

JUN 05 1992

Docket No. 50-416
License No. NPF-29

Entergy Operations, Inc.
ATTN: Mr. W. T. Cottle, Vice President
Nuclear Operations - Grand Gulf
P. O. Box 756
Port Gibson, MS 39150

Handwritten:
Attended
Copy 1

Gentlemen:

SUBJECT: MEETING SUMMARY - GRAND GULF

This refers to the meeting conducted at your request at the NRC Region II Office in Atlanta, Georgia on May 26, 1992. The purpose of the meeting was to present a self-assessment of plant performance prior to the end of the current SALP period.

It is our opinion that this meeting was beneficial and provided a better understanding of the licensee's perspective of overall plant performance since the last SALP period.

Should you have any questions concerning this letter, please let us know.

Sincerely,

Original signed by:
Jon R. Johnson/for
Luis A. Reyes, Director
Division of Reactor

Projects

Enclosure:

1. List of Attendees
2. GGNS Status Meeting

cc w/encls:

C. R. Hutchinson, General Manager
Grand Gulf Nuclear Station
Entergy Operations, Inc.
P. O. Box 756
Port Gibson, MS 39150

(cc w/encl cont'd - See page 2)

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Entergy Operations, Inc.

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JUN 05 1996

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(cc w/encls cont'd - See page 3)

Entergy Operations, Inc.

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JUN 05 1992

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RII:DRP

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RII:DRP

W
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06/3/92

RII:DRP

Voz
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06/3/92

ENCLOSURE 1

S. D. Ebnetter, Regional Administrator, RII
L. A. Reyes, Director, Division of Reactor Projects, (DRP), RII
J. R. Johnson, Deputy Director, DRP, RII
E. W. Merschhoff, Deputy Director, Division of Reactor Safety
(DRS), RII
B. S. Mallett, Deputy Director, Division of Reactor Safety and
Safeguards
(DRSS), RII
J. T. Larkins, Project Director, PDIV-1, NRR
P. W. O'Connor, Project Manager, PDIV-1, NRR
D. M. Verrelli, Chief, Reactor Projects Branch 1, DRP, RII
F. S. Cantiell, Section Chief, Reactor Projects Branch 1B, DRP,
RII
J. L. Mathis, Senior Resident Inspector, DRP, RII - Grand Gulf
C. A. Hughey, Resident Inspector, DRP, RII - Grand Gulf
R. W. Wright, Project Engineer, DRP, RII
R. H. Bernhard, Project Engineer, DRP, RII
F. N. Wright, Radiation Specialist, DRSS, RII
N. G. McNeil, Radiation Specialist, DRSS, RII
W. B. Gloersen, Radiation Specialist, DRSS, RII
G. R. Wiseman, Reactor Engineer, DRS, RII
H. Plaza, Reactor Engineer, NRR
H. Rathbun, Reactor Engineer, NRR
T. R. Farnholtz, Project Engineer, DRP, RII

Licensee Attendees

W. T. Cottle, Vice President, Nuclear Operations
C. R. Hutchinson, General Plant Manager
D. L. Pace, Director, Design Engineering
M. J. Meisner, Director, Nuclear Licensing
C. M. Dugger, Manager, Operations
T. E. Tankersley, Superintendent, Radiation Control

**GRAND GULF
NUCLEAR STATION
1992 PRE-SALP
MEETING**

At NRC, Region II
May 26, 1992

Entergy Operations, Inc.
Grand Gulf Nuclear Station
1992 Pre-SALP Meeting
May 26, 1992

- **Introduction**
 - 1. SALP period overview W. T. Cottle,
Vice President,
Nuclear Operations
 - 2. Scram rate issues
 - 3. Status of NRC SALP Challenges C. R. Hutchinson,
General Manager
- **Functional Area Presentations**
 - 1. Plant Operations C. M. Dugger, Manager
Plant Operations
 - 2. Radiological Controls T. E. Tankersley,
Superintendent
Radiation Control
 - 3. Maintenance/Surveillance C. R. Hutchinson
 - 4. Security C. R. Hutchinson
 - 5. Emergency Preparedness W. T. Cottle
 - 6. Engineering/Technical Support D. L. Pace, Director
Design Engineering
W. T. Cottle
C. M. Dugger
 - 7. Safety Assessment/Quality Verification M. J. Meisner, Director
Nuclear Safety & Regulatory
Affairs
M. A. Dietrich, Director
Quality Programs
- **Closing Remarks** W. T. Cottle

GGNS SALP
PERIOD OVERVIEW

SALP PERIOD OVERVIEW

- Major Challenges
 - Continuous improvement
 - Resolution of performance anomalies
 - Personnel error rate
 - Recirc pump shaft cracking
 - Scram rate
- Management Approach
 - Critical self-assessment
 - Fostering a safe culture
 - Strengthening a self-sustaining improvement program (Total Quality)
- Results
 - Strong performance in all SALP functional areas
 - Extended period of performance with low personnel error rate
 - Effective, aggressive response to recirc pump shaft cracking and scram rate

OVERVIEW

Station Strengths

- Strong safety culture based on conservative action, open communications, teamwork and accountability
- Effective self-assessment
- Substantial decline in safety significant operational events and, in particular, those due to personnel error
 - 16 LERs this SALP period compared to 36 in previous period
 - 2 LERs due to personnel error compared to 17 last SALP period
 - No plant trips due to personnel error
- Aggressive trip-critical system corrective action contributed to 5 scram-free months going into RF05 - one of the longer periods in GGNS history

OVERVIEW

Station Strengths

- Well planned outages
- Effective application of shutdown risk management principles
- Good materiel condition of the plant
- Over 8,000,000 hours without a lost-time accident
- Continued emphasis on broadening management development and experience

Strong design engineering and plant technical support staff and programs

- Strong corporate support and system-wide information and resource sharing
- Strong, effective senior management support and leadership

OVERVIEW

Scram Rate

- Six scrams due to hardware failure (none due to personnel error) in the first half of the SALP period
- Connection between scrams is obscure - seemingly random hardware failures

04/06	-	ATT power supply failure
06/11	-	Low level, loss of Conds/FW
06/17	-	Loss of ST11 due to breaker fault
07/28	-	BOP load shed
08/10	-	APRM flux upscale, lightning
11/19	-	APRM flux upscale, lightning

- Self assessment activities initiated starting in 6/91
 - ISEG scram review
 - Corporate assisted self-assessment
 - INPO assist

OVERVIEW

Scram Rate

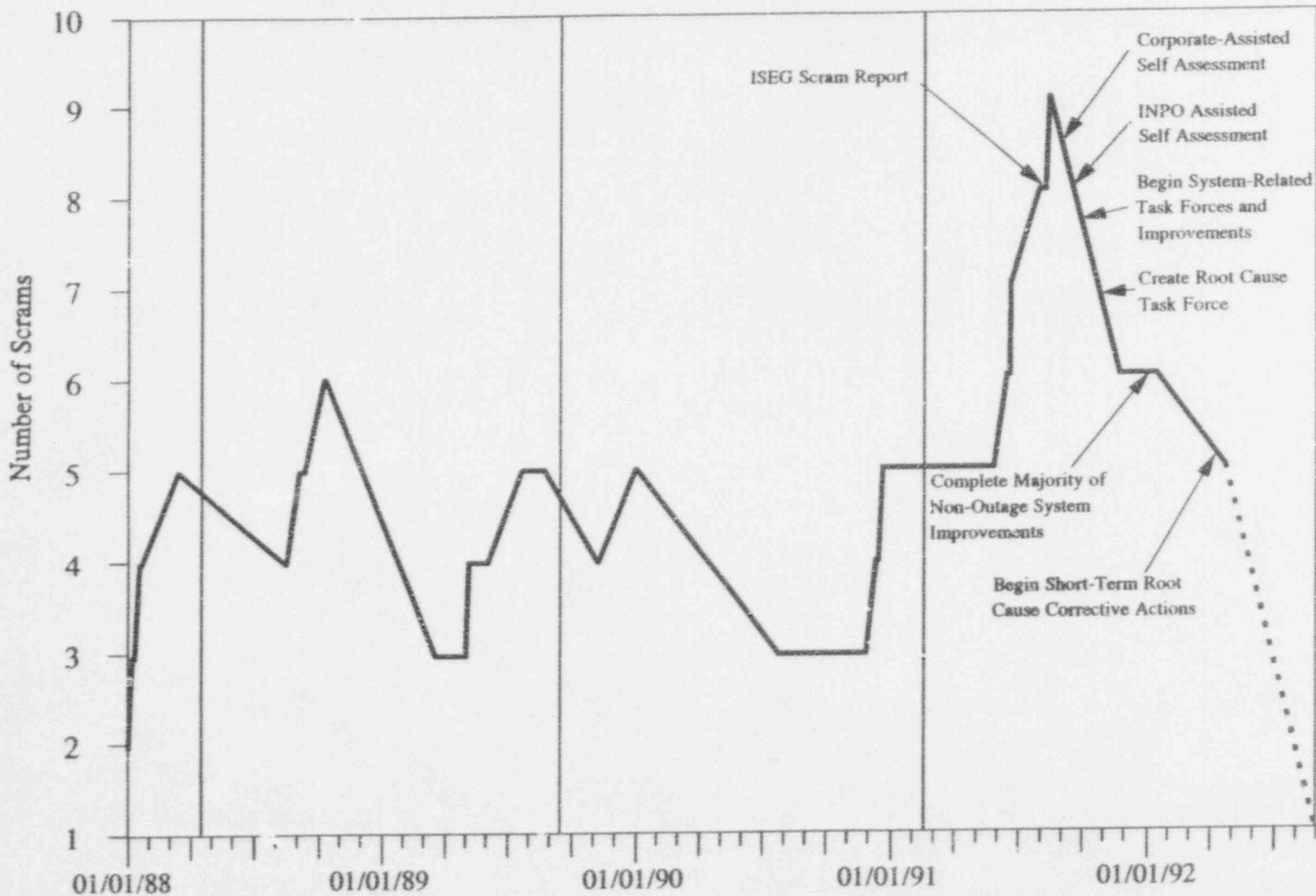
- Two pronged approach taken to reduce scram rate
 - Identify and implement hardware enhancements for trip-critical systems
 - Investigate and determine organizational and programmatic root causes associated with excessive scram rate
- Numerous enhancements implemented prior to and during RF05
 - Load shedding and sequencing
 - Condensate/Feedwater
 - Lightning protection
 - Circ water lube water

OVERVIEW

Scram Rate

- Root Cause Task Force determined organization/programmatic root causes
 - Combined effect of inadequacies in problem identification/resolution process, preventive maintenance program and root cause analysis process
 - Underlying lack of management overview of the corrective action process
- Long-range corrective action under development
- Implementing short-term action, for instance
 - Trip-critical component concept
 - Root cause improvements
 - Management training and principles

Automatic Scrams per Rolling 7000 Critical Hours



OVERVIEW

Scram Rate

- System-based corrective actions have been effective in reversing adverse scam rate trend
- Organization/programmatic corrective actions will lay the foundation to prevent recurrence
- Our in-depth approach to this issue is an example of a growing Grand Gulf strength - the ability to look beyond short-term solutions in implementing effective corrective action

STATUS OF NRC SALP CHALLENGES

- **Plant Operations**
 - **Attention to detail**
 - Previous corrective action and continued emphasis is effective in maintaining low personnel error rate
 - Monthly monitoring with low threshold for action
 - LERs due to personnel error dropped from 17 to 2
 - No scrams due to personnel error
 - **EOPs**
 - NRC recommendations implemented and reviewed
 - **Housekeeping**
 - Improved contractor control
 - Increased supervisor focus
 - Quarterly plant cleanups

STAT-1

STATUS OF NRC SALP CHALLENGES

- Radiological Controls
 - Tritium analysis
 - Identified cause of analysis disagreement
 - Current cross check sample results pending
 - Contaminated floor area
 - Management set ambitious goal (<2% of RCA)
 - Weekly review by General Manager and Radiation Control Superintendent
 - Power reductions to repair leaking components that contribute to contamination
 - Maintained low level of contamination consistent with ALARA

STAT-2

STATUS OF NRC SALP CHALLENGES

- **Maintenance/Surveillance**
 - **Attention to detail (discussed above)**
 - **Reliability centered maintenance**
 - Program developed from numerous best practices and customized for GGNS
 - Handled entirely in-house
 - Five systems completed (IA, FW, Heater vents and drains, SSW, Turbine HVAC)
 - Two planned for 1992 (Condensate, Radial Well)
 - Valuable results in improved maintenance and task reduction
 - Plan to re-prioritize future systems based on scram reduction "critical component" concept
 - **Systems important to safety**
 - Close coordination amongst Ops, Maint, HP, Design Engineering and P&SE
 - Prioritized for RCM handling

STAT-3

STATUS OF NRC SALP CHALLENGES

- **Emergency Preparedness**
 - **Drill scenario development**
 - Early review with Region II
 - 1991 drill scenario was well conceived and appropriately challenging
- **Security**
 - **Control of vital doors**
 - Security/Maintenance jointly implemented preventive maintenance program
 - 50% reduction in vital door reportable events since inception
- **Engineering/Technical Support**
 - Reliability centered maintenance (discussed above)
 - Systems important to safety (discussed above)

STATUS OF NRC SALP CHALLENGES

- **Safety Assessment/Quality Verification**
 - **Support for Tech Spec changes**
 - Increased and candid communications with NRC have led to virtual disappearance of communication difficulties common last period
 - **Improved 50.59 reviews**
 - Major upgrade to training program delivered to 302 personnel during 1991
 - Screening process improvements
 - reviewer qualifications
 - expanded questions
 - documented justification
 - PSRC/SRC review of 50.59 procedure changes

GGNS CHALLENGES

- **Scram Rate**
- **Complacency**
- **Continuous Improvement**

PLANT OPERATIONS

- **Operations**
- **Fire Protection**

PLANT OPERATIONS

Strengths/Achievements

- Strong management emphasis on professionalism and conduct of operations
 - Management standards
 - Low reporting thresholds and willingness to admit mistakes
 - Licensed operator seminars, plant visits and meetings with Region II
- Effective control of personnel error rate
 - LERs due to personnel error reduced from 17 to 2
 - No reactor scrams due to personnel error
- Conservative approach to decision-making
 - 12/91 shutdown based on recirc pump vibration
 - Expedited circulating water lube water system modification for RF05
 - Power reductions during thunderstorms

PLANT OPERATIONS

Strengths/Achievements

- Demonstrated operator competence and safety attitude
 - BOP load shed
 - Recriticality
 - No significant plant events during SALP period

- Innovations
 - Computerized rounds
 - Preparation for infrequently performed evolutions
 - Expanded use of licensed personnel in outage management roles
 - SRO/RO exposure to other plants and the NRC

PLANT OPERATIONS

Strengths/Achievements

- Operator achievements
 - 2 operators received their degrees through on-site degree program; 16 others are enrolled
 - Only one operator resignation and one termination
 - SRO and RO transferred to Training; SRO support for outage planning
 - Operator achievements routinely recognized at formal events
- Fire protection
 - Extensive experience/training
 - Fire Brigade consists of all Operations personnel
 - Appendix R compliance confirmed

PLANT OPERATIONS

Areas for Improvement

- Continued emphasis on reduction of personnel errors and professionalism of control room activities
- Support for scram reduction
- Contractor control

RADIOLOGICAL CONTROLS

- **Health Physics**
- **Chemistry**

RADIOLOGICAL CONTROLS

Strengths/Achievements

Health Physics

- Declining average operating exposure and contamination rate

	<u>Average Exposure</u>	<u>Cont. Rate (Cont/1000 FWP hours)</u>
1987		2.201
1988	10.7R	1.269
1989	8.3R	2.298
1990	6.9R	0.228
1991	6.8R	0.167

- Maintaining low contaminated area
- No unmonitored radwaste discharges

RADIOLOGICAL CONTROLS

Strengths/Achievements

- Selected initiatives
 - Establishment of a source term reduction committee
 - Detailed planning for chemical decon during RFO5
 - Remote handling and closure of radwaste shipping
 - Whole body monitors in RCA protected by shield booth
 - Remote reading tele-dosimetry system
 - Automated scaffold contamination monitor
 - Standardized radiological control methods based on EOI site best practices
 - NVLAP accreditation renewal for dosimetry processing lab

RADIOLOGICAL CONTROLS

Areas for Improvement

Health Physics

- Radwaste floor drain backup
- Restriction and removal of cobalt bearing components
- Segregation and minimization of waste

RADIOLOGICAL CONTROLS

Strengths/Achievements

Chemistry

- Excellent auxiliary circ water and standby service water system chemistry control
- Improved PSW microbiological control
- Strong laboratory cross check program
 - Radiochemistry: 100% acceptable results
 - Cold Chemistry: 93% acceptable results
- Selected initiatives
 - Radwaste discharge volume reductions
 - Condensate precoat installation of sintered metal septa
 - Sampling program to identify source of reactor sulfate contamination
 - New laboratory instrumentation includes liquid scintillation counter and plasma spectrophotometer

RADIOLOGICAL CONTROLS

Areas for Improvement

Chemistry

- Improved microbiological control for cooling tower fill
- Additional control of solids in areas of Standby Service Water not exposed to chemical treatment

MAINTENANCE/ SURVEILLANCE

- **Maintenance**
- **Plant Engineering**

MAINTENANCE/ SURVEILLANCE

Strengths/Achievements

- Effective maintenance management monitoring of work control resulting in continuing decrease in non-outage corrective maintenance
- Reliability centered maintenance
 - Five systems reviewed; one in progress
 - Improved maintenance practices identified and implemented
 - Reduction in ineffective or unnecessary tasks
- Personnel error events reduced
 - 16 M/S LERs previous SALP period compared to 11 this period

MAINTENANCE/ SURVEILLANCE

Strengths/Achievements

- Program enhancements
 - Vibration monitoring is state-of-the-art
 - Expanded thermography capability and application
 - Predictive Trending Program expanded database and weekly reports
 - Check Valve Maintenance Program non-intrusive testing
 - New MOV diagnostic equipment
 - New snubber test facility and test equipment upgrade
 - Improved preparation and tracking of inservice inspections
 - Expanded scope and value of Engineering Work Closeout Group

MAINTENANCE/ SURVEILLANCE

Areas for Improvement

- Reduction of administrative work load for first-line supervisors
- Implementation of the Maintenance Rule
- Continuation of reliability centered maintenance focused on safety-critical and trip-critical systems

SECURITY

Security

Strengths/Achievements

- Vital area doors
 - Instituted preventive maintenance program
 - Vital area door reportable events have decreased by 50% since inception

- Selected upgrades/achievements
 - Completed first phase of South Perimeter Upgrade Project
 - Completed feasibility study to expand vital areas
 - Computer mods to prohibit reentry into Protected Area without keycard deposit
 - Card reader controlled access to EDG building
 - 99.93% availability for security computer

Security

Strengths/Achievements

- Continued excellent off-site agency relationships
- Enhanced security during Op Desert Storm
- Fitness for Duty
 - Good facility and staff professionalism
 - Aggressive and thorough quality performance audits
 - Review of safety related work for individuals with positive testing results
 - More restrictive level for marijuana
 - Controls to ensure new supervisors receive FFD Supervisor Training

Security

Areas for Improvement

- Continue ongoing programs
 - South perimeter upgrade
 - Vital area expansion
 - Vital area doors

- CCTV camera failure rate

**EMERGENCY
PREPAREDNESS**

EMERGENCY PREPAREDNESS

Strengths/Achievements

- 1991 Drill Scenario
 - Reviewed with Region II prior to submittal
 - Appropriately challenging to emergency organization
- Enhancements due to Emergency Preparedness Effectiveness review
 - New OSC
 - Automatic notification systems and backup group page capability
 - Began quarterly site drills
 - Simulator use during 1991 annual drill
 - Successful off-hours augmentation drill

EMERGENCY PREPAREDNESS

Strengths/Achievements

- Selected initiatives
 - Established Entergy office in Port Gibson
 - Monthly meetings with state/local agencies in Ms. and La.
 - Medical training
 - Revised medical training and drill program for area hospitals
 - Conducted two training sessions and one drill per hospital per year
 - EALs
 - Restored EALs to Emergency Plan as requested
 - EAL enhancements to be submitted shortly

EMERGENCY PREPAREDNESS

Areas for Improvement

- Maintain emphasis on scenario development
 - Continue in-house preparation
 - Continue early review with Region II

- Improve integration of effort between EP and Training
 - Evaluate selected position descriptions and develop job task listings

ENGINEERING/ TECHNICAL SUPPORT

- **Plant Engineering**
- **Design Engineering**
- **Training**
- **Outage Scheduling**

ENGINEERING/ TECHNICAL SUPPORT

Strengths/Achievements

Plant and Design Engineering

- Extensive scram reduction measures implemented for trip-critical systems
 - Load shedding and sequencing
 - Lightning protection
 - Feedwater/Condensate
 - Reactor recirc pumps
 - Circulating Water Lubricating Water

- Strong performance in areas associated with regulatory programs, for instance:
 - EDSFI followup
 - Appendix R
 - Station blackout
 - Core stability
 - MOV program
 - IPE

ENGINEERING/ TECHNICAL SUPPORT

Strengths/Achievements

- Organizational enhancements to support future improvements
 - Plant Engineering work control group
 - Dedicated procurement engineering section
 - Dedicated nuclear safety analysis and PRA group

- Programmatic enhancements
 - Issued setpoint specification and methodology standard - upgraded Tech Spec setpoint calculations
 - Significant progress in updating and controlling procurement specifications and lower tier drawings
 - Continued progress on electrical calculation upgrades
 - Assessment of mechanical system calculations begun
 - Plant Data Management Systems upgrade
 - IST basis document
 - MOV program documents
 - RCM program
 - Vibration monitoring program
 - Check valve monitoring program

ENGINEERING/ TECHNICAL SUPPORT

Strengths/Achievements

- Significant progress in addressing longstanding issues
 - Recirculation pump shaft cracking
 - Groundwater exceedences
 - Lightning protection
 - Hydrogen control
 - Spent fuel pool cooling
 - Inop Annunciators

- Continued emphasis on professionalism, engineering training, and self-assessment
 - Broad participation in SRO certification
 - Liebstadt exchange program
 - Technical exchange with TEPCO
 - Upgraded root cause evaluation and safety evaluation training
 - INPO reverse loanee
 - Professional registration of engineers
 - Corporate design standards

ENGINEERING/ TECHNICAL SUPPORT

Areas for Improvement

Plant and Design Engineering

- Continued support for system level scram reduction initiatives
- Response to evolving procurement issues
- Strengthened capabilities in the safety analysis and PRA areas
- Maximizing use of technical expertise throughout the EOI system
- Continue development and trending of maintenance rework initiatives
- Streamline the design change process relating to parts/procurement activities
- Plant Engineering Work Control Group development
- Refining System Engineering function
- Evaluation of Engineering Support role

ENGINEERING/ TECHNICAL SUPPORT

Strengths/Achievements

Training

- Renewed INPO accreditation for the Maintenance, HP, Chemistry and TS&M programs
- Simulator certified to ANS 3.5 standards; simulator upgrade project in progress
- All operations instructor positions filled by mid-1991
- Initiated standard practice of conducting annual independent assessments of the Training Program
- Support for scram reduction through delivery of extensive root cause training

ENGINEERING/ TECHNICAL SUPPORT

Areas for Improvement

- License exam results
 - 10 of 12 operators passed NRC requalification exam - July 1991
 - 5 of 6 candidates passed NRC license exams - July 1991
 - 8 of 9 candidates passed NRC license exams January 1992

- Response to recent exam/assessment findings
 - Management oversight
 - Candidate readiness
 - Better understanding and communication with NRC
 - Increased Operations involvement and ownership of the training program
 - Changes to program administration
 - Training module improvements
 - Monitoring and mentoring candidate progress
 - Oral boards and final independent audit exam

ENGINEERING/ TECHNICAL SUPPORT

Strengths/Achievements

Outage Scheduling

- Dedicated developmental support and review
 - Outage pre-planning
 - Operations integration into the outage organization
 - Discipline review
 - Contingency planning
 - Schedule review with each on-site section
- Shutdown risk management
 - Shutdown protection plan
 - Independent risk assessment of schedule
 - Iterative risk review resulted in significant risk reduction through schedule changes

ENGINEERING/ TECHNICAL SUPPORT

Areas for Improvement

Outage Scheduling

- Focus on increasing level of control
 - Quality of outage personnel
 - Minimizing work scope and quantity
 - Outage work activities

**SAFETY ASSESSMENT/
QUALITY VERIFICATION**

- **Nuclear Safety & Regulatory Affairs**
- **Quality Programs**

SAFETY ASSESSMENT/ QUALITY VERIFICATION

Strengths/Achievements

Nuclear Safety & Regulatory Affairs

- Merger of Nuclear Licensing and Operational Analysis
 - Integrated, comprehensive approach to safety issues
- Extensive upgrade to 50.59 program
 - Training - expanded treatment of license basis, conservative approach to screening, multiple examples of SE situations, prepare SE to pass exam
 - Screening - second qualified reviewer, documentation of response basis
 - PSRC/SRC review of changes to 50.59 procedures

SAFETY ASSESSMENT/ QUALITY VERIFICATION

Strengths/Achievements

- Operational experience program recognized by INPO as one of the best in the industry
 - Broad distribution of OE insight throughout GGNS
- Strong ISEG assessment function
 - Human performance - steady state and transient monitoring activities
 - Five year scram comparison
 - Shutdown cooling experience
 - Review of SRC effectiveness
 - System reviews
 - Process radiation monitoring
 - DC systems
 - Circulating water system
 - Turbine generator

SAFETY ASSESSMENT/ QUALITY VERIFICATION

Strengths/Achievements

- Shutdown risk management
 - Detailed presentation to NRR, Region II and INPO earlier in the year
 - Risk insight led to schedule changes, contingency plans and heightened personnel awareness
- Emphasis on early proactive participation in the resolution of generic safety issues
 - IPE and severe accidents
 - MOV testing
 - Hydrogen control
 - Tech Spec Improvement Program
 - Core stability

SAFETY ASSESSMENT/ QUALITY VERIFICATION

Strengths/Achievements

- Emphasis on high quality submittals and professional interactions with NRC
 - Significant reduction in requests for additional information
 - An exceptional number of license amendments have been received so far this SALP period
 - Communication difficulties have all but disappeared
 - Requests for waivers of compliance are sound and well-supported
 - LER/NOV responses focus on accurate root causes and corrective action

- GGNS work completed on longstanding issues
 - SLCS
 - Containment purge
 - Groundwater
 - Station blackout
 - Spent fuel pool cooling

SAFETY ASSESSMENT/ QUALITY VERIFICATION

Areas for Improvement

Nuclear Safety & Regulatory Affairs

- Resolution of acceptable level of documentation for 50.59 screenings
- Continued sophistication in the use of risk management tools

SAFETY ASSESSMENT/ QUALITY VERIFICATION

Strengths/Achievements

Quality Programs

- Strong Audit/Inspection Program
 - Credibility of QP personnel
 - Routine management involvement
 - Performance based audits in addition to compliance feedback
 - Use of technical specialists as needed
 - Activity Monitoring Program in addition to witness/hold points
 - Backshift monitoring
 - "Real time" trending
 - Standardized audit checklists

SAFETY ASSESSMENT/ QUALITY VERIFICATION

Strengths/Achievements

- Conducts numerous requested assessments
 - Commercial grade procurement
 - Setpoint methodology
 - Root cause training program
 - Material availability
 - Erosion/Corrosion program
- Monitors industry developments to enhance technical methods
 - New ultrasonic methods for recirc pump shaft examination
 - Use of remote cameras for visual inspections
 - Implementation of in-house radiography program
 - Use of computerized data taking

SAFETY ASSESSMENT/ QUALITY VERIFICATION

Strengths/Achievements

- Continued commitment to safety system functional assessments
 - Now being conducted as a joint effort with other BWR6s
 - Completed SLCS (1988), FPCC (1990), HPCS (1991)
 - Selection process for next system is ongoing
- Continued emphasis on timely deficiency resolution
 - Personnel error rate monitoring with low threshold for action
 - Close monitoring of QDR, MNCR and DMR process effectiveness
 - Management involvement as needed

SAFETY ASSESSMENT/ QUALITY VERIFICATION

Areas for Improvement

Quality Programs

- Continued upgrade of inspection training material
- Development of an in-house construction materials testing program and facility
- Increased involvement by SRC members in audit planning activities