



Commonwealth Edison

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July 19, 1985

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: LaSalle County Station Unit 1
Application of Mechanical Stress
Improvement Process
NRC Docket No. 50-373

References (a): NUREG-1061, Volume 5
Summary - Piping Review Committee
Conclusions and Recommendations

(b): December 28, 1982 letter from C. W.
Schroeder to G. C. Lainas

Dear Mr. Denton:

Reference (b) provided Commonwealth Edison's response concerning NUREG-0313, Rev. 1 and indicated our intention to perform Induction Heating Stress Improvement (IHSI) on primary system welds susceptible to intergranular stress corrosion cracking (IGSCC) at the LaSalle Unit 1 first refueling outage.

Commonwealth Edison Company (CECo) is now alternatively considering the application of a Mechanical Stress Improvement Process (MSIP) as a means of improving the residual stress distribution in primary system piping circumferential butt welds. This Process evolved from the Pipelock technology developed by O'Donnell & Associates, Inc. (ODAI) in a cooperative program with CECo. It is applicable for pipe diameters ranging from four inches to twenty-eight inches.

The Mechanical Stress Improvement Process (MSIP) removes residual tensile stresses from weldments, thus mitigating subsequent stress corrosion cracking. This has recently been demonstrated by a successful magnesium chloride test performed by EPRI on a MSIP treated 12" weld. Simple mechanical tools are used to apply compressive stresses to the weldment, so that the application of the Process cannot cause existing cracks to grow. The required equilibrium tensile loads are carried by studs in the tools, not by the pipe or weldment. Only small strains need be applied, so that the Process produces no metallurgical effects and negligibly small low cycle fatigue damage. The Process is easily controlled using shims provided in the tools for that purpose. The acceptability of the process application can be confirmed by simple measurements taken after completion of the Process.

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Tests and analyses performed by ODAI, and independently checked and verified by Westinghouse, have shown that the MSIP Process produces compressive residual stresses comparable to those which can be reliably achieved by the Induction Heating Stress Improvement Process (IHSI). Commonwealth Edison Company also believes that the MSIP provides IGSCC mitigation equivalent to IHSI.

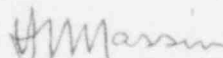
Should we elect to apply the MSIP technology, CECO would expect to achieve the same benefits and advantages as afforded to IHSI in NUREG-1061 (Reference (a)). Accordingly, we would obtain credit for MSIP as a stress improvement corrosion mitigator for the In-service Inspection Requirements. The purpose of this letter is to request NRC concurrence with this position.

The purpose of this submittal is to request your concurrence with the above position. A response in the timeframe of one month would be helpful for the LaSalle Unit 1 first outage (full 1985) scheduling.

Please direct any questions you may have concerning this matter to this office. A fee remittance in the amount of \$150.00 is enclosed pursuant to 10 CFR 170.

One signed original and ten (10) copies of this letter are provided for your use.

Very truly yours,



H. L. Massin
Nuclear Licensing Administrator

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cc: J. G. Keppler - Region III
Resident Inspector - LSCS
G. Wright - State of Ill.
A. Bournia - NRR
G. J. Diederich - LSCS
James Knight, Acting Director, Engineering Division - USNRC
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