UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
799 ROOSEVELT ROAD
GLEN ELLYN, ILLINOIS 60137

CENTRAL FILES

JAN 6 1977

Northern States Power Company
ATTN: Mr. Leo Wachter
Vice President
Power Production and
System Operation
414 Nicollet Mall
Minneapolis, Minnesota 54401

Docket No. 50-263
Docket No. 50-282
Docket No. 50-306

Gentlemen:

The enclosed IE Circular No. 77-01 is forwarded to you for your information. No written response is required.

Should you have any questions concerning this matter contact the Director of this NRC Regional Office.

Sincerely,

James G. Keppler
Regional Director

Enclosure:
IE Circular No. 77-01

cc w/encl:
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Plant Manager
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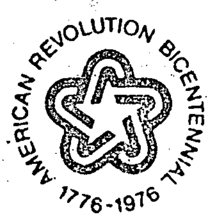

January 4, 1977
IE Circular No. 77-01

MALFUNCTIONS OF LIMITORQUE VALVE OPERATORS

DESCRIPTION OF CIRCUMSTANCES:

On October 28, 1976, Portland General Electric Company reported that the two motor operated (Limitorque) valves located between the Refueling Water Storage Tank and the charging pump suction at the Trojan Nuclear Plant failed to open in response to a spurious safety injection (SI) signal. The malfunction in both valves resulted from the torque limit switch in the opening circuit becoming activated before the valve was fully off its seat.

The licensee's investigation revealed that in each case the valve had been manually closed hard on its seat following a maintenance operation.

The licensee's investigation of this occurrence revealed difficulty in the opening of three additional motor operated (Limitorque) valves in the inlet and outlet piping of the Boron Injection Tank. Each of the valves failed to open in response to a single actuation of its manual control switch. In each case, the cause for failure was attributed to premature activation of the valve's torque limit switch. These valves had opened in response to the SI signal on October 28, 1976, following which they were closed normally using their motor operators.

Subsequent investigation by the licensee revealed that each of the valves which malfunctioned was equipped with a torque limit switch in the opening circuit, the actuation of which stops valve motion. The valves are also equipped with an adjustable bypass switch which defeats the function of the torque limit switch when the valve is being moved from its full open or full closed position. Each of the valves which malfunctioned was found to have its bypass switch adjusted such that it allowed the limit torque switch to be unbypassed and operable in the circuit before the valve was moved from its seat. Examination by the licensee revealed similar improper adjustment of the bypass switches on several other motor operated valves in safety related systems.

Corrective actions by the licensee included the establishment of procedural controls to insure that valves which are manually closed are checked for proper operation (by cycling them open with the motor operator) prior to their being declared operational. The bypass switches on all similar motor operated valves were checked and their position in terms of proper valve travel adjusted.

RECOMMENDED ACTION BY LICENSEES:

If valves similar to those described are in use in safety related systems, you should verify that your procedures contain adequate provisions to insure that these valves are adequately checked for operation following maintenance or manual closure, and that operating personnel are properly instructed to assure conformance with the procedures. You should also verify that measures are taken to insure the proper setting of torque limit switches and limit switch bypasses, to assure that the bypass function is not negated prematurely in either the opening or closing cycle.

No written response to this Circular is required. If you require additional information regarding this matter, contact the Director of the appropriate NRC Regional Office.

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Gentlemen:

Item 6 of IE Bulletin No. 75-04A required monthly progress reports for incomplete procedure changes and facility modifications resulting from the fire protection and emergency shutdown procedure reviews which were conducted following the Browns Ferry fire. Fire protection reviews are now being handled by the Office of Nuclear Reactor Regulation (NRR) in accordance with Appendix A to Branch Technical Position 9.5-1. The changes related to emergency shutdown are either complete or the completion schedule has been established. For these reasons, the requirement for progress reports in IE Bulletin No. 75-04A-6 is hereby terminated.

Sincerely yours,

James G. Keppler
James G. Keppler
Regional Director

cc: Mr. L. R. Eliason,
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