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Letter File	N-3
SP&E File	N-3
Date File	N-4

January 26, 1981

Mr. B.J. Youngblood, Chief
Licensing Branch No. 1
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

SUSQUEHANNA STEAM ELECTRIC STATION
INDUCTION HEATING STRESS IMPROVEMENT
ER 100450 FILE 883
PLA-600

Dear Mr. Youngblood:

This is to inform you that we have decided to perform Induction Heating Stress Improvement (IHSI) on Unit II. PP&L has reviewed the technical papers on IHSI issued by EPRI and Ishikawajima-Harima Heavy Industries Company, Ltd. (IHI) of Japan. Our evaluation has included discussions with EPRI and IHI concerning the technical evidence of the benefits of IHSI. The data and experience to date indicate that IHSI is an effective countermeasure against Inter Granular Stress Corrosion Cracking (IGSCC) and thus would be beneficial to have it performed on our Susquehanna Plant. We were just informed by IHI that IHSI have been performed on all plants (which are susceptible to IGSCC) in Japan.

We strongly recommend that IHSI be recognized as an effective countermeasure against IGSCC and thus credit be given for the performance of IHSI in place of the Augmented In-Service Inspection requirements.

We, therefore, request that you let us know your position on IHSI and, if necessary, what additional information is needed to take credit for performing IHSI.

Sincerely,

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

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INDUCTION HEATING STRESS IMPROVEMENT
AREAS OF CONCERN

1. What is experimental data which indicates there is a reduction in the susceptibility of austenitic stainless steel heat affect zone to IGSCC on the pipe I.D..
2. Based on the experimental data, what is the magnitude of the expected compressive stresses resulting from induction heat processing on pipes of different diameters, wall thickness and configuration.
3. How will the process be utilized on weld connection of elbows, "Ts" branch and "headers" of different size pipes?
4. How do you relate the experimental data in 1 and 2 to Susquehanna plant specific welds?
 - a) Identify welds which will be induction heat processed.
 - b) Identify systems and class of pipe which will be induction heat processed.
 - c) What is heat input for welds which will be induction heat processed.
 - d) What is carbon level of pipes which will be induction heat processed.
 - e) What are the maximum calculated stresses per line during normal operation in welds which will be induction heat processed?
 - f) Are there any welds which will be induction heat processed with a cumulative usage factor greater then 0.1? In what lines and systems are they and how high a usage factor has been calculated?
5. NRC concerns
 - a) Based upon items a) thru f), does the experimental data predict a reduction in the susceptibility to IGSCC of austenitic stainless steel pipe.
 - b) What is the long term effect of induction heating and normal operating temperatures on low temperature sensitization?
 - c) What are the long term effects of normal operating temperature and transient temperature on compressive ID stresses which result from induction heat processing?

