

## NRR-PMDAPEm Resource

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**From:** Frehafer, Ken [Ken.Frehafer@fpl.com]  
**Sent:** Friday, November 22, 2013 11:12 AM  
**To:** Lingam, Siva  
**Subject:** FW: St. Lucie Unit 1 - Additional Clarifications for Relief Request 7 (TAC No. MF2529)

Siva,

As discussed, here is our response for the questions asked.

1. Discuss whether the subject piping (1-30"-CW-29 and 1-30"-CW-30) has cathodic protection.

Sacrificial zinc ribbon anodes are installed in the piping from the Component Cooling Water Building Wall to the discharge canal.

2. Discuss whether there is coating applied to the outside surface of the subject pipe and if yes, what is the coating material.

As stated in Section 4 in the Reason for Request of the relief request, the outer surface of the piping is coated with Coal-Tar Epoxy. One of the advantages of the bolted patch plate repair verses welding is that the external coating is not impacted or destroyed. The repair hole is cleaned and filled with epoxy material to the profile of the pipe ID. The application of epoxy to the through wall hole provides protection of the pipe and patch plate.

3. The NRC staff understands that the subject piping discharges coolant to the ocean. If the pipe has a through wall leak, it appears that there is no safety concern other than non-compliance with the ASME Code, Section XI. Does the leakage affect any other pipe systems, structures, or components.

Yes the only concern is the non-compliance with ASME Code Section XI. The leakage would not affect any other systems, structures, or components. The two pipes (CW-29 and CW-30) are approximately 10-11 feet apart. The closest other piping is a small waste management pipe that is approximately 2.5 ft horizontal and 3 feet above CW-29

Let me know if there is anything else we need to provide. Thanks.

*Ken Frehafer*

St. Lucie Licensing Engineer  
(772) 467-7748

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**From:** Lingam, Siva [<mailto:Siva.Lingam@nrc.gov>]  
**Sent:** Wednesday, November 06, 2013 11:04 AM  
**To:** Frehafer, Ken  
**Cc:** Quichocho, Jessie; Lupold, Timothy; Tsao, John; Katzman, Eric  
**Subject:** RE: St. Lucie Unit 1 - Additional Clarifications for Relief Request 7 (TAC No. MF2529)

By letter dated August 5, 2013 (Agencywide Documents and Access Management System (ADAMS) Accession No. ML13220A029), as supplemented by letter dated August 30, 2013 (ADAMS Accession Nos. ML13283A011), Florida Power & Light Company (the licensee) submitted Relief Request 7 for the repair of buried intake cooling water piping at St. Lucie Unit 1. On September 25, 2013, the NRC staff verbally authorized the use of Relief Request 7.

However, the NRC staff has 3 clarification questions regarding the buried intake cooling water piping (1-30"-CW-29 and 1-30"-CW-30).

1. Discuss whether the subject piping (1-30"-CW-29 and 1-30"-CW-30) has cathodic protection.
2. Discuss whether there is coating applied to the outside surface of the subject pipe and if yes, what is the coating material.
3. The NRC staff understands that the subject piping discharges coolant to the ocean. If the pipe has a through wall leak, it appears that there is no safety concern other than non-compliance with the ASME Code, Section XI. Does the leakage affect any other pipe systems, structures, or components?

Please provide your responses as early as possible. Thank you.

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**From:** Lingam, Siva

**Sent:** Wednesday, September 25, 2013 2:12 PM

**To:** Katzman, Eric ([Eric.Katzman@fpl.com](mailto:Eric.Katzman@fpl.com)); Frehafer, Ken ([Ken.Frehafer@fpl.com](mailto:Ken.Frehafer@fpl.com))

**Cc:** Broaddus, Doug; Pascarelli, Robert; Lupold, Timothy; Tsao, John; Collins, Jay; Kolcum, Gregory; Morrissey, Thomas; Reyes, Rogerio

**Subject:** St. Lucie Unit 1 - Verbal Approval of Relief Requests 5 (TAC No. MF0675), and 7 (TAC No. MF2529)

A conference call was held on September 25, 2013, regarding the subject matter based on the following:

In accordance with Nuclear Reactor Regulation (NRR) Office Instruction LIC-102, "Relief Request Reviews," (Agencywide Documents Access and Management System (ADAMS) Accession No. ML091380595), the Nuclear Regulatory Commission (NRC) staff may provide verbal approval of the relief requests, provided:

- The proposed alternative is in writing and all information that the NRC staff requires to write the safety evaluation (SE) has been docketed.
- An identified need for the verbal authorization is recognized given the circumstances of the licensee's request.
- The NRC technical staff has completed its review and determined that the proposed alternative is technically justified, but has not yet formally documented it in the SE.
- The technical branch and the Division of Operating Reactor Licensing (DORL) branch chiefs have agreed to the verbal authorization.

NRC participants in discussion were:

Robert J. Pascarelli, Chief, DORL, LPL2-1 Branch

Timothy R. Lupold, Chief, Piping & Non-Destructive Examination Branch (EPNB)

John Tsao, EPNB Technical Reviewer

Jay Collins, EPNB Technical Reviewer

Siva P. Lingam, St. Lucie DORL Project Manager

Temporary verbal approval has been granted via the script below, and the NRC staff expects to provide a written SE within 150 days from the date of September 25, 2013. In summary, the NRC staff approved Relief Request No. 5 for 64 months associated with reactor coolant pump suction and discharge nozzle welds inspection, and Relief Request No. 7 associated with alternate repair of intake cooling water piping, for St. Lucie Unit 1. The NRC staff will issue the written authorization for these relief requests within 150 days from September 25, 2013.

VERBAL AUTHORIZATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
FOR RELIEF REQUEST 5 EXAMINATION OF COLD LEG DISSIMILAR METAL WELDS (DMWs)  
ST LUCIE UNIT 1

EPNB Chief: Timothy R. Lupold

By letter dated February 4, 2013, with supplements dated July 30, 2013 and August 22, 2013, Florida Power & Light Company (the licensee) requested an alternative (Relief Request 5) to the requirements of 10CFR50.55a(g)(6)(ii)(F)(3), which defines the volumetric inspection requirements for baseline examinations of Alloy 82/182 dissimilar metal welds, for eight dissimilar metal welds at the reactor coolant pumps inlet and outlet nozzles at St Lucie Unit 1.

In lieu of the requirements of 10 CFR 50.55a(g)(6)(ii)(F)(3) for volumetric inspection coverage of the baseline examination, the licensee requested permission to use the ultrasonic examination coverages achieved in the 2010 refueling outage. The NRC staff requested the licensee to perform flaw evaluations for postulated flaws in the areas of missed coverage to support the proposed alternative. For the weld with the least amount of ultrasonic examination coverage, the licensee estimated that a worst case axial flaw and circumferential flaw would grow to the unacceptable flaw size of 75 percent through-wall in 64 months and 139 months, respectively.

The NRC has performed ultrasonic modeling and an independent flaw evaluation and confirmed that the postulated axial flaw is limiting in terms of inspection intervals. The NRC staff found the licensee's calculated flaw growth time of 64 months of operation at Mode 3 or higher was acceptable. However, given that the 64 month period is less than the 7 calendar year reinspection interval allowed by regulation, with the information provided at this time, the NRC staff finds that the 64-month time period of operation at Mode 3 or higher should be used as the inspection interval for the subject welds. Therefore, the NRC finds that an inspection interval of 64 months (at Modes 1, 2, and 3) will provide reasonable assurance of the structural integrity and leak tightness for the subject DMWs.

DORL LPL2-1 Chief: Robert J. Pascarelli

As set forth above, the NRC staff determines that the proposed alternative provides reasonable assurance of structural integrity and leak tightness of the subject welds on the RCPs. The NRC staff finds that complying with ASME Code Case N-770 as conditioned in 10 CFR 50.55a(g)(6)(ii)(F)(3) would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. Accordingly, the NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(a)(3)(ii) and is in compliance with the requirements of the ASME Code, Section XI for which relief was not requested. Therefore the NRC staff authorizes the use of Relief Request Number 5 at the St Lucie Unit 1 for 64 months of plant operation at normal operating temperature (e.g. at Modes 1, 2, and 3) from the previous inspection of the RCP welds which was last conducted in April 2010.

All other requirements of ASME Code, Section XI and 10 CFR 50.55a(g)(6)(ii)(F) for which relief has not been specifically requested and approved in this relief request remain applicable, including third party review by the Authorized Nuclear Inservice Inspector.

**VERBAL AUTHORIZATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION**  
**FOR RELIEF REQUEST 7**  
**ALTERNATE REPAIR OF INTAKE COOLING WATER PIPING**  
**ST LUCIE UNIT 1**

EPNB Chief: Timothy R. Lupold

By letters dated August 5 and 30, 2013, Florida Power & Light Company (the licensee) requested relief from IWA-4000 of American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) at St. Lucie Plant Unit 1. Pursuant to 10 CFR 50.55a(a)(3)(ii), the licensee requested to use the proposed alternative in Relief Request Number 7, Revision 0, for the repair of the degraded intake cooling water piping (trains A and B) using a bolted patch plate design. The alternative is applicable to the fourth 10-year ISI interval which ends on February 10, 2018.

The NRC staff has reviewed the design, analyses, installation, and inspections of the bolted plate repair. The NRC has verified that the bolted plate will isolate the defect area from seawater and the plate itself will be covered with epoxy to minimize its corrosion in the seawater environment inside the pipe. The NRC staff has determined that the size of the bolted plate is sufficiently large with respect to the defect area such that any potential growth of the defect area will not exceed the confines of the bolted plate between periodic inspections. The licensee will visually inspect the pipe in each train every other refueling outage, which the NRC staff finds acceptable.

The NRC also finds that the licensee has provided a reasonable justification that compliance with the ASME Code requirement would result in a hardship or unusual difficulty without a compensating increase in the level of quality and safety. In summary, the NRC staff finds that Relief Request number 7 will provide a reasonable assurance of the structural integrity and leak tightness of the subject intake cooling water piping.

DORL LPL2-1 Chief: Robert J. Pascarelli

The NRC staff determines that the proposed alternative provides a reasonable assurance of structural integrity and leak tightness of the subject intake cooling water piping. The NRC staff finds that complying with IWA-4000 of the ASME Code, Section XI, would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. Accordingly, the NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(a)(3)(ii) and is in compliance with the requirements of the ASME Code, Section XI for which relief was not requested. Therefore the NRC authorizes the use of Relief Request Number 7 at the St Lucie Unit 1 for the remainder of the fourth ten-year ISI interval which ends on February 10, 2018.

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

NOTE: This e-mail will be placed in ADAMS as publicly-available and non-sensitive document.

Siva P. Lingam  
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**Received Date:** 11/22/2013 11:12:01 AM  
**From:** Frehafer, Ken

**Created By:** Ken.Frehafer@fpl.com

**Recipients:**  
"Lingam, Siva" <Siva.Lingam@nrc.gov>  
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