

USNRC REGION
DUKE POWER COMPANY

POWER BUILDING

422 SOUTH CHURCH STREET, CHARLOTTE, N. C. 28242

81-014-031

WILLIAM O. PARKER, JR.
VICE PRESIDENT
STEAM PRODUCTION

March 5, 1981

TELEPHONE: AREA 704
373-4083

Mr. James P. O'Reilly, Director
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, Suite 3100
Atlanta, Georgia 30303

Re: McGuire Nuclear Station Unit 1
Docket No. 50-369



Dear Mr. O'Reilly:

Please find attached Reportable Occurrence Report RO-369/81-09. This report concerns the operability of a train of the RHR System due to a valve failure. This incident was considered to be of no significance with respect to the health and safety of the public.

Very truly yours,

William O. Parker, Jr.
William O. Parker, Jr. *By [Signature]*

RWO:scs

Attachment

cc: Director
Office of Management and Program Analysis
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Mr. Bill Lavallee
Nuclear Safety Analysis Center
P. O. Box 10412
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MCGUIRE NUCLEAR STATION
INCIDENT REPORT

Report Number: RO-369/81-09

Report Date: February 25, 1981

Occurrence Date: February 5, 1981

Facility: McGuire Unit 1, Cornelius, North Carolina

Identification of Occurrence: Throttle Valve 1-ND-14 Failed to Close, Causing a Loss of Flow to the Reactor Coolant Loops from Train B ND Pump.

Condition Prior to Occurrence: Initial Fuel Loading, Mode 6.

Description of Occurrence:

On February 5, 1981 at 1601 hours, throttle valve 1-ND-14 "Failed Closed" causing a momentary loss of flow to the reactor coolant loops. Computer graphics also showed 1-ND-14 closed. The control room operator immediately positioned 1-ND-14 manual loader to 55% open but flow reading from gauges 1NDP5190 and 1NDP5191 in the control room remained at zero (0) GPM. Flow was diverted through 1-ND-34 and 1-NI-173A to establish a 3000 GPM flow to the reactor coolant loops, bypassing heat exchanger 1-B.

This incident caused a degraded mode of operation and was therefore reportable pursuant to Technical Specification 4.9.8.1.

Apparent Cause of Occurrence:

Valve 1-ND-14 can be placed in any desired position through a manual loader in the control room or from the Auxiliary Shutdown Panel. The amount of supply air allowed into the valve diaphragm is regulated in the "Valve Positioner" by the instrument air (3-15 lbs.). The instrument air pressure is controlled by the manual loader. The valve positioner is equipped with linkages attached to the valve stem which will cut off the supply air when the desired position is reached. Because of excessive vibration during operation, the nut that holds the linkage to the valve stem came loose causing the two (2) parts to move out of their proper position. This in turn, caused the valve to close due to a continuous flow of supply air.

Analysis of Occurrence:

When throttle valve 1-ND-14 "Failed Closed", the Residual Heat Removal Train B loop became inoperable, although flow to the reactor coolant loops was immediately re-established by bypassing heat-exchanger 1-B. The redundant loop of the RHR System (Train A) was also inoperable at that time (RN Train A was undergoing maintenance), so that there was no means of removing residual heat. However, since there is only new fuel in the core and the RHR System was not removing decay heat, there was no danger of overheating the fuel. There are several means to open the

valve if necessary. This valve would never fail close during an accident because the valve is designed to fail open on loss of supply air. The supply air to the valve is isolated and vented to the atmosphere where solenoid valve 1-NDSV-0140 is deenergized upon receipt of a Safety Injection (Ss) Signal causing the valve to fail open.

This incident did not affect any safe operation of the plant or safety of the public.

Corrective Action:

The linkage of the valve positioner was repositioned and the nut that holds it to the valve stem was tightened. Residual Heat Removal Train B Loop was restored at 1900 hours (3 hours after the incident) upon repairing valve 1-ND-14. The vibration effect on the valve positioner was investigated and reported to the manufacturer. Duke will review the manufacturer's recommendation concerning this problem.