Consumers Power Company

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Director,
Nuclear Reactor Regulation
US Nuclear Regulatory Commission
Washington, DC 20555

DOCKET 50-255 - LICENSE DPR-20 -
PALISADES PLANT - PROPOSED TECHNICAL SPECIFICATION CHANGE REQUEST -
AUXILIARY FEEDWATER SYSTEM

Attached are three (3) originals and thirty seven (37) conformed copies of a Request for Change to the Palisades Technical Specifications. The requested change responds to Generic Letter 83-37 and Item II.E.1.1 of NUREG-0737, Long Term Auxiliary Feedwater System Evaluation. Our response to the Generic Letter and TMI Action Plan (reference our submittals dated November 2, 1981, August 29, 1983 and February 8, 1984) identified that we had completed our evaluation to improve the reliability and performance of the auxiliary feedwater (AFW) system and notified you of our proposal to incorporated a third AFW pump.

The NRC Safety Evaluation Report dated June 19, 1984 approved the design by issuance of Amendment 83 to our Operating License. The modification involved the utilization of a spare high-pressure safety injection pump located physically separate from the existing AFW pump. The system provides for AFW pump suction from either the condensate storage tank, fire water system or the service water system.

The specification included in the attached revisions comply with the applicable NRC guidelines within the constraints of the existing plant design and construction. The limiting conditions for operation are consistent with those submitted under several other utility dockets reflecting similar system backfits. In particular, reference Federal Register 33944 on August 27, 1984. The NRC has issued an Amendment to Baltimore Gas & Electric Company which revised the Technical Specifications for operation of the Calvert Cliffs Plant Unit No 2. This Amendment includes a provision to extend the maximum period of inoperability of an auxiliary feedwater pump from 72 hours to 7 days. (49 FR 33944, August 27, 1984.)

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The improved auxiliary feedwater system for Palisades was designed to meet the accceptance criteria specified in revision 1 of the NRC Standard Review Plan (Section 10.4.9 and Branch Technical Position ASB 10-1) to the extent practical and feasible considering existing plant equipment and configuration. The design provides for automatic initiation, as well as isolation, as specified in item I.13 of the reference section. The automatic isolation feature of the system is provided by two redundant, series isolation valves in each of two injection lines to each steam generator (total of eight motor operated valves), along with appropriate instrumentation and control circuitry to selectively isolate the injection paths to the depressurized steam generator in the event of a steam line or feed line break. Nuclear safety considerations, as described below, dictate that the automatic isolation feature be disabled (operated in the manual mode), although the operator may manually isolate the effected steam generator from the control room using the motor operated isolation valves in each injection line, and is instructed to do so by plant emergency operating procedures during steam line and feed line breaks. Consequently, the proposed technical specifications do not incorporate surveillance and operability requirements for those portions of the AFW control circuitry which relate to the automatic isolation feature.

Operation with the automatic isolation feature in the manual mode is consistent with revision 2 of the Standard Review Plan (NUREG-0800). Item I.13 of Section 10.4.9 of NUREG-0800 states that: "The system design possesses the capability to automatically terminate auxiliary feedwater flow to a depressurized steam generator, and to automatically provide feedwater to the intact steam generator. Or as an alternative if it is shown that the intact steam generator will receive the minimum required flow without isolation of the depressurized steam generator and containment deisgn pressure is not exceeded, then operator action may be relied upon to isolate the depressurized steam generator." Further, item III.2.9 of Section 10.4.9 states that: "The AFWS is designed with redundant instrumentation so that the system will automatically limit (may be flow limiting orifice rather than instrumentation) or terminate auxiliary feedwater flow to a depressurized steam generator, and to assure that the minimum required flow is directed to the intact steam generator(s)." The Palisades AFW system is designed to automatically limit flow to the steam generators using a safety grade flow control valve and associated control circuitry in each injection line. This design limits flow to a prespecified amount to the broken steam generator in the event of a steam line or feed line break, thereby assuring adequate flow to the intact steam generator. Consequently, the requirements of item I.13 of SRP Section 10.4.9 is met. Operator action would be required to terminate all flow to the broken steam generator, but the operator would have considerable time to recognize the need for and take the required action.

Consumers Power Company's responses to IE Bulletin 80-04 (letters dated 5/9/80, 5/29/81, 4/26/82, 10/26/82, 7/22/83 and 9/8/83) and the NRC Safety Evaulation Report on the same subject (letter dated 4/11/84) concluded that the operator has in excess of 30 minutes to terminate feedwater to the broken steam generator before containment design pressure would be approached.

The decision to operate the AFW system with the automatic isolation feature in the manual mode was based on several considerations as follows:

1. General concern on the part of the reactor operators with a system design feature which could possibly result in unnecessary or unplanned isolation of one of the most important safety systems in the plant - the auxiliary feedwater system.

2. The possibility of spurious operation of the motor-operated isolation valves in the event of a fire causing a short to ground or hot short in instrumentation or control circuitry.

3. Concern with the possibility of spurious isolation of the good steam generator in a steam generator tube rupture event.

A check in the amount of $150.00 is enclosed as required by 10 CFR 170.21.

David J VandeWalle

David J VandeWalle
Director, Nuclear Licensing

CC Administrator, Region III, USNRC
NRC Resident Inspector - Palisades

Attachment

CONSUMERS POWER COMPANY
DOCKET 50-255 - LICENSE DPR-20 - PALISADES PLANT
REQUEST FOR CHANGE TO TECHNICAL SPECIFICATIONS

For the reasons hereinafter set forth, it is requested that the Technical Specifications contained in the Provisional Operating License DPR-20, Docket 50-255, issued to Consumers Power Company on October 16, 1972, for the Palisades Plant be changed as described in Section I below.

I. Changes

Revised Technical Specifications pages are attached. Proposed changes are shown by a vertical line in the right-hand margin. The following section of the Technical Specifications are affected by these proposed changes: Section 3.3, Section 3.5.1 a - f, Section 3.5.2 a - e, Section 3.5.3, Section 3.17, Table 3.17.4, Section 4.6.1.c, Section 4.9, and Section 4.1, Table 4.1.3. The following is a brief description of each change:

Specification 3.3 "Basis" - Change last sentence to reflect two rather than three high-pressure safety injection pumps.

Specification 3.5.1.a - The existing Specification refers to the operability of both pumps implying the existence of only two pumps. As a result of the Auxiliary Feedwater System Modifications, the Plant will have three auxiliary feedwater pumps thus this specification now refers to the operability of all three pumps.

Specification 3.5.1.b - This is a new Specification which makes Plant personnel aware of Auxiliary Feedwater System instrumentation operability requirements which are not addressed in Specification 3.5.

Specification 3.5.1.c - This is a new Specification which specifically defines the operability requirements of the Auxiliary Feedwater System flow control valves prior to heating the Plant.

Specification 3.5.1.d,e,f - These Specifications are identical to existing Specification 3.5.1.b,c,d.

Specification 3.5.2.a - This is a new Specification giving a limiting condition of operation when auxiliary feedwater pump P-8A or P-8B is inoperable. A period of 7 days is given to restore the affected pump to operability.

Specification 3.5.2.b - This is a new Specification giving a limiting condition of operation when auxiliary feedwater pump P-8C is inoperable. A period of 72 hours is given to restore P-8C to operability.

Specification 3.5.2.c - This Specification is a revision to existing Specification 3.5.2.b. A period of 7 days was given to restore the alternate fire water suction.

Specification 3.5.2.d - This is a new Specification giving a limiting condition of operation when alternate suction from the Service Water System to pump P-8C is not available. A period of 7 days was given to restore the alternate service water suction.

Specification 3.5.2.e - This is a new Specification giving a limiting condition of operation when one of the Auxiliary Feedwater System flow control valves is inoperable. A period of 72 hours is given to restore the flow control valve to operability.

Specification 3.5.3 - This is a new Specification which gives specific direction on what action to take if the requirements of 3.5.1 or the conditions of 3.5.2 cannot be met.

Specification 3.5.4 - This Specification is almost identical to existing Specification 3.5.4, but it refers to all auxiliary feedwater pumps instead of both auxiliary feedwater pumps.

Specification 3.5 Basis - This Section was revised to give a more accurate description of the Auxiliary Feedwater System. Included in this basis document is a brief description of the pump start sequence.

Specification 3.17, Table 3.17.4, Item 13 - This is a revision to an existing Specification. This Specification concerns the requirements for remote auxiliary feedwater flow indication available to operators.

Specification 3.17, Table 3.17.4, Item 14 - This Specification concerns the operability of Auxiliary Feedwater Actuation System Sensor Channels which receive steam generator level signals and make a determination if they exceed specified setpoints.

Specification 3.17, Table 3.17.4, Item 15 - This Specification concerns the operability of the Auxiliary Feedwater Actuation System Actuation Channels which receive trip signals from the sensor channels and then generate the appropriate signal to the Auxiliary Feedwater System equipment.

Specification 3.17, Table 3.17.4, Item 16 - This is an existing Technical Specification numbered as Item 15 on Table 3.17.4.

Specification 4.1, Table 4.1.3, NOTE 3 has been revised to state that the auxiliary feedwater pumps will be started from the control room hand switch, from the breaker, and from the pump test - key switch in a

three month period. This is a more accurate description of what is performed in the Surveillance Test.

Specification 4.6.1.c - This specification revision deletes reference to HPSI pump P66C which is now referred to as auxiliary feedwater pump P-8C.

Specification 4.9.b, - Specification b has been revised to incorporate new flow control valves CV-0727 and CV-0749 and to state the operability of flow control valves will be tested every month (MO-24). The basis for Specification 4.9, has been revised to incorporate these changes.

II. Discussion

The above proposed Technical Specification changes are requested.

Specification 3.3, "Basis" and Specification 4.6.1.c - In response to NUREG-0737 Action Item II.E.1.1, "Auxiliary Feedwater System Evaluation, Consumers Power Company proposed, in a letter dated November 2, 1981, to modify the existing Palisades Plant design. Proposed Technical Specifications were submitted by letter dated August 29, 1983. The design modification adapted the existing spare high pressure safety injection (HPSI) pump, P-66C, for auxiliary feedwater service. This design modification has been accepted by the NRC (reference Amendment No 83 dated June 19, 1984), and Consumers Power Company completed this modification during the 1983-1984 refueling outage. The above proposed Technical Specifications change is requested to bring the Palisades Technical Specifications into conformance with the actual as-built plant design.

Specification 3.5.1.a - See Section I.

Specification 3.5.1.b - See Section I.

Specification 3.5.1.c - If the Plant is in cold shutdown and one of the flow control valves is malfunctioning, the valve should be repaired prior to heating the Plant to ensure total Auxiliary Feedwater System operability.

Specification 3.5.1.d,e,f - See Section I.

Specification 3.5.2.a - If P-8A or P-8B is inoperable, the Plant still has two independent and redundant auxiliary feedwater pumps complete with associated equipment to supply auxiliary feedwater to the steam generators. However, if P-8A or P-8B is inoperable, the redundancy of the auxiliary feedwater system is reduced. Therefore, although inoperablility of P-8A or P-8B is not a serious deficiency it is not advant-

ageous for the Plant to have one of these pumps out of service as a normal Plant condition.

Specification 3.5.2.b - If P-8C is inoperable, the Plant still has one Auxiliary Feedwater System pipe train available to supply auxiliary feedwater to the steam generators. The limiting condition of operation of 72 hours is consistent with the Standard Technical Specifications.

Specification 3.5.2.c - The auxiliary feedwater system now has 2 secondary suction sources to the auxiliary feedwater pumps. The current Technical Specification 3.5.2.b has a limiting condition of operation time period of 72 hours to restore the alternate fire water suction to the auxiliary feedwater pumps P-8A and P-8B. With an additional independent secondary suction source to auxiliary feedwater pump P-8C, the time limit on the subject limiting condition of operation need not be as stringent. Therefore, the time limit on the subject limiting condition of operation is extended to 7 days.

Specification 3.5.2.d - A period of 7 days was selected to be consistent with Specification 3.5.2.c. The auxiliary feedwater system now has 2 secondary suction sources to the auxiliary feedwater pumps. The current Technical Specification 3.5.2.b has a limiting condition of operation time period of 72 hours to restore the alternate fire water suction to the auxiliary feedwater pumps P-8A and P-8B. With an additional independent secondary suction source to auxiliary feedwater pump P-8C, the time limit on the subject limiting condition of operation need not be as stringent. Therefore, the time limit on the subject limiting condition of operation is extended to 7 days.

Specification 3.5.2.e - If a flow control valve is inoperable, the Plant still has one Auxiliary Feedwater System pipe train available to supply auxiliary feedwater to the steam generators.

Specification 3.5.3 - See Section I.

Specification 3.5.4 - See Section I.

Specification 3.5 Basis - See Section I.

Specification 3.17, Table 3.17.4, Item 13 - In the Auxiliary Feedwater System, there are 2 remote flow indicators per flow control valve. It is necessary to have at least 1 remote flow indicator operable on each flow control valve for an operator to know how much water the auxiliary feedwater system is pumping to the steam generators and what steps he should take to adequately control auxiliary feedwater flow.

Specification 3.17, Table 3.17.4, Item 14, - The are four Auxiliary Feedwater Actuation System Sensor Channels. Two of the four sensor

channels must trip for the Auxiliary Feedwater Actuation System actuation channels to trip. If 1 sensor channel is inoperable, the logic then is 2 out of 3 sensor channels must trip for the actuation channels to trip. If 2 sensor channels are inoperable, the logic is then 2 out of 2 sensor channels must trip for the actuation channels to trip. NOTE F states one of the inoperable low level bistable modules (one for each steam generator) of an inoperable sensor channel must be in the tripped condition if two sensor channels are inoperable. Thus, if two sensor channels are inoperable, the logic for the automatic pump start signal would be 1 out of 2. These conditions are very similar to what currently exists.

Specification 3.17, Table 3.17.4, Item 15 - There are two Auxiliary Feedwater Actuation System Actuation Channels. One AFAS actuation channel generates the appropriate signal to right channel auxiliary feedwater equipment and the other AFAS actuation channel generates the appropriate signal to left channel auxiliary feedwater equipment. Both actuation channels must be operable to ensure automatic operation capability to all auxiliary feedwater pumps. NOTE (e) provides conditions in which the Plant may stay on line with one or both actuation channels out of service. The conditions given are very similar to what currently exists.

Specification 3.17, Table 3.17.4, Item 16 - See Section I

Specification 4.9, - See Section I.

Specification 4.1, Table 4.1.3, Item 17 and 18 - See Section I.

Specification 4.1, Table 4.1.3, NOTE 3 - See Section I.

Basis for Determination of No Significant Hazards Considertions:

We have reviewed the proposed change to add a third AFW pump to the Palisades Plant in accordance with the requirements of NUREG-0737 and the guidance of Generic Letter 83-37 in order to determine whether or not this change involves a significant hazards consideration. In our review, we have used the guidance of certain examples (48 FR 14870). One of the examples (ii) in this guidance is if a change constitutes an additional limitation, restriction, or control not presently included in the Technical Specifications than that change can be considered not likely to involve significant hazards considerations. Since this proposed change adds requirements mandated by NUREG-0737, we have determined that this change falls within the example and therfore the change does not involve a significant hazards consideration.

III. CONCLUSION

The Palisades Plant Review Committee has reviewed this Technical Specification Change Request and has determined that this change does not involve an unreviewed safety question and therefore involves no significant hazards considertion. This change has also been reviewed under the cognizance of the Nuclear Safety Board. A copy of this Technical Specification Change Request has been sent to the State of Michigan official designated to receive such Amendments to the Operating License.

CONSUMERS POWER COMPANY

By _____
R B DeWitt, Vice President
Nuclear Operations

Sworn and subscribed to before me this 17th day of September 1984.

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Sherry L Durfey, Notary Public
Jackson County, Michigan

My commission expires November 5, 1986.

SHERRY LYNN DURFEY
Notary Public, Jackson County, Mich.
My Commission Expires Nov. 5, 1986

PROPOSED PAGES

Consumers Power Company
Palisades Plant - Docket 50-255

TECHNICAL SPECIFICATION CHANGE REQUEST

AUXILIARY FEEDWATER SERVICE

8 Pages