

March 19, 1986

Docket No. 50-354

APPLICANT: Public Service Electric & Gas Company
FACILITY: Hope Creek Generating Station
SUBJECT: SUMMARY OF MANAGEMENT SITE VISIT

On March 10 and 11, 1986, representatives of the NRC met with representatives, of PSE&G to discuss the readiness of Hope Creek for an operating license.

Activities on March 10 included PSE&G management introductions and a simulator exercise at the PSE&G Nuclear Training Center. Activities on March 11 included PSE&G presentations regarding the completion status of Hope Creek and a site tour. Attendees at these activities are identified in Enclosure 1. Enclosure 2 is the Management Site Visit agenda. Enclosure 3 presents the information booklets provided by PSE&G.

/S/
David H. Wagner, Project Manager
BWR Project Directorate No. 3
Division of BWR Licensing


Enclosures:
As stated

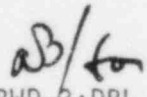
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Docket File
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BWD-3:DBL
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03/19/85


BWD-3:DBL
EAdensam
03/17/86

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Public Service Electric & Gas Co.

Hope Creek Generating Station

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Public Service Electric & Gas Co.
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Regional Administrator, Region I
U. S. Nuclear Regulatory Commission
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Public Service Electric & Gas Co. - 2 -

Hope Creek Generating Station

cc:

Mr. B. A. Preston
Public Service Electric & Gas Co.
Hope Creek Site MC12Y
Licensing Trailer 12L.I
Foot of Buttonwood Road
Hancocks Bridge, New Jersey 08038

Management Site Visit
March 10 and 11, 1986

<u>Name</u>	<u>Affiliation</u>
Stan LaBruna	PSE&G
Roger Salvesen	PSE&G
John Boettger	PSE&G
Pete Landrieu	PSE&G
Corbin McNeill	PSE&G
Dick Eckert	PSE&G
Bruce Preston	PSE&G
Darrell Eisenhut	NRC
Bob Bernero	NRC
Bill Borchardt	NRC
Dick Vollmer	NRC
Elinor Adensam	NRC
Suzie Black	NRC
Gus Lainas	NRC
Gerry Hulman	NRC
Bill Russell	NRC
Dave Wagner	NRC
Don Fischer	NRC

March 19, 1986

MEETING SUMMARY DISTRIBUTION

~~Docket No(s): 50-354~~

NRC PDR

Local PDR

BWD #3 r/f

J. Partlow (Emergency Preparedness only)

E. Adensam

Attorney, OELD

E. Jordan

B. Grimes

ACRS (10)

Project Manager D. Wagner

E. Hylton

NRC PARTICIPANTS

D. Eisenhut
R. Bernero
B. Borchardt
D. Vollmer
E. Adensam
S. Black
G. Lainas
G. Hulman
B. Russell
D. Wagner
D. Fischer

bcc: Applicant & Service List

ENCLOSURE

AGENDA FOR
MANAGEMENT SITE VISIT
HOPE CREEK GENERATING STATION

Monday, March 10, 1986 ^{1/}

4:30 p.m. - 5:00 p.m.	NRC and PSE&G Management Introductions
5:00 p.m. - 6:00 p.m.	Simulator Exercise
6:00 p.m. - 6:30 p.m.	Training Center Tour

Tuesday March 11, 1986 ^{1/}

8:00 a.m. - 12:00 p.m.	Meeting Discussions/Presentations <ul style="list-style-type: none"> ◦ Construction readiness ◦ Organization, staffing, training ◦ Operational experience/personnel qualifications ◦ Operational readiness/procedures ◦ Lessons learned from other operating plant experiences ◦ Preoperational Testing/Startup Testing ◦ Technical Specification certification status ◦ Quality Assurance operation program implementation ◦ Performance reviews (IDVP, INPO, etc.)
12:00 p.m. - 12:30 p.m.	Lunch ^{3/}
12:30 p.m. - 2:00 p.m.	Site Tour ^{2/}
2:00 p.m.	Concluding Remarks by NRC and PSE&G
2:30 p.m.	Meeting Adjourned

^{1/} Attendance for the simulator exercise and the site tour is limited to NRC and PSE&G personnel.

^{2/} The tour will consist of several groups inspecting various areas of the plant. PSE&G should plan to provide an escort for each group.

^{3/} PSE&G is requested to provide a room to enable the NRC to conduct a working meeting during lunch. Lunch will be available for purchase at a nominal fee.

Enclosure 3

NRC BRIEFING
HOPE CREEK OPERATIONAL READINESS
MARCH 10 & 11, 1986

NRC BRIEFING
HOPE CREEK OPERATIONAL READINESS
LIST OF SPEAKERS

C.A. McNEILL	VICE PRESIDENT - NUCLEAR
L.A. REITER	GENERAL MANAGER - LICENSING AND RELIABILITY
C.W. CHURCHMAN	ASSISTANT GENERAL MANAGER - PROJECT SERVICES
S. LaBRUNA	ASSISTANT GENERAL MANAGER - HOPE CREEK OPERATIONS
R.S. SALVESEN	GENERAL MANAGER - HOPE CREEK OPERATIONS
G.C. CONNOR	OPERATIONS MANAGER
J.R. LOVELL	RADIATION PROTECTION/CHEMISTRY MANAGER
P.A. MOELLER	MANAGER - SITE PROTECTION
B.A. PRESTON	MANAGER - LICENSING AND REGULATION
J.A. NICHOLS	TECHNICAL MANAGER
W.H. SCHELL	POWER ASCENSION DIRECTOR
C.P. JOHNSON	GENERAL MANAGER - NUCLEAR QUALITY ASSURANCE
P.R.H. LANDRIEU	VICE PRESIDENT - ENGINEERING AND CONSTRUCTION
J.H. MacKINNON	GENERAL MANAGER - NUCLEAR SAFETY REVIEW
H.D. HANSON	MANAGER - NUCLEAR TRAINING

NRC BRIEFING AGENDA
HOPE CREEK OPERATIONAL READINESS
MARCH 10 AND 11, 1986
HOPE CREEK SITE & PSE&G TRAINING CENTER

MONDAY - MARCH 10, 1986 - REGION I ONLY

12:00-4:00 PM - MEETING DISCUSSIONS/PRESENTATION
(HOPE CREEK GENERAL PURPOSE ROOM)

- | | | |
|------|---|----------------|
| I. | INTRODUCTION | C.A. McNEILL |
| | A. CORPORATE SUPPORT AND OVERVIEW | |
| II. | HOPE CREEK TRANSITION PLAN | L.A. REITER |
| III. | CONSTRUCTION READINESS | |
| | A. ENGINEERING AND CONSTRUCTION STATUS | C.W. CHURCHMAN |
| | B. PRE-OP TESTING STATUS | S. LaBRUNA |
| | 1. DEFERRED SYSTEMS AND SCHEDULE FOR COMPLETION | |
| | 2. PROJECT COMPLETION LIST STATUS | |
| | 3. WORK CONTROL COORDINATION GROUP | |
| IV. | SURVEILLANCE TESTING AND SYSTEM OPERABILITY | J.A. NICHOLS |
| V. | PLANT ORGANIZATION AND READINESS FOR OPERATION | |
| | A. STAFFING AND SHIFT EXPERIENCE LEVEL | R.S. SALVESEN |
| | B. PROCEDURES | R.S. SALVESEN |
| | C. CONTROL ROOM | G.C. CONNOR |
| | D. RADIOLOGICAL CONTROLS | J.R. LOVELL |
| | E. CONTINGENCY PLANS AND EQUIPMENT | P.A. MOELLER |
| | 1. FIRE | |
| | 2. SECURITY | |
| | 3. EMERGENCY | |

- V. PLANT ORGANIZATION AND READINESS FOR OPERATION (CONTINUED)
 - F. LESSONS LEARNED FROM OTHER OPERATING PLANTS R.S. SALVESEN
 - 1. INPO INVOLVEMENT
 - 2. DOMESTIC AND INTERNATIONAL PLANTS
- VI. TECHNICAL SPECIFICATIONS B.A. PRESTON
- VII. LOW POWER TESTING AND POWER ASCENSION W.H. SCHELL
- VIII. QUALITY ASSURANCE C.P. JOHNSON
 - A. QA DURING CONSTRUCTION/STARTUP TESTING
 - B. OPERATIONAL QA PROGRAM
- IX. PERFORMANCE REVIEWS P.R.H. LANDRIEU
 - A. INPO ASSESSMENTS
 - B. SALP REVIEWS
 - C. INDEPENDENT DESIGN VERIFICATION PROGRAM (IDVP)
 - D. N-5 PROGRAM
 - E. THEODORE BARRY AND ASSOCIATES AUDITS (TB&A)
 - F. SAFETEAM
 - G. PRIDE PROGRAM
- X. NUCLEAR SAFETY REVIEW J.H. MacKINNON
- XI. CLOSING REMARKS C.A. McNEILL

4:00 PM - ADJOURN TO PSE&G TRAINING CENTER
 CHESTNUT STREET
 SALEM, NEW JERSEY

MONDAY - MARCH 10, 1986 (CONTINUED)

NRC REGION I AND NRR

4:30 PM - SIMULATOR EXERCISE INTRODUCTION	G.C. CONNOR
5:00 PM - SIMULATOR EXERCISE AND CRITIQUE	LEAD INSTRUCTOR/ NRC
6:00 PM - TRAINING CENTER TOUR	H.D. HANSON
6:30 PM - ADJOURN	

TUESDAY - MARCH 11, 1986 - NRR ONLY

8:00 AM-12:00 PM - MEETING DISCUSSIONS/PRESENTATIONS
(HOPE CREEK GENERAL PURPOSE ROOM)

12:00 PM-12:30 PM - LUNCH (NRR WORKING MEETING)

12:30 PM - 2:00 PM - SITE TOUR

2:00 PM - READINESS DEBRIEFING

2:30 PM - ADJOURN

VICE PRESIDENT - NUCLEAR

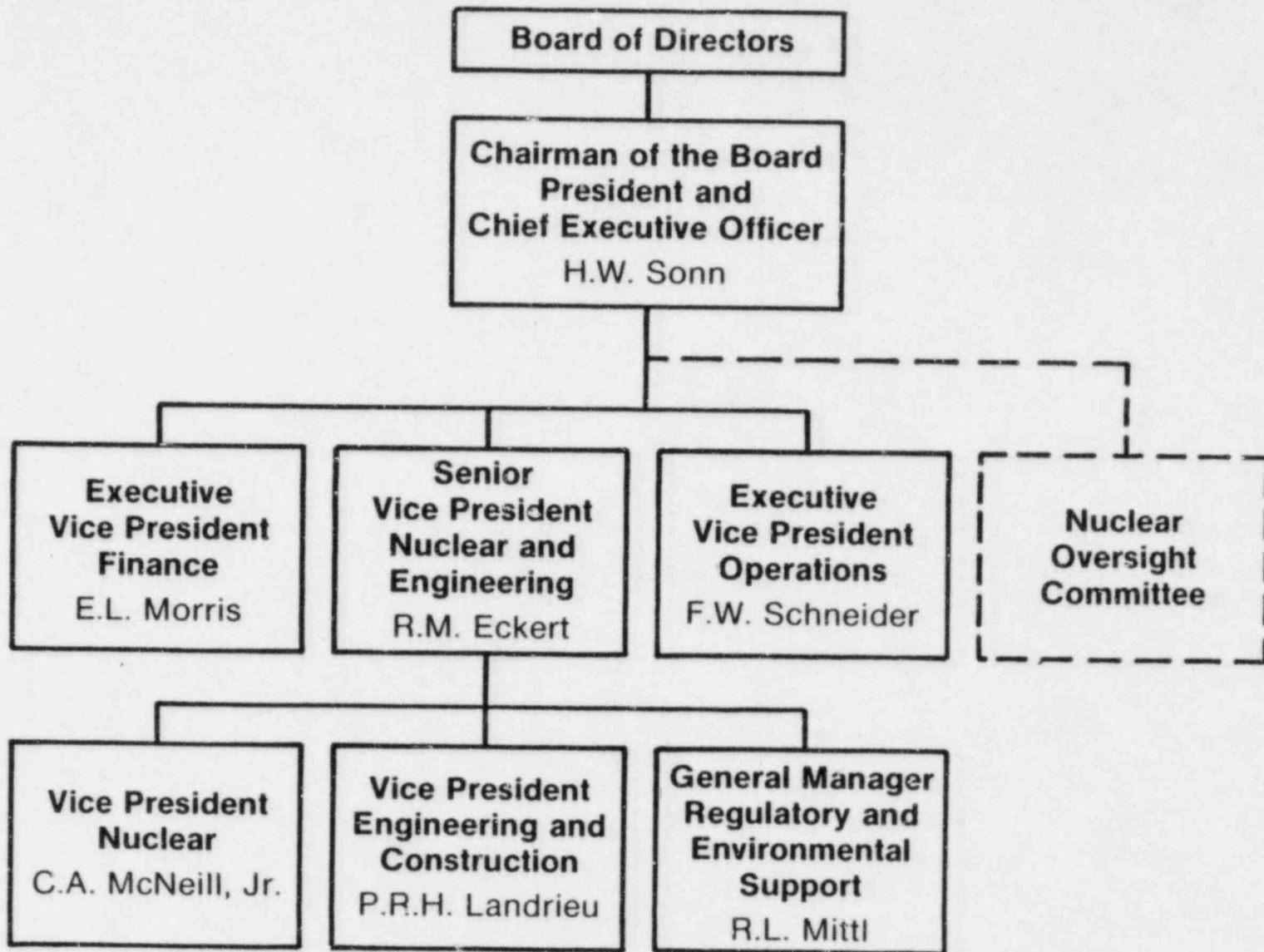
CORBIN A. McNEILL JR.

NUCLEAR REGULATORY COMMISSION

BRIEFING

HOPE CREEK GENERATING STATION

MARCH 10, 1986



**NUCLEAR OVERSIGHT
COMMITTEE**

Dr. Melvin B. Gottlieb, Chairman

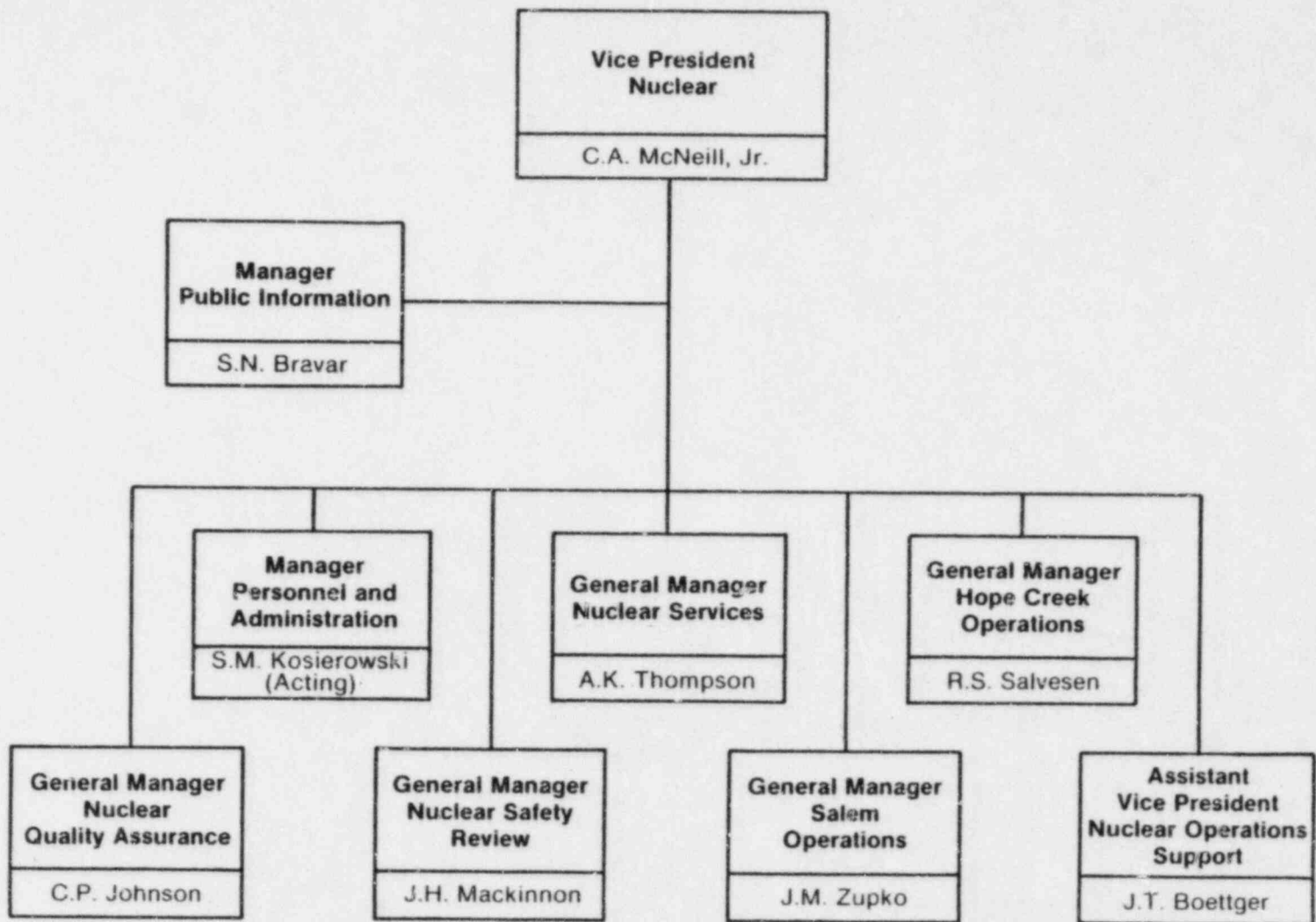
Dr. Sol Levy

Dr. Kenneth C. Rogers

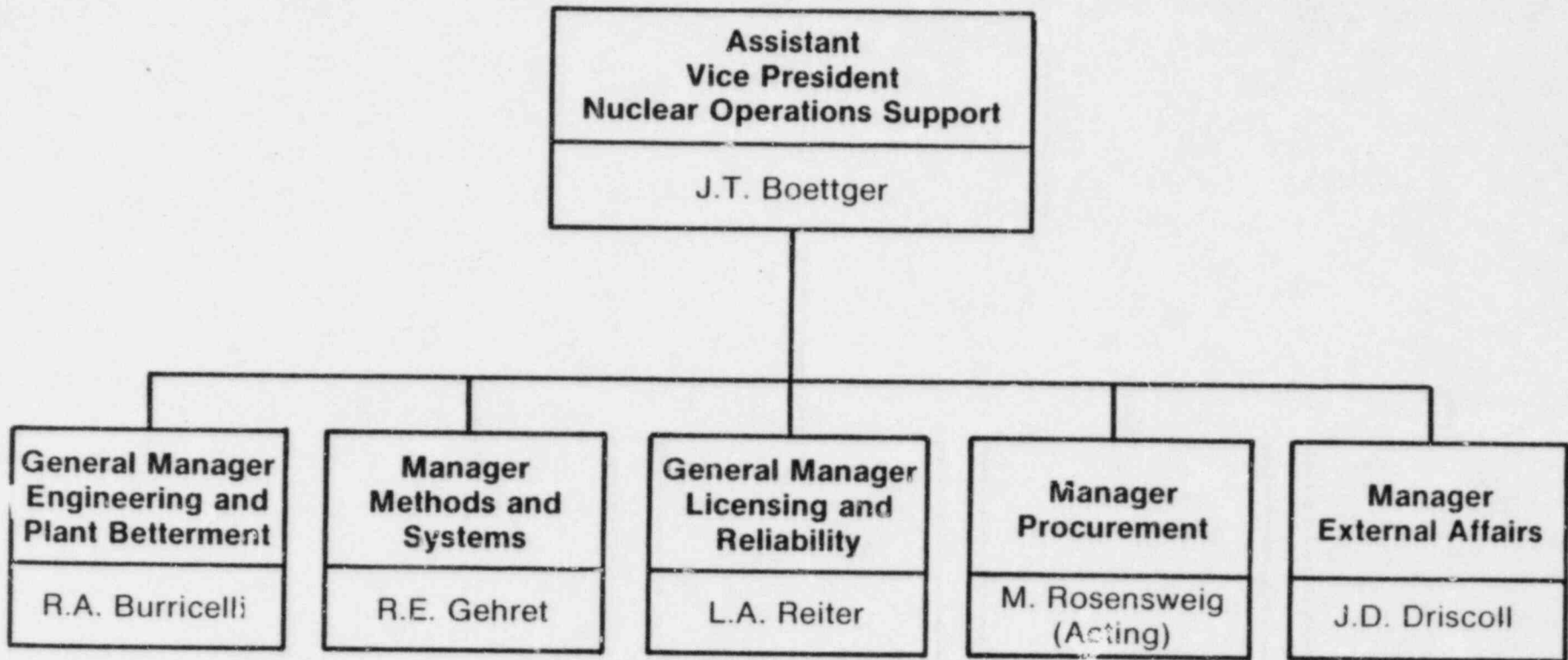
Dr. Warren F. Witzig

Mr. E.P. Wilkinson

NUCLEAR DEPARTMENT



NUCLEAR OPERATIONS SUPPORT



**GENERAL MANAGER -
LICENSING AND RELIABILITY**

LAWRENCE A. REITER

**HOPE CREEK
GENERATING STATION**

TRANSITION PLANNING PROCESS

TRANSITION PLANNING MILESTONES

- Transition Management Steering Committee Chartered July, 1983
- Transition Plan Issued December, 1983
- Transition Plan Revisions Issued January, 1985 and October, 1985

The Transition Plan Was a Living Document/Program That Was Concerned With the Transfer of:

- People
- Functions
- Documents and Records

The Transition of Hope Creek from a Construction Project to an Operating Facility Was Planned and Monitored to:

- Maximize Continued Availability of PSE&G Technical Expertise
- Ensure That Functions and Programs Continue Smoothly
- Ensure That the Transition to the Nuclear Department Had Minimum Perturbations on Readiness to Load Fuel

**TRANSITION PLAN
ACCOMPLISHMENTS**

**HOPE CREEK
TRANSITION PLAN**

A Proactive Program
That Achieved Results

**ASSISTANT GENERAL MANAGER -
PROJECT SERVICES**

CHARLES W. CHURCHMAN

ENGINEERING ISSUES

Included in the Initial Design of Hope Creek:

- Mark I TORUS Hydrodynamic Load Program (Mark I Owners/GE)
- TMI Lessons Learned
- CRD Water Hammer Effects
- ATWS - 3A Design Changes
- NSSS Loads Adequacy Evaluation (GE New Loads Program)
- Environmental Qualification

UNIQUE DESIGN FEATURES

- Concrete Secondary Containment
- Filtration Recirculation Ventilation System (FRVS)
- Early Constructed Simulator
- Turbine Building Seismic Design

OPEN LICENSING ISSUES

- Safety Parameter Display System (SPDS)
- Control Room Design Review
- Environmental Qualification/TOBAR Transmitters
- Main Steam Isolation Valve Leak Testing

ENGINEERING SUPPORT AT FUEL LOAD

PSE&G Nuclear Department - Resident on
Artificial Island

- 295 Permanent PSE&G Engineering and Design Support Personnel, 95 of Which Are Full-Time Hope Creek Assigned (Plus Additional Contract Personnel)
- Station System Engineers in the Powerblock

Bechtel - Resident and San Francisco Area Office

GE - Resident and San Jose Office

CONSTRUCTION STATUS AT FUEL LOAD

	% Construction Completed
• Primary Containment	100%
• Reactor Building	100%
• Auxiliary Building	100%
• Turbine Building	100%
• Service Water Intake Structure	100%
• Circulating Water Pump House	100%
• Cooling Tower and Other Yard Facilities	100%
• Fire Protection/Suppression	100%
• Fireproofing	100%
• Penetration Sealing	100%
• Engineering Walkdowns (Cable Separation, ALARA, Seismic, etc.)	100%
• System Construction Required for Fuel Load	100%

**ASSISTANT GENERAL MANAGER -
HOPE CREEK OPERATIONS**

STANLEY LABRUNA

PREOP TESTING STATUS CONSTRUCTION RELEASES TO STARTUP

	Systems	Facilities
Required for:		
Fuel Load	100%	100%
5% Power	100%	100%
Full Power	99.8%	100%

SYSTEM OPERABILITY REQUIRED FOR FUEL LOAD

	No. of Systems
• Total	83
• Startup Preop Testing Completed	78
• Accepted by Operations	61
• Declared Operational	36

STATUS OF SYSTEMS NOT REQUIRED FOR FUEL LOAD

	No. of Systems
• Total	59
• Startup Preop Testing Completed	56
• Accepted by Operations	47
• Declared Operational	18

SYSTEMS SCHEDULED FOR COMPLETION AFTER FUEL LOAD

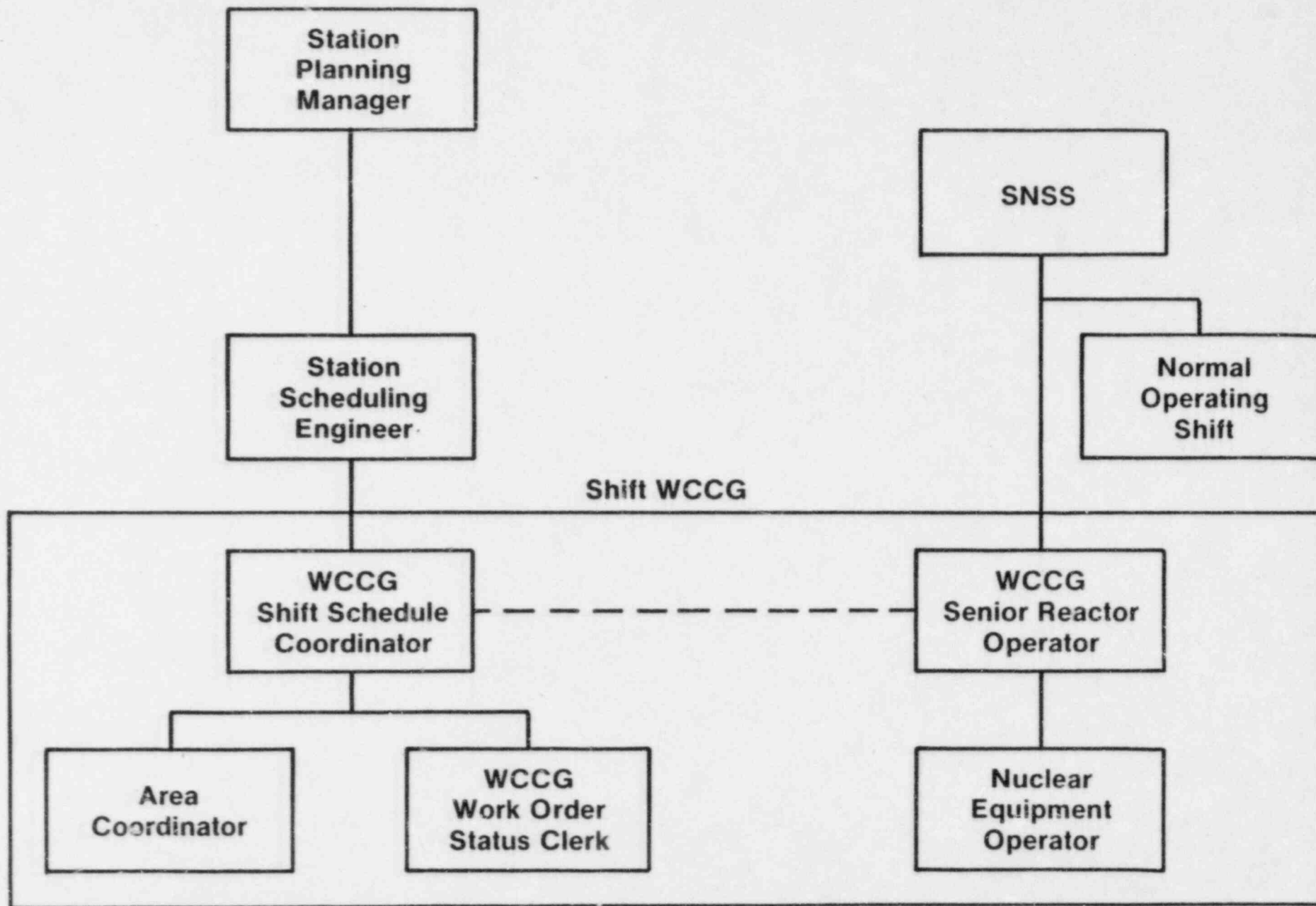
- Solid Rad Waste
- Traversing In-Core Probe Monitoring
- Gaseous Rad Waste
- Portions of Radiation Monitoring
- "D" Diesel Generator

FUEL LOAD PROJECT COMPLETION LIST (PCL)

PCL Categories:

1. Startup Deviation Reports
2. NRC Open Item List
3. Response Coordination
4. N-5 Reports
5. Commitment Tracking
6. Field Deviation Instruction/
Field Design Deviation Reports
7. Temporary Modifications
8. Field Questionnaires
9. Licensing Issues
10. Unapproved Vendor Documents
11. PSE&G Design Change Requests
12. Bechtel Design Change Packages

WORK CONTROL COORDINATION GROUP



TECHNICAL MANAGER - HOPE CREEK

JOHN A. NICHOLS

TECHNICAL SPECIFICATION SURVEILLANCE PROGRAM

- Station Approved Procedures
- Cross Reference Matrix
- Scheduling of Surveillance Activities
- Completion Status

SURVEILLANCE TESTING

	<u>Total</u>	<u>Completed</u>
Core Load	817	492
Initial Criticality	832	405
Power Operation	118	17

SYSTEMS OPERABILITY

- Station System Engineers
- Determination of Operability
 - Project Completion List Review
 - System Walkdowns
 - Corrective Maintenance Review
 - Surveillance Completion
- Station Operations Review Committee
- Status

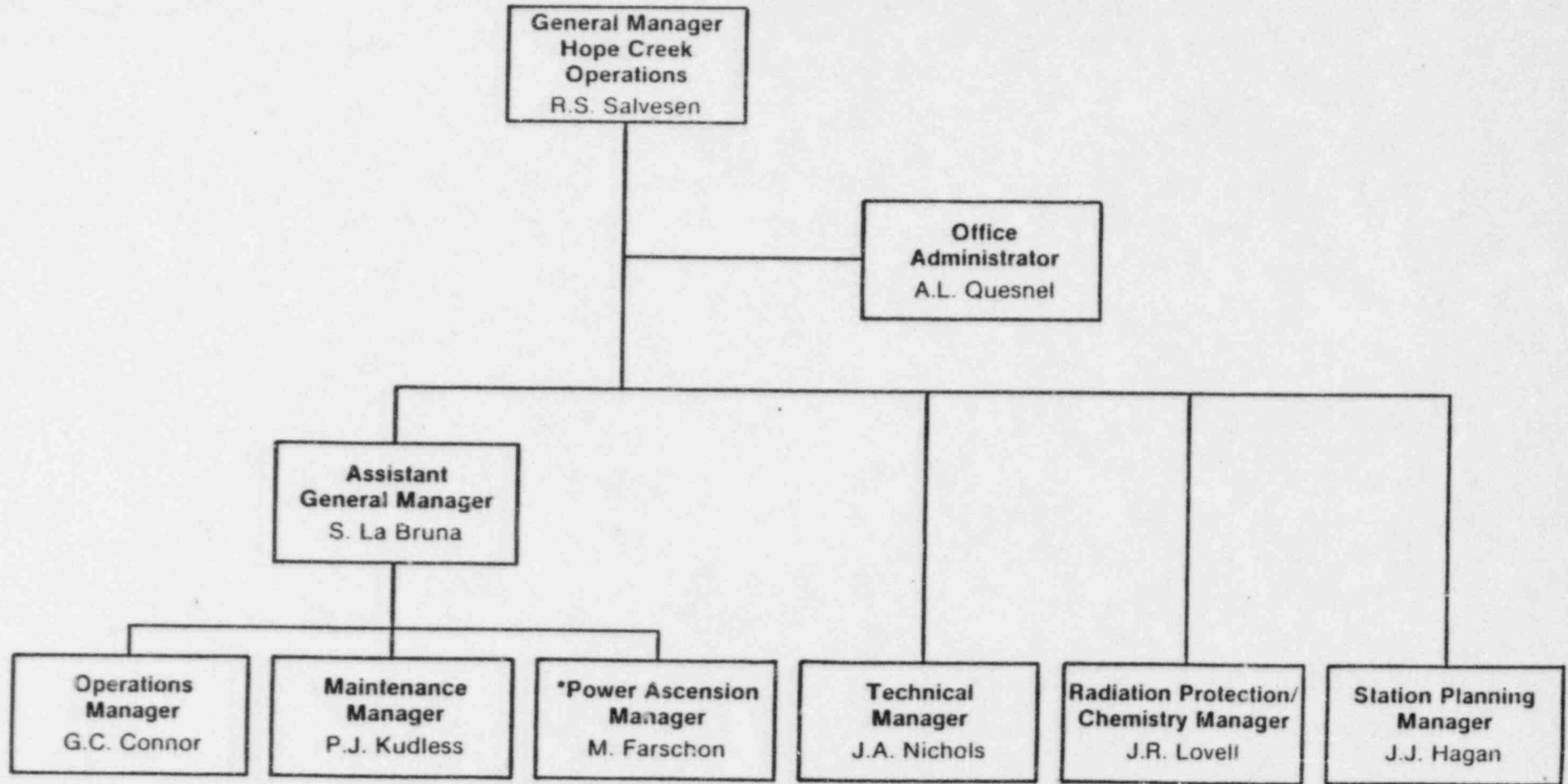
SYSTEMS REQUIRED FOR EACH OPERATION CONDITION

<u>Operating Condition</u>	<u>Description</u>	<u>Required</u>	<u>Operable</u>
5	Core Load	83	36
2	Initial Criticality	43	8
1	Power Operation	16	10

**GENERAL MANAGER -
HOPE CREEK OPERATIONS**

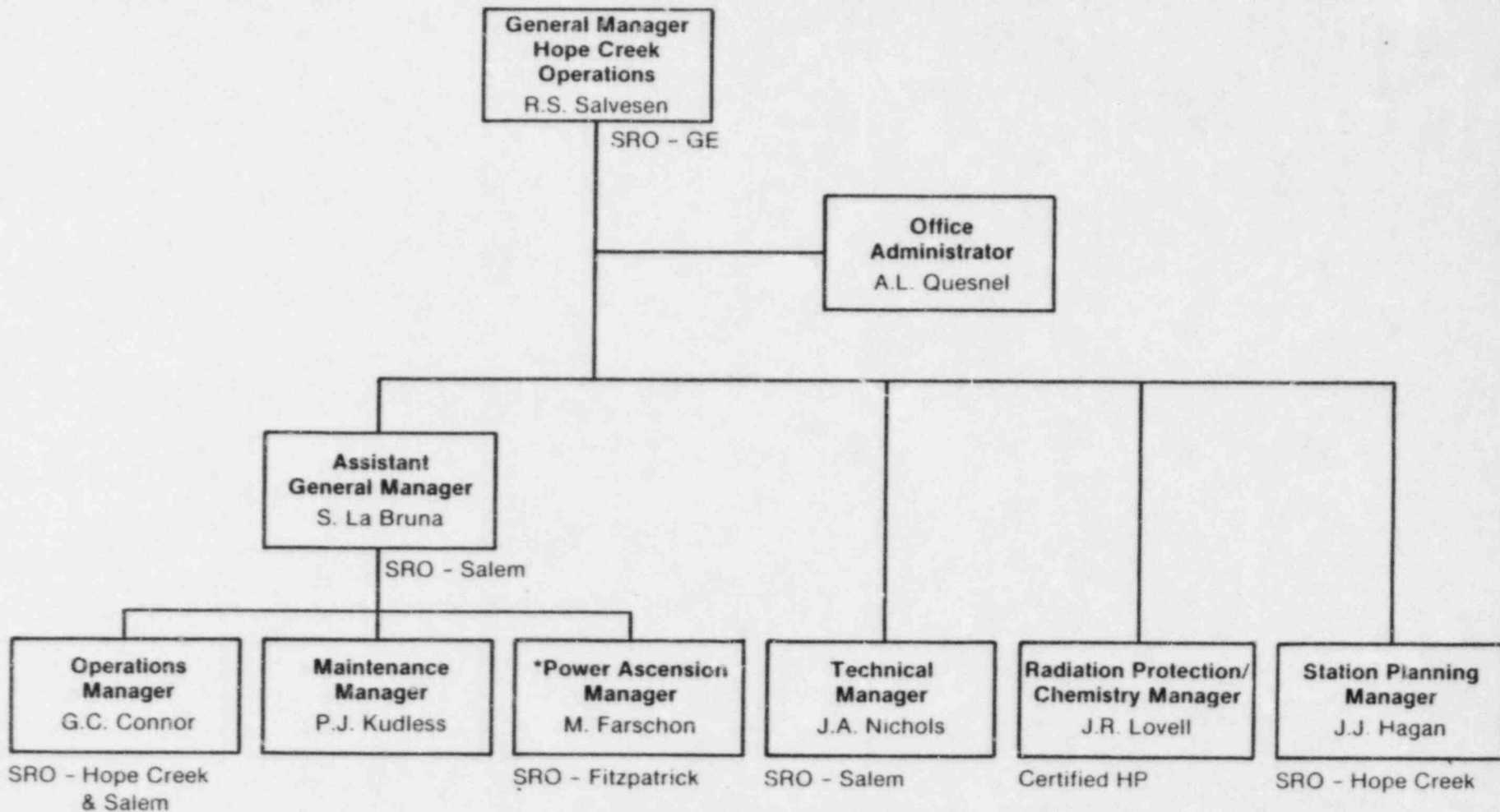
ROGER S. SALVESEN

HOPE CREEK OPERATIONS STAFFING & EXPERIENCE



*Contract Employee

HOPE CREEK OPERATIONS STAFFING & EXPERIENCE



Nuclear Experience 95 Years

*Contract Employee

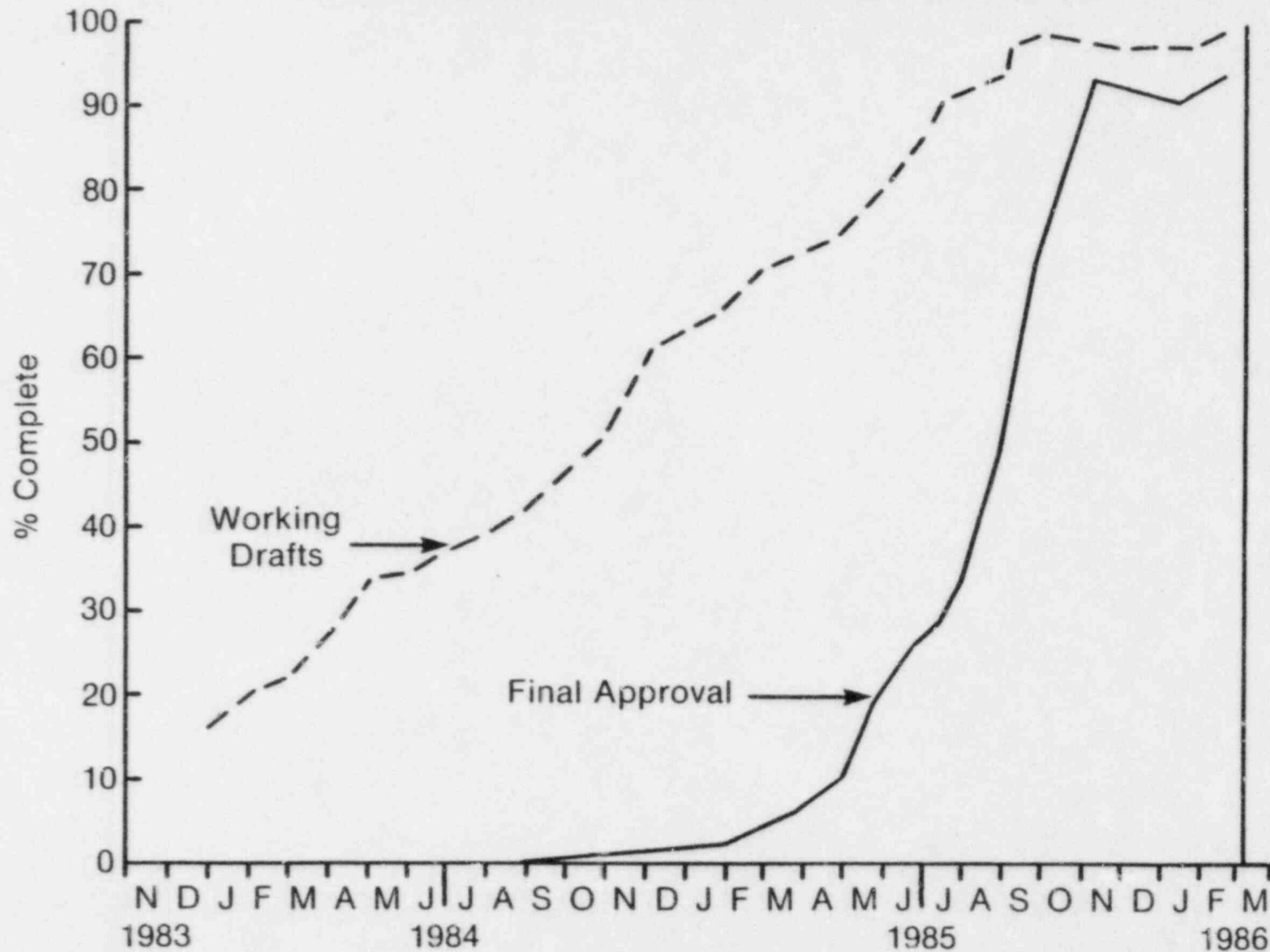
HOPE CREEK OPERATIONS STAFFING & EXPERIENCE

	Number	No. of Degrees	Years of Nuclear Experience
Administration	15	5	25
Operations	98	12	488
Technical	31	25	245
Maintenance	113	11	389
Instrument and Control	38	17	187
Radiation Protection	57	29	206
Chemistry	22	18	106
Planning/Scheduling	7	5	38
Power Ascension	4	4	47
Total	385	126	1,731

HOPE CREEK OPERATIONS STAFFING & EXPERIENCE ON SHIFT

- Will Have Five Shifts
- Do Not Need Shift Advisors
- Each Shift Will Have
 - A Supervisor With at Least One Year of Hot Licensed Experience at a Similar Plant
 - A Second Supervisor With Six Months or Six Weeks Participating Experience at a Similar Plant
 - An STA Qualified Degreed Engineer (All Qualified as SRO)

PROCEDURE DEVELOPMENT PERCENT COMPLETE



HOPE CREEK OPERATIONS PROCEDURE STATUS

Department	Total Required	Mode 5 Not Issued
Chemistry	221	0
I&C	1188	40
Maintenance	383	0
Operations	599	1
Power Ascension	122	0
RX Engineering	54	2
Rad Protection	85	4
Technical	35	4

OPERATIONS MANAGER - HOPE CREEK

G. CHRISTOPHER CONNOR

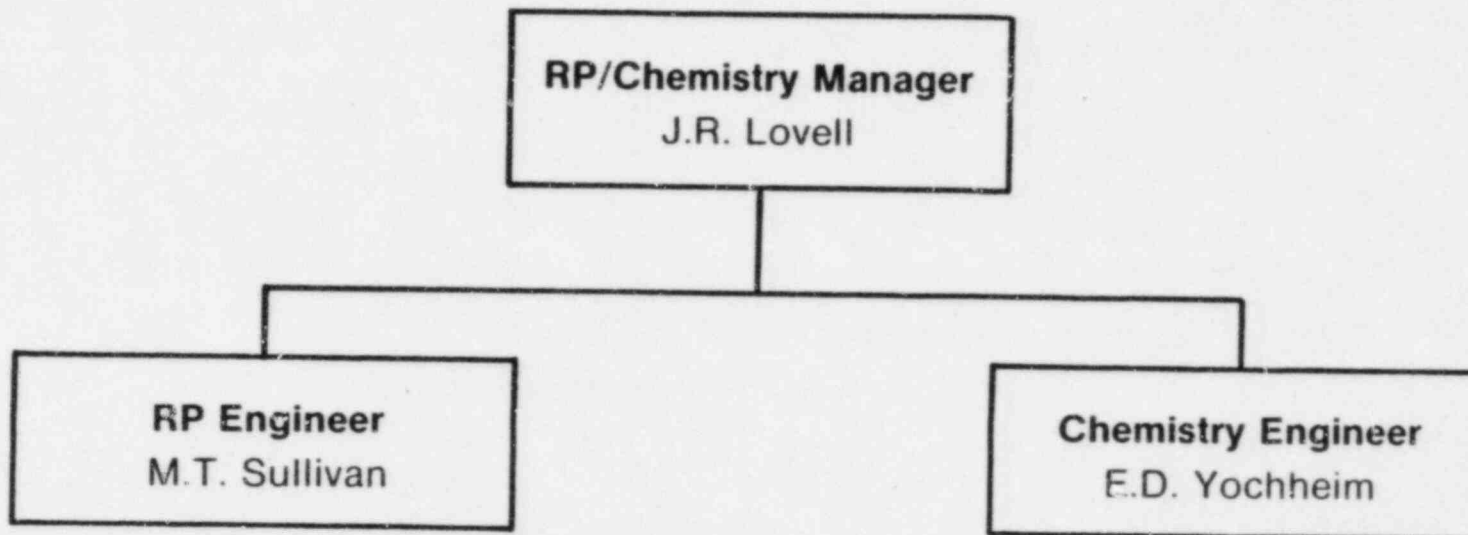
EMERGENCY OPERATING PROCEDURE DEVELOPMENT

- Generic Guidelines – BWROG EPG Rev. 3
- Develop Procedures Generation Package (PGP)
- Develop Plant Specific Technical Guidelines (PSTG)
- Develop Emergency Operating Procedures
- Perform Verification & Validation (V&V)
- Implement Emergency Operating Procedures

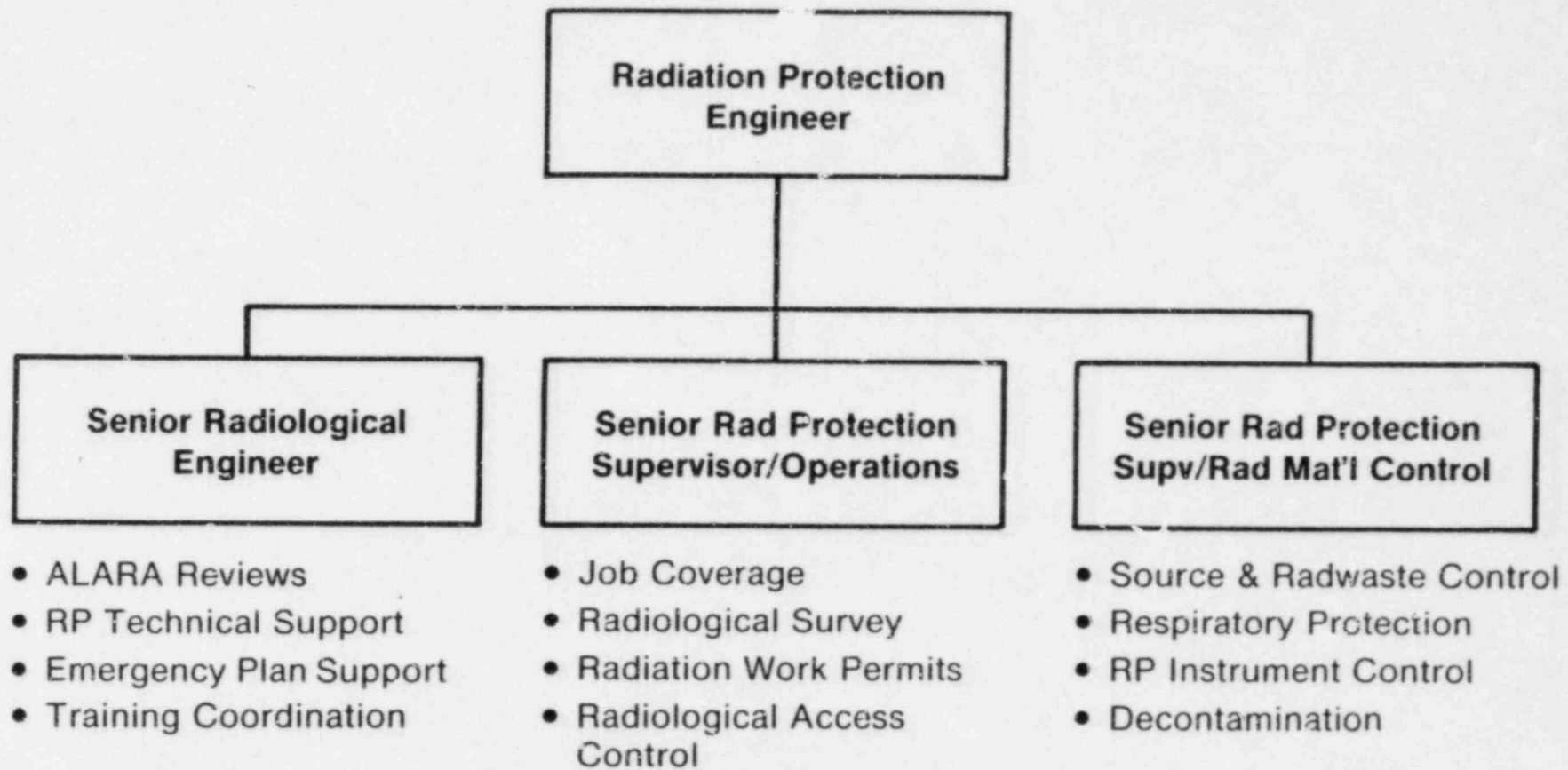
**RADIATION PROTECTION/CHEMISTRY
MANAGER - HOPE CREEK**

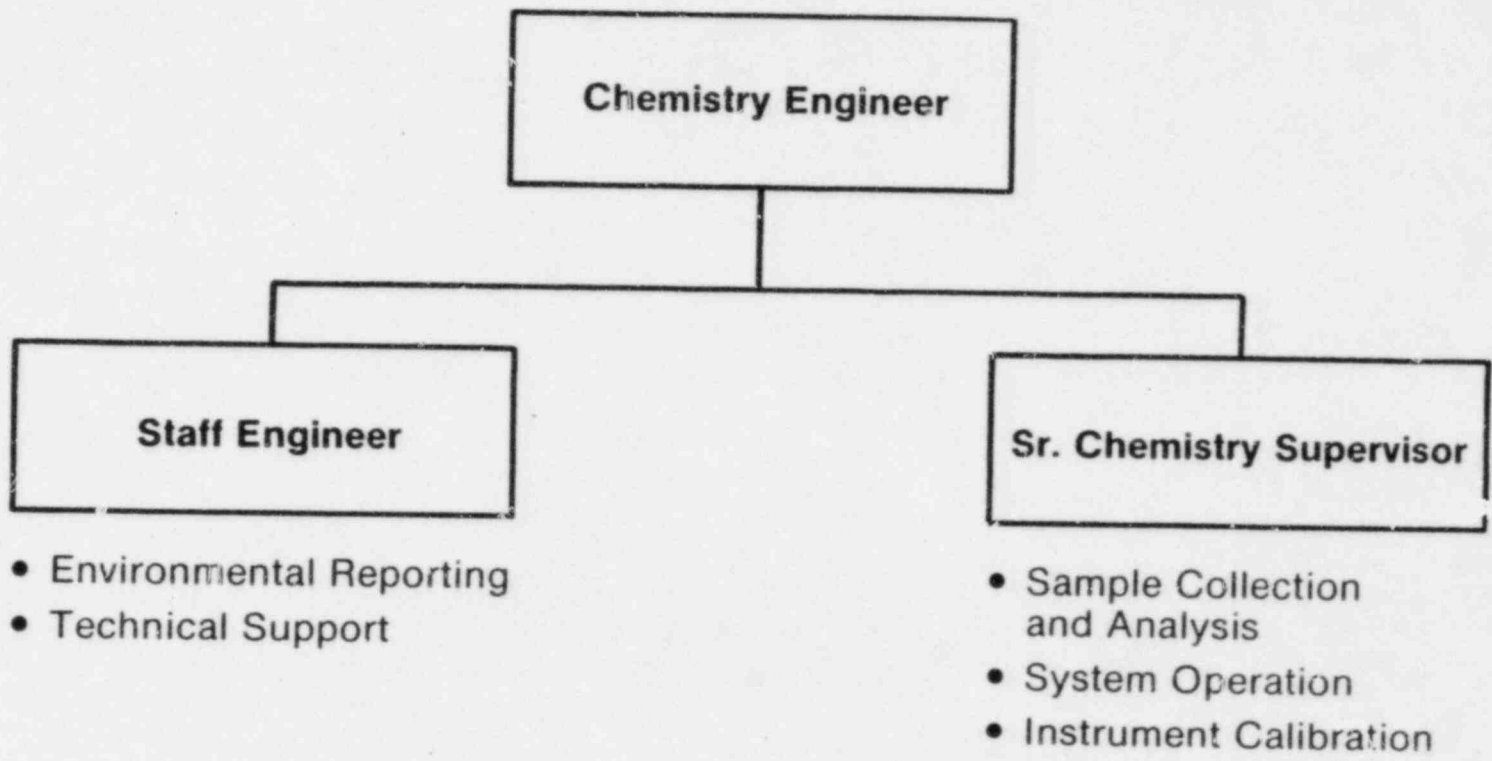
J.R. LOVELL

HOPE CREEK RADIATION PROTECTION/CHEMISTRY DEPARTMENT



- Two Separate Groups Under RP/Chemistry Manager
- No Cross Qualification of Personnel





RADIATION PROTECTION/ CHEMISTRY DEPARTMENT

- Strong Corporate Commitment to ALARA Principles
- Strong Tradition and Commitment to Chemistry Excellence
- Experienced and Qualified Staff
- Equipment and Procedures Functioning

MANAGER - SITE PROTECTION

PETER A. MOELLER

EMERGENCY PREPAREDNESS

- Hope Creek and Salem Emergency Plan the Same
- Favorable Low Population Density
- October Exercise - Successful
- NRC Appraisal and Follow-up Completed
- EP Training Continuing

FIRE PROTECTION

- Single Fire Protection Organization for Hope Creek and Salem
- Full-Time Fire Brigade

MAJOR FIRE BRIGADE DUTIES

- System Surveillances
- Hazardous Material Response
- Combustible Control
- Welding/Burning Permits
- Fire System Impairment Permits
- Training

NUCLEAR SECURITY

- Single Security Organization
for Hope Creek and Salem
 - PSE&G
 - Contract Security Force

NUCLEAR SECURITY SYSTEM

- Central Alarm Station in Each Plant
- Combined Secondary Alarm Station

SECURITY STATUS

- Hope Creek Secured February 16
- All Hardware Systems Fully Operational
- Security System Fully Implemented March 17
- All NRC Items Closed
- SALP Results

**GENERAL MANAGER -
HOPE CREEK OPERATIONS**

ROGER S. SALVESEN

LESSONS LEARNED INPO

- Loaned Employee Program
- Workshops
- Plant Evaluation Participation
- Assist Visits
- NPRDS

LESSONS LEARNED OPERATING EXPERIENCE EVALUATION PROGRAM

- Based on Industry Guidance
 - Generic Letter 82-04
 - INPO Good Practices (Industry 403)
(In-House 406)
- Provides Licensed Operators and Staff an Awareness of Site Application and Corrective Action

LESSONS LEARNED OPERATING EXPERIENCE EVALUATION PROGRAM

Experience Assessment Coordinator
Assures the Evaluation of:

- Regulatory Documents and Requirements
- INPO See-In Documents
- Vendor Information
- Site Specific Incidents

LESSONS LEARNED
OPERATING EXPERIENCE EVALUATION PROGRAM
STATUS AS OF FEBRUARY 22, 1986

		HCGS	INPO Industry Average
Red Items	- Closed	95.5%	91%
	- Evaluated	98.9%	-
Non-Red Items	- Closed	83.8%	76%
	- Evaluated	88.7%	-

LESSONS LEARNED

DOMESTIC OPERATING PLANTS

Susquehanna

- Operating Shift Personnel
- Plant Manager
- Maintenance Manager
- Reactor Engineers

Peach Bottom

- Operating Shift Personnel

Limerick

- Reactor Engineers
- Startup

**LESSONS LEARNED
SWEDISH OPERATING PLANTS**

Oskarshamn

Forsmark

**MANAGER -
LICENSING & REGULATIONS**

BRUCE A. PRESTON

TECHNICAL SPECIFICATIONS

- Initial Preparation - Began May 1984
- Team Approach Utilized
 - Licensing
 - Plant Operations
 - Site Engineering
 - In-Service Inspection
 - Startup and Power Ascension
 - Bechtel Power Corporation
 - General Electric Co.

TECHNICAL SPECIFICATIONS

- Base Document BWR 4/5 Standard Technical Specifications
- Input Per Division of Responsibility
 - Plant Specific Design Documents
 - HCGS FSAR and Amendments
 - Safety Evaluation Report and Supplements
 - NRC Generic Letters
 - I&E Bulletins, Circulars, and Notices
 - BWROG Activities
- Initial Submittal to NRC - January 17, 1985

TECHNICAL SPECIFICATIONS

- Technical Specifications Change Request Procedure
 - Design Changes
 - Preoperational Test Results
 - Surveillance Procedures
 - NRC Feedback
 - Setpoint Changes
 - Walkdowns
- All Changes Reviewed by All Affected Departments
- Nuclear Training Kept Current on All Changes

TECHNICAL SPECIFICATIONS

- Proof and Review Issued October 4, 1985
- Extensive Review by All Parties
- Comments Resolved With NRC Technical Staff and NRC Technical Specifications Review Group
- NRC Region I Technical Specifications Audit

TECHNICAL SPECIFICATIONS

- Final Draft Received February 20, 1986
- Extensive Review by All Parties
 - Certification by Key PSE&G Managers
 - Certification by General Electric
 - Certification by Bechtel Power Corp.
 - Additional NRC Comments Resolved

TECHNICAL SPECIFICATIONS

- Certification Targeted for March 17, 1986 Submittal
 - Certification Reviews – PSE&G, GE, BPC
 - Independent Consistency Review
 - As-Built Walkdowns
- Technical Specifications Are Reflective of:
 - Chapter 15 Safety Analysis
 - Plant Specific Considerations
 - 10CFR 50.36
 - As-Built Configuration
 - FSAR and SER

**POWER ASCENSION
TECHNICAL DIRECTOR**

BILL H. SCHELL

MAJOR ACTIVITIES

1. Procedures
2. Training
3. Organization
4. Schedule
5. Implementation

PROCEDURES

- Scope Developed in 1983
- Approximately 125 Procedures Defined
- SORC Approved
- Simulator Tested (Transient Testing)
- Requal Training Usage

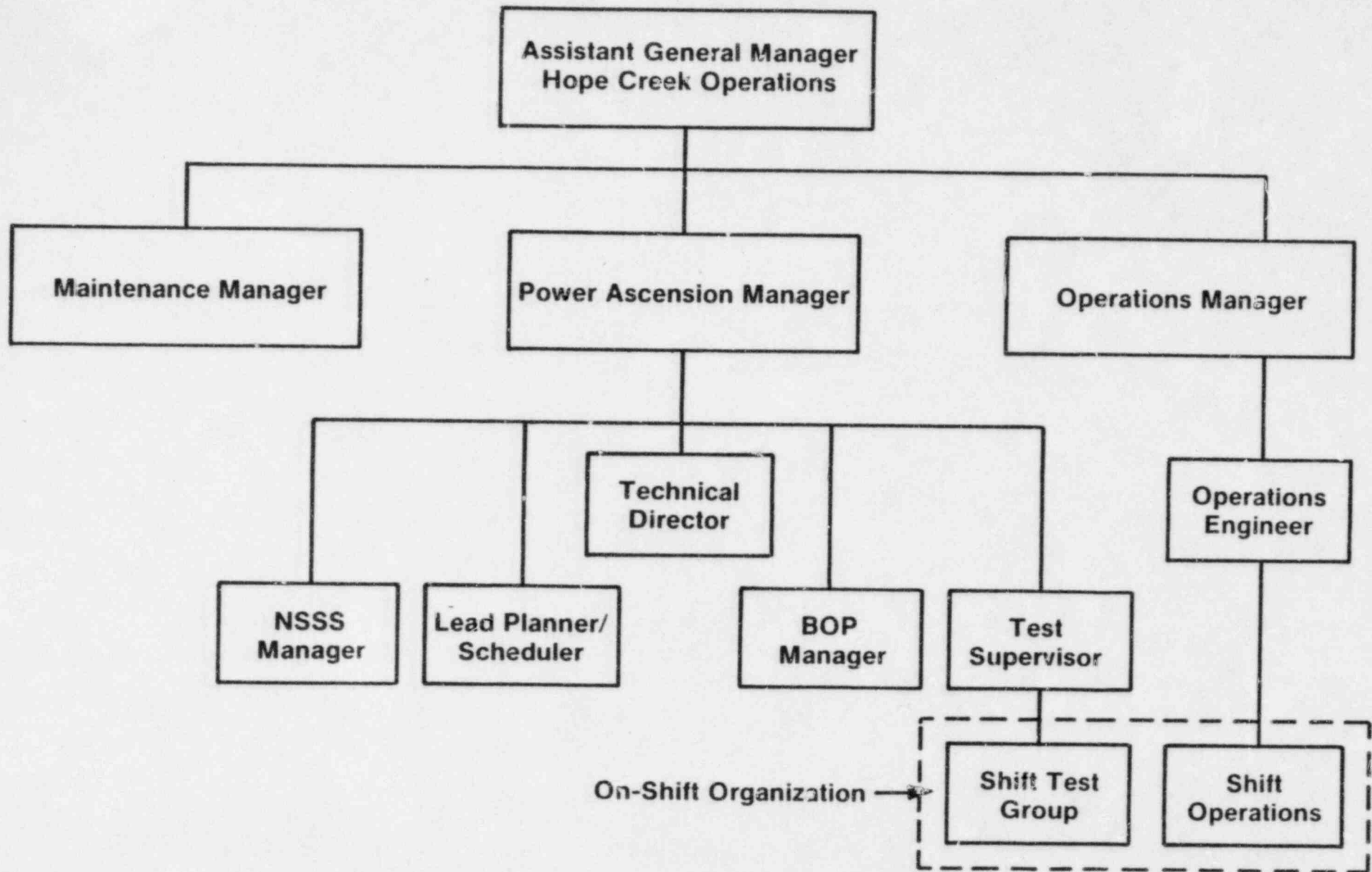
TRAINING

- Offsite Assignments
- Simulator and Test Procedures
- Administrative Program
- Special Training
- ANSI/ANS-3.1 1981 Qualified

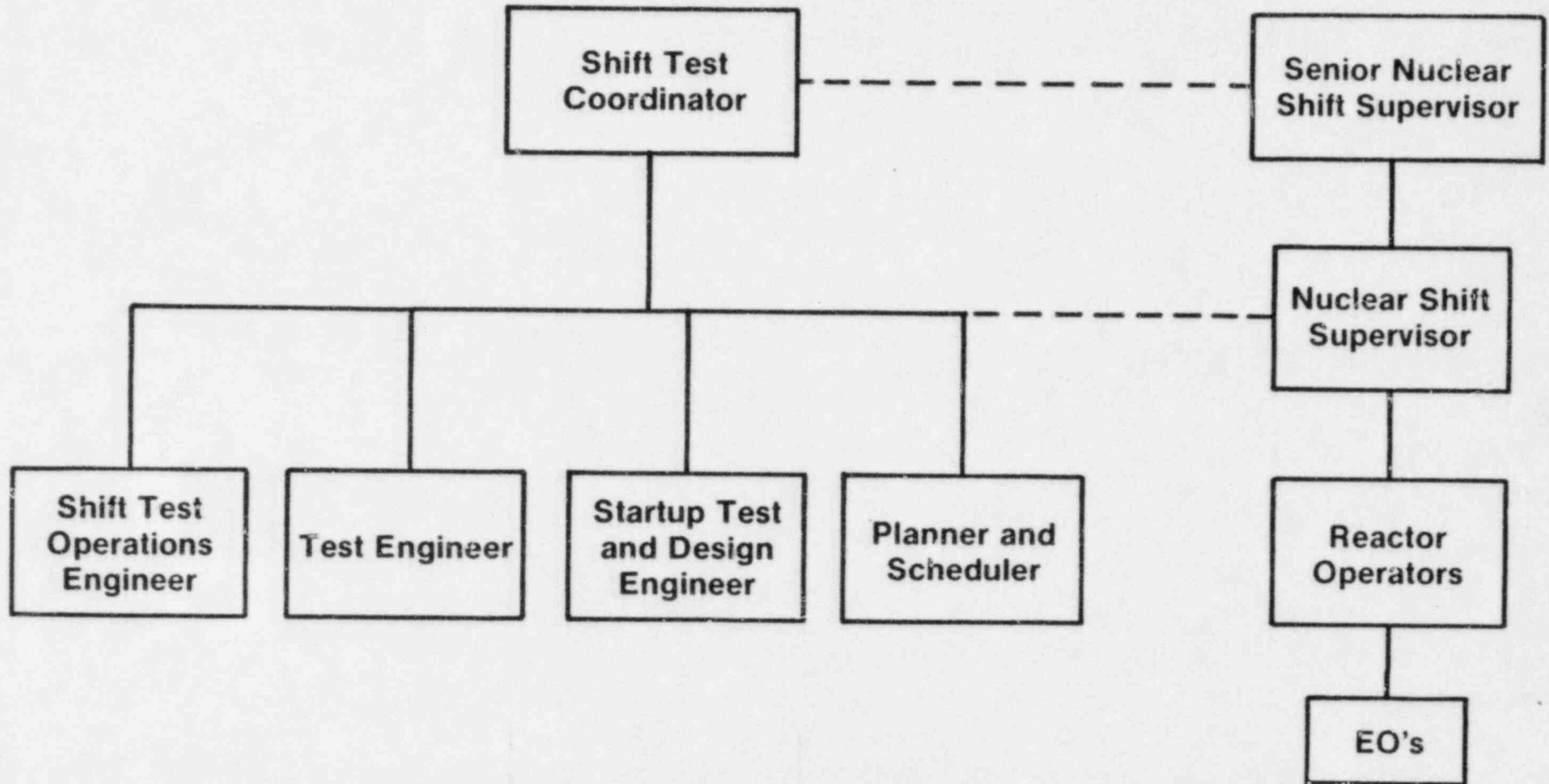
ORGANIZATION

- Fully Staffed
- Experienced
- Five Shift Rotation
- Upper Management Support

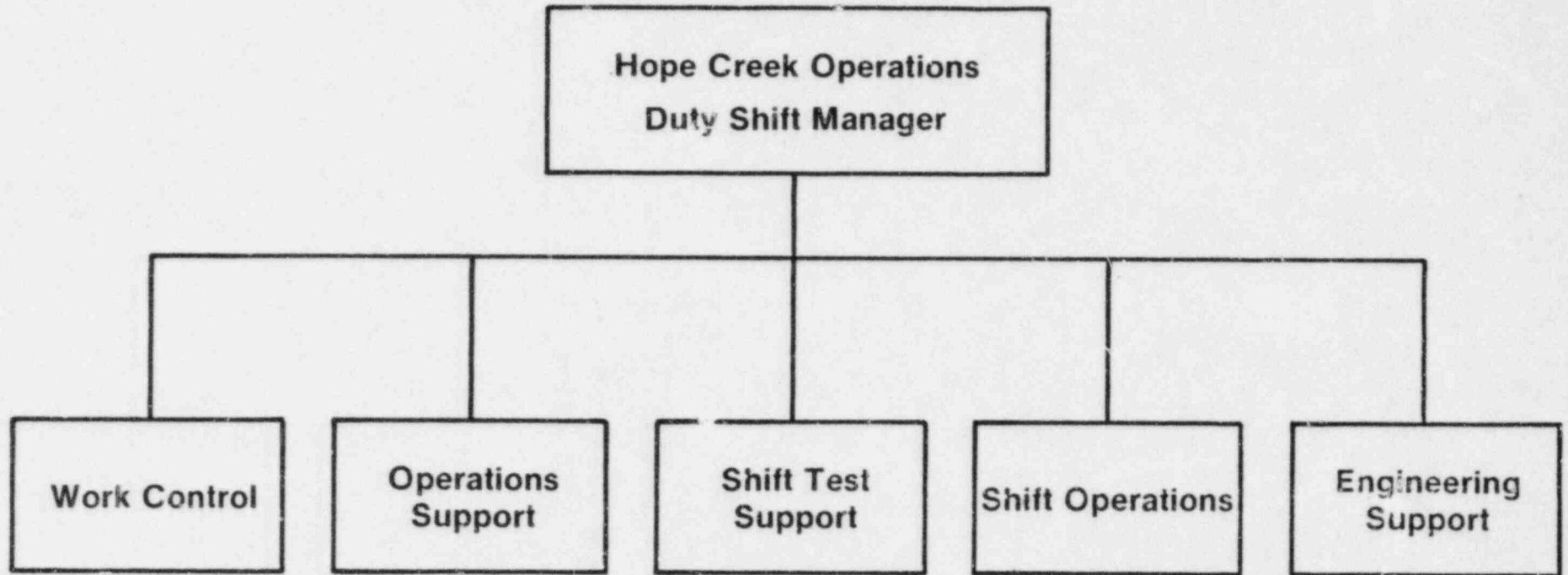
POWER ASCENSION ORGANIZATION



ON-SHIFT OPERATIONS/PATGO ORGANIZATION



SHIFT ORGANIZATION



SCHEDULE

- Aggressive
- Pre-Planning to Reduce Testing and Delay Times
 1. Test Program Changes
 2. Tune-Up Program Enhancements
 3. 23 System Walkdowns
 4. Technical Specification Evaluations
 5. Off-Line Data Analysis (Spare GETARS)
 6. Experienced Organization

SCRAM REDUCTION

- Current INPO/BWROG Recommendations
- Administrative Procedures and Controls
- Training
- Trending
- Independent Studies
- Goal
 - Planned 4
 - (Precommercial) Unplanned 4 (or Less)
 - Total Scrams 8 (or Less)

IMPLEMENTATION

- Pre-Fuel Load Testing
- Exercise Controls/Fine Tune Program
- Develop Shift Organization and Team Building

SUMMARY

Well Executed

Quality

Power Ascension Program

**GENERAL MANAGER -
QUALITY ASSURANCE**

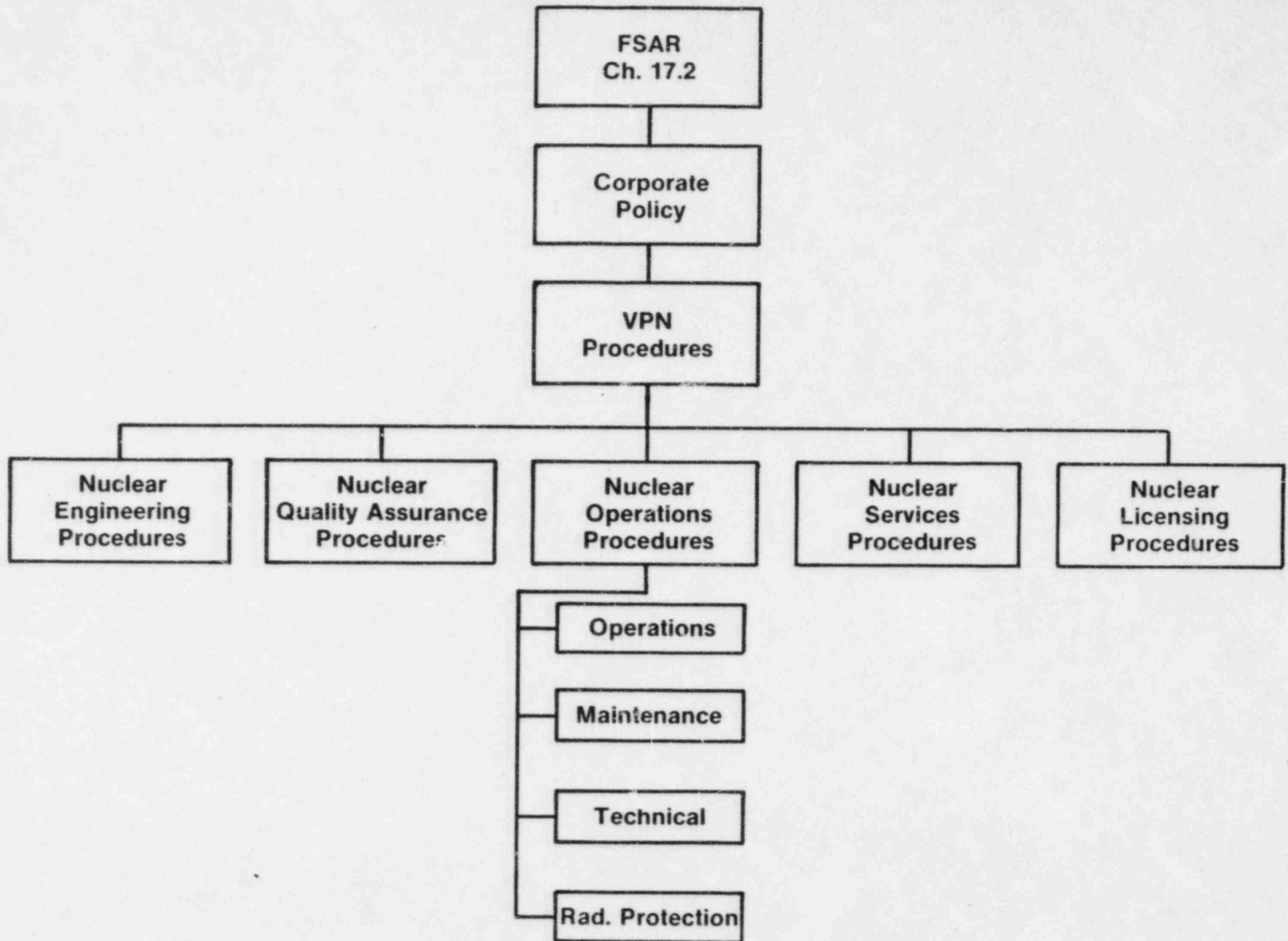
CHARLES P. JOHNSON

- Operational QA Program
- QA During Construction and Preoperational Testing

NUCLEAR QUALITY ASSURANCE OPERATIONS PHASE

- Established and Mature Program
- Implemented on Hope Creek Since July 1985
- All Functions Located on Site
- Independent of Cost and Schedule
- Reports Directly to the Vice President - Nuclear
- Fully Staffed and Functioning
- Extensive Involvement in Test Program

OPERATIONAL QA PROGRAM



**Nuclear
Quality Assurance**

**Engineering
and
Procurement**

- Quality Engineering
- QA Procurement Control
- QA Material Compliance

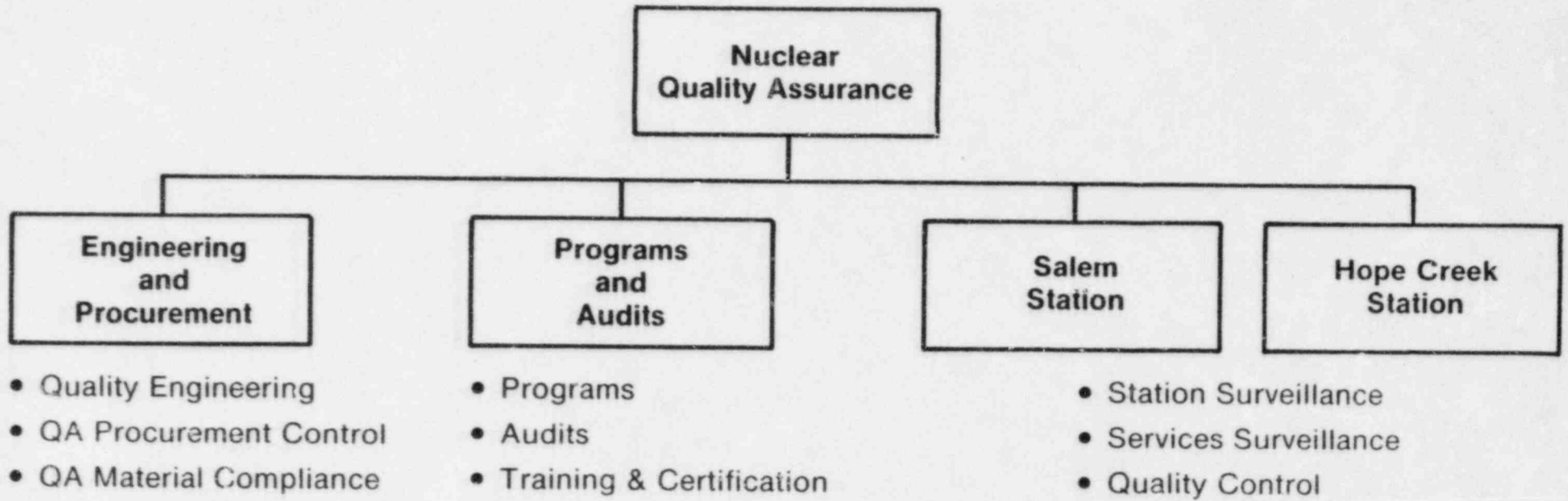
**Programs
and
Audits**

- Programs
- Audits
- Training & Certification

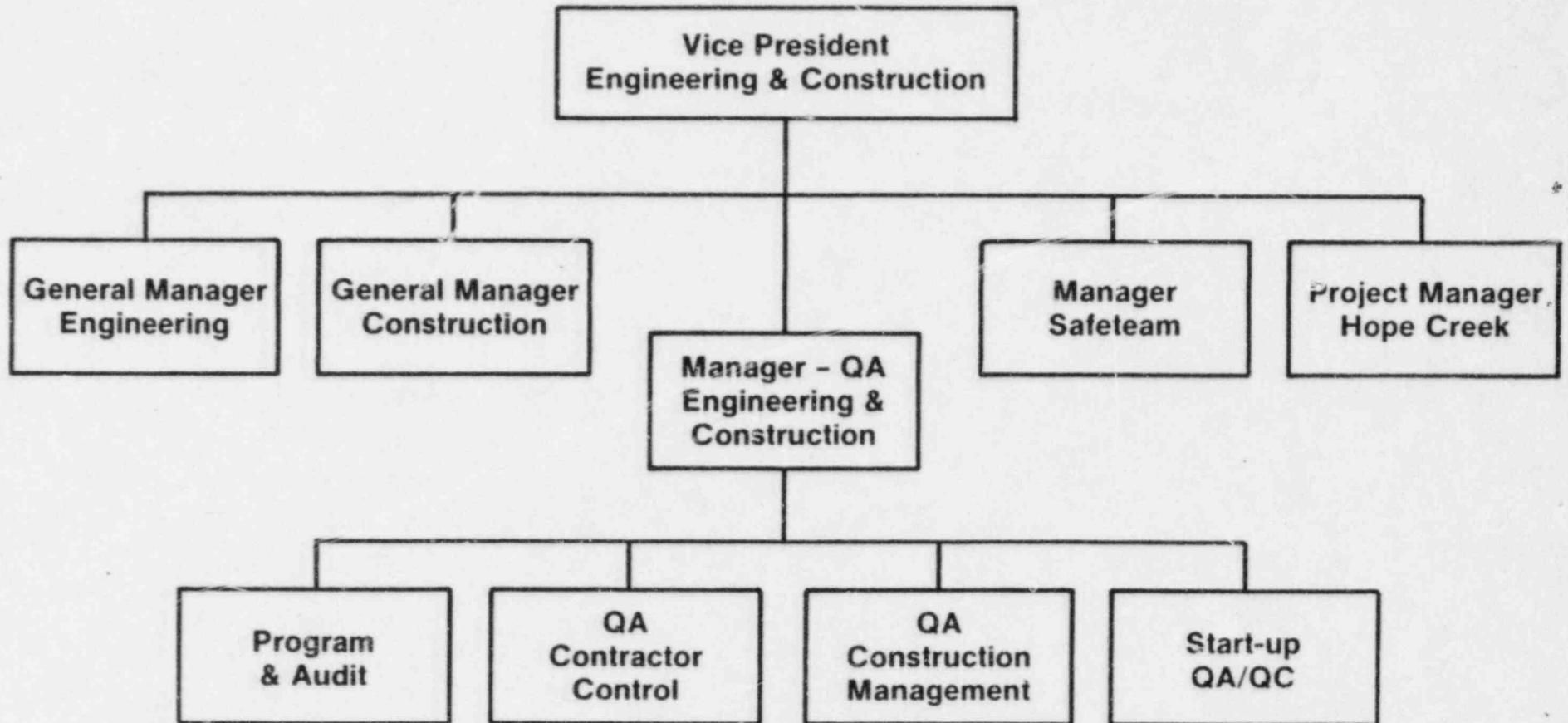
**Salem
Station**

- Station Surveillance
- Services Surveillance
- Quality Control

**Hope Creek
Station**



QA DURING CONSTRUCTION



CONSTRUCTION QUALITY PROGRAM STRENGTHS

- Strong Management Support
- Bechtel's Nuclear Experience
- PSE&G's Nuclear Experience
- Few Subcontractors
- PRIDE Program Including Quality Awareness
- Aggressive Initiatives to Identify and Resolve Problems

MAJOR EXTERNAL EVALUATIONS

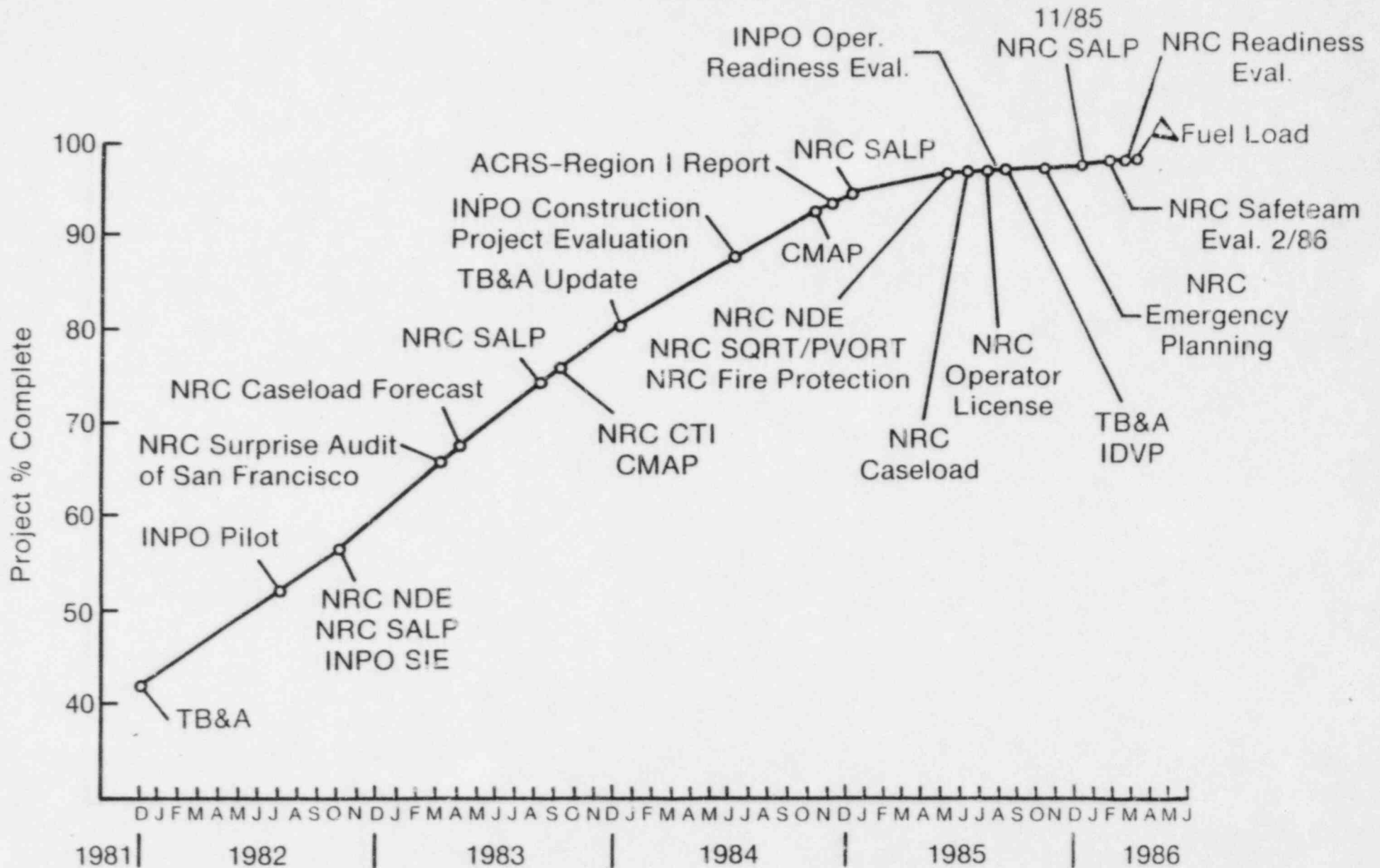
- INPO
- Theodore Barry & Associates
- Cooperative Management Audit Program
- NRC Region 1

No Significant
Quality Problems
Over the History
of Hope Creek

**VICE PRESIDENT -
ENGINEERING & CONSTRUCTION**

P.R.H. LANDRIEU

MAJOR OUTSIDE AUDITS



info

**HOPE CREEK GENERATING STATION
 NRC SYSTEMATIC ASSESSMENT OF LICENSING
 PERFORMANCE
 AUGUST 1, 1983 - OCTOBER 31, 1984
 SUMMARY OF RESULTS**

Functional Areas	Category	Trend
Containment and Other Safety-Related Structures	1	Consistent
Piping Systems and Supports (Includes Welding, NDE and Preservice Inspection)	2	Improved
Safety-Related Components (Includes Vessel, Internals, and Pumps)	1	Consistent
Support Systems (Includes HVAC & Fire Protection)	1	Improved
Electrical Power Supply and Distribution	2	Consistent
Instrumentation and Control Systems	2	Consistent
Preoperational Testing	1	Improved
Licensing Activities	2	Consistent

**HOPE CREEK GENERATING STATION
NRC SYSTEMATIC ASSESSMENT OF LICENSING
PERFORMANCE
NOVEMBER 1, 1984 - OCTOBER 31, 1985
SUMMARY OF RESULTS**

Functional Areas	Category	Trend
Construction Activities	1	Consistent
Electrical and I&C Construction	2	NA
Quality Assurance	1	Consistent
Preoperational Testing	2	NA
Operational Readiness	1	NA
Maintenance	2	NA
Radiological Controls	2	NA
Security and Safeguards	1	NA
Emergency Preparedness	2	NA
Licensing Activities	2	Improving

**THEODORE BARRY & ASSOCIATES
MANAGEMENT AUDIT
FEBRUARY - NOVEMBER, 1981**

Conclusions:

“PSE&G’s and Bechtel’s perspective, capabilities and experience have developed a well-managed project.”

**THEODORE BARRY & ASSOCIATES
MANAGEMENT REVIEW UPDATE
NOVEMBER 1983 - MAY 1984**

Conclusions:

"TB&A finds that the management of Hope Creek continues to be well managed and to compare favorably with other nuclear projects in our experience."

**THEODORE BARRY & ASSOCIATES
AUDIT
AUGUST 1985**

Scope:

- Project Management
- Construction Management
- Quality Assurance

THEODORE BARRY & ASSOCIATES AUDIT AUGUST 1985

Conclusions:

- "...The Hope Creek project continues to be a well managed project, comparing very favorably with other nuclear projects in TB&A's experience."
- "PSE&G is leading the industry in several aspects of management"
 - The Use of Incentive Contracts
 - The Cost and Schedule Systems
 - The Transition Planning Effort
 - The Aggressive Power Ascension Program Approach
- "Most of the recommendations ... identify opportunities to improve the effectiveness or efficiency of various activities or to reduce potential risks which might delay project completion."

INDEPENDENT DESIGN VERIFICATION PROGRAM SARGENT & LUNDY

- Reviewed More Than 4,000 Design Documents
- Held 31 Technical Meetings
- 700 Telephone Conversations With the NRC, PSE&G, BPC or Other Contractors
- Vertical Review of Three Safety-Related Systems: HPCI, ADS & SACS
- Horizontal Review of Certain Design Requirements Common to Systems and Structures Throughout HCGS: High- and Moderate-Energy Line Break, Fire Protection, Seismic Interaction, Shielding and Radiological Safety, and Seismic Analysis
- Horizontal Review of Several New and Unique HCGS Features, e.g., Secondary Containment and Control Room Design Features
- Walkdown to Assess Whether Systems and Structures Were Generally Configured as Designed
- 159 Observation Reports Issued:
 - None Considered Safety-Significant
 - None Resulted in a Design or Hardware Change
 - Each Satisfactorily Resolved

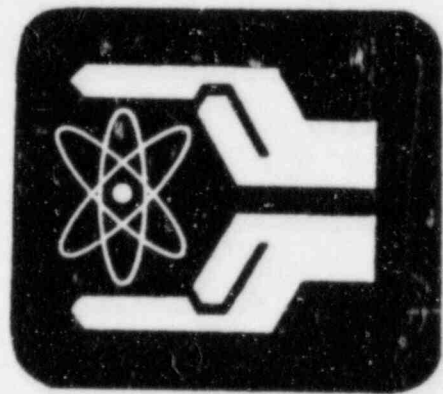
INDEPENDENT DESIGN VERIFICATION PROGRAM SARGENT & LUNDY

- Final Report Issued August 30, 1985

- Conclusion:

"Based on results of the IDVP, S&L has concluded that the completed design reviewed by the IDVP team is technically adequate and complies with applicable licensing requirements. Successful completion of the on-going design activities will provide reasonable assurance that the overall HCGS design will be technically adequate and meet applicable licensing requirements."

**HOPE CREEK
N-5 PROGRAM COMPLETE
FEBRUARY, 1986**



**HOPE
CREEK
SAFETEAM™**

**SAFETEAM
NRC INSPECTION
FEBRUARY 3-7, 1986**

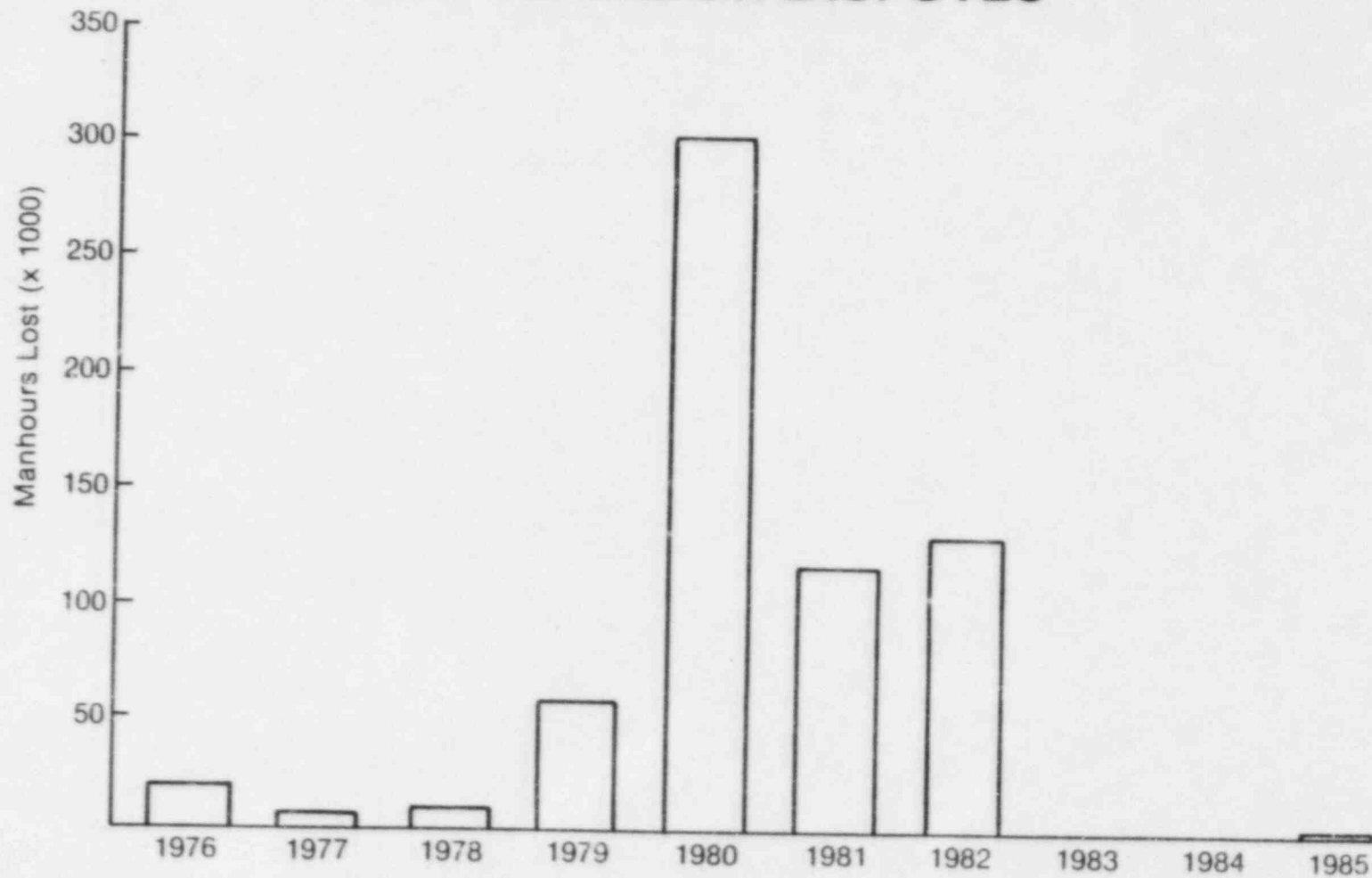
NRC Observations:

- Program Is Efficiently Managed and Well Organized
- Management Support Is Good
- Timeliness of Response to Concerns Is Above Average
- Quality of Responses Is Good

SAFETEAM ACTIVITY

Total Concerns		788	
No. of Concerns Closed	733		
No. of Concerns Open	55		
Nuclear Safety Concerns		300	(38%)
No. of Concerns Closed	296		
No. of Concerns Open	4		

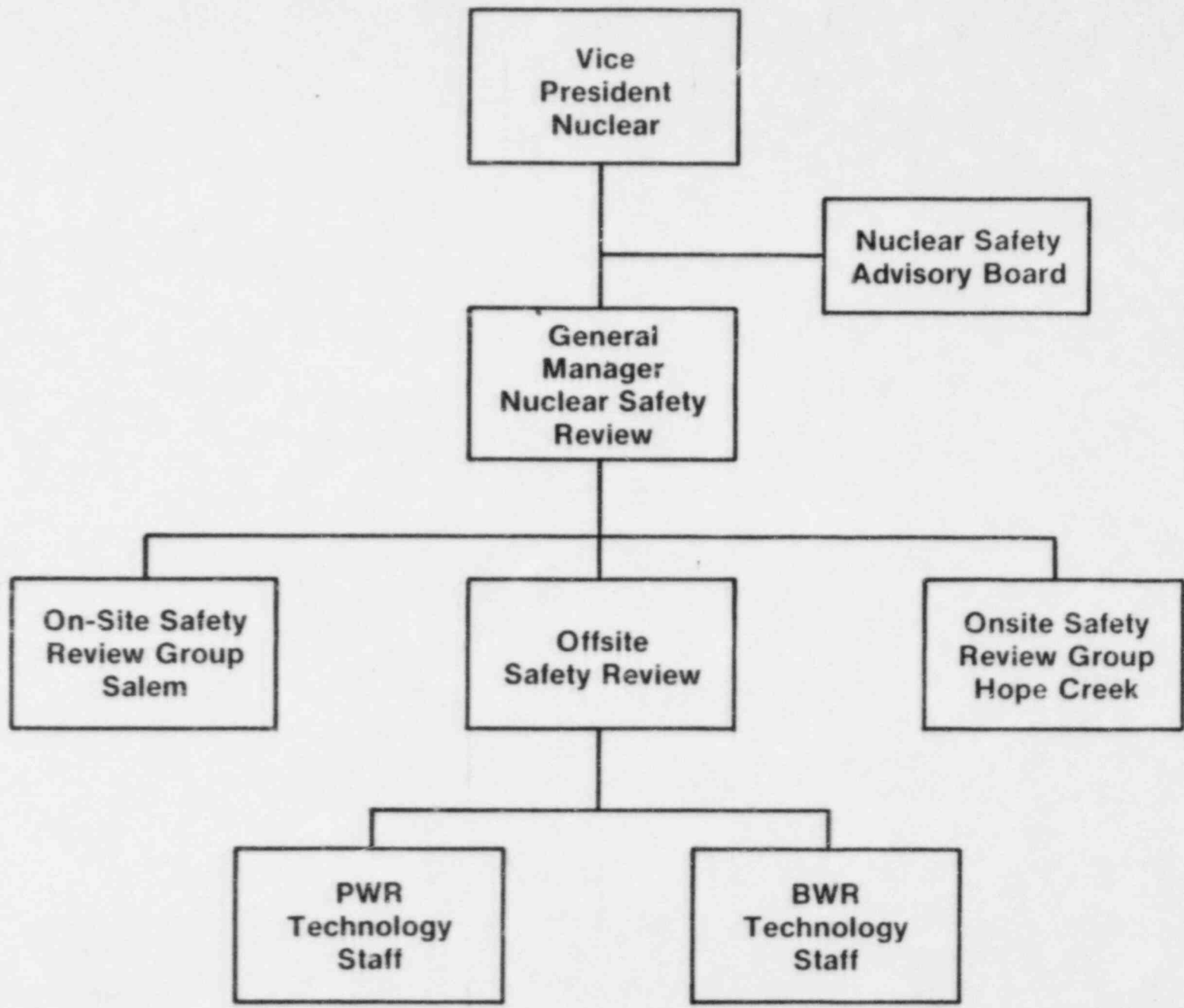
MANHOURS LOST DUE TO LABOR DISPUTES



**GENERAL MANAGER -
NUCLEAR SAFETY REVIEW**

JOHN H. MACKINNON

**NUCLEAR SAFETY REVIEW
ORGANIZATION
READINESS OVERVIEW**



**HOPE CREEK ON-SITE SAFETY
REVIEW GROUP
INDEPENDENT SAFETY
ENGINEERING GROUP**

- Established and Functioning
- Observing Plant Operations
- Performing Investigations and Studies
- Member of Station Operations Review Committee

HOPE CREEK ON-SITE SAFETY REVIEW GROUP ADDITIONAL ACTIVITIES

- Assist in Nuclear Safety Review Hope Creek Readiness Evaluation
- Assist in Offsite Review of Project Completion List
- Monthly Reports to Senior Management
- Review of Technical Department's Technical Specification Matrix

OFFSITE SAFETY REVIEW GROUP

- Full-Time Manager and Staff
- Performs All Independent 50.59 Reviews
- Oversees Technical Specification Audit Program
- Conducted Hope Creek Readiness Reviews

HOPE CREEK NUCLEAR SAFETY ADVISORY BOARD

- Reports to Vice President - Nuclear
- Meets Quarterly
- Membership:
 - Outside Member
 - N.J. Public Advocate Representative
 - Atlantic Electric Member
 - Internal PSE&G - 4 Members

READINESS OVERVIEW

- Senior Management Assessment Questions
- Nuclear Safety Review Analysis
- Follow Up Actions
- Project Completion List
- Deferred System Safety Evaluation Reviews
- Future Actions



PSEG

The Energy People

MARCH 1986

**HOPE CREEK
GENERATING STATION**

BRIEFING BOOK

HOPE CREEK GENERATING STATION

BRIEFING BOOK

MARCH 1986

TABLE OF CONTENTS

- o FACT SHEET
- o PROJECT MILESTONES
- o PRINCIPAL CONTACTS
- o NSSS DESIGN FEATURES
- o COMPARISON OF HOPE CREEK DESIGN TO OTHER PLANTS
- o EMERGENCY CORE COOLING SYSTEMS
- o HOPE CREEK GENERATING STATION SYSTEM DESIGNATORS
- o MANAGEMENT INVOLVEMENT
- o NUCLEAR EXPERIENCE OF KEY MANAGEMENT INDIVIDUALS
- o HOPE CREEK OPERATIONS STAFFING AND EXPERIENCE
- o PSE&G'S COMMITMENT TO TRAINING
- o PSE&G'S CONTINUING ROLE IN THE NUCLEAR INDUSTRY
- o PSE&G STAFFING
- o ORGANIZATIONAL CHARTS
- o OPERATING SHIFT EXPERIENCE
- o OPERATING SHIFT COMPLEMENT
- o TECHNICAL SPECIFICATION MILESTONES
- o USNRC AUDITS

FACT SHEET

FACT SHEET

- o PLANT TYPE: BWR 4/5, MARK I CONTAINMENT
- o CONSTRUCTION PERMIT (CPR-120) ISSUED NOVEMBER 4, 1974
- o CONSTRUCTION PERMIT EXPIRATION DATE DECEMBER 31, 1986
- o OPERATING LICENSE APPLICATION TENDERED MARCH 1, 1983
- o FINAL SAFETY ANALYSIS REPORT DOCKETED JUNE 29, 1983
- o USNRC SAFETY EVALUATION REPORT (SER)
(NUREG-1048) ISSUED OCTOBER 1984
 - o SER SUPPLEMENT No. 1 ISSUED MARCH 1985
 - o SER SUPPLEMENT No. 2 ISSUED AUGUST 1985
 - o SER SUPPLEMENT No. 3 ISSUED OCTOBER 1985
 - o SER SUPPLEMENT No. 4 ISSUED DECEMBER 1985

PROJECT MILESTONES

PROJECT MILESTONES

0	RECEIVE CONSTRUCTION PERMIT	NOV - 74
0	START MAJOR ON-SITE CONSTRUCTION	MAR - 76
0	START REACTOR BUILDING BASEMATS	SEP - 77
0	START ERECTION OF STRUCTURAL STEEL	MAY - 78
0	SET REACTOR PRESSURE VESSEL	DEC - 80
0	SET CONTAINMENT DOME	NOV - 82
0	COMPLETE CONTROL ROOM COMPLEX	JUN - 84
	INTEGRATED TEST	
0	COMPLETE INTEGRATED FLUSH	FEB - 85
0	ASME B&PV CODE HYDRO OF VESSEL	MAR - 85
0	COMPLETE NSSS PRE-OP TESTS	MAY - 85
0	TURBINE ON TURNING GEAR	JUL - 85
0	COMPLETE VACUUM PULL	JUL - 85
0	RECEIVED FIRST FUEL	SEP - 85
0	COMPLETE CONTAINMENT STRUCTURAL	DEC - 85
	INTEGRITY TEST	
0	COMPLETE INTEGRATED LEAK RATE TEST	DEC - 85
0	COMPLETE LOSS OF OFF-SITE POWER TEST	JAN - 86
0	RECEIVE LOW POWER OPERATING LICENSE	MAR - 86
0	START FUEL LOAD	MAR - 86
0	INITIAL CRITICALITY	APR - 86
0	RECEIVE FULL POWER LICENSE	MAY - 86
0	TEST CONDITION 6 (100% POWER PLATEAU)	AUG - 86
0	WARRANTY RUN	SEP - 86

PRINCIPAL CONTACTS

PRINCIPAL CONTACTS

U.S. NUCLEAR REGULATORY COMMISSION

- o NRC REGION I OFFICE, KING OF PRUSSIA (215) 337-5000
- o E.G. ADENSAM, DIRECTOR - PROJECT DIRECTORATE #3 (301) 492-7831
- o D.H. WAGNER, PROJECT MANAGER - HOPE CREEK (301) 492-9418
- o R.W. BORCHARDT, HOPE CREEK SENIOR RESIDENT INSPECTOR (609) 935-5151

PUBLIC SERVICE ELECTRIC AND GAS COMPANY

- o HOPE CREEK GENERATING STATION (609) 935-7400
- o C.A. McNEILL, JR. - VICE PRESIDENT - NUCLEAR (609) 339-4800
- o J.T. BOETTGER - ASSISTANT VICE PRESIDENT -
NUCLEAR OPERATIONS SUPPORT (609) 339-4700
- o L.A. REITER - GENERAL MANAGER -
LICENSING AND RELIABILITY (609) 339-4011
- o B.A. PRESTON - MANAGER - LICENSING & REGULATION (609) 339-5129

NSSS DESIGN FEATURES

NSSS DESIGN FEATURES

<u>ITEM</u>	<u>HOPE CREEK</u>
RATED THERMAL POWER-MW _{TH}	3293
NET ELECTRICAL OUTPUT MW _E	1067
AVERAGE LINEAR HEAT GENERATION RATE-KW/FT	5.34
MAXIMUM LINEAR HEAT GENERATION RATE-KW/FT	13.4
FEEDWATER TEMPERATURE-°F	420
SYSTEM PRESSURE, NOMINAL IN STEAM DOME-PSIA	1020
CORE COOLANT FLOWRATE-LB/HR	100.0 x 10 ⁶
STEAM FLOWRATE-LB/HR	14.16 x 10 ⁶
NUMBER OF FUEL ASSEMBLIES	764
NUMBER OF FUEL RODS PER ASSEMBLY	62
ASSEMBLY CONFIGURATION	8 x 8
ACTIVE LENGTH OF FUEL-IN.	150
NUMBER OF CONTROL RODS	185
REACTOR VESSEL INSIDE DIA-IN	251
NUMBER OF RECIRCULATION LOOPS	2
RECIRCULATION PUMP FLOW (EACH)-GPM	45,200
NUMBER OF JET PUMPS	20
MAIN STEAM LINES (MSL's)	4
MSL PIPE DIAMETER-IN	26
MSIV's PER STEAM LINE	2

COMPARISON OF HOPE CREEK DESIGN TO OTHER PLANTS

COMPARISON OF HOPE CREEK DESIGN TO OTHER NUCLEAR POWER PLANTS

	HOPE CREEK BWR 4/5	HATCH 1 BWR 4	LIMERICK BWR 4/5	SUSQUEHANNA BWR 4
RATED POWER - MW_{TH}	3293	2436	3293	3293
RATED POWER - MW_E (GROSS)	1117.5	813.5	1138	1085
STEAM FLOW RATE - LB/HR	14.16×10^6	10.03×10^6	14.16×10^6	13.48×10^6
SYSTEM PRESSURE, NOMINAL IN STEAM DOME - PSIA	1020	1020	1020	1020
MAXIMUM LINEAR HEAT GENERATION RATE - KW/FT	13.4	13.4	13.4	13.4
AVERAGE LINEAR HEAT GENERATION RATE - KW/FT	5.34	7.11	5.3	5.34
FEEDWATER TEMPERATURE - °F	419.9	387.4	420	383
CORE COOLANT FLOWRATE - LB/HR	100.0×10^6	78.5×10^6	100.0×10^6	100.0×10^6
NUMBER OF FUEL ASSEMBLIES	764	560	764	764
NUMBER OF FUEL RODS PER ASSEMBLY	62	49	62	62
ASSEMBLY CONFIGURATION	8x8	7x7	8x8	8x8
CORE HEIGHT (ACTIVE FUEL LENGTH) - IN.	150	144	150	150
NUMBER OF MOVABLE CONTROL RODS	185	137	185	185
REACTOR VESSEL INSIDE DIAMETER - FT-IN.	20-11	18-2	20-11	20-11
NUMBER OF RECIRCULATION LOOPS	2	2	2	2
RECIRCULATION PUMP FLOW RATE - GPM	45,200	42,200	45,200	45,200
NUMBER OF JET PUMPS	20	20	20	20
MAIN STEAM LINES	4	4	4	4
DIAMETER OF MAIN STEAM LINES - IN.	26	24	26	26

EMERGENCY CORE COOLING SYSTEMS

EMERGENCY CORE COOLING SYSTEMS

<u>ITEM</u>	<u>HOPE CREEK</u>
<u>CONTAINMENT TYPE</u>	MARK I
DRYWELL FREE VOLUME-FT ³	169,000
DRYWELL DESIGN PRESSURE (INTERNAL)-PSIG	62
<u>SUPPRESSION POOL</u>	
WATER VOLUME-FT ³	122,000 (HIGH WATER LEVEL)
<u>DRYWELL</u>	
LIGHT BULB/STEEL VESSEL	
<u>LPCI SYSTEM</u>	
NUMBER OF LOOPS	4
NUMBER OF PUMPS	4
FLOW RATE GPM/PUMP	10,000 @ 20 PSID
<u>L.P. CORE SPRAY SYSTEM</u>	
NUMBER OF LOOPS	2
L.P. CORE SPRAY PUMPS	4
FLOW RATE GPM/LOOP	6350 @ 105 PSID
<u>AUTOMATIC DEPRESSURIZATION SYSTEM (ADS)</u>	
NUMBER OF RELIEF VALVES	5
<u>HPCI SYSTEM</u>	
NUMBER OF LOOPS (AND PUMPS)	1
FLOW RATE-GPM	5600
<u>RCIC PUMPS</u>	1
FLOW RATE-GPM	600 @ 150-1120 PSID
<u>RHR PUMPS (REACTOR SHUTDOWN COOLING MODE)</u>	2
FLOW RATE-GPM/PUMP	10,000

HOPE CREEK GENERATING STATION SYSTEM DESIGNATORS

HOPE CREEK GENERATING STATION SYSTEM DESIGNATORS (SD)

<u>SD</u>	<u>SYSTEM</u>
AB	MAIN STEAM
AC	MAIN TURBINE
AD	CONDENSATE
AE	FEEDWATER
AF	EXTRACTION STEAM, HEATER VENTS & DRAINS
AK	CONDENSATE DEMINERALIZER
AM	FRESH WATER SUPPLY
AN	DEMIN. WATER MAKEUP, STORAGE & TRANSFER
AP	CONDENSATE STORAGE AND TRANSFER
AQ	CHEMISTRY CONTROL - CONDENSATE & FEEDWATER
AR	FRESH WATER PRETREATMENT
BB	NUCLEAR BOILER & REACTOR RECIRCULATION
BC	RESIDUAL HEAT REMOVAL (RHR)
BD	REACTOR CORE ISOLATION COOLING (RCIC)
BE	CORE SPRAY
BF	CONTROL ROD DRIVE - HYDRAULIC
BG	REACTOR WATER CLEANUP (RWCU)
BH	STANDBY LIQUID CONTROL (SBLC)
BJ	HIGH PRESSURE COOLANT INJECTION (HPCI)
BN	REFUELING WATER TRANSFER
CA	MAIN TURBINE SEALING SYSTEM
CB	MAIN TURBINE & GENERATOR LUBE OIL
CC	MAIN GENERATOR - GAS CONTROL
CD	MAIN GENERATOR - HYDROGEN SEAL OIL
CE	MAIN GENERATOR - STATOR WATER COOLING
CF	LUBE OIL STORAGE, TRANSFER & PURIFICATION
CG	CONDENSER AIR REMOVAL
CH	MAIN TURBINE CONTROL OIL (EHC)
CJ	RFP TURBINE LUBE OIL
DA	CIRCULATING WATER
DB	COOLING TOWERS
DD	CIRCULATING WATER HYPOCHLORINATION
DE	CIRCULATING WATER ACID INJECTION
DF	COOLING TOWER BLOWDOWN DECHLORINATION
EA	SERVICE WATER
EC	FUEL POOL COOLING & CLEANUP
ED	REACTOR AUXILIARIES COOLING (RACS)
EE	TORUS WATER CLEANUP
EG	SAFETY & TURBINE AUXILIARIES COOLING (SACS)
EP	SERVICE WATER SCREENS & BACKWASH
EQ	SERVICE WATER HYPOCHLORINATION
FA	AUXILIARY BOILERS
FB	AUXILIARY STEAM SYSTEM
FC	RCIC TURBINE STEAM
FD	HPCI TURBINE STEAM
FW	RFP TURBINE STEAM
GA	PLANT HEATING SYSTEM
GB	CHILLED WATER

<u>SD</u>	<u>SYSTEM</u>
GC	ADMINISTRATIVE BUILDING HVAC
GD	FIRE PUMP HOUSE HVAC
GE	TURBINE BUILDING HVAC
GF	MISCELLANEOUS BUILDING HVAC
GH	AUXILIARY BUILDING HVAC - RADWASTE AREA
GJ	AUXILIARY BUILDING CHILLED WATER - CONTROL ROOM
GK	AUXILIARY BUILDING HVAC - CONTROL ROOM
GL	AUXILIARY BUILDING HVAC - SERVICE AREA
GM	AUXILIARY BUILDING HVAC - DIESEL GENERATOR AREA
GP	PRIMARY CONTAINMENT LEAK RATE TEST
GQ	INTAKE STRUCTURE HVAC
GR	REACTOR BUILDING HVAC
GS	CONTAINMENT ATMOSPHERE CONTROL
GT	DRYWELL HVAC
GU	FILTRATION, RECIRCULATION & VENTILATION (FRVS)
HA	GASEOUS RADWASTE (OFF GAS)
HB	LIQUID RADWASTE
HC	SOLID RADWASTE
HD	DECONTAMINATION FACILITIES
HG	BUILDING & EQUIPMENT DRAINS
HH	RADIOACTIVE LAUNDRY
JA	AUXILIARY BOILER FUEL OIL STORAGE & TRANSFER
JE	DIESEL FUEL OIL STORAGE & TRANSFER
KA	SERVICE COMPRESSED AIR
KB	INSTRUMENT (CONTROL) AIR
KC	FIRE PROTECTION
KD	DOMESTIC (POTABLE) WATER
KE	FUEL HANDLING & REACTOR VESSEL SERVICING
KF	CRANES, HOISTS & ELEVATORS
KG	BREATHING AIR
KH	SERVICE GASES (CO ₂ , N ₂ , & H ₂)
KJ	EMERGENCY DIESEL GENERATORS
KL	CONTAINMENT INSTRUMENT GAS
KP	MSIV STEAM SEALING
LA	BUILDING SEWAGE
LB	STORM DRAINAGE
LD	CHEMICAL WASTE
LE	OILY WASTE
LF	NORMAL DRAINS
LG	FLOOR WATER COLLECTION
MA	MAIN GENERATOR & TRANSFORMERS
MB	MAIN GENERATOR EXCITER & VOLTAGE REGULATOR
MC	13.8 KV STATION POWER
MD	SWITCHYARD BUSES
ME	SWITCHYARD 125V DC
MF	SWITCHYARD LIGHTING & AUXILIARY POWER
MH	500 KVAC

<u>SD</u>	<u>SYSTEM</u>
NA	7.2 KVAC
NB	4.16 KVAC
NG	480VAC SUBSTATION POWER
NH	480V MCC POWER
NJ	250VDC
NK	125VDC
NQ	120VAC
PB	4.16 KVAC (CLASS 1E)
PE	STANDBY AC POWER (DIESEL GENERATORS)
PG	480VAC (CLASS 1E) SUBSTATION POWER
PH	480V (CLASS 1E) MCC POWER
PJ	250VDC (CLASS 1E)
PK	125VDC (CLASS 1E)
PL	24VDC (CLASS 1E)
PN	120VAC (CLASS 1E)
QA	NORMAL STATION LIGHTING
QB	ESSENTIAL & STANDBY LIGHTING
QC	YARD, ROADWAY & FENCE LIGHTING
QE	PUBLIC OFF-SITE COMMUNICATION
QF	IN-PLANT COMMUNICATION
QG	SITE GROUNDING
QH	CATHODIC PROTECTION
QJ	FREEZE PROTECTION (HEAT TRACING)
QK	FIRE & SMOKE DETECTION
QL	PRIVATE OFF-SITE COMMUNICATION
QM	SPECIAL FACILITIES
RC	PROCESS SAMPLING
RD	METEOROLOGICAL INSTRUMENTATION
RF	ENVIRONMENTAL INSTRUMENTATION
RG	PLANT SECURITY
RH	CLOSED CIRCUIT TV
RJ	PLANT COMPUTER
RK	PLANT ANNUNCIATOR
RL	CONTROL COMPLEX
SA	REDUNDANT REACTIVITY CONTROL
SB	REACTOR PROTECTION
SC	REACTOR INSTRUMENTATION
SD	AREA RADIATION MONITORING
SE	NEUTRON MONITORING (NIS, TIP)
SF	REACTOR MANUAL CONTROL
SG	SEISMIC INSTRUMENTATION
SH	POST ACCIDENT MONITORING
SK	PLANT LEAK DETECTION
SL	REACTOR BUILDING PRESSURE RELIEF
SM	PRIMARY CONTAINMENT ISOLATION (NSSS)
SN	AUTOMATIC DEPRESSURIZATION (ADS)
SP	PROCESS RADIATION MONITORING
SS	ROTATING MACHINERY VIBRATION MONITORING
ST	TRANSIENT MONITORING
SU	RADWASTE CONTROLS & LOGIC
SV	REMOTE SHUTDOWN

MANAGEMENT INVOLVEMENT

MANAGEMENT INVOLVEMENT

- 0 CHAIRMAN OF THE BOARD, PRESIDENT, AND CHIEF EXECUTIVE OFFICER
- 0 EXECUTIVE VICE PRESIDENT - FINANCE
- 0 SENIOR VICE PRESIDENT - PLANNING AND RESEARCH
- 0 SENIOR VICE PRESIDENT - NUCLEAR AND ENGINEERING
- 0 VICE PRESIDENT - ENGINEERING AND CONSTRUCTION
- 0 VICE PRESIDENT AND CORPORATE RATE COUNSEL
- 0 GENERAL MANAGER - ENGINEERING
- 0 GENERAL MANAGER - CONSTRUCTION
- 0 PROJECT MANAGER - HOPE CREEK

NUCLEAR DEPARTMENT MANAGEMENT (ON SITE)

- 0 VICE PRESIDENT - NUCLEAR
- 0 ASSISTANT VICE PRESIDENT - NUCLEAR OPERATIONS SUPPORT
- 0 GENERAL MANAGER - LICENSING AND RELIABILITY
- 0 GENERAL MANAGER - ENGINEERING AND PLANT BETTERMENT
- 0 GENERAL MANAGER - HOPE CREEK OPERATIONS
- 0 GENERAL MANAGER - NUCLEAR QUALITY ASSURANCE
- 0 GENERAL MANAGER - NUCLEAR SERVICES
- 0 GENERAL MANAGER - NUCLEAR SAFETY REVIEW

NUCLEAR EXPERIENCE OF KEY MANAGEMENT INDIVIDUALS

NUCLEAR EXPERIENCE OF KEY MANAGEMENT INDIVIDUALS

<u>TITLE</u>	<u>TOTAL YEARS NUCLEAR EXPERIENCE</u>
VICE PRESIDENT - NUCLEAR	24
ASSISTANT VICE PRESIDENT - NUCLEAR OPERATIONS SUPPORT	20
GENERAL MANAGER - NUCLEAR SAFETY REVIEW	24
GENERAL MANAGER - NUCLEAR QUALITY ASSURANCE	22
GENERAL MANAGER - NUCLEAR SERVICES	25
GENERAL MANAGER - LICENSING AND RELIABILITY	20
GENERAL MANAGER - ENGINEERING AND PLANT BETTERMENT	17
GENERAL MANAGER - HOPE CREEK OPERATIONS	17
ASSISTANT GENERAL MANAGER - HOPE CREEK OPERATIONS	9
TECHNICAL MANAGER - HOPE CREEK	15
OPERATIONS MANAGER - HOPE CREEK	23
MAINTENANCE MANAGER - HOPE CREEK	10
RADIATION PROTECTION/CHEMISTRY MANAGER - HOPE CREEK	8

VICE PRESIDENT - NUCLEAR

NAME: Corbin A. McNeill, Jr.

EDUCATION:

1958-1962 United States Naval Academy
Annapolis, Maryland
BS, Engineering

1962-1963 U.S. Naval Nuclear Power Training
Vallejo, California
Balston Spa, New York

1976 University of California at Berkeley
Master's Program

1981 General Electric's BWR School

1983-1984 Syracuse University
Syracuse, New York
MBA Studies

1984 Westinghouse Training Center
PWR Simulator Training

EXPERIENCE:

1985 Public Service Electric and Gas Company
Vice President - Nuclear

1981-1985 New York Power Authority:

1984-1985 Senior Vice President - Nuclear Generation:
Responsible for safe operation of two
nuclear power plants. Provided management
guidance and review for the Resident
Managers of both plants. Ensured provision
of required resources for operation.

1981 Resident Manager, James A. Fitzpatrick
Nuclear Power Plant: Responsible for
all aspects of operation of 800-MW
boiling water reactor power plant including
operations, maintenance, and modification.

1962-1981 United States Navy

EXPERIENCE: (Continued)

1977-1981	U.S.S. Tautog (SSN 639) Commanding Officer
1975-1977	Naval Nuclear Power School Commanding Officer
1973-1975	Executive Officer, nuclear-powered attack submarine
1971-1973	Squadron Material Officer, Fleet Ballistic Missile Submarine Squadron
1968-1971	Engineering Officer, new construction submarine
1963	Naval Nuclear Propulsion Program

PROFESSIONAL AFFILIATIONS:

Member of ANS

ASSISTANT VICE PRESIDENT - NUCLEAR OPERATIONS SUPPORT

NAME: John T. Boettger

LICENSES AND CERTIFICATES:

Professional Engineer, New Jersey

EDUCATION:

1955 - 1959	Lehigh University BS, Electrical Engineering
1965	Westinghouse Electric Corporation Pressurized Water Reactor Seminar
1966	General Electric Company Boiling Water Reactor Seminar
1968	NUS Corporation Nuclear Power for Engineers
1969	General Electric Company Fundamentals of Boiling Water Reactor Plant Operations
1969	University of Tennessee Protection Systems for Nuclear Plants
1981	Westinghouse Electric Corporation Pressurized Water Reactor Simulator, Executive Training
1981	Gilbert Associates, Inc Executive Seminar on Quality Assurance

EXPERIENCE:

1960 - Present	Public Service Electric and Gas Company
1984 - Present	Assistant Vice President - Nuclear Operations Support
1981 - 1984	General Manager - Nuclear Support: Responsible for engineering, licensing, and fuel design services to support the operation, maintenance, and modifications of operating nuclear power generating stations.

- Oversee the performance of independent safety reviews of operational activities.
- 1980 - 1981 General Manager - Corporate Quality Assurance: General supervision of the corporate quality assurance department. This department interprets regulations, codes, and standards. It also formulates and approves corporate QA programs and implements assurance functions of these programs.
- 1972 - 1980 Project Manager - Hope Creek: Responsible for the licensing, engineering/design, construction, and startup of two 1100-MWe boiling water reactor power plants
- 1970 - 1972 Senior Engineer: Responsible for licensing and system analysis for nuclear plant control and protection systems
- 1960 - 1970 Various: Assignments in the engineering department related to the design, construction, and startup of new electrical generating stations
- 1960 - 1961 Management training program for engineers

PROFESSIONAL AFFILIATIONS:

- Past/present member of ANS, IEEE and PMI
- Member of IEEE Standards Board
- Member of Industry Steering Committee on PRA Procedures Guide
- Past chairman of IEEE/PES Nuclear Power Engineering Committee

GENERAL MANAGER - NUCLEAR SAFETY REVIEW

NAME: John H. MacKinnon

EDUCATION:

1954-1958 U.S. Naval Academy
BS

1960 Officers Basic Course
US Naval Submarine School

1962 Officers Nuclear Power Course
US Naval Submarine School
and SIC Prototype, Windsor Locks, CT

1963 S5W Crew Training
Bettis Laboratory, West Mifflin, PA

1971 Prospective Nuclear Submarine Commanding
Officers Course
Director Division of Naval Reactors,
USAEC Washington, DC

1978 Quality Assurance Auditors Course
Stone & Webster Engineering Corp.

1979-1980 Courses in MBA Program
Boston University

EXPERIENCE:

1984-Present General Manager - Nuclear Safety Review
for Public Service Electric and Gas
Company: See HCGS FSAR Section 13.1.1.1.3.4
for responsibilities.

1982-1984 Project Manager - Clinton Power Station
for Illinois Power Company: Responsible
for management of all construction
activities at that 950 MW Boiling Water
Reactor.

1980-1982 Project Manager - SWEC: Responsible
for management of projects such as
engineering support of an operational
BWR plant, pipe stress/pipe support
reanalysis for an operating PWR, and
emergency planning for three plants.
Participated as member of Institute
of Nuclear Power Operations Pilot Construction
Evaluation Program.

EXPERIENCE: (Continued)

- 1979-1980 Chief Engineer - Quality Assurance Cost and Auditing Division, SWEC: Responsible for managing the corporation's internal quality assurance audit program of construction sites, construction site contractors working to their own quality assurance programs, project programs, ASME III and four quality assurance divisions.
- 1978-1979 Senior Quality Assurance Engineer and Consultant: Performed quality assurance audits.
- 1976-1978 US Navy. Deputy Commander - Submarine Squadron 2: Responsible for the operation, maintenance and training of 10 nuclear powered submarines and of five different propulsion plants.
- 1972-1976 US Navy. Commanding Officer, USS Lafayette: Responsible for overall management of all aspects of operations, training, maintenance and quality related functions during overhaul and conversion from Polaris and Poseidon weapons system and independent strategic deterrent patrols.
- 1971-1972 Commander, US Navy undergoing Prospective Commanding Officer training in nuclear propulsion plants, ballistic weapons system and submarine operations.
- 1958-1971 Various: Assignments as Naval Officer including Executive Officer and Engineer Officer of nuclear submarines under construction, in overhaul and in operation.

PROFESSIONAL AFFILIATIONS:

Past member of AIF Subcommittee on Quality Assurance

GENERAL MANAGER - NUCLEAR QUALITY ASSURANCE

NAME: Charles Peter Johnson

EDUCATION:

1963 University of Southern California
B.S., Industrial Engineering

1965 Completed Navy Officer's Nuclear Propulsion
Training Program

1975 Drexel University
MBA, Business Administration

1970 Westinghouse Design Lecture Series - Salem PWR

EXPERIENCE:

1970 - Present Public Service Electric and Gas Company

8/1984 - Present General Manager - Nuclear Quality Assurance:
See Section 13.1.1.1.3.2 for responsibilities

11/1983 - 8/1984 Manager - Nuclear Operations Quality
Assurance: Responsible for planning,
coordinating, directing and overseeing the
functional implementation of QA/QC Programs
dedicated to operation of the Salem and Hope
Creek Nuclear Generating Stations.

Analyzes the state of the art concerning
Quality requirements and trends, and
interfaces with interdepartmental management
to ensure attainment of established quality
objectives.

1981 - 1983 Assistant to Vice President - Nuclear,
Nuclear Department: Responsible to Vice
President for General Office and corporate
management liaison on all nuclear matters.
Additionally, perform independent reviews of
nuclear facilities and special projects.
Chairman of Nuclear Review Board Audits
Committee.

- 7/1979 - 12/1981 Nuclear Plant Engineer, Nuclear Production Department, General Office: Responsible to Manager - Nuclear Operations for evaluation of nuclear plant system operations and performance of design reviews on changes to operating plants and new nuclear plant designs.
- 4/1977 - 6/1979 Startup Engineer, Engineering and Construction Department, Salem Generating Station: Responsible to Project Construction Manager for all testing activities on Salem No. 2 Unit. As member of Project Team, report to home office Project Manager. Direct group of test engineers (approximately 25) whose activities include test planning and scheduling; monitoring, assisting, and controlling construction manager's verification test group; inspection and acceptance of all plant systems; and executing detailed preoperational and operational startup test program.
- 5/1974 - 3/1977 Startup Engineer, Electric Production Department, Salem Nuclear Generating Station: Responsible to Station Manager for developing, planning, executing and controlling Salem No. 1 Unit's test program. Directed group of test engineers (peak of 44) whose activities included system inspection and acceptance, hydrostatic tests, flushing and cleaning, instrument calibrations and functional tests, system preoperational tests and integrated operational tests. Primary company liaison with NRC for system inspection and test.
- 4/1971 - 4/1974 Associate Engineer, Electric Production Department, Salem Nuclear Generating Station: Responsible for the development of the Salem startup test program, including policy manual and detailed administrative procedures for system inspection and turnover, writing and executing test procedures, resolution of testing deficiencies, and maintenance of documentation. Defined testing sequence and generated detailed schedules (CPM). Conducted manpower study and recommended staffing. This work was similar to, but more preliminary than that described above.

2/1970 - 3/1971

Associate Engineer, Electric Production Department, Linden Generating Station: Orientation with company and commercial electric power generation at conventional steam power plant. Assigned various special projects including directing boiler chemical cleaning and instructor for boiler operator apprentice training program.

6/1967 - 1/1970

Lieutenant, U.S. Navy. Weapons Officer aboard nuclear attack submarine, USS SUNFISH (SSN 649): Responsible for initial testing, operation and maintenance of ship's torpedo, fire control and sonar systems during construction and through first year of operations. Administrator of department consisting of two other officers and twenty-four men. Received Commendation for highly successful weapon systems trials, acoustic trials, and nuclear weapons inspection. Engineering Officer of the Watch in naval nuclear power plant during the initial reactor plant test program.

4/1965 - 5/1967

Lieutenant, U.S. Navy, assigned to nuclear attack submarine, USS HADDO (SSN 604): As Auxiliary Division Officer, responsible to Engineer for operation and maintenance of submarine's hydraulic, air, atmosphere control, and other non-nuclear fluid systems. Related duties included responsibility for effective damage control and ship control procedures, and training and qualification of the crew in these areas. As Supply Officer, responsible for ordering, maintaining and issuing ship's repair parts. Qualified as Engineering Officer of the Watch, Officer of the Deck, and in Submarines.

General Manager - Nuclear Services

NAME: Alton K. Thompson

EDUCATION:

1960 United States Naval Academy
BS, Engineering

1961 United States Navy Nuclear Power Program

1971 United States Naval Postgraduate School
MS, Economics Major in Management

1973 Nuclear Submarine Commanding Officer Training

EXPERIENCE:

1985-Present Public Service Electric and Gas Company,
General Manager - Nuclear Services: Responsi-
bilities are described in Section 13.1.1.1.3.3

1984-1985 Electronic Data Systems Corporation: Provided
data processing and computer services for
plant automation to General Motors Truck
and Bus Division.

1983-1984 Navy Member, Chairman's Staff Group, Officer
of the Chairman of the Joint Chiefs of Staff,
Washington, DC: One of the four specially
selected senior officers who were principal
advisors to the Chairman on a broad range
of national security matters, produced objective
evaluations of key defense issues, including
arms control, Latin American military initiatives,
strategic weapons systems and command, control
and communications.

1978-1983 Commanding Officer, OHIO (SSBN 726) Precommissioning
Unit and USS OHIO (SSBN 726): Directed
295 enlisted personnel and 32 officers during
a 3.5 year construction period at a civilian
shipyard of the nation's first TRIDENT Class
fleet ballistic missile submarine. Originated
administrative, operational and casualty
procedures that were improvements of previous
submarine procedures. Developed and supervised
training plan to support operation by ship's
personnel of all systems during an extensive
propulsion plant testing program. Qualified
all key ship's operators. Insured contractor's

compliance with specifications. Managed transition of ship and crew to fully operational status through comprehensive, unique shakedown operations. Made extremely successful first strategic deterrent deployment.

1976-1978

Military Assistant to the Deputy Secretary of Defense and Assistant Secretary of Defense (Manpower, Reserve Affairs and Logistics), Washington, DC: Reviewed and analyzed major issues and policy matters pertaining to the Department of Defense. Participated in substantive meetings and made appropriate recommendations to senior Defense Department officials for developing positions on numerous policy questions.

1974-1976

Commanding Officer, USS PUFFER (SSN 652): Directed all phases of operations, maintenance and training of a nuclear-powered attack submarine. Supervised 12 officers and 125 enlisted men while conducting a thirteen-month overhaul and several deployments. Instituted fiscal management practices that were responsible for the lowest expenditures of thirteen ships in the squadron while maintaining a high tempo of operations.

1971-1974

Executive Officer, USS JAMES MADISON (SSBN 627): Planned coordinated and executed ship's training program that included the exercise of all operational and casualty procedures. Administered radiation health program.

1970-1971

Student, United States Naval Postgraduate School, Monterey, California: Graduated with distinction from twelve-month graduate level course in management (economics major).

1968-1970

Aide and Special Assistant to the Under Secretary of the Navy: Provided advice, counsel and recommendations to the Under Secretary on a myriad of significant Navy Department issues. Monitored staff actions for compliance with policy and procedural guidance.

1966-1968

Engineer Officer, USS THOMAS A. EDISON (SSBN 610): Supervised 90 men during the conduct of a nineteen-month overhaul that included decontamination and refueling of the reactor plant. Operated and maintained all propulsion plant, auxiliary and support systems during deployments prior to, and after, the overhaul.

1960-1966

Assigned to various positions of increasing scope and responsibility in the United States Navy. Assignments included the construction period of a nuclear-powered fleet ballistic missile submarine, the overhaul of a nuclear-powered attack submarine and several submarine deployments.

GENERAL MANAGER - LICENSING AND RELIABILITY

NAME: Lawrence A. Reiter

LICENSES AND CERTIFICATES:

Professional Engineer - State of New Jersey No. 24748

EDUCATION:

1959-1962	Phoenixville (Pa.) Area High School
1962-1966	Villanova University - BME
1966-1968	University of Connecticut - Graduate Courses in Mechanical and Nuclear Engineering
1969-1971	Stevens Institute of Technology - Graduate Courses in Mechanical Engineering
1971-1974	Rutgers University - MBA
1973	General Atomic Co. - Advanced HTGR Technology Training
1975	Supervisory Skills Course (PSE&G)
1975	Problem Analysis and Effective Communication Course (PSE&G)
1980	Westinghouse PWR Information Course
1981	PSE&G Advanced Management Program
1983	The Executive Technique - Media/Communication Course
1985	American Management Association - Management Course

EXPERIENCE:

1971 to Present

Public Service Electric and Gas Company

10/85-present

General Manager - Licensing and Reliability

Direct all activities in Licensing, Environmental Licensing, Nuclear Fuel Design and Analysis, Reliability Engineering, and Risk Assessment in support of PSE&G Nuclear Facilities.

8/84 - 10/85

Assistant General Manager - Hope Creek Transition

Direct Nuclear Department activities associated with preparing for the receipt of the people, functions, and documents transitioning from the Hope Creek Project to the Nuclear Department upon completion of the construction phase. Also, serve as Chairman of the interdepartmental Hope Creek Transition Management Steering Committee which guides and monitors all corporate efforts associated with the transition from construction phase to operating phase.

2/82 - 8/84

Manager - Nuclear Systems Engineering

Provide management control and direction for engineering organization responsible for systems engineering for nuclear, balance of plant, and radwaste systems.

12/80 - 2/82

Assistant Chief Mechanical Engineer

Assist the Chief Mechanical Engineer in providing management control and direction for all mechanical engineering associated with Salem Nuclear Generating Station.

12/75 - 12/80

Principal Engineer, Mechanical Engineering Division

Supervisor of engineering group responsible for all nuclear and radwaste systems for Salem Nuclear Generating Station.

6/75 - 12/75

Senior Engineer, Mechanical Engineering Division

Supervisor of engineering group responsible for all nuclear and radwaste systems for Salem Nuclear Generating Station.

5/74 - 6/75

Lead Engineer, Mechanical Engineering Division

Assist Principal Engineer in directing the activities of engineering group responsible for nuclear systems for Salem Nuclear Generating Station and Hope Creek Generating Station

6/71 - 5/74

Assistant Engineer, Mechanical Engineering Division

Engineer responsible for several systems for Salem Nuclear Generating Station and Hope Creek Generating Station.

1969 - 1971

Curtiss-Wright Corporation

Senior Engineer

Responsible as project design engineer for design development of steam generators for Naval Nuclear Program.

1966 - 1969

Electric Boat Division/General Dynamics Corporation

Engineer

Responsible for acoustic testing and design of nuclear systems on various nuclear submarines.

PROFESSIONAL AFFILIATIONS

Member - American Society of Mechanical Engineers and American Nuclear Society

GENERAL MANAGER - ENGINEERING AND PLANT BETTERMENT

NAME: R.A. Burricelli

LICENSES AND CERTIFICATES:

Professional Engineer, New Jersey

EDUCATION:

1970-1973 Rutgers University
Master of Business Administration

1967-1969 Rose Hulman Institute of Technology
BS, Mechanical Engineering

1962-1964 Newark College of Engineering,
Two years study toward BSME

EXPERIENCE:

1969-Present Public Service Electric and Gas Company

1985-Present General Manager - Engineering and Plant
Betterment: Responsibilities described
in HCGS FSAR Section 13.1.1.1.3.1.

1984-1985 General Manager - Nuclear Engineering:
Responsible for providing engineering
services for the operating nuclear
plants including plant modifications,
operations/maintenance activities.
Also responsible for establishing criteria
and specifications for systems and
equipment performance, and performance
of safety evaluations on all design
changes and abnormal plant occurrence.

1981-1984 Manager of Methods and Administration -
Nuclear: Responsible for methods and
administration activities in the areas
of cost and scheduling human resources,
computer system applications, and management
methods and system activities in support
of corporate nuclear activities.

1980-1981 Manager - Emergency Preparedness:
Responsible for the development of
emergency preparedness activities in
accordance with the requirements of
NUREG-0654 to provide for the licensing
of Salem Generating Station Unit 2.

EXPERIENCE: (Continued)

- 1979-1980 Assistant Manager - Project Control Services: Responsible for cost and scheduling activities associated with the construction and operation support of electric generating facilities.
- 1976-1979 Assistant Project Manager: Responsible for the completion of Salem Unit 2, acting for the Project Manager in his absence. Provided direction for licensing, quality assurance, and startup activities.
- Prepared progress reports, conducted weekly project activity meeting, and developed estimate of time, hours, and cost.
- 1976 Project Engineer: Responsible for providing project direction to lead engineering personnel to ensure that engineering activities on the Salem project were accomplished in accordance with project schedules and plans.
- Acted for the Project Manager in his absence and was chief company spokesman on licensing matters. Directly supervised licensing coordinator and other project support personnel.
- 1969-1976 Associate Engineer: Designed reactor safety systems for the Salem and Newbold Island Nuclear Generating Stations. Administrated company contract with nuclear steam supply system suppliers.
- Developed a program for nuclear plant protection against industrial sabotage. Developed conceptual layouts and arrangements for new generating facilities.
- Acted as a liaison between field startup personnel and system design engineers.
- Evaluated and approved design changes required by new regulatory requirements.

GENERAL MANAGER - HOPE CREEK OPERATIONS

NAME: R. S. Salvesen

LICENSES AND CERTIFICATES:

1969 Certified as an RO at Saxton Generating Station (Nuclear/Coal)

1982 Certified as an SRO at Black Fox Nuclear Plant Simulator (GE)

EDUCATION AND TRAINING:

1948 - 1952 Rensselaer Polytechnic Institute,
BS, Mechanical Engineering

1953 - 1954 Stevens Institute of Technology,
Master Level Courses in Power Engineering

1952 - 1968 Numerous 2 week Vendor Instrument and Control
Schools, including - Bailey Meter, Leeds &
Northrup, Mason-Neilon, and IBM; and a 2 week
Nuclear Fuel Management Course at MIT

1969 Westinghouse,
Reactor Operator Training Program

1970 AMA 4 week Management Course, NYC, NY

1982 General Electric
(2 1/2 months) BWR Operator Training Program, Tulsa, OK

EXPERIENCE:

1981 - Present General Manager - Hope Creek Operations

Participated as member of the Hope Creek Project Team to coordinate Hope Creek Operations activities in support of project goals. Provided general directions to the Plant Staff for support of the preoperational test program and the development of policies and procedures necessary for fuel load and plant operation. Between May and August 1984 spent eight weeks at Susquehanna Steam Electric Plant assigned to the Assistant Plant Superintendent participating as a member of the Work Activities Review Committee. This group coordinated, on a daily basis, the maintenance activities of

Unit 1 which was in commercial operation, and the testing activities of Unit 2 which was in the power ascension phase of operation.

1978 - 1981

Manager - Hope Creek: Involved with the design review of Hope Creek for operability and maintainability and the development and implementation of a selection and training plan for station personnel

1971 - 1978

Manager - Nuclear Operations (offsite technical support): Directed production department support of plants in operation, construction and design stages in the areas of licensing, operational quality assurance, security, radiation protection, fuel cycle strategy, operator training, and design review for company nuclear projects including Salem, Hope Creek, and Atlantic Generating Stations.

As Manager - Nuclear Operations, had day-to-day involvement with Salem operations from preoperational testing through the initial refueling. Accumulated over 2 months onsite time during that period, participating in the management decision process related to plant operations. Also spent 1 month onsite during preoperational testing to coordinate license testing commitments. Spent 2 weeks at Peach Bottom Station during a routine refueling outage assigned to the operations department

1968 - 1971

Chief Engineer (Operations Manager) for Salem Nuclear Generating Station: Participated in a reactor operator training program; directed the development of department training programs and operating procedures

1952 - 1968

Over 12 years experience at five different Public Service Electric and Gas Company fossil generating stations as supervisor or department head in maintenance and technical departments

1954 - 1956

US Army, Chemical Corps, Ft. Detrick, MD as a Staff Engineer with the rank of Specialist 3rd Class.

ASSISTANT GENERAL MANAGER

NAME: Stanley LaBruna

LICENSES AND CERTIFICATES:

New Jersey Stationary Engineer Red Seal License

New Jersey Public Sewage Treatment Operator

SRO License SOP-3889 - Salem Nuclear Generating Station
Units 1 & 2, PWR

EDUCATION

1960 - 1964	Fairleigh Dickinson University, BS, Electrical Engineering
1965 - 1966	New Jersey Institute of Technology, Master-level courses in Math and Engineering
1967	Bailey Meter Instrument and Control School
1968	L&N Instrument School
1969	Pratt and Whitney Fuel Control School
1969	Westinghouse Hagan Instrument and Control School
1969	PSE&G, Supervisor Training Course
1976	Rutgers University Supervisor Training
1978	Westinghouse, Fundamentals of Reactor Theory and Kinetics
1979	Westinghouse, PWR Information Course
1980	STA/SRO Training Course Zion Simulator Startup Certification and Accident and Transient Analysis

1981	SRO License Requalification Simulator Certification SNUPP II
1981	NUS BWR Information Course
1984	Hope Creek Systems Course - 8 weeks
1984	SSES Simulator Training - 2 weeks
1984	Hope Creek BWR Cycle (Requal) Training
1984	AMA Management Course - 4 weeks

EXPERIENCE:

1964 - present	Public Service Electric and Gas Company
12/81 - Present	Assistant General Manager - Hope Creek Operations: Assists the General Manager in providing the management control for activities associated with plant operation, maintenance and power ascension. Ensures plant compliance with operating license and government regulations
1977 - 1981	Maintenance Engineer - Salem Nuclear Generating Station: Overall responsibility of plant maintenance including personnel qualification, spare parts program, budgeting, maintenance of a quality program, implementation of ALARA program, outage Tech Spec Surveillance planning, ISI program, and direction of activities of General Presidents Maintenance Agreement (GPMA) site contractor.
1973 - 1977	Maintenance Engineer for Hudson Generating Station: Overall responsibility of plant mechanical and electrical maintenance
1972 - 1973	Performance Engineer for Hudson Generating Station: Responsible for operation of water treatment plant, plant performance monitoring, and maintenance and optimization of instrument and process control
1971 - 1972	Operating Engineer for Linden Generating Station: Responsible for the daily plant operation and startup on Unit 4

Operating Engineer for Hudson Generating Station: Responsible for the daily plant operation

1968 - 1970 Performance Supervisor for Kearny Generating Station: Responsible for instrument and control maintenance, water chemistry, and plant performance monitoring and testing

1966 - 1968 Maintenance Foreman for Kearny Generating Station: Supervised activities of electricians, boiler repairmen, and machinists in the varied aspects of plant maintenance

1965 - 1966 Assignment in the operating and maintenance departments

1964 - 1965 Cadet Engineer - training program: Assignment for familiarization with the company functions

TECHNICAL MANAGER

NAME: John A. Nichols

LICENSES AND CERTIFICATES:

Senior Reactor Operator - Salem Unit 1
Stationary Engineer, New Jersey Blue Seal

EDUCATION AND TRAINING:

1967 Fairleigh Dickinson University,
BS, Electrical Engineering

1970 Westinghouse,
Reactor Operator Training Program (10 months),
RO equivalency license

1972 Westinghouse,
Reactor Engineering Training Program (13 weeks)

1974 Nuclear Associates International,
Core Design and Analysis (equivalent to 1 year)

1983 INPO Technical Managers Workshop

1984 Hope Creek Systems Course - 8 weeks

1984 BWR Simulator Familiarization - 2 weeks
Hope Creek BWR Cycle Training

EXPERIENCE:

1982-Present Technical Manager - Hope Creek. Directs and controls the performance of technical department activities in the areas of reactor engineering, technical reports and procedures, thermal performance, equipment performance, document control, and systems engineering.

Vice Chairman and Member of Station Operations Review Committee Emergency Duty Officer

1981-1982 Nuclear Plant Engineer: On loan for 1 year to the Institute of Nuclear Power Operation (INPO) as an evaluation specialist in the area of technical support.

EXPERIENCE: (Continued)

- 1979-1981 Member of Preoperational Review Committee for Salem Unit 2: Responsible for the overall coordination, planning, and implementation of the Phase III (core load, initial criticality, natural circulation and power ascension) testing program for Salem Generating Station Unit 2.
- 1976 Reactor Engineer: Responsible for the overall coordination, planning and implementation of the Phase III (core load, initial criticality) startup testing program for Salem Generating Station Unit 1.
- Responsible for reactor engineering functions including core performance monitoring, nuclear fuel controls, fuel reload planning and implementation, and reload startup testing. Named as Station Emergency Duty Officer and member of Station Operating Review Committee.
- 1974-1976 Reactor Engineer: On loan to Westinghouse's Nuclear Operation group as Shift Test Engineer for Prairie Island Unit 1 core loading.
- 1973-1974 Reactor Supervisor: On loan to Westinghouse's Nuclear Operations group as Shift Test Engineer for Surry Unit 2 initial criticality and power ascension testing.
- 1971-1974 Assistant Engineer Operations for Salem Generating Station: Responsible for gas turbine startup.
- 1968-1971 Maintenance Foreman for Burlington Generating Station (fossil): Supervisor for mechanical and electrical craft personnel on 1000 MWC station.
- 1967-1968 Assistant Engineer - Electric Engineering Department: Electric-motor application review, 500-kV switchyard design.
- Load Dispatcher Office: Mathematical modeling of daily electric load predictions.

OPERATING MANAGER

NAME: George C. Connor

LICENSES AND CERTIFICATES:

1963 Qualified on SIC Prototype, PWR
1976 SRO License 2734 Salem Unit 1, PWR
1976 Certified QA Level II Verifier
1978 New Jersey Gold Seal License,
Stationary Engineer
1979 SRO License 2734-2 Salem Units 1 and 2, PWR
1985 SRO License 10366 Hope Creek, BWR

EDUCATION:

1962 U.S. Navy Electrician School in
San Diego, California
1962-1963 U.S. Navy Nuclear Power School in
Bainbridge, Maryland
1963 U.S. Navy Nuclear Power Training Unit
SIC Prototype, Windsor Locks, Connecticut
1963-1968 Various U.S. Navy schools, courses
in Vibration Analysis, Voltage Regulators,
Motor-Generator Sets, Power Generation,
and Distribution and Damage Control
1970 Westinghouse,
Design Lecture Series
1970-1972 Cumberland County College - Vineland, New Jersey
Associate of Science, Math and Science
1972 Westinghouse,
Gas Circuit Breaker School
1972 PSE&G
Supervisory Training Course
1972-1976 Widener University, Chester, Pennsylvania
BS Engineering

EDUCATION: (Continued)

1974 Westinghouse,
Simulator Training Phase II

PSE&G,
QA Indoctrination Course

PSE&G,
QA NDE Course

PSE&G,
QA Level II Verifier Course

1976-1981 Wilmington College, Wilmington, Delaware,
MBA courses in Accounting, Economics,
and Finance and Behavioral Science
in Management

Salem Generating Station (PWR) requalification
program including qualification at
the following simulators: Zion, Indian Point,
Surry and Westinghouse SNUPPS II

1977 PSE&G,
Nuclear Plant Reliability Data System Seminar
Engineering Economics

1980 Loft/NRC Technology Transfer Seminar
Idaho Falls, Idaho

1981 ASME/EPRI,
Radwaste Workshop
Atlanta, Georgia

NUS,
BWR Technology Course

1982 INPO,
Operations Manager Workshop
Atlanta, Georgia

Rutgers University, New Brunswick, New Jersey,
Advanced Management Training

1985 PSE&G,
Prelicense Training Program - 12 weeks

EXPERIENCE:

1982-Present

Operations Manager for Hope Creek Generating Station, BWR: Responsible to the Assistant General Manager - Hope Creek Operations for all activities of the Operations Department. The Operations Department directs the overall operation of the nuclear steam supply system, turbine generator and auxiliary systems, waste systems, fire protection system, and other support systems. Responsibilities include:

- A. Ensure that plant operations are conducted in accordance with the requirements of the operating license and technical specifications by properly trained and qualified personnel
- B. Approve of all operating, emergency, and departmental administrative procedures
- C. Review incident reports, reportable occurrences, departmental accident reports, and other departmental correspondence
- D. Assume the duties of the Emergency Duty Officer, if required
- E. Monitor the training and requalification of all licensed personnel to ensure compliance with current regulatory requirements
- F. Act as Vice Chairman of the Station Operations Review Committee
- G. Provide direction for long-range operations planning and surveillance and provide detailed plans and estimates to the Station Planning Engineer for outages

1978-1982

Station Planning Engineer for Salem Generating Station: Responsible to the Station Manager for the activities of the planning department. This involved all aspects of planning for forced and scheduled outages, analyzing work packages, review and implementation of design packages, and conducting preplanning and plan-of-the-day meetings. Also coordinated all outage-related departmental efforts to minimize conflicts and implement the ALARA program.

As a backup licenseholder, stood watch on the operating unit a minimum of 8 hours per month and was scheduled as Emergency Duty Officer an average of 1 week per month.

During the period 4/80 to 11/80, stood watch full time as the Senior Shift Supervisor for Salem Units 1 and 2. This duty was necessitated by an accelerated requalification program resulting in a shortage of operating personnel. Directed hands-on initial core loading of Salem 2 and reloading of Salem 1 during this period.

1977-1978

Senior Planning Supervisor for Salem Generating Station

1974-1977

Maintenance Supervisor for Salem Generating Station: Supervised the Maintenance Department. Provided startup technical support, developed and implemented preventative and corrective maintenance programs, coordinated maintenance functions at planning meetings, and stood watches as Shift Supervisor/Senior Reactor Operator. Supervised maintenance functions for initial core load.

1973-1974

Maintenance Foreman for Salem Generating Station: Supervised a work force of electricians, machinists, boiler repair mechanics, and station mechanics. Prepared maintenance procedures, monitored construction progress, and provided startup technical support.

- 1970-1973 Watch Foreman for Salem Generating Station, PWR: Participated in the SRO license program, developed operating and emergency procedures, developed and presented training courses, monitored construction progress, and reviewed start-up procedures.
- 1969-1970 Engineering Assistant at PSE&G for Mercer and Salem Generating Stations: Indoctrination training, procedure preparation, and administrative duties.
- 1962-1969 Engineering Watch Supervisor, U.S. Navy Nuclear Program: Naval experience included 3 years as the senior enlisted engineering watchstander supervising the operation of a two-loop PWR both at power and during refueling.

MAINTENANCE MANAGER

NAME: Peter J. Kudless

LICENSES AND CERTIFICATES:

Professional Engineer - New Jersey

MILITARY:

1967 - 1971 U.S. Navy (Active Duty)
1971 - Present U.S. Naval Reserve (currently Commander, CEC, USNR-R)

EDUCATION AND TRAINING:

1962 - 1966 Worcester Polytechnic Institute,
BS, Civil Engineering

1970 - 1971 University of Rhode Island, Masters level
course in Statistics, Math, Economics and Law

1975 PSE&G QA Orientation for Engineers
ASME, Nuclear Power Engineering

1976 PSE&G, CPM of Scheduling

1977 PSE&G, ASME Boiler & Pressure Vessel Code
General Electric, BWR Design Survey Course
PSE&G, Control Valves & Pipe Fittings
PSE&G, Welding Inspection
General Electric, BWR Installation Course
PSE&G, Non-Destructive Examination
PSE&G, QA Orientation for Construction
Engineers

1978 PSE&G, Hydraulic & Friction Crane Operation,
Maintenance & Safety
AMR Internation, Project Management

1979 PSE&G, Supervisory Training Program

1980 PSE&G, Strategies of Effective Listening
PSE&G, OAD Follow Up Training for Engineering
& Construction Personnel

1981 Rutgers University, Advance Management
Training

EXPERIENCE:

1971 - Present Public Service Electric and Gas Company

6/84 - Present Maintenance Manager - HCGS: Responsible for management, direction and control of the work of the Maintenance Department. Assure conduct of electrical, mechanical, and I&C maintenance activities is in accordance with facility license, company and government regulations. Assure maintenance activities are accomplished safely and efficiently by properly trained and qualified personnel. Assure that maintenance is conducted safely and efficiently during outage to achieve maximum possible unit availability and reliability. Develop and control budgets for the Maintenance Department. Assure a cost effective spare parts inventory. Act as a member of the Station Operations Review Committee.

12/80 - 6/84 Project Construction Manager, HCGS: Responsible for monitoring the field construction efforts of a 1100MW BWR power plant. Managed a staff in excess of 50 personnel (civil, mechanical, electrical, HVAC, cost & scheduling engineers and administrative personnel) who controlled the field construction and support work of over 4000 personnel. Also responsible for site security contract.

11/78 - 11/80 Principle Construction Engineer - HCGS:
Supervised a staff of 20 Construction
engineers (all disciplines) who monitored and
controlled all the field construction effort
of over 3500 personnel.

7/76 - 11/78 Senior Construction Engineer - HCGS:
Supervised a staff of 5 Construction
Engineers who monitored and controlled the
field construction efforts of over 1500
personnel in the power block area of the
plant.

3/75 - 7/76 Associate Field Representative - Assigned to
the corporate home offices, with rotational
field assignments, providing staff support
(i.e., procedure, specification, drawing
review) in preparation for the start of the
full site construction effort on the HCGS.

8/71 - 7/75 Engineer - Gas Engineering Dept. Senior site
representative for 2 1/2 years supervising a
staff of 15 construction engineers and
administrative personnel who monitored and
controlled the site construction and support
efforts for a Synthetic Natural Gas (SNG)
plant. Provided home office staff support
for 1 1/2 years construction of the first SNG
plant constructed in this country, and a peak
sharing Liquefied Natural Gas (LNG) storage
facility.

1966 - 8/71 U.S. Navy - Served on active duty as a Civil
Engineer Corps (CEC) Officer. Attended Naval
OCS and CEC officers school. After
commissioning, served at Newport, R.I., and
Republic of Viet Nam. While at Newport, R.I.
was assigned as Assistant Operation officer
for 1 1/2 years and a Resident Officer in
Charge of Construction (ROICC) 1 1/2 years at
the Navy Public Work Center. In the former
position was responsible for directing the
day to day operations of 3 divisions
(Utilities, Maintenance and Transportation)
of the Operations Department, which provided
the services to all the Naval commands
(approximately 10,000 personnel) at the
Newport Naval Base. In the latter position,
was responsible for the administration of
greater than 10 million dollars of

construction contracts including utility (i.e., boiler repair), vertical and horizontal construction projects. While serving 1 year as a ROICC in Viet Nam, I was assigned to two different field locations to administer construction contracts in excess of 1 billion dollars. Type of projects included power plants and utility systems, waterfront, vertical and horizontal construction.

RADIATION PROTECTION/CHEMISTRY MANAGER

NAME: John Russell Lovell

LICENSES AND CERTIFICATES:

American Board of Health Physics certification in power reactor health physics

EDUCATION:

1976 Brigham Young University
BA, Japanese/Zoology

1978 Harvard University School of Public Health
MS Radiological Sciences

EXPERIENCE:

1985 - Present Radiation Protection/Chemistry Manager - Hope Creek Operations: Responsible for management of the Radiation Protection and Chemistry Department.

1983 - 1985 Radiation Protection Engineer - Hope Creek Operations: Primary responsibilities as Radiation Protection Department Head include development and implementation of the Station Radiation Protection and Radioactive Material Control Programs to ensure that personnel radiation exposure and releases of radioactive material are as low as reasonably achievable (ALARA).

1982 - 1983 Plant Health Physicist for Consumers Power Palisades Nuclear Power Plant, Covet, MI: As designated, Radiation Protection Manager responsibilities included implementation of the plant radiation safety plan, supervision of radiation safety supervisors and technicians, procedure development and review, development and implementation of the plant ALARA program and regulatory compliance.

- 1981 - 1982 Senior Health Physicist for Consumers Power Midland Energy Center, Midland, MI: Responsible for supervising the development of plant programs and procedures for emergency planning, radioactive materials control and environmental surveillance.
- 1979 - 1981 Radiological Control Engineer for Newport News Reactor Services, Naval Reactors Facility, Idaho: Developed radiological control procedures, assisted in technician training, performed ALARA planning and tracking and audited procedure compliance during the refueling and overhaul of the AIW prototype reactor plant.
- 1980 - 1981 Associated faculty member of the University of Idaho, Idaho Falls, ID: Taught college level health physics classes as part of the University of Idaho/Idaho National Engineering Laboratory's education program.
- 1978 - 1979 Health Physicist for Allied Chemical Idaho Chemical Processing Plant, Idaho Falls, ID: Responsibilities at this nuclear fuels reprocessing plant include effluent monitoring, internal dosimetry and technical support for operational health physics program.
- 1976 - 1978 Health Physics Technician for Harvard University, Cambridge, MA: As part-time position involving radiological surveys of biological research laboratories, instrument calibration and providing assistance in teaching basic radiation safety courses.

HOPE CREEK OPERATIONS
STAFFING AND EXPERIENCE

HOPE CREEK OPERATIONS
STAFFING AND EXPERIENCE

	NUMBER	NUMBER OF DEGREES	YEARS OF NUCLEAR EXPERIENCE
ADMINISTRATION	15	5	25
OPERATIONS	98	12	488
TECHNICAL	31	25	245
MAINTENANCE	113	11	389
INSTRUMENTATION AND CONTROL	38	17	187
RADIATION PROTECTION	57	29	206
CHEMISTRY	22	18	106
PLANNING/SCHEDULING	7	5	38
POWER ASCENSION	4*	4	47
TOTALS	385	126	1731

*PLUS 38 CONTRACT PERSONNEL

PSE&G'S RESOURCE COMMITMENT TO TRAINING

PSE&G'S COMMITMENT TO TRAINING

- o MEMBER OF THE NATIONAL ACADEMY OF TRAINING (2ND IN THE UNITED STATES)
- o HOPE CREEK TRAINING BASED ON AN EFFECTIVE, SYSTEMATIC APPROACH (PARALLELS SALEM)
- o PROTOTYPING ACCREDITATION PROJECT FOR HOPE CREEK NOW
- o TECHNICAL AND INSTRUCTIONAL CAPABILITY QUALIFICATION REQUIREMENTS FOR INSTRUCTIONAL STAFF
- o THE AUTHORIZATION OF 100 FULL-TIME PERSONNEL FOR TRAINING AND TRAINING SUPPORT FUNCTIONS
- o EFFECTIVE COURSE CONFIGURATION MANAGEMENT
- o A FULL SCOPE, HOPE CREEK CONTROL ROOM SIMULATOR
- o EXTENSIVE LABORATORIES, SHOPS, MOCK-UPS, AUDIO/VISUAL MEDIA TO ENHANCE TRAINING EFFECTIVENESS
- o A 65,000 SQUARE FOOT TRAINING CENTER THAT WAS OPENED IN AUGUST, 1982

PSE&G'S CONTINUING ROLE IN THE NUCLEAR INDUSTRY

PSE&G'S CONTINUING ROLE IN THE NUCLEAR INDUSTRY

- o 1952 - CHARTER MEMBER OF THE DOW CHEMICAL-DETROIT EDISON NUCLEAR POWER DEVELOPMENT PROJECT (LATER BECAME ATOMIC POWER DEVELOPMENT ASSOCIATES, INC.)
- o 1957 - PSE&G BEGAN CONSULTANT SERVICES FOR THE PRINCETON UNIVERSITY PLASMA PHYSICS LABORATORY. PSE&G WORKS CLOSELY WITH THE LABORATORY IN R&D OF FUSION TECHNOLOGY.
- o PSE&G HAS CONTRIBUTED MANPOWER AND FINANCIAL SUPPORT TO R&D PROJECTS SUCH AS:
 - o HIGH TEMPERATURE REACTOR DEVELOPMENT ASSOCIATES, INC.
 - o FAST BREEDER REACTOR RESEARCH
 - o LIQUID METAL FAST BREEDER REACTOR CORP.
 - o DIRECT CYCLE HIGH TEMPERATURE GAS COOLED REACTOR
 - o WESTINGHOUSE FUSION-FISSION HYBRID STUDY
 - o NUCLEAR REACTOR AND PLANT ENGINEERING RESEARCH
 - o WESTINGHOUSE ADVANCED PWR
- o PSE&G ENGINEERS WERE/ARE EXTENSIVELY INVOLVED IN DESIGN CONSTRUCTION, STARTUP, OPERATION AND MAINTENANCE OF SALEM GENERATING STATION UNITS 1 AND 2.

PSE&G STAFFING

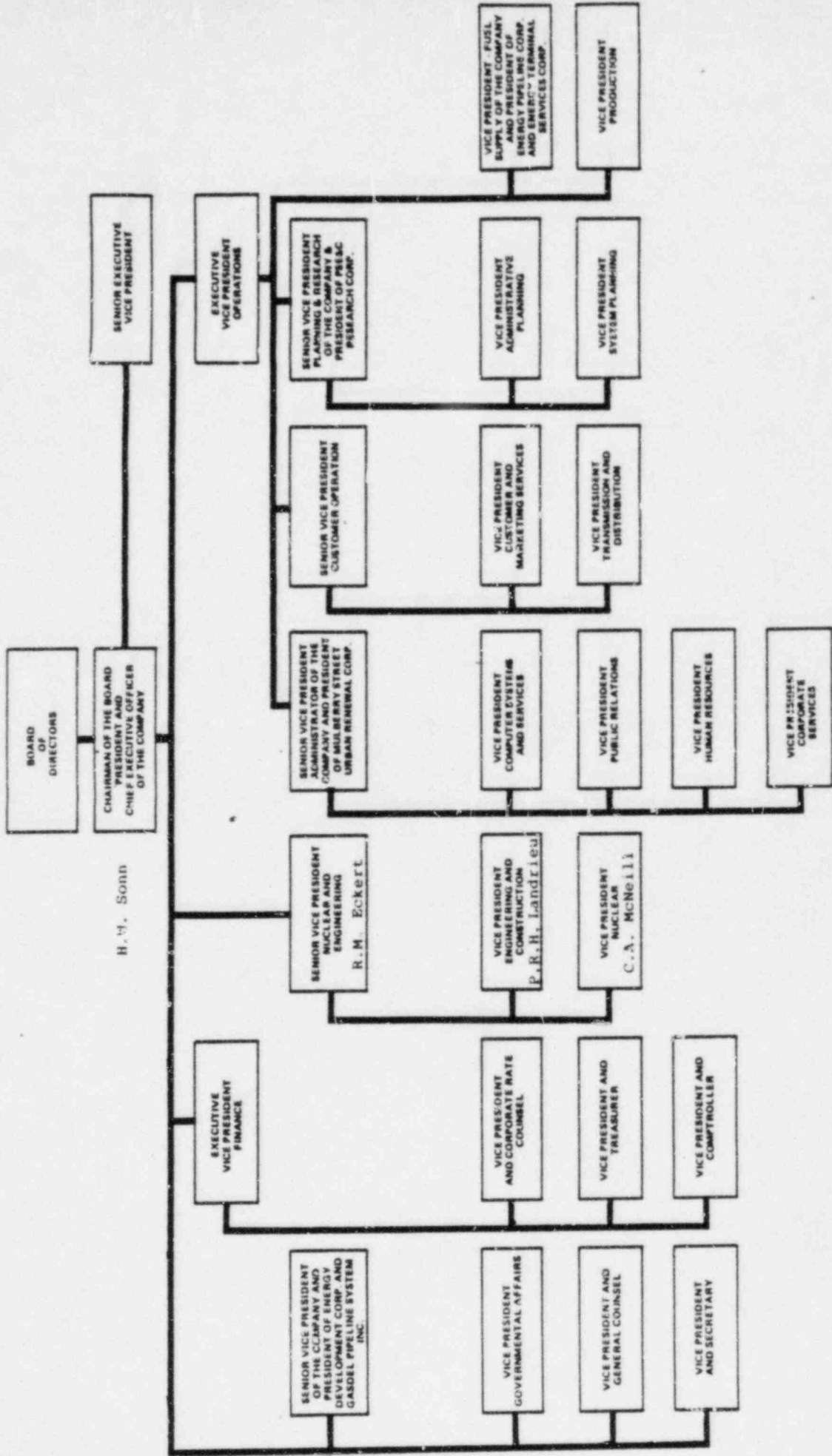
APPROVED STAFFING LEVELS AT FUEL LOAD

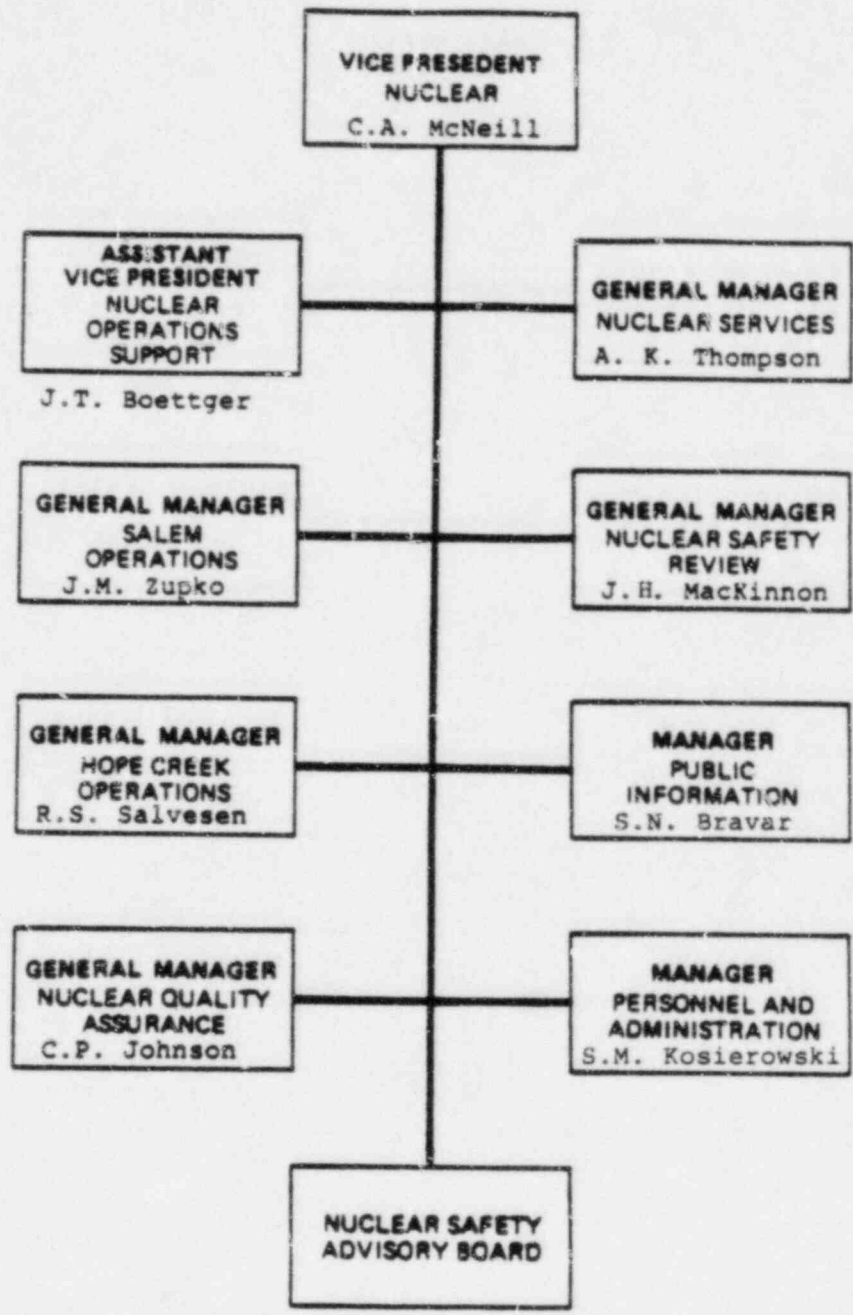
<u>DEPARTMENT</u>	<u>APPROVED STAFFING LEVELS AT FUEL LOAD</u>	
SALEM OPERATIONS	495	
HOPE CREEK OPERATIONS	433	
OPERATIONS		87
MAINTENANCE		158
TECHNICAL		40
RADIATION PROTECTION/CHEMISTRY		85
PLANNING		6
POWER ASCENSION*		42
NUCLEAR OPERATIONS SUPPORT	550	
ENGINEERING AND PLANT BETTERMENT		350
LICENSING AND RELIABILITY		56
METHODS AND SYSTEMS		103
EXTERNAL AFFAIRS		24
PROCUREMENT		17
NUCLEAR SERVICES	329	
SITE PROTECTION		56
NUCLEAR TRAINING		115
RADIATION PROTECTION SERVICES		27
SITE SERVICES		129
NUCLEAR QUALITY ASSURANCE	114	
HOPE CREEK QUALITY ASSURANCE		21
ENGINEERING AND PROCUREMENT		36
PROGRAMS AND AUDITS		27
NUCLEAR SAFETY REVIEW	21	
PERSONNEL AND ADMINISTRATION	42	
VICE PRESIDENT-NUCLEAR AND STAFF	2	
	1986	

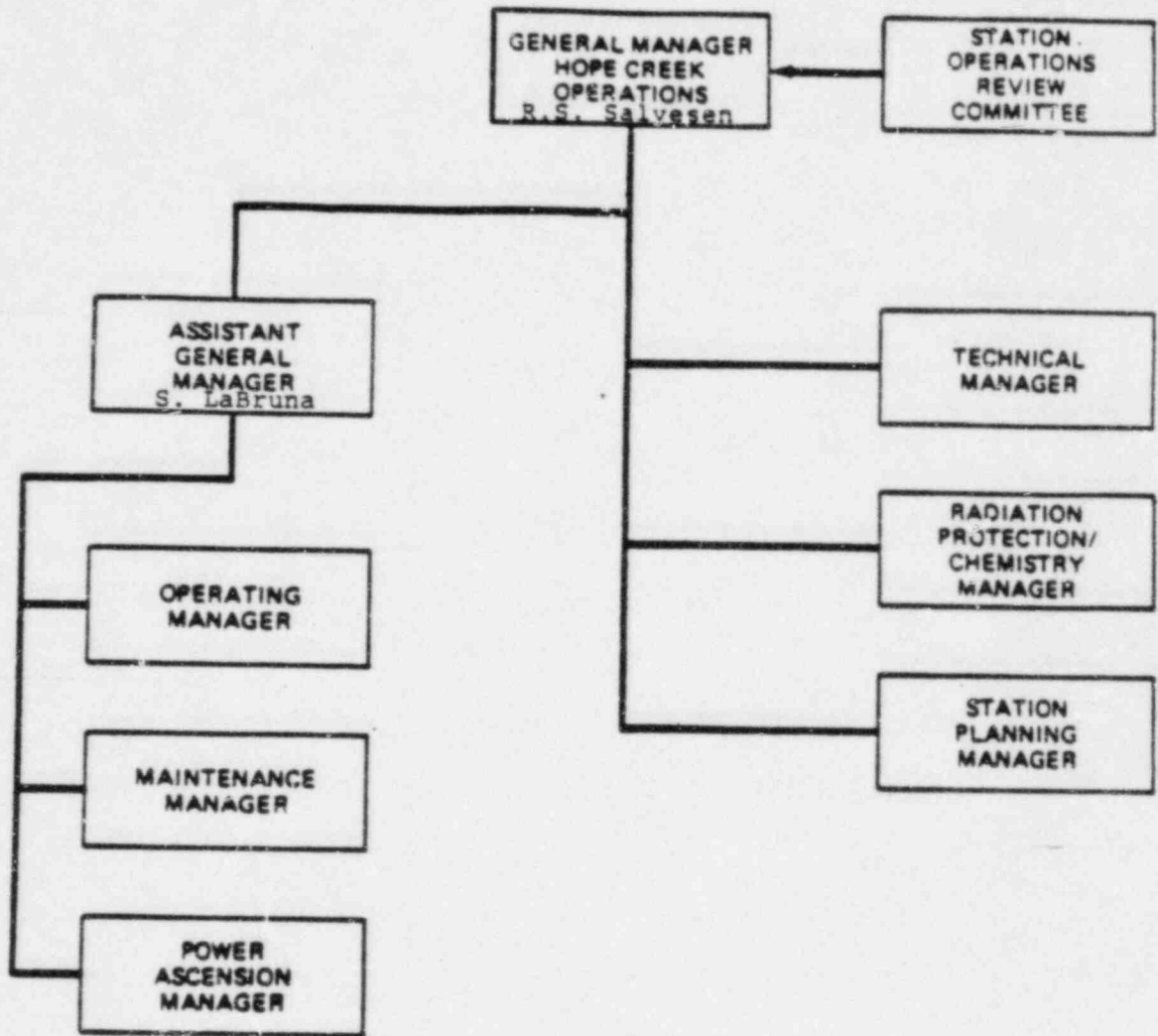
TOTALS INCLUDE DEPARTMENTAL HEADS AND THEIR STAFFS

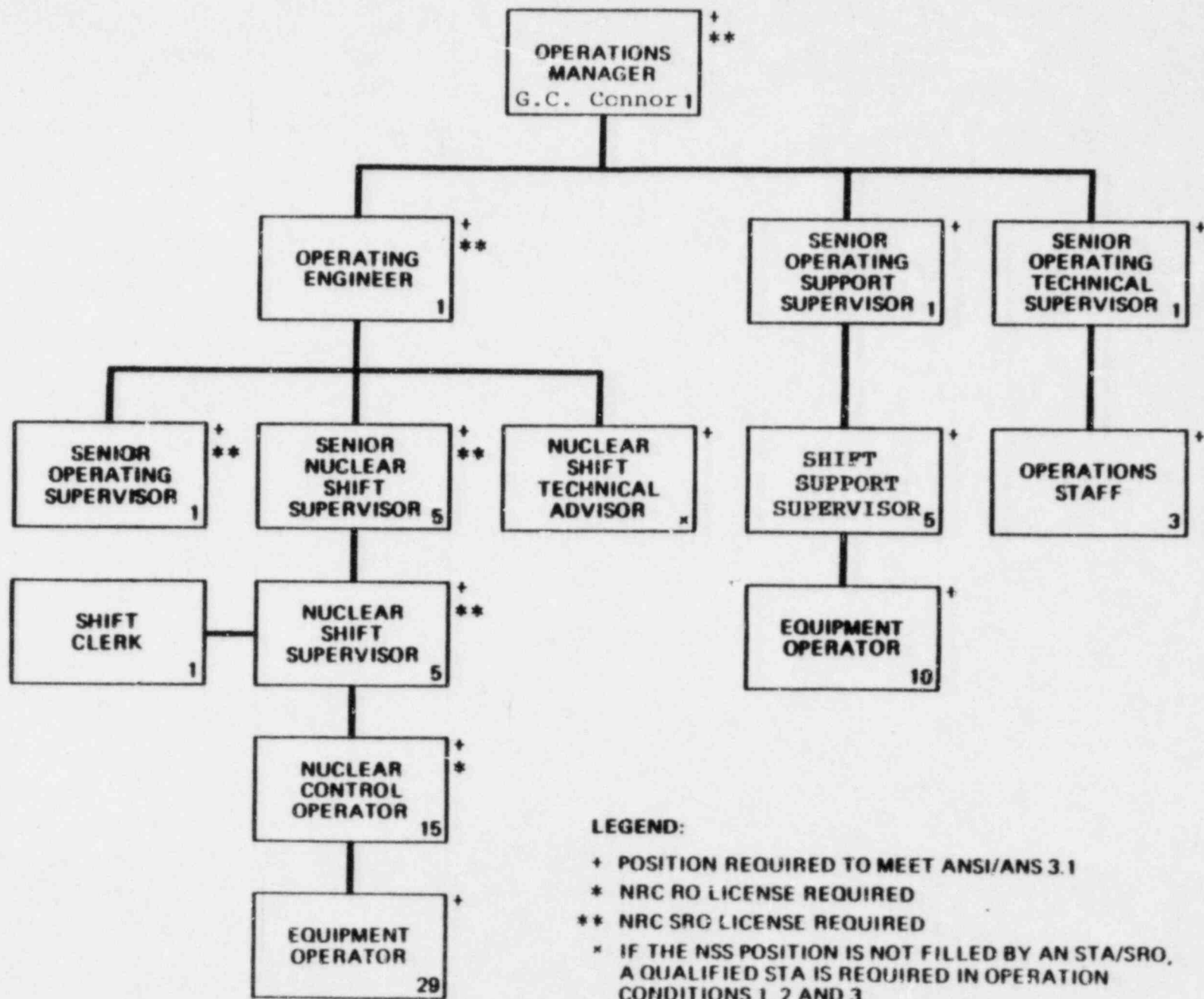
*THE POWER ASCENSION DEPARTMENT WILL DISSOLVE AT COMMERCIAL OPERATION AND HENCE IS NOT CONSIDERED PART OF THE PERMANENT NUCLEAR DEPARTMENT ORGANIZATION.

ORGANIZATIONAL CHARTS

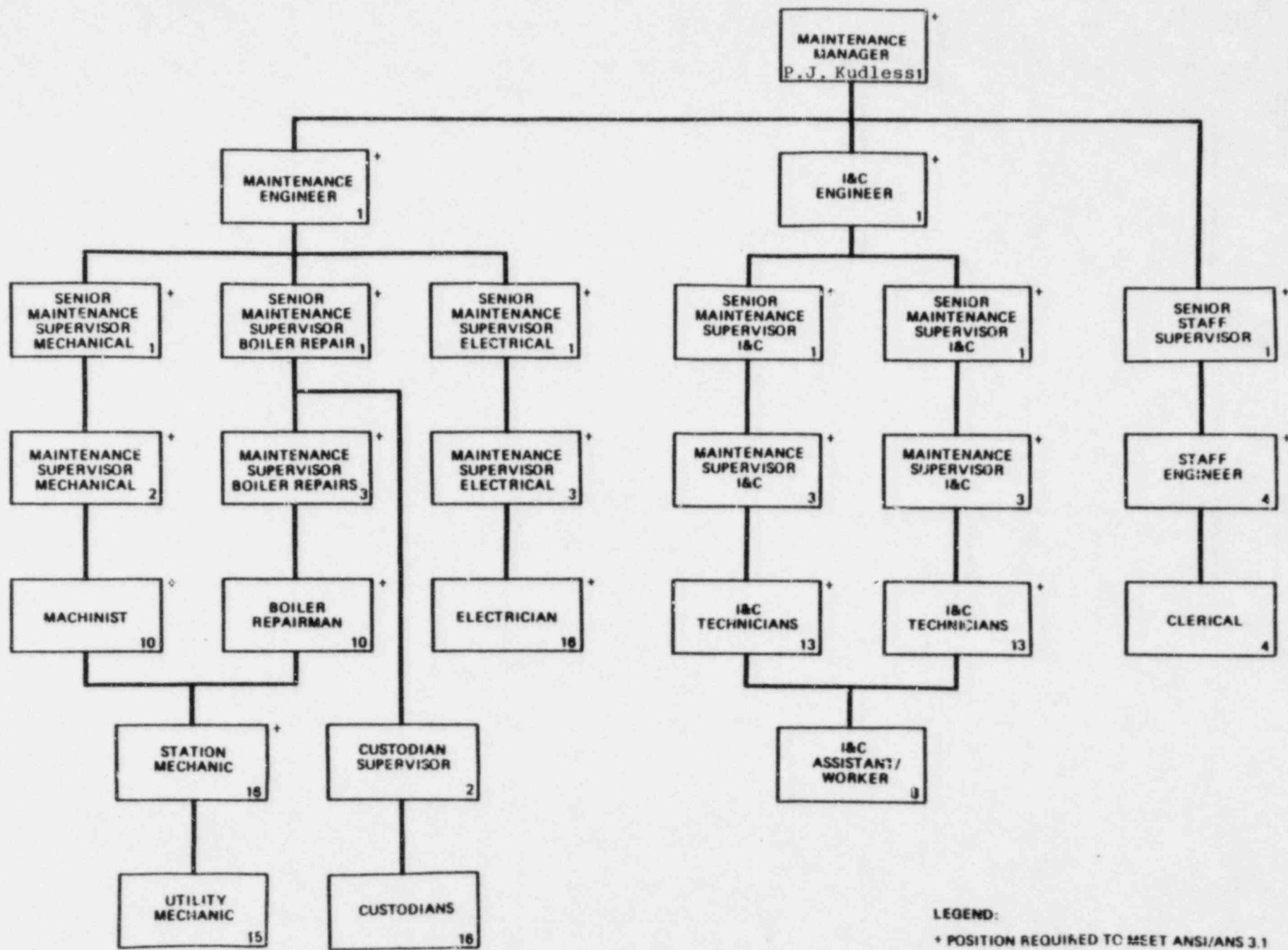




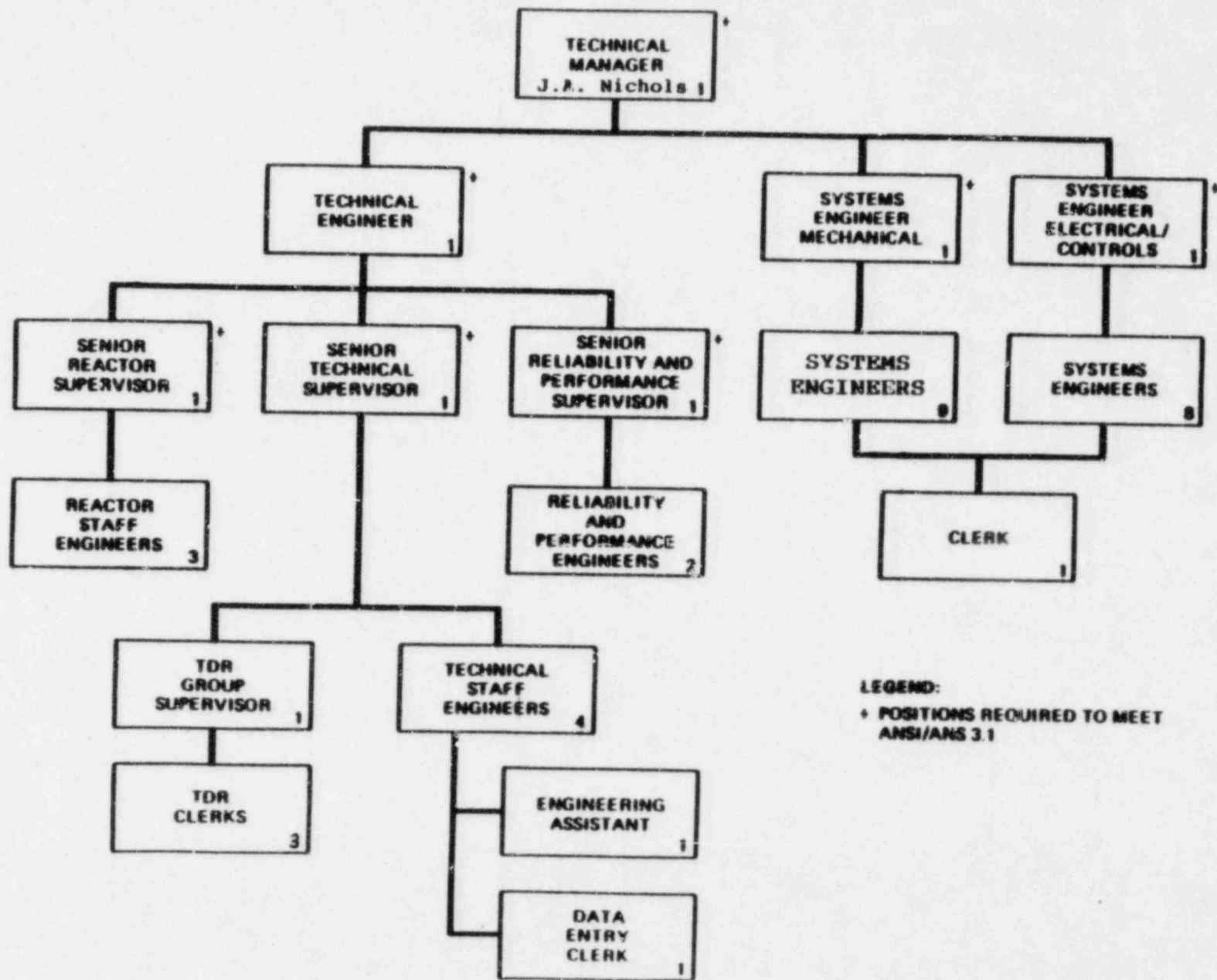




- LEGEND:**
- + POSITION REQUIRED TO MEET ANSI/ANS 3.1
 - * NRC RO LICENSE REQUIRED
 - ** NRC SRC LICENSE REQUIRED
 - * IF THE NSS POSITION IS NOT FILLED BY AN STA/SRO, A QUALIFIED STA IS REQUIRED IN OPERATION CONDITIONS 1, 2 AND 3.

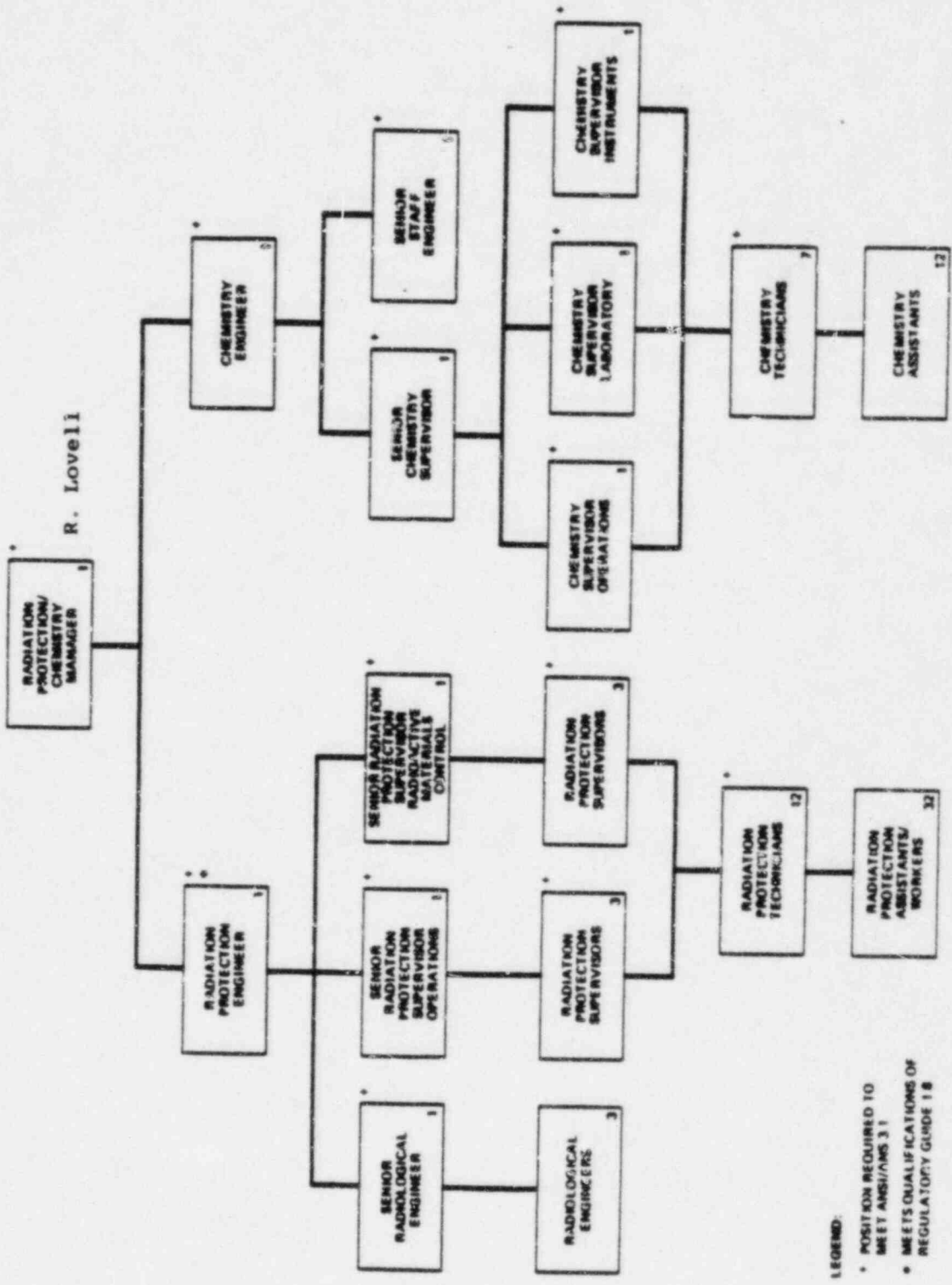


LEGEND:
 * POSITION REQUIRED TO MEET ANSI/ANS 3.1



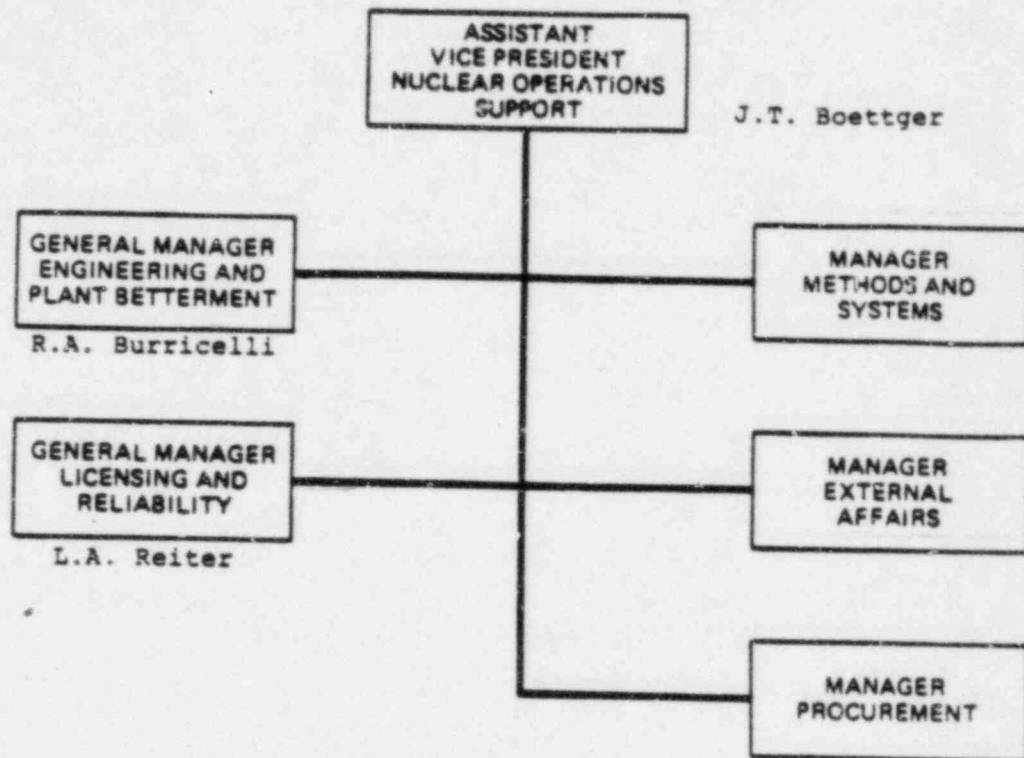
LEGEND:

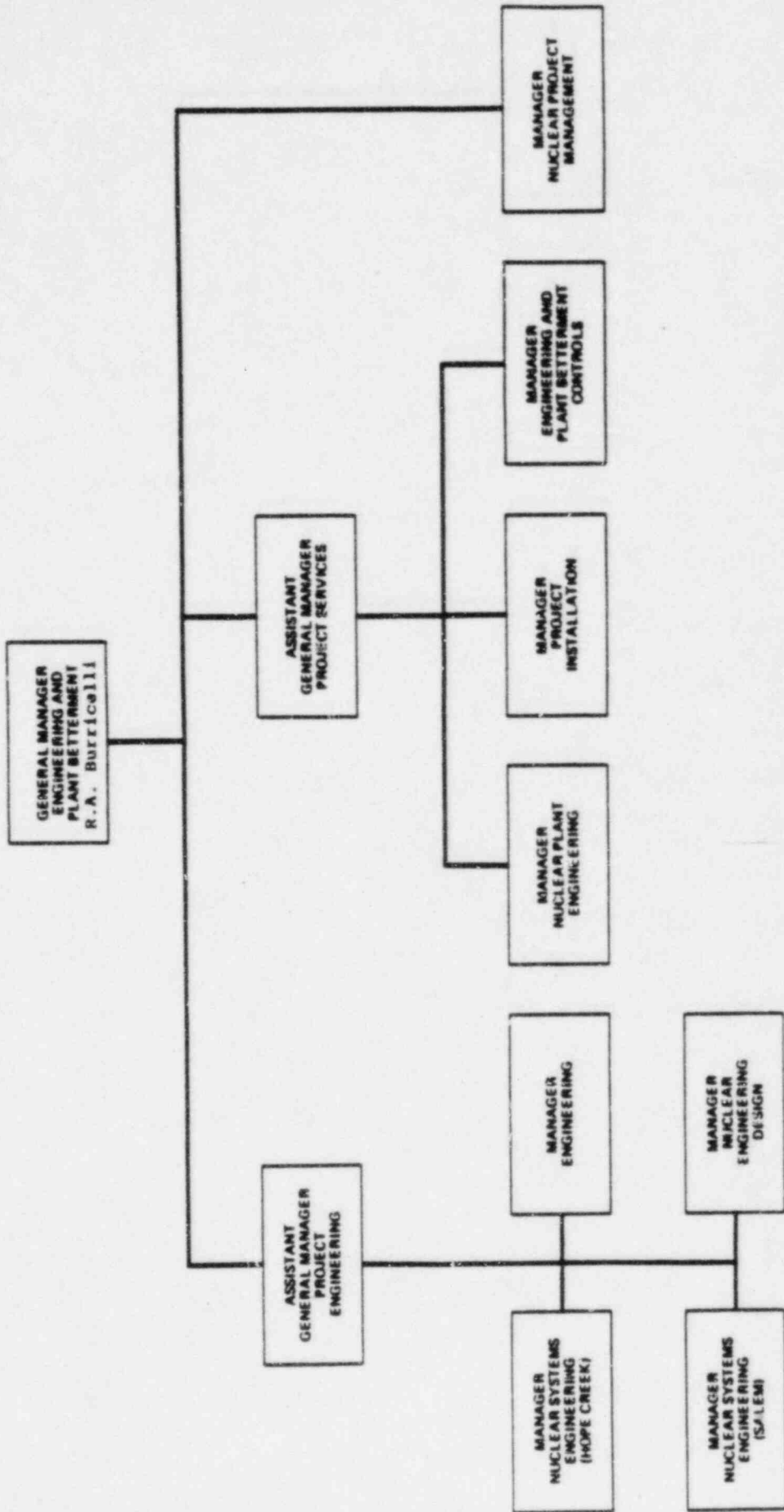
+ POSITIONS REQUIRED TO MEET ANS/ANS 3.1

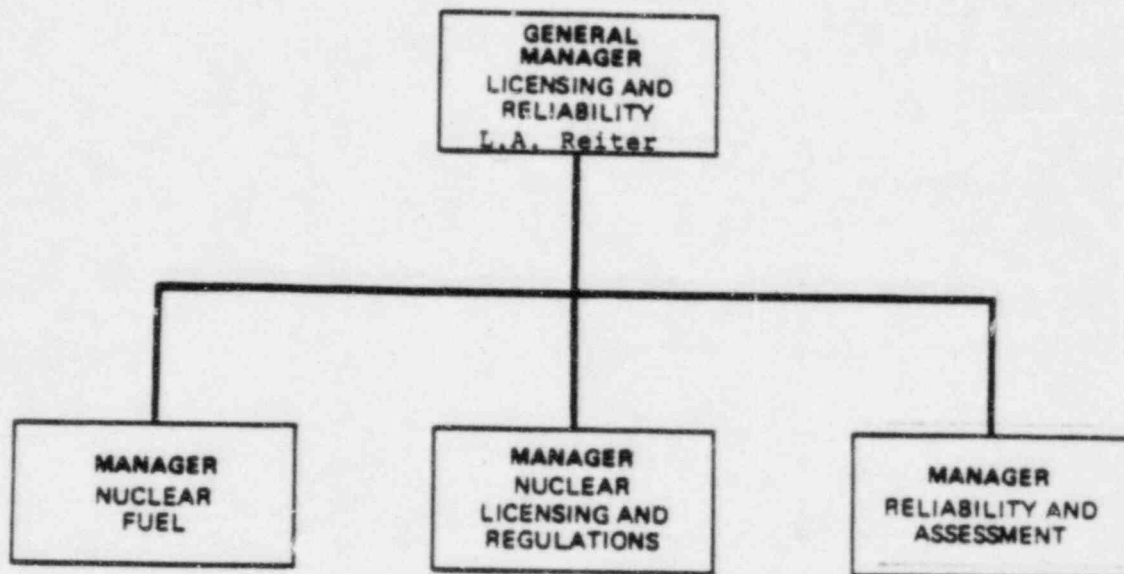


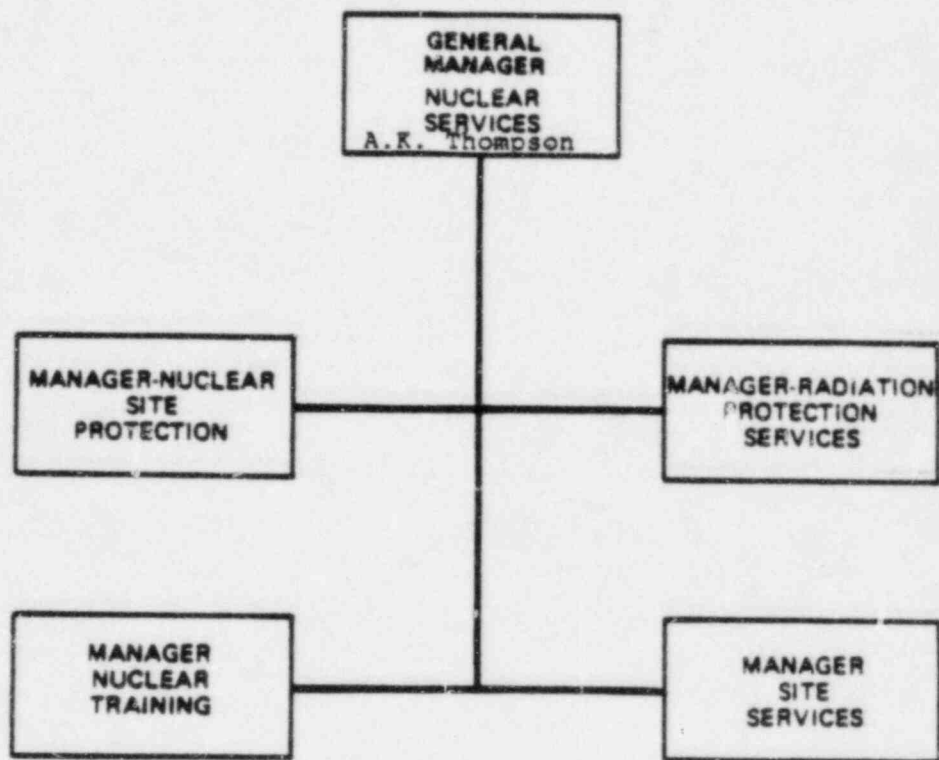
LEGEND:

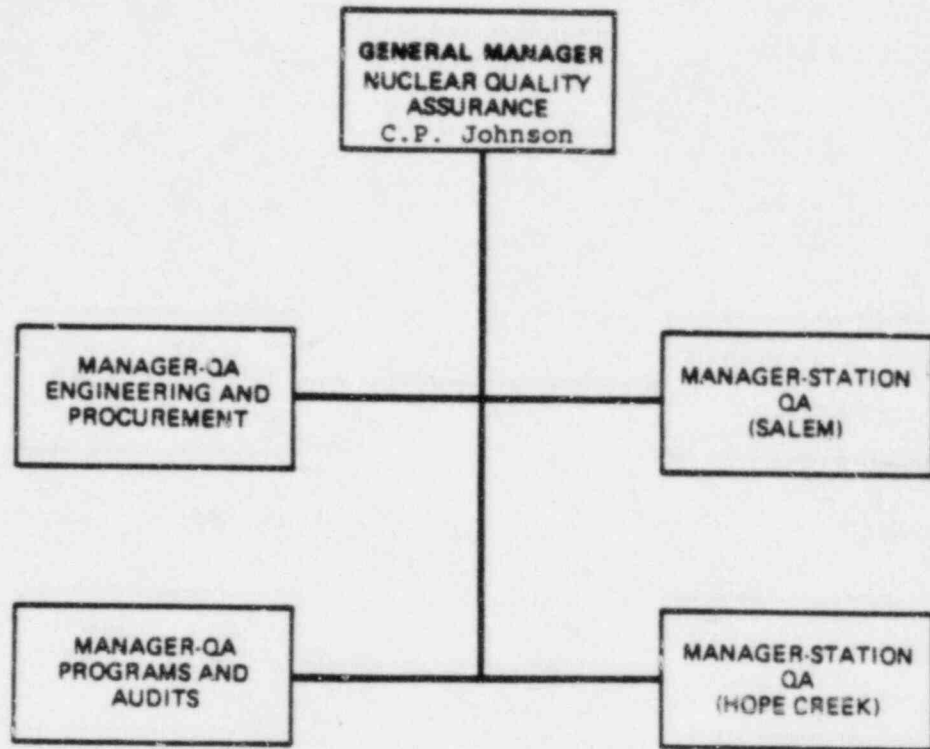
- * POSITION REQUIRED TO MEET ARMS/AMS 3.1
- MEETS QUALIFICATIONS OF REGULATORY GUIDE 1.8

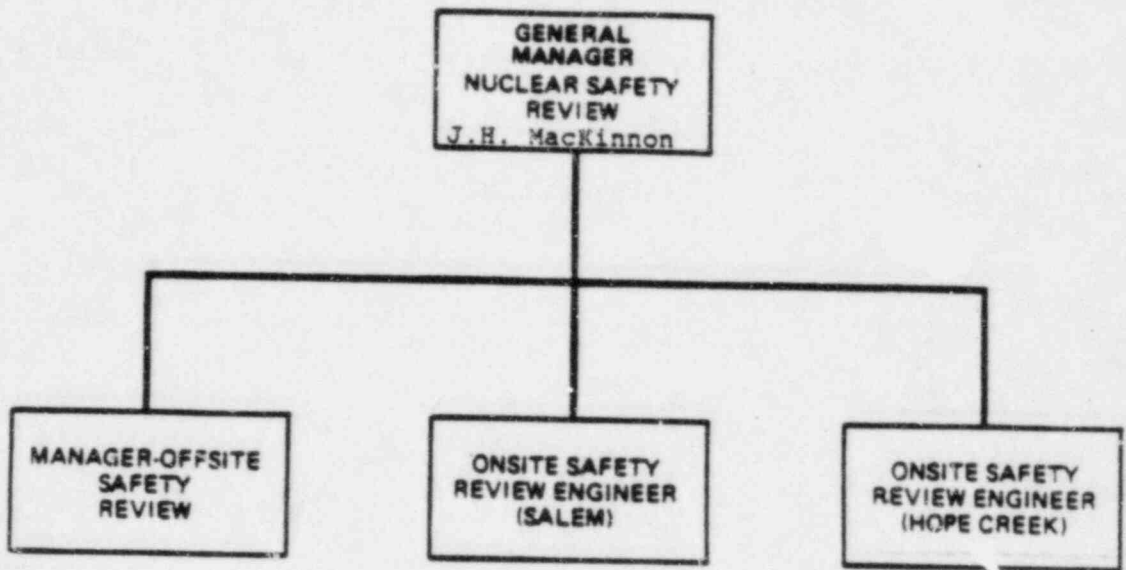












OPERATING SHIFT EXPERIENCE

DATE: 2/86

OPERATING SHIFT EXPERIENCE

PLANT NAME: Hope Creek

UTILITY: PSE&G

JOB TITLE: Shift Supervisor (Senior Nuclear Shift Supervisor)
(NOTE 2)

O.L. DATE: 2/86

NUCLEAR POWER PLANT EXPERIENCE
FOR OPERATING SHIFT POSITIONS (NOTE 1)

ENTER DATA: MONTHS/MONTHS x WEIGHTING FACTOR

TYPE OF EXPERIENCE	WEIGHTING FACTOR	MAXIMUM CREDIT	1*	2	3	4	5	6	7	8	9	10
1. SAME TYPE COMMERCIAL SRO	1.00	NO LIMIT			6/6							
2. OTHER COMMERCIAL SRO	0.75	NO LIMIT						9/6.75				
3. SAME TYPE COMMERCIAL RO	1.00	NO LIMIT			56/56		24/24					
4. OTHER COMMERCIAL RO	0.75	NO LIMIT						112/84				
5. NAVY (MILITARY) NUCLEAR (RO, END, EOW, PPM'S) (OTHER)	0.50 0.25	36 MONTHS	93/36		102/36		72/36	76/36				
6. SIMULATOR (REFERENCE PLANT) (SIMILAR)	5.00 3.00	12 MONTHS (12 MONTHS) (9 MONTHS)	.7/3.5	.7/3.5	.7/3.5	.7/3.5	.7/3.5	.7/3.5				
7. NUCLEAR PLANT EXPERIENCE ON SHIFT (OWN PLANT) (LESS THAN 1-1/2 YEARS PRIOR TO F.L.) (MORE THAN 1-1/2 YEARS PRIOR TO F.L.)	0.75 0.50	24 MONTHS (12 MONTHS) (12 MONTHS)	18/12	18/12	18/12	18/12	151	11.25	18/12			
8. LICENSED CLASSROOM TRAINING AND EXAM (OWN PLANT)	0.50	9 MONTHS	6/3	2/1	8/4	2/1		6/3				
9. PARTICIPATION AT OPERATING PLANT	0.75	12 MONTHS	12/6	12/6	12/6	12/6	12/6	12/6				
10. OTHER NUCLEAR PLANT EXPERIENCE	0.25	12 MONTHS		3/2.5		3/2.5						
11. CONDUCTING LICENSE TRAINING	0.25	"		30/7.5		34/8.5	48/12					
12. DEGREE (ENGINEERING, APPLIED SCIENCE OR EQUIVALENT) (BACHELORS DEGREE) (ASSOCIATES DEGREE)		12 MONTHS (12 MONTHS) (6 MONTHS)	12		10							
TOTAL NUCLEAR PLANT EXPERIENCE:			139.4/ 74.5	66.4/ 34.5	213.7/ 136.5	70.4/ 35.5	171.7/ 92.75	234.4/ 155.25				
HOT PARTICIPATION EXPERIENCE												
TIME > 20% PWR/BWR (WKS)			6 (BWR) NO	26 (BWR) YES	28 (BWR) YES (RO)	26 (BWR) YES (SRO)	20 (BWR) YES (SRO)	26 (BWR) YES (SRO)				
STARTUP & SHUTDOWN (YES/NO)				6 (SRO)	108	6	24	6				
MONTHS ON SHIFT			1.5									

1. L. Newman
2. L. Averse
3. E. Riley
4. M. Trum
5. R. Hovey
6. F. Hughes

*Also certified as STA

NOTE 1: SEE "INSTRUCTIONS FOR USE OF NUCLEAR POWER PLANT EXPERIENCE FACTORS FOR OPERATING SHIFT POSITIONS (OL APPLICANTS)"

NOTE 2: INCLUDE ALL SHIFT SUPERVISORS (SS), SHIFT SRO'S, REACTOR OPERATORS (RO) AND SHIFT TECHNICAL ADVISORS (STA).

- a. Shift advisors must be used to satisfy the "hot participation experience" requirements of the utility plan.
- b. Shift advisors will probably be required, at least for some shifts.
- c. Do not plan to use shift advisors unless some unforeseen circumstance arises.

DATE: 2/86

PLANT NAME: Hope Creek

UTILITY: PSE&G

O.L. DATE: 2/86

OPERATING SHIFT EXPERIENCE

Attachment 1
Sheet 2

JOB TITLE: Shift SRO (Nuclear Shift Supervisor)
(NOTE 2)

NUCLEAR POWER PLANT EXPERIENCE
FOR OPERATING SHIFT POSITIONS (NOTE 1)

ENTER DATA: MONTHS/MONTHS x WEIGHTING FACTOR

TYPE OF EXPERIENCE	WEIGHTING FACTOR	MAXIMUM CREDIT	ENTER DATA: MONTHS/MONTHS x WEIGHTING FACTOR											
			1	2	3	4	5	6	7	8*	9*	10		
1. SAME TYPE COMMERCIAL SRO	1.00	NO LIMIT							4/4					6/6
2. OTHER COMMERCIAL SRO	0.75	NO LIMIT												
3. SAME TYPE COMMERCIAL RO	1.00	NO LIMIT							48/48					50/50
4. OTHER COMMERCIAL RO	0.75	NO LIMIT	108/91	108/81										
5. NAVY (MILITARY) NUCLEAR (RO, EMO, EOW, PPMs) (OTHER)	0.50 0.25	36 MONTHS				84/56	48/24	72/56	72/56					72/56
6. SIMULATOR (REFERENCE PLANT) (SIMILAR)	5.00	12 MONTHS (12 MONTHS)	.7/3.5	.7/3.5		.7/3.5	.7/3.5	.7/3.5	.7/3.5	.7/3.5	.7/3.5	.7/3.5	.7/3.5	.7/3.5
	3.00	(9 MONTHS)	.7/2	.7/2		.7/2	.7/2	.7/2	.7/2	.7/2	.7/2	.7/2	.7/2	.7/2
7. NUCLEAR PLANT EXPERIENCE ON SHIFT (OWN PLANT) (LESS THAN 1-1/2 YEARS PRIOR TO F.L.) (MORE THAN 1-1/2 YEARS PRIOR TO F.L.)	0.75	24 MONTHS (12 MONTHS)	18/12	18/12		18/12	18/12	18/12	18/12	12/9	12/9			18/12
	0.50	(12 MONTHS)	6/3	6/3		6/3	6/3	6/3	6/3					
8. LICENSED CLASSROOM TRAINING AND EXAM (OWN PLANT)	0.50	9 MONTHS	12/6	12/6		12/6	12/6	12/6	1/6	12/6	12/6			12/6
9. PARTICIPATION AT OPERATING PLANT	0.75	12 MONTHS	25/12	9/6.75										18/13.5
10. OTHER NUCLEAR PLANT EXPERIENCE	0.25	12 MONTHS				36/9	36/9			31.7.75			6/1.5	
11. CONDUCTING LICENSE TRAINING	0.25	12 MONTHS												
12. DEGREE (ENGINEERING, APPLIED SCIENCE OR EQUIVALENT) (BACHELORS DEGREE) (ASSOCIATES DEGREE)		12 MONTHS (12 MONTHS)												
		(6 MONTHS)							4		12	12		4.5
TOTAL NUCLEAR PLANT EXPERIENCE:			170.4/ 119.5	154.4/ 114.25		157.4/ 71.5	121.4/ 59.5	165.4/ 118.5	141.4/ 66	68.4/ 40.25	43.4/ 34.0			151.2/ 111.7
<u>HOT PARTICIPATION EXPERIENCE</u>														
TIME > 20% PWR/BWR (HRS)			26(BWR)	26(BWR)		6(BWR)	6(BWR)	Note 3 18(BWR)	6(BWR)	6(BWR)	6(BWR)			
STARTUP & SHUTDOWN (YES/NO)			YES	YES		YES	YES	YES (SRO) 52	YES	NO	NO			Later
MONTHS ON SHIFT			6	6						2	2			

1. T. Russell
2. R. Stamat
4. D. Powell
5. R. Ebright
6. R. Thorson
7. F. Higgins
8. M. Azzaro
9. W. O'Malley
10. D. Galvors
11. R. Hiddle
12. D. Stoken
14. J. Johnson
15. G. Naylor

*Also certified as
STA

NOTE 1: SEE "INSTRUCTIONS FOR USE OF NUCLEAR POWER PLANT EXPERIENCE FACTORS FOR OPERATING SHIFT POSITIONS (OL APPLICANTS)"

NOTE 2: INCLUDE ALL SHIFT SUPERVISORS (SS), SHIFT SRO'S, REACTOR OPERATORS (RO) AND SHIFT TECHNICAL ADVISORS (STA).

NOTE 3: Experience at small BWR (Lacrosse)

a. Shift advisors must be used to satisfy the "hot participation experience" requirements of the utility plan.

b. Shift advisors will probably be required, at least for some shifts.

c. Do not plan to use shift advisor unless some unforeseen circumstance arises.

DATE: 2/86
 PLANT NAME: Hope Creek
 UTILITY: PSEG
 O.L. DATE: 2/86

OPERATING SHIFT EXPERIENCE

JOB TITLE: Shift SRO (Nuclear Shift Supervisor)
 (NOTE 2)

NUCLEAR POWER PLANT EXPERIENCE
 FOR OPERATING SHIFT POSITIONS (NOTE 1)

ENTER DATA: MONTHS/MONTHS x WEIGHTING FACTOR

TYPE OF EXPERIENCE	WEIGHTING FACTOR	MAXIMUM CREDIT	11	12	13	14*	15*	16	17	18	19	20
1. SAME TYPE COMMERCIAL SRO	1.00	NO LIMIT		5/3								
2. OTHER COMMERCIAL SRO	0.75	NO LIMIT										
3. SAME TYPE COMMERCIAL RO	1.00	NO LIMIT	74/74	53/53								
4. OTHER COMMERCIAL RO	0.75	NO LIMIT										
5. NAVY (MILITARY) NUCLEAR (RO, EMO, ECOM, PPMWS) (OTHER)	0.50 0.25	36 MONTHS		48/24								
6. SIMULATOR (REFERENCE PLANT) (SIMILAR)	5.00 3.00	12 MONTHS (12 MONTHS) (9 MONTHS)	7/3.5	7/3.5	7/3.5	7/3.5	7/3.5					
7. NUCLEAR PLANT EXPERIENCE ON SHIFT (OWN PLANT) (LESS THAN 1-1/2 YEARS PRIOR TO P.L.) (MORE THAN 1-1/2 YEARS PRIOR TO P.L.)	0.75 0.50	24 MONTHS (12 MONTHS) (12 MONTHS)	15/11.25	15/11.25	12/9	12/9	12/9					
8. LICENSED CLASSROOM TRAINING AND EXAM (OWN PLANT)	0.50	9 MONTHS	12/6	12/6	12/6	12/6	12/6					
9. PARTICIPATION AT OPERATING PLANT	0.75	12 MONTHS										
10. OTHER NUCLEAR PLANT EXPERIENCE	0.25	12 MONTHS		96/12		6/1.5	33/8.25					
11. CONDUCTING LICENSE TRAINING	0.25	12 MONTHS										
12. DEGREE (ENGINEERING, APPLIED SCIENCE OR EQUIVALENT) (BACHELORS DEGREE) (ASSOCIATES DEGREE)		12 MONTHS (12 MONTHS) (6 MONTHS)	5	5		12	12					
TOTAL NUCLEAR PLANT EXPERIENCE:			106.7/98.5	212.7/97.75		43.7/35	70.4/40.75					
NOT PARTICIPATION EXPERIENCE			60(BMR)	26(BMR)		6(BMR)	6(BMR)					
TIME > 208 PWR/BWR (MKS)			YES	YES		NO	NO					
STARTUP & SHUTDOWN (YES/NO) MONTHS ON SHIFT			74	37		1.5	1.5					

1. T. Russell
2. R. Stenato
3. D. Powell
4. R. Ebricht
5. R. Thorson
6. F. Higgins
7. M. Azzaro
8. W. O'Neilley
9. D. Galvors
10. R. Riddle
11. D. Stonen
12. S. Johnson
13. G. Naylor

*Also certified a STA

NOTE 1: SEE *INSTRUCTIONS FOR USE OF NUCLEAR POWER PLANT EXPERIENCE FACTORS FOR OPERATING SHIFT POSITIONS (OL APPLICANTS)*

NOTE 2: INCLUDE ALL SHIFT SUPERVISORS (SS), SHIFT SRO'S, REACTOR OPERATORS (RO) AND SHIFT TECHNICAL ADVISORS (STA).

NOTE 3: Experience at small BWR (Lacrosse)

OPERATING SHIFT EXPERIENCE

DATE: 2/86
PLANT NAME: Hope Creek
UTILITY: PSE&G
O.L. DATE: 2/86

JOB TITLE: Shift Technical Advisor
(NOTE 2)

ENTER DATA: MONTHS/MONTHS x WEIGHTING FACTOR

TYPE OF EXPERIENCE	WEIGHTING FACTOR	MAXIMUM CREDIT	1*	2*	3*	4*	5*	6*	7*	8*	9*	10*
1. SAME TYPE COMMERCIAL SRO	1.00	NO LIMIT										
2. OTHER COMMERCIAL SRO	0.75	NO LIMIT										
3. SAME TYPE COMMERCIAL RO	1.00	NO LIMIT										
4. OTHER COMMERCIAL RO	0.75	NO LIMIT										
5. NAVY (MILITARY) NUCLEAR (RO, EMO, EOW, PPMWS) (OTHER)	0.50 0.25	36 MONTHS	54/21	40/20	51/28.5	48/24						
6. SIMULATOR (REFERENCE PLANT) (SIMILAR)	5.00 3.00	12 MONTHS (12 MONTHS) (9 MONTHS)										
7. NUCLEAR PLANT EXPERIENCE ON SHIFT (OWN PLANT) (LESS THAN 1-1/2 YEARS PRIOR TO F.L.) (MORE THAN 1-1/2 YEARS PRIOR TO F.L.)	0.75 0.50	24 MONTHS (12 MONTHS) (12 MONTHS)	6.5/4.8	6/4.5	7/5.25	12/9	1/5.25					
8. LICENSED CLASSROOM TRAINING AND EXAM (OWN PLANT)	0.50	9 MONTHS	3/1.5	5/2.5	3/1.5	12/6	3/1.5					
9. PARTICIPATION AT OPERATING PLANT	0.75	12 MONTHS										
10. OTHER NUCLEAR PLANT EXPERIENCE	0.25	12 MONTHS					19/4.75	5/1.75				
11. CONDUCTING LICENSE TRAINING	0.25	12 MONTHS										
12. DEGREE (ENGINEERING, APPLIED SCIENCE OR EQUIVALENT) (BACHELORS DEGREE) (ASSOCIATES DEGREE)		12 MONTHS (12 MONTHS) (6 MONTHS)	12	12	12	12	12	12				
TOTAL NUCLEAR PLANT EXPERIENCE:			75.5/ 65.5	65/ 59	79/ 47.25	56.4/ 37.25	73/ 43.5					
HOT PARTICIPATION EXPERIENCE												
TIME > 20% PWR/BWR (MKS)												
STARTUP & SHUTDOWN (YES/NO)												
MONTHS ON SHIFT			6 (HMR)	6 (HMR)	5 (HMR)	6 (HMR)	6 (HMR)	6 (HMR)				
			YES	YES	YES	NO	YES					
			1.5	1.5	1.5	1.5	1.5					

1. W. Maceovic
2. N. Conicella
3. J. Eaton
4. J. O'Brien
5. W. Mohar

*Fill also license as SRO

NOTE 1: SEE "INSTRUCTIONS FOR USE OF NUCLEAR POWER PLANT EXPERIENCE FACTORS FOR OPERATING SHIFT POSITIONS (OL APPLICANTS)"

NOTE 2: INCLUDE ALL SHIFT SUPERVISORS (SS), SHIFT SRO'S, REACTOR OPERATORS (RO) AND SHIFT TECHNICAL ADVISORS (STA).

a. Shift advisors must be used to satisfy the "hot participation experience" requirements of the utility plan.
 b. Shift advisors will probably be required, at least for some shifts.
 c. Do not plan to use shift advisors unless some unforeseen circumstance arises.

DATE: 2/86

OPERATING SHIFT EXPERIENCE (AT FUEL LOAD)

Attachment 1
Sheet 4

PLANT NAME: Hope Creek

JOB TITLE: Reactor Operator (Nuclear Control Operator)
(NOTE 2)

UTILITY: PSE&G

NUCLEAR POWER PLANT EXPERIENCE
FOR OPERATING SHIFT POSITIONS (NOTE 1)

ENTER DATA: MONTHS/MONTHS x WEIGHTING FACTOR

O.L. DATE: 2/86

TYPE OF EXPERIENCE	WEIGHTING FACTOR	MAXIMUM CREDIT	MONTHS/MONTHS x WEIGHTING FACTOR											
			1	2	3	4	5	6	7	8	9	10*		
1. SAME TYPE COMMERCIAL SHO	1.00	NO LIMIT												
2. OTHER COMMERCIAL SHO	0.75	NO LIMIT												
3. SAME TYPE COMMERCIAL RO	1.00	NO LIMIT												
4. OTHER COMMERCIAL RO	0.75	NO LIMIT												16/12
5. NAVY (MILITARY) NUCLEAR (RO, ENG, EODW, PPWS) (OTHER)	0.50	36 MONTHS	72/36	72/36		72/36	72/36				72/36			40/20
	0.25													
6. SIMULATOR (REFERENCE PLANT) (SIMILAR)	5.00	12 MONTHS (12 MONTHS)	.7/3.5	.7/3.5	.7/3.5	.7/3.5	.7/3.5	.7/3.5	.7/3.5	.7/3.5	.7/3.5	.7/3.5	.7/3.5	.7/3.5
	3.00	9 MONTHS	.7/2	.7/2	.7/2	.7/2	.7/2	.7/2	.7/2	.7/2	.7/2	.7/2	.7/2	.7/2
7. NUCLEAR PLANT EXPERIENCE ON SHIFT (OWN PLANT) (LESS THAN 1-1/2 YEARS PRIOR TO F.L.) (MORE THAN 1-1/2 YEARS PRIOR TO F.L.)	0.75	24 MONTHS (12 MONTHS)	18/12	18/12	18/12	18/12	18/12	18/12	18/12	18/12	18/12	18/12	18/12	18/12
	0.50	12 MONTHS	6/3	6/3	6/3	6/3	6/3	6/3	6/3	6/3	6/3	6/3	6/3	6/3
8. LICENSED CLASSROOM TRAINING AND EXAM (OWN PLANT)	0.50	9 MONTHS	12/6	12/6	12/6	12/6	12/6	12/6	12/6	12/6	12/6	12/6	12/6	12/6
9. PARTICIPATION AT OPERATING PLANT	0.75	12 MONTHS			21/12				30/12	39/12			28/12	24/12
10. OTHER NUCLEAR PLANT EXPERIENCE	0.25	12 MONTHS									6/1.5			
11. CONDUCTING LICENSE TRAINING	0.25	12 MONTHS												
12. DEGREE (ENGINEERING, APPLIED SCIENCE OR EQUIVALENT) (BACHELORS DEGREE) (ASSOCIATES DEGREE)		12 MONTHS (12 MONTHS)					3	6					5	5
		6 MONTHS												
TOTAL NUCLEAR PLANT EXPERIENCE:			109.4/62.5	109.4/62.5	64.4/38.5	112.4/63.5	115.4/68.5	67.4/38.5	76.4/38.5	115.4/64.0	70.4/43.5	117.4/73.5		
<u>HOT PARTICIPATION EXPERIENCE</u>														
TIME > 20% PWR/BWR (WKS)			2	2	2	2	2	2	2	2	2	2	2	2
STARTUP & SHUTDOWN (YES/NO)			NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
MONTHS ON SHIFT			.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5

1. F. Bonnet
2. W. Chausse
3. J. DeDominico
4. T. Eastlick
5. J. Edwards
6. A. Faulkner
7. S. Geary
8. S. Hensell
9. S. Jones
10. T. Kirwin

*Will also License as SHO

NOTE 1: SEE "INSTRUCTIONS FOR USE OF NUCLEAR POWER PLANT EXPERIENCE FACTORS FOR OPERATING SHIFT POSITIONS (OL APPLICANTS)"

NOTE 2: INCLUDE ALL SHIFT SUPERVISORS (SS), SHIFT SHO'S, REACTOR OPERATORS (RO) AND SHIFT TECHNICAL ADVISORS (STA).

- a. Shift advisors must be used to satisfy the "hot participation experience" requirements of the utility plan.
- b. Shift advisors will probably be required, at least for some shifts.
- c. Do not plan to use shift advisors unless some unforeseen circumstance arises.

DATE: 2/86

OPERATING SHIFT EXPERIENCE

Attachment 1
Sheet 4A

PLANT NAME: Hope Creek

JOB TITLE: Reactor Operator (Nuclear Control Operator)
(NOTE 2)

UTILITY: PSE&G

NUCLEAR POWER PLANT EXPERIENCE
FOR OPERATING SHIFT POSITIONS (NOTE 1)

ENTER DATA: MONTHS/MONTHS x WEIGHTING FACTOR

O.I. DATE: 2/86

TYPE OF EXPERIENCE	WEIGHTING FACTOR	MAXIMUM CREDIT	11							12*		13		14		15		16		17		18		19		
1. SAME TYPE COMMERCIAL SRO	1.00	NO LIMIT																								
2. OTHER COMMERCIAL SRO	0.75	NO LIMIT																								
3. SAME TYPE COMMERCIAL RO	1.00	NO LIMIT																								
4. OTHER COMMERCIAL RO	0.75	NO LIMIT																								
5. NAVY (MILITARY) NUCLEAR (RO, ENR, EODW, PPM'S) (OTHER)	0.50 0.25	36 MONTHS	72/36			72/36	72/36	72/36	72/36																	
SIMULATOR (REFERENCE PLANT) (SIMILAR)	5.00	12 MONTHS (12 MONTHS)	.7/5.5	.7/5.5	.7/5.5	.7/5.5	.7/5.5	.7/5.5	.7/5.5																	
	5.00	(9 MONTHS)	.7/2	.7/2	.7/2	.7/2	.7/2	.7/2	.7/2																	
7. NUCLEAR PLANT EXPERIENCE ON SHIFT (OWN PLANT) (LESS THAN 1-1/2 YEARS PRIOR TO F.L.) (MORE THAN 1-1/2 YEARS PRIOR TO F.L.)	0.75	24 MONTHS (12 MONTHS)	18/12	18/12	18/12	18/12	18/12	18/12	18/12																	
	0.50	(12 MONTHS)	6/3	6/3	6/3	6/3	6/3	6/3	6/3																	
8. LICENSED CLASSROOM TRAINING AND EXAM (OWN PLANT)	0.50	9 MONTHS	12/6	12/6	12/6	12/6	12/6	12/6	12/6																	
9. PARTICIPATION AT OPERATING PLANT	0.75	12 MONTHS		21/12															32/12							
10. OTHER NUCLEAR PLANT EXPERIENCE	0.25	12 MONTHS																								
11. CONDUCTING LICENSE TRAINING	0.25	12 MONTHS																								
12. DEGREE (ENGINEERING, APPLIED SCIENCE OR EQUIVALENT) (BACHELORS DEGREE) (ASSOCIATES DEGREE)		12 MONTHS (12 MONTHS)	6	4			2	12	2																	
		(6 MONTHS)																								
TOTAL NUCLEAR PLANT EXPERIENCE:			115.4/ 68.5	89.4/ 62.75	109.4/ 62.5	111.4/ 64.5	121.4/ 74.5	71.4/ 40.5																		
<u>NOT PARTICIPATION EXPERIENCE</u>																										
TIME > 20% PWR/BWR (HKS)			2	2	2	2	2	2	2																	
STARTUP & SHUTDOWN (YES/NO)			NO	NO	NO	NO	NO	NO	NO																	
MONTHS ON SHIFT			.5	.5	.5	.5	.5	.5	.5																	

- 11. B. Lewis
- 12. H. Meyers
- 13. R. Rudy
- 14. J. Wicks
- 15. T. Williams
- 16. P. Wilson

*Will also License as SRO

NOTE 1: SEE "INSTRUCTIONS FOR USE OF NUCLEAR POWER PLANT EXPERIENCE FACTORS FOR OPERATING SHIFT POSITIONS (OL APPLICANTS)"

NOTE 2: INCLUDE ALL SHIFT SUPERVISORS (SS), SHIFT SRO'S, REACTOR OPERATORS (RO) AND SHIFT TECHNICAL ADVISORS (STA).

- a. Shift advisors must be used to satisfy the "hot participation experience" requirements of the utility plan.
- b. Shift advisors will probably be required, at least for some shifts.
- c. Do not plan to use shift advisors unless some unforeseen circumstance arises.

OPERATING SHIFT COMPLEMENT

HCGS NORMAL OPERATING SHIFT COMPLEMENT

POSITION TITLE	LICENSE REQUIRED	NORMAL COMPLEMENT
SENIOR NUCLEAR SHIFT SUPERVISOR (SNSS)	SRO	1 (NOTE 1)
NUCLEAR SHIFT SUPERVISOR (NSS)	SRO	1 (NOTE 1)
SHIFT TECHNICAL ADVISOR (STA)	(NOTE 2)	1 (NOTE 1)
SHIFT SUPPORT SUPERVISOR (SSS)	NONE	1 (NOTE 3)
NUCLEAR CONTROL OPERATOR (NCO)	RO	2
EQUIPMENT OPERATOR (EO)	NONE	6
SHIFT ELECTRICIAN	NONE	1
RADIATION PROTECTION SUPPORT	NONE	3
INSTRUMENT AND CONTROL TECHNICIAN	NONE	1
CHEMISTRY SUPPORT	NONE	1
COMMUNICATOR	NONE	(NOTE 4)
FIRE BRIGADE	NONE	6

NOTES:

1. AN INDIVIDUAL CAN SERVE A DUAL ROLE CAPACITY AS THE NSS/STA OR THE SNSS/STA ON SHIFT PROVIDED THE INDIVIDUAL IS SRO LICENSED, STA QUALIFIED AND SATISFIES ONE OF THE FOLLOWING EDUCATION ALTERNATIVES: 1) A BACHELORS DEGREE IN ENGINEERING FROM AN ACCREDITED INSTITUTION, 2) A PROFESSIONAL ENGINEER'S LICENSE, 3) A BACHELORS DEGREE IN ENGINEERING TECHNOLOGY OR PHYSICAL SCIENCE FROM AN ACCREDITED INSTITUTION INCLUDING WORK IN THE PHYSICAL, MATHEMATICAL OR ENGINEERING SCIENCE.
2. THE STA CAN BE SRO LICENSED; HOWEVER THIS IS NOT AN NRC REQUIREMENT. THE STA SHALL HAVE A BACHELORS DEGREE OR EQUIVALENT IN A SCIENTIFIC OR ENGINEERING DISCIPLINE AND HAVE SPECIFIC TRAINING IN THE RESPONSE AND ANALYSIS OF THE PLANT FOR TRANSIENTS AND ACCIDENTS.
3. THE SSS SHALL FUNCTION AS THE SITE FIRE BRIGADE COORDINATOR.
4. THE ROLE OF COMMUNICATORS WILL NORMALLY BE SATISFIED WITH AVAILABLE EO'S ABOVE THE TECHNICAL SPECIFICATION MINIMUM REQUIREMENTS.

TECHNICAL SPECIFICATION MILESTONES

HOPE CREEK TECHNICAL SPECIFICATIONS MILESTONES

- o SUBMITTED HOPE CREEK SPECIFIC DRAFT TO NRR JANUARY 17, 1985
- o FIRST DRAFT ISSUED BY NRR JULY 3, 1985
- o PROOF AND REVIEW COPY ISSUED BY NRR OCTOBER 4, 1985
- o CLUSE OF PROUF AND REVIEW JANUARY 24, 1986
- o NRC ISSUES FINAL DRAFT TECH SPECS FEBRUARY 20, 1986
- o CERTIFICATION OF TECHNICAL SPECIFICATIONS MARCH - 1986

USNRC AUDITS

USNRC AUDITS - HOPE CREEK GENERATING STATION

- 0 INDEPENDENT DESIGN VERIFICATION PROGRAM (IDVP)*
- 0 NRC INDEPENDENT MEASUREMENTS
- 0 TMI ACTION PLAN
- 0 SQRT/PVORT
- 0 EMERGENCY PLANNING
- 0 SECURITY
- 0 FIRE PROTECTION
- 0 RADWASTE
- 0 OPERATIONAL QUALITY ASSURANCE
- 0 EQUIPMENT QUALIFICATION
- 0 DESIGN CHANGE/CONTROL PROGRAM
- 0 POWER SYSTEMS ELECTRICAL WALKDOWN
- 0 CLAD PIPE NDE
- 0 PRESERVICE INSPECTION
- 0 SAFETY PARAMETER DISPLAY SYSTEM
- 0 INSTRUMENTATION CONTROL
- 0 AS-BUILT CONFIGURATION
- 0 RADIATION PROTECTION/CHEMISTRY
- 0 CONTROL ROOM DESIGN REVIEW

*PER NRC STAFF REPORT ON THE STATUS OF NEAR-TERM OPERATING LICENSES (NTOLs) IN WASHINGTON, DC ON 12/10/85, IT WAS STATED THAT HOPE CREEK'S IDVP WAS "THE BEST THEY'VE SEEN TO DATE."