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TELEPHONE
AREA CODE 716 546-2700

July 8, 1974

Mr. James P. O'Reilly, Director
Directorate of Regulatory Operations
Region I
U. S. Atomic Energy Commission
631 Park Avenue
King of Prussia, Pennsylvania 19406



Subject: Abnormal Occurrence 50-244/74-11: Malfunction of
Main Steam Line Isolation Valve Solenoid Valves
R. E. Ginna Nuclear Power Plant, Unit No. 1
Docket No. 50-244

Dear Mr. O'Reilly:

In accordance with Technical Specifications, Article 6.6.2a, the
attached report of Abnormal Occurrence 74-11 is hereby submitted.

Very truly yours,

Keith W. Amish
Keith W. Amish

Attachment

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50-244*

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1. Report Number: 50-244/74-11
- 2a. Report Date: July 8, 1974
- 2b. Occurrence Date: June 26, 1974
3. Facility: R. E. Ginna Nuclear Power Plant, Unit No. 1
4. Identification of Occurrence:

This abnormal occurrence is defined by Technical Specification 1.9d: Failure of one or more components of an engineered safety feature or plant protection system that causes or threatens to cause the feature or system to be incapable of performing its intended function.

5. Condition Prior to Occurrence:

The reactor was critical and supplying nuclear heat for the secondary plant warm-up. The "A" and "B" Main Steam Line Isolation (MSLI) valves had been worked on the day before while the plant was at cold shutdown. New gaskets had been installed on the cover flange of both valves. Procedure M37.20 was being used and the final steps on the procedure called for the stroking of the valves to verify proper operation. These steps were to be performed after hot shutdown conditions were established.

6. Description of Occurrence:

At 1205 hours the testing of the "A" and "B" MSLI valves was started. The "A" MSLI valve failed to close when the control room operator twice turned the switch to the CLOSE position. The operator at the MSLI valve location observed that all four solenoid operated valves that control the opening and closing of the MSLI valves had failed to operate. Normally when the control switch is in CLOSE position, the two air supply solenoid valves that are in series close, and the two air vent solenoid valves that are in parallel open to vent the air from the operating piston of the MSLI valve so that spring pressure can close the MSLI valve. The control room operator then tested the "B" MSLI valve and the valve closed properly, but one of the two air vent solenoid operated valves failed to open.

Instrument and Control personnel were called, and approximately fifteen minutes later when they arrived at the MSLI valve location, they asked the Control Room operator to again test the "A" MSLI valve. This time the "A" MSLI valve closed properly but one of the air vent solenoid operated valves failed to open. The "B" MSLI valve was tested again and the valve operated properly and all four solenoid operated valves operated properly.

7. Designation of Apparent Cause of Occurrence:

When the unit was shut down for repairs at 0030 hours on June 21, 1974 the MSLI valves were closed at 0545 hours and the control switches for the "A" and "B" MSLI valves were left in the CLOSE position. In this position the coils of the solenoid operated valves remain energized and the plungers stay up in the coils. All eight solenoid coils were left energized from

0545 hours on June 21, 1974 until the MSLI valves were opened at 1205 hours on June 26, 1974. As soon as the MSLI valves were opened, the test for the closing of the MSLI valves was started. The coils were very hot and the excessive heat of the coils plus the apparent influence of the heat on the plungers of the solenoid operated valves apparently caused them to not operate properly.

8. Analysis of Occurrence:

There was no hazard to plant personnel or the public. Because of prior problems with both the MSLI valves and the solenoid operated valves, the policy at the plant since December 1971 has been to test the proper operation of the MSLI valves every time the Turbine-Generator is removed from service. Also, if the Turbine-Generator is on the line for longer than 60 days, the solenoid operated valves are tested alone for proper operation. The valves had been tested on June 21, 1974 prior to cooling down the plant for maintenance and they worked satisfactorily at that time.

9. Corrective Action:

The Instrument and Control personnel made adjustments to the length the plunger moves before tripping the linkage to operate the air supply and air vent valves. This adjustment allows the plunger to have greater momentum when it strikes the linkage to trip the valve. Rochester Gas and Electric has consulted with the manufacturer who has confirmed that the solenoid coils do lose effectiveness under sustained current. Therefore, the operators have been instructed to always leave the control switch in the OPEN position after the MSLI valves are closed. The applicable procedures are being reviewed and the appropriate steps will be added.

10. Failure Data:

When the solenoid operated valves were mounted on a floor supported panel, vibration from the floor affected the proper operation of the valves. The solenoid operated valves were then mounted on the containment wall, and since that time they have always operated properly until this occurrence.

The valves are Laurence Solenoid Valves, Cat. #125434W (air vent valves), and Cat. #110114W (air supply valves) for 125 psi air. They are manufactured by the R. G. Laurence Company, Inc., Tenafly, New Jersey 07670.