

Neil S. "Buzz" Carns  
Vice President  
Nuclear GenerationMay 20 , 1993  
NMP88356United States Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, DC 20555RE: Nine Mile Point Unit 2  
Docket No. 50-410  
NPF-69**Subject: SPECIAL REPORT**

Gentlemen:

In accordance with Nine Mile Point Unit 2 (NMP2) Technical Specification (T.S.) Table 3.3.7.10-1, "Radioactive Gaseous Effluent Monitoring Instrumentation," ACTION Statement 139-b, Niagara Mohawk Power Corporation is submitting the following Special Report concerning the inoperability of the Reactor Building Ventilation Gaseous Effluent Monitoring System (VENT GEMS).

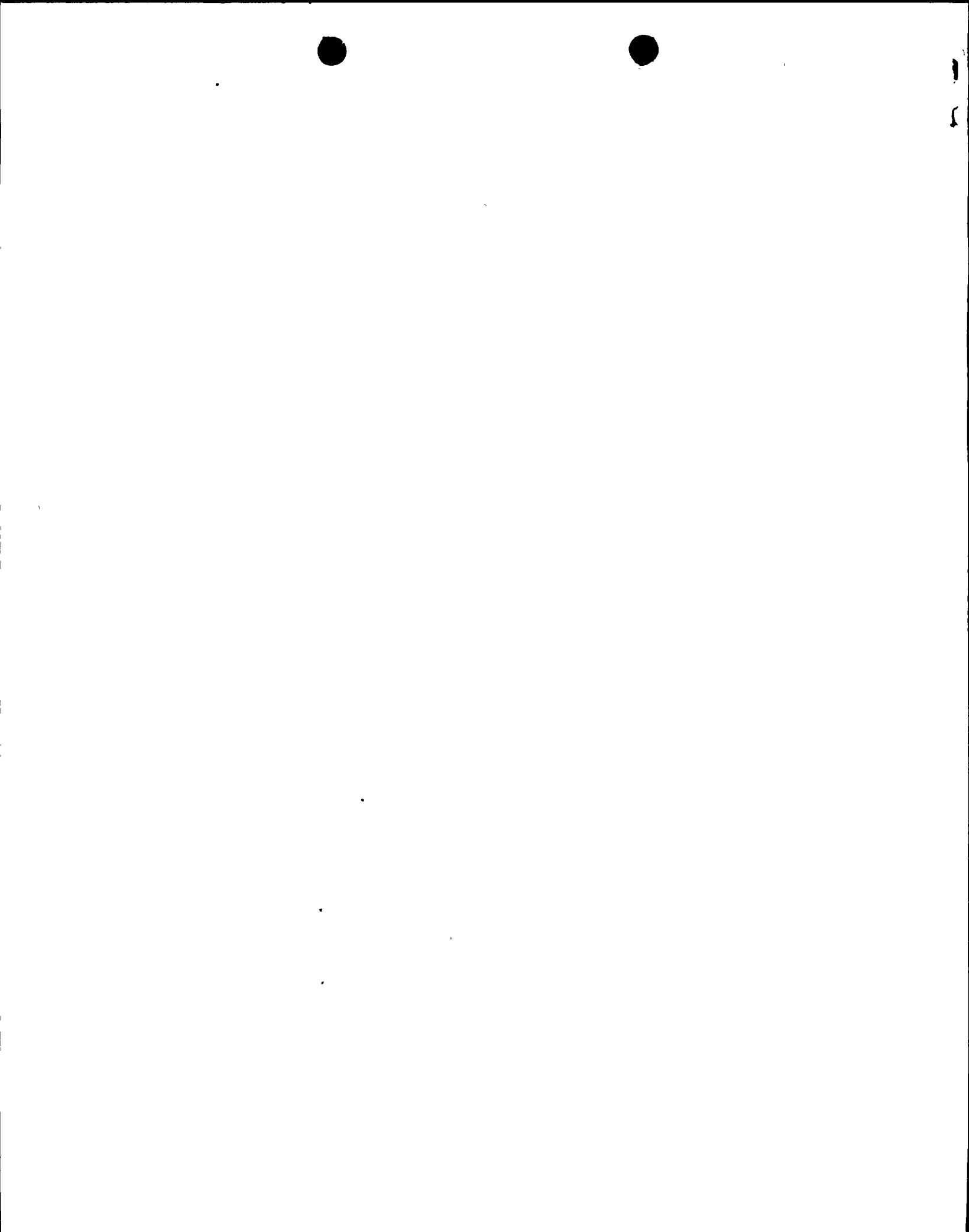
**EVENT DESCRIPTION**

On May 4, 1993 at 8:05 a.m., with the reactor mode switch in the "RUN" position (Operational Condition 1), and the plant operating at approximately 100 percent rated thermal power, the VENT GEMS instrumentation was declared inoperable to perform a calibration. A 4 hour system/sample flow estimate program, a continuous iodine and particulate sample program, and a 12 hour gas grab sample program were implemented at the time the Vent GEMS was declared inoperable as required by T.S. Table 3.3.7.10-1, ACTION Statements 136, 138 and 139-a.

For the past few months, a quality control trend chart has showed an upward bias (i.e., in the conservative direction) in the net counts for the 779 Kev peak area of the Vent GEMS gamma detector. This upward bias indicated increased detector efficiency, and was the result of an amplifier adjustment to improve detector resolution. Thus, a recalibration of the detector was indicated, using a National Bureau of Standards traceable radioactive gas source. Prior planning was done, such as procedure changes, to streamline the recalibration. The expected duration of the recalibration was 2-3 days. The detector was last calibrated in August 1992, and was due for calibration in February 1994.

The recalibration was started on May 4, 1993. During the detector calibration with the 6 liter gas chamber, an intermittent problem in identifying the 81 Kev Xe-133 peak was identified. This was corrected by adjusting the analog to digital converter threshold. During the detector calibration with the 30 cc gas chamber, decreasing count rates were noted for long counts performed several hours after loading the gas source. As a result, the current calibration efficiency values were reinstalled into the computer pending detailed data reviews. On May 7, 1993 at 8:05 a.m., the VENT GEMS was inoperable for 72 hours, which requires this Special Report in accordance with Technical Specifications. The Vent GEMS was determined to be operable and returned to service on May 8, 1993 at 11:00 a.m.

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CAUSE OF THE EVENT

The cause of the VENT GEMS being inoperable for greater than 72 hours was the time needed to resolve the technical deficiencies that were identified. The vendor was contacted regarding the inability of the "peak search" software to consistently identify the 81 Kev Xe-133 peak during calibration of the 6 liter gas chamber. The vendor indicated that under certain conditions (e.g., high peak area with a high background), if descending counts were not detected before the peak was reached, the peak would not be identified. The vendor recommended decreasing the threshold of the analog to digital converter to increase the likelihood of encountering a peak prior to the first peak of interest. Inability to identify the 81 Kev Xe-133 peak did not impact the radiation monitor's ability to detect noble gas gross activity, since gross count rate is used to produce Control Room indication and alarm.

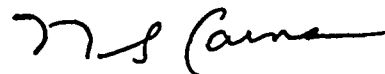
The cause of the decreasing count rates during calibration of the 30 cc gas chamber is suspected to be diffusion of the calibration gas away from the detector during the long counting times. Longer counting times are necessary to obtain accurate results with a small volume in a high background environment.

CORRECTIVE ACTIONS

The following corrective actions have been or will be taken:

- Reviewing the primary calibration process/procedure prior to next performance to determine additional methods to expeditiously complete future primary calibrations.
- Adjusting the analog to digital converter corrected the problem of identifying the 81 Kev Xe-133 peak.
- Completing the review of the 30 cc chamber recalibration results and completing this calibration procedure prior to expiration of the current calibration. This will include completion of "transfer source" calibration. The use of a "transfer source" eliminates the need to use gas sources for routine future calibrations.
- Deviation Event Report #2-93-1147 was initiated to track corrective actions.

Very truly yours,



N. S. Carns

Vice President - Nuclear Generation

NSC/JTP/lmc

xc: Mr. Thomas T. Martin, Regional Administrator, Region I  
Mr. Wayne L. Schmidt, Senior Resident Inspector

