



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

KEITH W. AMISH  
SENIOR VICE PRESIDENT  
ELECTRIC AND STEAM

TELEPHONE  
AREA CODE 716 546-2700

July 16, 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 Occurrences:

- 74-12 Leak in the socket weld of the 3/4" vent pipe to vent valve  
on the charging pump discharge filter bypass line, and  
74-13 Leak in the socket weld of the 3/4" vent pipe to the weldolet  
on the charging pump discharge filter bypass line.

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 reports of Abnormal Occurrences numbers 74-12 and 74-13 are hereby submitted. These two occurrences are being reported at the same time because the leaks occurred in the same piping section.

The first leak, observed on June 29, 1974, appeared to have been caused by a corrosion mechanism which may have been aided by sensitization of the valve material.

The second leak, observed on July 2, 1974, was caused by a void found to have been formed due to improper surface preparation of the weldolet on the bypass line.

This letter constitutes an interim report. Approval for a one-week delay in the submission of these reports had been provided by telephone on July 8, 1974 by Mr. J. Hannon of the USAEC-DRO Region I Staff, in anticipation of a metallurgical investigation of the material involved in the first leak. Reports of this investigation and a stress analysis as specified in paragraph 7 of the report of Abnormal Occurrence 74-13 have not been received. A subsequent report will be submitted after review of these analyses.

Very truly yours,

*Keith W. Amish*  
Keith W. Amish

Enclosures

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1. Report Number: 50-244/74-13
- 2a. Report Date: July 16, 1974
- 2b. Occurrence Date: July 2, 1974
3. Facility: R. E. Ginna Nuclear Power Plant, Unit No. 1
4. Identification of Occurrence:

This abnormal occurrence is defined by Technical Specifications Article 1.9e: Abnormal degradation of one of the several boundaries designed to contain radioactive materials resulting from the fission process.

5. Conditions Prior to Occurrence:

The plant was operating at 70% power.

6. Description of Occurrence:

At about 1430 hours on July 2, 1974, a health physics technician noticed a slight vapor in the charging pump room in the Auxiliary Building. He notified the shift foreman, and the shift foreman and the maintenance engineer made an inspection in the charging pump room. A leak was discovered in the weld that connects the 3/4" vent pipe to a weldolet on the 3" bypass line on top of the charging pump filter. The control room operators checked the Auxiliary Building particulate and gas monitors and the charging pump room area monitor. A portable air monitor was in service in the charging pump room. No changes in any monitoring systems were noted. The plant superintendent was notified and a Plant Operations Review Committee meeting was called.

7. Designation of Apparent Cause of Occurrence:

A crack was propagated from an area where there was no fusion with the weldolet. This was caused by improper weldolet surface preparation when the original fillet weld was removed on December 11, 1973. The defect was an elliptical void and measured about 1/16" x 1/8" of an inch with a sharp notch where the crack propagated.

The Nuclear Safety Audit and Review Board met on July 3, 1974 to consider this leak together with the leak reported in Abnormal Occurrence 74-12, which had occurred three days before. Rochester Gas and Electric management had contacted an outside consultant metallurgical engineer from Bechtel Corporation to examine the filter piping welds, review the welding procedures used, and to perform an independent analysis of the failures. A metallographic examination was recommended as a necessary follow-up to the visual examination of the material involved in the leak at the valve. It was also recommended that a stress analysis be performed to determine the stress levels in the 3/4" vent line. RG&E management has contacted Southwest Research Institute to perform this analysis.

8. Analysis of Occurrence:

There was no indication of an increase of radioactivity on the Auxiliary Building particulate or gas monitor. The exposure dose rates during the repair varied between 10 and 30 mr/hour with the maximum dose received being 80 mr by the welder who made the weld repair.

The NSARB reviewed the safety implications of the leak in this system and agreed that even a complete loss of function of the charging pump system would not prevent the safe shutdown of the plant nor result in any risk to the public. The NSARB recommended an emergency procedure be developed for this contingency by the plant prior to startup.

9. Corrective Action:

The PORC recommended that EM-24, Repair of Charging Pump Filter Piping Leak, Rev. 1 be used. They also recommended that a new 3/4" vent valve and nipple be installed after cutting the nipple at the weld on the weldolet. Fillet welds of larger dimension were applied on both ends of the nipple to provide greater stability and greater distribution of stresses. An emergency procedure was written and approved by the PORC for use in the event of a complete loss of charging flow due to a rupture in the system. Extra surveillance of the charging room area by the operators would continue pending further review by the PORC.

10. Failure Data:

On May 28, 1971, as reported in the third Semiannual Report under Shutdowns, there was a leak in a socket weld in the 3/4" drain line from the inlet manifold to the charging pump filter from the 1B Charging Pump. This failure was caused by intergranular corrosion due to heavy sensitizing when overheated during the initial filter installation. This had been repaired by cutting off and capping the ends.

On December 11, 1973, as reported in the eighth Semiannual Report under Shutdowns, there was a leak in a socket weld that connects the 3/4" nipple for the vent to the weldolet on the 3" filter bypass line. This failure was caused by a pinhole defect in the weld.

On June 29, 1974, as reported in Abnormal Occurrence Report 50-244/74-12, there was a leak in the weld that connects the 3/4" filter vent valve to the 3/4" nipple. This failure appears to have been caused by a corrosion mechanism which may have been aided by a sensitized condition of the valve. The exact cause of this leak will be reported later after review of the metallurgical analysis by Bechtel Corporation and a stress analysis by Southwest Research Institute.