NMC
Committed to Nuclear Excellence

Palisades Nuclear Plant
Operated by Nuclear Management Company, LLC

September 18, 2003

10 CFR 50.55a(a)(3)(i)

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

PALISADES NUCLEAR PLANT
DOCKET 50-255
LICENSE No. DPR-20
NRC ORDER EA-03-009 RELAXATION REQUEST

Nuclear Management Company, LLC (NMC) requests approval for relaxation from certain requirements of Nuclear Regulatory Commission (NRC) Order EA-03-009, "Issuance of Order Establishing Interim Inspection Requirements for Reactor Pressure Vessel Heads at Pressurized Water Reactors," issued February 11, 2003, for the Palisades Nuclear Plant. The basis for relaxation is attached, which states that the proposed alternative provides an acceptable level of quality and safety. NMC proposes an alternative to the specified Order EA-03-009 requirements, in accordance with section IV F.(2), pursuant to 10 CFR 50.55a(a)(3)(i).

NMC requests approval of the proposed relief request by July 1, 2004, to support Palisades upcoming refueling outage.

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

> NMC will perform ultrasonic testing of the reactor pressure vessel head penetration nozzles (eight instrumentation nozzles and forty-five control rod drive nozzles) to extend two inches below the J-groove weld.

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Site Vice-President, Palisades Nuclear Plant

CC Regional Administrator, USNRC, Region III
Project Manager, Palisades Nuclear Plant, USNRC, NRR
NRC Resident Inspector – Palisades Nuclear Plant

Attachment

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ATTACHMENT

NUCLEAR MANAGEMENT COMPANY, LLC

PALISADES NUCLEAR PLANT
DOCKET 50-255

SEPTEMBER 18, 2003

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3 Pages Follow

ATTACHMENT 1
PALISADES NUCLEAR PLANT
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COMPONENT IDENTIFICATION

The affected components are the Palisades Nuclear Plant reactor pressure vessel (RPV) head penetration nozzles (eight instrument nozzles and forty-five control rod drive nozzles).

APPLICABLE DOCUMENT

The applicable document is Order EA-03-009, "Issuance of Order Establishing Interim Inspection Requirements for Reactor Pressure Vessel Heads at Pressurized Water Reactors," issued February 11, 2003.

APPLICABLE REQUIREMENT

Order EA-03-009 established interim inspection requirements for RPV head penetration nozzles, depending on their susceptibility to primary stress corrosion cracking. The Palisades' RPV head is currently in the moderate susceptibility category and is expected to enter the high susceptibility category beyond the year 2006.

Order EA-03-009 specifies the requirements governing ultrasonic testing of RPV heads in the moderate and high susceptibility categories in Sections IV.C.(2)(b)(i) and IV.C.(1)(b)(i), respectively. If ultrasonic testing is selected, the following is required:

> "Ultrasonic testing of each RPV head penetration nozzle (i.e., nozzle base material) from two (2) inches above the J-groove weld to the bottom of the nozzle..."

BASIS FOR RELAXATION REQUEST

NMC is requesting relaxation from sections IV.C.(2)(b)(i) and IV.C.(1)(b)(i) of Order EA-03-009, from the requirement to perform ultrasonic testing to the bottom of the RPV head penetration nozzles at Palisades. Most Palisades RPV head penetration nozzles extend well below the J-groove weld. A J-groove weld attaches each nozzle to the underside of the RPV head and forms part of the pressure-retaining boundary. The eight instrument nozzles extend approximately

three feet below the J-groove weld while the forty-five control rod drive nozzles extend approximately four feet to six feet below the J-groove weld. The RPV head vent line penetration nozzle does not extend below the J-groove weld. The portions of the RPV head penetration nozzles that extend below the J-groove weld do not provide any pressure retaining function. Therefore, testing the lower portions of the RPV head penetration nozzles is unnecessary. (Refer to Figure 1 for RPV head penetration nozzle configuration.)

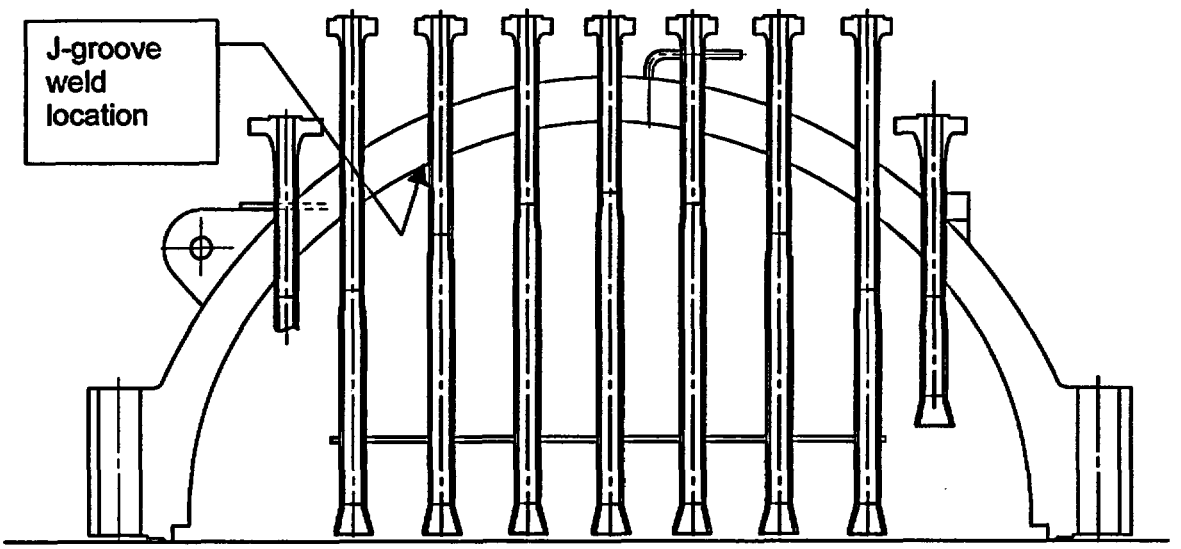

Figure 1: Palisades' Reactor Vessel Head

PROPOSED ALTERNATE EXAMINATION

NMC proposes that the ultrasonic testing conducted of each RPV head penetration nozzle, in accordance with sections IV.C.(2)(b)(i) and IV.C.(1)(b)(i) of Order EA-03-009, be required to extend two inches below the J-groove weld, in lieu of requiring that ultrasonic testing extend to the bottom of the nozzle. Below the J-groove weld, the nozzle is an open-ended tube, and the nozzle wall in this portion is not part of the reactor coolant pressure boundary. Therefore, testing the lower portions of the RPV head penetration nozzles is unnecessary.

Stresses in the equivalent area below the J-groove weld decrease significantly due to the design configuration of the tubes (open ended and not a pressure boundary). Stresses due to differential pressure and temperature are negligible in this area, therefore, this area is not an area of concern for primary water stress corrosion cracking (PWSCC). Defining the inspection area below the J-groove weld the same as above the J-groove weld provides adequate coverage for the detection of PWSCC.

The requirement that ultrasonic testing extend from two inches above the J-groove weld would be unaffected. The proposed alternative would not apply to the RPV head vent line penetration nozzle, as this nozzle does not extend below the J-groove weld.

CONCLUSION

In summary, NMC is requesting relaxation from sections IV.C.(2)(b)(i) and IV.C.(1)(b)(i) of Order EA-03-009, from the requirement to perform ultrasonic examination to the bottom of the RPV head penetration nozzles at Palisades. Based on the information presented, and pursuant to 10 CFR 50.55a(a)(3)(i), NMC requests approval of this relaxation request on the basis that the proposed alternative provides an acceptable level of quality and safety.

PERIOD FOR WHICH RELIEF IS REQUESTED

The proposed alternative will apply for the duration Order EA-03-009 is in effect.