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SUBJECT: Provides revs to GL 89-13 response re NRC Recommended Actions I & II.

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SUSQUEHANNA STEAM ELECTRIC STATION
REVISED GENERIC LETTER 89-13 RESPONSE
PLA-4543 FILE R41-2

Docket Nos. 50-387
and 50-388

References:
1) *PLA-3349, H. W. Keiser to W. T. Russell, "Response to Generic Letter 89-13," dated February 23, 1990.*
2) *PLA-3377, H.W. Keiser to T.T. Martin, "Supplemental Response to Generic Letter 89-13," dated April 17, 1990.*
3) *PLA-3845, H.W. Keiser to T.T. Martin, "Final Response to Generic Letter 89-13," dated October 1, 1992.*

The purpose of this letter is to provide revisions to Pennsylvania Power & Light Company's response to NRC Recommended Actions I and III of Generic Letter 89-13 as documented in the referenced letter. Specifically, we voluntarily committed to: (1) include quantitative measurement of instantaneous rate of corrosion of piping and valves in the Emergency Service Water (ESW) and Residual Heat Removal Service Water (RHRSW) as part of our corrosion monitoring program and (2) perform enhanced flow testing of the Emergency Service Water (ESW) and Residual Heat Removal Service Water (RHRSW) every two years to verify proper flow balance to each safety-related heat exchanger. Although these enhancements were not specifically required by the Generic Letter, we are informing you that we have decided to change the frequency of ESW and RHRSW flow balance testing from two to three years and to discontinue gathering instantaneous corrosion rate data as part of our program. 10CFR50.59 evaluations have been performed and conclude that these changes do not constitute unreviewed safety questions. The attached justifications summarize the bases for our conclusions.

If you have any questions, please contact Mr. R. R. Sgarro at (610) 774-7552.

Very truly yours,

R. G. Byram

Attachment

A065 1/1

copy: NRC Region I
Mr. K. Jenison, NRC Sr. Resident Inspector - SSES
Mr. C. Poslusny, Jr., NRC, Sr. Project Manager - Rockville

INCREASE IN FREQUENCY OF ESW/RHRSW FLOW BALANCING FROM THE CURRENT 2 YEAR INTERVAL TO A 3 YEAR INTERVAL

Background:

As part of PP&L's response to NRC Generic Letter 89-13 in PLA-3349 dated 2/23/90, a voluntary commitment was made to perform enhanced ESW flow balancing every two years. A test procedure was developed to verify proper flow balance to each safety-related heat exchanger. Flow balancing has been performed in accordance with the test procedure in 1989, 1991, 1993, and 1995.

At the time of PP&L's response to Generic Letter 89-13, the two year flow balance frequency was judged to be more than adequate to detect potential flow blockage. The SSES Technical Specifications do not require ESW flow balancing. Also, there are no regulatory requirements applicable to this testing. Accordingly, the voluntary commitment to perform the flow balancing every two years is self-imposed.

Evaluation of performance data from three previous ESW flow balances revealed the following:

1. Over the four year period in which the three flow balances have been performed, no significant flow blockage has occurred. A comparison of "as-found" flow values for a given flow balance with "as-left" values for the preceding flow balance revealed that there has been little change during each two year interval or over the entire four year test period. Thus, there is no evidence that flow blockage has occurred at SSES.

2. Performance of flow balancing has allowed the system flow margin to be more evenly distributed among the various cooling loads.

3. Plant modifications have been implemented which have reduced the potential for flow degradation to occur between flow balances. These modifications include the removal of RHR pump seal coolers and the installation of flow throttling valves which are designed for throttling purposes.

4. Calculations which establish minimum flow requirements for each cooling load are recognized as being conservative so that additional flow margin beyond that demonstrated in the flow balancing procedure is known to exist.

5. Periodic flow testing done per the IST program monitors pump performance to identify flow change resulting from pump degradation.

In addition, flow balances are performed following maintenance or modification activities which could cause system flow changes, or when flow adjustments are needed on a limited scale.

The balance of the efforts described in PP&L's original response to Generic Letter 89-13 (ref. 1), including:

- heat exchanger maintenance activities,
- freshwater bivalve detection activities, and
- sedimentation/corrosion product inspection and removal activities

remain in effect, and continue to provide assurance that adequate cooling flow is provided to safety-related cooling loads associated with the ESW and RHRSW systems.

Impact to Safety Margin:

Extending the interval between ESW flow balancing from the current two year frequency to a three year frequency will have no effect on component safety functions or preclude the ability of the ESW and RHRSW systems from accomplishing their functions. The changes in flow which have occurred during the existing two year flow balance intervals are insignificant. More than adequate flow exists for all cooling loads. Modifications done to the system have reduced the potential for system flow degradation. Technical Specification Bases state that ESW and RHRSW "...ensures that sufficient cooling capacity is available for continued operation of safety-related equipment during normal and accident conditions." The Basis for the affected Technical Specification is still met when flow balancing is performed at the three year interval.

ELIMINATION OF CORROSION PROBE DATA IN SUPPORT OF CORROSION MONITORING

Background:

As part of PP&L's response to NRC Generic Letter 89-13, a voluntary commitment was made to measure, collect, and then correlate instantaneous rate of corrosion in the piping and valves of the ESW and RHRSW systems with the visual, UT, and RT measured wall thickness data derived from the other elements of the corrosion monitoring program. Corrosion probes were installed at 15 strategic locations in the ESW and RHRSW systems in 1992. A specification was developed which contains the requirements of the corrosion program.

New probe electrodes were installed in 1996 in an effort to improve the data and results. However, over one-half of the probes provided data that was inconsistent. This is based on comparison of the probe data to two other sources of data that were consistent with each other: the Pipe Corrosion Program UT wall thickness corrosion rates, and the corrosion rates from the most recently replaced probe electrodes that had been evaluated as corrosion coupons. The new probe data differed sufficiently from these other sources to conclude that the probe data could not be relied upon to provide useful information.

Impact to Safety Margin:

The ESW and RHRSW system corrosion probes are discussed in FSAR Section 9.2.5.2 and 9.2.6.2, respectively. The probes do not perform an active function with regard to the ESW and RHRSW systems. The elimination of the corrosion probe data does not require removal of the corrosion probes. The corrosion probes will continue to provide a pressure boundary to the ESW and RHRSW system piping.

The elimination of corrosion monitoring using the corrosion probes does not affect the overall performance and operation of the ESW and the RHRSW systems. The reliability of the pressure boundary wall thickness due to corrosion will continue to be determined by UT and RT wall thickness evaluations. In addition, the elimination of the probes as a corrosion monitoring device does not affect system cooling capacity, system redundancy, or system ability to withstand a single failure. The corrosion rate data taken from the visual, UT, and RT measured wall thickness data continues to provide the appropriate corrosion rate information for the ESW and RHRSW systems. The corrosion rate of these systems is not volatile enough to warrant instantaneous readings for corrosion rates. Therefore, the basis for our corrosion monitoring program, as committed to in our response to Generic Letter 89-13, is still met without the use of the corrosion monitoring probes. The aforementioned FSAR Sections will be revised to reflect this change.