

The Light company

Houston Lighting & Power, South Texas Project Electric Generating Station P. O. Box 289 Wadsworth, Texas 77483

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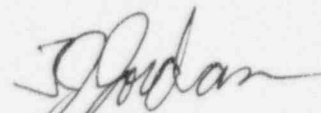
U. S. Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 400
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South Texas Project
Units 1 & 2
Docket Nos. STN 50-498; STN 50-499
Response to NRC Inspection
Report 50-498/95-17; 50-499/95-17

Reference: Letter from T. P. Gwynn, Nuclear Regulatory Commission to W. T. Cottle,
South Texas Project dated July 28, 1995 (ST-AE-HL-94263)

In June 1995 Nuclear Regulatory Commission inspectors reviewed the South Texas Project actions in response to Nuclear Regulatory Commission Bulletin 90-01 on loss of fill oil in safety-related pressure transmitters manufactured by Rosemount and documented the results of their findings in the referenced inspection report. The inspection report does not identify any items of non compliance; however, it does identify a number of aspects of our program that did not meet the expectations of the Nuclear Regulatory Commission. The attached information describes actions we have taken to enhance the program and provides additional details to clarify our program for managing the Rosemount loss of fill oil issue.

Should you have any questions, please contact M. Forsyth at (512) 972-7234 or me at (512) 972-7902.



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Attachment: South Texas Project Actions to Enhance the Program for Managing the
Rosemount Loss of Fill Oil Issue

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Project Manager on Behalf of the Participants in the South Texas Project

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**South Texas Project Actions to
Enhance the Program for
Managing the Rosemount Loss of Fill Oil Issue**

Trended Calibration Data Threshold Criteria:

The evaluation threshold criteria for trended calibration data is specified in South Texas Project Design Engineering Report No. 90-01.93/Revision 0, "Rosemount Transmitter Calibration Data Trending Program" Table 3 "Maximum Allowable Cumulative Drifts For 1153/1154 Oil Loss Transmitters" on page 17 of 200. The criteria is consistent with Rosemount Technical Bulletin No. 4 dated December 22, 1989. Individual analysis and trending spreadsheets incorporating these drift limits have been implemented for each transmitter in the Enhanced Surveillance program. The template spreadsheet used to create these spreadsheets was sent to Rosemount with plant calibration data for verification and validation for use in detecting fill-oil loss. Use of these spreadsheets has successfully identified, prior to transmitter failure, adverse trends in transmitters that were indicative of fill-oil loss, one of which was verified as such by Rosemount. The component analysis sheets that were performed further indicate the methodology used in evaluating these components for fill-oil loss. In addition, written instructions have been implemented that give guidance to reliability engineers for analysis and evaluation of trended data to identify failed or failing transmitters. Calibration review acceptance criteria is based on the cumulative zero and span drift thresholds and the historical trend analysis of these datum. These instructions specifically state conditions indicating a potentially adverse loss of fill-oil and actions warranted.

Detection of failures in transmitters not in the enhanced monitoring program:

Failure of transmitters not in the enhanced surveillance program have been detected in the past through a failure analysis process of the quarterly equipment history review. The failure analysis conducted for the "Systems Engineering Quarterly Report" for the quarter ending March 31, 1995, identified a potential adverse failure trend in Rosemount model 1151 transmitters. While the model 1151 is not part of the fill-oil loss suspect population, this is indicative that the analysis for this report has and will identify conditions warranting further investigation. This review process has recently been enhanced by implementation of a software tool for reliability engineers to consistently rate instrument performance severity levels for screening out-of-tolerance calibration data. In addition, presently and at the time of the inspection, all instrument calibrations are reviewed by Reliability Engineering as part of the Equipment History Program. This information is entered into the Equipment History

Database and trended. Adverse trends are identified and corrective action is taken to address the problem. As part of this process, any failures or out-of-tolerance conditions associated with Rosemount instruments are immediately brought to the attention of the Rosemount Loss-of-Fill Program Coordinator for further evaluation. Training on fill-oil loss detection has recently been provided to technicians.

Some of the symptoms of fill-oil loss are: loss of response time, output shift, slow drift in either direction, decrease in the noise or RMS signal, and inability to respond over the entire range. Review of STP equipment history over a period beginning May 29, 1989 and ending August 7, 1995, reveals that several transmitter failures within the suspect population not included in the Enhanced Surveillance program that exhibited fill-oil loss symptoms were identified and subsequently replaced. Three were identified as having 'Excessive Static Shift', five were characterized as having unstable output characteristics (e.g. poor repeatability, noise, erratic behavior, drift, ...), two were identified as being 'sluggish', and in one case two transmitters had been out of tolerance on two previous calibrations so all four transmitters in the group were prudently replaced.

Vendor hardware failure analysis and calibration data trending analysis:

The Nuclear Purchasing and Material Management Department has the responsibility for coordinating return of transmitters suspected of failing due to loss of fill-oil to the vendor. Vendor Field Return Analysis reports are reviewed by Reliability Engineering. Several vendor Failure Analysis Reports have recently been received. Analysis of nine transmitters sent to the vendor resulted in no signs of oil loss noted. An analysis of a tenth transmitter found the returned transmitter exhibited a slow response as a result of an oil leak at the glass to metal seal interface surrounding the platinum fill tube on the high pressure side of the delta sensing cell.

Evaluation or prevention of installation of failure-prone Rosemount transmitters:

Following receipt of NRC Bulletin 90-01, safety-related Rosemount transmitters were placed on "Restricted Issue" to prevent inadvertent issue of suspect transmitters. In 1992, a Station Problem Report was written identifying a problem with maintaining configuration management where part numbers and/or model number changes occurred. As an intermediate fix to this problem, the requirement for a "Tagging Restriction" was instituted until a permanent process could be developed. During the implementation stage of this intermediate fix, a question came up on how to identify items that had both a Restricted Issue and Tagging Restriction imposed. The Restricted Issue requirement was inadvertently replaced by the Tagging Restriction instead of both requirements being maintained.

To more closely control the Restricted Issue and Tagging Restriction processes, the Material Control group of Nuclear Purchasing and Material Management has assumed data entry requirements. All safety-related class bins containing Rosemount transmitter Model 1153 have been identified and verified currently on Restricted Issue. All occurrences of class bins where both indicators for Restricted Issue and Tagging Restriction were present for the same item have been identified. The database for these occurrences have been evaluated to have the correct status. The results of the investigation into the condition that led to the actions described in this paragraph were provided to Nuclear Purchasing, Material Management and Procurement Engineering personnel. In addition, Nuclear Purchasing and Material Management procedures were reviewed and found adequate for controlling Restricted Issue material.

Training:

Training on the issue regarding loss of fill oil in Rosemount pressure transmitters was recently conducted during Third Quarter 1995 Continuing Training for craft technicians and supervisors. The training lesson plan for future craft training will contain a discussion on the issue regarding loss of fill oil in Rosemount pressure transmitters.

Program implementing procedure:

Reliability Engineering has implemented written guidance to reliability engineers responsible for maintaining the Rosemount transmitter calibration data trending program. This written guidance specifies acceptance criteria, methodology for collecting and analyzing data, and expected corrective actions for Rosemount transmitters suspected of loss of fill oil.