



ROCHESTER GAS AND ELECTRIC CORPORATION • 89 EAST AVENUE, ROCHESTER, N.Y. 14604

EDWARD J. NELSON
VICE PRESIDENT

January 12, 1970

Don't Understate



Dr. Peter A. Morris, Director
Division of Reactor Licensing
United States Atomic Energy Commission
Washington, D. C. 20545

Subject: Failure of one safety injection train to operate on signal,
Ginna Station Unit No. 1
Docket No. 50-244

Dear Dr. Morris:

On January 3, 1970, at 1022 hours, a safety injection signal was properly initiated and the "B" train of this safeguards system failed to operate. At the time of the incident, the plant status was that the reactor was critical at less than one (1) per cent thermal power, and the secondary plant was down for planned maintenance. Zero power tests and flux mappings were being performed on the reactor.

The Instrument and Control personnel had requested permission to run calibration checks on the six main steam line pressure transmitters. These transmitters are arranged equally in two channels and failure of any two transmitters in either one of the two channels will generate the safety injection signal.

The Instrument and Control repairmen had received permission to isolate and calibrate transmitter PT483. While calibrating this transmitter with a dead weight tester, the repairmen noted that transmitter PT478 isolation valve bonnet was leaking steam. One of the Instrument and Control repairmen closed the isolation valve PT478 and proceeded to notify the control room. However, as transmitter PT483 and transmitter PT478 are both in the "B" train, a safety injection signal had already been initiated and the reactor tripped before any corrective action could be taken.

*130R/Staff
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On the signal only the "A" train associated equipment and valves on the safety injection system operated. Since reactor conditions precluded an accident, the pumps were stopped and the safeguards valves reset to their normal operating position. Simulation of the condition which caused the initiation of the safety injection signal was duplicated and again only the "A" train safety injection system operated.

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Investigation of the "B" train disclosed failure of an MG-6 type relay contact to close properly and prevented the initiation and operation of the train of safeguards equipment. This was evidenced when finger pressure applied to the relay contact leaves completed the circuit and the "B" safety injection train functioned.

The contacts on this relay were cleaned and when safety injection signal was initiated both trains operated.

However, with the successful operation of the "B" train, three safeguards valves did not indicate proper operation on the status board. These valves were:

- (a) Air operated valve 953 (pressurizer liquid space isolation valve inside containment)
- (b) Air operated valve 966C (Loop "B" hot leg sample line isolation valve outside containment)
- (c) Motor operated valve 878B (2" safety injection line to loop "B" cold leg inside containment)

The two above air operated valves, 953 and 966C were found to be operating properly, but their respective position indicator switches were out of position and unable to make contact for proper position indication. These were adjusted.

Motor operated valve MOV878B was found to have an open limit switch contact. This was also adjusted and the valve exercised satisfactorily seven consecutive times.

These equipment failures and adjustments were reported by telephone on the day of occurrence to Mr. Norman Mosely of the AEC Division of Compliance and this was followed by a telegram to Mr. R. W. Kirkman, Director - Region I, Division of Compliance.

The safety injection "B" train was last operated on October 22, 1969, by safety injection unblock signal and the system performed correctly. Containment isolation valves 953 and 966C were also operated successfully on this signal at that time.

MOV878 valve had been stroked by operation from the control board switch during the performance of safeguard valve exercise on December 17, 1969. At that time automatic disengagement of the manual operator did not occur and the valve failed to open. The valve apparently

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had been run down manually to a tightly closed position and the Limitorque would not disengage the manual operator. Adjustments were made to the manual operator and the valve was stroked successfully several times.

On the day of January 3, 1970, and prior to the adjustment of the limit switch on MOV878B the reactor was made critical to resume testing. Within the next half hour it was determined that returning the reactor to criticality was in violation of the Technical Specifications because the above safeguard was not operating properly. The reactor was immediately placed in hot shutdown at 1306 hours, some fifty minutes after criticality. This was reported as required. A Plant Operating Review Committee meeting was called immediately to discuss the situation. It was agreed that the reactor could be returned to service when the adjustments were satisfactorily completed.

Despite the recognized durability and overall reliability of the MG-6 type relay and the designed action of this relay to wipe the contact surfaces upon operation there is the possibility of random failure. It has been recommended by the Ginna Nuclear Safety Audit and Review Board that this particular relay be replaced and then examined thoroughly at our Company's laboratory and at the Westinghouse laboratory. Design specifications for this relay will be obtained for comparison.

There are fourteen (14) additional MG-6 auxiliary relays in the safeguards system. Each will be examined for cleanliness and given continuity checks before return to power.

Very truly yours,

Edward J. Nelson

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