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 50-388 Susquehanna Steam Electric Station, Unit 2, Pennsylv 05000388
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 KEISER, H. W. Pennsylvania Power & Light Co.
 RECIP. NAME RECIPIENT AFFILIATION
 WIGGINS, J. T. Region 1, Ofc of the Director

SUBJECT: Responds to 880325 request for addl info re util responses to Bulletin 85-003 on motor-operated valve switch settings. Encl response addresses only issues within scope of bulletin.

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APR 28 1988

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SUSQUEHANNA STEAM ELECTRIC STATION
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION
BULLETIN 85-03: MOV SWITCH SETTINGS
PLA-3020 FILE R41-1A/R41-2

Docket Nos. 50-387
and 50-388

Dear Mr. Wiggins:

I am writing in response to your letter of March 25, 1988, which forwarded a request for additional information (RAI) dated March 15, 1988 concerning PP&L's responses to Bulletin 85-03 on MOV switch settings.

The RAI directed PP&L to take certain actions some of which were beyond the scope of the bulletin. This apparently resulted from NRC review of a BWROG Report on Bulletin 85-03. The report was not a generic effort and PP&L was one of a number of utilities that chose not to participate. As a result PP&L had no input to the BWROG report and has not endorsed it. In a phone conference on April 4, 1988, with Mr. R. J. Kiessel of NRR's Generic Communications Branch and the Susquehanna resident inspector and project manager, Messrs. F.I. Young and M.C. Thadani, we explained that portions of the RAI were outside the scope of the bulletin. They concurred that PP&L was not obligated to address these issues now except to justify our claim. The attached response does so and addresses the remainder of the RAI.

If you have any questions, please contact Mr. R. M. Harris at (215) 770-7918.

Very truly yours,

H. W. Keiser
Senior Vice President-Nuclear

Attachment

8805040379 880428
PDR ADDCK 05000387
Q PDR

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cc: NRC Document Control Desk (w/original)

NRC Region I

Mr. F. I. Young, NRC Sr. Resident Inspector

Mr. M. C. Thadani, NRC Project Manager

Mr. R. J. Kiessel

NRR Generic Communications Branch

Washington, D.C. 20555

NRC REQUEST FOR ADDITIONAL INFORMATION
BULLETIN 85-03

1. Comment: If MOVATS is planned for application to some MOVs which are not included in its data base, commit to and describe an alternate method for determining the extra thrust necessary to overcome pressure differentials for these valves.

Response: As stated in Section II.C. of our final report (1/12/88) PP&L has used industry accepted equations for thrust determination. MOVATS diagnostic equipment was used to obtain static stroke operating signatures for certain valves. These signatures were used to verify limit switch settings as well as to determine thrust at torque switch trip.

During the effort to evaluate this bulletin, PP&L became aware of new formulas being developed by individuals to correlate valve design basis parameters to required actuator thrust. PP&L reviewed the work done in this area and concluded that the testing performed to verify these new equations was marginal at best and therefore does not justify the use of these new equations. Almost all of the testing was performed in the opening direction which provides no useful data to verify the equations. Furthermore, none of the failures identified in the bulletin can be directly related to the failure of industry accepted equations to accurately predict required actuation thrusts. The failures instead are related to inaccurate design basis information being used as input, or the output information not being properly incorporated as actual switch settings by the utility. For the reasons stated above, no further justification is required for use of industry accepted (valve) equations.

2. Comment: Revise the tables of the response dated 10-09-86 to include the following MOVs, or justify their exclusion. As required by Action Item a of the bulletin, assume inadvertent equipment operations.
 - (a) RCIC MOV F010 is shown normally open in Zone E-2 of Drawing M-149 Revision 26, and as MOV 3 of Page 72 of the BWROG Report. How would suction from the CST be ensured if this MOV were to be (a) actuated inadvertently to the closed position upon intended initiation of the system or (b) left closed inadvertently?
 - (b) RCIC MOV F012 is shown normally open in Zone C-4 of Drawing M-149 Revision 26, and as MOV 8 on Page 72 of the BWROG Report. How would discharge to the reactor vessel be ensured if this valve were to be (a) actuated inadvertently to the closed position upon intended initiation of the system or (b) left closed inadvertently?
 - (c) RCIC Turbine Stop Valve HV-15012 is shown normally open in Zone E-3 of Drawing M-150 Revision 15, and as MOV X on Page 74 of the BWROG Report. How would steam supply to the RCIC Turbine be ensured if this valve were to be (a) actuated inadvertently to the closed position upon intended initiation of the system or (b) left closed inadvertently?

Response: As stated in Bulletin 85-03, the scope of the bulletin is limited to motor-operated valves that are required to be tested for operational readiness in accordance with 10CFR50.55a(g). The above mentioned valves are not required to be tested pursuant to 10CFR50.55a(g) at Susquehanna and as such are not within the scope of Bulletin 85-03.

3. Comment: The following listed MOVs are shown locked open in steam exhaust lines from the turbines to the suppression pool. If power is removed from these MOVs, state this in your response. Otherwise, address the effect of inadvertent equipment operations as required by Action Item a of the bulletin and as described in Item 2(a) above.

(a) HPCI MOV F066 is shown in Zone B-5 of Drawing M-155 Revision 23, and as MOV VI on Page 71 of the BWROG Report.

(b) RCIC MOV 5059 (sic) is shown in Zone C-5 of Drawing M-149 Revision 26, and as MOV VI on Page 74 of the BWROG Report.

Response: Inadvertent operation of these valves was addressed in our 1/12/88 response to IEB 85-03. The subject MOVs are locked open via a keylock switch in the control room. The key is removable only in the open position. Since the valves are normally open with the key removed, inadvertent equipment operation would involve obtaining a key and closing the valves. If the valves were inadvertently mispositioned with the system in standby, an alarm would annunciate in the control room which would alert the operators. The steam admission valve will not open upon an initiation signal until the turbine exhaust valve is fully reopened.

4. Comment: Revise the tables of the response dated 10-09-86 to include the following MOVs. These valves do not have a safety action; however, differential pressures for testing should be provided. Refer to Note o on Page 66 of the BWROG Report.

(a) HPCI MOV F011 is shown normally closed in Zone E-5 of Drawing M-155 Revision 23, and as MOV 6 on Page 68 of the BWROG Report.

(b) RCIC MOV F022 is shown normally closed in Zone D-4 of Drawing M-149 Revision 26, and as MOV 5 on Page 72 of the BWROG Report.

Response: As stated in Bulletin 85-03 the scope of the bulletin is limited to motor-operated valves that are required to be tested for operational readiness in accordance with 10CFR50.55a(g). The above mentioned valves are not required to be tested pursuant to 10CFR50.55a(g) at Susquehanna and as such are not within the scope of Bulletin 85-03.

5. Comment: Revise the tables of the responses dated 10-09-86 and 01-12-88 to include RCIC MOV F046. This valve is shown normally closed in Zone A-5 of Drawing M-150 Revision 15, and as MOV 9 on Page 72 of the BWROG Report.

Response: As stated in Bulletin 85-03 the scope of the bulletin is limited to motor-operated valves that are required to be tested for operation readiness in accordance with 10CFR50.55a(g). The above mentioned valves are not required to be tested pursuant to 10CFR50.55a(g) at Susquehanna and as such are not within the scope of Bulletin 85-03.

6. Comment: Possible use of handwheel turns for setting switches is mentioned on Page 5 of the response dated 10-09-86. For a problem caused by using this method, refer to Event 1 (at Davis-Besse) on pages 1 and 2 of IE Bulletin 85-03. This method is not recommended. If it is indeed planned for use, provide full justification.

Response: Whenever handwheel turns were used for setting limits, the count did not begin until lost motion within the actuator and play between the disc/stem interface were taken up and stem travel had actually begun. This introduces additional conservatism not integrated into the switch setting procedures at Davis-Besse. Additional items taken into consideration are as follows:

- (a) Valves which must open to perform their safety function do not employ a torque switch bypass but instead eliminate the opening torque switch entirely. The opening stroke is solely governed by the full open limit switch.
- (b) Valves which must close to perform their safety function employ a torque switch bypass for 97% of the closing stroke.
- (c) Each valve was stroke tested after setting of the switches to verify correct operation of the switches.
- (d) In many cases MOVATS signatures were used to verify proper switch development.

7. Comment: The proposed program for action items b, c, and d of the bulletin is incomplete. Provide the following details as a minimum:

- (a) commitment to a training program for setting switches, maintaining valve operators, using signature testing equipment and interpreting signatures.
- (b) commitment to justify continued operation of a valve determined to be inoperable.
- (c) description of a method possibly needed to extrapolate valve stem thrust determined by testing at less than maximum differential pressure, and
- (d) justification of a possible alternative to testing at maximum differential pressure at the plant.

Response:

- (a) PP&L has an in-house developed training program for electrical and mechanical aspects of maintenance on Limitorque motor operators including switch development and set-up, and operator manual overhaul. For the MOVATS test device used by PP&L, the vendor provides required training for instrumentation utilization and results interpretation on a periodic basis.
- (b) Valves determined to be potentially inoperable during plant operation are treated as any other potentially inoperable piece of equipment. A non-conformance report (NCR) is generated and an operability determination is rendered. If the valve is determined to be inoperable, the effect on the system is evaluated in accordance with any applicable Technical Specifications. Based on the evaluation, Limiting Conditions of Operation (LCOs) are entered if required.
- (c) See the response to comment 1) above.
- (d) This justification is provided in Section II.F. of PP&L's 1/12/88 final report and also on the individual valve summary sheets included as Attachment 5 to that report.

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