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MIDDLE SOUTH UTILITIES SYSTEM

October 31, 1984

W3P84-2958
Q-3-A35.07.57
3-A1.01.04

Mr. John T. Collins
Regional Administrator, Region IV
U.S. Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76011

Dear Mr. Collins:

Subject: Waterford 3 SES
Docket No. 50-382
SIGNIFICANT CONSTRUCTION DEFICIENCY NO. 57
"Inadequate Instrumentation & Control Installations & Turnover Documentation"
Final Report

References:
1. LP&L letter W3P84-2583 dated September 18, 1984.
2. NRR letter dated June 13, 1984 from D.G. Eisenhut to J.M. Cain (LP&L).
3. LP&L letter W3P84-2810 dated October 4, 1984.

Reference 1 reopened the subject deficiency because of ongoing efforts associated with resolution of issues in reference 2. By reference 3 we informed you that LP&L anticipated submittal of the final report on SCD-57 by October 31.

Our review of the issues resolutions against the previously submitted final report SCD-57 has been completed and no modifications are needed. Attached as a resubmittal are two copies of the final report of SCD-57 (R1).

Very truly yours,

K.W. Cook

K.W. Cook
Nuclear Support & Licensing Manager

KWC:GEW:sms

cc: NRC, Director of I&E (15 copies)
NRC, Director of Management
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FINAL REPORT
SIGNIFICANT CONSTRUCTION DEFICIENCY NO. 57 R1
"INADEQUATE INSTRUMENTATION AND CONTROL INSTALLATIONS AND TURNOVER DOCUMENTATION"

INTRODUCTION

This final report is submitted pursuant to 10CFR50.55(e). It describes Instrumentation and Control (I&C) System Installations which were not in accordance with the design specifications. Additionally, the recently prepared system "as-built" drawings did not accurately reflect the actual installed conditions. These problems are considered reportable under the requirements of 10CFR50.55(e).

To the best of our knowledge, this problem has not been reported to the Nuclear Regulatory Commission pursuant to 10CFR21.

DESCRIPTION

In preparation for ECCS Flow Testing and Primary System Cold Hydrostatic Testing, Mercury Company of Norwood, Inc. (Installation Contractor for Instrumentation and Control Systems), submitted their installation, inspection, and test documentation and "as-built" drawings for the following plant Start-Up Systems (SUS):

a) SUS No. 59 - Containment Spray

b) SUS No. 60A - High Pressure Safety Injection

c) SUS No. 60B - Low Pressure Safety Injection

d) SUS No. 60C - Safety Injection Tanks

The Mercury submittal contained exceptions such that final Quality Assurance/ Quality Control certification was not provided.

Audits of the I&C System documentation in conjunction with As-Built Drawing review and walkdown surveillance revealed the following:

a) The "As-Built" drawings did not accurately depict existing installations. The problems consisted of (1) incorrect slope indications for tubing runs, (2) incorrect designations for seismic supports, (3) dimensional errors, and (4) inadequate design consideration for thermal expansion of tubing.

b) The actual installations had the following physical problems: (1) tubing runs with reverse slope, (2) uninstalled supports, (3) improper bolting and (4) tube touching track or bolt heads thereby causing tube deformity.

As a result of the system walkdown on SUS No. 60B, the Mercury Co. was informed of the deficiencies noted above.

After Mercury reworked I&C installations associated with SUS No. 60B and Mercury's Quality Control organization accepted the rework, many of the same generic-type problems were found to exist.

SAFETY IMPLICATIONS

Instrumentation associated with these systems are Safety Class 2 and 3. The subject instruments are required for plant parameter monitoring and for safe shutdown of the plant. If the deficiencies were left uncorrected, degradation could have occurred resulting in failure of the instruments to provide reliable information required by the Reactor Operators.

CORRECTIVE ACTION

On June 23, 1982, Mercury Company of Norwood, Inc., by direction of the Engineer, initiated implementation of the following corrections:

a) Reassigned crafts off safety-related systems installations and rework.

b) Identified rework teams of Craft, Foremen, Field Engineers, QC Inspector and Supervision who, upon completion of the retraining program satisfactory to the Engineer, proceeded with rework required for acceptable construction completion, documentation, and turnover of the aforementioned systems.

c) Developed documented retraining program, related to correcting the problems encountered.

d) After approval by the Engineer, this retraining program was implemented under the review of the Engineer with the rework teams identified in (b) above.

e) Subsequent to concurrence by the Engineer that this retraining program was properly executed for the teams, the Engineer authorized reassignment of craft to safety-related work.

f) The retraining program was extended to all Mercury personnel consistent with a training schedule.

g) Organizational changes were implemented resulting from a meeting with LP&L and Ebasco on June 24, 1982.

The retraining of Mercury personnel was performed in accordance with the Ebasco approved training program. The Training Program addressed project and Mercury Quality Program requirements with particular emphasis on deficient areas described in this SCD. The training addressed the general program requirements as well as the specific requirements for the Construction, Engineering, and Quality Assurance organizations within Mercury.

Mercury was allowed to begin safety related work, using personnel that had completed the retraining program. Walkdown teams were formed, comprised of Mercury Engineering and Quality Control, Ebasco Construction Engineering and Louisiana Power and Light Quality Assurance, to reinspect the four systems. The walkdown teams generated punchlist of their findings. The punchlist items were addressed as required by Mercury's Quality Program. Upon completion of the required rework, Mercury Isometrics were walked down, revised as necessary, and signed as "as-built" drawings. The results of the walkdowns of these four systems were evaluated and the walkdown program was extended to systems installed prior to June 23, 1982.

Additionally, Ebasco placed personnel in the contractor's engineering, and construction departments to assure corrective actions were effective and the work performed subsequent to the identification of the deficiencies met project requirements. Ebasco determined the key management personnel in Mercury did not have the qualifications necessary to accomplish effective corrective action. As a result, Ebasco placed personnel in these positions to assure completion of the contract in accordance with project requirements.

All corrective action is complete on SCD-57 and the applicable documentation has been reviewed and accepted by Ebasco Engineering and Quality Assurance.

This report is submitted as a revised Final Report.