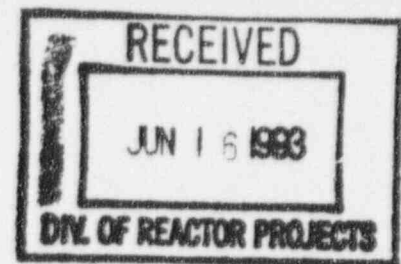




UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555



June 10, 1993

MEMORANDUM FOR: A. Bill Beach, Director
Division of Reactor Projects, Region IV

FROM: Charles W. Hehl, Team Manager
South Texas Diagnostic Evaluation Team

SUBJECT: INSPECTION PROGRAM CREDIT FOR THE DIAGNOSTIC
EVALUATION AT SOUTH TEXAS

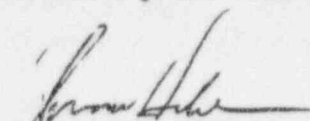
In accordance with NRC Directive 8.7, the South Texas Project (STP) Diagnostic Evaluation Team has compared the evaluation done at STP to the inspection program modules to establish credit. The DET recommends that Region IV take full or partial credit for the modules listed below. The DET recognizes that additional follow-up inspection may be needed in some areas based on performance observations documented in the DET report.

- 71500, Balance of Plant Inspection - 100% Close
- 71715, Sustained Control Room and Plant Observations - 100% Close
- 61700, Surveillance Procedures and Records - 100% Close
- 61701, Complex Surveillance - 50% Credit
- 62700, Maintenance Program Implementation - 100% Close
- 62704, Instrumentation Maintenance - 50% Credit
- 62705, Electrical Maintenance - 50% Credit
- 73756, In-service Testing of Pumps and Valves - 100% Close
- 82205, Shift Staffing and Augmentation - 25% Credit
- 81042, Testing and Maintenance - 25% Credit
- 37701, Facility Modifications - 100% Close
- 37828, Installation and Testing of Modifications - 100% Close
- 72701, Modification Testing - 100% Close
- 93801, Safety System Functional Inspection - 50% Credit
- 35702, Inspection of Quality Verification Function - 100% Credit
- 38701, Procurement Program - 50% Credit
- 38702, Receipt, Storage, and Handling of Equipment and Materials Program - 50% Credit
- 39702, Document Control Program - 50% Credit
- 40704, Implementation, Audit Program - 100% Close
- 54834, Housekeeping Controls - 100% Close
- 90700, Feedback of Operational Experience Information at Operating Power Reactors - 100% Close
- 92720, Corrective Action - 100% Close
- 93804, Risk-Based Operational Safety and Performance Inspection - 25% Credit

- 64704, Fire Protection/Prevention Program - 100% Close
- 71710, ESF System Walk-down - 100% Close
- 93702, Prompt On-site Response to Events at Operating Power Reactors - 100%Close
- 61726, Surveillance Observations - 100% Close
- 62703, Maintenance Observations - 100% Close
- 37700, Design, Design Changes, and Modifications - 100% Close
- 40500, Evaluation of Licensee Self-Assessment Capability - 100% Close

The hours expended in the evaluation are not included as entry of these hours into RITS/MIPS would result in a financial charge to the licensee for this activity. The NRC resource expenditure for a DET is not directly assessed the subject licensee.

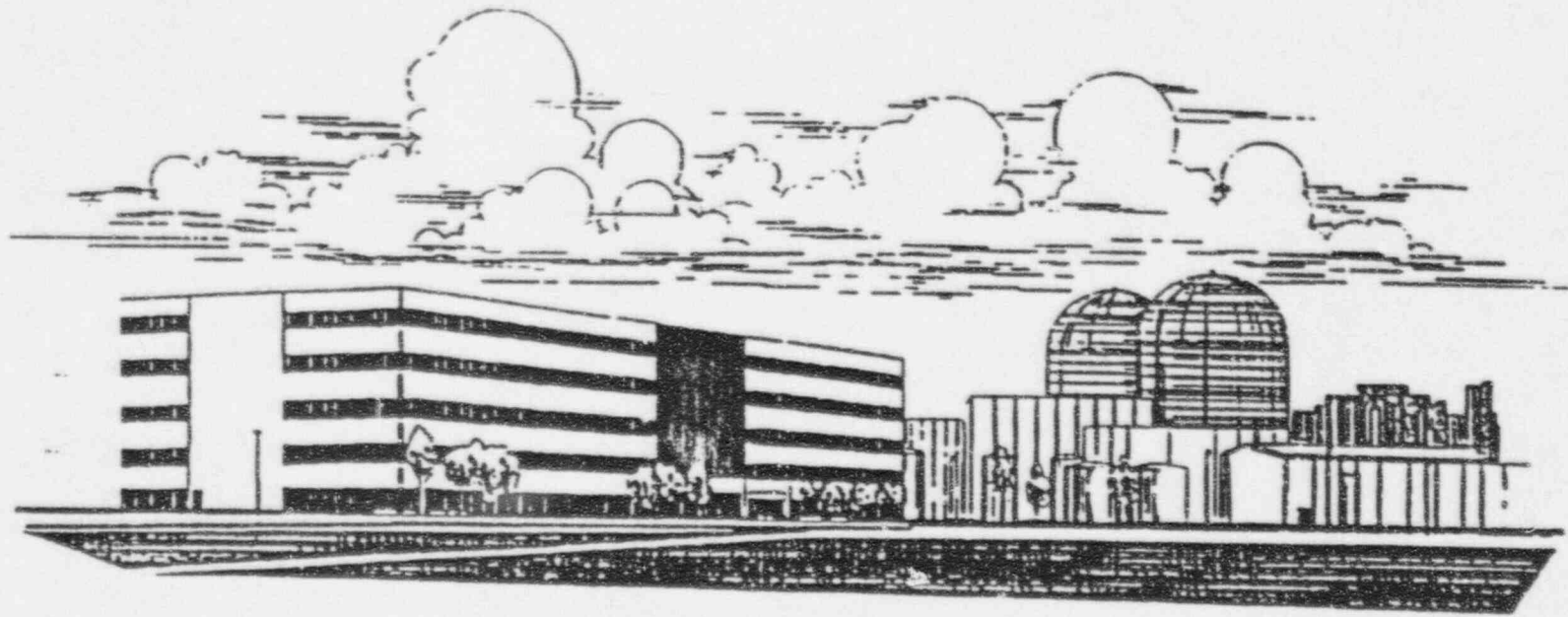
If there are any questions regarding this information please contact me at (215) 337-5229.



Charles W. Hehl

cc: ELJordan
SDRubin
JLMilhoan

SOUTH TEXAS PROJECT DIAGNOSTIC EVALUATION TEAM EDO BRIEFING



SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION

6/9
May 27, 1993

SELECTION OF SOUTH TEXAS BASED ON

- o Decline in Performance in the Last Two SALP Reports**
- o Repetitive Hardware Problems**
- o Significant Numbers of Personnel Errors**
- o Number of Recent Management Changes**
- o Organizational Performance Problems Not Well Understood**

DET GOALS AND OBJECTIVES

- o Provide Information to Supplement Other Assessment Data Available to NRC Senior Management**
- o Evaluate Licensee Management Involvement and Effectiveness with Respect to Safe Plant Operation**
- o Evaluate the Effectiveness of the Licensee's Improvement Programs and Plans**
- o Determine the Root Causes of Safety-Related Equipment and Performance Problems**

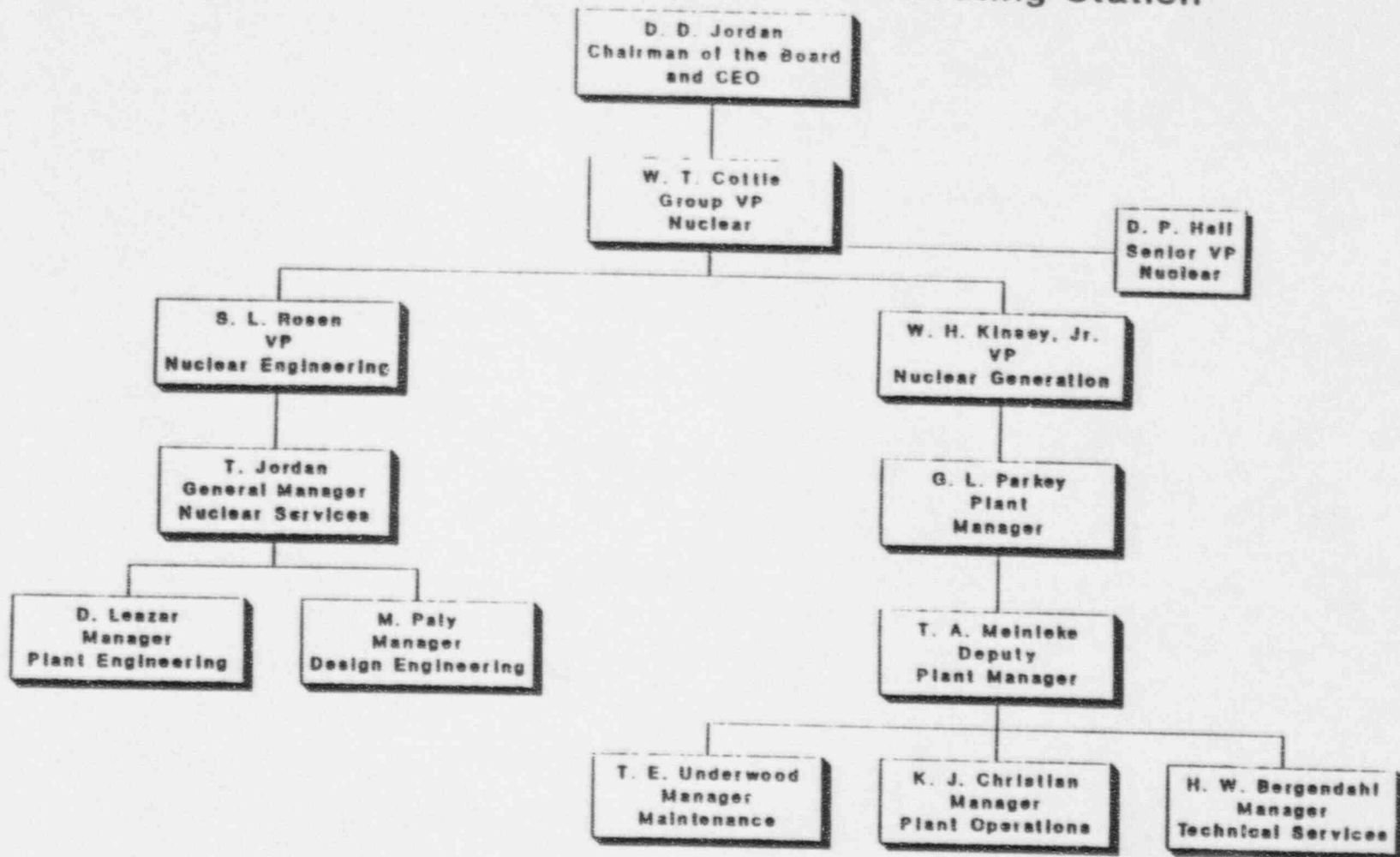
DET METHODOLOGY

- o 15-Member Team: 3-OPS, 4-M&T, 4-ENG, 4-M&O**
- o 5-Week Evaluation: 3 Weeks On-site, 2 Weeks In-office**
- o Over 140 Interviews Conducted From COB/CEO to RPO**
- o 3 Days of Near Round-the-Clock CR Observation**
- o Indepth Review of 4 Systems**

Houston Lighting and Power Company

Organizational Structure

South Texas Project Electric Generating Station



RECENT CORRECTIVE ACTIONS

- o Replaced Group Vice President, Nuclear**
- o Replaced Vice President, Nuclear Generation**
- o Recruiting Replacement for Vice President, Engineering**
- o Conducted Pre-DET Evaluation**
- o Developing New Station Master Operating Plan**
- o Significantly Expanded Scope of Unit 1 Outage**

DET FINDINGS HIGHLIGHTS

- o Marginal OPS Staffing Levels Considering the Workload
- o Credibility of Management Questioned by CR Staff Due to Conflicting Guidance
- o Poor Equipment Condition
- o Corrective, Preventative and Predictive Maintenance Problems Impacted Equipment Reliability
 - T-Drains Not Installed on Several EQ Valves
 - Standby Diesel Gen. Fuel Injector Pump Failures
 - QPDS Computer Card Seismic Fasteners Missing
 - HHSI Motor Damaged
 - FWIV Bypass Valve

DET FINDINGS HIGHLIGHTS

(Continued)

- o Periodic and Post Maintenance Testing Problems**
 - CR HVAC Charcoal Adsorber Test**
 - SDG Inoperable After Maintenance**

- o Ineffective Planning, Scheduling and Work Control Processes**

- o Weak Engineering Support**
 - Target Rock SOVs**
 - AFW Flow Control Stop Check**

- o Ineffective System Engineering Program Implementation**

DET FINDINGS HIGHLIGHTS

(Continued)

- o Poor Utilization of Operational Feedback Experience**
- o Limited Use of Risk Insights**
- o Weaknesses in Configuration Control**
- o Backlogs Large & Not Well Managed or Defined**
 - Corrective Work Requests**
 - Engineering Mods and Other Work Requests**
 - Vendor Manual & Drawing Changes**
 - Station Problem Reports**
 - PM Procedure Changes**
 - Review of Industry Operating Experience**

DET FINDINGS HIGHLIGHTS

(Continued)

- o Essential Chilled Water Design, Maintenance and Testing Issues**
 - Cold Weather DBA Capability Questionable**
 - CR HVAC Tornado Dampers Never Tested**

- o Fire Protection Operability Issues**

- o Ineffective Problem Identification, Root Cause Analysis and Corrective Actions**

- o Self-Assessment and Quality Oversight Functions Not Effectively Utilized**

OPERATIONS WEAKNESSES

- MARGINAL OPS STAFFING LEVEL CONSIDERING WORKLOAD
- INADEQUATE SITE SUPPORT TO OPERATIONS
- CONFLICTING MANAGEMENT EXPECTATIONS AND POLICIES
- INCONSISTENT OPERATOR PERFORMANCE
- INEFFECTIVE PROBLEM IDENTIFICATION AND RESOLUTION

OPERATIONS POSITIVE OBSERVATIONS

- DEDICATION
- CONTROL BOARD AWARENESS
- SHIFT TURNOVERS
- RADIOLOGICAL HOUSEKEEPING

MAINTENANCE AND TESTING WEAKNESSES

- INEFFECTIVE CORRECTIVE MAINTENANCE
- PREVENTIVE MAINTENANCE PROGRAM LESS THAN FULLY EFFECTIVE
- MAINTENANCE TRAINING DEFICIENCIES
- DEFICIENCIES IN THE SPARE PARTS PROGRAM
- INADEQUATE SUPPORT TO MAINTENANCE

MAINTENANCE AND TESTING WEAKNESSES (Continued)

- INEFFICIENT WORK CONTROL PROCESS
- POST MAINTENANCE TESTING NOT ALWAYS EFFECTIVE
- PERIODIC TESTING NOT ALWAYS EFFECTIVE

MAINTENANCE AND TESTING POSITIVE OBSERVATIONS

- QUALITY OF MAINTENANCE FACILITIES
- TECHNICAL SUPPORT ENGINEER POSITION
- GENERAL MAINTENANCE SUPERVISOR POSITION

ENGINEERING SUPPORT WEAKNESSES

- WEAK SUPPORT IN RESOLVING PLANT PROBLEMS
- SYSTEM ENGINEERING PROGRAM NOT EFFECTIVELY IMPLEMENTED
- ENGINEERING WORK BACKLOGS WERE LARGE, POORLY TRACKED, AND NOT WELL MANAGED
- USE OF OPERATIONAL EXPERIENCES WAS INADEQUATE
- INADEQUATE SUPPORT TO ENGINEERING

ENGINEERING SUPPORT WEAKNESSES (Continued)

- CONFIGURATION CONTROL WEAKNESSES
- ESSENTIAL CHILLED WATER SYSTEM DESIGN, MAINTENANCE, AND TESTING ISSUES CHALLENGE OPERABILITY
- UNTIMELY RESOLUTION OF FIRE PROTECTION ISSUES

ENGINEERING SUPPORT POSITIVE OBSERVATIONS

- TECHNICAL SUPPORT ENGINEERS
- DESIGN BASIS DOCUMENTATION PROGRAM

MANAGEMENT AND ORGANIZATION (WEAKNESSES)

- INEFFECTIVE MANAGEMENT DIRECTION AND OVERSIGHT
- POOR SUPPORT AND RESOURCE UTILIZATION
- COMMUNICATIONS AND TEAMWORK WERE WEAK
- INEFFECTIVE CORRECTIVE ACTION PROCESS
- INEFFECTIVE UTILIZATION OF SELF ASSESSMENT AND QUALITY OVERSIGHT FUNCTIONS
- INADEQUATE INFORMATION SYSTEMS

MANAGEMENT AND ORGANIZATION

POSITIVE OBSERVATIONS

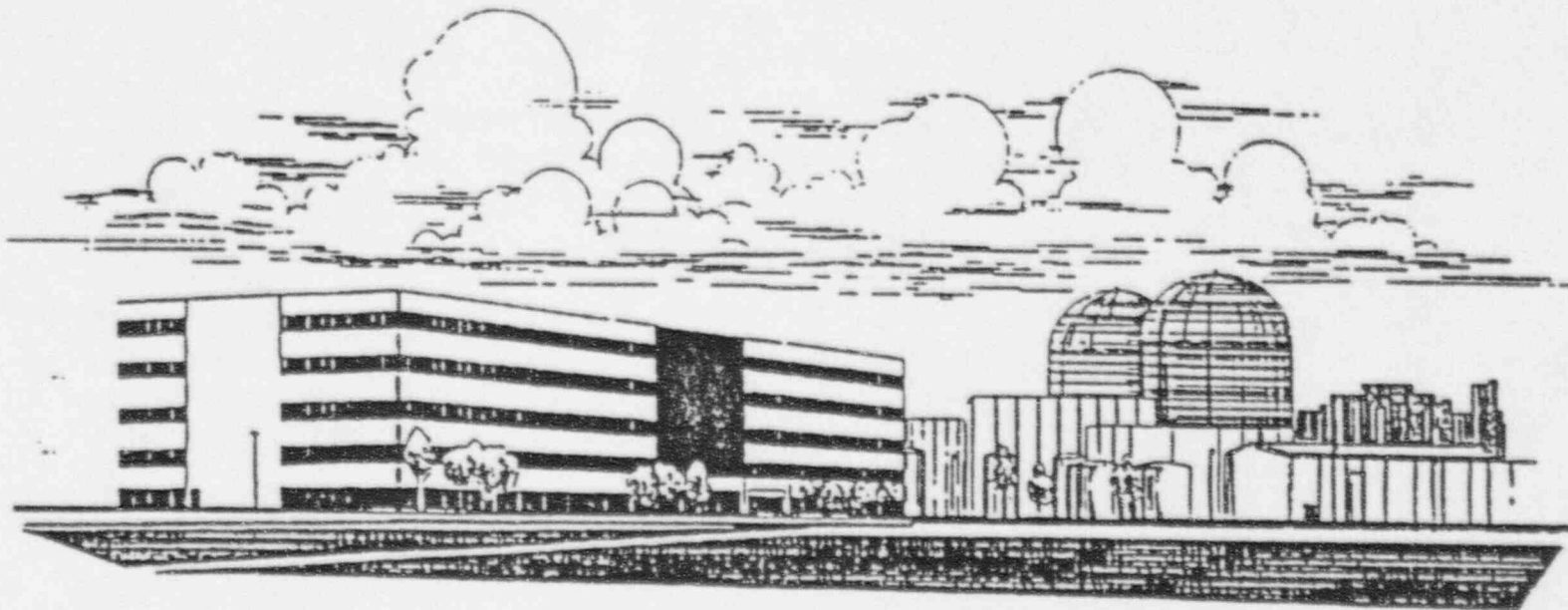
- RECENT MASTER OPERATING PLAN IMPROVEMENTS
- RECENT MANAGEMENT AND ORGANIZATIONAL CHANGES, COMPLETED AND UNDERWAY

ROOT CAUSES

- FAILURE OF MANAGEMENT TO PROVIDE ADEQUATE SUPPORT
- INEFFECTIVE MANAGEMENT DIRECTION AND OVERSIGHT
- FAILURE TO EFFECTIVELY UTILIZE SELF-ASSESSMENT AND QUALITY OVERSIGHT FUNCTIONS
- INEFFECTIVE ROOT CAUSE/CORRECTIVE ACTION PROCESS

6/5

SOUTH TEXAS PROJECT DIAGNOSTIC EVALUATION TEAM FINDINGS



SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION

6/5

June 3, 1993

MAINTENANCE AND TESTING POSITIVE OBSERVATIONS

- **QUALITY OF MAINTENANCE FACILITIES**
- **TECHNICAL SUPPORT ENGINEER POSITION**
- **GENERAL MAINTENANCE SUPERVISOR POSITION**

ENGINEERING SUPPORT WEAKNESSES

- **WEAK SUPPORT IN RESOLVING PLANT PROBLEMS**
- **SYSTEM ENGINEERING PROGRAM NOT EFFECTIVELY IMPLEMENTED**
- **ENGINEERING BACKLOGS WERE LARGE, POORLY TRACKED, AND NOT WELL MANAGED**
- **USE OF OPERATIONAL EXPERIENCES WAS INADEQUATE**
- **INSUFFICIENT SUPPORT TO ENGINEERING**

ENGINEERING SUPPORT WEAKNESSES (Continued)

- **CONFIGURATION CONTROL WEAKNESSES**
- **ESSENTIAL CHILLED WATER SYSTEM DESIGN, MAINTENANCE, AND TESTING ISSUES CHALLENGE OPERABILITY**
- **UNTIMELY RESOLUTION OF FIRE PROTECTION ISSUES**

ENGINEERING SUPPORT POSITIVE OBSERVATIONS

- **TECHNICAL SUPPORT ENGINEERS**
- **DESIGN BASIS DOCUMENTATION PROGRAM**

MANAGEMENT AND ORGANIZATION WEAKNESSES

- **INEFFECTIVE MANAGEMENT DIRECTION AND
OVERSIGHT**
- **POOR SUPPORT AND RESOURCE UTILIZATION**
- **COMMUNICATIONS AND TEAMWORK WERE WEAK**
- **INEFFECTIVE CORRECTIVE ACTION PROCESS**
- **INEFFECTIVE UTILIZATION OF SELF ASSESSMENT
AND QUALITY OVERSIGHT FUNCTIONS**
- **INADEQUATE INFORMATION SYSTEMS**

MANAGEMENT AND ORGANIZATION POSITIVE OBSERVATIONS

- **RECENT MASTER OPERATING PLAN IMPROVEMENTS**
- **RECENT MANAGEMENT AND ORGANIZATIONAL CHANGES, COMPLETED AND UNDERWAY**

ROOT CAUSES

- FAILURE OF MANAGEMENT TO PROVIDE ADEQUATE SUPPORT
- INEFFECTIVE MANAGEMENT DIRECTION AND OVERSIGHT
- FAILURE TO EFFECTIVELY UTILIZE SELF-ASSESSMENT AND QUALITY OVERSIGHT FUNCTIONS
- INEFFECTIVE ROOT CAUSE/CORRECTIVE ACTION PROCESS

SELECTION OF SOUTH TEXAS BASED ON

- **DECLINE IN PERFORMANCE IN THE LAST TWO SALP REPORTS**
- **REPETITIVE HARDWARE PROBLEMS**
- **SIGNIFICANT NUMBERS OF PERSONNEL ERRORS**
- **NUMBER OF RECENT MANAGEMENT CHANGES**
- **ORGANIZATIONAL PERFORMANCE PROBLEMS NOT WELL UNDERSTOOD**

DET GOALS AND OBJECTIVES

- **PROVIDE INFORMATION TO SUPPLEMENT OTHER ASSESSMENT DATA AVAILABLE TO NRC SENIOR MANAGEMENT**
- **EVALUATE LICENSEE MANAGEMENT INVOLVEMENT AND EFFECTIVENESS WITH RESPECT TO SAFE PLANT OPERATION**
- **EVALUATE THE EFFECTIVENESS OF THE LICENSEE'S IMPROVEMENT PROGRAMS AND PLANS**
- **DETERMINE THE ROOT CAUSES OF SAFETY-RELATED EQUIPMENT AND PERFORMANCE PROBLEMS**

DET METHOLOGY

- 15-MEMBER TEAM: 3-OPS, 4-M&T, 4-ENG, 4-M&O
- 5-WEEK EVALUATION: 3 WEEKS ON-SITE, 2 WEEKS IN-OFFICE
- OVER 140 INTERVIEWS CONDUCTED FROM COB/CEO TO RPO
- 3 DAYS OF NEAR ROUND-THE-CLOCK CR OBSERVATION
- INDEPTH REVIEW OF 4 SYSTEMS

OPERATIONS WEAKNESSES

- **MARGINAL OPS STAFFING LEVEL CONSIDERING WORKLOAD**
- **POOR SITE SUPPORT TO OPERATIONS**
- **CONFLICTING MANAGEMENT EXPECTATIONS AND POLICIES**
- **INCONSISTENT OPERATOR PERFORMANCE**
- **INEFFECTIVE PROBLEM IDENTIFICATION AND RESOLUTION**

OPERATIONS

POSITIVE OBSERVATIONS

- **DEDICATION**
- **CONTROL BOARD AWARENESS**
- **SHIFT TURNOVERS**
- **RADIOLOGICAL HOUSEKEEPING**

MAINTENANCE AND TESTING WEAKNESSES

- **INEFFECTIVE CORRECTIVE MAINTENANCE**
- **PREVENTIVE MAINTENANCE PROGRAM LESS THAN FULLY EFFECTIVE**
- **MAINTENANCE TRAINING DEFICIENCIES**
- **DEFICIENCIES IN THE REPLACEMENT PARTS PROGRAM**
- **INSUFFICIENT SUPPORT TO MAINTENANCE**

MAINTENANCE AND TESTING WEAKNESSES (Continued)

- **INEFFICIENT WORK CONTROL PROCESS**
- **POST MAINTENANCE TESTING NOT ALWAYS EFFECTIVE**
- **PERIODIC TESTING NOT ALWAYS EFFECTIVE**

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

June 24, 1993



MEMORANDUM FOR: Edward L. Jordan, Director
Office of Analysis & Evaluation
of Operational Data

FROM: Jack W. Roe, Director
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

SUBJECT: SOUTH TEXAS PROJECT DIAGNOSTIC EVALUATION PROPOSED FOLLOW-UP
STAFF ACTIONS (YELLOW TICKET NO. 0930124)

My staff has reviewed the proposed staff actions resulting from the South Texas Project Diagnostic Evaluation. Each action item was discussed with the appropriate technical branch within NRR. We note that most actions are a combination of generic issues and site-specific issues.

NRR plans to assign those items that are generic to the appropriate technical divisions within NRR. NRR recommends that the plant-specific items be assigned to Region IV with assistance from NRR as necessary. The South Texas Project Oversight Panel, which is composed of NRR and RIV staff, will review the conclusions regarding the plant-specific issues. I have enclosed a list that delineates those issues that appear to be generic for which NRR will have the lead. We note that some of these issues are similar to ones already under review by the staff, i.e., action items 1.b, 5, and 8.

If you have any comments regarding this memorandum, please contact Lawrence E. Kokajko (Senior Project Manager for the South Texas Project) at telephone number 504-1309.

Jack W. Roe

Jack W. Roe, Director
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Enclosure:
Recommended Tasks and
Responsibilities

~~9306290144 XA~~

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ENCLOSURE

RECOMMENDED TASKS AND RESPONSIBILITIES

- Action 1.a. - Region IV
- Action 1.b. - NRR
- Action 2.a. - Region IV (with NRR assistance)
- Action 2.b. - NRR
- Action 2.c. - NRR
- Action 3 - Region IV (with NRR assistance)
- Action 4.a. - Region IV
- Action 4.b. - NRR
- Action 4.c. - NRR
- Action 5 - NRR (with RIV assistance)
- Action 6.a. - NRR
- Action 6.b. - NRR
- Action 7.a. - Region IV (with NRR assistance)
- Action 7.b. - NRR
- Action 8 - NRR
- Action 9 - Region IV (with NRR and AEOD assistance)