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June 27, 1994

Re: Indian Point Unit No. 2
Docket No. 50-247

Document Control Desk
US Nuclear Regulatory Commission
Mail Station P1-137
Washington, DC 20555

SUBJECT: Reply to a Notice of Violation from Inspection Report 50-247/94-04

This is in response to your letter dated May 27, 1994, concerning the safety inspection conducted by Messrs. G. Hunegs and B. Westreich from March 20, 1994 to April 30, 1994.

The attachment to this letter constitutes our reply to the Notice of Violation included as Appendix A to your letter.

Should you have any questions regarding this matter, please contact Mr. Charles W. Jackson, Manager, Nuclear Safety and Licensing.

Very truly yours,

Attachment

cc: Mr. Thomas T. Martin
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ATTACHMENT

REPLY TO A NOTICE OF VIOLATION
INSPECTION REPORT 50-247/94-04

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
INDIAN POINT UNIT NO. 2
DOCKET NO. 50-247
JUNE, 1994

Notice of Violation

During an NRC inspection conducted from March 20, 1994 through April 30, 1994, a violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," 10 CFR Part 2, Appendix C, the following violation was identified:

> Technical Specification 3.5.6 requires that when the reactor coolant system is above 350°F, the instrumentation requirements as stated in Table 3.5-5, "Accident Monitoring Instrumentation", shall be met. Table 3.5-5 requires that a minimum of 1 channel of the Plant Vent Noble Gas Effluent Monitor (R-27) remain operable during these plant conditions. If the channel is not operable, restore within 7 days or initiate an alternate method of monitoring the appropriate parameters and prepare and submit a special report to the Commission within the next 14 days.
>
> Contrary to the above, R-27 could not carry out its safety function as designed since the performance of the last surveillance test on December 20, 1993 until April 11, 1994.
>
> This is a Severity Level IV violation (Supplement 1).

RESPONSE

The inoperability of the Plant Vent Wide Range Noble Gas Effluent Monitor in the automatic mode was identified by plant personnel during the performance of a quarterly surveillance test on April 8, 1994, and was subsequently reported to the NRC by letter dated April 22, 1994. Upon discovery by plant personnel, immediate corrective action was taken on April 11, 1994 to restore the monitor to operable status by the opening of a nitrogen purge stop valve that had been incorrectly closed. A root cause investigation was promptly initiated to determine the reason the valve was mispositioned, the length of time the condition existed, and the reason the condition remained undetected.

Although radiation monitor R-27 would not have automatically transferred from the low range channel to the mid or high range channels with the nitrogen purge stop valve in the closed position, the monitor was fully functional in the low range. Further, had actual radiological conditions warranted an automatic start of the mid/high range compressor, several indications would have alerted the reactor operators to the lack of transfer to the higher range(s). In that case, even with the valve closed, the monitor could then be manually upranged from the Central Control Room so that it would have been able to perform its safety function.

Background Information

The Plant Vent Wide Range Noble Gas Effluent Monitor contains three channels with overlapping ranges. The low range channel has its sample drawn by the low range compressor. The mid/high range compressor draws the sample for the mid and high range channels. The low range compressor is normally running during plant operation. With an increase in plant vent activity, the mid/high range compressor starts prior to transfer of the monitoring function from the low to the mid range channel. At this point, both compressors would be operating. As activity continues to increase, the monitoring function transfers to the mid range channel and the low range sample pathway automatically purges prior to the low range compressor shutting off. The monitoring function transfers automatically to the high range channel if activity continues to increase.

Once activity decreases to a certain point, the low range compressor starts. Again, in the range overlap region both compressors would be running. As activity continues to decrease, the monitoring function transfers to the low range channel and the mid/high range sample pathway would be purged prior to shutdown of the mid/high range compressor.

The skid is purged using nitrogen supplied through a stop valve (5105). However, should nitrogen not be available to the skid during the purge cycle, that channel's respective compressor will trip off as a result of a low flow condition, rather than from the completion of that pathway's normal purge routine following a range transfer. Compressor shutdown is indicated in either case by a common indicating light. There is no differentiation in indication between the causes of the compressor shutdown. The tripped condition must be manually cleared from the affected channel before the unit will automatically transfer monitoring functions from the operating channel to the affected channel on ascending or descending plant vent activity.

Description of Occurrence

On April 8, 1994, while performing surveillance test PT-Q42, "Wide Range Noble Gas Monitor R-27 Functional Test", technicians identified that the mid/high range compressor was tripped and would not start automatically on a simulated increase in activity. The failure to meet the test acceptance criteria was documented in a Significant Occurrence Report (94-209). A work request was issued to determine the cause and correct the problem. The nitrogen purge supply stop valve (5105) was subsequently found to be closed and was restored to its normal open position. A second Significant Occurrence Report (94-212) was then issued to initiate determination of the root cause for the event.

The root cause investigation included a review of recently completed surveillance tests of R-27. The monitor had successfully passed the September 1993 quarterly surveillance test as all automatic transfers occurred as required. During the December 1993 quarterly test, R-27 had successfully transferred automatically from the low to the mid/high range channels, but not back down to the low range channel. This indicates that the low range compressor had tripped during the test, most likely from the lack of purge nitrogen due to the closed valve that was discovered in April 1994. Thus, R-27 was operable in the automatic mode for its accident function between the September and December tests, since the transfer to the

mid/high range was successful. The return to the low range channel in the December 1993 test required a manual start of the low range compressor in accordance with the test procedure, after which the mid/high range compressor tripped on a low flow condition due to a lack of purge nitrogen. Because there is no unique indication for a compressor trip, no manual action was taken to clear the trip for the mid/high range compressor. Therefore, R-27 is presumed to have been left in a tripped condition such that the mid/high range channel was inoperable since December and the monitor would not have been able to perform its accident function automatically. Although the December 1993 test met the acceptance criteria, an unsatisfactory condition (the low range compressor did not automatically start as simulated activity was decreased) was noted. Further corrective action was not initiated and the rationale for this decision was not noted in the comments section of the test procedure. It appears that an opportunity to detect the tripped condition of the mid/high range compressor may have been missed due to inadequate investigation of an unsatisfactory test response.

In February 1994, a work order was completed to replace the sample flow filters and the skid was manually cycled to purge at that time. This attempt to purge tripped both compressors due to low flow since the nitrogen supply stop valve was closed. The subsequent manual start of the low range compressor during the work activity cleared the trip signals for both compressors, a different sequence than that which occurred in the December 1993 test. This would have enabled R-27 to transfer from the low to the mid/high ranges automatically if sample activity were to increase at some later time. However, since the mid/high ranges did not automatically transfer from the low range during the April 1994 test, another event had to have occurred in the interim to cause the failure. Based on discussions with the vendor, it is postulated that a spike associated with the skid's periodic, automatic source check initiated the start of the mid/high range compressor, without a transfer to the mid range channel, at some time between the February maintenance work and the April test. With the mid/high range compressor running and the low range channel monitoring, the dissipation of the spike would normally have enabled the mid/high range sample pathway to purge and the mid/high range compressor to shut off. However, since valve 5105 was closed the mid/high range compressor was tripped due to low flow, not due to normal shutoff. During the performance of the functional test in April, 1994, the tripped condition prevented the mid/high range compressor from starting automatically.

Reason for the Violation

As our investigation determined, the root cause for the inoperability of radiation monitor R-27 in the automatic mode was the closed position of nitrogen purge supply stop valve 5105. The valve is listed on the system check-off list as normally open and is so indicated on the most recently completed check-off list dated October 19, 1992. Since there were no unsatisfactory test results or test failures prior to the December 1993 test, this indicates that the valve was correctly positioned during the completion of the October 1992 check-off list. Based on a search of the tagout database, a review of work permits issued for R-27, and a review of plant operator logs for the period, it is concluded that the valve was not required to be operated to the closed position and there were no work activities that could credibly be connected to an inadvertent manipulation of valve 5105. These efforts did not reveal how the valve became mispositioned.

Control of valve positions in the plant is accomplished through operating procedures, check-off lists, and tagouts. Valve 5105 is normally maintained in the open position, as specified on the applicable check-off list and as maintained through the applicable system operating procedure. Because the valve was correctly positioned when the check-off list was performed, the subsequent mispositioning was not the result of inadequate procedural control of valve position. Further, the intent of a surveillance test is to determine operability of equipment. A closed valve could compromise equipment operability, as occurred in this instance. Because the radiation monitor is functionally tested quarterly (even though the Technical Specifications only require a channel calibration on a refueling interval basis), it is believed to be reasonable assurance for detection of conditions that could cause inoperability.

The test performed in December 1993 successfully indicated an unsatisfactory condition of the system, and the test personnel properly documented the same. However, the test personnel incorrectly determined the compressor restart was normal and did not pursue further investigation. Additionally, later test reviewers did not question the unsatisfactory condition, so there was a missed opportunity to correct the problem in December 1993. Therefore, a contributing cause to the inoperability of the monitor was inadequate review of the test results. This is considered to be an isolated occurrence.

Corrective steps that have been taken and the results achieved

Upon discovery by plant personnel during the investigation of the April 1994 test failure, valve 5105 was opened and the applicable sections of PT-Q42 were performed to satisfactorily complete the required testing. Although it is believed that the existing quarterly functional test of R-27 is satisfactory, appropriate enhancements to the test procedure have been made.

Corrective steps that will be taken to avoid further violations

Based on our investigation, it is believed that the existing administrative controls on valve positions, the surveillance test procedure, and the test review process are adequate. However, in this instance, the proper reviews of the completed test were not performed. Therefore, a review of the particular circumstances of this event with personnel involved in test activities will be conducted to emphasize the importance of proper test review and actions necessary to address unsatisfactory conditions.

The date when full compliance will be achieved

The corrective step above will be achieved by July 29, 1994.