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Docket No. 50-244

FEB 02 1979

Mr. Leon D. White, Jr.
Vice President
Electric and Steam Production
Rochester Gas and Electric Corporation
89 East Avenue
Rochester, New York 14649

Dear Mr. White:

Enclosed is our evaluation of Systematic Evaluation Program Topic V-10.A. You are requested to examine the facts upon which the staff has based its evaluation and respond either by confirming that the facts are correct, or by identifying any errors. If in error, please supply corrected information for the docket. We encourage you to supply for the docket any other material related to this topic that might affect the staff's evaluation.

Your response within 30 days of the date you receive this letter is requested. If no response is received within that period, we will assume that you have no comments or corrections.

Sincerely,

Original signed by
Dennis L. Ziemann

Dennis L. Ziemann, Chief
Operating Reactors Branch #2
Division of Operating Reactors

Enclosure:
Topic V-10.A

cc w/enclosure:
See next page

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DATE	2/2/79	2/1/79	2/2/79			

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SYSTEMATIC EVALUATION PROGRAM

PLANT SYSTEMS/MATERIALS

GINNA

Topic V-10.A Residual Heat Removal System Heat Exchanger Tube Failures

The safety objective of this review is to assure that impurities from the cooling water system are not introduced into the primary coolant in the event of residual heat removal system heat exchanger tube failure. This was expanded to assure that adequate monitoring exists to assure no leakage of radioactive material in the other direction - into the service water and thus to the environment.

Information for this assessment was gathered from plant personnel during the safe shutdown review site visit in June 1978. Information was also taken from the Ginna Technical Specifications and a July 31, 1978 letter from Rochester Gas & Electric Corporation (RG&E) which addressed this topic.

The bases for the review of these cooling systems on today's plants include: (1) the NRC's Standard Review Plan (SRP) 9.2.1, which requires that the service water system include the capability for detection and control of radioactive leakage into and out of the system and prevention of accidential releases to the environment; (2) SRP 9.2.2 requires that auxiliary cooling water systems (such as the residual heat removal system) include provisions for detection, collection and control of system leakage and means to detect leakage of activity from one system to another and preclude its release to the environment; and (3) SRP 5.2.3, which discusses compatibility of materials with reactor coolant and requires monitoring and sampling of the primary coolant system. These Standard Review Plans were used only in the comparison of the Ginna plant against today's criteria and were not used as absolute requirements which must be met, especially if the plant incorporates other equally viable means of accomplishing the stated goals.

Unlike the statement of the problem in the topic definition, Ginna's residual heat removal (RHR) system would normally be at a higher pressure than the component cooling water (CCW) system. Information provided in the RG&E July 31, 1978 letter stated that the pressure in the primary side of the RHR heat exchanger would vary between 120 psig and 150 psig, depending upon time during the shutdown. When the reactor coolant system is depressurized and open to the atmosphere (reactor vessel head removed), the RHR is throttled to reduce flow and pressure is maintained at about 150 psig. The pressure of the CCW system, on the other hand, is approximately 100 psig

at the RHR heat exchanger. This is lower than the RHR pressure and therefore tube leakage could result in contamination of the CCW system.

Furthermore, since CCW pressure at the CCW heat exchanger (normally about 80 psig) is greater than that of the Service Water system at this heat exchanger (approximately 75 psig), radioactive leakage to the environment could occur in the event of highly unlikely simultaneous failure of tubes in a combination of one (or both) of the two RHR heat exchangers (or any other CCW-cooled component) and one (or both) of the two CCW heat exchangers. Ginna is provided with CCW system instrumentation to prevent such an occurrence. As defense against leakage to the environment, the CCW system incorporates a radiation detector, and the surge tank of this system has high and low level alarms which will indicate leakage either into or out of the system. The capability of these alarms to function during an unlikely simultaneous leak in RHR and CCW heat exchangers is questionable because of dependence on the amounts of in-leakage and out-leakage. However, the radiation monitor mentioned above serves to alert the plant operators to take the necessary action to secure the leakage.

The Ginna service water system does not incorporate a radiation monitor as required by S.R.P. 9.2.1. Nor are surveillance and operability requirements for the CCW system radiation monitor included in the Ginna Technical Specifications. Such specifications could serve as an alternative to the installation of a service water monitor.

RG&E noted in their July 31, 1978 letter that the tubes of the RHR heat exchanger (through which the primary water passes) are scheduled to be hydrostatically tested during the plant's 1979 refueling outage. Such a test will provide further assurance of protection for the environment.

A small possibility exists that water from the CCW system could leak into the primary system when the RHR system is shutdown. However, even were this to occur, the intrusion of chromates (a compound of which is used in the CCW system as a corrosion inhibitor) would cause an increase in the system conductivity, which is monitored in accordance with a plant procedure. The chromate would be cleaned up by the demineralyzers of the Chemical and Volume Control system, but even were leakage to continue, the CCW surge tank low level alarm would notify the operators of leakage. If the RHR system were started with such leakage in progress, the CCW surge tank high level alarm would sound.

Except as noted above regarding the lack of a service water system radiation detector, we have determined that Ginna meets the intent of

today's criteria. The alternatives available for the service water system monitoring will be addressed during the integrated assessment. No action by the licensee is considered necessary at this time.