February 28, 2007 10 CFR 50.90

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Palisades Nuclear Plant
Docket 50-255
License No. DPR-20

Withdrawal of License Amendment Request to Remove TSP from Palisades Containment

By letter dated March 20, 2006, pursuant to 10 CFR 50.90, Nuclear Management Company, LLC (NMC) requested Nuclear Regulatory Commission (NRC) review and approval of a proposed license amendment for the Palisades Nuclear Plant (PNP). NMC was proposing to remove tri-sodium phosphate (TSP) from the containment building at PNP as an interim measure until the long term resolution of GSI-191 is implemented.

On January 9, 2007, a teleconference was held with NRC staff to discuss the subject LAR. Subsequent to the conference call, NMC decided to withdrawal the subject LAR. Enclosure 1 provides the basis for the withdrawal.

A copy of this RAI response has been provided to the designated representative of the State of Michigan.

Summary of Commitments

This letter contains no new commitments and no revisions to existing commitments.

I declare under penalty of perjury that the foregoing is true and correct. Executed on February 28, 2007.

Paul A. Harden
Site Vice-President, Palisades Nuclear Plant
Nuclear Management Company, LLC

Enclosures (1)

cc: Administrator, Region III, USNRC
Project Manager, Palisades, USNRC
Resident Inspector, Palisades, USNRC

ENCLOSURE 1
PALISADES NUCLEAR PLANT

On January 9, 2007, a conference call was held with NRC staff to discuss the license amendment request (LAR) to remove tri-sodium phosphate (TSP) from the Palisades Nuclear Plant (PNP) containment. During the discussion, the NRC requested that information regarding the pressurizer surge line, and other areas around the pressurizer, including lines, welds or components, that may have increased susceptibility to failure, be included as part of any basis for withdrawal, should NMC decide to withdraw the subject LAR. The NRC also requested that NMC confirm the type of insulation installed in the pressurizer surge line area.

Subsequent to the conference call, NMC decided to withdraw the LAR. The requested information and the basis for withdrawal follow:

Pressurizer

The pressurizer at PNP maintains primary coolant system operating pressure and compensates for changes in coolant volume during load changes. The pressurizer is constructed of ASTM A 533, Grade B, Class 1 steel plate. The interior surface of the cylindrical shell and upper head is clad with type 304 stainless steel. The lower head is clad with an Alloy 600 material to facilitate welding of the Alloy 600 heater sleeves to the shell.

The pressurizer contains 136, Alloy 600 penetrations, which are categorized as follows:

- (1) 3-inch ID X 6-inch OD power operated relief valve (PORV) nozzle located in the upper head, originally fabricated of ASTM-A-508-64 CL 2 forged steel with type 304 stainless steel cladding and fitted with a schedule 120, Alloy 600 safe-end. In 1993, the safe-end developed a through-wall crack. The safe-end was repaired by removing the cracked weld and heat affected zone, rewelding the stainless steel PORV line to the safe-end and performing code required examinations of the repair. In 1995, the PORV safe-end was replaced with a new type 316 stainless steel safe-end/spool piece. Alloy 690 was used for the attachment weld to eliminate primary coolant system (PCS) contact with Alloy 600 from the pressurizer PORV nozzle. Baseline examinations of the repair welds were performed in 1995 using ultrasonic (UT) and liquid penetrant (PT) methods with acceptable results. The safe-end welds are UT examined once each inservice inspection (ISI) ten-year interval. The examination of this safe end was last performed in 2004 with acceptable results.

  The upper head is covered with NUKON insulation & stainless steel jacketing.

- (1) – 4-inch spray line nozzle assembly fabricated of ASTM-A-508-64 CL 2 forged alloy steel with type 304 stainless steel cladding and fitted with a schedule 120, Alloy 600 safe-end. These welds are examined every other refueling outage and were last UT inspected in 2004 with acceptable results.

The spray nozzle is located in the center of the upper head which is covered with NUKON insulation & stainless steel jacketing.

- (1) – 12-inch surge line nozzle located in the bottom head of the pressurizer. The surge nozzle is fabricated of ASTM-A-508-64 CL 2 forged alloy steel with type 304 stainless steel cladding and fitted with a schedule 140, Alloy 600 safe-end. Mechanical Stress Improvement Process (MSIP) was applied to the safe end to elbow weld in 1995. The safe-end welds were UT/PT examined in 1995 with acceptable results. The safe-end welds associated with the pressurizer surge line safe-end are UT examined every other refueling outage. These welds were last examined in 2006 with acceptable results.

  The surge line at these welds is covered with NUKON insulation & stainless steel jacketing.

- (3) – 3-inch ID X 6-inch OD valve nozzles, all in the upper head, fabricated of ASTM-A-508-64 CL 2 forged alloy steel with type 304 stainless steel cladding and fitted with Alloy 600 nozzle flanges to provide a 3-inch, 2500# flange connection to the safety valves. All three nozzles welds were examined by UT, RT and PT of the ID in 1993 with acceptable results. Additionally, two of these nozzles were again inspected with UT in 1995 with acceptable results. The last inspection performed on these nozzles was a bare metal visual inspection in 2004. All three nozzles are scheduled to have a volumetric inspection performed during the 2007 refueling outage.

  These nozzles are located on the top of the pressurizer and are insulated with NUKON insulation & stainless steel jacketing.

- (8) – 1-inch level nozzles, four upper and four lower, fabricated of ASTM-A-508-64 CL 2 alloy steel forgings, clad and fitted with Alloy 600 ends. The alloy end is to facilitate welding the SA-182 (F-316) stainless steel socket weld safe-ends for connection of the water level instrumentation piping. The last inspection performed on these welds was a bare metal visual inspection in 2004 with acceptable results.

  Four of these welds are located on the top head, with the other four welds being located on the bottom head of the pressurizer. The top of the pressurizer is insulated with NUKON insulation and stainless steel jacketing and the bottom of the pressurizer is insulated with Transco Thermal Wrap.

- (2) – 1-inch temperature element nozzle penetrations (TE-0101 and TE-0102), one in the upper head and the other in the lower shell, fabricated of Ni-Cr-Fe alloy with SA-182 (F316) stainless steel socket weld safe-ends. These two penetrations were found to be leaking in 1993. Axial PWSCC, in the heat affected zone of these Inconel 600 nozzles,

was found to be the root cause for this leakage. A pad weld repair was performed in both nozzle locations. The last inspection performed on these welds was a bare metal visual inspection in 2004 with acceptable results.

TE-0101 is on the top of the pressurizer and is covered with NUKON insulation and stainless steel jacketing. TE-0102 is located on the side of the pressurizer and is insulated with a NUKON blanket.

- (120) - Pressurizer heater penetrations, which are J-welded to the internal cladding of the vessel lower head, which is clad with Alloy 600 material. PNP operates with heaters in full-time service. This improves equalization of the PCS loop and pressurizer chemistry, reduces thermal stratification and cycling in the surge and spray lines, and maintains lower pressurizer spray inlet safe-end temperatures. Bare metal visual inspections are performed each refueling outage of the 120 heater penetrations. The last inspection was performed in 2006 with acceptable results.

  The Pressurizer bottom head and the inside skirt is insulated with Transco Thermal Wrap removable blankets covered by fiberglass cloth with stainless steel wire mesh. The Pressurizer shell and the outside of the support skirt is insulated with Mineral Wool aluminum jacketing and wire mesh.

As a result of Alloy 600 cracking issues associated with the pressurizer PORV nozzle, a project was initiated in 1993 to identify and rank all Alloy 600 penetrations contained within the PCS. This project ranked all 251 Alloy 600 penetrations based on four main criteria: PWSCC susceptibility, failure consequence, leakage detection margin and radiation dose rates. As a result of the project, MSIP was applied to the surge line ends and the shutdown cooling line safe end. Additionally many exams were performed in 1993 and 1995 to assess the condition of the alloy 600 welds. Since that time PNP has followed the inspection requirements of NRC Bulletins and Orders associated with Alloy 600, as well as the newer inspection requirements of MRP-139. Based on PNP history of Alloy 600 inspections and remediation efforts to date, there are no indications of leaks or cracks in the pressurizer surge line, connections, or taps, which would increase the probability of a failure in the area.

In addition, as part of the response to Generic Letter 2004-02, an evaluation was performed to establish the PNP containment debris source term under design basis loss of coolant accident conditions, using the methodology specified in NEI 04-07, "Pressurized Water Reactor Sump Performance Evaluation Methodology," Revision 0, dated December 2004, and the accompanying Safety Evaluation on NEI 04-07. This evaluation determined that a hot leg break near the inlet of the steam generator is the limiting break from a debris standpoint.

The 12-inch pressurizer surge line is smaller than the NEI recommended 14-inch alternate pipe break and the alternate pipe break evaluated does not result in a bounding case debris generation load. Therefore, any LOCA associated with the pressurizer would generate a debris load less than the GSI-191 bounding case debris load.

Based on the remediation performed to date and the inspection efforts, there are no indications of leaks or cracks in the pressurizer surge line, connections, or taps which would increase the probability of a failure in the area. Therefore, withdrawing the TSP LAR is considered to be risk neutral. In addition, if a random failure were to occur resulting in a leak or break in the surge line or a pressurizer connection, the amount of generated debris would be less than the GSI-191 calculated debris loads. The next scheduled refueling outage at PNP is in the fall of 2007. Therefore, given the brief exposure time that the plant would operate with TSP, the risk of leaving the TSP buffer in containment until the commencement of the 2007 outage is considered negligible.