

UNITED STATES

NUCLEAR REGULATORY COMMISSION

REGIONIV

611 RYAN PLAZA DRIVE, SUITE 400 ARLINGTON, TEXAS 76011-8064

APR - 8 1996

Entergy Operations, Inc.

ATTN: John R. McGaha, Vice President -Operations, River Bend Station

P.O. Box 220

St. Francisville, Louisiana 70775

SUBJECT: RIVER BEND STATION LONG-TERM PERFORMANCE IMPROVEMENT PLAN MEETING

This refers to the public meeting conducted in the Region IV office on March 20, 1996, in which Entergy Operations, Incorporated, presented an overview of performance and the status of the long term performance improvement program for River Bend Station. A copy of the Entergy Operations, Incorporated, presentation material is provided as Enclosure 1. The meeting attendance list is provided as Enclosure 2.

We appreciated the time and effort that your staff gave to prepare and present this material. We found your presentation to be a self-critical, introspective review of performance problems with emphasis placed on proposed improvement plans to address areas of concern. In addition, the meeting was helpful in our understanding of your staff's improvement objectives. Improvements in performance and management oversight have been noted at River Bend Station; however, sustained and additional efforts are needed to continue this improving trend. Region IV will continue to closely monitor plant performance.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy or this letter will be placed in the NRC's Public Document Room.

Should you have any questions concerning this matter, we will be pleased to discuss them with you.

Sincerely,

J. E. Dyer, Director

Division of Reactor Projects

Enclosures:

1. Licensee Presentation

2. Attendance List

CC:

Entergy Operations, Inc.

ATTN: Executive Vice President and
Chief Operating Officer
P.O. Box 31995

P.O. Box 31995

Jackson, Mississippi 39286-1995

Entergy Operations, Inc. ATTN: Vice President Operations Support P.O. Box 31995

Jackson, Mississippi 39286-1995

Entergy Operations, Inc.
ATTN: General Manager
Plant Operations
River Bend Station

P.O. Box 220

St. Francisville, Louisiana 70775

Entergy Operations, Inc.

ATTN: Director - Nuclear Safety River Bend Station

P.O. Box 220

St. Francisville, Louisiana 70775

Wise, Carter, Child & Caraway P.O. Box 651 Jackson, Mississippi 39205

Winston & Strawn ATTN: Mark J. Wetterhahn, Esq. 1401 L Street, N.W. Washington, D.C. 20005-3502

Entergy Operations, Inc.
ATTN: Manager - Licensing
River Bend Station
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St. Francisville, Louisiana 70775

The Honorable Richard P. Ieyoub Attorney General P.O. Box 94095 Baton Rouge, Louisiana 70804-9095

H. Anne Plettinger 3456 Villa Rose Drive Baton Rouge, Louisiana 70806 President of West Feliciana Police Jury P.O. Box 1921 St. Francisville, Louisiana 70775

Cajun Electric Power Coop. Inc. ATTN: Larry G. Johnson, Director Systems Engineering 10719 Airline Highway P.O. Box 15540 Baton Rouge, Louisiana 70895

William H. Spell, Administrator Louisiana Radiation Protection Division P.O. Box 82135 Baton Rouge, Louisiana 70884-2135 L. J. Callan
DRP Director
Branch Chief (DRP/D)
Project Engineer (DRP/D)
Branch Chief (DRP/TSS)
Resident Inspector

Senior Resident Inspector (Grand Gulf) Senior Resident Inspector (Cooper) DRS-PSB MIS System RIV File Leah Tremper (OC/LFDCB, MS: TWFN 9E10)

DOCUMENT NAME:

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GEWerner; coryula	PHHarvan	JEDyer Jub	
04/4/96	04/97/96	04/6/96	

OFFICIAL RECORD COPY

bcc to DMB (IEO1)

bcc distrib. by RIV:

L. J. Callan DRP Director Branch Chief (DRP/D) Project Engineer (DRP/D) Branch Chief (DRP/TSS) Resident Inspector Senior Resident Inspector (Grand Gulf) Senior Resident Inspector (Cooper) DRS-PSB MIS System RIV File Leah Tremper (OC/LFDCB, MS: TWFN 9E10)

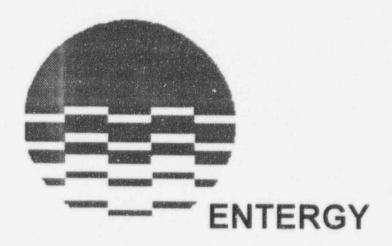
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04/4/96	04/9/196	04/6/96	

OFFICIAL RECORD COPY

RBS/NRC PERFORMANCE REVIEW MEETING



March 20, 1996

RBS / NRC PERFORMANCE REVIEW MEETING AGENDA

I. INTRODUCTION

John McGaha Vice President Operations

II. PLANT

Mike Krupa Manager Operations

OUTAGE MANAGEMENT

Tom Hildebrandt Outage Manager

III. PEOPLE

Early Ewing Manager Maintenance

IV. PROCESSES

Ted Leonard
Director Engineering

V. LTPIP

Jim Fisicaro
Director - Nuclear
Safety

VI. SUMMARY and CONCLUSIONS

John McGaha Vice President Operations

INTRODUCTION

- Purpose
- Performance Overview

JOHN McGAHA Vice President Operations

PURPOSE OF MEETING

- Performance Overview
 - What We've Accomplished
 - Where We See Ourselves
 - Where We're Going
- · Focus On 3 P's
 - Plant
 - » Outage Performance
 - People
 - Processes

- Address Four Major Root Causes
 - Planning, Goal Setting, Performance
 Monitoring and Management Feedback Have
 Not Been Effective
 - Management and Leadership Skills Have Not Kept Pace with the Level of Change Required
 - Problem Identification and Problem Solving Methods Have Not Been Consistently Applied to Improve Performance
 - Critical Station Work Processes Are Inefficient and Have Allowed Backlogs of Work to Occur

- Rotations
 - General Manager Plant Operations
 - Manager Operations
 - Manager Performance and System Engineering
 - Manager Licensing
 - Other
- People Development
- Resource Sharing
- Union Relations

- July 1995 Industry Review
 - RBS Comparable to Top Performers In Many Areas
 - LTPIP Progressing Better Than Expected
- 8 Months Left in Plan Implementation
- Many Successes
- Isolated Areas Not Meeting Expectations
- Check and Adjust Philosophy Directing Focus Where Needed

- · Focus on 3 P's
 - Plant
 - People
 - Processes
- · Self-Critical Culture

PLANT

- Historical Overview
- Improvement Approach
- · Results
- Areas of Continued Focus
- Operations Perspective

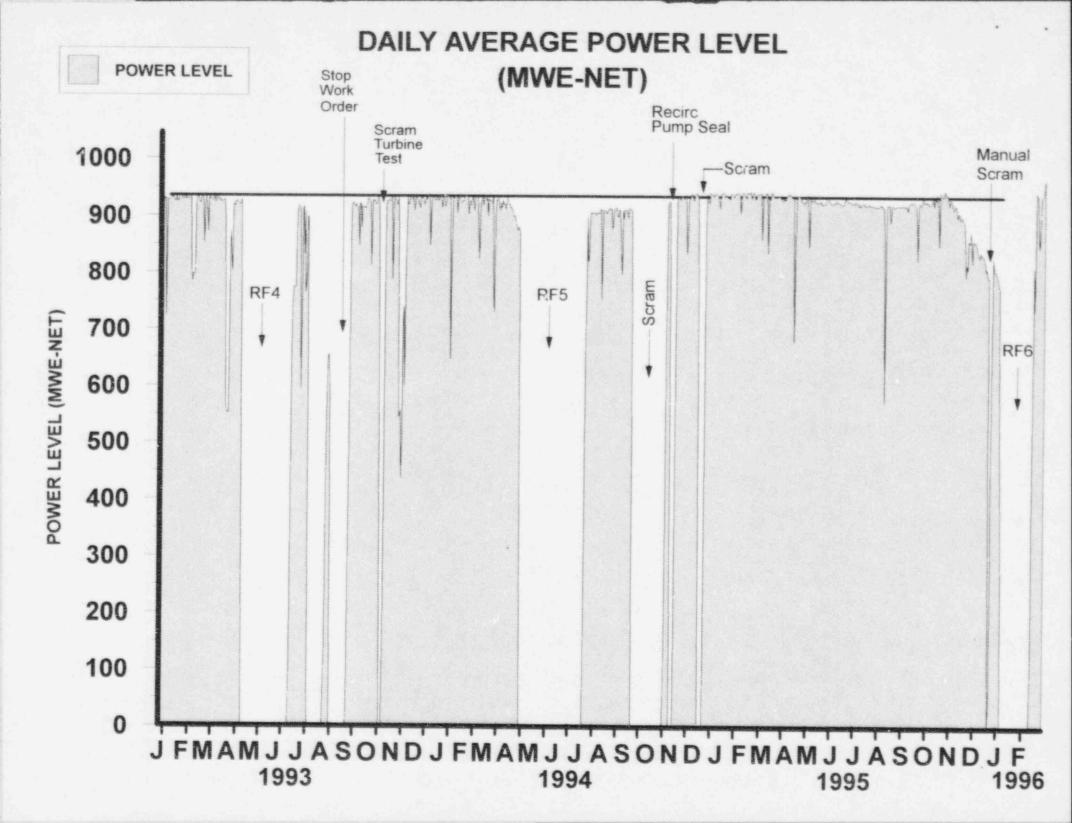
MIKE KRUPA Manager Operations

HISTORICAL OVERVIEW

- Numerous Long Term Equipment Problems
- 3 Year Average Capacity Factors Prior to 1994 <60%
- Inadequate Availability / Reliability of Plant Systems
 - Reactor Core Isolation Cooling
 - Control Building Chillers
 - Containment Airlocks
 - Feedwater Pumps

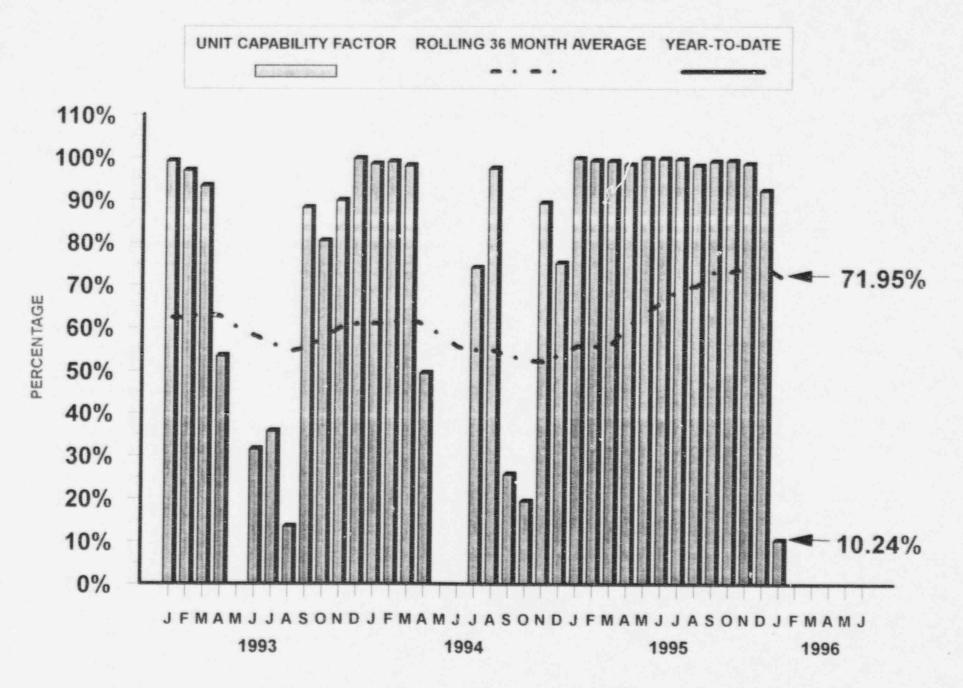
IMPROVEMENT APPROACH

- Improved Plant Performance / Materiel Condition Focus of LTPIP
- · 3 Year Plan
- Two Refuel Outages
- Developed Top 20 Equipment Challenges
- Long Standing Equipment Problem List
- Focus on Maintenance Backlog and Prioritization
- Results



UNIT CAPABILITY FACTOR

ROLLING 36 MONTH AVERAGE



OPERATING PERFORMANCE

INPO PERFORMANCE INDICATORS RIVER BEND ACTUAL 1995 GOAL

UNIT CAPABILITY FACTOR	Colum	98.33%	≥ 92%
UNPLANNED CAPABILITY LOSS	O.	1.44%	≤ 4.5%
SCRAMS	Of The second	0	≤1
HP SYSTEM PERFORMANCE	Chi	0.008	≤ 0.025
LP SYSTEM PERFORMANCE	Of w	0.010	≤ 0.025
AC SYSTEM PERFORMANCE	Contract of the second	0.018	≤ 0.025

OPERATING PERFORMANCE

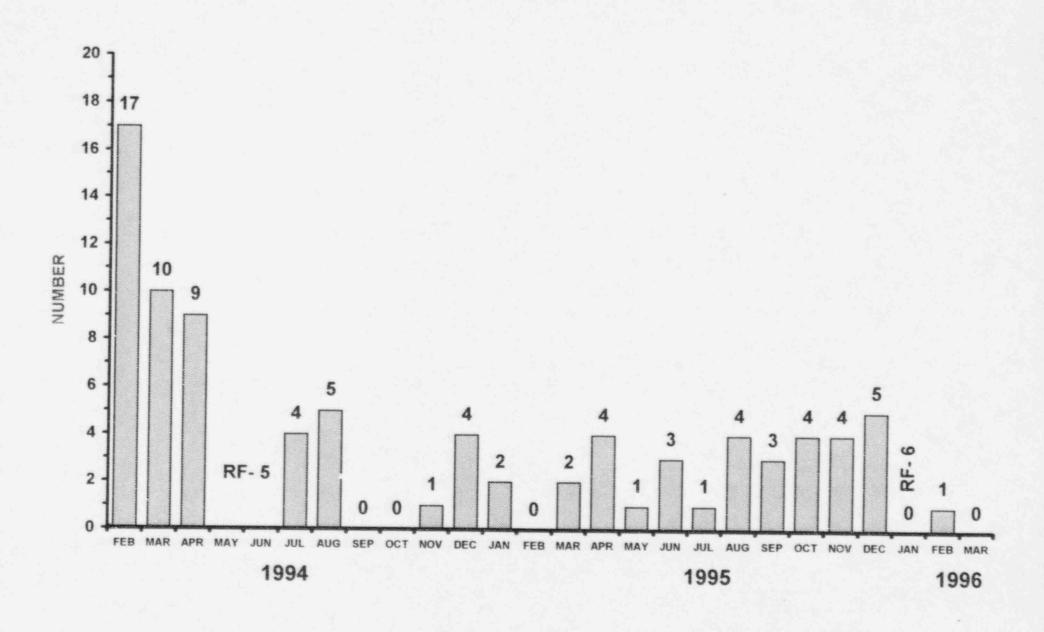
INPO PERFORMANCE INDICATORS

RIVER	BEND	ACTUAL	1995 GOAL
RADIATION EXPOSURE	ed	79.4	≤ 100
RADWASTE GENERATED	Contract of the second	6026.3	≤ 21,000ft3
INDUSTRIAL SAFETY	Colum	0.224	≤ 0.5
THERMAL PERFORMANCE	Of the	99.7%	≥ 99.3%
FUEL RELIABILITY	Colonia	471 No Defects	Zero Defects
CHEMISTRY	O	0.248	≤ 0.3

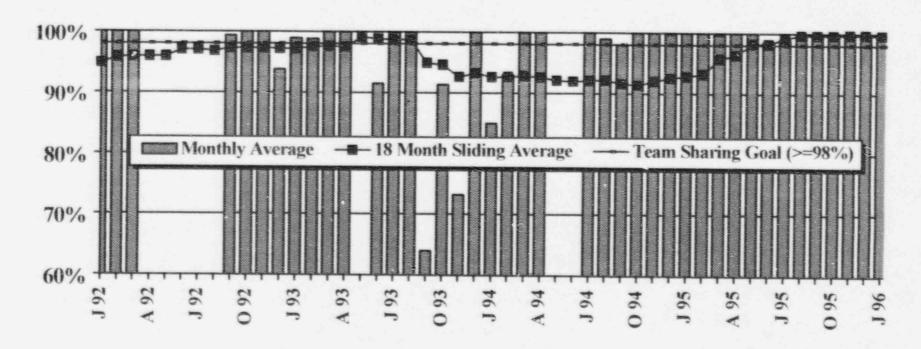
RESULTS

- Improvement In Key System Performance
 - Reactor Core Isolation Cooling
 - Residual Heat Removal
 - Standby Service Water
 - Instrument Air System
 - Main Steam SRVs
- Competitive Results from July 1995 Industry Safety System Performance Comparison
 - High Pressure Core Spray
 - Residual Heat Removal
 - Reactor Core Isolation Cooling

SHUTDOWN LCO'S Plant Challenges Due To Equipment Failures

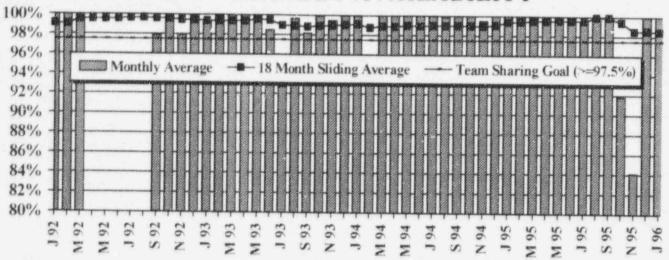


RCIC SYSTEM STANDBY AVAILABILITY*

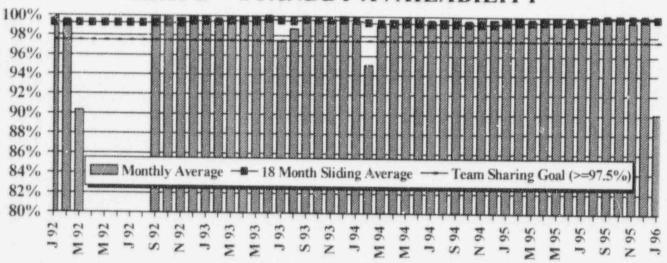


^{*} Available hours / Total Required hrs

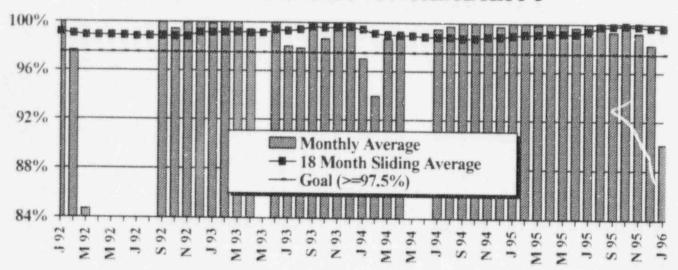
RHR'A' - STANDBY AVAILABILITY*



RHR'B' - STANDBY AVAILABILITY*



RHR'C' - STANDBY AVAILABILITY*



^{*} Available hours / Total Required hrs

RESULTS

- Developed and Addressing Top 20 Reliability Issues
 - Significant Progress Made
 - Living Document
- Reduction of Control Room Deficiencies
 - Past Year: 165 Reduced to 83
- Maintenance Backlog Reduction
- Management involvement in Improvement of Plant Materiel Condition

Top 20 Plant Equipment Issues

Resolved

ISSUE	DESCRIPTION
Instrument Air System	IAS and SAS compressor unreliability and relief valve problems.
Radiation Monitoring System	General unreliability of several components.
Solenoid Operated Valves	Target Rock problems.
EPA Breakers	Numerous spurious trips.
Riley Temperature Switches	Causing spurious RCIC, RWCU, and RHR system isolations.
Makeup Water Structure	Degraded condition of structure and equipment.
Cooling Tower Fans	High vibration, bearing wear.
MSIVs/Turbine Testing	Minimize turbine and MSIV testing to reduce downpowers and resulting steam leaks, BOP perturbations, etc.
HVR Air Operated Valves	LLRT failures due to wear of thrust washer.

Top 20 Plant Equipment Issues

Significant Progress

ISSUE		DESCRIPTION
-------	--	-------------

Borg Warner Valves Unreliability.

Clarifier Overall degraded condition. Blowdown

valves, rake torque switches, sludge

pumps unreliability.

HVK System Chiller and SW pump, HVN/HVK down

time, reverse acting controller.

Nuclear Instrumentation SRMs/IRMs sensitive to EMF/RFI

High noise level. Parts obsolescence.

Optimum Water Chemistry/IGSCC Potential for high cost repairs if

cracking not prevented.

Suppression Pool Turbidity, cleanliness, foreign material

intrusion

Testable Check Valves LLRT failures. Location of 65 & 66

valves.

Batteries Premature failures.

Chemical feed systems have frequent Chemical Injection leaks and reliability problems.

Inverters/Power Line Conditioners Obsolete

Circulating and Service Water

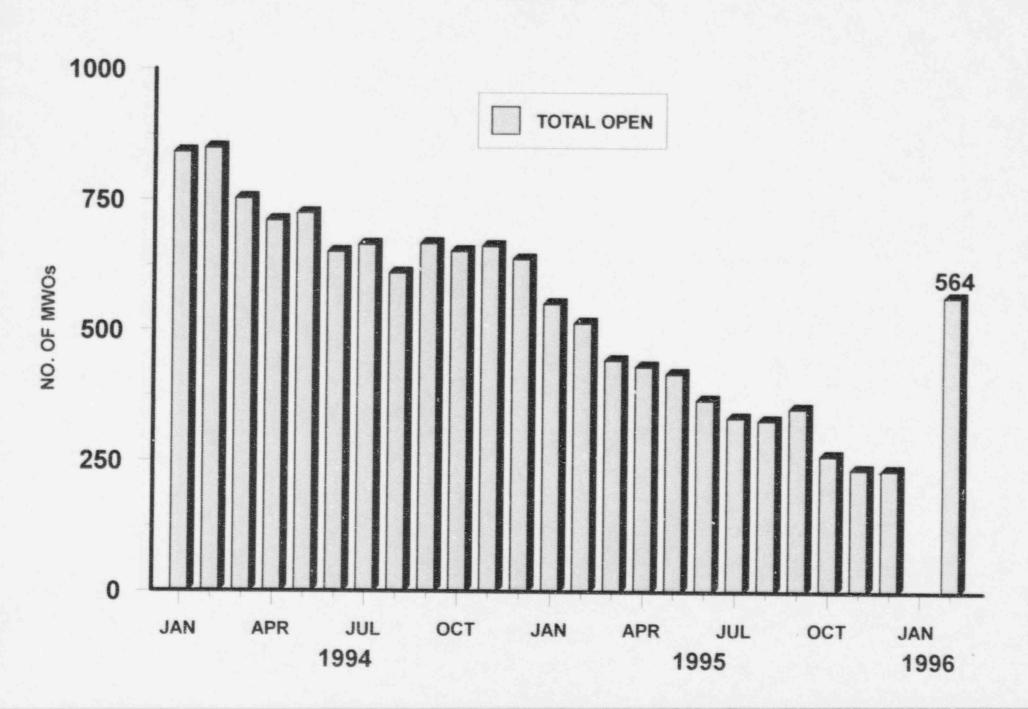
AKR Breakers New type breaker selected. Adequate

AKR spares now on site.

CFCs R-114 Phase out due to

legislation/regulatory rules

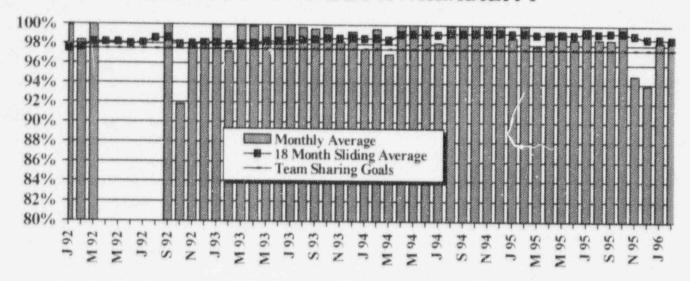
CORRECTIVE MAINTENANCE STATUS MWO



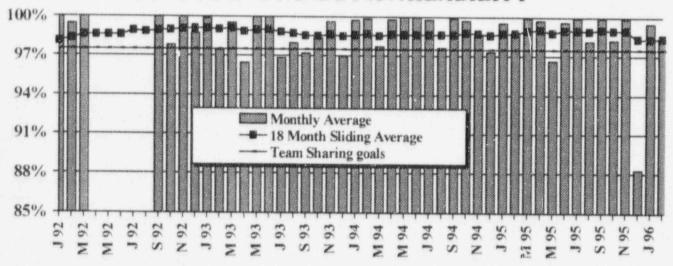
AREAS OF CONTINUED FOCUS

- System Performance (Top 20)
 - Emergency Diesel Generators
 - -- Control Building Chillers
 - Suppression Pool Clean-Up
- Foreign Material Exclusion Program
- Control of Plant Work Activities
- Maintenance Backlogs
 - Manageable
 - Prioritized
 - Control Room Deficiencies \ Annunciators
 - Operator Work Arounds

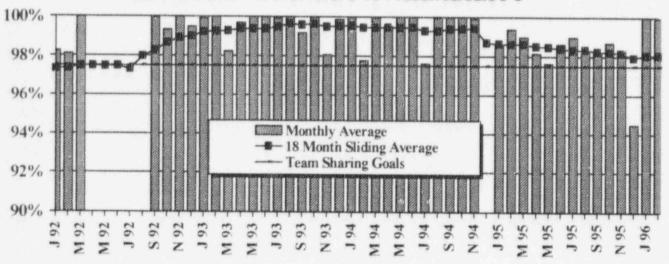
DIV 1 EDG - STANDBY AVAILABILITY*



DIV 2 EDG - STANDBY AVAILABILITY*



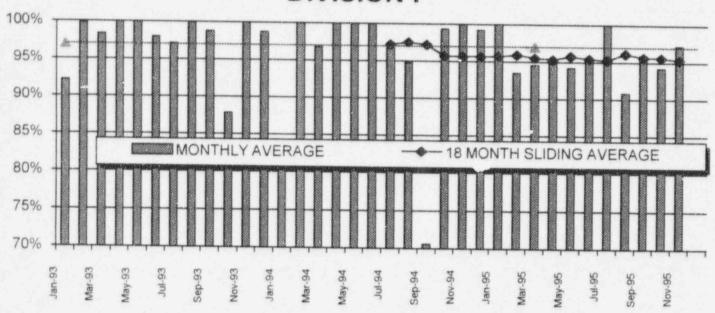
DIV 3 EDG - STANDBY AVAILABILITY*



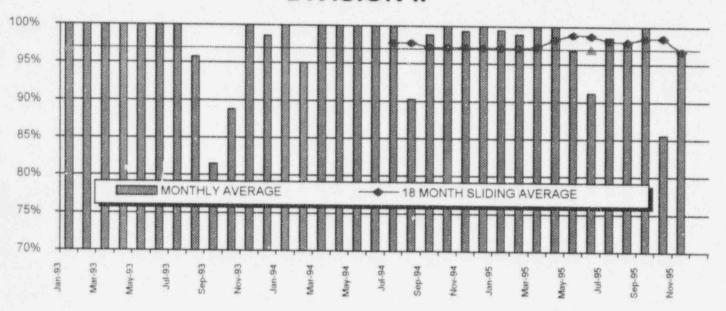
^{*} Available hours / Total Required hrs

CONTROL BUILDING CHILLERS DIVISION AVAILABILITY

DIVISION I



DIVISION II



Note: Availability is the ratio of a train's available time in a period divided by the total time in that period; where available time is total time minus down time.

SUMMARY

- Plant Materiel Condition Continuing to Improve
- Some Remaining Challenges
- Continue to Improve System Performance

OPERATIONSPERSPECTIVE

- Operations In Charge of the Plant
- Support from Departments
- Ownership
- Plant Condition
- Conservative Approach
- Continued Improvement / Self-Assessment

Outage Performance

- Focus On Safety
- Scope
- · Results
- Comparison
- · Planning
- · Areas of Continued Focus

TOM HILDEBRANDT Outage Manager

FOCUS ON SAFETY

- Shutdown Operations Protection Plan
 - Daily Management of Outage Risk
 - Defense In Depth
- Outage Risk Assessment Team
 - Provides Effective Safety Analysis
 - » Planning
 - » Scheduling
 - » Implementation and Schedule Changes
- ORAM / TIP
 - Risk Management Guidelines
 - Probabilistic System Safety Assessment

RF-6 OUTAGE SCOPE

	Schedule	Actual
MAIs	1107	1808
PMs	1368	1479
Modifications	36	38
Minor Modifications	12	12
STPs	357	357

OUTAGE RESULTS

	RF-5		RF-6	
	Goal	Actual	Goal	Actual
ESF Actuations	2	6	0	2
Loss of Shutdown Cooling	0	1	0	2 ¹
Dose	500	377	280	318 ²
LERs	Note 3	15	Note 3	6

Notes:

- 1. Same Event As ESF Actuation
- 2. 40 REM Due to Emergent Work
- 3. Outage Goals Not Established

OUTAGE RESULTS

	RF-5		RF-6	
	Goal	Actual	Goal	Actual
Loss Time Accidents	0	3	0	0
OSHA Reportable Accidents	3	17	3	11
Outage Duration	53	81	45	39

MAJOR WORK

- 89-10 Motor Operated Valve's (83 Static, 19 Flow Tests)
- 33 MDRs, 57 Agastat Relay Replacements
- 143 Control Rod Drive Solenoid Replacements
- 40 Hydraulic Control Units Rebuilt
- 200 Valve Repacks
- SRV Test and Replacement
- Heater Drain Pump Motor Rebuild
- Eddy Current Testing
- Battery Testing
- Condenser Bellows

MAJOR MODIFICATIONS

- Alternate Decay Heat Removal / Suppression Pool Tie-In
- Electrical Protection Assembly Breaker Upgrade
- NSSSS Isolation Lights
- Hydrogen Igniter Cables
- Drywell Unit Cooler Rebuild
- Reactor Plant Component Cooling Water Pump Check Valves
- Topaz Inverter Replacement
- RHR Test Return Line Vibration
- Vacuum Breaker Arm Replacement

OUTAGE COMPARISON RF-5 / RF-6

- Preplanning
- Schedule Implementation / Accountability
- Resource Sharing
- Worker Effectiveness
- Critique Process

PLANNING

- · On Line Maintenance
- Probabilistic Risk Assessment
- Philosophy

AREAS OF CONTINUED FOCUS

- Suppression Pool Clean-Up System
 - Support of FME Program
 - Alternate Cooling
- System Restoration
- Shutdown Cooling
- Fuel Management Safety Culture
- Pre-Planning
- Schedule Implementation
 - Emergent Work
 - Rework
 - Accountability

SUMMARY

- Good Test of Processes and People
 - Fixed Identified Problems
- RF-6 Indicated Significant Improvement In Many Areas
 - Safety
 - Plant Performance
 - Communication
 - Duration

PEOPLE

- · Results
- · Areas of Continued Focus

EARLY EWING Manager - Maintenance

- Improved Employee Morale
 - Personnel Empowerment
 - Increased Ownership / Accountability
- Schedule Adherence
- Improved Productivity
- Rework
- Site Awards Programs
 - Peak Performer
 - Impact
 - Shining Through

- Team Work (1995)
 - 61 Natural Work Teams
 - 7 Quality Action Teams
- Entergy Awards
 - Chairman's
 - » Leadership / Empowerment
 - Team Excellence
 - » Radwaste Natural Work Team
 - » Electronic Maintenance System

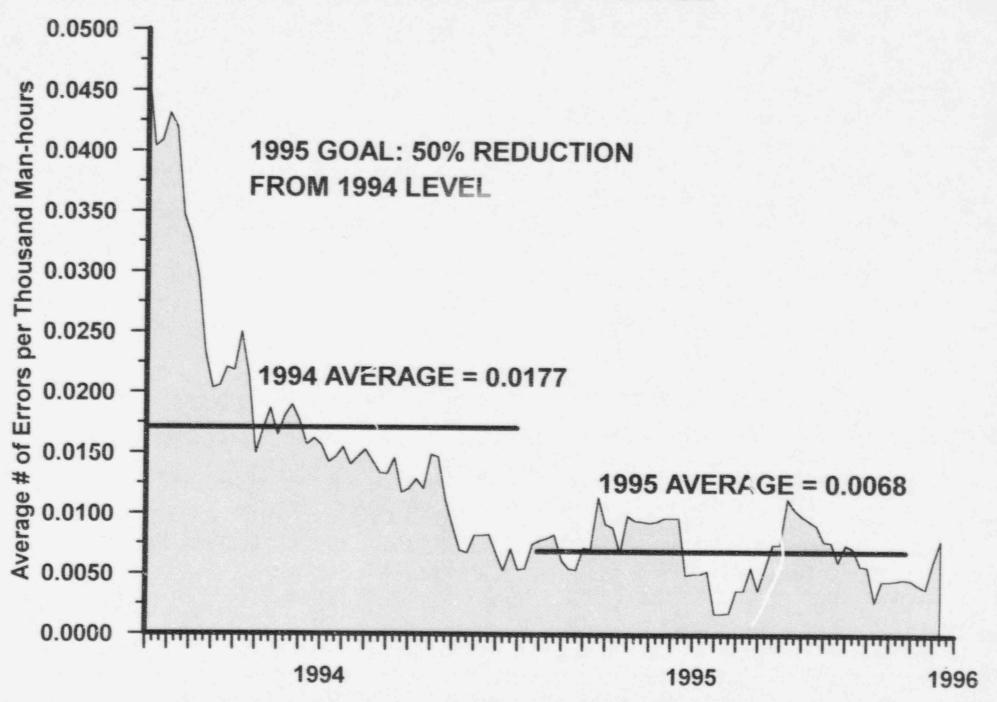
- Team Sharing
- Union Relationship
- Resource Sharing
- Supervisor Performance
- Team Alignment Seminars
 - Pilot Course Completed
 - 9 Scheduled for 1996

AREAS OF CONTINUED FOCUS

- · Put the Right People In the Right Job
- Supervisor / People Performance
- Procedure Compliance
- Accountability
- Engineering Support
- Operations Teamwork / Restructuring

NORMAL SIGNIFICANT CR HUMAN ERROR RATE

12 WEEK ROLLING AVERAGE



AREAS OF CONTINUED FOCUS

- Communication
- · Reliance on Individual Performance
- Team Building
- Training
 - Management Certification
 - SRO Licenses
- Change

SUMMARY

- Personnel Taking Ownership of Plant
- Increased Employee Support
- Increased Awareness to Identify Problems
- Emphasize the Need for Change
- Continue to Work Plan to Achieve Expected Goals
- Continuous Improvement

PROCESSES

- · Results
- · Areas of Continued Focus

TED LEONARD Director - Engineering

- Configuration Management
 - Performed Comprehensive Root Cause Analysis
 - Broad Corrective Actions: 50 of 77 Complete
 - Site Wide Training
 - Change Process Improvements
 - Engineering Request Process Implemented

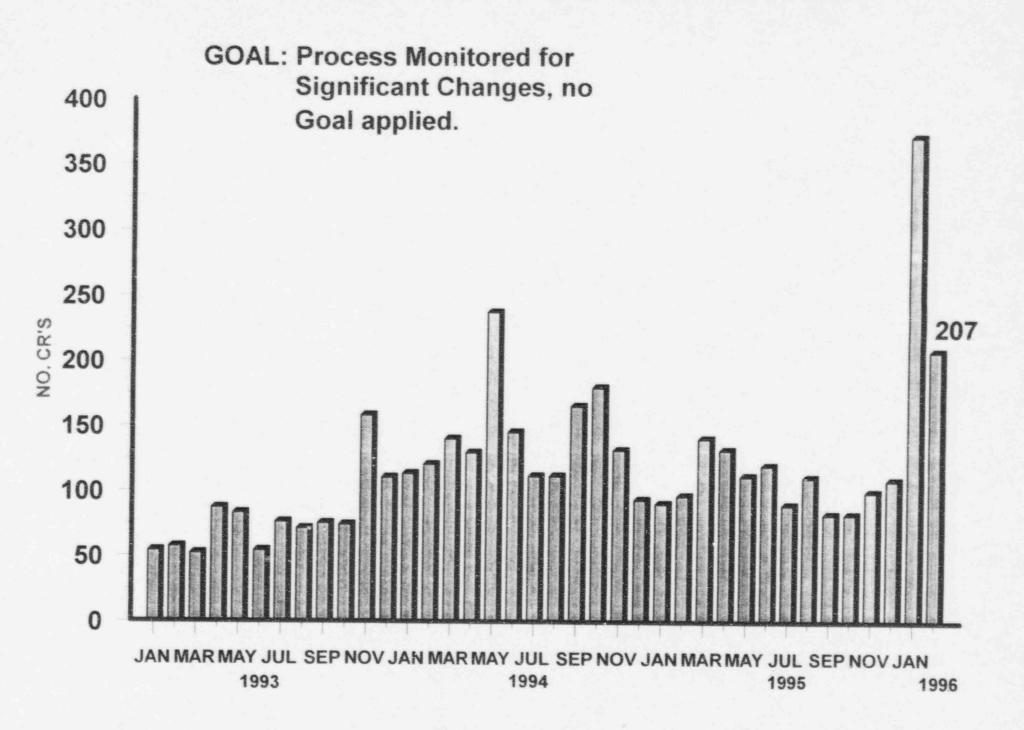
- · Infrastructure Documents
 - Drawing Upgrade Project Complete
 - Additional Drawing Initiatives
 - » 5000 Drawings Scheduled for 1996
 - System Design Criteria Documents
 - » LPCS, 125 VDC Complete
 - » 18 Scheduled for 1996 Issue
 - Vendor Manual Improvement Complete
 - » 345 Vendor Manuals Updated
 - Loop Calibration Report Improvements
 - » 1290 Reports Complete
 - Engineering Standards
 - » 10 Issued
 - » 6 In Progress

- Infrastructure Computer Databases
 - Component Database
 - » Initially Populated May 1995: 50,000 Components
 - » March 1996: 100,000 Components
 - » Foundation for:
 - · Electronic Maintenance System
 - LCO Tracking
 - Electronic Clearance Tagging
 - Extensive Data Loading / Review
 - » Loop Calibration Report Data 3800 Reports

- Improved Technical Specifications
 - Implemented October 1, 1995
 - Issued/Revised Procedures (Containing More Restrictive Requirements)
 - Completed ITS Licensed Operator Training

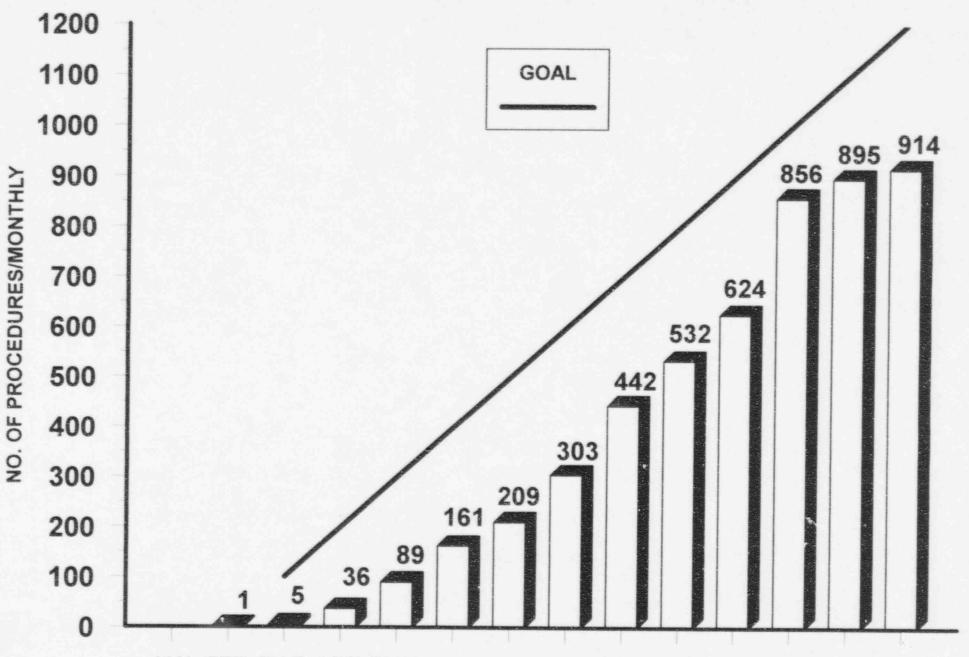
- Corrective Action Program
 - Increased Effectiveness
 - » Root Cause Determinations
 - » Corrective Actions
 - Limited Repeating of Significant Issues
 - » 247 CARB Reviews Completed to Date (Since Late 1993)
 - » 3 Repeat Issues

CONDITION REPORT GENERATION



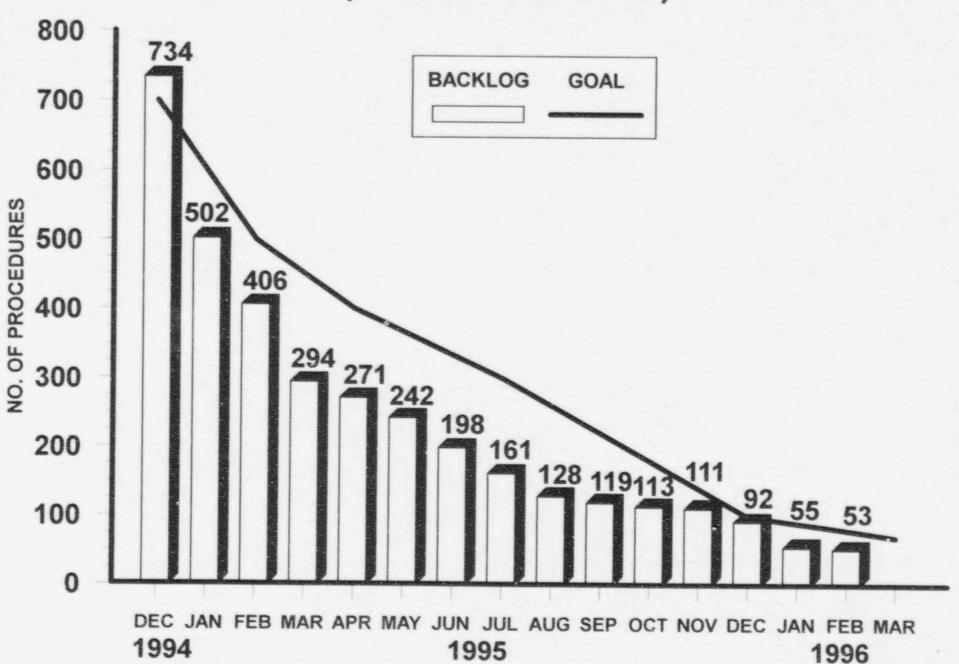
- Procedures Upgrade Program
 - Revising Procedures as Planned
 - 2200 Procedures In Program
 - » 1246 Procedures Upgraded / Cancelled
 - » Increasing Customer Satisfaction
 - » 5 Related Condition Reports Initiated
 - Departmental Procedures
 - » Radiation Protection Completed
 - » Remainder Scheduled In 1996

UPGRADED PROCEDURE ACTIVITY



JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB 1995

PROCEDURE REVISION BACKLOG (NON UPGRADE)



AREAS OF CONTINUED FOCUS

- Engineering Programs
- Corrective Action Program
- Procedures

LTPIP

- · Status
- Overview
- Effectiveness
- Self-Assessment

JIM FISICARO Director - Nuclear Safety

LTPIP STATUS

mgm 4 4			
lotal	Action	Items	635

Ahead of Schedule 15

Total Actions Completed 565

Total Complete 88%

LTPIP OVERVIEW

- Six Major Sections Completed
 - Section 5: Change Management
 - Section 6: Problem Identification and Root Cause Evaluation
 - Section 7: Closure of Problems
 - Section 8: Oversight of Problem Solving
 - Section 18: Security
 - Section 20: Quality Assurance
- Added Preventative Maintenance Program

LTPIP OVERVIEW

- Completing Some Sections Ahead of Schedule
- Review LTPIP
 - Evaluated Completed Tasks and Balance of Work
 - Found On Track
 - No Major Changes Needed
 - Can Close Some Additional Sections

LTPIP EFFECTIVENESS

- 16 Effectiveness Reviews Completed In 1995
- Results
 - On the Right Path
 - Some Check and Adjust Needed
- LTPIP Addressing Key Issues

SELF-ASSESSMENT PROCESS

- Ongoing Program
 - Periodic Self-Critical Departmental Analysis
 - Promotes Self-Critical Culture
 - Successful at Other EOI Sites
 - Identify Strengths and Challenges
- Each Department Presents Results to Senior Management
- Next Self-Assessment Scheduled for Spring

SELF-ASSESSMENT PROCESS

- Trending and Monitoring
 - Annunciator Windows
 - » Departmental Performance Measures
 - » Major Processes are Monitored
 - » Strategic Organizational Performance
 - Condition Report Trending
 - » Problem Codes for Early Detection of Trends
 - » Cause Codes for Commonality of Problems
 - » Predictive in Nature
 - » Have Identified Potential Trends

ADDITIONAL ASSESSMENT ACTIVITY

- Establish and Validate Top Site Issues
 - Employee Brainstorming Sessions
 - » All Plant Groups Represented
 - » 12% of Work Force Participated
 - » Results Rolled Into Validation of Top Site Issues
 - Reviewed Key Plant Data
 - » Condition Reports
 - » LCO's
 - » Annunciator Windows
 - » LER and Violations
 - » QA Overview
 - » Selected Industry Experience

ADDITIONAL ASSESSMENT ACTIVITIES

- Middle Management Overview
 - All Key Plant Groups Represented
 - Brainstorming Session
 - Used All Available Data Noted Previously
 - Total Quality Techniques Used to Evaluate Data
 - Top Issues List Prepared and Submitted to Senior Management
- Final Issues List Rollout Scheduled for End of March

SUMMARY

- LTPIP
 - Resulted In Significant Improvements
 - Transitioning to Normal Business Planning Environment
- Continuing Self Assessments
 - Maintain Self Critical Attitude
 - Identify Areas in Need of Adjustment
 - Trending and Monitoring
- Top Site Issues List
 - Solicit Employee Input
 - Validate Direction As We Transition

CLOSING STATEMENTS

- Summary
- · Conclusions
- Challenges

JOHN McGAHA
Vice President Operations

SUMMARY

- Plant
 - Safe / Reliable Operation
 - System Availability
- People
 - Training
 - Teamwork
 - Safety Culture
- Processes
 - Procedures
 - Corrective Action Program

CONCLUSIONS

- · Plan Is On Track
- Improvements Are Evident
- Establishing Culture of Self-Assessment / Improvement
- 1988 EOI Strategic Goals

REMAINING CHALLENGES

- Ensure Effective Completion of LTPIP
- Transition From LTPIP Initiatives to Total Quality Culture
- Maintain Intensity for Continuous Performance Improvement
- Self-Critical Perspective Is Key Component In Reaching Our Ultimate Goals
 - Top Decile Performance
 - Strive Towards Zero Error Tolerance