

November 17, 1988

Docket No. 50-311

Mr. Steven E. Miltenberger
Vice President and Chief Nuclear
Officer
Public Service Electric & Gas Company
Post Office Box 236
Hancocks Bridge, New Jersey 08038

Dear Mr. Miltenberger:

SUBJECT: TEMPORARY RELIEF FROM ASME SECTION III REQUIREMENTS FOR USE OF
MECHANICAL SEAL CLAMP ASSEMBLIES (TAC NO. 69552)

RE: SALEM GENERATING STATION, UNIT 2

By letter dated October 13, 1988, Public Service Electric and Gas Company (the licensee) requested temporary relief from the requirements of Section III of the ASME Boiler and Pressure Vessel Code for the use of a Mechanical Seal Clamp Assembly (MSCA) in sealing a leaking canopy seal weld on a spare head adaptor cap. The MSCA is an alternative to seal welding the canopy.

We have reviewed your submittal and determined that the use of MSCA as an alternative to repairing the seal weld is acceptable for a maximum of three fuel cycles. Granting of relief is authorized by law and will not endanger life or property or the common defense and security and is otherwise in the public interest, giving due consideration to the burden on the licensee that could result if the requirements were imposed on the facility. Our Safety Evaluation is enclosed. Based on our conclusion, pursuant to 10 CFR 50.55a(g)(6)(i) we grant the relief for a maximum of three (3) cycles. Verbal approval of the use of the MSCA was communicated to Region I on October 21, 1988.

Sincerely, /S/

Walter R. Butler, Director
Project Directorate I-2
Division of Reactor Projects I/II
Office of Nuclear Reactor Regulation

Enclosure:
Safety Evaluation

cc w/enclosure:
See next page
Docket No. 50-311

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[STEVE E. LETTER]

Previously concurred*

PDI-2/LA* PDI-2/PM*
MO'Brien JStone:tr
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PDI-2/D* OGC*
WButler
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MO'Brien	JStone:tr	WButler
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OGC
gm
11/14/88

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

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A handwritten signature in cursive script, reading "Walter R. Butler", is positioned above the typed name.

Walter R. Butler, Director
Project Directorate I-2
Division of Reactor Projects I/II
Office of Nuclear Reactor Regulation

Enclosure:
Safety Evaluation

cc w/enclosure:
See next page

Mr. Steven E. Miltenberger
Public Service Electric & Gas Company

Salem Nuclear Generating Station

cc:

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO REQUESTED TEMPORARY RELIEF FROM

ASME SECTION III REQUIREMENTS

PUBLIC SERVICE ELECTRIC & GAS COMPANY

PHILADELPHIA ELECTRIC COMPANY

DELMARVA POWER AND LIGHT COMPANY

ATLANTIC CITY ELECTRIC COMPANY

SALEM GENERATING STATION, UNIT NO. 2

DOCKET NO. 50-311

1.0 INTRODUCTION

By letter dated October 13, 1988, Public Service Electric & Gas Company requested relief from ASME Section III Code requirements in accordance with 10 CFR 50.55a(g)(5)(iii) for the use of a Mechanical Seal Clamp Assembly (MSCA) in sealing a leaking canopy seal weld on a spare head adaptor cap in Salem Unit 2. The canopy seal welds provide a leakage barrier on the spare reactor vessel head adaptor caps.

- 2.0 CODE REQUIREMENT FROM WHICH RELIEF IS REQUESTED: Pursuant to 10 CFR 50.55a(g)(5)(iii), relief is requested from Section III of the ASME Code allowing the use of a MSCA to be used to seal a leaking canopy weld in lieu of a welded repair.

- 3.0 BASIS FOR RELIEF: Section XI requires repairs to be made in accordance with the provisions of Section XI or the original design code. The original design code for Salem Unit 2 is the ASME 1966 Edition with Winter of 1966 Addenda. However, this edition does not provide any specific guidance on mechanical seals. Therefore, NB 3671.7, Sleeve Coupled and Other Mechanical Joints, 1986 Edition was used in designing the MSCA.

- 4.0 PROPOSED ALTERNATIVE: The licensee has proposed to use a MSCA to temporarily seal the leaking canopy weld on a spare reactor vessel head adaptor cap. In addition, three non-leaking spare reactor vessel head adaptor caps will have MSCAs installed as a precaution against leaking. The MSCAs will be installed for a maximum of three cycles, thus providing the licensee time to develop a permanent solution to the problem of leaking canopy seal welds.

5.0 EVALUATION

PSE&G has elected to use the MSCA designed and tested by Combustion Engineering to remedy leakage through the seal weld in a spare reactor vessel head adaptor cap at Salem, Unit 2. PSE&G has also elected to use the MSCA on three spare head adaptor caps that do not have leaking seals.

The ASME Code, Section XI, requires that repairs be made in accordance with the provisions of Section XI or the original design code. The MSCA is designed in accordance with the ASME Code, Section III, paragraph NB-3671.7 requirements except for the material selection which was purchased to ASTM material specifications. The licensee's relief request contains a summary of their analysis for conforming with NB-3671.7. With the exception of the material selection aspects noted above this installation has been determined to be in conformance with NB-3671.7.

The ASTM material is the same as the equivalent ASME material but it is not subject to the same controls. The metallic portions of the MSCA are only required to maintain the Grafoil seal in compression, will not be in contact with the reactor coolant, and are not expected to experience loading in excess of the original installation load.

The MSCA modification is considered temporary and is not intended to be used beyond three cycles. Pre-load on the MSCA studs will be verified during refueling outages. Visual verification of zero leakage will be confirmed during the shutdown and outage Reactor Head area inspections. Salem Unit 2 Reactor Vessel Closure Head has enhanced leakage detection capabilities. A new air particulate monitor was developed to identify reactor coolant system leakage from the reactor head area. In addition, three inspection ports were added to the lower control rod drive mechanism cooling shroud. This allows direct visual observations of the upper portions of the head penetrations, including the canopy seal weld areas, any time the reactor is not critical.

The staff finds that the proposed alternative to use the MSCA in lieu of repairing the seal weld is acceptable. Based upon the determination that the proposed alternative to use the MSCA has been fully developed, tested, and already installed, compliance with the requirements of 10 CFR 50.55a with respect to repair would be impractical. Compliance with the Code requirements would result in a significant delay in plant restart to perform additional engineering design and field repair work. Based upon the determination that complying with the Code requirements in this case is impractical and considering the burden on the licensee if conformance with the Code were required, temporary relief is granted from the ASME Code, Section XI, pursuant to 10 CFR 50.55a(g)(6)(i). The granting of this relief is contingent upon fulfillment of all commitments made in the request for relief.

6.0 CONCLUSION

We have concluded, based on the considerations discussed above, that granting of relief is authorized by law and will not endanger life or property or the common defense and security and is otherwise in the public interest giving due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility.

Principal Contributor: E. Sullivan, MEB and J. Stone, PDI-2

Dated: October 1988