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July 2, 1982

Mr. R. C. Haynes
Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, Pennsylvania 19406

SUSQUEHANNA STEAM ELECTRIC STATION
FINAL REPORT OF A DEFICIENCY INVOLVING
PIPE SUPPORT FIELD WELDS
ERs 100450/100508 FILE 821-10
PLA-1162

References: (1) PLA-877 (7/14/81)
 (2) PLA-920 (9/11/81)
 (3) PLA-976 (12/9/81)

Dear Mr. Haynes:

This letter contains information, which in conjunction with our status update reports (References (2) & (3)), serves to provide the Commission with a Final Report on the deficiency involving inadequate pipe support welds.

This deficiency was originally reported in a telephone conversation between Mr. L. Narrow of NRC Region I and Mr. A. R. Sabol of PP&L on June 8, 1981. The information contained in this report is submitted pursuant to the provisions of 10CFR50.55(e).

This deficiency was discovered during a review of piping as-builts and a Bechtel QA Field audit of pipe supports. The review, audit, and subsequent investigations revealed that QC inspected and accepted pipe support welds which did not meet the requirements of Bechtel Specification 8856-M-213, Installation, Inspection, Documentation of Pipe Supports, Hangers and Restraints and the various applicable design drawings. An investigation as to the cause of the deficiency resulted in PP&L issuing to the Commission Reference (2), Status Update on a Reportable Deficiency Involving Pipe Support Welds on September 11, 1981. This update detailed the description, cause, and safety implications of the cited deficiency and further provided corrective actions taken and planned to preclude the recurrence of the deficiency.

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During the course of performing the corrective actions detailed in the September 11, 1981 report, Bechtel conducted an audit to verify the adequacy of the intended corrective actions. The audit identified areas of the corrective action program which were not being properly implemented and/or were inadequate to achieve the required result. As a result of the audit, PP&L issued a second status update report to the Commission. The second report (Reference (3)) indicated that PP&L and Bechtel management needed to reformulate the corrective actions required to correct the deficiencies and to further investigate the complete cause of the deficiencies involved in the inspection/acceptance process for pipe support welds.

Investigation into the cause of the persistent inadequate hanger inspection process revealed that:

- (1) The acceptance criteria were susceptible to misinterpretation.
- (2) Numerous engineering documents and criteria applicable to hangers (e.g. specifications, FCR's, FCN's, EMC's, etc.) exist.
- (3) Improper methods of inspection and judgments were employed by one Quality Control Inspector when using the generalized acceptance criteria.

PP&L believes that the causes listed above and those detailed in Reference (2) all contributed to the subject deficiency.

In order to remedy the ineffective areas of the previous hanger programs, the corrective actions as detailed in Reference (2) have been revised to the following:

- (a) The weld deficiencies cited on NCR-7723 will be either reworked or technically justified (task completed; NCR-7723 closed 2/20/82).
- (b) The Quality Control inspector in question, and all Quality Control personnel engaged in pipe support welding inspection, have received additional training in order to preclude acceptance of inadequate welds in the future.
- (c) Project Engineering has developed clear and definitive acceptance criteria for pipe supports and hangers. These criteria have been incorporated into Rev. 9 of Bechtel Specification 8856-M213 by Addenda 1, 2, & 3.
- (d) Field Engineering has acquired two more welding inspectors.
- (e) Field Welding Engineers will fully inspect all welds on each pipe support for acceptability prior to release to Quality Control for final inspection. A log will be maintained to identify engineering inspection status of all hangers.
- (f) Instructions have been given to all Field Welding Engineers on the importance of in-process surveillance.

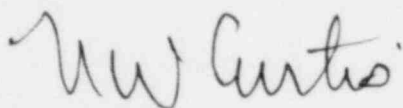
- (g) Bechtel Field Engineering has established an independent as-built audit group consisting of experienced hanger engineers familiar with IE Bulletin 79-14 hanger inspections. Their function will be to monitor the work of all Field Engineers and draftsmen involved in ongoing hanger activities.
- (h) The use of hanger/pipe support red-line markups for final inspection by QC has been stopped. All red-line changes are now incorporated in the hanger drawing prior to QC final inspection.
- (i) The QC Hanger Discipline has been reorganized to provide more supervision and technical direction. Each inspector's work shall be monitored by inspection team leaders for completeness and accuracy. This monitoring will be performed on a regular weekly basis and documented accordingly.
- (j) Additional training will occur on an as needed basis for QC inspectors identified by the internal monitoring process as requiring special attention.

The PP&L Nuclear Quality Assurance Construction Surveillance Group has monitored the implementation of the above corrective actions. These monitoring activities indicate that the corrective actions stated above have been effective in achieving the proper hanger support weldments.

Since the details of this report provide information relevant to the reporting requirements of 10CFR21, this correspondence is considered to also discharge any formal responsibility PP&L may have in compliance thereto.

We trust the Commission will find this report satisfactory.

Very truly yours,



N. W. Curtis

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MHC/pd

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