

February 28, 1997

Tennessee Valley Authority
ATTN: Mr. Oliver D. Kingsley, Jr.
President, TVA Nuclear and
Chief Nuclear Officer
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

SUBJECT: MEETING SUMMARY - SEQUOYAH NUCLEAR PLANT, DOCKET NOS. 50-327 AND
50-328

Dear Mr. Kingsley:

On February 26, 1997, the NRC staff met at the Sequoyah Nuclear Plant Training Center with representatives of the Tennessee Valley Authority's Sequoyah Nuclear Plant staff. The purpose of this meeting was to discuss operational performance of the Sequoyah units. Enclosure 1 is a list of the individuals who attended the meeting, and Enclosure 2 contains a copy of the material supplied by the licensee at the meeting.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, 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 P. K. Van Doorn)

Mark S. Lesser, Chief
Reactor Projects Branch 6
Division of Reactor Projects

Docket Nos. 50-327, 50-328
License Nos. DPR-77, DPR-79

Enclosures: 1. List of Attendees
2. Handout Material

cc w/encls: (See page 2)

9703110116 970228
PDR ADOCK 05000327
P PDR



cc w/encls:

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Sequoyah Nuclear Plant
Tennessee Valley Authority
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Distribution w/encls: (See page 3)

TVA

3

Distribution w/encls:

J. R. Johnson, RII
M. S. Lesser, RII
S. E. Sparks, RII
F. J. Hebdon, NRR
R. W. Hernan, NRR
H. L. Whitener, RII
C. F. Smith, RII
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OFFICE	DRP/RII	DRP/RII				
SIGNATURE	<i>S. Sparks</i>	<i>K. VanDoorn</i>				
NAME	SSparks-vyg	KVanDoorn				
DATE	02 / 28 / 97	02 / 28 / 97	02 / / 97	02 / / 97	02 / / 97	02 / / 97
COPY?	YES NO	YES <i>AB</i>	YES NO	YES NO	YES NO	YES NO

OFFICIAL RECORD COPY

DOCUMENT NAME: G:\BR6.SQ\MM0226.SUM

LIST OF ATTENDEES

NRC

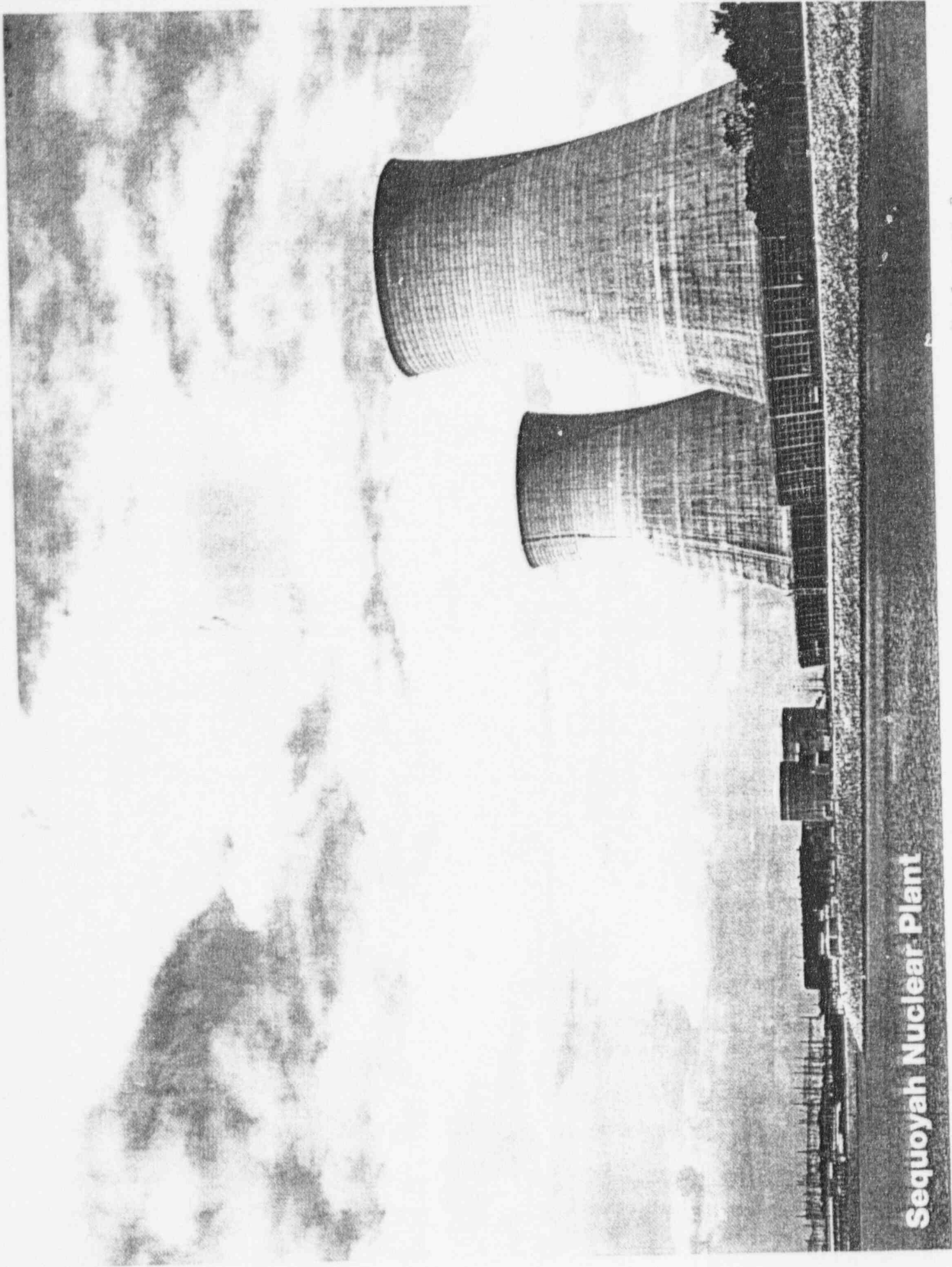
L. A. Reyes, Regional Administrator, Region II (RII)
J. R. Johnson, Director, Division of Reactor Projects (DRP), RII
W. E. Holland, Acting Branch Chief, Maintenance Branch, Division of Reactor Safety, RII
M. C. Shannon, Senior Resident Inspector, DRP, RII
D. A. Seymour, Resident Inspector, DRP, RII
S. E. Sparks, Project Engineer, DRP, RII
R. W. Hernan, Senior Licensing Project Manager, Office of Nuclear Reactor Regulation

Licensee Attendees:

O. D. Kingsley, President, TVA Nuclear and Chief Nuclear Officer
O. J. Zeringue, Senior Vice President, Nuclear Operations
J. A. Bailey, Vice President, Engineering and Technical Services
R. Baron, General Manager, Nuclear Assurance and Licensing
R. J. Adney, Site Vice President
J. T. Herron, Plant Manager, Sequoyah
W. Lagergren, Operations Manager
R. Rausch, Maintenance and Modifications Manager
T. A. Flipppo, Site Support Manager
M. Burzynski, Engineering and Materials Manager
M. Skarzinski, Technical Support Manager
L. Bryant, Outage Manager
M. Fetch, Nuclear Assessment and Licensing Manager

Sequoyah Nuclear Plant

Enclosure 2



Tennessee Valley Authority

Sequoyah Nuclear Plant

TVA/NRC Meeting

February 26, 1997

Sequoyah Nuclear Plant
TVA/NRC Meeting Agenda
February 26, 1997

- | | | |
|------|---|--------------|
| I. | Introduction | R. J. Adney |
| II. | Sequoyah Performance | J. T. Herron |
| | - <i>INPO Performance Indicator Index</i> | |
| III. | Key Focus Areas | All |
| | - <i>Corrective Action</i> | |
| | - <i>Self Assessments</i> | |
| | - <i>Personnel Performance</i> | |
| | - <i>Plant Material Condition</i> | |
| IV. | Outage Preparations | L. S. Bryant |
| V. | QA Perspective | M. J. Fecht |
| VI. | Summary | R. J. Adney |

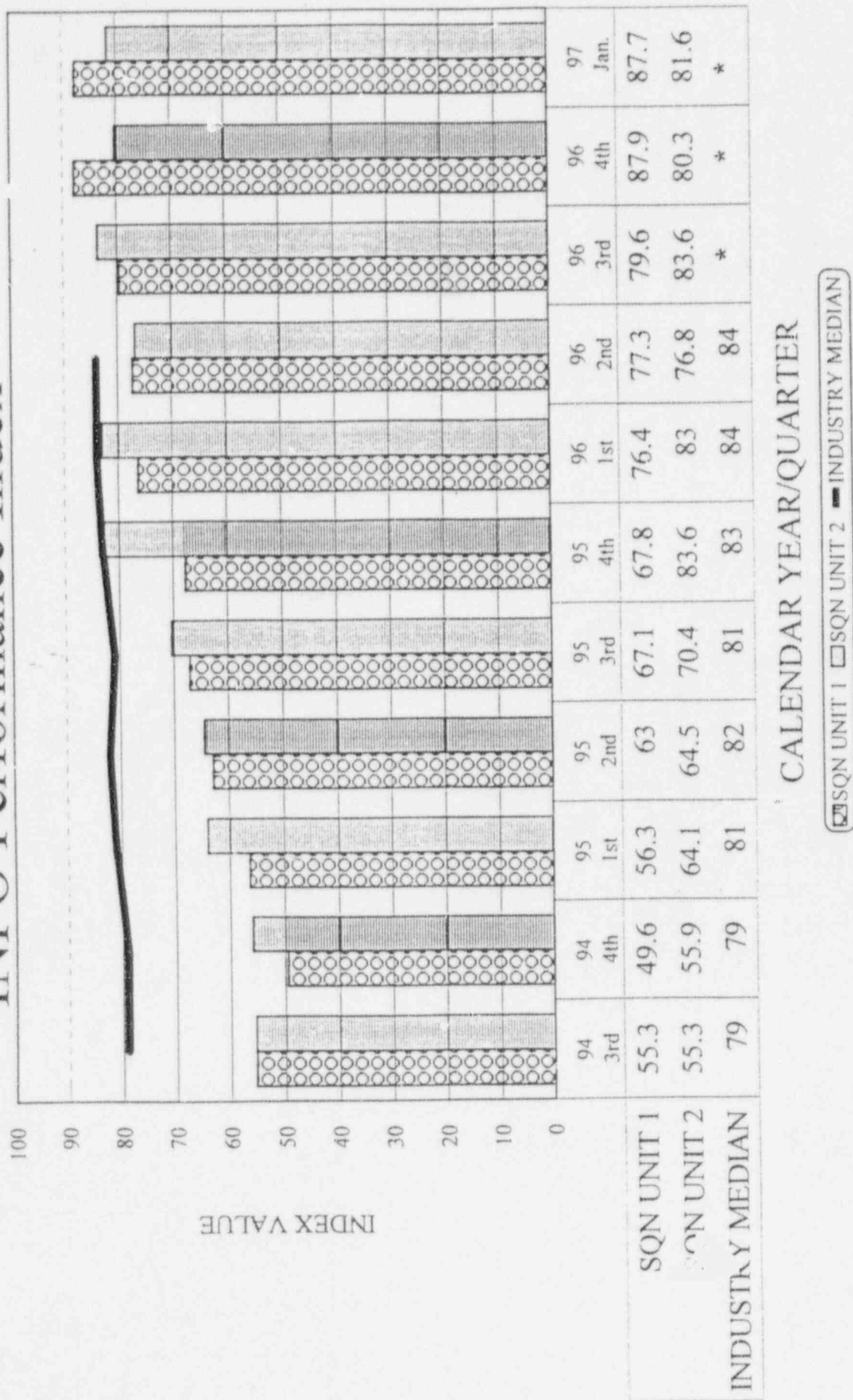
Sequoyah Nuclear Plant

Introduction

Sequoyah Nuclear Plant

Sequoyah Performance

Sequoyah Nuclear Plant INPO Performance Index



*Note: Median data not published until after March 1997

INPO INDEX

SEQUOYAH UNIT 1

	min	max	weight	value	index	Product	criteria
Unit Capability Factor	40	90	0.16	82.49	84.980	13.6	82.490
Unplanned Capability loss Factor	15	0	0.12	8.05	46.333	5.6	8.050
Unplanned Automatic Scrams	5	1	0.08	1.375	90.620	7.2	1.375
High Pressure Injection	0.03	0.01	0.1	0.006	100.000	10.0	0.010
Auxiliary Feedwater	0.04	0.01	0.1	0.008	100.000	10.0	0.010
Emergency AC System Availability	0.05	0.01	0.1	0.011	97.500	9.8	0.011
Thermal Performance	98	100	0.06	99.711	85.529	5.1	99.711
Fuel Reliability	0.01	0.0005	0.08	0.000	100.000	8.0	0.001
Chemistry Index	2.00	1.10	0.07	1.076	100.000	7.0	1.100
Collective Radiation Exposure	400	100	0.08	155.876	81.375	6.5	155.876
Industrial Safety Accident Rate	2	0.3	0.05	0.329	98.323	4.9	0.329

Weighted Index

January 1997 =

87.7

SEQUOYAH UNIT 2

	min	max	weight	value	index	Product	criteria
Unit Capability Factor	40	90	0.16	84.38	88.760	14.2	84.380
Unplanned Capability loss Factor	15	0	0.12	8.38	44.133	5.3	8.380
Unplanned Automatic Scrams	5	1	0.08	1.377	90.572	7.2	1.377
High Pressure Injection	0.03	0.01	0.1	0.008	100.000	10.0	0.010
Auxiliary Feedwater	0.04	0.01	0.1	0.029	37.667	3.8	0.029
Emergency AC System Availability	0.05	0.01	0.1	0.011	97.500	9.8	0.011
Thermal Performance	98	100	0.06	99.733	86.659	5.2	99.733
Fuel Reliability	0.01	0.0005	0.08	0.000	100.000	8.0	0.001
Chemistry Index	2.00	1.10	0.07	1.137	95.859	6.7	1.137
Collective Radiation Exposure	400	100	0.08	155.876	81.375	6.5	155.876
Industrial Safety Accident Rate	2	0.3	0.05	0.329	98.323	4.9	0.329

Weighted Index

January 1997 =

81.6

Sequoyah Nuclear Plant

Key Focus Areas

- **Corrective Action**
- **Self Assessments**
- **Personnel Performance**
- **Plant Material Condition**

Sequoyah Nuclear Plant

Corrective Action

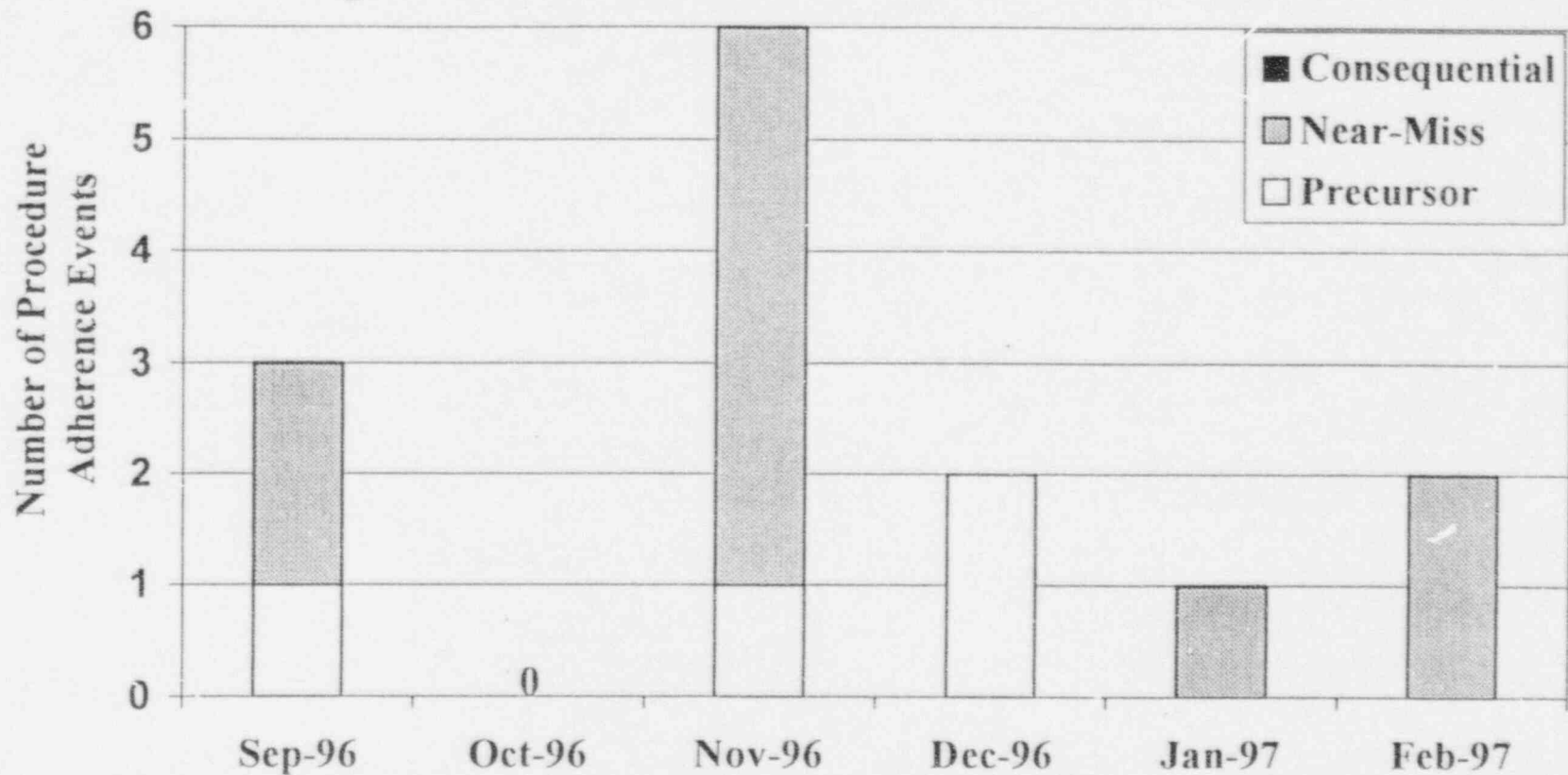
- Management ownership/accountability is improving
- QA rejection rate decreasing (25% down to 8%) concurrent with lower threshold
- Meeting with operators, maintenance personnel, RadCon/Chemistry techs, and Engineering personnel to emphasize need to write PERs, clearly describe problem, and preserve evidence
- Root cause quality has been improving as observed by:
 - Senior management reviews
 - Line management reviews
 - QA rejection rate decreasing on 100% review
 - Basic quality of completed evaluations
 - RCP motor vibration
 - RCP seal leakage issues
 - Motor-driven auxiliary feedwater pump dark oil
 - Repetitive gasket leaks on level indicating instruments

Sequoyah Nuclear Plant Self Assessments Operations

- INPO-like assessments
 - Ongoing:
 - Scope (Conduct of Ops, status control, procedures, facilities, knowledge)
 - Observation Program (same as BFN and WBN)
 - Each supervisor does three per quarter in the plant and in training
 - 17 different areas (e.g., AUO Watchstanding, Radcon/Safety, Procedures)
 - Quarterly multi-site:
 - Use SROs from other TVA nuclear sites
 - Ongoing and quarterly feed Site Trend Analysis Committee (STAC) process
- Results
 - Procedure adherence (see graph)
 - Status control (see graph)
 - Other focus areas (e.g., ARPs, Logkeeping, RO Formality, AUO Watchstanding Practices, Pre-Job Briefs)
- Corrective Action Program
 - Self-identification

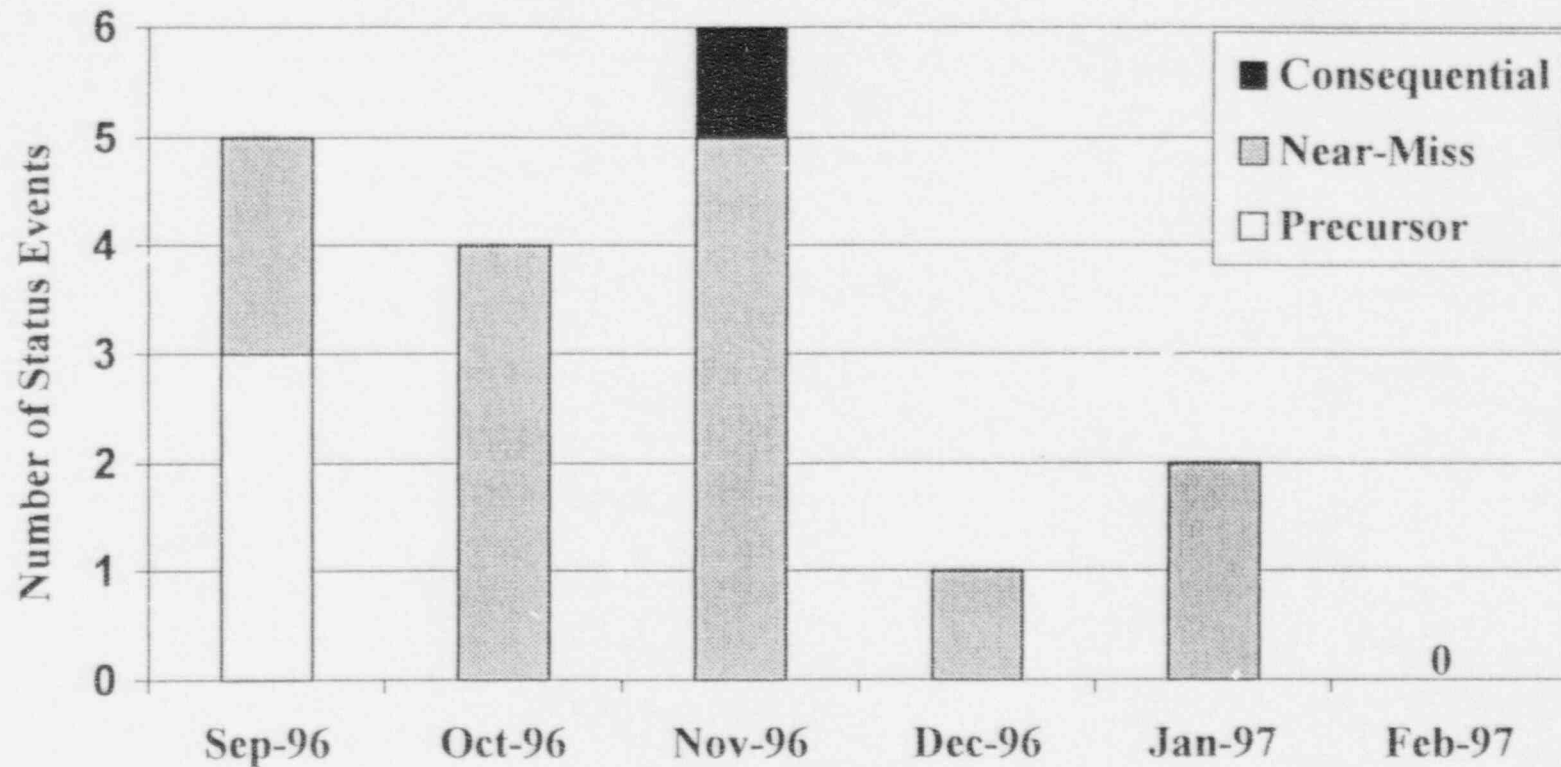
Sequoyah Nuclear Plant Operations Self-Assessment

Operations Procedure Adherence Events



Sequoyah Nuclear Plant Operations Self-Assessment

Site Status Control Events



Sequoyah Nuclear Plant Self Assessments Maintenance

- Assessment Process: Modeled after INPO performance objectives
 - Performed quarterly (feeds the STAC process)
- Participants
 - Assessment team mix (management and craft)
 - Assessment team trained on Observation Techniques
- Results
 - Identified site weakness in EMS data
 - Identified training weakness and helped initiate Scenario Training
 - Identified weakness in Supervisor Observation and initiated Maintenance Peer Evaluation Program
- Program improvements
 - Identified need to improve Maintenance ownership (followup)
 - Include members from QA, Operations, and Engineering in assessments

Sequoyah Nuclear Plant Self Assessments Engineering

- Assessment Process:
 - Modeled after INPO performance objectives, performed quarterly (feeds STAC process)
 - Two-year PER data reviewed annually
- Participants
 - Personnel trained in Root Cause Analysis
- Results
 - Past reviews
 - Electrical wiring diagram errors
 - Excessive field changes for modification packages
 - Modification close-out completeness
 - Return-to-service issues

Sequoyah Nuclear Plant Self Assessments Engineering

- Current reviews
 - Completeness of revising affected documents
 - Vendor interface difficulties
 - Operations training interface
- Future reviews
 - In-depth root causes identifying human performance issues
 - Facilitates analysis for areas of improvement
- Trends
 - FDCN design error rate better than established goal
 - PER self-identification is generally on target
 - Personnel error rate for PERs has increased due to heightened root cause analysis

Sequoyah Nuclear Plant

Self Assessments

Radcon/Chemistry

- Assessment Process:
 - INPO-like assessments, annual
 - STAC assessments, quarterly
 - Internal assessments
- Participants
 - Line personnel and technical staff based upon independence and technical needs
 - INPO-like assessments include multi-site personnel
- Results
 - Identified attention to detail and procedural problems, areas for improvement, efficiency issues
- Program improvements
 - Improvements in internal QA/QC program, chemical and materials procurement, secondary chemistry program, records management, radwaste shipping documents, RWP program

Sequoyah Nuclear Plant Personnel Performance

- Personnel performance
 - Personnel error
 - Thresholds lowered
 - Department self-identification improving
 - Ongoing actions for additional improvements
 - STAR and QV&V training
 - Use of a STAR simulator
 - Front-line supervisors, licensed and non-licensed operators and craft visits to SALP 1 sites
 - Required management observations
 - INPO Operations assist visit
 - Challenges/problems
 - Attention to detail
 - Peer challenges
 - Procedural compliance
 - Management follow-through on corrective actions

Sequoyah Nuclear Plant

Plant Material Condition

- Sequoyah has a plan to improve material condition
- Sequoyah is working that plan
- Completed improvements
 - Replaced Unit 2 condenser with modular titanium
 - Unit 2 integrated computer system installation to replace obsolete P250
 - Ongoing Arrow-Hart replacements
 - Steam generator chemical cleaning - both units
 - Erosion/Corrosion Program implementation
 - Unit 1 exciter replacement
 - Feedwater nozzle replacements

Sequoyah Nuclear Plant

Plant Material Condition

- Completed improvements (cont.)
 - Electrical penetration replacements
 - MSIV upgrades - both units
 - MSCV removal - both units
 - Capacitor bank installation for improved offsite power source reliability
 - BOP chemistry improvement mods
 - Switchyard improvements
 - Lower compartment cooler replacements
 - Pro-active reactor head funnel welding
 - Vital inverter overhauls
 - Pressurizer safety valve condition improvements
 - 250-volt station battery replacement
 - No. 3 HDT LCV improved reliability

Sequoyah Nuclear Plant

Plant Material Condition

- Completed improvements (cont.)
 - CCW pump trip circuit mods
 - Improved diesel generator availability through revamped scheduling of routine work
 - Feedwater heater level tree reliability improvements
 - Control air line reliability improvements through upgrades to flexible stain less steel lines on critical end devices
 - Main transformer sudden pressure relay to eliminate spurious actuations
 - Safety-related chiller refurbishments
 - Stator cooling water pressure and temperature sensor logic changes to minimize spurious actuations
 - MFWP loss of oil pump trip circuit mods to eliminate spurious actuations

Sequoyah Nuclear Plant

Plant Material Condition

- Completed improvements (cont.)
 - Upgrades of MFWP control circuit components to eliminate premature failures
 - Replaced rod step demand counters with more reliable design (digital)
 - Revised No. 3 HDT runback control circuit to minimize spurious actuations
 - Improved RCS level monitoring capability for reduced inventory conditions to minimize shutdown risk

Sequoyah Nuclear Plant

Plant Material Condition

- Rolling three-year Capital Projects (current Business Plan)
 - Fiscal Year '97 @ \$63M
 - Fiscal Year '98 @ \$37M
 - Fiscal Year '99 @ \$26M
- Rolling three-year O&M Projects (current Business Plan)
 - Fiscal Year '97 @ \$6.5M
 - Fiscal Year '98 @ \$7.7M
 - Fiscal Year '99 @ \$6M

Sequoyah Nuclear Plant Plant Material Condition

- Future projects (see attached Project Lists - The Project Lists are subject to change based on overall site priorities)

Sequoyah Nuclear Plant

Plant Material Condition

- Reliability Study
 - 23 plant reliability issues identified
 - 4 issues resolved
 - 2 issues complete on Unit 2 and scheduled for U1C8 refueling outage (RFO)
 - 16 issues currently in progress for U1C9/U2C9 RFOs
 - 1 issue scheduled for completion by U1C10/U2C10 RFOs
- Additional in-depth study of reliability significant systems
 - 16 key BOP systems identified
 - Includes system walkdown and review of system unreliabilities
 - For Unit 2, have identified corrective/preventive maintenance and design improvements
 - Unit 1 in progress

Sequoyah Nuclear Plant

Plant Material Condition

- SQN BOP comparison with industry
 - SQN BOP lessons learned from WBN
 - WBN BOP design changes since startup have been reviewed
 - 16 determined to be applicable and reliability related
 - 1 lacked implementation benefit
 - 10 have been implemented
 - 1 design change in progress, 4 planned

Sequoyah Nuclear Plant

Plant Material Condition

- SQN BOP comparison with industry (cont.)
 - 1993 Stone & Webster industry expert identified several differences
 - Majority of differences due to original SQN design focus on efficiency
 - Philosophy introduced complexity and reduced reliability
 - No significant changes were recommended
 - One recommendation complete; one planned
 - Bechtel Corporation recently contracted to perform supplementary review
 - Comparison will be to standard Bechtel BOP design
 - Review is in progress

Sequoyah Nuclear Plant

Plant Material Condition

- Steam dump system status
 - Evaluated condition by use of industry and corporate personnel
 - Root cause determined
 - Modifications planned for U1C8 and U2C8 RFOs
 - Interim monitoring actions in place

- Arrow-Hart replacement status
 - Original population of critical components - 468
 - Expedited resolution and work is on schedule - 284 complete
 - Remaining population - 184; scheduled for completion by end of U2C8

Sequoyah Nuclear Plant

Plant Material Condition

- RHR pump discharge header gas venting condition
 - Voluntary LER provided root cause
 - Industry experts consulted
 - No safety impact
 - Partial mod completed on Unit 1 during November planned shutdown
 - Modifications scheduled for cycle 8 RFOs
- Freeze Protection Program
 - To be placed in A1 status Maintenance Rule
 - Compensatory measures
 - Engineering issued implementation schedule

Sequoyah Nuclear Plant

Plant Material Condition

- System health
 - Integrates Operations, Maintenance, and Engineering
 - Enables aggregate effect review of open items
 - Equipment failure trending
 - Provides focus for improving system performance
 - Aids in work prioritization
 - Incorporates Maintenance Rule

Sequoyah Nuclear Plant

Plant Material Condition

- Evaluating effectiveness of previous corrective actions (CA)
- Senior manager owns review
- Review is a site-wide effort
 - Master Issues List (approximately 500 items)
 - Open WRs/WOs, & PERs (approximately 5500 items)
 - RCM/PM basis approach (EPRI review; 3 systems)
 - Plant walkdowns (three 7-man teams with independent QA verification)
 - Closed documents
 - PERs (approximately 8500 PERs, back to 1989)
 - WOs (3 samplings; approximately 60 items per sample)
 - Operating Experience Review (approximately 160 items)

Sequoyah Nuclear Plant

Plant Material Condition

- Following December '95 breaker failure, management initiated evaluation of switchyard
- TVA-wide reorganization focused on switchyard ownership, and created separate organization for TVA nuclear switchyards
- Recent TVA accomplishments in switchyard
 - Replaced 500kV PCB 5054 and 5064
 - Completed planned 500kV switchyard outage
 - Completed internal inspections and routine PMs on 500/161kV intertie transformer bank
 - Replaced air compressors on 161 kV PCBs 994, 984, and 924
 - Conducted Engineering/Design/Maintenance evaluations
 - Independent contractor evaluation

Sequoyah Nuclear Plant

Plant Material Condition

- Ongoing switchyard activities
 - Replacement of 500 kV PCB 5048 and 161 kV PCB 974 scheduled for completion 3/97
 - Systematic replacement of five high maintenance air compressors

Sequoyah Nuclear Plant

Plant Material Condition

- Planned switchyard activities
 - Upgrade six oil-filled PTs with SF-6 PTs in 500kV yard
 - Upgrade CCVT with SF-6 PT in 500kV yard
 - Internal inspections and regasketing of Unit 1 main bank transformers
 - Add two pressure switches to LVBC system to improve Unit 1 transformer reliability by preventing spurious trips
 - Replace obsolete contactors on cooling fans and oil pumps on Unit 1 transformers
 - Routine maintenance and test activities within periodicity by end of UIC8
- Results
 - Reliable switchyard
 - Strong diverse offsite power sources
 - Two hydro
 - Two fossil
 - One nuclear

Sequoyah Nuclear Plant

Outage Preparations

Sequoyah Nuclear Plant Outage Preparations

- Power reduction March 21, breaker close May 7
- Major outage scope
 - 36 modifications
 - 1,056 work orders (Mods and Maintenance)
 - 927 preventive maintenance orders
 - 460 surveillance activities
 - Replace 5 electrical penetrations
 - Replace 2 LP turbine rotors
 - Replace main condenser
 - Replace main feedwater nozzles on loop 3 & 4 steam generators

Sequoyah Nuclear Plant

Outage Preparations

- Other outage scope
 - Selected ASCO SOVs
 - Replace four S/G PORV controllers (Operations workaround)
 - Refurbish 24 6.9 kV breakers
 - Install S&K flow rotometers on RCP seal return
 - Modify main steam dump drain system
 - Integrated Computer System modification
 - Install No. 2 feedwater heater bypass sparger (in U1C8 vs U1C9)
 - Replace 70 Arrow-Hart contactors
 - Rod control maintenance diagnostic

Sequoyah Nuclear Plant Outage Preparations

- Other outage items
 - Outage safety plan developed
 - Defense-in-depth expanded
 - Independent safety review completed
 - Milestone managers utilized
 - Operations Shift Managers (outage) utilized
 - High impact teams utilized
 - No hot midloop UIC8

Sequoyah Nuclear Plant Outage Preparations

- Goals - Sequoyah Unit 1 Cycle 8
 - **Run Unit 2 safely and reliably**
 - No Licensee Event Reports or regulatory violations
 - No more than 1 TVA recordable case injuries
 - No lost time accidents
 - Less than 225 total REM exposure and no high rad area violations
 - Less than 0.9 personnel contaminations per 1000 RWP hours
 - Outage-related Unit 1 temporary alterations cleared
 - Temporary leak repairs cleared
 - Outage control room deficiencies cleared
 - Total completion of baseline outage scope
 - Strong Unit 1 performance after startup

Sequoyah Nuclear Plant

QA Perspective

Sequoyah Nuclear Plant

QA Perspective

- Recent QA initiatives
 - Degraded/nonconforming condition assessment (complete)
 - Equipment failure trending assessment (complete)
 - Freeze protection (complete)
 - M&TE (complete)
 - Vertical slice audit (ongoing)
 - Fire protection assessment (complete)
 - Corrective Action Program 100% review (ongoing)
 - QA escalations
- The top five focus areas:
 - Problem resolution (Corrective Action Program)
 - Line self-assessments
 - Plant material condition
 - Personnel performance
 - Trending

Sequoyah Nuclear Plant

Summary

SEQUOYAH CAPITAL PROJECTS LIST

FISCAL YEARS 1997-1999

PROJECT TITLE	OUTAGE	SCHED FINISH	FY 1997	FY 1998	FY 1999
<u>OPERATOR WORK AROUNDS</u>					
UPGRADE TURBINE STEAM SEAL UNIT 1	U1C9			70%	30%
UPGRADE TURBINE STEAM SEAL UNIT 2	U2C8		35%	65%	
FLOW MODIFIER 1-FM-142A TERRY TURBINE CNTRL	U1C8	Apr-97	100%		
FLOW MODIFIER 2-FM-142A TERRY TURBINE CNTRL	U2C8		30%	70%	
REPLACE ICE CONDENSER GLYCOL CHILLERS					10%
POST U1C7 ARROW-HART ISSUES		Nov-96	100%		
HEAT TRACE RECORDERS FOR FREEZE PROTECTION		Jan-97	100%		
U1C8 ARROW-HART ISSUES	U1C8	Apr-97	100%		
U2C8 ARROW-HART ISSUES	U2C8		10%	90%	
CVCS VENTING	U1C9			70%	30%
CVCS VENTING	U2C9			15%	85%
INSTALL NEW MFP MINIFLOW VALVE NEW ORFICE AND NEW CONTROLLERS	U1C9			55%	45%
INSTALL NEW MFP MINIFLOW VALVE NEW ORFICE AND NEW CONTROLLERS	U2C8		30%	70%	
RHR SYSTEM DISCHARGE PIPING VENT	U1C8	Apr-97	100%		
RHR SYSTEM DISCHARGE PIPING VENT	U2C8		55%	45%	
POST U2C7 ARROW-HART ISSUES		Nov-96	100%		
REPL ARROWHART CONTACTORS				35%	30%
<u>REPLACEMENT OF OBSOLETE EQUIPMENT</u>					
MAIN TURBINE SUPERVISORY INSTR U1	U1C10				10%
MAIN TURBINE SUPERVISORY INSTR U2	U2C10				10%
REPLACE AUX AIR COMPRESSORS					20%
GLYCOL CHILLERS INSTRUMENTATION				100%	

SEQUOYAH CAPITAL PROJECTS LIST

FISCAL YEARS 1997-1999

PROJECT TITLE	OUTAGE	SCHED FINISH	FY 1997	FY 1998	FY 1999
POWER SUPPLY I-PX-3-142	U1C8	Apr-97	100%		
REPLACE CRD COOLER CONTROLLEPS U1		Jun-97	100%		
REPLACE CRD COOLER CONTROLLERS U2		Jul-97	100%		
REPLACE DUNHAM BUSH TIMER TMR-103		Jun-97	100%		
REPLACE S&K FLOW INDICATING XMITTERS U1	U1C8	Apr-97	100%		
REPLACE S&K FLOW INDICATING XMITTERS U2	U2C8		50%	50%	
AUXILIARY BOILER RECORDER AND CONTROLS UPGRADE					100%
OBSOLETE RECORDERS	U2C8		30%	70%	
OBSOLETE RECORDERS	U1C8	May-97	100%		
OBSOLETE RECORDERS (U1C9, U2C9, U1C10)				40%	30%
REPLACE MICRO R 100 RECORDERS				60%	40%
REPLACE MICRO R 100 RECORDERS				60%	40%
<u>CHEMISTRY & RAD PROTECTION UPGRADES</u>					
RESOLVE PAS SYS PROBLEMS		Jul-97	100%		
RESOLVE PAS SYS PROBLEMS		Jul-97	100%		
INSTALL CABLE AND CONDUIT TO POWER PLASMA SPECTROMETER					100%
SECONDARY SAMPLING AND INSTRUMENT		Feb-97	100%		
SECONDARY SAMPLING AND INSTRUMENT			95%	5%	
INSTALL DATA ACQUISITION SYSTEM			100%		
REPLACE ERCW CHLORINATION SYS			95%	5%	
REPLACE RCW CHLORINATION SYSTEM					100%
<u>FIRE PROTECTION ISSUES</u>					

SEQUOYAH CAPITAL PROJECTS LIST

FISCAL YEARS 1997-1999

PROJECT TITLE	OUTAGE	SCHED FINISH	FY 1997	FY 1998	FY 1999
CSST A OIL RETAINING CURB		Jan-97	100%		
UPGRADE FIRE PROTECTION SYS			95%	5%	
FIRE DETECTION IN PASF		Jul-97	100%		
VARIOUS BUILDING UPGRADES					
REACTOR BLDG ROOF UPGRADE			50%	50%	
SOLAR BLDG ELEVATOR INSTALLATION		Jul-97	100%		
ALPINE VILLAGE UPGRADE		Jul-97	100%		
SOLAR BUILDING UPGRADE		Jul-97	100%		
PLANT OFFICE BUILDING UPGRADE		Jul-97	100%		
ELECTRICAL PENETRATION CHANGEOUTS					
ELECTRICAL PENETRATIONS	U1C8	May-97	100%		
ELECTRICAL PENETRATIONS U2C8	U2C8		55%	45%	
REPLACE ELECTRICAL PENETRATIONS (U1C9 & U1C10)				20%	50%
STEAM GENERATOR PRESERVATION					
RETUBE GLAND STEAM CONDENSER	U1C8	Apr-97	100%		
CONDENSER RETUBE PROJECT	U1C8	Jun-97	100%		
CONDENSER RETUBE PROJECT	U2C7	Dec-96	100%		
INSTALL S/G N16 MONITOR	U1C9			70%	30%
INSTALL S/G N16 MONITOR	U2C9			20%	80%

SEQUOYAH CAPITAL PROJECTS LIST

FISCAL YEARS 1997-1999

PROJECT TITLE	OUTAGE	SCHED FINISH	FY 1997	FY 1998	FY 1999
<u>TURBINE GENERATOR UPGRADES</u>					
TURBINE GENERATOR LONG RANGE UPGRADES				25%	20%
<u>UPGRADE/REBUILD OF PLANT EQUIPMENT</u>					
REBUILD J-A ERCW PUMP & MOTOR		Feb-97	100%		
REPLACE SCSA COMPRESSORS		Jul-97	100%		
REPLACE WASTE GAS ANALYZER		Jul-97	100%		
REPLACE IB CONTAINMENT SPRAY HEAT EXCHANGER				60%	40%
<u>OUTAGE IMPROVEMENT</u>					
LOWER CONTAINMENT COOLING	U1C10			10%	20%
LOWER CONTAINMENT COOLING	U2C10				10%
CRDM DUCT REPLACEMENT AT RPV HEAD	U1C8	May-97	100%		
PRESSURIZER SAFETY VALVES	U1C9		35%	60%	5%
PRESSURIZER SAFETY VALVES	U2C8		35%	50%	15%
<u>ICE COND FLOOR MODIFICATIONS</u>					
ICE COND FLOOR MODIFICATION	U1C8		15%	10%	15%
ICE COND FLOOR MODIFICATION	U2C9		3%	22%	25%
<u>OTHER PROJECTS TO IMPROVE RELIABILITY</u>					

SEQUOYAH CAPITAL PROJECTS LIST

FISCAL YEARS 1997-1999

PROJECT TITLE	OUTAGE	SCHED FINISH	FY 1997	FY 1998	FY 1999
STEAM DUMP DRAIN VALVES & MONITORING SYSTEM UNIT 1	U1C8	Apr-97	100%		
STEAM DUMP DRAIN VALVES & MONITORING SYSTEM UNIT 2	U2C8	Dec-97	50%	50%	
REDUNDANT CUNO FILTER SEAL OIL SYSTEM	U1C8	Apr-97	100%		
INSTALL BEARING LUBE WATER UPGRADE SYSTEM (CCW)			95%	5%	
MOTOR DRIVEN AUX FEEDWATER WATER LEVEL CONTROL VALVES	U1C10				30%
STATION BATTERY BANK REPLACEMENT		Dec-96	100%		
STM. GEN. FEEDWATER INTERFACE PIPING	U1C8	Apr-97	100%		
STM. GEN. FEEDWATER INTERFACE PIPING	U2C9				100%
PMP FLOODING ISSUE		Jul-97	100%		
CABLE DRIVE FOR TRANSFER SYSTEM	U2C9		30%		70%
UPGRADE AIRBORNE RAD MONITORS-(CAMs)				100%	
NO. 2 FEEDWATER HEATER - AUTO BYPASS TO CONDENSER	U1C9			60%	40%
NO. 2 FEEDWATER HEATER - AUTO BYPASS TO CONDENSER	U2C8	Dec-97	60%	40%	
REPLACE RAD MONITOR 0-RE-090-122		Aug-97	100%		
480V BOARD ROOM SUPPLEMENTAL COOLING				60%	40%
480V BOARD ROOM SUPPLEMENTAL COOLING				55%	45%
ROD POSITION INDICATING SYSTEM	U1C9			20%	80%
ROD POSITION INDICATING SYSTEM	U2C9			20%	80%
YARWAY ARC VALVE REPLACEMENT	U1C9			70%	20%
YARWAY ARC VALVE REPLACEMENT	U2C9			25%	75%
REPLACEMENT OF THE 125V DC DIESEL GENERATOR BATTERIES				100%	
MAIN GENERATOR VOLTAGE REGULATOR REPLACEMENT	U1C9			60%	40%
MAIN GENERATOR VOLTAGE REGULATOR REPLACEMENT	U2C9			50%	50%
SUPER SHORT CYCLE MODIFICATION	U1C8	Apr-97	100%		
DIGITAL MFW CONTROL SYSTEM	U1C10			20%	25%
DIGITAL MFW CONTROL SYSTEM	U2C10				20%

SEQUOYAH CAPITAL PROJECTS LIST

FISCAL YEARS 1997-1999

PROJECT TITLE	OUTAGE	SCHED FINISH	FY 1997	FY 1998	FY 1999
MANHOLE SUMP PUMPS				55%	45%
CIVIL/SEISMIC ISSUES					
CIVIL ISSUE - LARGE BORE PIPING REVIEW		Jan-97	100%		
CIVIL ISSUE - UNQUALIFIED PIPING IN AUX BLDG U1				100%	
CIVIL ISSUE - CCS THERMAL OP MODES U1	U1C9		60%	30%	10%
CIVIL ISSUE- CCS THERMAL OP MODES U2	U2C8		25%	75%	
CIVIL ISSUES (BALANCE OF ITEMS)				65%	35%
MINOR CAPITAL PROJECTS					
REPLACE CAT. 2 LT'S WITH CAT. 1 SYSTEM 3					100%
REPLACE TEMPERATURE SWITCHES					100%
CONTROL BLDG LOW LEAKAGE DAMPERS				100%	
REDUNDANT VAPOR EXTRACTOR - MAIN TURBINE OIL TANK UNIT 1	U1C9			65%	35%
REDUNDANT VAPOR EXTRACTOR - MAIN TURBINE OIL TANK UNIT 2	U2C9			65%	35%
HIGH PRESSURE ALARM FOR SAFETY INJECTION	U1C10				30%
REPLACE FT'S ON EGTS & CONTAINMENT AIR RETURN FANS	U1C10				100%
SPENT FUEL BRIDGE CRANE HOIST					100%
EQUALIZATION VALVES ON HIGH PRESSURE FILTERS PDS-47-12, 17-41	U1C9			50%	50%
EQUALIZATION VALVES ON HIGH PRESSURE FILTERS PDS-47-12, 17-41	U2C9			30%	70%
AFWPT 1A-S OIL DRAIN SAMPLE VALVE	U1C8	Apr-97	100%		
#7 HDT OPTIMIZATION			10%	40%	50%
HEAT TRACE & INSULATE 1-RE-90-106/112 LINES		Feb-97	100%		
HEAT TRACE & INSULATE 2-RE-90-106/112 LINES		Dec-96	100%		

SEQUOYAH CAPITAL PROJECTS LIST

FISCAL YEARS 1997-1999

PROJECT TITLE	OUTAGE	SCHED FINISH	FY 1997	FY 1998	FY 1999
FIRE DETECTION @ AUX BLDG HVAC ROOMS		Jan-97	100%		
REPLACE LUNDELL ANNUNCIATOR U1		Jul-97	100%		
REPLACE LUNDELL ANNUNCIATOR U2		Jun-97	100%		
REPLACE SECURITY BACK-UP DIESEL FUEL TANK				90%	10%
FIFTH DIESEL SECURITY PROTECTION		Nov-96	100%		
<u>PURCHASE OF TAGGED EQUIPMENT</u>					
TAGGED EQUIPMENT				50%	50%
MANSEL LEVEL MONITOR SYSTEM			100%		
TORBO-TOC TURBINE OIL CONDITIONER			100%		
D/G DATA ACQUISITION SYSTEM			100%		
RCS VACUUM PUMP			100%		
<u>PLANT COMPUTER CHANGEOUT</u>					
INTEGRATED COMPUTER SYSTEM (ICS)	U1C8	Apr-97	100%		
INTEGRATED COMPUTER SYSTEM (ICS)	U2C7	Nov-96	100%		
<u>ENVIRONMENTAL COMPLIANCE</u>					
PCB RISK REDUCTION				30%	30%
<u>MAINTENANCE IMPROVEMENT</u>					
CVCS VALVE RELOCATION IN ACCUMULATOR ROOM	U1C10				35%

SEQUOYAH CAPITAL PROJECTS LIST

FISCAL YEARS 1997-1999

PROJECT TITLE	OUTAGE	SCHED FINISH	FY 1997	FY 1998	FY 1999
FOUR ADDITIONAL RCCA'S	U1C10				20%
<u>PERSONNEL SAFETY</u>					
ADDITION OF PLANT ACCESS PLATFORMS FOR MSVV'S	U2C10				20%

SEQUOYAH O&M PROJECTS LIST

FISCAL YEARS 1997-1999

PROJECT TITLE	OUTAGE	SCHED FINISH	FY 1997	FY 1998	FY 1999
ECCS Throttle Valves U1	U1C9			50%	50%
ECCS Throttle Valves U2	U2C9			50%	50%
ASME Sect XI Containment Inservice Inspection Program			10%	20%	40%
Turbine Generator Long Range Maintenance				60%	15%
Work Management System Data Bases			45%	30%	25%
ISI Support	U1C8	Jun-97	100%		
Erosion/Corrosion	U1C8	Jun-97	100%		
Coatings		Sep-97	100%		
Raw Water Inspection		Sep-97	100%		
Erosion/Corrosion	U2C8		100%		
ISI Support	U2C8		100%		
Drawing Backlogs			40%	35%	25%
Thermolag Enhancements			10%	45%	45%
II SQ960654PER Resolution (Partial Mods)		Sep-97	100%		
DCN Closeout	U1C8		70%	30%	
Relief Valve Issue Unit 2 & Common	U2C8		40%	60%	
Relief Valve Issue Unit 1	U1C9			35%	65%

SEQUOYAH O&M PROJECTS LIST

FISCAL YEARS 1997-1999

PROJECT TITLE	OUTAGE	SCHED FINISH	FY 1997	FY 1998	FY 1999
Loss of Voltage Relay, Annunciator Main Bus	U1C8	Apr-97	100%		
Replace Flow Switches			5%	65%	30%
Control Air for ABGTS		Jul-97	100%		
Thermal Barrier Isolation Vlvs	U1C8	Apr-97	100%		
Ecolochem		Sep-97	100%		
PROJECTS TO IMPROVE RELIABILITY					
MCR Annunciator		Jul-97	100%		
Replace Doors C49 and C50					100%
SCWS Pump Discharge Iso Valves	U1C8	Apr-97	100%		
SCWS Pump Discharge Iso Valves	U2C8		50%	50%	
Con Demin Waste		Sep-97	100%		
NASH Relief Valve Drain Pipe	U2C8		65%	35%	
U1 Upgrade Rad Monitor Software		Jul-97	100%		
U2 Upgrade Rad Monitor Software		Sep-97	100%		
Sight Glass Replacement	U1C9			85%	15%
Sight Glass Replacement	U2C8		55%	45%	
No. 7 Heater Drain Tank Flow in MCR	U1C8	Apr-97	100%		
No. 7 Heater Drain Tank Flow in MCR	U2C8		80%	20%	
U1 No. 3 HDTP Seal Injection Low Delta P Alarm			20%	80%	

SEQUOYAH O&M PROJECTS LIST

FISCAL YEARS 1997-1999

PROJECT TITLE	OUTAGE	SCHED FINISH	FY 1997	FY 1998	FY 1999
ERCW Traveling Screens			5%	95%	
Various Reach Rod Operated Valves			30%	35%	35%
Press Control Vlvs 77-430,431	U1C9		30%	35%	35%
Press Control Vlvs 77-430,431	U2C8		50%	50%	
Add T-Drains to 35 MOVs (U2C8 & U1C9)	U2C8		30%	35%	35%
U2 AMSAC Test Switch		Jun-97	100%		
Change Elev Benchmark Liquid Level Gauge	U1C8	Apr-97	100%		
U1 AMSAC Test Switch		Jun-97	100%		
System Descriptions		Sep-97	100%		
Remove Z3 Zener Diode from SA-1				100%	
MG Set Switchgear Test Jack/Digital Indication Unit 1	U1C9			60%	40%
MG Set Switchgear Test Jack/Digital Indication Unit 2	U2C9			40%	60%
Add Time Delay to CBP Low Oil Pressure Signal Unit 1				75%	25%
Add Time Delay to CBP Low Oil Pressure Signal Unit 2				75%	25%
Status Indication for Aux Feedwater Initiation Unit 1	U1C9			100%	
Status Indication for Aux Feedwater Initiation Unit 2	U2C8		70%	30%	