FPL

September 30, 2021
L-2021-183
10 CFR 50.55a

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555-0001

Re: Turkey Point Unit 3
Docket Nos. 50-250
Fifth Ten-Year Inservice Inspection Interval Relief Request No. 10

Pursuant to 10 CFR 50.55a(z)(2), Florida Power & Light Company (FPL) requests the Nuclear Regulatory Commission (NRC) for relief from the applicable American Society of Mechanical Engineers Section XI Code (ASME Code) requirements for the repair/replacement activity identified in this request. This relief is necessary to repair a section of the degraded Unit 3 Intake Cooling Water pipe spool by installing a proprietary repair device, Encapsulated Clamp Assembly, with new pressure boundary material and without removing the sections of degraded piping. In addition, it requests to allow plant operations to continue until implementation of restorative repairs have been completed, not to exceed six months from approval of this request. The basis for the relief is that compliance with the specified ASME Code repairs would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

The details of the subject Relief Request No. 10 are provided in Enclosure 1. Enclosure 2 provides the proprietary proposed alternative preliminary design details, and Enclosure 3 contains the Affidavit of Mr. Paul Manzon of PMC Engineering certifying that the material provided in Enclosure 2 is proprietary in nature. FPL requests that the material in Enclosure 2, be withheld from public disclosure under the provisions of 10 CFR 2.390, Public Inspections, Exemptions, Requests for Withholding.

FPL is requesting approval prior to the Unit 3 returning to Mode 2, after the upcoming Unit 3 refueling outage, which begins on October 9, 2021. If you have any questions, please contact Robert J. Hess, Licensing Manager, at (305) 246-4112.

Sincerely,

Robert J. Hess
Licensing Manager
Turkey Point Nuclear Plant

Enclosures

cc: USNRC Regional Administrator, Region II, USNRC
USNRC Senior Resident Inspector, USNRC, Turkey Point Nuclear Plant
USNRC Project Manager, Turkey Point Nuclear Plant

L-2021-183

Enclosure 1

TURKEY POINT UNIT 3

RELIEF REQUEST No. 10

Turkey Point, Unit 3
Fifth 10-Year Interval Relief Request No. 10
Intake Cooling Water Pipe Spool Repairs for Through Wall Defect
L-2021-183, Enclosure 1

In Accordance with 10 CFR 50.55a(z)(2)
--Hardship or Unusual difficulty
without a compensating increase in the level of quality and Safety--

1.0 ASME CODE COMPONENT(S) AFFECTED

The affected component is the Turkey Point Unit 3 Intake Cooling Water (ICW) discharge pipe spool piece.

The 24-inch diameter, 11 1/8-inch long cast iron bolted pipe spool piece is located outside of the Turkey Point Unit 3 containment. The location of interest is within the Component Cooling Water (CCW) Room, a location that houses the three CCW heat exchangers, three CCW pumps and associated large bore piping.

The ICW discharge bolted spool piece was fabricated in accordance with construction code for pressure piping USAS B31.1-1955 and was later reconciled to Turkey Point Unit 3 code of record, ANSI B31.1 1973 Edition including Addenda through Winter 1976 Addenda. For the purpose of this relief request, the safety significance and quality class of the code of record ANSI B31.1 1973, is considered equivalent to ASME Code Section III, Class 3 piping (References 4 and 5). Accordingly, this piping is subject to repair/replacement requirements of ASME Code, Section XI, IWA 4000.

The following design data pertains to this moderate energy Quality Group C, ASME Section XI Class 3, ICW discharge pressure boundary piping:

- Pipe Schedule: 24-inch Sch. STD (t_{nom} = 0.73-inch)
- Design Pressure: 55 psig
- Operating Pressure: 25 psig
- Design Temperature: 120°F
- Material Specification: Cast Iron, ASA 21.6, Class 150, Cement Lined ASA 21.4 with .25” thickness.

The ICW System loop provides the cooling water to the safety related Component Cooling Water (CCW) Heat Exchangers. The ICW System also provides cooling water to the Turbine Plant Cooling Water (TPCW) Heat Exchangers. A separate ICW System is provided for each nuclear unit. The safety related function of the ICW System is to remove the heat load from the CCW System during accident conditions to support both reactor heat removal and containment heat removal requirements.

2.0 APPLICABLE CODE EDITION AND ADDENDA

The Turkey Point, Unit 3 applicable Code for the fifth 10-year Inservice inspection (ISI) Interval is the ASME Code Section XI 2007 Edition with 2008 Addenda

(Reference 1). The Turkey Point Unit 3 Fifth ISI 10-Year interval started on February 22, 2014 and ends on February 21, 2024.

3.0 APPLICABLE CODE REQUIREMENTS

IWA-4412, "Defect Removal" states:

> Defect removal shall be accomplished in accordance with the requirements of IWA-4420

IWA-4420, "Defect Removal Requirements" and IWA-4421, "General Requirements" states:

> Defects shall be removed or mitigated in accordance with the following requirements:
>
> (a) Defect removal by mechanical processing, metal removed by mechanical means, e.g., grinding, machining, chipping, shall be in accordance with IWA-4462.
> (b) Defect removal by thermal methods shall be in accordance with IWA-4461.
> (c) Defect removal or mitigation by welding or brazing shall be in accordance with IWA-4411.
> (d) Defect removal or mitigation by modification shall be in accordance with IWA-4340.

It should also be noted that use of IWA-4340, "Mitigation of Defects By Modification", is prohibited by 10 CFR 50.55a(b)(2)(xxv)(A), which states: "The use of the provision for mitigation of defects by modification in IWA-4340 of Section XI 2001 Edition through the 2010 Addenda is prohibited."

4.0 REASON FOR REQUEST

During the surface preparation for metalizing/coatings application, a through wall flaw was discovered on a Class 3, 24-inch diameter, 11 1/8-inch long ICW safety related cast iron bolted pipe spool piece prior to the start of the Turkey Point Unit 3 refueling outage March 30, 2020.

The non-planar flaw was identified under the pipe coatings downstream of the ICW manual isolation valve 3-50-406 from the CCW heat exchangers (See attached drawings). The flawed pipe section is located in the Turkey Point Unit 3 CCW heat exchanger room, approximately 12 feet from where the piping turns underground directing the water exiting the CCW heat exchangers back to the discharge structure and the ultimate heat sink. It does not include any downstream valves or any other active components that could fail and prevent delivery of the ICW fluid back to the discharge location. The safety significance of this section of the pipe is considered low

since the heat removal function is completed as the ICW fluid exits the CCW heat exchangers.

The location of the through wall flaw is un-isolable and would require the entire Unit 3 ICW system to be placed out of service for repairs. This would also impact the operability of the CCW system which provides cooling to the Spent Fuel Pool through the SFP heat exchangers even in a defueled mode.

The subject ICW pipe has been confirmed as being an original installation in operation since the initial plant start up. The flaw size is shaped like a crater with two small wall weep holes inside. The size of the flaw longitudinal OD is 9/16 inches with a diameter of 13/16 inches. The average measured leakage is approximately 5 GPH with the subject ICW line pressurized. Leakage fluctuates between 0-10 GPH (depending on the system cleanliness and line up).

The likely cause of the defect is ID corrosion due to localized degradation of the concrete liner. The latest prompt operability determination concluded that this section of piping is classified as "Operable but Degraded" with no compensatory measures required. Both leakage rate and flaw size are monitored in accordance with ASME XI code case N-513-4 and have not grown since the initial identification in March 2020.

With respect to leakage management, leakage is captured and routed to the nearby floor drain. There is no safety related equipment nearby that could be impacted with the leakage condition or with a challenged capture arrangement. There are no FME effects probable due to the leak.

The subject ICW pipe spool wall loss has been characterized using non-destructive examination (NDE) techniques. Following the initial field walkdown, ultrasonic (UT) thickness measurements were obtained ½ inch away from the circumference of the flaw, which corresponds to approximately one diameter length from the flaw center point. Subsequently, full circumferential UT thickness measurements were obtained at the flaw location and at five additional locations selected for the Augmented Examination. No adverse values were revealed in the sample locations selected.

The thickness measurements around the flaw are obtained within a 90-day interval per an assessment documented in the Corrective Action Program utilizing Code Case N-513-4 criteria to monitor wall loss. The thickness measurements obtained at a distance of 1/2-inch from the flaw have consistently averaged greater than the Code Case N-513-4 minimum allowable size.

Compliance with Code Case N-513-4 allows for one operating cycle to implement a viable repair. Turkey Point has considered a total of seven options, of which the three most viable options included a combination of ASME Section XI code and a non-code compliant repairs; herein referred to as "code" and "non-code." However, as noted

below, these most viable code compliant repair options each presents challenges lessening their practical viability.

One of the considered code repair options involves the removal of the through wall flaw by drilling and tapping the cast iron pipe followed by the installation of a standard male threaded solid plug. This code repair option has both operational and repair risks. To perform this repair option, it would require removing the Component Cooling Water (CCW) Heat Exchangers from service to reduce leakage. This action places the plant in an alternate line up with limited time to perform the through wall drilling, tapping, and installing the fitting. Also, when drilling, the hole size could be become significantly larger resulting in increased leakage, which will further complicate repairs. Additional repair risks include the potential to crack the ICW spool piece while drilling in the cast iron material and the potential to develop a larger leak due to loss of plug or a leak caused by degradation of the threaded plug.

Another code repair option is to restore the piping back to its original design by direct replacement of the degraded bolted flange spool piece. This code repair option also has both operational and repair risks. As mentioned above, the leak location is un-isolable and the repair plan would require both the ICW and CCW system to be placed out of service during the repairs. This option could only take place during the defueled window when the only heat load remaining on the CCW is from the SFP heat exchangers. This option has significant risk due to the need to provide a temporary heat exchanger and temporary flow paths of the ICW and CCW systems prior to the placement of the spool piece. Access points on existing piping for the temporary tie-ins require additional back up plans and the involvement of various departments to ensure station readiness for implementing these changes during a refueling outage.

A viable option considered would install a high strength corrosion resistant bolted clamp assembly designed to encapsulate the affected piping and become the new pressure boundary. This non-code repair option is considered a permanent repair that will satisfy the applicable ASME B31.1 design and construction criteria in accordance with the original design requirements for the Turkey Point ICW system.

10 CFR 50.55a(z) authorizes the Director, Office of Nuclear Reactor Regulation, to approve alternatives to the requirements of paragraphs (b) through (h) of 10 CFR 50.55a, including relief from the prohibition on IWA-4340 specified in 10 CFR 50.55a(b)(2)(xxv).

This request is submitted to allow the installation of pressure retaining parts that will be used to restore areas with unacceptable through wall leakage.

With respect to the Clamp Assembly repair option, installation of replacement pressure retaining parts without first removing the degraded portions of the subject ICW discharge pipe spool piece does not comply with the requirements of IWA-4421.

Thereby, relief is requested from the requirements of IWA-4421 to remove defects in accordance with IWA-4411, IWA-4461, or IWA-4462 on the subject piping identified in this request, prior to performing repair/replacement activities.

Relief is also requested from the prohibition of IWA-4340 in 10 CFR 50.55a(b)(2)(xxv).

In addition, relief is requested to extend the compliance with the Code Case N-513-4, beyond the allowed single operating cycle and until repairs and testing have been completed, but no later than six months after approval. Turkey Point will continue to meet Code Case N-513-4 compliance criteria while in the extended period of the additional six months.

As described above, this proposed alternative has been developed because other repair/replacement options that would fully comply with IWA-4421 create a hardship or unusual difficulty without a compensating increase in the level of quality and safety for reasons detailed in this request.

5.0 PROPOSED ALTERNATIVE AND BASIS FOR USE

Proposed Alternative

In lieu of the requirement of IWA-4421 to remove the defective portion of the ICW component prior to performing repair/replacement activities, unacceptable localized through wall corrosion, shall be corrected by installation of a Code compliant replacement pressure retaining parts, Restoration Clamp Assembly, that fully restore the degraded pipe spool.

At this time, the design of the Restoration Clamp Assembly is preliminary. FPL will promptly supplement this relief request with additional information consistent with the final design and the installation details. Following the fabrication of this assembly, installation is expected to start at the beginning of February 2022. The request to extend compliance with the Code Case N-513-4 beyond the allowed single operating cycle by six months is related to the projected schedule for finalizing the design, installing, and testing the Restoration Clamp Assembly. During this period, Turkey Point will continue to meet Code Case N-513-4 compliance criteria while in the extended period of the additional six months.

Details of the preliminary Restoration Clamp Assembly are provided in the proprietary Enclosure 2.

The technical justification for its use is outlined below:

- For the through wall leakage in the subject component, an IWA-4340 modification/repair is needed to be installed around the circumference of the degraded pipe spool without removal of the degraded area. The through wall leak is to be first sealed using a housekeeping repair to enable the pressure retaining components to be safely and effectively installed on the dry surfaces. ASME Code Case N-513-4 is used to justify the structural stability of the ICW piping for past operability, as well as continued operation during the outage, and prior to installation of the IWA-4340 modification /repair.

- The modification/repair is a bolted proprietary repair device, hereafter referred to as the Restoration Clamp Assembly, installed on the outside of the pipe spool, and designed in accordance with ASME B31.1, 1973 edition including Addenda through Winter 1976, to replace the pressure boundary and to maintain the structural integrity of the degraded piping. The proposed repair is to restore the entire sections of 24-inch diameter ICW piping, approximately 12 inches long, containing the degradation (bolted pipe spool wall loss due to localized corrosion) with a 34-inch OD Restoration Clamp Assembly. The modification shall provide for the structural integrity of the pipe, such that it no longer relies on the encapsulated piping of the existing spool piece.

    - The Restoration Clamp Assembly components are ASME Code compliant components that replace existing Code pressure boundary component with new Code pressure boundary components.

    - The Restoration Clamp Assembly will be constructed from material that is highly resistant to salt water (i.e. Inconel 625, AL6XN or other FPL approved salt water resistant material) that may be coated on the interior surface to enhance corrosion resistance.

    - The outer edge surface (approximately 1-7/8 inches wide) of each 34-inch OD pipe spool flange will be gasketed (360° circumferential direction). The Restoration Clamp Assembly will be approximately 10.75 inches wide (spanning between the two end flanges and will have the longitudinal direction mating surfaces gasketed.

    - Gasket material Elastomeric or other to be determined.

    - Existing Pipe Spool flange bolting will be replaced using salt-water resistant high-strength fasteners and gaskets of the same diameter but slightly longer than the existing bolts. The Restoration Clamp Assembly also uses structural clips at several bolt locations (approximately 12 out of 20 locations) that are part of the bolted connection to the Spool Piece Flanges and transfer the applied loads to the Restoration Clamp Assembly clamp structure (see detail in Enclosure 2).

- Clamp assembly gaskets will provide for primary pressure integrity and leak tightness of the repair. An additional secondary back up pressure integrity and leak tightness may be provided by filling the Internal interstitial encapsulated area of pipe spool with an approved sealant to assure all gaskets areas are backed up. The sealant will provide additional saltwater corrosion protection of the encapsulated surfaces of the Cast Iron Pipe spool flange surfaces.

- The Restoration Clamp Assembly weld designs are per the requirements of ANSI B31.1-1973 including Addenda through Winter 1976, the piping code of construction for the ICW system at Turkey Point Nuclear Units 3 and 4 (Reference 6). Note that there are no welds being performed on the affected bolted pipe spool. The welds noted herein are associated with fabrication and installation of the Restoration Clamp Assembly with associated subcomponents.

- The fabrication/assembly of the Restoration Clamp Assembly follows the welding guidelines for Code Class 3 components.

- Any welding for the installation of the Restoration Clamp Assembly is accomplished per requirements of the FPL Welding Control Manual and vendor drawings.

- The proposed alternative is the installation of the Restoration Clamp Assembly in accordance with IWA-4340 of the 2013 Edition of Section XI (Reference 2), except as noted below regarding flaw growth and future examinations with the repair being for extended acceptance. NRC proposes to allow use of IWA-4340 of Section XI, 2011 Addenda through 2017 Edition in the Federal Register (Reference 3), with three conditions.

  1) Cannot be used for crack-leak defects or those associated with flow accelerated corrosion.
  2) Have to include a rate of degradation equal to either two times the actual measured corrosion rate at the location, or four times the estimated maximum corrosion rate for the piping system.
  3) Wall thickness measurements to be taken in the vicinity of the modification and relevant base metal during at least the next two refueling outages.

  These conditions related to the form of degradation, future degradation, and future examination. The subject ICW pipe spool degradation is caused by localized internal corrosion, not cracking, and not flow accelerated corrosion, therefore; IWA-4340 is applicable. Regarding condition 2, since the clamp is constructed with highly corrosion resistant material, no coating is necessary to the outer surface of the component for preventing any future external degradation. As such

the degradation mechanism is mitigated since corrosion is no longer a valid degradation mechanism. Regarding condition 3, because external corrosion is no longer a valid degradation mechanism, future wall thickness examinations are not required.

- Prior to installation of the modification/repair, the through wall leakage will be stopped with a non-structural housekeeping seal. Stopping the leakage is only necessary to enable installation of the Restoration Clamp Assembly. This repair is anticipated to involve covering the through wall hole with epoxy pipe repair tape or approved compound. Once the Restoration Clamp Assembly is installed, the seal is no longer needed, but will be left in place. At some point, the seal provided by the pipe repair tape is expected to no longer hold and the Restoration Clamp Assembly will become the pressure boundary. During plant operation, although the repair tape may still be preventing leakage, the Restoration Clamp Assembly will be the ASME Code pressure boundary.

- The Restoration Clamp Assembly is to be installed around the circumference of the degraded pipe spool flange perimeter without removal of the degraded area (degraded pipe area is not involved with the clamp repair structure). The localized flaw appears to be due to localized ID corrosion caused by a failure of the internal cement lining allowing the saltwater environment to contact the inside surface of the cast iron pipe spool. The localized wall thickness in the degraded area of pipe spool has already been characterized using ultrasonic (UT) examination techniques, and thus, a Restoration Clamp Assembly will be applied which covers the degraded area and accounts for any future wall loss.

- Where the Restoration Clamp Assembly is to be attached/bolted onto the 24-inch pipe spool, UT thickness measurement shall also be performed to confirm that material thickness is adequate for the repair design. The 24-inch pipe portion of the spool piece between the flanges, that is to be encapsulated, will be considered non-existent and thus would provide no pressure retention or structural integrity contribution to the piping system.

- The Restoration Clamp Assembly will be clamped and bolted to the system pressure boundary at a distance from locations of identified wall thinning of existing code piping that is sufficient to preclude the growth of identified corrosion from challenging the integrity of the repair for the remaining life of the component to which the Restoration Clamp Assembly is being housed.

- The Restoration Clamp Assembly repair is designed such that it shall not rely on the existing spool piece pipe wall. As the clamp is constructed with highly corrosion resistant grade material, no coating is necessary to the outer surface of the component for preventing any future external degradation. Therefore, future external wall loss will not be considered.

- Restoration of the pressure boundary by use of the repair clamp at the defective or locally thinned area shall be performed only once.

- Except as permitted by the Code of Construction for seal welding, welding of the Restoration Clamp Assembly to the ICW pipe spool is not permitted as part of this repair activity. A bolted assembly is the principle feature in attaching the encapsulating clamp to the pipe spool and establishing the new pressure boundary.

- The Restoration Clamp Assembly will include ports located at prescribed clamp shell locations to allow for pressure testing of the installed Restoration Clamp Assembly and for the injection of Belzona or similar material (pliable, non-corrosive filler material). Following the injection process, the ports will be closed with code approved threaded plugs of equally qualified material resistive to effects of corrosion.

- Future NDE will be in accordance with ASME Code, Section XI, Table IWD-2500-1 for Examination Category D-A. The piping internal to the Restoration Clamp Assembly boundary is inaccessible and will not be examined in the future because credit will no longer be taken for its pressure retaining or structural integrity function. Since the encapsulated clamp material is constructed with corrosion resistant material, internal or external effects of corrosion will not occur.

The proposed alternative provides reasonable assurance of structural integrity because the Restoration Clamp Assembly will be designed, fabricated, inspected, and installed in accordance with the requirements of the current Code of Construction, ASME B31.1 1973 Edition including Addenda through Winter 1976 using all applicable design loads and load cases provided by and verified by FPL. Additionally, the proposed alternative provides reasonable assurance that the component/system will be operationally ready because the alternative will restore the pressure boundary and structural integrity of the degraded spool piece to the requirements of the current code of construction.

Basis for the Request

Complying with IWA-4421 requirements to remove degraded portions of this piping prior to performing a repair/replacement activity represents a hardship or unusual difficulty without a compensating increase in the level of quality and safety for the following reasons:

As discussed previously, removal of the defective pipe spool would require that the piping be isolated and depressurized. The 24-inch piping would create a significant hardship should isolation be performed for the following reasons:

- The Turkey Point Unit 3 ICW/CCW heat exchangers would be in a shutdown condition thereby requiring temporary heat exchanger equipment and cooling medium of a significant volume to satisfy the cooling requirements for the Spent Fuel Pit (SFP) heat exchangers (prior to reactor spent fuel offload to the SFP during a refueling outage). Additionally, temporary safety related inlet and outlet piping tie-ins would be required onto existing safety code equipment, which adds to potential adverse field events.

- Uncertainty whether existing large ICW butterfly valves (upstream of the Restoration Clamp Assembly location) will be leak tight to provide adequate isolation of the ICW flow to be able to perform temporary safety related inlet and outlet piping tie-ins for the operation of temporary heat exchangers.

- Installation of a mechanical stop or use of a freeze seal in the 24-inch piping for system isolation because of the need for continuous flow of intake cooling water from the discharge end on the CCW heat exchangers is critical and the effects of freeze sealing on the affected concrete lined cast iron pipe.

In conclusion, the ASME B & PV Code Section XI requirement, IWD-3120(b), is to correct a component containing a wall loss. The proposed alternative is to relocate the pressure boundary by restoring the affected portion of the piping system, with a Restoration Clamp Assembly which will have adequate material thickness for pressure retention and structural integrity rather than correct the piping experiencing the wall loss. The proposed repair demonstrates by qualitative assessment that the material and the presence of the postulated worst-case wall loss will not be detrimental to the pressure retaining function or structural capability of the intake cooling water piping system.

Based on the discussion and the summary above, it is requested that the NRC authorize this proposed alternative in accordance with 10 CFR 50.55a(z)(2) as the alternative provides an acceptable level of quality and safety.

6.0 DURATION OF PROPOSED ALTERNATIVE

The licensee requests approval of the proposed alternative for the remaining life of the plant, as supported by the Restoration Clamp Assembly design documentation, or until such time that further repair/replacement activities are required for the affected portions of the ICW system piping, whichever occurs first.

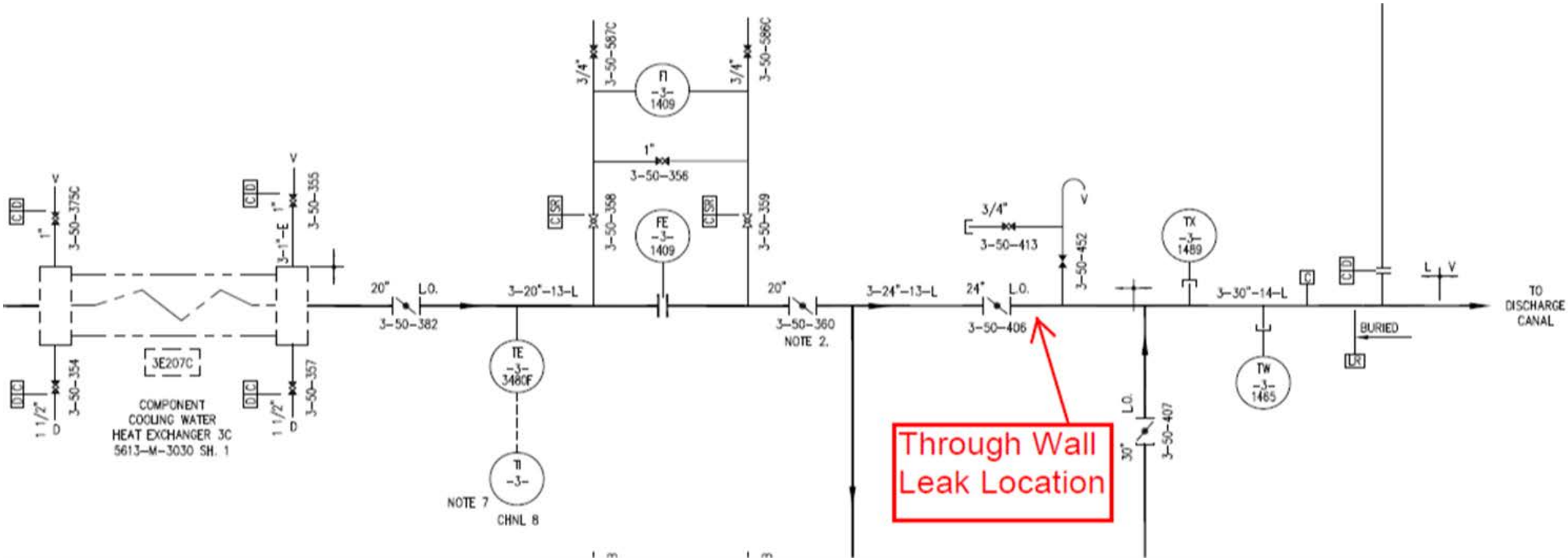
7.0 PRECENDENT

1. NextEra Energy, Turkey Point Nuclear Power Station Units 3 and 4, Relief Request 6, approved by NRC on November 6, 2020, " Turkey Point Nuclear Generating Unit No. 3 – Approval of Alternative to Use ASME Code Section XI IWA-4340 -For Repairs of Component Cooling Water System Piping (EPID L-LLR-0040) Accession No.: ML20287A551

8.0 REFERENCES

1. American Society of Mechanical Engineers (ASME) Boiler & Pressure Vessel Code, Section XI, 2007 Edition including Addenda through 2008.
2. American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, 2013 Edition.
3. Federal Register, Volume 83, Number 218, November 9, 2018, "Proposed Rules".
4. Regulatory Guide 1.26, "Quality Group Classifications and Standards for Water-Steam-, and Radioactive-waste-containing Components of Nuclear Power Plants".
5. NextEra Energy Engineering Design Standard, STD-M-027, Rev. 6, "ASME Section XI Repair and Replacement".
6. ASME/ANSI B31.1, 1973 Edition including Addenda through Winter 1976

Turkey Point, Unit 3
Fifth 10-Year Interval Relief Request No. 10
Intake Cooling Water Pipe Spool Repairs for Through Wall Defect
Location of Through Wall Leak
L-2021-183, Enclosure 1



L-2021-183

Enclosure 3

TURKEY POINT UNIT 3

RELIEF REQUEST No. 10

Proprietary Information Affidavit
Supporting Request for Withholding

272 Grubb Rd • Pottstown, PA 19465 | tel. 610.495.9750 | fax. 440.425.9750 | www.pmcengineering.com

U3 AFFIDAVIT, Rev. 1

I, Paul S. Manzon, state as follows:

1. I am the owner of PMC Engineering Solutions, Inc., Pottstown, PA, 19465. I am the inventor and owner of United States Patent 6,860,297, "Local degraded area repair and restoration component for pressure retaining items" and am addressing the proprietary documents listed in (2) below, containing information which is sought to be withheld, and am applying for its withholding.

2. The information sought to be withheld is contained in the following PMC Engineering Solutions, Inc. documents:

    a. PMC Engineering Drawing - PMCap shop fabrication details drawing, "Restoration Clamp Assembly Details", Drawing No. 202111-M-0001, P6, Sheets 1 through 3.

3. In making this application for withholding of proprietary information of which it is the owner, PMC Engineering Solutions, Inc. relies upon the exemption from disclosure set forth in the Freedom of Information Act ("FOIA"), 5 USC Sec. 552(b)(4) and the Trade Secrets Act, 18 USC Sec. 1905, and NRC regulations 10 CFR 9.17(a)(4), and 2.390(a)(4) for "trade secrets" (Exemption 4). The information for which exemption from disclosure is here sought also qualifies under the narrower definition of "trade secret", within the meanings assigned to those terms for purposes of FOIA Exemption 4 in, respectively, Critical Mass Energy Project v. Nuclear Regulatory Commission. 975F2d871 (DC Cir. 1992), and Public Citizen Health Research Group v. FDA. 704F2d1280 (DC Cir. 1983).

4. Some examples of categories of information which fit into the definition of proprietary information are:

    a. Information that discloses a process, method, or apparatus, including supporting data and analysis, where prevention of its use by PMC Engineering Solutions, Inc.'s competitors without license from PMC Engineering Solutions, Inc. constitutes an economic advantage over other companies

b. Information which, if used by a competitor, would reduce their expenditure of resources, or improve their competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing of a similar product

c. Information which reveals aspects of past, present, or future PMC Engineering Solutions, Inc. customer funded development plans and programs, resulting in potential products to PMC Engineering Solutions, Inc.

d. Information which discloses patentable subject matter for which it may be desirable to obtain patent protection

The information sought to be withheld is considered to be proprietary for the reasons set forth in paragraphs (4) a., (4) b., and (4) d., above.

5. To address 10 CFR 2.390 (b) (4), the information sought to be withheld is being submitted to the NRC in confidence. The information is of a sort customarily held in confidence by PMC Engineering Solutions, Inc., and is in fact so held. The information sought to be withheld has, to the best of my knowledge and belief, consistently been held in confidence by PMC Engineering Solutions, Inc. No public disclosures to third parties including any required transmittals to the NRC, have been made, or must be made, pursuant to regulatory provisions which provide for the maintenance of the information in confidence. Its initial designation as proprietary information, and the subsequent steps taken to prevent its unauthorized disclosure, are set forth in paragraphs (6) and (7) following.

6. Approval of proprietary treatment of a document is made by me, Paul S. Manzon, owner of PMC Engineering Solutions, Inc. I am the person most acquainted with the value and sensitivity of the information in relation to industry knowledge. Access to such documents within PMC Engineering Solutions, Inc. is limited on a "need to know" basis.

7. The procedure for approval of external release of such a document requires review by me, Paul S. Manzon, owner, PMC Engineering Solutions, Inc., for technical content, competitive effect, and determination of the accuracy of the proprietary designation. Disclosures outside PMC Engineering Solutions, Inc. are limited to regulatory bodies, customers, potential customers, and their agents, suppliers, and business and licensees, Authorized ASME Code Nuclear Inspectors, and others with a legitimate need for the information, and then only in accordance with appropriate regulatory provisions or proprietary agreements.

8. The document identified in paragraph 2.a., above, is classified as proprietary because it contains "know-how" and "unique information" developed by PMC Engineering Solutions, Inc. within our product development programs. The development of this document, supporting methods, and information constitutes a major PMC Engineering Solutions, Inc. asset in this current market. Supporting aspects for the application to withhold information specific to the document containing proprietary information are as follows:

   a. PMC Engineering Drawing - PMCap shop fabrication details drawing, “Restoration Clamp Assembly Details”, Drawing No. 202111-M-0001, P6, Sheets 1 through 3.

      i. Drawing 202111-M-0001, Revision P6, Sheets 1 through 3, contains specific shop fabrication details required to construct ASME B31.1 Code Safety-Related restoration hardware (*PMCaps).* The development of these shop fabrication details applicable to and supporting ASME B31.1 Code Safety-Related material, design, fabrication, examination, and testing requirements are a major PMC Engineering Solutions, Inc. asset in this current market. These shop fabrication details were developed at a very high level of effort and expense over the past several years during which PMC Engineering Solutions, Inc. has been offering the nuclear power industry its comprehensive PMC Restoration Method (U.S. Patent 6,860,297) products and services which include those protected by U.S. Patent 6,860,297.

9. The entirety of the information contained in the documents listed in paragraphs 2.a., above, is sought to be withheld from Public Disclosure under 10 CFR 2.390:

10. Public disclosure of the information sought to be withheld is likely to cause substantial harm to PMC Engineering Solutions, lnc.'s competitive position and foreclose or reduce availability of profit-making opportunities. The information is part of PMC Engineering Solutions, lnc.'s comprehensive PMC Restoration Method products and services offerings which include those protected by U.S. Patent 6,860,297, and its commercial value extends beyond the original development costs. The value of the technology base goes beyond the information contained in the documents and includes development of the expertise to determine and apply the appropriate data, requirements, criteria, limitations, approaches and methodologies used in the development and preparation of the design, design details, and supporting documentation for the restoration covered by the information sought to be withheld.

The research, development, engineering, and analytical costs comprise substantial investment of time and money by PMC Engineering Solutions, Inc.

The precise value of the expertise to devise a restoration method and apply the appropriate and correct Code and regulatory requirements to the restoration is difficult to quantify, but it clearly is substantial.

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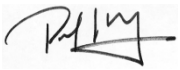
PMC Engineering Solutions, Inc.'s competitive advantage will be lost if its competitors are able to use the results of the PMC Engineering Solutions, Inc. experience to develop or modify their own restoration method or if they are able to claim an equivalent understanding by demonstrating that they can develop the same or similar restoration method.

The value of this information to PMC Engineering Solutions, Inc. would be lost if the information were disclosed to the public. Making such information available to competitors without their having been required to undertake a similar expenditure of resources would unfairly provide competitors with a windfall, and deprive PMC Engineering Solutions, Inc. of the opportunity to exercise its competitive advantage to seek an adequate return on its large investment in developing these very valuable analytical tools.

I declare under penalty of perjury that the foregoing affidavit and the matters stated therein are true and correct to the best of my knowledge, information, and belief.

Sincerely,



Paul S. Manzon
Owner
PMC Engineering Solutions, Inc.

09.28.2021
Date