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

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102-02660-WFC/RAB/SAB

September 28, 1993

WILLIAM F. CONWAY
EXECUTIVE VICE PRESIDENT
NUCLEAR

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Mail Station P1-37
Washington, DC 20555

Dear Sirs:


Subject: Palo Verde Nuclear Generating Station (PVNGS)
Units 1, 2, and 3
Docket Nos. STN 50-528/529/530
Response to NRC Generic Letter 89-10, Supplement 5,
Inaccuracy of Motor-Operated Valve Diagnostic Equipment
File: 93-010-026; 93-180-419

On June 28, 1993, the NRC issued Generic Letter (GL) 89-10, Supplement 5, "Inaccuracy of Motor-Operated Valve Diagnostic Equipment." This generic letter informed licensees of a concern regarding new information on the accuracy of motor-operated valve (MOV) diagnostic equipment.

The generic letter requires licensees to notify the NRC of the diagnostic equipment used to confirm the proper size, or to establish settings, for MOVs within the scope of the GL 89-10 program and to report the actions taken or planned to be taken to address the information provided regarding equipment accuracy. The requested information is provided in the enclosure to this letter.

Should you have any questions, please contact Richard A. Bernier at (602) 393-5882.

Sincerely,



WFC/RAB/SAB/ry

Enclosure

cc: B. H. Faulkenberry
J. A. Sloan
C. M. Trammell

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ENCLOSURE

RESPONSE TO GENERIC LETTER 89-10, SUPPLEMENT 5
INACCURACY OF
MOTOR-OPERATED VALVE DIAGNOSTIC EQUIPMENT

NRC Reporting Requirement:

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.

Arizona Public Service Company (APS) Response:

The diagnostic test systems used at PVNGS are:

ITI MOVATS Series 3000/3386 Diagnostic Test System, and

Liberty Technologies 100 System (VOTES)

NRC Reporting Requirement:

Report whether actions have been taken or are planned to be taken (including schedule and summary of actions taken or planned) to address the information on the accuracy of MOV diagnostic equipment.

APS Response:

APS has taken or is planning to take the following actions based on the inaccuracy concerns associated with MOV diagnostic equipment:

ITI MOVATS

A review of diagnostic test results was conducted to identify those MOVs which have been tested using the ITI MOVATS thrust measuring device (TMD) methodology. A total of 139 MOVs were identified. Of these 139, 25 were Rotork actuators, 39 were Limitorque type SMC-04 actuators and the remaining 75 were Limitorque type SMB actuators.

The Limitorque type SMB actuator test results were evaluated in accordance with ITI MOVATS Engineering Report (ER) 5.2, "Limitorque Actuator Open vs. Close TMD Data Analysis Procedure." It was determined that each of the MOVs met operability requirements.

Since the Rotork actuators have two spring packs, one for open and one for close, the open spring pack calibration could not be used to set the close torque switch. The Rotork test results were reevaluated using the Rotork Test Certification reports. The closing current values, and measured actuator torque values from

the test reports, were compared to the onsite testing results using a reasonable stem thread coefficient of friction and a conservative valve packing torque. All of these actuators were found to meet operability requirements.

The Limitorque type SMC-04 actuators had not originally been considered in ITI MOVATS ER 5.2. A test program was performed at PVNGS, and the results were provided to ITI MOVATS for inclusion of an accuracy calculation in ER 5.2. ITI MOVATS provided APS with a letter containing coefficients for evaluating the SMC-04 test data. The SMC-04 test data was reviewed using these coefficients and the actuators were found to meet operability requirements.

Although the Rotork, SMB and SMC-04 actuators were determined to be operable despite the additional inaccuracy in the diagnostic equipment, it was determined that some of the actuators would be reset using direct stem measurement data since this method provides greater accuracy and results in a greater available margin of thrust.

The ITI MOVATS TMD methodology is now used only when direct stem measurement is not possible. MOV administrative procedures have been revised to require that data obtained when using the TMD methodology are evaluated by Engineering using ER 5.2 following testing.

ITI MOVATS ER 5.0, "ITI MOVATS Equipment Accuracy Summary," addresses test device accuracy. Torque switch repeatability was removed from this document in Revision 5 due to the inclusion of revised torque switch repeatability information in Limitorque Maintenance Update 92-2. The Limitorque Maintenance Update has been evaluated and changes to the setpoint control documents have been identified.

The applicable setpoint control documents for the three PVNGS units will be revised to include the limitations associated with both testing Rotork actuators and using the TMD method for Limitorque actuators, and to incorporate the new torque switch repeatability information.

LIBERTY TECHNOLOGIES (VOTES)

The data from MOV tests performed with VOTES equipment were reevaluated using adjusted setpoint bands developed from guidance provided by Liberty Technologies. Eleven of these MOVs had data that fell outside of the adjusted bands. Further evaluation was performed and the 11 MOVs were determined to be within the design limits of their respective setpoint calculations.

•TELEDYNE ENGINEERING SERVICES (STRAIN GAGES)

Stem-mounted strain gages obtained from Teledyne Engineering have been used for MOV diagnostic testing to record stem thrust and torque values. Teledyne issued two technical reports regarding the accuracy of these strain gages. The affect of the accuracy information on testing data is under evaluation and is expected to be complete by February 15, 1994. A preliminary review of the technical reports indicate that the inaccuracies have been bounded by the inaccuracy values presently used for static testing.

STATE OF ARIZONA)
) ss.
COUNTY OF MARICOPA)

I, W. F. Conway, represent that I am Executive Vice President - Nuclear, that the foregoing document has been signed by me on behalf of Arizona Public Service Company with full authority to do so, that I have read such document and know its contents, and that to the best of my knowledge and belief, the statements made therein are true and correct.

W F Conway
W. F. Conway

Sworn To Before Me This 28 Day Of September, 1993.

Roxanna Vandell
Notary Public

My Commission Expires

My Commission Expires June 12, 1997



