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Norman W. Curtis
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April 26, 1982

Mr. Richard W. Starostecki, Director
Division of Resident and Project Inspection
U. S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406

SUSQUEHANNA STEAM ELECTRIC STATION
NRC INSPECTION OF JANUARY 27-MARCH 1, 1982
REPORT NO. 50-387/82-04
ER 100450 FILE 840-4
PLA-1070

Dear Mr. Starostecki:

Reference is to your letter of March 15, 1982 which forwarded IE Inspection Report No. 50-387/82-04 and "APPENDIX A, NOTICE OF VIOLATION."

Your letter advised that PP&L was to submit within thirty (30) days of the date of the Notice, a written reply addressing (1) corrective steps which have been taken and the results achieved; (2) corrective steps which will be taken to avoid further violations; and (3) the date when full compliance will be achieved. Please note that in a telephone conversation on April 15, 1982 between A. R. Sabol of PP&L and Mr. E. C. McCabe of NRC, Mr. Sabol requested and was granted an extension to April 23, 1982 for submitting said explanation.

The "NOTICE OF VIOLATION" cites five (5) violations. The violations are stated below and each is followed by its corrective action response:

A.1 Violation:

10 CFR 50 Appendix B Criterion XI requires appropriate preoperational testing of structures, systems and components to demonstrate that they will perform satisfactorily in service. Such tests must be performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents. Quality Assurance Procedure SP-3, Control of Testing and Inspection Activities, Part 5.4.1.2 requires the preoperational test program to assure that licensing commitments and design specifications are reflected in the completed installations. Susquehanna FSAR Section 14.2.12.1 (P59.1) states that the closure times in the FSAR for containment isolation valves are to be verified in preoperational tests.

Contrary to the above, on January 28, 1982 preoperational tests for the Atmosphere Control System, Primary Containment Instrument Gas System, and Reactor Building Chill Water System did not include closure time testing for containment isolation valves.

Response:

(1) Corrective Action Taken and the Results Achieved:

For the specific concern of containment isolation valve testing, a new preoperational test, P59.3 "Primary Containment Isolation Valve Timing", has been drafted. This test will provide for stroke timing of automatically initiated containment isolation valves. It also provides for assembling and verifying data sheets for containment isolation valves that do not receive an automatic isolation signal. The scope of the procedure includes valves with closure times specified in FSAR Table 6.2-12. FSAR Change Requests have been submitted to insert an abstract for P59.3 into Chapter 14 and to delete the statement regarding stroke time testing from the abstract for P59.1.

(2) Corrective Action Taken to Avoid Further Violations:

As noted in the transmittal letter for Inspection Report 82-04, corrective actions have been instituted for similar problems on two previous occasions. Initially, the Test Review Board (TRB) was advised of the need for closer attention to FSAR commitments in their reviews. As became apparent in a subsequent violation notice, that measure alone did not assure incorporation of all FSAR commitments. At that time, it was directed that a detailed technical review of preoperational tests be performed by Plant Staff engineers prior to TRB review of those procedures. Plant Staff and Integrated Startup Group (ISG) engineers were charged with verifying conformance to test abstracts contained in Chapter 14 of the FSAR and to other appropriate Chapters providing design descriptions, as well as verifying conformance to design documents.

This action was successful in large part, resulting in a marked improvement in procedure quality, especially in the area of FSAR conformance. However, this recent incident exposed a gap in the review process. For a particular test, reviewers would analyze the abstract for that test and not the abstracts for other tests. This was a proper review process, but it did fail to pick up commitments placed in other test abstracts, such as the containment isolation valve stroke time requirement.

To address this weakness, FSAR Chapter 14 was reviewed to evaluate Preoperational Test Program commitments, with special attention being given to identifying additional "hidden" commitments. In addition, an intensive review will be conducted to verify that each Chapter 14 commitment is fulfilled in the appropriate document. Identified deviations will generate appropriate document revisions to provide conformance.

(3) Date When Full Compliance Will be Achieved:

Continuation of the Plant Staff engineering reviews, coupled with resolution of open items identified by the Chapter 14 review will bring SSES into full compliance. Reviews of individual preoperational tests not yet run will be completed prior to their performance. Completion of FSAR Chapter 14 and procedure reviews and identification of necessary changes will be completed by May 15, 1982.

A.2 Violation:

10 CFR 50 Appendix B Criterion II requires activities affecting quality to be accomplished under suitably controlled environmental conditions. 10 CFR 50 Appendix B Criterion V requires that activities affecting quality shall be prescribed and accomplished in accordance with appropriate documented instructions. Susquehanna FSAR Appendix D Section 2.5 requires activities affecting quality to be prescribed by documented and appropriate instructions, procedures or drawings.

Contrary to the above, on February 1, 1982 procedures for activities performed on the access pits to the Emergency Service Water and Residual Heat Removal System Flow Instrumentation were not appropriate to the circumstances, in that conditions were not established to prevent the flooding of safety-related instrumentation in the access pits.

Response:

(1) Corrective Steps Which Have Been Taken and the Results Achieved:

The incident occurred while Construction was installing the missile shields in the flow transmitter pits located south of ESSW pumphouse. A Kelly panel enclosure had been erected over and around the pits in order to maintain a dry and heated area in which to perform the grouting. Because of the time of year, no special provisions were made to prevent surface runoff from entering the enclosed area. On Saturday, January 30, freezing rain put a glaze on the frozen, snow covered ground; and, on Sunday, January 31, an unseasonable rainstorm dropped approximately 1/2" of rain in the area. The resultant excessive runoff entered the enclosure and flooded the pits. This flooding resulted in the submersion of Q listed instruments which are under PP&L jurisdiction as well as a Q listed junction box which is under Bechtel jurisdiction.

On Monday, February 1, the cognizant Bechtel field engineer and superintendent became aware of the flooded pits and initiated corrective action which included draining of the pits and the setting of sand bags to divert further runoff.

Bechtel NCR 8749 has been issued to document the submersion of the junction box and to obtain corrective action.

PP&L NCR 82-077 was issued to document and obtain corrective action for flow transmitters FT-01204A&B and FT-01109A&B.

Inspection and rework of flow transmitters, in response to PP&L NCR 82-077, was performed under WA-U-27120 (FT01109A&B) and WA-U-27119 (FT01204A&B) and has been completed. This assures proper operation of flow transmitters.

(2) Corrective Steps Which Have Been Taken to Avoid Further Items of Noncompliance:

Field Procedure FP-G-15 "Procedure for Housekeeping at the SSES" has been revised by interim memo, dated 3/30/82 to clarify the requirement for protection of equipment and systems, regardless of turnover status, against possible damage from construction activities and/or environmental conditions.

Access pit covers have been installed and caulked. The area surrounding the access pits has been regraded to direct runoff away from the pits. Pipe penetration seals which show evidence of seepage will be recaulked.

(3) The Date When Full Compliance Will Be Achieved:

Full compliance will be achieved when the following items are accomplished.

(a) Bechtel will close NCR 8749 by 5/9/82.

(b) Recaulking of piping in the transmitter pits will be completed by 5/30/82.

A.3 Violation:

10 CFR 50 Appendix B Criterion XI states that a test program shall be established in accordance with written test procedures which incorporate the requirements and acceptance limits of applicable design documents. PP&L Quality Assurance Manual Procedure SP-3, Revision 2, "Control of Testing and Inspection Activities," states in Section 5.4 that the Preoperational Test Program shall consist of written and approved procedures which assure that test data is analyzed and evaluated against design requirements to determine acceptability. Startup Administrative Manual Procedure AD7.5, Revision 10, states that quantitative acceptance criteria necessary to determine that system performance is acceptable will specify either minimum or maximum values or tolerances for the value, and that the acceptance criteria identifies the step of the test that verifies the stated criterion.

Contrary to the above, as of February 4, 1982 Acceptance Criterion 2(11) of P55.1, Revision 2, stated maximum and minimum values for total CRD cooling water flow, but the test did not verify the acceptance criteria because the specified tolerances extended beyond the stated maximum acceptable value.

Response:

(1) Corrective Action Taken and the Results Achieved:

The acceptance criterion in question provides CRD cooling water flow limitations derived from GE Process Diagram information. The referenced band of 37 gpm to 63 gpm was written to apply during normal operation (30 ± 5 psid between the cooling water header pressure and reactor above core plate pressure, no rod movement). The band was calculated by multiplying individual drive limits (.2 gpm minimum, .34 gpm maximum) by the total number of drives. Discussions with GE have indicated that 37 gpm is a valid limit to ensure adequate flow to drives, but that 63 gpm was not intended to represent an upper limit on cooling header flow for this plant. This position is supported by the Process Diagram notation that nominal cooling header flow is 63 gpm at a nominal Δp of 30 psid. Since the flowrate will increase as Δp increases, and the maximum allowable Δp during normal operation is 35 psid, cooling header flowrates in excess of 63 gpm are expected and permissible during normal operation.

(2) Corrective Action Taken to Avoid Further Violations:

The following actions, concurred with by the TRB, will be taken on the discussion above. Confirmation of the acceptability of cooling header flow in excess of 63 gpm will be obtained from GE. The acceptance criterion will be revised to specify a minimum allowable cooling water header flow of 37 gpm at the minimum allowable Δp for normal operation (25 psid). Additional steps will be added to P55.1 to verify this criterion, including recording of appropriate data.

This occurrence represents an isolated instance of misinterpretation concerning the meaning of certain GE Process Diagram entries and their applicability as acceptance criteria to the testing being performed. The complex nature of this issue contributed to the misinterpretation, and it is felt that no programatic problems exist that require corrective action to prevent recurrence.

(3) Corrective Action Taken to Avoid Further Violations:

Full compliance will be achieved by May 15, 1982 when the procedure changes (supported by GE documentation) are made.

A.4 Violation:

10 CFR 50 Appendix B Criterion V states that activities affecting quality shall be prescribed by approved procedures. PP&L Quality Assurance Manual Procedure SP-9 Revision 1 Section 5.3, and PP&L Startup Administration Manual Procedure AD6.8 Revision 4 Sections 5.3 and 5.4 prescribe control of temporary modifications by use of orange identification tags and by entry of such modifications into a temporary modification log.

Contrary to the above, on February 5, 1982 a temporary switch was found connected to terminal box TB0144 with no orange temporary modification identification tag and no entry in the Temporary Modification Log.

Response:

(1) Corrective Action Taken and the Results Achieved:

The temporary switch has been identified as a temporary modification in accordance with AD6.8, a temporary modification tag was hung on the switch and the item was entered in the Temporary Modification Log. The responsible personnel have received intensive indoctrination in the provisions of AD6.8.

(2) Corrective Action Taken to Avoid Further Violations:

ISG and Technical Section engineers will attend a special training session on temporary modification control. This training will be completed by May 15, 1982.

(3) Corrective Action Taken to Avoid Further Violations:

Full compliance was achieved when the switch was placed under AD6.8 controls.

A.5 Violation:

10 CFR 50 Appendix B Criterion V states that activities affecting quality shall be accomplished in accordance with approved procedures. PSAR Appendix D Section 2.5 states that activities affecting quality will be prescribed by documented procedures. QA Manual Procedure 7.1 states that documents which prescribe activities affecting quality are to be used by personnel at locations where the activity is performed. Startup Administrative Procedure AD6.3 Revision 6 Section 5.3.3 states that, upon a receipt of a Startup Field Report (SFR) reply, work items resulting from the SFR resolution agreeable to the Integrated Startup Group are to be added to the Startup Work List or a new SFR is to be prepared and processed.

Contrary to the above, as of February 19, 1982, no work items had been entered on the Startup Work List and no new SFR had been processed for SFR 1531 whose response had been distributed on November 10, 1980.

Response:

(1) Corrective Action Taken the the Results Achieved:

SFR 1531 was written to achieve confirmation that drawing changes reflecting a proposed modification were being incorporated. The change had beer accepted by a previous SFR and installed under the controls of the Temporary Modification Program. The resolution of SFR 1531 rejected this previously approved change without providing a detailed explanation for the rejection. At this pcint the SFR was closed, with the ISG Engineer intending to resolve the discrepancy at a later date. The fact that the temporary modification was not removed by either generating a new SFR or issuing a Work Authorization constitutes a technical violation of AD6.3. However, the open temporary modification controlling the change still would have necessitated resolution of the issue prior to final system acceptance.

To correct the identified problem, clarification of the basis for rejection was obtained and a Work Authorization was initiated to restore the wiring to the original configuration.

(2) Corrective Action Taken to Avoid Further Violations:

The special circumstances surrounding this particular incident indicate that AD6.3 as written provides adequate control of the SFR process. A training session will be conducted on the provisions of AD6.3 with emphasis placed on SFR closure. The training session will also stress that communication channels exist with design organizations and that these channels were to be utilized to achieve timely resolution of issues. The training session will be complete by May 15, 1982.

(3) Corrective Action Taken to Avoid Further Violations:

Issuance of the Work Authorization to remove Temporary Modification 60A&B-1 brought SSES into full compliance.

We trust the Commission will find our response to be satisfactory.

Very truly yours,

N. W. Curtis
Vice President-Engineering & Construction-Nuclear

JS:sab

Attachment

cc: Mr. Gary G. Rhoads
U. S. Nuclear Regulatory Commission
P.O. Box 52
Shickshinny, PA 18655

AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA)
: SS
COUNTY OF LEHIGH)

I, NORMAN W. CURTIS, being duly sworn according to law, state that I am Vice President, Engineering & Construction-Nuclear of Pennsylvania Power & Light Company and that the facts set forth on the attached response by Applicants to the NOTICE OF VIOLATION dated March 15, 1982 are true and correct to the best of my knowledge, information and belief.

N W Curtis

Norman W. Curtis
Vice President,
Engineering & Construction-Nuclear

Sworn to and subscribed
before me this twenty-sixth day
of April.

Jean A. Smolick
Notary Public

JEAN A. SMOLICK, Notary Public
Allentown, Lehigh County, Pa.
My Commission Expires May 14, 1984