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SUBJECT: Responds to 930628 GL 89-10,suppl 5, "Inaccuracy of MOV Diagnostic Equipment."

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September 28, 1993

U.S. Nuclear Regulatory Commission
Document Control Desk
Attn: Allen R. Johnson
Project Directorate I-3
Washington, D.C. 20555

Subject: Response to Generic Letter 89-10, Supplement 5, "Inaccuracy of Motor-Operated Valve Diagnostic Equipment"
R.E. Ginna Nuclear Power Plant
Docket No. 50-244

Dear Mr. Johnson:

This correspondence provides the 90-day response to the request for information from GL 89-10, Supplement 5, dated June 28, 1993, regarding the Motor-Operated Valve (MOV) Qualification Program in place at Rochester Gas & Electric Corporation's (RG&E) R.E. Ginna Nuclear Power Plant.

GL 89-10 Supplement 5 contained the following REQUESTED ACTIONS and REPORTING REQUIREMENTS.

"REQUESTED ACTIONS

1. On the basis of the new information on MOV diagnostic equipment inaccuracy discussed in this letter, licensees are requested to reexamine their MOV programs and to identify measures taken or planned to account for uncertainties in properly setting valve operating thrust to ensure operability. Licensees should not limit their evaluation to only the specific examples of increased inaccuracy of MOV diagnostic equipment provided in the Discussion section of this GL supplement, but should consider any information reasonably available to them.

2. Licensees are requested to evaluated the schedule necessary (a) to consider the new information on MOV diagnostic equipment inaccuracy and (b) to respond to that information.

REPORTING REQUIREMENTS

(1) Within 90 days of receipt of this letter, all licensees are required to notify the NRC staff of the diagnostic equipment used to confirm the proper size, or to establish settings, for MOVs within the scope of GL 89-10.

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(2) Within 90 days of the receipt of this letter, licensees are required to report whether they have taken actions or plan to take actions (including schedule and summary of actions taken or planned) to address the information on the accuracy of MOV diagnostic equipment."

This submittal addresses the requested actions and reporting requirements above stated in Supplement 5 to Generic Letter 89-10. RG&E has reexamined its MOV program, including the schedule for completion and has taken and will continue to take actions to address the information on accuracy of MOV diagnostic equipment to account for the following identified concerns:

a. published inaccuracies associated with the ITI-MOVATS thrust measuring device (TMD)
b. the estimation of stem thrust based on spring pack deflection
c. the use of diagnostic equipment calibrated only in the open direction to measure stem thrust in the closed direction.

RG&E employs the ITI-MOVATS System 3000 Data Acquisition System. As part of this data acquisition system, RG&E currently employs the torque thrust cell (TTC), stem strain ring (SSR), stem strain transducer (SST), load cell and the thrust measuring device (TMD).

Prior to the notification of increased inaccuracies associated with ITI-MOVATS TMD diagnostic equipment in March 1992, RG&E relied exclusively on the TMD to estimate closing stem thrust by calibrating spring pack deflection with the open direction thrust measured using the load cell. As a result of relying solely on the TMD load cell combination for determining MOV thrust in both the open and close directions, the revised inaccuracies associated with the open versus close issue raised the question of whether each MOV whose torque switch was set using the TMD, could be considered to be operable. With the assistance of ITI-MOVATS and using the guidance provided by Nuclear Management and Resources Council (NUMARC), RG&E performed an extensive review of all previously performed MOV diagnostic test results in the first quarter of 1992 (just prior to Ginna Station's GL 89-10 Stage I NRC inspection conducted from April 6 - April 10, 1992, reported in NRC Inspection Report No. 50-244/92-80, dated May 14, 1992). A two-path evaluation was performed for the sixty-two (62) MOVs previously tested to assess the potential for inoperability due to the open versus closed issue. The results of that evaluation concluded that twenty-one (21) MOVs did not meet the acceptance criteria of the two - path evaluation and could potentially be inoperable. The twenty-one (21) MOVs were evaluated for corrective action using non-conformance reports, grouped into four categories:

<u>Category 1</u>

MOVs that had already been scheduled for retest during the Spring 1992 outage

Ten (10) MOVs were scheduled for retest during the 1992 refueling shutdown following our evaluation of the open versus close issue. Of the ten (10) MOVs scheduled, eight (8) were successfully retested using the TTC and found to have been operable. Two (2) MOVs, due to scheduling difficulties, could not be retested as planned during the 1992 refueling outage. These two (2) MOVs were evaluated by Engineering Design Analysis and the results verified that their degraded voltage stall thrusts would not impede MOV actuation under reduced voltage conditions.

Category 2

MOVs that were not scheduled for retest but had a potential for exceeding a thrust limit

Six (6) MOVs were identified as having the potential for exceeding the thrust limits of the valve, actuator or motor and, due to scheduling difficulties, could not be retested during the 1992 refueling shutdown. These six (6) MOVs were evaluated by Engineering Design Analysis and the results confirmed that sufficient margin was available to verify that the thrust limits for each MOV were not exceeded utilizing the existing MOV torque switch settings.

Category 3

MOVs that were not scheduled for retest but had a potential for inadequate thrust

Three (3) MOVs were identified as having the potential to not be able to develop sufficient thrust to overcome the affects of design-basis accident differential pressure and, due to scheduling difficulties, could not be retested during the 1992 refueling shutdown. These three (3) MOVs were evaluated using the results of differential pressure testing conducted in 1991 and were found to have been operable.

Category 4

Block valves for PORVs

The two (2) block valves for the power-operated relief valves were evaluated as a special case even though they were retested using the TTC during the 1992 outage (Category 1). As a result of retesting, it was determined that no increase in torque switch setting (thrust) was needed and no thrust limits were exceeded. These two (2) MOVs, therefore, were determined to have been operable.

In summary, the results of retesting using the more accurate diagnostic equipment or further evaluation by Engineering Design Analyses provided the basis to conclude that the twenty-one (21) MOVs were operable after having been setup using the TMD.

Following the notification of increased inaccuracies associated with the ITI-MOVATS TMD, RG&E upgraded its diagnostic equipment and now employs the TTC on every MOV where it is practical to do so. The accuracy of the TTC has been shown to be reliable and repeatable. Once thrust data is obtained using the TTC, a feedback process is employed to verify the assumptions made in the original target thrust calculation with regard to valve and stem factors. There are, however, certain MOVs that cannot accept the installation of the TTC. In those cases, every effort is being made to employ diagnostic equipment whose accuracy is more reliable than the TMD. Either the SSR or SST devices are used to validate the closing thrust as measured by the TMD. For the small number of MOVs where the TTC, SSR or SST devices cannot be used, therefore, the TMD is solely relied on to measure thrust in the closing direction. In these cases, excess thrust margin is being factored into the target thrust calculation to provide added confidence of MOV operability. It is the intent of RG&E to complete the validation of valve and stem factor assumptions for all MOVs regardless of the diagnostic equipment employed.

Very truly yours,

Robert C. Mecredy

GAH/303
Attachment

Subscribed and sworn to before me
on this 28th day of September, 1993

Marie C. Villeneuve

MARIE C. VILLENEUVE
Notary Public, State of New York
Monroe County
Commission Expires October 31, 1994

xc: Mr. Allen R. Johnson (Mail Stop 14D1)
Project Directorate I-3
Washington, D.C. 20555

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Ginna Senior Resident Inspector

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