,

As requested, attached are *MS WORD* versions of the Kewaunee 10 CFR 50.55a request (sn 12-324) and the RAI response (12-324A) for RR-2-4.

Jack

=====

From: Jack Gadzala (Generation - 4)

Sent: Tuesday, May 08, 2012 3:07 PM

To: 'Feintuch, Karl'

Subject: Kewaunee 10 CFR 50.55a Request 2-4

Karl,

Attached is the original request (sn 12-324) and the RAI response (12-324A) for RR-2-4.

This completes the series.

Jack

=====

From: Jack Gadzala (Generation - 4)

Sent: Tuesday, May 08, 2012 1:46 PM

To: 'Feintuch, Karl'

Subject: Kewaunee 10 CFR 50.55a Request 2-3

Karl,

To help you reconcile all the submittals, attached is the original request (sn 12-319), the RAI response (12-319A), the supplement (12-319B), and the retraction (12-319C).

The second submittal (RR-2-4) will follow in a separate email.

Jack

Dominion KPS Licensing
920-388-8604

===== end explanation of "12-319" and "12-324" documents =====
Record of Meeting May 1, 2012, 1700-1800 ET

Convenience Copies of Supplement received today



SN 12-319B Cover
Letter 5-1-12...



SN 12-319B
Enclosure 1.pdf

NOTE: LICENSEE IS PLANNING ANOTHER 05May2012 SUPPLEMENT THAT APPLIES A SECOND CLAMP TO ACHIEVE A ZERO LEAK. UPDATES WILL FOLLOW. [call from licensee minutes ago.]

Separately, I will send an update to 4/28/30 Outlook Meeting, which has previous submittals.

Call details: 5/1/2012 1700 ET – 1800 ET;
HOO line conf call - **301-516-5100 / 800-449-3694**

Agenda – (see yellow highlight in Krsek message)

- 1 - Rank Order Severity of RAI items to be addressed
- 2 – Discuss how to best convey items and their impact on perceived success path, to licensee
- 3 – Organize for which Tech Branches / BCs / Reviewers are involved

===== request from Region for this conference call =====

From: Krsek, Robert

Sent: Tuesday, May 01, 2012 2:48 PM

To: Feintuch, Karl; Frankl, Istvan; Hills, David; Riemer, Kenneth; Collins, Jay; Tsao, John; Dennig, Robert; Elliott, Robert; Ulses, Anthony; Murphy, Martin

Cc: Jandovitz, John; Barclay, Kevin

Subject: RE: ME8503 - socket weld repair - status after damage to sampling line

Everyone,

I just wanted to correct the following statement:

“If the RCP condition requires repair, the relief request will be unnecessary and be withdrawn, since the repair can be performed as a result of the conditions present to enable RCP repair.”

The licensee has not fully identified the condition. Based on what they have currently have analyzed, they believe that they can correct the condition in the current MODE 5. They have not finished their full evaluation though.

Also, the Region feels an internal call is needed today. If what is submitted is not acceptable, then we need to tell the licensee that, so they can take that into consideration on their repair strategy for the combined issues.

Thanks,

rob

From: Feintuch, Karl

Sent: Tuesday, May 01, 2012 1:07 PM

To: Krsek, Robert; Frankl, Istvan; Hills, David; Riemer, Kenneth; Collins, Jay; Tsao, John; Dennig, Robert; Elliott, Robert; Ulses, Anthony; Murphy, Martin

Cc: Jandovitz, John; Barclay, Kevin

Subject: ME8503 - socket weld repair - status after damage to sampling line

Jack Gadzala called. He described the way the reactor coolant pump reacted to the short pump startup that they attempted (higher vibration than anticipated). The pump condition has taken first place in their focus.

Regarding the relief action: They still pursue it at this time, but do not expect or encourage “heroic” efforts on our part. Specifically, we are adequately justified to do what we need and react to them on a first shift basis.

I remarked that we would be thorough in assembling the NRC team and supplying them with adequate information and the time to absorb it so as to address their application.

Jack affirmed that the most recent submittal is intended as a supplement and concurred that the TAC ME8305 should be retained to capture costs for the continuing effort. (It will accept charges from the beginning of this payperiod.)

If the RCP condition requires repair, the relief request will be unnecessary and be withdrawn, since the repair can be performed as a result of the conditions present to enable RCP repair.

As a first shift effort we need to collect a comprehensive set of RAIs, should the effort continue to fruition.

Tech Branch BCs - A courtesy copy of the supplement after damage to the sampling line is attached. Please advise your respective reviewers of this status.

Rob, Kevin – I would like to assemble a comprehensive set of RAI items (questions, requests for information, comments regarding practicality, etc). It is the next step in the dialog on this relief request with the licensee.

===== Gadzala's specific message follows =====

From: Jack Gadzala [<mailto:jack.gadzala@dom.com>]
Sent: Tuesday, May 01, 2012 1:39 PM
To: Feintuch, Karl
Cc: Krsek, Robert; Barclay, Kevin
Subject: Review of KPS RR-2-3

Karl,

Due to an emergent issue that has arisen regarding reactor coolant pump vibrations, we have temporarily shifted some resources away from the Request RR-2-3 (RHR socket weld leak). During this time, we do not need the NRC staff to employ heroic efforts to expedite review of RR-2-3. We do request continued expediting, although on a "regular working hours" basis.

I will call you to further discuss schedule specifics.

Jack

*Dominion KPS Licensing
920-388-8604*

===== end Gadzala message =====

From: Krsek, Robert
Sent: Tuesday, May 01, 2012 1:13 PM
To: Feintuch, Karl; Frankl, Istvan; Hills, David; Riemer, Kenneth
Cc: Jandovitz, John; Barclay, Kevin
Subject: Kewaunee Will Be Calling The Project Manager Shortly

Karl,

Kewaunee will be calling you shortly to let you know that they will be asking us to "slow down" our review. I would ask them to be more specific on what they are asking, as I was unable to get answer on what that means.

As an update, they have just confirmed a problem associated with the B Reactor Coolant Pump, so this may be the cause. Remember the B Reactor Coolant Pump is needed in order for them to Change Modes.

Thanks,

Robert G. Krsek
Senior Resident Inspector
NRC Kewaunee Resident Office
Phone: 920.388.3156
Pager: 920.305.0411
Cell: 920.265.7480

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

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.

Script of DORL Branch Chief

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.