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 FACIL: 50-387 Susquehanna Steam Electric Station, Unit 1, Pennsylvania 05000387  
 AUTH. NAME: CURTIS, N.W. AUTHOR AFFILIATION: Pennsylvania Power & Light Co.  
 RECIP. NAME: SCHWENCER, A. RECIPIENT AFFILIATION: Licensing Branch 2

SUBJECT: Forwards plan for expanded reconciliation sampling program to show adequacy of engineering judgements made in large pipe design process. Final rept will be available 821112. Requests NRC allow operation up to 35%.

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*Handwritten signature*





Pennsylvania Power & Light Company

Two North Ninth Street • Allentown, PA 18101 • 215 / 770-5151

Norman W. Curtis  
Vice President-Engineering & Construction-Nuclear  
215 / 770-5381

October 14, 1982

Mr. A. Schwencer, Chief  
Licensing Branch No. 2  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

SUSQUEHANNA STEAM ELECTRIC STATION  
INDEPENDENT DESIGN REVIEW  
RECONCILIATION SAMPLING PROGRAM  
ER 100450 FILE 841-2  
PLA-1346

Docket No. 50-387

Dear Mr. Schwencer:

Attached is a plan for an expanded Reconciliation Sampling Program which PP&L is undertaking to show the adequacy of engineering judgements made in the large pipe design process. This program was described in general terms in our meeting of October 8, 1982.

We have asked Teledyne Engineering Services to review this program and provide you with their opinion on the adequacy of the program to address a finding of the Independent Design Review performed by Teledyne. In addition, Teledyne will audit this program to satisfy themselves that it is being satisfactorily implemented.

While we will keep you informed of our progress, a final report will not be available until about November 12, 1982. In the interim, however, we request that NRC allow operation of Susquehanna Unit 1 at power levels up to 35%. We believe this is acceptable for the following reasons:

- Based on the samples examined by Teledyne and PP&L, it is our judgement that the large pipe supports are adequate. The issue at hand questions a small fraction of the judgements made in the reconciliation process. However, we have not concluded that any pipe supports are unacceptable.
- Our experience on Susquehanna indicates that the piping systems are conservatively designed. No violations of code criteria have been found. Even if a small fraction of the engineering judgements made in the reconciliation process were in error, we would not expect a hanger or support to fail to function. We believe the likelihood of a system failure in normal service or under accident conditions is small. It is our expectation that the one support in question will be shown to be acceptable.

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- The combinations of events which challenge the piping systems integrity are extremely small.

We anticipate having some preliminary results from this program shortly; we will inform you of those results.

If you require further information, please call.

Very truly yours,

*W. Barberich for*

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

WEB/mks

Attachment

cc: R. L. Perch - USNRC  
D. F. Landers - TES

SUSQUEHANNA STEAM ELECTRIC STATION  
PLAN FOR RECONCILIATION SAMPLING PROGRAM

Purpose

The Reconciliation Sampling Program was undertaken to resolve concerns raised during the Independent Design Review, performed by Teledyne Engineering Services (TES). These concerns involve the use of engineering judgement in accepting the differences between the as-built condition and the design of large pipe hangers.

Program Definition

A large sample has been chosen for reexamination. For each hanger the design and as-built drawing will be compared. All differences will be identified and categorized as follows:

- Category I: Those differences which are considered insignificant, such as slight variations in dimensions.
- Category II: Those differences which are more significant, but which, after further investigation, are considered acceptable. Further investigation may be by engineering judgement or by simply referring to the as-designed calculation and noting what the requirements or actual stresses are.
- Category III: Those differences which are significant and require further evaluation. The evaluation would require an additional analysis or a more detailed analysis of the original calculation.

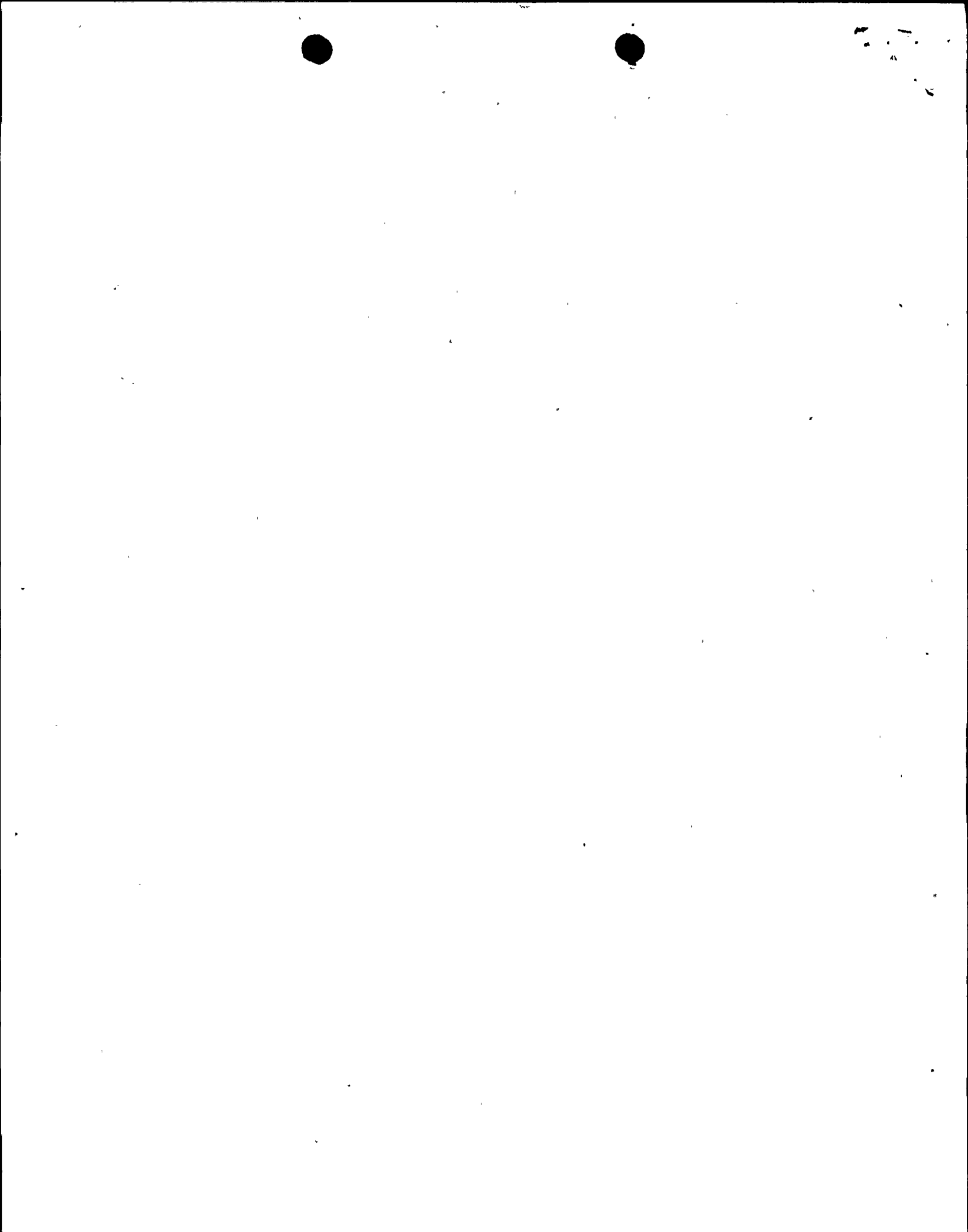
Documentation will be kept of judgements and analysis made for every hanger examined.

Sample Size

We have performed a calculation which suggests that a sample of 250 hangers would adequately characterize the population. For conservatism, we have chosen a sample of 500 hangers. The sample selected will be random with respect to systems but skewed in favor of anchors and rigid and operationally active snubbers with less consideration to dead weight type supports. Anchors and rigid supports are more complex and are more likely to have discrepancies requiring analysis.

Acceptance Criteria

A sample of 500 out of a total population of 3400 large pipe hangers will be reexamined. For this process, a rejected hanger is one that cannot be shown to meet code allowables by appropriate analysis. Should the number of rejected hangers be excessive (more than 2-4 in the sample of 500), the nature of the problem will be analyzed and a decision made on additional actions, including expanding the sample. Another indication of a problem which may require additional sampling would be an excessive number of discrepancies placed in Category III. Should this occur, the discrepancies will be assessed for significance, and the need for further action will be determined.



Management and Organization of Program

This program will be performed under the direct supervision of PP&L. Qualified Bechtel and contract piping design engineers will do the actual review, evaluation and analysis. Teledyne has agreed to audit the program and accept the results as completion of their Independent Design Review.