

September 22, 1982

In reply, please
refer to LAC-8601

DOCKET NO. 50-409

Director of Nuclear Reactor Regulation
ATTN: Mr. Dennis M. Crutchfield, Chief
Operating Reactors Branch #5
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

SUBJECT: DAIRYLAND POWER COOPERATIVE
LA CROSSE BOILING WATER REACTOR (LACBWR)
PROVISIONAL OPERATING LICENSE NO. DPR-45
REVIEW OF HIGH PRESSURE CORE SPRAY MODIFICATION

- References:
- (1) DPC Letter, Madgett to Ziemann, LAC-2686
dated August 15, 1974
 - (2) DPC Letter, Madgett to Ziemann, LAC-3554,
dated December 18, 1975
 - (3) DPC Letter, Madgett to Director NRR, LAC-3930,
dated May 19, 1976
 - (4) NRC Letter, Crutchfield to Linder,
dated August 6, 1974
 - (5) DPC Letter, Linder to Crutchfield, LAC-8597,
dated September 20, 1982
 - (6) DPC Letter, Linder to Crutchfield, LAC-7025,
dated July 14, 1980
 - (7) DPC Letter, Linder to Keppler, LAC-8375,
dated July 1, 1982

Gentlemen:

DPC will be electrically isolating the Service Water to Emergency Core Spray Pumps Valve (53-25-004) because use of the valve may result in blockage in the High Pressure Core Spray (HPCS) bundle, per the telephone communications between DPC, NRC-NRR and NRC-I&E. The High Pressure Core Spray System is the primary and preferred method of post-accident core cooling. DPC has agreed to electrically isolate the valve, so as to prevent inadvertant actuation, but to allow for reestablishment of the control circuitry if all other sources of core cooling fail during an accident situation. Isolation of this valve will remove from service a valve evaluated in the Safeguards Report for Operating Authorization (August 1967), so a review of credit taken for its use was conducted.

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The Safeguards Report mentions high pressure service water as a backup water supply for the Emergency (High Pressure) Core Spray System. Reference 1 which submitted the results of an analysis on Consequence of Postulated Pipe Failures Outside of the Containment Structure, concluded in part, "The High Pressure Core Spray System will be capable of providing short term and long term cooling if either the High Pressure Service Water system or the Demineralized Water Supply system remains operational after a pipe break outside containment," and "The High Pressure Core Spray and Alternate Core Spray system will be capable of providing adequate short term and long term core cooling to ensure a safe reactor shutdown even if both the High Pressure Service Water and the Demineralized Water Supply systems are damaged by the pipe break outside containment." The consequences of isolating the Service Water to Emergency Core Spray Pumps Valve would be similar to a break in the High Pressure Service Water (HPSW) line, with regards to safe shutdown.

The single failure ECCS analysis was submitted in Reference 2. Credit was taken in the analysis for the high pressure service water tie to HPCS as a backup means of both short term and long term cooling. In only one LOCA plus single failure scenario was the high pressure service water to HPCS tie the sole means of providing short term and/or long term cooling. It was not considered a sufficient method of core cooling. The scenario involved an Alternate Core Spray line break combined with the failure of the Overhead Storage Tank check valve (69-26-001) to open. The recommended modification to eliminate that scenario from the list of those failing to provide adequate core cooling was to add a second check valve in parallel to the first. In Reference 3, however, it was stated that based on conferences and site inspections it was determined the modification was not necessary since the check valve had been determined sufficient to satisfy the requirements of Interim Acceptance Criteria.

Reference 4 contained the NRC evaluation of SEP Topic XV-19, "Loss of Coolant Accidents Resulting from Spectrum of Postulated Piping Breaks within the Reactor Coolant Pressure Boundary." The evaluation took no credit for the high pressure service water to HPCS connection. DPC expressed its agreement with the conclusions of this analysis in Reference 5.

DPC's review of analyses has identified other analyses (eg SEP Topic III.4.C, "Internal Missiles"), in which the service water supply to HPCS is mentioned as a backup. In no analysis which has been identified as mentioning the high pressure service water to HPCS connection, has credit been taken for it being the sole and sufficient means of cooling the core. Also, LACBWR Technical Specifications presently establish no requirements for the connection. Therefore, isolating the valve will not degrade equipment necessary for safe shutdown of the reactor. DPC does not, however, want to irretrievably eliminate any potential source of even partial core cooling. Therefore, DPC plans to electrically isolate the Service Water to Emergency Core Spray Pumps Valve by pulling the fuses or installing a key switch. Use of the valve will be procedurally controlled to be only if all other methods of core cooling fail following a LOCA. Therefore, DPC's planned actions will prevent inadvertant actuation of the valve, without totally eliminating a valve which could be useful at some future date.

Mr. Dennis M. Crutchfield, Chief
U. S. Nuclear Regulatory Commission

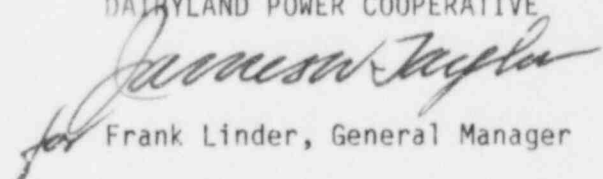
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The determination that use of high pressure service water in the High Pressure Core Spray System may result in at least partial blockage of the core spray bundle was made following discovery of a small amount of silt in the core spray bundle header, which created a system back pressure. It is believed the silt entered the High Pressure Core Spray System during a test of the Service Water to Emergency Core Spray Pumps Valve and the HPSW Check Valve (53-26-004), which is downstream of the control valve. The HPSW system utilizes water from the Mississippi River. DPC committed to performing this test in Reference 6, per an NRC requirement for inservice testing. Adverse consequences of performing this test were first reported in Reference 7. Based on the consequences of the test on the HPCS system and primary water chemistry and the revised status of the tie from HPSW to HPCS, the test on the control valve, 53-25-004, and the check valve, 53-26-004, will no longer be performed.

If there are any questions concerning this submittal, please contact us.

Very truly yours,

DAIRYLAND POWER COOPERATIVE



Frank Linder, General Manager

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cc: J. G. Keppler, Regional Administrator, NRC-DRO III
NRC Resident Inspector