UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA ST., N.W., SUITE 3100
ATLANTA, GEORGIA 30303

SEP 27 1979

In Reply Refer To:
RII:JPO
50-370

Duke Power Company
Attn: W. O. Parker, Jr.
Vice President, Steam Production
P. O. Box 2178
Charlotte, North Carolina 28242

Gentlemen:

The enclosed Bulletin 79-24 is forwarded to you for information. If you desire additional information regarding this matter, please contact this office.

Sincerely,

James P. O'Reilly
Director

Enclosure:
IE Bulletin No. 79-24

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cc w/encl:
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
WASHINGTON, D.C. 20555

September 27, 1979

IE Bulletin No. 79-24

FROZEN LINES

Summary:

On January 3, 1979, an unusual event occurred at Davis-Besse, Unit 1. The event involved the freezing of the water in a portion of the high pressure coolant injection (HPCI) system recirculation line that is common to both high pressure coolant injection pumps. The line was not thawed until January 5, 1979, and the event was not reported to NRC until March 12, 1979. In addition, over the past five years, there have been several events involving frozen instrument and sampling lines.

Description of Circumstances:

The condition was discovered on January 3, 1979, while the reactor was operating at approximately 96 percent power. During a monthly surveillance test of the HPCI pumps, there was no flow through the recirculation line from the pump discharge to the Borated Water Storage Tank (BWST). Investigation revealed that water in a portion of the line exposed to the outside weather was frozen. This portion of the line to the BWST is common to both HPCI pumps. The line has redundant heat tracing (a heated wire to prevent freezing); it is insulated; and it has a low-temperature alarm system to warn of freezing conditions. Water in the line froze apparently because of prolonged sub-freezing temperatures and a defect in the insulation. There was no apparent malfunction of the heat tracing or temperature alarm circuits, although the temperature sensing elements are located in an area not exposed to the coldest temperature conditions.

This recirculation line serves two purposes: One is to provide a flow path for surveillance testing, and the other is to provide a minimum flow path to prevent possible damage to the pump in the event it is operated against a closed discharge valve or a reactor coolant system pressure greater than the maximum discharge pressure of the pump (approximately 1600 psig).

In the initial review of the event on January 3, 1979, the licensee concluded that the pumps were still operable with the recirculation line [illegible]. [illegible] no immediate action was taken to thaw the [illegible] January 5, 1979, the line was thawed and t[illegible] was successfully completed.

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