June 11, 1971

Dr. Peter A. Morris, Director
Division of Reactor Licensing
U.S. Atomic Energy Commission
7920 Norfolk Avenue
Bethesda, Maryland 20014

Re: Rochester Gas and Electric Corporation
Docket No. 50-244

Subject: Compliance with Facility Technical Specifications

Dear Dr. Morris:

On June 5, 1971 Rochester Gas and Electric Corporation wrote to the Atomic Energy Commission, Division of Compliance, informing it that initial calculations tended to indicate that gaseous effluent release limits may have been exceeded during the month of May 1971. Further evaluation indicates that limits were not exceeded during May 1971. However, it now appears probable that limits were exceeded in some periods in the interval from June 1 to June 5, 1971. Accordingly, this report is submitted pursuant to paragraph 6.6.2 of the facility's Technical Specifications.

Following the return to power of the Ginna facility on May 13, 1971, the gaseous release rate from the auxiliary building ventilation system leveled off at a rate greater than had been experienced prior to shutdown. Subsequent analysis indicated that the major portion of the release came from two sources, one was the predominant source of the xenon component, the other was the predominant source of the iodine component.

The xenon release mechanism has been diagnosed as having resulted primarily from a gasket leak on valve PCV 141, a pressure control regulator on the volume control tank. A mixture of radioactive gases, primarily Xe^{133}, Xe^{135}, and I^{131}, presumably in the composition ratio of the cover gas of the volume control tank, was released to the

June 11, 1971
Dr. Peter A. Morris, Director

auxilary building. This area is ventilated into the gas decay tank room, then through the ventilation system associated with the gas decay tank room, through charcoal filters and charcoal filter fans 1A and 1B, discharging into the auxiliary building vent. Charcoal filter iodine efficiency measurements supplied by the manufacturer support the position that the iodine released from PCV 141 was effectively adsorbed on the charcoal filters. These charcoal filters had been replaced during the Spring 1971 refueling shutdown. The supplier advised Rochester Gas and Electric Corporation that iodine removal efficiency of the new material was measured to be 99.97%. Isolation of PCV 141 further confirmed its minor contribution of I^{131} to the release, since the vent gas concentration of I^{131} decreased only slightly while Xe^{133} and Xe^{135} were reduced significantly.

The second release point has been diagnosed as being from the vent of the waste evaporator located in the auxiliary building basement. During the period from May 13 to May 29, low level waste (approximately 10^{-2} μCi/cc) resulting from the refueling operation was processed and releases, particularly I^{131} from the evaporator vent were low. However, during the period from May 29 through May 31, the reactor was taken to the cold shutdown condition with the charging system being taken out of service and drained. This caused an addition of approximately 2,000 gallons of primary coolant, containing a high concentration of I^{131} to the inventory of the waste holdup tank. On June 2, the gas samples which were taken represented the combined effect of leakage from PCV 141 and releases from the waste evaporator vent. The sample representing the combined effect indicated release rates were within allowable limits. On June 3, the leak from PCV 141 was located and PCV 141 was isolated from the volume control tank. Isolation of PVC 141 resulted in a reduction of xenon releases by a factor of 50.

It is surmised that the first days in June were the period of highest releases since the I^{131} concentration in the waste holdup tank was then highest. The waste water consisted principally of primary coolant. Activity in the waste holdup tank has since been reduced both by decay and dilution from the collection of floor drain sumps, etc. Iodine activity in the waste holdup tank was measured on June 2, 1971, and found to be .43 μCi/cc. Another measurement made on June 9 indicated iodine activity to be .18 μCi/cc.

While the gas sample taken on June 2 did not indicate a Technical Specification violation, it obviously caused concern. Review of the problem, its cause, and remedy took place throughout Friday, June 4 and was continued on Saturday, June 5. A gas sample taken from approximately 11:00 a.m. to 1:30 p.m. on June 5 indicated a possible Technical Specification violation. The sample indicated a release rate of I^{131} for the 2-1/2 hour period of approximately 132% of the limit as defined in paragraph 3.9.2.1 of the

June 11, 1971
Dr. Peter A. Morris, Director

facility's Technical Specifications. A second sample of approximately 1 hour integration was immediately initiated and indicated the release rate was approximately 55% of the annual average release limit regarding I^{131}. It appeared that a spike of I^{131} release must have occurred sometime during the 2-1/2 hour integrated sample. Section 3.9.2.2 of the facility's Technical Specification, allows release of up to 10 times the annual average release rate for not greater than 15 minutes. By drawing an envelope consisting of a spike 10 units high and 15 minutes long followed by 2 hours and 15 minutes of .55 units, (corresponding to measurements of the second sample) it would have been possible to have released within this envelope and observed a greater integrated sample than was measured. It does not, however, seem realistic that a spike of activity would be limited to either the boundary of 10 times the annual average release rate or the 15 minute time limit. It is for this reason that Rochester Gas and Electric Corporation believes that release rates were probably exceeded.

Spikes of I^{131} must have originated from the waste evaporator vent, however, the mechanism of initiation is not well understood. The most probable cause would be changes in level of the feed tank which would, upon increasing level, cause a purging of the gas from the tank.

On June 5, 1971 at approximately 6:00 p.m. a portable continuous recording iodine monitor was installed on the stack vent. Delivery of the permanent iodine monitor is now expected in 5 weeks.

Operation of the waste evaporator was suspended on June 9 and upon return to service, its vent discharge will be injected upstream of the charcoal filter, of charcoal filter fans 1A and 1B, or some other method will be initiated to mitigate releases of I^{131} when the water in the waste holdup tank contains high amounts of I^{131}. PCV 141 has been repaired and returned to service. Releases are presently well below the facility's Technical Specification effluent release limits specified in paragraphs 3.9.2.1 and 3.9.2.2.

Very truly yours,

Granger E. Green