ROCHESTER GAS AND ELECTRIC CORPORATION • 89 EAST AVENUE • ROCHESTER, N.Y. 14649

August 21, 1973

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U.S. ATOMIC ENERGY COMMISSION
Regulatory Mail Section

Mr. John F. O'Leary, Director
Directorate of Licensing
U. S. Atomic Energy Commission
Washington, D. C. 20545

Subject: "B" Steam Generator Feedwater Control Valve Failure
Resulting in Reactor Trip on July 22, 1973
R. E. Ginna Nuclear Power Plant, Unit No. 1
Docket No. 50-244

Dear Mr. O'Leary:

Enclosed is a report relative to a reactor trip which occurred on July 22, 1973. The trip signal which was activated was a combination of low steam generator level and feedwater flow-steam flow mismatch associated with the "B" steam generator. It is postulated that trip signal was initiated by loss of feedwater flow due to the separation of the "B" steam generator feedwater control valve plug from its stem. It is further theorized that this plug separation induced rapid flow variations, causing piping displacements sufficient to create support and insulation damage on various locations along the feedwater line.

A stress analysis, based on postulated piping displacements, was performed and high stress welds have undergone in-service type inspection. Stress analysis and in-service type inspections were performed by qualified consultants and reviewed by the Rochester Gas and Electric Corporation.

The incident and the results of the ensuing investigation were reviewed by the Plant Operations Review Committee and the Nuclear Safety Audit and Review Board. Both committees determined that there were no unreviewed safety questions and plant was then returned to power.

Very truly yours,

Granger E. Green
Vice President
Electric and Steam

Encl. In incident pocket

xc:Mr. J. P. O'Reilly

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Roy Kuhlman

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

August 1, 1973

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

Subject: R. E. Ginna Nuclear Power Plant, Unit No. 1
Failure of sensing line on "B" Auxiliary Feedwater Pump
Abnormal occurence 73-6 and 73-7
Docket No. 50-244

Dear Mr. O'Reilly:

In accordance with Technical Specifications Section 6.6.2a which requires that a written report relative to abnormal occurrences be submitted within ten days to the Director of Licensing with a copy sent to the Director of Regional Regulatory Operations, the following is submitted:

A reactor trip occurred at 1306 hours on July 22, 1973. The trip signal which was activated was a combination of low steam generator level and feedwater flow-steam flow mismatch associated with the "B" steam generator. The low steam generator level and feedwater flow-steam flow mismatch has been attributed to the separation of the "B" steam generator feedwater control valve "plug" from the valve stem. During the transient, piping displacement was sufficient enough to cause a "Swagelock" fitting associated with the "B" auxiliary feedwater flow orifice and dp guage to disconnect.

The normal performance of the auxiliary feedwater pump is as follows:

a) During power operation, the discharge valve of the auxiliary feedwater pump is open.

b) Following initiation of a signal for the pump to start, the pump will start and the discharge valve will, if closed, open wide.

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c) The flow transmitter associated with the feedwater pump then supplies a signal to the discharge valve to throttle back to a flow of approximately 230 gpm.

During the transient, the pump started automatically. The disconnection of the flow transmitter created a false high flow signal which caused the auxiliary feedwater pump discharge valve to stroke toward the closed position.

The operator noted from control board instrumentation that there was high flow and high discharge pressure readings associated with the "B" auxiliary feedpump. The operator determined that the high discharge pressure indicated low flow from the auxiliary feedwater pump and manually opened the discharge valve to provide flow to the steam generator. An auxiliary operator was dispatched to inspect the pump and he isolated the disconnected line. This malfunction is believed reportable under the abnormal occurrence definition as written in Technical Specifications section 1.9d which states: "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."

It must be noted that due to the concentration of effort into the investigation of the causes and of the transient which occurred, this event was not reported within the twenty-four hour specifications defined by the Technical Specifications. Only in subsequent post incident review and discussion by and with the operators involved and by further inspection of the feedwater lines did this situation become evident. Therefore, it is further believed that this item be reported as an abnormal occurrence as defined by Technical Specifications 1.9g as follows: "Observed inadequacies in the implementation of administrative or procedural controls such that the inadequacy causes or threatens to cause the existence or development of an unsafe condition in connection with the safe operation of the plant."

This event was reviewed and discussed by the Plant Operations Review Committee on July 26, 1973. The following modifications were approved and performed:

The sensing lines for the flow transmitters for the "B" auxiliary feedwater pump were evaluated and it was determined that there was not sufficient expansion capability for the piping displacement that was experienced. The sensing line for the "B" auxiliary feedwater pump was reworked to include expansion bends to allow for such piping displacements. Furthermore, the rigidity of the support for the sensing lines was improved and one additional anchor to the wall was added. This was installed on July 28, 1973.

Similar expansion bends were added to the "A" auxiliary feedwater pump flow sensing lines on July 29, 1973.

To ensure that all personnel give due consideration to the Technical Specifications relative to abnormal occurrences, the Plant Superintendent has posted a letter to all personnel reminding them of their personal responsibility in proper and timely reporting of plant abnormalities.

It is intended that the above actions will preclude the recurrence of these events.

Very truly yours,

Granger E. Green
Vice President
Electric and Steam

xc:Mr. John F. O'Leary