

DEC 22 1992

Docket Nos. 50-338, 50-339
License Nos. NPF-4, NPF-7

Virginia Electric and Power Company
ATTN: Mr. W. L. Stewart
Senior Vice President - Nuclear
5000 Dominion Boulevard
Glen Allen, VA 23060

Gentlemen:

SUBJECT: MANAGEMENT MEETING SUMMARY - SELF-ASSESSMENT OF NORTH ANNA POWER
STATION

This letter refers to the Management Meeting held on December 15, 1992, at the Region 11 office. The meeting concerned a self-assessment for your North Anna facility. A list of attendees, a meeting summary, and a copy of your handout are enclosed.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 3, Title 10, Code of Federal Regulations, a copy of this letter and its enclosures will be placed in the NRC Public Document Room.

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

Sincerely,

Original signed by

Ellis W. Merschoff, Director
Division of Reactor Projects

070040

Enclosures:

1. List of Attendees
2. Meeting Summary
3. Handout - Slides Presented

cc w/encs:

M. L. Bowling, Jr., Manager
Nuclear Licensing
Virginia Electric & Power Company
5000 Dominion Boulevard
Glen Allen, VA 23060

cc w/encs cont'd: See page 2

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cc w/encls cont'd:
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Richmond, VA 23219

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bcc w/encl: See page 3

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3

DEC 22 1992

bcc w/encl:
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L. Engle, NRR
Document Control Desk

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NRC Resident Inspector
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RII:DRP
AR
ARuff
12/27/92

RII:DRP
MS
MSinkule
12/27/92

~~RII:DRP
EMerschhoff
12/27/92~~

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Virginia Power



**NORTH ANNA POWER STATION
SELF ASSESSMENT
DECEMBER 15, 1992**

Virginia Power



INTRODUCTION

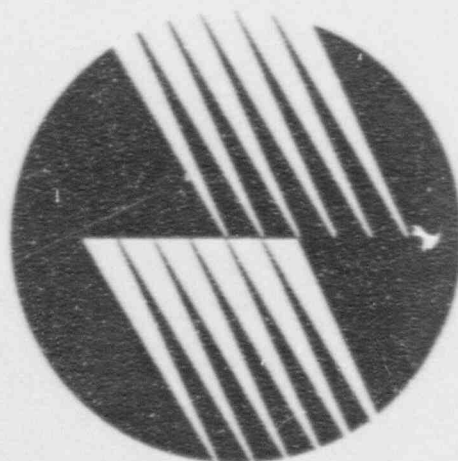
J. P. O'Hanlon

Vice President - Nuclear Operations

AGENDA

- Introduction J. P. O'Hanlon
- Performance Review G. E. Kane
- Self Assessment J. A. Stall
- State of Quality J. P. Smith
- Safety Assessment L. M. Girvin
- Conclusions J. P. O'Hanlon

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STATION PERFORMANCE REVIEW

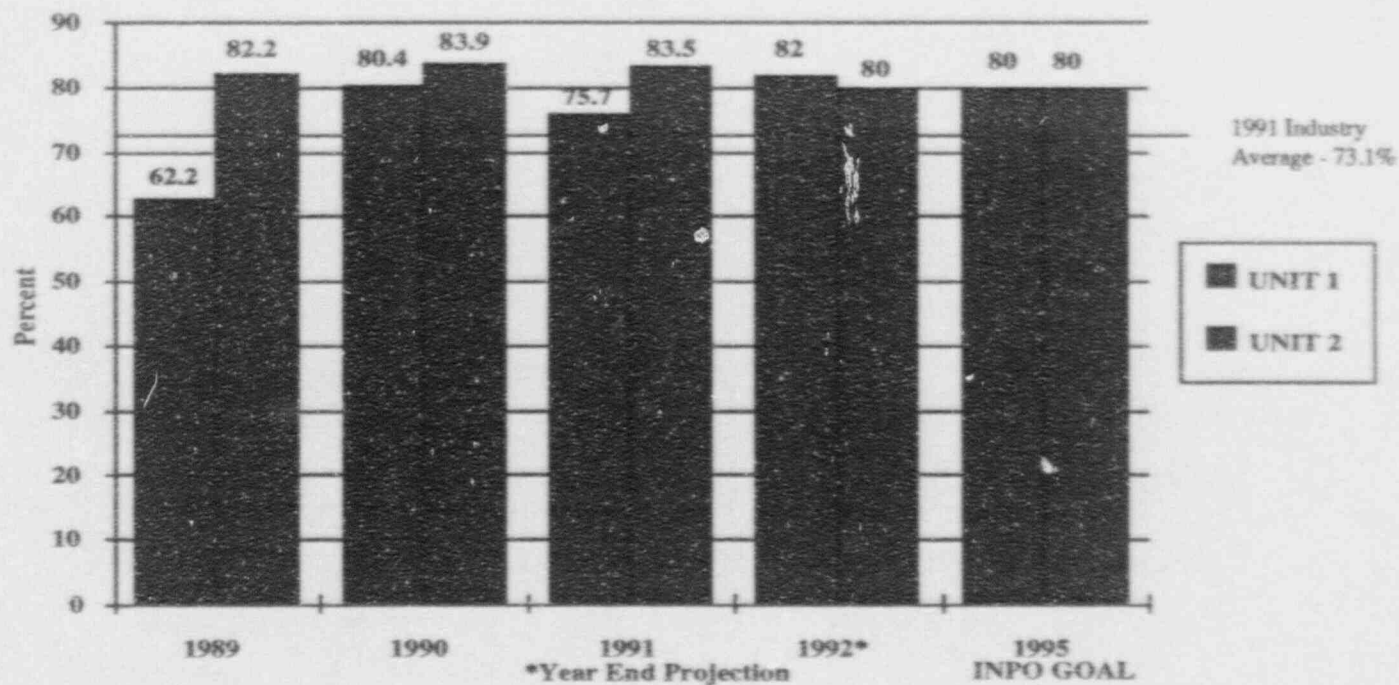
**G. E. Kane
Station Manager**

NORTH ANNA PERFORMANCE INDICATORS

- **Unit Capability Factor**
- **Unplanned Capability Loss Factor**
- **Unplanned Automatic Scrams**
- **EDG Availabilty**
- **Chemistry Index**
- **Collective Radiation Exposure**

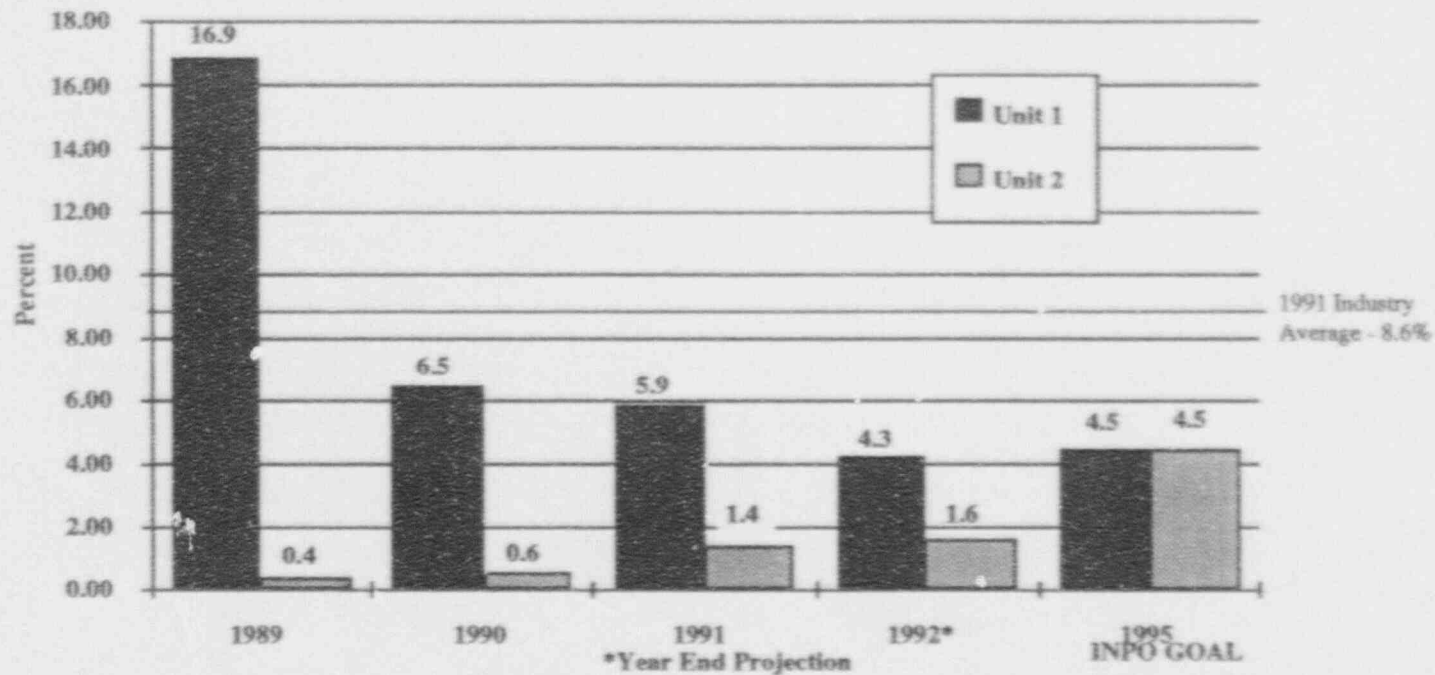
NORTH ANNA POWER STATION

UNIT CAPABILITY FACTOR (THREE YEAR AVERAGE)



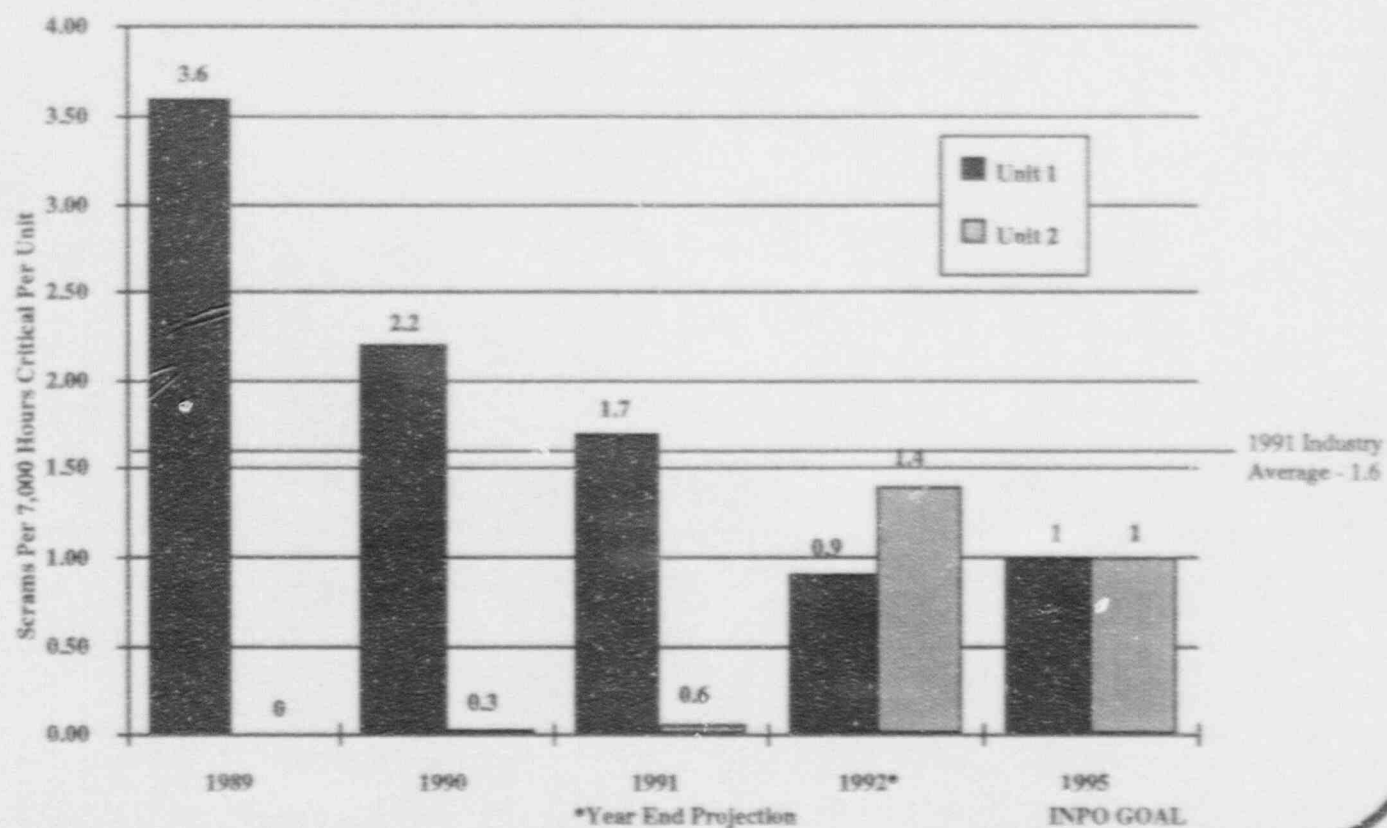
NORTH ANNA POWER STATION

UNPLANNED CAPABILITY LOSS FACTOR (THREE YEAR AVERAGE)



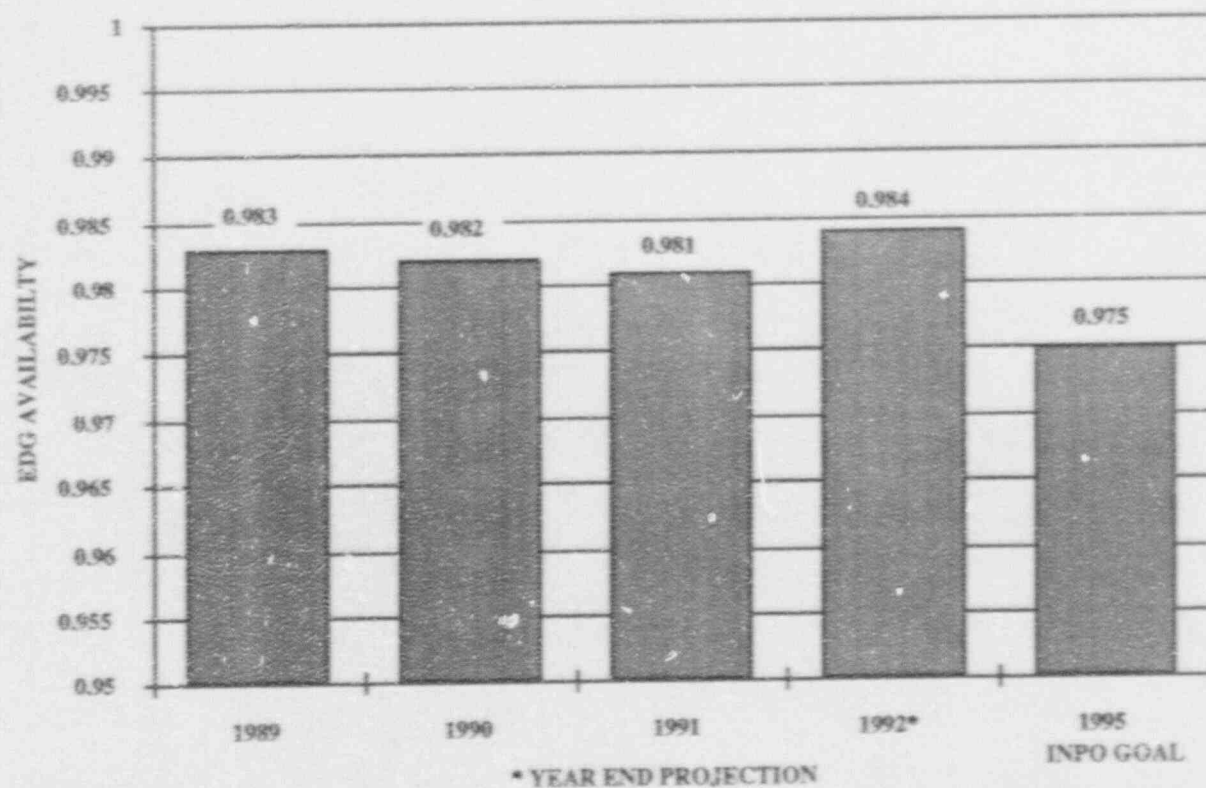
NORTH ANNA POWER STATION

UNPLANNED AUTOMATIC SCRAMS (THREE YEAR AVERAGE)



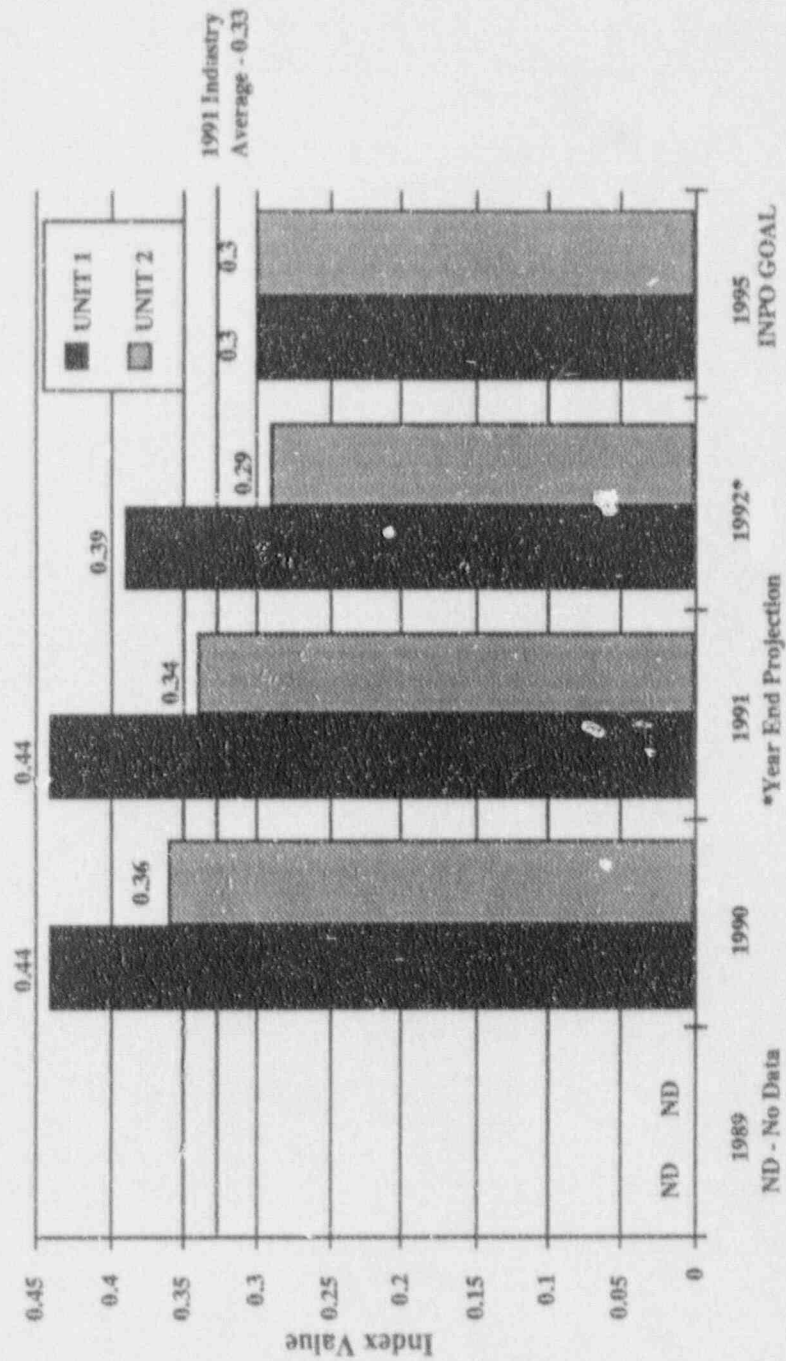
NORTH ANNA POWER STATION

EDG AVAILABILITY (THREE YEAR AVERAGE)



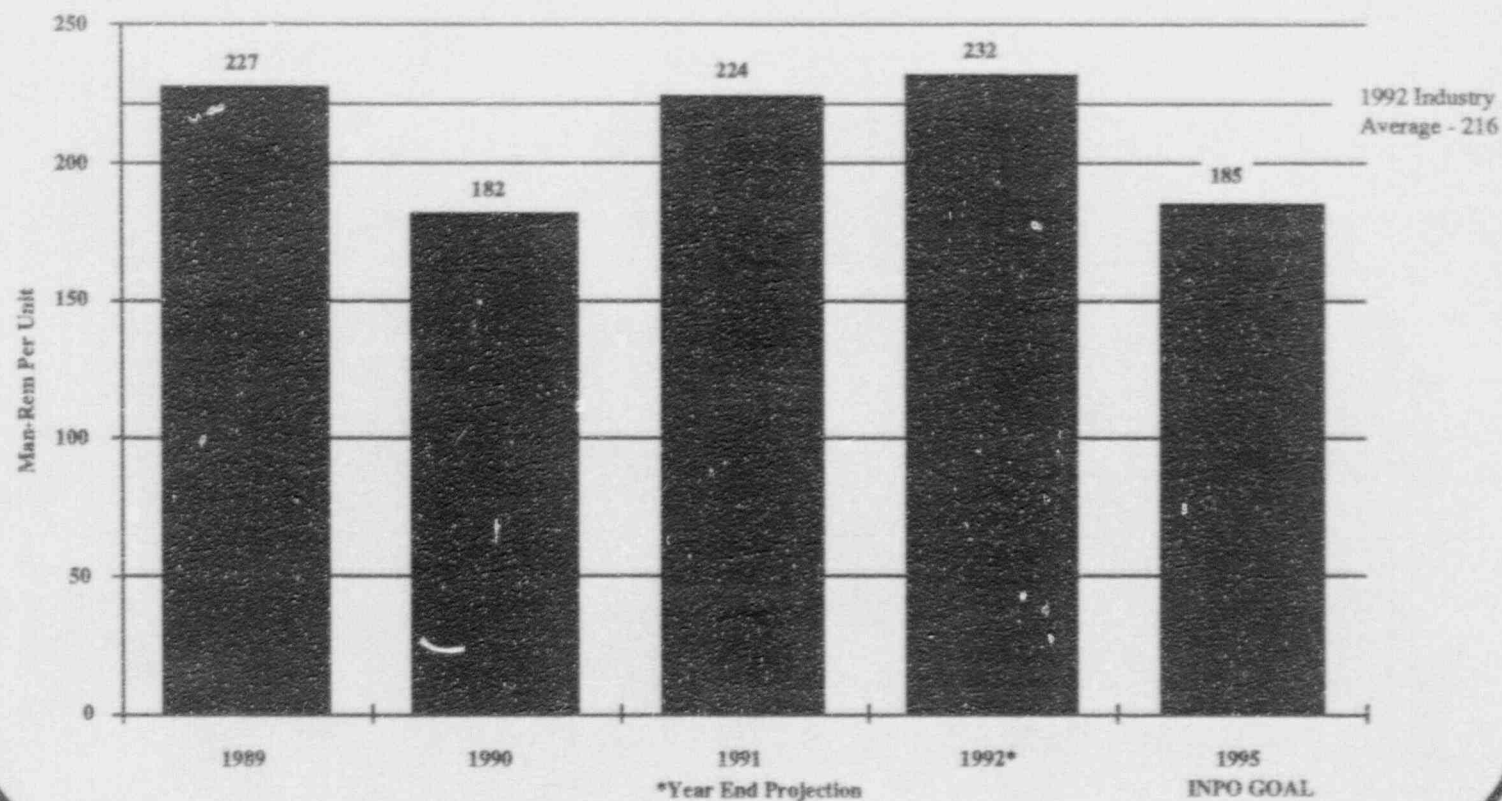
NORTH ANNA POWER STATION

CHEMISTRY INDEX



NORTH ANNA POWER STATION

COLLECTIVE RADIATION EXPOSURE (THREE YEAR AVERAGE)



North Anna Performance Annunciator Windows

Third Quarter 1992

PERSONNEL PERFORMANCE

<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
OPERATION	MAINTENANCE	RADIOLOGICAL PROTECTION	NSS	ENGINEERING	STATION SUPPORT

EQUIPMENT PERFORMANCE

<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
REACTOR TRIPS	ESF ACTUATIONS	RCS AND SECONDARY SYSTEM INTEGRITY	FUEL RELIABILITY	KEY SAFETY SYSTEM PERFORMANCE/AVAILABILITY	SYSTEM MATERIEL CONDITION
<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
NET GENERATION THERMAL PERFORMANCE	PLANT AVAILABILITY	EMERGENCY PREPAREDNESS EQUIPMENT AVAILABILITY	CHEMISTRY PERFORMANCE		

PROGRAM PERFORMANCE

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OPERATING PROGRAM	MAINTENANCE PROGRAM	RADIATION PROTECTION PROGRAM	SITE SERVICES PROGRAM	SITE ENGINEERING PROGRAM	SECURITY PROGRAM
<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
REGULATORY PERFORMANCE PROGRAM	EMERGENCY PREPAREDNESS PROGRAM	INDUSTRIAL SAFETY PROGRAM	SAFETY ASSESSMENT AND QUALITY PROGRAM	MATERIALS PROGRAM	TRAINING PROGRAM
<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
PLANNING & SCHEDULING PROGRAM	PROCEDURE PROGRAM	BUSINESS PLAN PERFORMANCE	ADHERENCE TO NUCLEAR SAFETY POLICY		

RED - SIGNIFICANT WEAKNESS
 YELLOW - IMPROVEMENT NEEDED
 WHITE - SATISFACTORY
 GREEN - SIGNIFICANT STRENGTH

LEGEND

4Q/91	1Q/92	2Q/92
THIRD QUARTER 1992		

REGULATORY PERFORMANCE

	CURRENT SALP	PREVIOUS SALP
LEERS	32	37
CITED VIOLATIONS	13	12

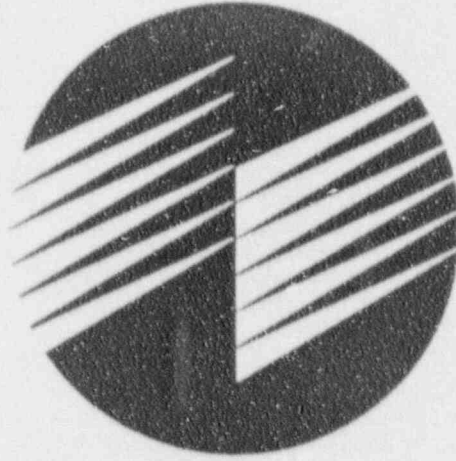
As of December 3, 1992

6 of 32 LEERS attributed to the aggressive ongoing
Technical Specification surveillance requirement
reviews.

North Anna Steam Generator Replacement Project Goals

	<u>Goal</u>	<u>Current Estimate</u>
ALARA	500 Man-Rem	480.7 Man-Rem
Licensing	10CFR50.59	10CFR50.59
Schedule	120 Days	110 Days
Cost	\$185 Million	\$142 Million
Safety	4.5 OSHA Rate	0 to Date

Virginia Power



STATION SELF ASSESSMENT

J. A. Stall

Assistant Station Manager

North Anna Performance

ACCOMPLISHMENTS

OPERATIONS

- Human Performance Improvement Plan/Results
- Outage Safety Attitude
- Licensed Operator Staffing and Experience
- Effective Operator Response
- Safe and Reliable Reactor Operation
- Few Reactor Trips
- Station Housekeeping
- Switchyard Control

North Anna Performance

ACCOMPLISHMENTS

OPERATIONS

- Improved Procedures:

- Implemented the Electronic PAR Process (E-PAR)

- Established Procedure Writing Station in TSC

- On Shift Procedure Writer – 24 Hour Coverage

- 1 Writer per Shift Assigned to the SRO

- On Shift Procedure Writers are Licensed Reactor Operators

- All Procedure Changes made by E-PAR Process

- Continued Improvement in Computer Based Information Systems

North Anna Performance

ACCOMPLISHMENTS

MAINTENANCE / SURVEILLANCE

- Plant Materiel Condition and Housekeeping
- Low Forced Outage Rate (0.7%)
- Consistently Low Reactor Coolant System Leakage
- Low Tolerance for System Leakage
- Low Backlog and Low Average Age of Work Orders
- 480 VAC Part 21 Klockner Moeller Breaker Change Out on Line
- Turbine Throttle Valve Repair on Line
- Enhanced Operation & Maintenance Interface
(Tagging Office)
- Instrument and Calibration PAR Reduction

North Anna Performance

ACCOMPLISHMENTS

MAINTENANCE / SURVEILLANCE

- Detailed T.S. Surveillance Review
- RTD Manifold Removal Scheduled
- IST Program Change Management Reviewed by SNSOC
- Post Maintenance Testing Program
- Reliability Centered Maintenance Program
- Root Cause Evaluation Program (e.g. failed feed reg valve cards, MSTV rupture discs)
- Check Valve Reliability Program
- Outage Shutdown Safety Perspective

North Anna Performance

ACCOMPLISHMENTS

ENGINEERING / TECHNICAL SUPPORT

- **Management Involvement in Issues:**
 - Responsiveness to Operational Needs
 - Effective Contingency Plan for Replacement of Battery 2-IV Cells
 - Proactive Approach to Resolving Difficult Problems (e.g. AFW response time testing)
- IPE Response at North Anna
- Microbiological Induced Corrosion Program
- **Eliminated Procedure Backlog Resulting from Plant Modifications**

North Anna Performance

ACCOMPLISHMENTS

ENGINEERING / TECHNICAL SUPPORT

- Training Program Effectiveness
Operations 100% Pass
Maintained Accreditation
- EDSFI Follow-up Demonstrated Significant Progress on Issues
- Motor Operated Valve Configuration Control and Differential Pressure Testing Program
- Engineering Work Well Coordinated with Station Maintenance to Support Planned and Emerging Work

North Anna Performance

ACCOMPLISHMENTS

RADIOLOGICAL PROTECTION

- Management Support
- RP Experience Level and Training
- PCE Reduction Efforts
- Dose Reduction Efforts (SGR, RTD Bypass Modifications and working smarter)
- Source Term Reduction
- Respirator Reduction Efforts
- Contaminated Area Very Low
- Locked High Radiation Area Reduction/Reclamation
- Housekeeping
- Early Boration and Lithium Reduction

North Anna Performance

ACCOMPLISHMENTS

RADIOLOGICAL PROTECTION

- Digital Alarming Dosimeter Upgrade
- Template Radiation Work Permits
- Industry Experience Enhancements
- New 10CFR20 Implementation Plan
- Radiological Protection Training - Contract and ARW Personnel
- Initiatives to Minimize Dose during Steam Generator Replacement (SGR):
 - Distinct Radiological Protection Organization
 - GET/ALARA Training for all SGR Personnel
 - Mock-up Training
 - Incorporated Lessons Learned From Other Utility SGR
 - State of the Art Equipment

North Anna Performance

ACCOMPLISHMENTS

EMERGENCY PLANNING

- Management Support
- Emergency Planning - Successful Graded EP Exercise, Including 4 Full Scale Drills
- Maintained High State of Readiness of EP Equipment
- Developed Emergency Action Level Basis Document

North Anna Performance

ACCOMPLISHMENTS

SECURITY

- Management Support
- Training Facilities Improvement - New Simulator
- Log Entries for Human Errors Well Below Region II Average
- Equipment Improvement:
 - New Card Readers
 - Main Security Computer System Replacement
 - Operational Secondary Portal for SGR
 - New Security Training Facility
- No Handgun Failures in 1992/Raised Handgun Qualification Average

North Anna Performance

ACCOMPLISHMENTS

SAFETY ASSESSMENT AND QUALITY VERIFICATION

- Management Involvement In Issues
- Station Oversight Board Meetings
- Nuclear Safety Oversight for Normal and Shutdown Conditions
- Good Identification Of Generic Safety Issues
- Integrated Event Trending
- QA Oversight of Operational Activities
- Effective Audit and Assessment Program
- QA Involvement in SNSOC

PREVIOUS SALP IDENTIFIED CHALLENGES

PLANT OPERATION

- Mispositioned Components - CORRECTED
- Improve Procedures - CORRECTED
- Address Adverse Trends in Operator Errors - CORRECTED

Further Initiatives Being Implemented

MAINTENANCE/SURVEILLANCE

- IST Program Weaknesses - CORRECTED
- Review of Test Results - CORRECTED
- Missed or Inadequate Surveillances - ONGOING
- Backlog of Procedure Action Requests - CORRECTED
- RTD Bypass Manifold - SCHEDULED FOR NEXT OUTAGES

PREVIOUS SALP IDENTIFIED CHALLENGES

ENGINEERING/TECHNICAL SUPPORT

- Impact of Design Changes on Procedures - CORRECTED
- Technical Support for Procedures - CORRECTED
- Electrical Distribution Design Calculations - ON SCHEDULE
- Assuring Engineering Involvement in Problem Areas - CORRECTED

PREVIOUS SALP IDENTIFIED CHALLENGES

RADIOLOGICAL CONTROLS

- Maintain Level of Performance - ONGOING

EMERGENCY PREPAREDNESS

- Maintain Level of Performance - ONGOING

SAFEGUARDS

- Maintain Level of Performance - ONGOING

SAFETY ASSESSMENT/QUALITY VERIFICATION

- Maintain Level of Performance - ONGOING

PREVIOUS SALP IDENTIFIED CHALLENGES THAT REQUIRE ONGOING ATTENTION

Missed Surveillances

- Ongoing detailed line by line review of Technical Specifications (TS) will be completed by June 1993
- The scope of the review includes procedures that demonstrate operability, maintain system line-ups, or implement channel functional tests or calibrations
- Team consists of SRO qualified, senior level Engineers
- Results of the review are maintained in a database that will augment the existing TS Cross Reference Document
- All missed surveillances have been reported to the NRC pursuant to 10 CFR 50.72, and when completed operability was demonstrated

PREVIOUS SALP IDENTIFIED CHALLENGES **THAT REQUIRE ONGOING ATTENTION**

Maintenance and Calibration Procedure Adequacy

- Maintenance/Instrumentation Procedure Change Backlog has been Significantly Reduced
- Technical Procedure Upgrade Program is Well Ahead of the Goal (913 Complete vs Goal of 600)
- Electronic Procedure Change Process (E-PAR) has been Implemented with a Dramatic Decrease in PAR Backlog (1717 to 122) and a Higher Quality Procedure for the Craftsman

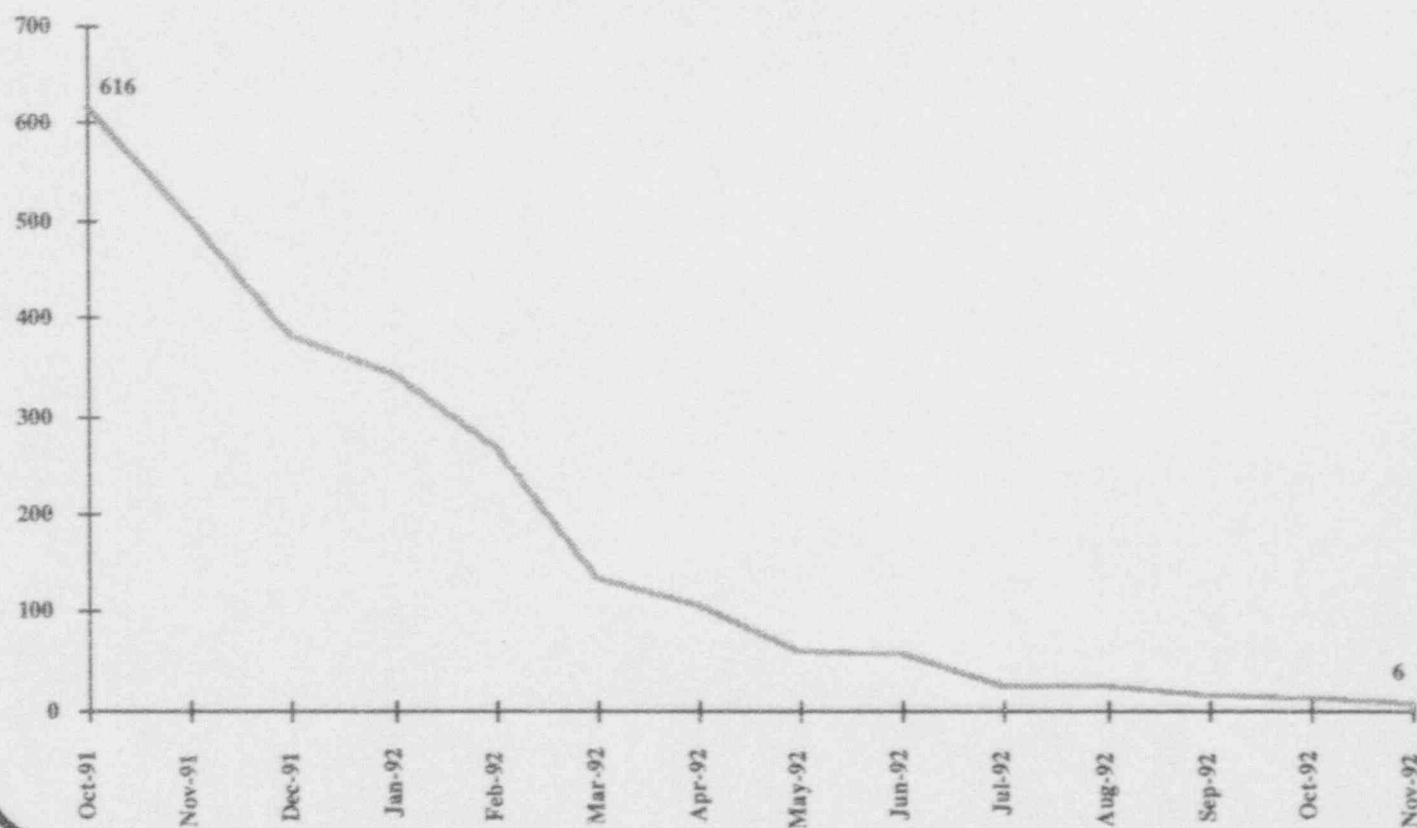
PREVIOUS SALP IDENTIFIED CHALLENGES **THAT REQUIRE ONGOING ATTENTION**

Maintenance and Calibration Procedure Adequacy

- Established Instrument Department Procedure Writing Station, Featuring Latest Computerized Technology, Allowing Direct Face to Face Interaction with Craft
- Installing Same Work Station for Mechanical and Electrical Maintenance
- The Result is a Dramatic Reversal in the Status of Procedures at North Anna. The Procedures Area is now Considered a Station Strength

NORTH ANNA POWER STATION

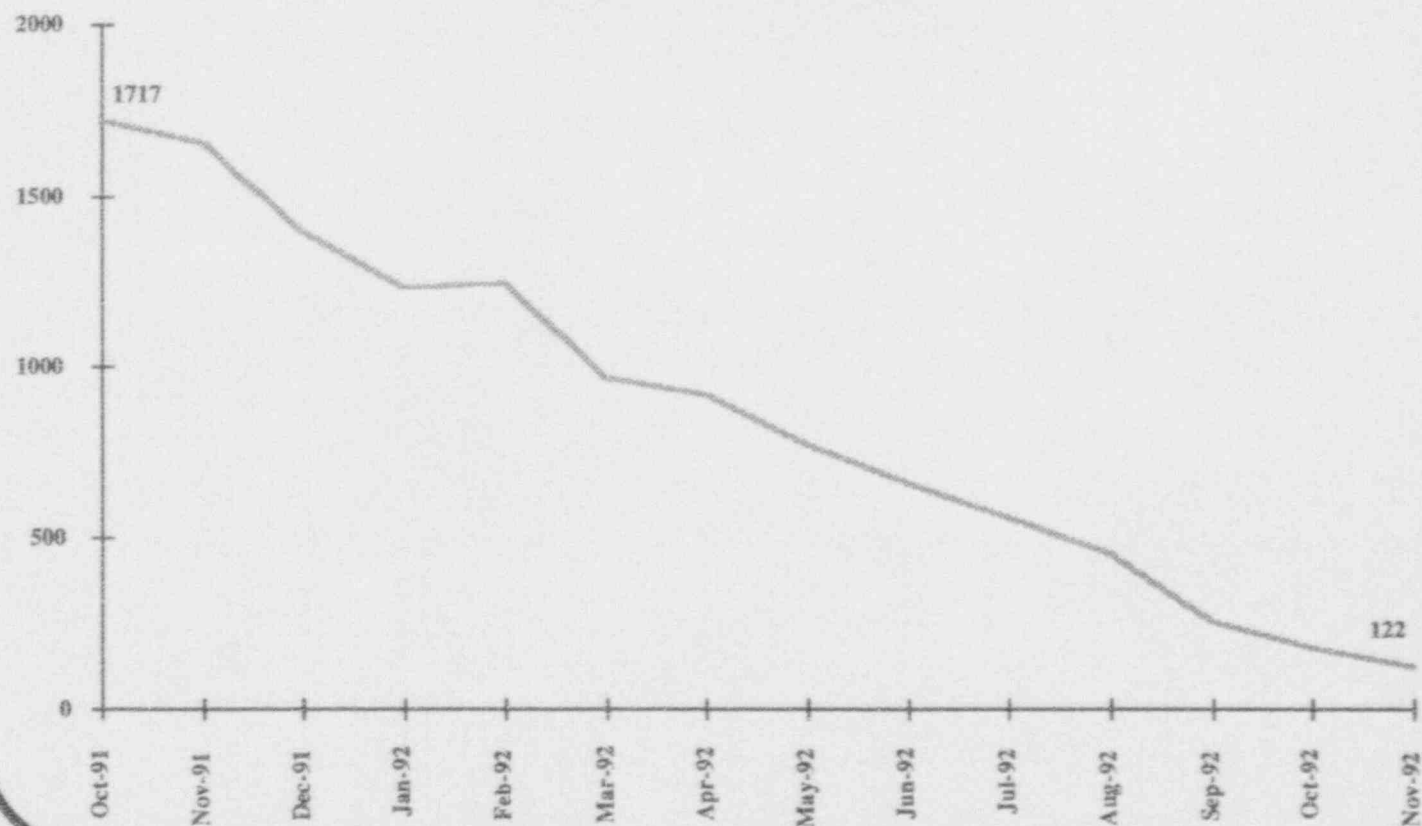
I&C PAR BACKLOG (10/91 TO PRESENT)



NORTH ANNA POWER STATION

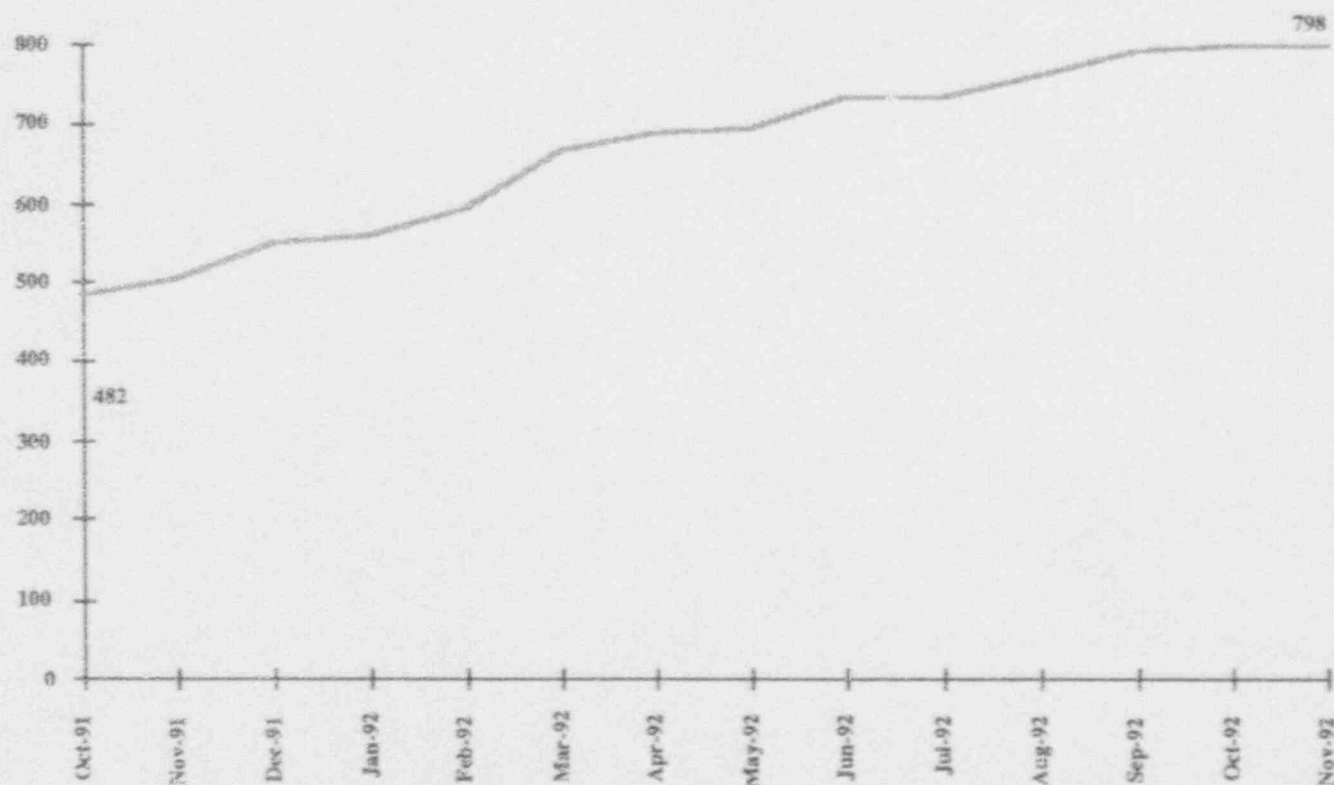
PAR BACKLOG

(10/91 TO PRESENT)

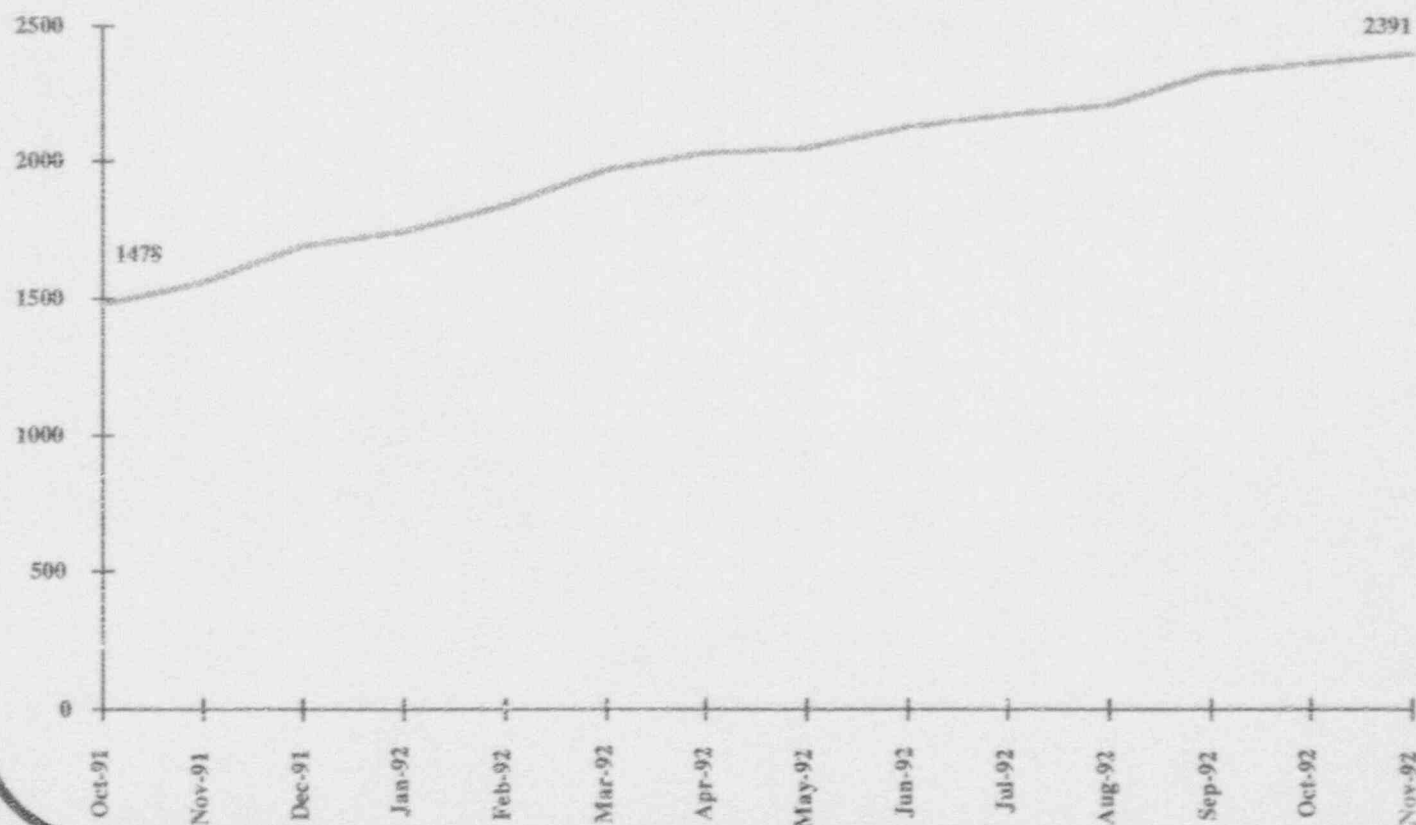


NORTH ANNA POWER STATION

I&C TPUP UPGRADE (10/91 TO PRESENT)



NORTH ANNA POWER STATION TECHNICAL PROCEDURE UPGRADE PROGRAM (10/91 TO PRESENT)



PREVIOUS SALP IDENTIFIED CHALLENGES THAT REQUIRE ONGOING ATTENTION

Reduction in Human Performance Based Problems

- Utilized QA Organization to Provide Oversight of Operational Activities During High Risk/High Activity Levels of Outages
- Developed Extensive Human Performance Improvement Program in Operations Department
- Used Consultant Dr. Allan Swain to Evaluate Human Performance Improvement Program
- Requested and Received an INPO HPES Assist Visit and Incorporated Recommendations

PREVIOUS SALP IDENTIFIED CHALLENGES THAT REQUIRE ONGOING ATTENTION

Reduction in Human Performance Based Problems

- Modified/Improved Supervisor Managerial Methods to Reduce Potential for Human Events Identified by QA
- Expanded QA Independent Verification Assessments to Departments Other Than Operations on an As Needed Basis
- Human Performance Trends/Indicators are Routinely Shared with all Operators
- The Result is a Substantial Reduction in Human Performance Issues at North Anna and is Now Seen as a Station Strength

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STATE OF QUALITY

J. P. SMITH

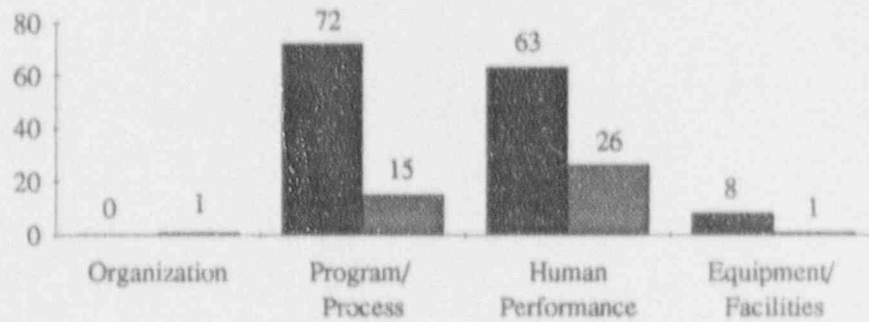
Quality Assurance Manager

PROACTIVE QUALITY ASSURANCE

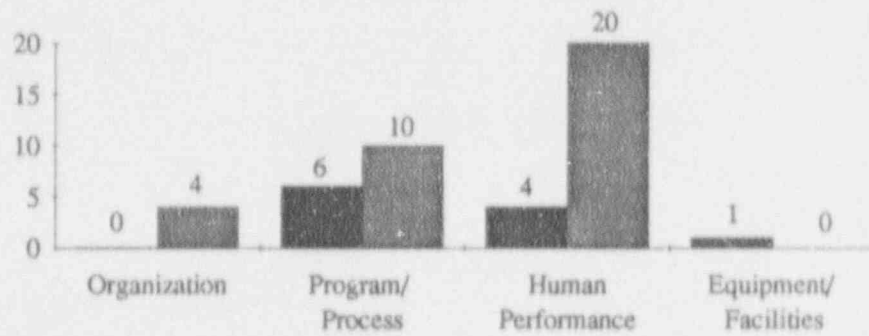
- Analyzing Trends to Provide Early Detection of Problems
- Monitoring for Effective and Timely Corrective Actions
- Getting Out of Inline QA – Line Accountable for Quality
- Assessing Performance
- Determining Overall State of Quality

State of Quality

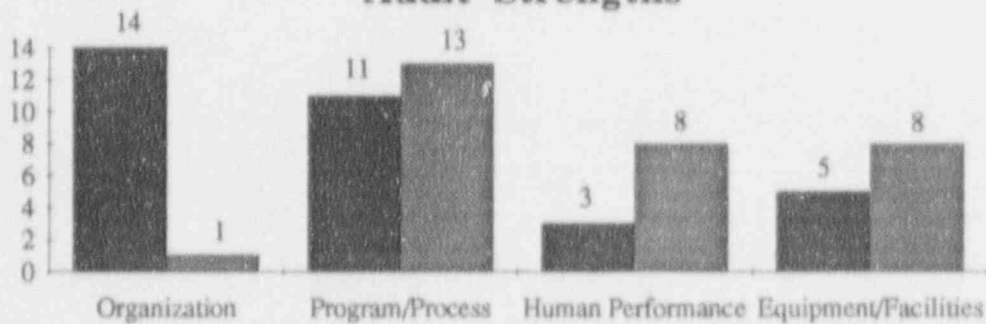
Audit Findings/Observations



Audit Enhancements



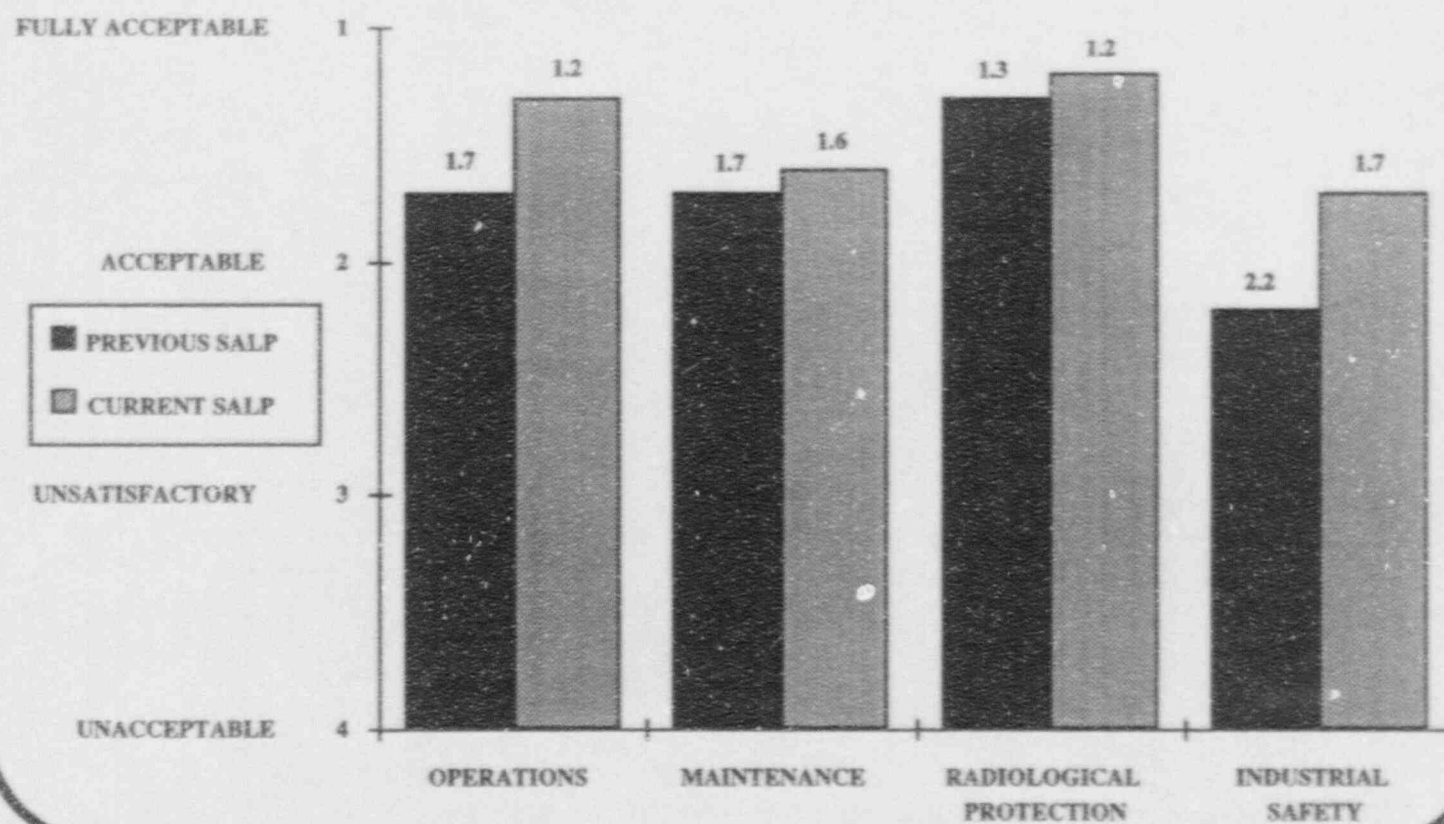
Audit Strengths



■ Previous Period ■ Current Period

STATE OF QUALITY

METHODOLOGY ASSESSMENT RESULTS



STATE OF QUALITY

CONCLUSIONS

- Maintain Management Focus on Human Performance
- Strong Management Focus on Resolving Issues and Addressing Assessment Results
- Superior Condition of Equipment and Facilities
- Personnel are Skilled and Knowledgeable

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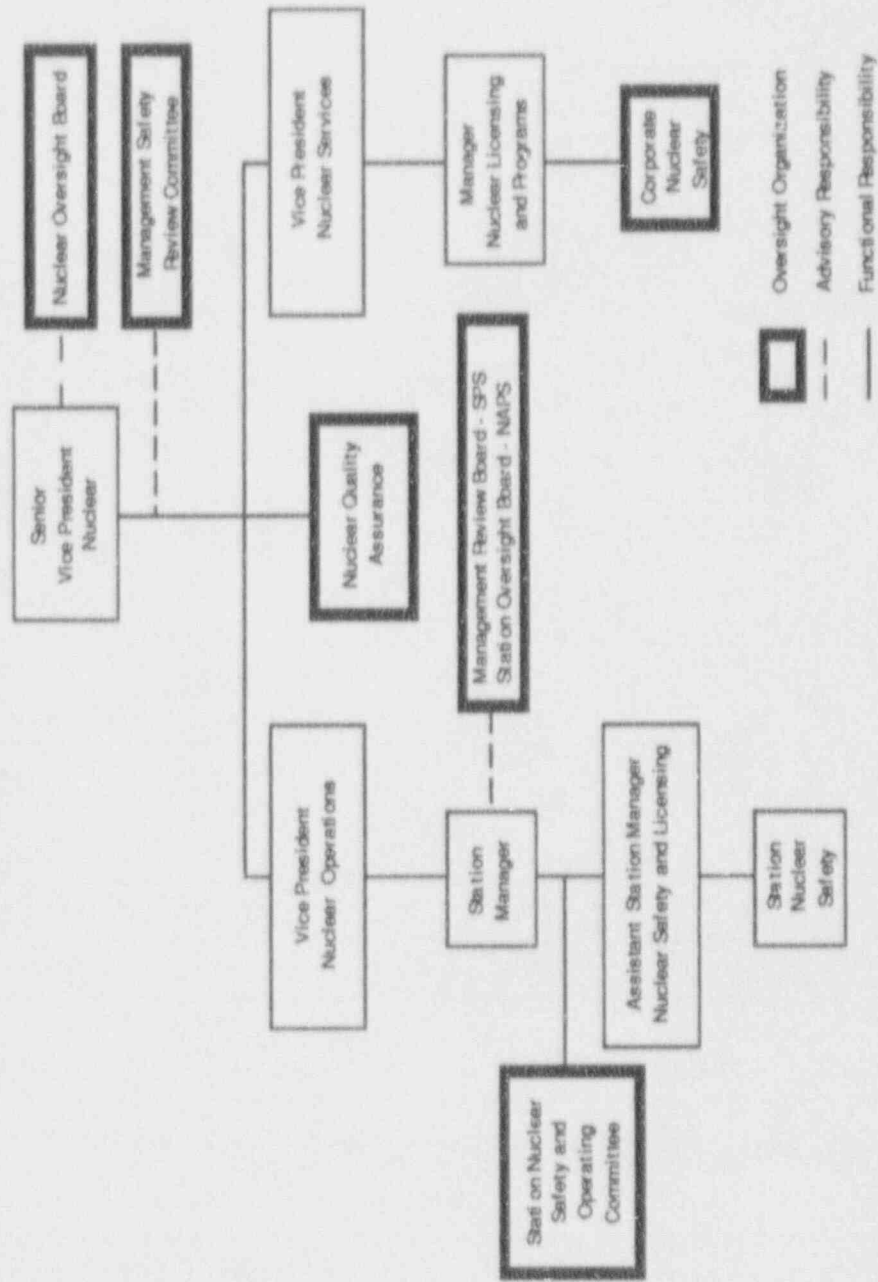
SAFETY ASSESSMENT

Larry M. Girvin

Vice President - Nuclear Services

Virginia Power

Nuclear Safety Oversight



Performance Based Assessments Conducted In 1992

- Shutdown Management
- Post Maintenance Testing
- Safety Evaluations
- Switchyard
- Environmental Qualification Program
- Appendix R
- Start-Up Assessment Process
- Electrical Distribution
- Engineering Change Control

Significant Event Reviews
Requested By Station Management In 1992

- Unit 2 Chiller Failing To Trip At Surry
- 480V Motor Control Fire At North Anna
- GETARS Utilization
- Condenser Waterbox Opening Transposition At North Anna

Other Corporate Oversight Activities

- Integrated Event Trending Program
- Back Shift Management Assessments And Simulator Observations
- Review Of NRC Violations At Other Utilities
- UFSAR Operational Review At Each Station
- QA Audit Program

Licensing Performance

- No Commitments to NPC have been missed in the Current SALP Period
- The North Anna UFSAR Backlog has been eliminated
- The Number of License Amendment Requests Currently at NRC is Low (6)
- The Number of Temporary Waivers of Compliance Requested is Low (2)
- Significant Licensing Issues are Highly Visible Through the Top 10 Priority List
- Significant Licensing Tasks have been Accomplished in a Timely Manner

Licensing Performance

- No commitments to NRC have been missed in current SALP period. The number of deferred commitments is low and declining (5 in 1991, 3 in 1992).
- The North Anna UFSAR backlog is being eliminated. The backlog was highest in May 1991 with 61 items, reduced to 36 items at the beginning of the current SALP period and will be 0 by December 31, 1992.
- The number of license amendment requests currently at NRC is low: 6. NRC issued 19 amendments for North Anna 1 and 14 amendments for North Anna 2 since the SALP period began in November 1991. Only one emergency and one exigent Technical Specification change (for North Anna 1 only) were requested. Both were approved by NRC.
- The number of temporary waivers of compliance requested is low: 2. One involved turbine throttle valve testing, the other involved AFW pump relay response testing. Both were for North Anna 1 only and were granted by NRC.
- Significant licensing issues are highly visible through the top 10 priority list. The Top 10 North Anna Licensing Task system effectively identifies licensing issues important to both NRC and Virginia Electric and Power Company.
- Significant licensing tasks have been accomplished in a timely manner. Examples include NRC startup approval (March '92) and issuance of two license amendments (Feb '92) supporting the startup of North Anna 1 following an unplanned outage in Dec. '91, the replacement of North Anna 1 Steam Generators under 10CFR50.59, and the restoration of portions of the Service Water system in accordance with NRC-approved exemptions.

Virginia Power



CONCLUSIONS

J. P. O'Hanlon

Vice President - Nuclear Operations