9696

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

JAN 17 1990

DOCKETED
USNRC

'90 JAN 18 A11:17

OFFICE OF SECRETARY
DOCKETING & SERVICE
BRANCH

Thomas S. Moore, Esq., Chairman
Administrative Judge
Atomic Safety and Licensing
Appeal Board
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Howard A. Wilber
Administrative Judge
Atomic Safety and Licensing
Appeal Board
U.S. Nuclear Regulatory Commission
Washington, DC 20555

G. Paul Bollwerk, III, Esq.
Administrative Judge
Atomic Safety and Licensing
Appeal Board
U.S. Nuclear Regulatory Commission
Washington, DC 20555

In the Matter of
PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE, ET AL.
(Seabrook Station, Units 1 and 2)
Docket Nos. 50-443, 50-444 -OL

Dear Administrative Judges:

Currently pending before you is Intervenors' joint appeal from the Licensing Board's denial of their motion to reopen the proceeding to consider certain issues arising from the Applicants' low power test conducted on June 22, 1989. As you are aware, on June 23, 1989, the Regional Administrator, NRC Region I, issued Confirmatory Action Letter (CAL) 89-11 in connection with that event. The CAL confirmed the Applicants' commitments to conduct a post-trip review, to complete corrective actions deemed necessary prior to startup, and to obtain the agreement of the NRC's Regional Administrator prior to startup.

This is to inform you that the Staff has completed its review of this matter and of the Applicants' related corrective actions. In a letter issued on January 9, 1990, the Regional Administrator concluded as follows:

> In summary, NRC review of NHY corrective actions in response to CAL commitments has confirmed that implementation of programmatic changes and corrective measures has enhanced your ability to safely conduct testing. Subject to satisfaction of the Technical Specification requirements and license conditions imposed by NHY operating license NFP-67, I concur that NHY may restart Seabrook Unit 1.

D507

A copy of the letter of January 9, 1990, along with copies of three inspection reports issued that date (IR 89-13, 89-21, and 89-83) are enclosed herewith.

Sincerely,

Richard G. Bachmann
Counsel for NRC Staff

cc w/Encl.: Service List

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406

Docket No. 50-443
EA No. 89-158

JAN 0 9 1990

Public Service Company of New Hampshire
ATTN: Mr. Edward A. Brown, President
and Chief Executive Officer
New Hampshire Yankee Division
Post Office Box 300
Seabrook, New Hampshire 03874

Gentlemen:

Subject: CONFIRMATORY ACTION LETTER (CAL) 89-11

In response to the June 22, 1989 failure to perform a manual reactor trip when required during the natural circulation test for Seabrook Unit 1, you committed to a post-trip review and to complete corrective actions deemed necessary prior to startup of the unit. Further, the agreement of the Regional Administrator, Region I, was to be obtained prior to startup. These commitments were documented in Confirmatory Action Letter (CAL) 89-11 dated June 23, 1989.

New Hampshire Yankee (NHY) responded to CAL 89-11 with a July 12, 1989 letter submitting a Corrective Action Plan for Region I review. Since then, several NHY letters to Region I have updated the Corrective Action Plan and its status. On December 21, 1989, NHY reported that all Corrective Action Plan action items either were complete or were being implemented by ongoing programs. The NHY assessment was that the Corrective Action Program was effective and that both the plant and NHY staff were ready to begin power ascension testing in January of 1990.

I dispatched an Augmented Inspection Team (AIT) to Seabrook to determine the June 22, 1989 event sequence, causes and safety significance. That inspection (Report 89-82) identified several violations, but concluded that plant safety was not in question during the event. The AIT also found that, except for the significant error of not tripping the reactor when required by the test procedure, the NHY operating staff had performed well. An Enforcement Conference was held in Region I on September 7, 1989 to discuss the AIT findings. After that meeting, your Corrective Action Plan evolved into 55 distinct action items addressing seven major categories of corrective measures.

Region I has reviewed all 55 Corrective Action Plan items. We noted that each item was submitted to the NHY Independent Review Team for verification before it was deemed ready for NRC review and inspection. During an Operational Readiness Assessment Team (ORAT) inspection (Report 89-83) in November 1989, most of the Corrective Action Plan items were inspected and found acceptable. The ORAT found NHY implementation and management oversight of the Corrective Action

Plan for CAL 89-11 to be good. Of particular note were the rigorous procedure compliance policy and strong management oversight, not only of Corrective Action Plan progress, but also of independent review and self-assessment efforts.

Other NRC inspections (Reports 89-13, 89-15, and 89-21) examined the effectiveness of the remaining Corrective Action Items and found them acceptable. During a December 1989 inspection to evaluate operating crew training and qualification, a major NHY initiative to incorporate the Startup Test Program in the Power Ascension Test Program was noted. Integration of startup personnel with operators for training and in the use of revised startup procedures was found effective. Instances of minor procedure noncompliance were noted on simulator drills, but overall procedure adherence was found acceptable.

In summary, NRC review of NHY corrective actions in response to CAL commitments has confirmed that implementation of programmatic changes and corrective measures has enhanced your ability to safely conduct testing. Subject to satisfaction of the Technical Specification requirements and license conditions imposed by NHY operating license NFP-67, I concur that NHY may restart Seabrook Unit 1.

Sincerely,

W T Russell

William T. Russell
Regional Administrator

cc:
J. C. Duffett, President and Chief Executive Officer, PSNH
T. C. Feigenbaum, Senior Vice President and Chief Operating Officer, NHY
J. M. Peschel, Operational Programs Manager, NHY
D. E. Moody, Station Manager, NHY
T. Harpster, Director of Licensing Services
R. Hallisey, Director, Dept. of Public Health, Commonwealth of Massachusetts
S. Woodhouse, Legislative Assistant
Public Document Room (PDR)
Local Public Document Room (LPDR)
Nuclear Safety Information Center (NSIC)
NRC Resident Inspector
State of New Hampshire, SLO
Commonwealth of Massachusetts, SLO Designee
Seabrook Hearing Service List

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406

Docket No. 50-443 JAN 0 9 1990

Public Service Company of New Hampshire
ATTN: Mr. Edward A. Brown
President and Chief Executive Officer
New Hampshire Yankee Division
Post Office Box 300
Seabrook, New Hampshire 03874

Gentlemen:

Subject: NRC Region I Inspection 50-443/89-13 (10/11/89 - 12/11/89)

This refers to the above subject safety inspection at the Seabrook Station, Unit No. 1, Seabrook, New Hampshire. Aspects inspected included operational safety, ESF system walkdowns, reportable events, open items and event follow-up, the Containment Integrated Leak Rate Test, quality assurance activities, security controls and plan implementation, and design modification activities. The results of the inspection were discussed with Mr. D. Moody and other members of your staff.

Two violations of NRC requirements, identified by your staff, were reviewed. One involved failures to follow maintenance procedures; the other involved non-compliance with technical specification action statements. These violations are not being cited because the criteria specified in V.G of the NRC Enforcement Policy (10 CFR 2, Appendix C) have been satisfied. However, management attention to potential root cause relationships between these violations and other procedural or personnel errors is warranted.

No reply to this letter is required. Thank you for your cooperation.

Sincerely,

Jon R. Johnson

Jon R. Johnson, Chief
Projects Branch No. 3
Division of Reactor Projects

Enclosure: NRC Region I Inspection Report No. 50-443/89-13*

*Contains Safeguards Information

cc w/o Page 21 of encl:*
J. Duffett, President and Chief Executive Officer, PSNH
T. Feigenbaum, Senior Vice President and Chief Operating Officer, NHY
J. Peschel, Operational Programs Manager, NHY
D. Moody, Station Manager, NHY
T. Harpster, Director of Licensing Services
R. Hallisey, Director, Department of Public Health, Commonwealth of Massachusetts
Public Document Room (PDR)
Local Public Document Room (LPDR)
Nuclear Safety Information Center (NSIC)
NRC Resident Inspector (w/cy of encl)*
State of New Hampshire
Commonwealth of Massachusetts
Seabrook Hearing Service List

*Contains Safeguards Information

SEABROOK HEARING SERVICE LIST

Public Service Company of New Hampshire
ATTN: Mr. Edward A. Brown, President
and Chief Executive Officer
Post Office Box 300
Seabrook, New Hampshire 03874

Public Service Company of New Hampshire
ATTN: Mr. John C. Duffett
President and Chief Executive
Officer
P. O. Box 330
1000 Elm Street
Manchester, New Hampshire 03105

Mr. Donald E. Moody
Public Service Company of New Hampshire
Post Office Box 300
Seabrook, New Hampshire 03874

Mr. Ted C. Feigenbaum
Public Service Company of New Hampshire
Senior Vice President & Chief Operating
Officer
Post Office Box 300
Seabrook, New Hampshire 03874

Massachusetts Transportation
Building
ATTN: Sarah Woodhouse
Legislative Assistant
Ten Park Plaza - Suite 3220
Boston, Massachusetts 02116

Thomas Dignan, Esq
John A. Ritscher, Esq.
Ropes and Gray
225 Franklin Street
Boston, Massachusetts 02110

Mr. Bruce Beckley, Project Manager
New Hampshire Yankee
P.O. Box 330
Manchester, New Hampshire 03105

USNRC Resident Inspector
Post Office Box 1149
Seabrook, New Hampshire 03874

Mr. T. Harpster
Public Service Company of
New Hampshire
P.O. Box 300
Seabrook, New Hampshire 03874

Mr. James M. Peschel
Public Service Company of New
Hampshire
Post Office Box 300
Seabrook, New Hampshire 03874

Mr. R. Hallisey, Director
Dept. of Public Health
Commonwealth of Masssachusetts
Radiation Control Program
150 Tremont Street, 4th Floor
Boston, MA 02111

E. Tupper Kinger, Esq.
Assistant Attorney General
Office of Attorney General
208 State House Annex
Concord, New Hampshire 03301

Jerard A. Crouteau, Constable
82 Beach Road
P. O. Box 5501
Salisbury, Massachusetts 01950

Dr. Murray Tye, President
Sun Valley Association
209 Summer Street
Haverhill, Massachusetts 08139

Robert A. Backus, Esq.
Backus, Meyer and Solomon
116 Lowell Street
P. O. Box 516
Manchester, New Hampshire 03106

Phillip Ahren, Esq.
Assistant Attorney General
Office of the Attorney General
State House Station #6
Augusta, Maine 04333

Steven Olesky, Esq.
Office of the Attorney General
One Asburton Place
P. O. Box 330
Boston, Massachusetts 02108

Ms. Diana P. Randall
70 Collins Street
Seabrook, New Hampshire 03874

Richard Hampe, Esq.
New Hampshire Civil Defense Agency
107 Pleasant Street
Concord, New Hampshire 03874

Mr. Calvin A. Canney, City Manager
City Hall
126 Daniel Street
Portsmouth, New Hampshire 03801

Board of Selectmen
RFD Dalton Road
Brentwood, New Hampshire 03833

Chairman, Board of Selectmen
Town Hall
South Hampton, New Hampshire 03827

Mr. Angie Machiros, Chairman
Board of Selectmen
for the Town of Newbury
25 High Road
Newbury, Massachusetts 01950

George D. Bisbee, Esq.
Assistant Attorney General
Office of the Attorney General
25 Capitol Street
Concord, New Hampshire 03301

Diane Curran, Esq.
Harmon and Weiss
2001 S. Street, N.W.
Suite 430
Washington, D.C. 20009

D. Pierre G. Cameron, Jr., Esq
General Counsel
Public Service Company of
New Hampshire
Manchester, New Hampshire 03105

Mr. Alfred V. Sargent, Chairman
Board of Selectmen
Town of Salisbury, MA 01950

Ms. Suzanne Breiseth
Town of Hampton Falls
Drinkwater Road
Hampton Falls, New Hampshire 03844

Senator Gordon J. Humphrey
ATTN: Tom Burack
U.S. Senate
531 Hart Senate Office Building
Washington, D.C. 20510

Mr. Owen B. Durgin, Chairman
Durham Board of Selectmen
Town of Durham
Durham, New Hampshire 03824

Rye Nuclear Intervention Committee
c/o Rye Town Hall
10 Central Road
Rye, New Hampshire 03870

Jane Spector
Federal Energy Regulatory Comm.
825 North Capitol Street, N.E.
Room 8105
Washington, D.C. 20426

Ms. Rosemary Cashman, Chairman
Board of Selectmen
Town of Amesbury
Town Hall
Amesbury, Massachusetts 01913

Honorable Peter J. Matthews
Mayor, City of Newburyport
City Hall
Newburyport, Massachusetts 01950

Administrative Judge
Alan S. Rosenthal, Chairman
Atomic Safety and Licensing Appeal Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Administrative Judge
Emmeth A. Luebke
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Edwin J. Reis, Esq.
Office of the General Counsel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Edward A. Thomas
Federal Emergency Management Agency
442 J. W. McCormack (POCH)
Boston, Massachusetts 02109

Paul McEachern, Esq.
Shaines and McEachern
25 Maplewood Avenue
Portsmouth, New Hampshire 03801

Board of Selectmen
10 Central Street
Rye, New Hampshire 03870

Mr. R. Sweeney
New Hampshire Yankee Division
Public Service Company of New Hampshire
Suite 610, Three Metro Center
Bethesda, Maryland 20814

Administrative Judge
Howard A. Wilber
Atomic Safety and Licensing Appeal Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Administrative Judge
Thomas S. Moore, Esq.
Atomic Safety and Licensing Appeal Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Administrative Judge
Jerry Harbour
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

H. Joseph Flynn, Esq.
Assistant General Counsel
Federal Emergency Management Agency
500 C. Street, S.W.
Washington, D.C. 20472

Carol S. Sneider, Esq.
Assistant Attorney General
Office of the Attorney General
One Ashburton Place, 19th Floor
Boston, Massachusetts 02108

Richard A. Haaps, Esq
Haaps and McNicholas
35 Pleasant Street
Concord, New Hampshire 03301

Allen Lampert
Civil Defense Director
Town of Brentwood
20 Franklin Street
Exeter, New Hampshire 03833

William Armstrong
Civil Defense Director
Town of Exeter
10 Front Street
Exeter, New Hampshire 03833

Anne Goodman, Chairman
Board of Selectmen
13-15 Newmarket Road
Durham, New Hampshire 03824

Norman C. Kantner
Superintendent of Schools
School Administrative Unit No. 21
Aluani Drive
Hampton, New Hampshire 03842

Jane Doughty
Seacoast Anti-Pollution League
5 Market Street
Portsmouth, New Hampshire 03801

Mr. Robert Carrigg, Chairman
Board of Selectmen
Town Office
Atlant Avenue
North Hampton, New Hampshire 03870

Sandra Gavutis, Chairman
Board of Selectmen
RFD #1, Box 1154
Kensington, New Hampshire 03827

Stanley W. Knowles, Chairman
Board of Selectmen
P. O. Box 710
North Hampton, New Hampshire 03862

Judith H. Mitzner
Silverglate, Gertner, Baker, Fine,
Good, and Mitzner
88 Broad Street
Boston, Massachusetts 02110

Gary W. Holmes, Esq.
Holmes and Ellis
47 Winnacunnet Road
Hampton, New Hampshire 03842

Adjudicatory File
Atomic Safety and Licensing Board
Panel Docket
U.S. Nuclear Regulatory Commission
Washington, DC 20555

U.S. NUCLEAR REGULATORY COMMISSION, REGION I

Docket/Report No: 50-443/89-13 License No.: NPF-67

Licensee: Public Service Company of New Hampshire
1000 Elm Street
Manchester, N.H. 03105

Facility: Seabrook Station, Unit No. 1, Seabrook, New Hampshire

Dates: October 11 - December 11, 1989

Inspectors: A. Cerne, Senior Resident Inspector
R. Fuhrmeister, Resident Inspector
S. Barr, Reactor Engineer
N. Dudley, Project Engineer
W. Lancaster, Physical Security Inspector
E. Sylvester, Senior Reactor Engineer
J. Yerokun, Reactor Engineer

Reviewer: N. Ervin, NRC Office of Nuclear Reactor Regulation

Approved By: Ebe C. McCabe, Jr.
Ebe C. McCabe, Chief, Reactor Projects Section 3B — 1/6/90 Date

Areas Inspected: Operational safety, ESF system walkdowns, reportable events, open items, the Containment Integrated Leak Rate Test, quality assurance activities, security, and design modification activities.

Results: Licensee planning, corrective measure implementation and overall response to potential problems with plant equipment (e.g., Westinghouse Technical Bulletin - section 3.5.4; Rosemount Part 21 Report - section 8.2) has been comprehensive and technically sound.

Two non-cited violations (sections 3.4 and 8.1) were identified by the licensee. Both procedural adherence and personnel errors were involved. Other examples where licensee action was required to correct procedure/personnel interaction problems are also discussed in this report (sections 3.5.2 and 8.3). Continued management emphasis upon associated interdepartmental coordination and monitoring of work is appropriate.

Successful performance of the Containment Integrated Leak Rate Test was witnessed. A recurrent problem with one leaking valve was identified, indicating that a repeat valve repair may not prevent recurrence (section 5). Routine involvement of Quality Assurance personnel in work and corrective action implementation, as well as in surveillances and audits, was evident.

A revision to the Seabrook Station Physical Security Plan is needed to resolve safeguards issues raised by an NRC security evaluation (section 9).

TABLE OF CONTENTS

DETAILS

1. Persons Contacted - New Hampshire Yankee (NHY)

E. Brown, President and Chief Executive Officer
J. DeLoach, Executive Director of Engineering and Licensing
B. Drawbridge, Executive Director of Nuclear Production
T. Feigenbaum, Senior Vice President and Chief Operating Officer
*J. Grillo, Operations Manager
R. Hanley, Operations Training Manager
T. Harpster, Director of Licensing Services
J. Hart, Licensing Manager
G. Kann, Program Support Manager
S. Kulback, Operations Security
*D. Moody, Station Manager
J. Peschel, Operational Programs Manager
*N. Pillsbury, Director of Quality Programs
C. Roberts, Manager, Security and Compensatory Systems
J. Vargas, Manager of Engineering
*J. Warnock, Nuclear Quality Manager

*Attended exit meeting conducted on December 12, 1989.

Other licensee and contractor personnel were also contacted.

2. Summary of Activities

2.1 Resident Inspector Activities

One senior resident inspector (SRI) was assigned to the site during the entire inspection period. On November 20, 1989, a new resident inspector was assigned to the Seabrook resident office.

Region-based inspectors reviewed technical issues and made routine site inspections, witnessed the Containment Integrated Leak Rate Test, and reviewed plant security. Regional inspector input to this report is documented in the report section appropriate to the inspection effort.

A total of 243 inspection hours, including 49 backshift hours and 18 deep backshift hours, were expended.

The SRI also participated in a meeting on October 11, 1989 at Seabrook Station between Region I management and the licensee to discuss Systematic Assessment of Licensee Performance (SALP) Report No. 50-443/87-99, covering the period from August 1, 1987 - June 30, 1989. Another meeting to discuss the licensee's schedule and action plan for open inspection issues was also held on site on October 11, 1989. This meeting was a prelude to a Region I/licensee meeting in King of Prussia, Pennsylvania on October 18, 1989 to discuss the NHY Corrective Action Plan status and the self-assessment program for the Unit 1

power ascension program. The SRI attended these meetings, as well as ones conducted by Region I and NRR personnel onsite on November 8, 1989 to review implementation of certain sections of the Seabrook Station Physical Security Plan and on November 20, 1989 to further discuss the licensee schedule for Corrective Action Plan and open item closure and readiness for testing. During November 13-20, 1989, the SRI participated in the Operational Readiness Assessment Team (ORAT) inspection of Seabrook Unit 1.

From October 23-27, 1989 while the SRI inspected another nuclear power station, a regional reactor engineer was assigned to Seabrook Station for routine coverage and safety system and equipment modification reviews. During the week of December 4, 1989, the SRI also attended training and a resident counterpart meeting in King of Prussia, Pennsylvania.

2.2 Visiting Inspector Activities

On October 12, 1989 an NRR Radiation Protection Branch reviewer visited the site to examine system modifications and documentation related to iodine effluent sampling, as discussed in the Safety Evaluation Report (SER) for Seabrook Station, confirmatory item no. 60.

On October 16-20, 1989, a regional inspector reviewed licensee response and corrective action to four open inspection items relating to the environmental qualification of Raychem splices. The results of this inspection will be documented in NRC Region I Inspection Report 50-443/89-14.

On November 6-10, 1989, two regional inspectors, supported by NRC contractor personnel, inspected the licensee's environmental qualification (EQ) program to address compliance with 10 CFR 50.49 and examine the EQ files. The results of this inspection will be documented in NRC Region I Inspection Report 50-443/89-17.

On November 13-20, 1989, an Operational Readiness Assessment Team (ORAT) inspected Seabrook Station to assess readiness for safe operation through reviews of operations and operational support programs to include health physics, maintenance, surveillance, engineering support, modification controls and Corrective Action Plan implementation. The results of this inspection are documented in NRC Region I Inspection Report 50-443/89-83.

On November 13-17, 1989, NRC regional and headquarters operator licensing (OL) examiners, assisted by an NRC contractor, administered written, oral and simulator examinations to twelve NHY operator license candidates. The results of these OL examinations are documented in NRC Region I Inspection Report 50-443/89-11.

On November 27 - December 1, 1989 regional inspectors and examiners, assisted by an NRC contractor, evaluated licensed operator proficiency at Seabrook Station by using NRC-developed scenarios to witness the performance of all shift operating crews on the Seabrook simulator. The results of this evaluation are documented in NRC Region I Inspection Report 50-443/89-15.

On November 27 - December 1, 1989, a regional inspector inspected the licensee program for environmental monitoring and liquid and gaseous waste handling and reviewed licensee actions on open inspection items. The results of this inspection are documented in NRC Region I Inspection Report 50-443/89-18.

On November 27 - December 7, 1989, regional inspectors, with the support of NRC contractor personnel, inspected the post-accident sampling system (PASS) and other inplant and effluent sampling systems and programs to check compliance with commitments made by the licensee in response to NUREG 0737. As part of this inspection, applicable TMI Action Plan items were reviewed and open items were closed, as appropriate. The results of this inspection will be documented in NRC Region I Inspection Report 50-443/89-19.

2.3 Plant Activities

The plant remained in operational mode 5, cold shutdown, with primary coolant temperature between 120F and 140F and the reactor coolant system vented at the top of the pressurizer. Maintenance and modification activities shifted from train 'B' to train 'A' equipment as the train 'B' residual heat removal system was returned to service. Major work was conducted on the electrical buses, the diesel generator support systems and the control building air, containment building spray, service water and primary component cooling water (PCCW) systems. Inspection, eddy current testing and repair activities related to tubing in the PCCW heat exchangers represented the major train-related outage work in progress on the primary side of the plant. The Containment Integrated leak Rate Test (CILRT) was conducted over a four-day period commencing on November 19, 1989.

3. Operational Safety

3.1 Plant Operations

The inspector observed plant operations during regular and backshift inspections of the control room and during routine tours of the plant. In the control room, plant logs, night orders, technical specification action statement status, and alarm conditions were reviewed, and operators were interviewed regarding control board indications and system lineups. Tagging controls and plant valve positions, used to support field work, were spot-checked and the Monthly Temporary Modification (TMOD) Report was reviewed to verify proper TMOD controls and tagging.

The inspector also verified that control room personnel were properly utilizing temporary pump requests for field situations requiring the installation of portable pumping equipment in plant sumps. Discussion with the radwaste and utilities (R&U) supervisor confirmed adequate control of the procedurally required temporary pump request forms. Additional discussions were held with the R&U supervisor concerning the control of Administrative Site Procedures (ASPs), fire barrier integrity, and containing the leakage of rain

water into the plant. Outdated ASPs held over from site construction activities have been cancelled and a request for engineering services (RES 89-1054) has been issued to address the water leaks. Interim corrective actions for removing water as leakage occurs were assessed as acceptable.

The inspector compared control room log entries with technical specification action statement status sheets for two specific limiting conditions for operation (LCO 3.3.3.1, Containment Radiation Monitoring, and 3.7.6.B, Control Room Ventilation) for a one-month period. These LCOs are interrelated by common intake radiation monitoring which affects each LCO compliance and action statement differently. Thus, at any given time, either or both of the technical specification action statements may be entered depending upon the particular component failure. Exiting an action statement must therefore account for the other action statement's applicability. The inspector's review of eight action statement entries and seven exits during the sampled month revealed precise accountability and documentation by the control room operators. All questions raised by the log book review were satisfactorily answered by the action statement status sheets.

The inspector witnessed licensed operator personnel in the performance of watch-standing duties for the purpose of upgrading their inactive licenses to active status. Requalification training for licensed operators was discussed with training and operations management personnel and the station policy of removing from shift duties any operator who has failed requalification training was confirmed. In such situations, the inspector noted that the licensee program for remedial training and appropriate retesting is flexible to fit individual training needs and has been effectively used.

The inspector's witness of cold shutdown operations and review of work control activities within the control room identified no concerns. Operators were cognizant of overall plant and equipment status and performed board manipulations and system realignments in a controlled manner in accordance with procedural requirements. Operations management personnel were frequently observed in the control room, particularly during shift changes.

3.2 Plant Tours

The inspectors observed activities and plant status during general inspections of the plant. Work was examined for defects or noncompliances, and station staff and contractor personnel were interviewed in their work areas.

The inspector verified proper positioning, in accordance with operational procedures or work controls, of various valves, switches and breakers during system walk-downs and checked the valve and switch status in the control room. Similarly, temporary modifications and component tagging, maintenance work, and design change implementation activities, as observed during plant inspection tours, were evaluated for evidence of proper field controls and coordination of the work with the control room and operations personnel on shift. In certain

cases, the operability of specific components and the applicability of the observed work to the technical specification requirements were discussed with the operators.

During several plant tours, the inspector checked general plant housekeeping, the control of temporary equipment and staging, the handling of tools and miscellaneous equipment within the radiologically controlled area (RCA), RCA access controls, and the compensatory measures in place for degraded security systems and fire barriers. Generally, good work practices were in evidence. For areas where work is in progress over several days, it is difficult to confirm small work item and tool controls until the job is finished. While a "roll back" out of certain plant areas is planned prior to plant heatup, increased attention to work controls during jobs in progress should be emphasized by station management.

During a tour of the Unit 1 tank farm, the inspector noted the existence of several floor drains within the diked area surrounding the refueling water storage tank. From a review of the piping and isometric drawings, it appeared that these drains were connected to the floor drains inside the diked area surrounding the reactor water makeup tank. That would bypass the RWST dike. Discussion with representatives from Engineering revealed that the two diked areas have separate drain systems with isolation valves which prevent uncontrolled draining. Cross-connecting of the floor drains is also precluded. The inspector had no further questions.

During a tour of the primary auxiliary building, the inspector noted ongoing activities involving eddy-current inspection of the tubes in the "A" primary component cooling water (PCCW) heat exchanger. The inspector noted the presence of broken off rolled ends of tube sleeves in the lower head of the heat exchanger. The inspector also examined several tube ends and sleeve ends, noting the advanced erosion evident on several. Notable by its absence was the corrosion, biofouling, and debris often associated with sea water cooling systems.

A tour of other plant areas and buildings resulted in specific observations as follows:

-- Cooling tower tour - verified access control (a guard was posted due to door problems) and posting, and material condition of equipment. No loose material which could become missles due to seismic activity was evident. The basin was filled.

-- Containment tour - housekeeping was good (no loose material lying about in spite of ongoing work). Containment sump screens were in-place and intact. Mesh barriers were being erected at accesses to areas which could become high radiation areas once the plant has operated at power.

-- Diesel generator building - portable catwalks secured, cranes/hoists secured, no equipment/debris lying about loose. An air-operated pump was used to circulate fuel oil through a filter. Oil soaked rags and filters were in plastic bags on the catwalk in the bay for the tank being cleaned ('B' tank).

With respect to all of the above area inspections, building tours and observations, no violations or unresolved safety concerns were identified.

3.3 Operating Procedures Review

On September 11, 1989, the licensee completed a review of all operating procedures for consistency. The review was conducted as part of a commitment documented in NRC Region I Inspection Report 50-443/87-10. As a result of the review, the licensee issued Operating Procedures OP 11.2, "Operating Procedures Writer's Guide," and OP 11.1, "Surveillance Test Procedure Writer's Guide," to establish a consistent format, style, and content for writing procedures. The inspector reviewed OP 11.1 and OP 11.2 and concluded that the procedures provided adequate detailed guidance for procedure writers. The inspector had no questions.

The inspector reviewed the new Operations Department Instruction ODI.21, "Direction for Inoperable Snubbers," which provides directions for dealing with inoperable snubbers as described in NRC Region I Inspection Report 50-443/89-09. The instruction requires an evaluation by the technical support group prior to removal of a snubber from service and the tracking of snubber removal under the action statement tracking system for snubbers covered under technical specification action statement 3/4.7.7, "Snubbers." A listing of snubbers by number and system location is available in the control room. The inspector concluded that ODI.21 provides an appropriate method for determining the operability of snubbers and provides adequate guidance to the Unit Shift Supervisor. The inspector had no questions.

3.4 Follow-up of Operating/Equipment Questions from Plant Heatup

During plant heatup for low power testing, several equipment failures occurred and were discussed in NRC Region I Inspection Report 50-443/89-80. Subsequent inspector follow-up was conducted to determine the cause of and corrective actions taken for each of the failures.

During heatup prior to initial criticality, residual heat removal cold leg injection valve RH-14 failed to open remotely. The valve was manually stroked without problem. Investigation determined that the motor pinion key had sheared. The motor pinion key was replaced on May 31, 1989, and the valve operability test was satisfactory. The pinion key was scheduled to be replaced after low power testing as a result of recommendations made in NRC Information Notice 88-84. The pinion key had not been replaced prior to low power testing because of the planned operability tests and the planned replacement of all keys during system outages after low power testing, and also because of the

consideration of low decay heat levels during low power testing. All other similar pinion keys in safety-related motor-operated valves have since been replaced.

Residual heat removal (RHR) crossover valve RH-V21 would not open remotely. After being manually opened, the valve was successfully stroked from the main control room. Investigation determined the valve had stuck on its seat due to thermal binding. Operational steps to prevent future binding were being developed and the inspector has no further questions in this regard.

During initial operation of the reactor coolant pumps (RCPs) for heatup prior to initial criticality, a vibration alarm was received on RCP-B. Investigation of the vibration meters on all four RCPs determined that seven of the eight frame vibrator indicators were inoperable. Local vibration readings were taken on the pump shafts and motor frames and were within limits. Further troubleshooting identified that all eight probes had been wired incorrectly, seven in one configuration and the eighth in another. The licensee determined that the vibration monitors were most likely improperly wired during replacement and testing conducted after initial installation in October 1985. Post-maintenance testing involved only continuity tests and did not include functional or calibration tests. New calibration procedures have been written based on information obtained from the vendor, Bentley Nevada, and are to be incorporated into the 18-month functional checks for the indicator probes. The inspector had no further questions.

During heatup prior to initial criticality, an alarm received in the control room indicated low flow in loop 1 with the RCP running. Licensee investigation determined that the flow element was installed backward. Further investigation determined that the loop 2 flow element was also installed backward. All four flow elements had been removed and reinstalled in December 1988 to repair gasket leaks. The work requests for the flow elements in loops 1, 2, and 3 did not require verification of proper orientation of the flow element while the work request for the flow element in loop 4 required QA verification. Loop 1 and 2 flow elements were removed and properly reinstalled on June 3, 1989. The licensee performed a 100% quality assurance check of all flow elements, flow orifices and restricting orifices for instrumentation located in safety-related systems. The inspector reviewed the results of the quality checks and verified that all flow orifices were determined to be installed correctly. The licensee later added a check for proper orifice installation on the final inspection checklist for piping as part of maintenance procedure MS 0517.03, "Installation of Piping, Pipe Supports and STOW Supports." The inspector had no further questions.

The final equipment question raised during the readiness inspection for low power testing involved demineralizer three-way divert valve CS-TCV-129, which would not stay in the 'demin' position with the control switch in the 'auto' position. Investigation found that one lead in the control circuit was

not terminated and that dynamic testing of the valve was not conducted. Continuity checks and relay operation of relay R1 contacts were conducted rather than the specific dynamic valve position verification due to the inability to establish required plant conditions for dynamic testing.

The licensee identified that this deviation from the required retest was not in accordance with maintenance instruction MT 3.1, section 4.1.23, and that the incomplete documentation of lifting the lead was a failure to follow the requirements of maintenance procedure MA 4.5. These two licensee-identified examples of failure to follow maintenance procedures violated regulatory requirements which require that procedures be properly implemented. The violation is not being cited because the criteria specified in 10 CFR 2, Appendix C Section V.G.1 of the Enforcement Policy were satisfied. The licensee identified the problem. Corrective actions for procedural compliance are being effected as part of the license response to Confirmatory Action Letter 89-11. A non-cited violation (NCV 89-13-01) documents identification of this issue, which concurrently is hereby closed.

On September 25, 1989, the Nuclear Quality Group issued Corrective Action Request 89-005 to express concern regarding seven station information reports which identified problems with post-maintenance testing. In response to the CAR, a committee was tasked with review of the reasons for the inadequate post-maintenance testing and with developing recommendations to improve the post-maintenance test program. The committee has not completed its review. The present post-maintenance testing program was reviewed by the Operational Readiness Team in NRC Region I Inspection Report 50-443/89-83 and found acceptable.

3.5 Operating Event Followup

3.5.1 Loss of RHR Shutdown Cooling Capability

On October 11, 1989, one of the two suction valves for the operable train 'A' residual heat removal (RHR) pump stroked close. Since the train 'B' RHR system was out of service for maintenance, the loss of train 'A' RHR suction flow resulted in the loss of all RHR cooling. This condition was corrected less than an hour later when the valve that was closed, RC-V-22, was manually reopened, the 'A' RHR pump was restarted and full RHR flow was reestablished. With negligible decay heat in the reactor core, reactor coolant system temperatures did not rise during this event. The licensee notified the NRC Headquarters Duty Officer via the Emergency Notification System (ENS) in accordance with 10 CFR 50.72. Licensee Event Report (LER) No. 89-012 was issued to evaluate the root cause, safety consequences and corrective actions.

Since valve RC-V-22 is energized from a train 'B' electrical bus, valve closure was traced to the reenergization of the train 'B' motor control center supplying power to RC-V-22. When the supply breaker for RC-V-22 was closed, the valve stroked closed because control power had not yet been reestablished for the valve. The valve performed as designed for the electrical power configuration at the time.

The root cause of this event was procedural. While ongoing maintenance activities and plant conditions required only partial restoration of train 'B' electrical power, the procedure used to restore power was written to provide for complete restoration of the AC bus. No consideration was given to the restoration of DC control power to RC-V-22 prior to motive power restoration. In this case, the actual electrical configuration for the work was not properly considered in restoration planning.

Complete licensee corrective action in response to this event will be reviewed as follow-up to LER 89-012, which remains open.

3.5.2 Primary Drain Tank (PDT) Collapse

On November 21, 1989, the 'A' Primary Drain Tank (BR5,TK-66A) was found in a partially collapsed and buckled condition. Station Information Report (SIR) 89-079 documented this discovery and an event evaluation team was established to determine the cause. The PDT is a non-safety-related tank located in the Waste Processing Building. Two tanks are located side by side and designed to service two nuclear units. With the 'A' tank collapsed, the 'B' tank remains available to support Unit 1 operation. Licensee evaluation of this event for reportability under 10 CFR 50 requirements made a determination of nonreportability.

The inspector reviewed the Event Evaluation for SIR 89-079, noting that the failure to provide vacuum protection, due to isolation of the nitrogen purge supply valves to the tank during tank pump down, was the cause of the tank collapse. During tank pump down, an auxiliary operator (AO) misinterpreted a gauge reading normal atmospheric pressure (i.e., approximately 15 psia) to represent 15 psig overpressure on the tank. Thus, the AO believed that the procedural precaution regarding positive tank pressure to be maintained was met. This mistake was compounded by the misaligned nitrogen purge valves and a procedure which should have stressed the importance of monitoring tank pressure during pump down (the tank is not constantly vented).

The inspector reviewed the licensee recommendations resulting from the event evaluation team review. An NRC Region I effluents specialist inspector also examined the tank, reviewed this event and discussed his follow-up in NRC Region I Inspection Report 50-443/89-18. The licensee's Event Reduction Committee also will be reviewing this event and is required to report its findings to the Nuclear Safety Audit and Review Committee (NSARC).

The inspector has no further questions on the collapse of the 'A' PDT. The licensee's evaluation of this event was thorough and the resulting recommendations were found technically correct and comprehensive.

3.5.3 Engineered Safety Features (ESF) Actuation

On November 29, 1989, a loss of train 'A' power for a few seconds caused the control room emergency filter fan to start and align the control building air system in the recirculation mode. This is considered an ESF actuation and

was reported to the NRC Headquarters duty officer via the ENS in accordance with 10 CFR 50.72. Licensee evaluation of this event under 10 CFR 50.73 has scheduled LER 89-14 to be issued no later than December 29, 1989.

The inspector reviewed SIR 89-080 associated with this event. While all systems operated as required, the failure of battery charger EDE-BC-1A while restoring the train 'A' vital batteries from a cross-connected condition appears to require additional investigation and causal analysis. The ESF actuation was not caused by a valid signal and thus, while reportable, represents an electrical failure and interaction problem. Alignment of the station train 'A' vital battery buses in a cross-connected configuration is allowed by the station DC electrical design, with two 100% 125 volt batteries in each train. However, proper procedural control and implementation should allow restoration of each DC bus to its own battery supply without loss of vital equipment like a battery charger. Further NRC review will follow LER 89-14 issuance.

3.5.4 Westinghouse Technical Bulletin NSD-TB-89-06 Follow-up

On November 1, 1989, the Westinghouse Electric Corporation (W) issued a Technical Bulletin addressing the possibility of incorrect termi-point clip connections being installed in the solid state protection system (SSPS). A 100% visual inspection of the approximate 5200 termi-point clips in the SSPS, along with a sample of pull tests were recommended. The licensee implemented these recommendations and identified a pull test failure in the train 'B' SSPS, resulting in the requirement to implement a 100% pull test inspection.

The inspector witnessed a portion of the pull test inspections in SSPS control panel 1-MM-CP-13. Correct use of the applicable procedure, IS 89-1-1, and the use of calibrated tools were confirmed, as was the presence of knowledgeable quality control inspection personnel. The inspector interviewed the technicians responsible for the test and determined that the quality checks were being performed in accordance with the published acceptance criteria (reference: Operator's Quality Check Procedure for AMP TERMI-POINT Clip Application).

The inspector also discussed the results of the train 'B' inspection and the plans for the train 'A' SSPS inspection with the responsible system support manager. No inadequacies were found with the licensee response to W Technical Bulletin NSD-TB-89-06 and implementation of the recommended inspection program. There was appropriate QC involvement in the inspection process. Completion of the recommended inspection requirements for all safety-related termi-point clip installations is scheduled prior to plant heatup. Since the non-safety-related connections are not scheduled for inspection at this time, the inspector requested confirmation that visual inspection, in accordance with the W recommendation, would be performed. The licensee committed to conducting such inspection and tracking its accomplishment on the licensee's integrated commitment tracking system (ICTS), reference No. RE03104. Additionally, the licensee requested that W evaluate any delay of the non-safety connection inspections

until after completion of the power ascension test program. By letter dated November 16, 1989, W responded that there was no need to conduct an immediate inspection of the non-safety-related termi-point clip installations.

The inspector had no further questions on the termi-point clip inspection and replacement work.

4. Engineered Safety Features (ESF) System Walkdown

The inspector walked down accessible portions of the Residual Heat Removal (RHR) system. At the time, RHR train 'A' was in operation in the hot leg recirculation mode and RHR train 'B' was in a system outage. The purpose of the walkdown of train 'A' was to check on conformance with the most recent valve lineup and to ensure the system was operating properly, while the walkdown of train 'B' was performed to check the progress of outage work, maintenance and modifications.

The inspector checked the ESF lineup of the RHR train 'A' system from the primary loop connections inside containment to the penetration area and RHR equipment vault outside the containment. To verify proper valve lineup, the inspector utilized the licensee's operations form OS 1013.03A, "RHR System Lineup," and drawing 9763-F-805808, "RHR System Piping and Instrumentation Drawing." The inspector found two valves out of position per OS1013.03A; however, both discrepancies had been previously identified by the licensee and were being acceptably controlled and tracked with form OP10.3B, "System Lineup Review and Exception Sheet." In addition to the system lineup, the inspector reviewed the overall material condition of the system. The inspector noted that system component and area housekeeping was adequate, components were properly labeled, instrument calibration was up-to-date, and mechanical snubbers were properly aligned and attached. The one major discrepancy in system material condition was valve RH-V-8, the RH-P-8A pump discharge sample valve. The valve was found to be leaking, but the licensee had positive control of the situation. Radiological control barriers had been established and all leakage was being collected in a funnel and directed to a floor drain. Subsequent to the walkdown, the inspector reviewed a Request for Engineering Services (RES) that had been submitted by the licensee RHR System Engineer concerning RH-V-8 and other similar valves in the RHR system. The RES requested that all gate-type vent and drain valves be replaced with globe valves due to the extensive maintenance required for the gate valves. Based on the inspection of RHR train 'A' and in light of the proper documentation for all noted discrepancies, the inspector determined that the system was being effectively maintained and was capable of performing all required ESF functions.

Following the inspection of RHR train 'A', the inspector walked down the RHR 'B' train accompanied by the licensee RHR System Engineer. The purpose of this walkdown was to inspect the modifications made to train 'B' during the system outage. The same modifications had been made to train 'A' during its previous outage. One design change inspected was the addition of a check valve in series with each of two existing check valves that provide isolation of RHR

train 'B' from the Containment Building Spray system. This change represents a confirmatory item in the Seabrook Safety Evaluation Report, Supplement No. 8, documenting the licensee commitment to add the additional check valves.

Other modifications inspected were the substitution of a globe valve in place of a gate valve for the RHR pump flow control valve and the correction of a problem relating to pump vibration for the RHR pump impeller. Modification work was found to have been performed effectively and in a controlled manner. No discrepancies were identified. Also inspected during the train 'B' walkdown was the system material condition. With the exception of some piping insulation awaiting installation, the material condition of train 'B' was acceptable and the system appeared ready to be returned to service.

5. Containment Integrated Leakage Rate Test

From November 19 to November 22, 1989, the licensee conducted the containment Integrated Leakage Rate Test (CILRT) for the Unit 1 Containment as required by 10 CFR 50, Appendix J. The test was performed in accordance with station procedure number EX 1803.001, Revision 01, "Reactor Containment Integrated Leak Rate Test - Type A". The test was observed by a region-based inspector and a resident inspector. The inspectors reviewed the test procedure, witnessed preparations for test, and observed various portions of the test. Other documents reviewed include the CILRT test log, instrument calibration records, piping and instrument drawings and test results.

Pre-Test Setup

The inspector verified, on a sampling basis, the positioning of valves identified in station procedure EX 1803.001, Rev. 01. A drain valve, 1-FP-V-0922, at containment penetration X-38 was found not to be closed, which is the required test position. This valve also had 2 test tags on it instead of 1. When informed of this situation, the licensee investigated the cause of the discrepancy and then properly aligned and tagged the valve for the test. Other penetrations walked down were found to be in the required configuration.

The inspector reviewed and found acceptable the results of station procedure EX 1803.004, Rev. 00, "Containment and Containment Enclosure Surface Inspection," which was used to perform the inspection of the containment internal and external surfaces in accordance with 10 CFR 50 Appendix J (V.A.).

Instrumentation

The inspector reviewed the calibration records for the resistance temperature detectors (RTDs), dew cells, pressure detectors and mass flowmeters used for the test. The instruments' calibrations met the accuracy and time requirements of ANSI/ANS 56.8-1987 and were traceable to the National Bureau of Standards. A total of 26 RTDs, 6 dew cells (with 6 back-ups), 2 pressure detectors and 1 mass flowmeter (with 1 backup) were used for the test.

The test data collection and analysis were as follows:

-- The two pressure detectors indicated the containment pressure on the Data Logger at the test center.

-- The 26 RTDs provided input into the data logger and the temperature reading of each RTD could be selected.

-- The dew cells (and backups if selected) provided input into the data logger through 2 "phys-chem" monitors.

-- The data logger transmitted all data to the CILRT test computer at the test center.

-- The computer continually monitored instrument readings, and analyzed and printed test data and calculations every 20 minutes.

No unacceptable conditions were identified.

CILRT Chronology

11/19/89	1800	ILRT measurement system fully operable and ready.
11/20/89	0130	Began containment pressurization.
	1830	Test pressure reached, test boundary isolated from compressors (51 psig).
	1843	Began stabilization period.
	2343	Temperature stabilization criteria met.
	2343	Began ILRT (50.39 psig).
11/21/89	0625	Test terminated because of valve leakage.
	0643	Test restarted.
11/22/89	0643	ILRT ended (24 hour duration).
	0823	Stand. verification flow test. Imposed flowrate of 12.22 scfm (0.15%/day).
	1223	Verification flow completed.
	1223	Test completed.
	1829	Start depressurization.
11/22/89	0845	Exit interview held.
11/23/89	1514	Containment depressurized.

Test Performance and Control

Tours were made by the inspector before and during the CILRT to ensure that test activities were being conducted in accordance with the test procedure and within regulatory requirements. Test boundaries were surveyed for evidence

of leakage and proper valve positions. The inspector observed that the licensee's quality control group was monitoring the test and keeping abreast of situations.

During a walkdown of test boundaries with test personnel, a major leak was identified at penetration X-36 through vent valve RMW-V-94. This leak was determined to be coming through containment isolation valve RMW-V-30. The licensee evaluated the leak and elected to terminate the test, isolate the leak, and re-start the test. The inspector verified that this was accomplished within the scope of the station's procedure. The inspector independently examined the penetration area and then reviewed the last Local Leak Rate Test results of the leaking containment isolation valve (RMW-V-30). (See Findings paragraph below.)

CILRT Result

The containment successfully passed the "As-left" Integrated Leak Rate Test, demonstrating containment acceptability for power operation. The calculated leak rate using the "Mass Point Analysis" method was 0.0545 wt %/day (0.75 La is 0.1125 wt %/day). The "As Found" leak rate was indeterminate as described below.

Findings

The containment leak rate met the acceptance criteria for power operation in the "As-left" condition. The "As-found" condition is still indeterminate because of a need to add in subsequent LLRT data for RMW-V-30. The implications of these results were discussed with the licensee and the inspector confirmed that they were understood by the licensee. The test was performed within the guidelines of the procedure. All test personnel interviewed were knowledgeable and competent to perform their duties. The licensee's quality control organization monitored on-going testing. A review of the previous Type C test results of containment isolation valve RMW-V-30 showed "As-found" leakage as "undetermined" and "As-left" leakage of 5.54 scfh (after repairs). Since the problems with leakage of valve RMW-V-30 appear to be recurrent and have not been corrected by prior repairs, a root cause evaluation and determination of proper corrective action, beyond another valve repair, are warranted to ensure effective resolution. "As-found" leakage implications will be further assessed during routine review of the CILRT report.

6. Installation and Testing of Design Modifications

The inspector reviewed the documentation for and observed portions of the installation and testing of design coordination request (DCR) 86-481. This design change provides a high speed, automatic, static transfer switch between inverters UPS-I-1E and 1F and their respective maintenance supplies. The switch allows for uninterruptible transfer of power to vital instrument buses 1E and 1F, from inverter to maintenance supply and vice versa.

The uninterruptible power supplies (UPS) for buses 1E and 1F are the normal sources of power to the distribution panels that make up each bus. Each UPS unit consists of two major components: an AC-to-DC rectifier type power supply that converts 480 VAC power to 125 VDC and a DC-to-AC inverter that changes the 125 VDC to 120 VAC. On a loss of the 480 VAC supply or a failure of the rectifier, backup 125 VDC power is supplied to the inverter by the vital DC distribution system. If the UPS is not operational or malfunctions, the static transfer switch was to be installed to provide an alternate source of 120 VAC power. This power is supplied by a motor control center powered from the same emergency bus as the UPS, through a stepdown transformer and the static transfer switch to the power panel. The switch automatically selects between the inverter output or the alternate power source, whichever is most reliable. Once shifted to the alternate power source, the switch will automatically shift back to the inverter output when the UPS is functioning properly. The transfer switch can also be controlled manually using control pushbuttons located on the switch.

Prior to inspecting the installation, the inspector reviewed the documentation in the DCR package. This included the technical requirements and specifications for the UPS from the vendor, the Elgar Corporation, the licensee's engineering evaluation, the DCR implementation plan, and the DCR functional test requirements. Also reviewed as part of the DCR package was the 10 CFR 50.59 safety evaluation. DCR documentation was extensive and complete. The installation and test procedures were clear and thorough in their precautions and directions.

The installation of the static transfer switch involved mounting the switch, running additional conduit and cable from the vital instrument power panel to the transfer switch, and from the switch to the inverter, and UPS internal wiring modifications. The modifications were all contained within the essential switchgear room. Over a four day period, the inspector observed the completion of the UPS-I-1F static transfer switch installation and portions of the functional testing of the switch. The inspector noted that, during the installation and testing, the licensee maintained an adequate staff in the switchgear room to accomplish all work in a safe manner. As a minimum, an electrician, a work group supervisor, the system engineer and a quality control supervisor were present. The inspector inspected the modifications made to the 1F vital instrument power panel and to the 1F UPS cabinet and was satisfied that all work had been performed in an acceptable manner.

The testing portion of the DCR was intended to demonstrate operability of both the UPS and the newly installed transfer switch by a performance test. The test included loaded transfers of the static switch and UPS, as well as the placement of intentional grounds on the 480 VAC bus and the 125 VDC bus feeding the UPS. The placement of the grounds verified that the static switch/UPS output was not interrupted as a result of grounding. Through direct observation of the testing, the inspector determined that the tests were conducted in a controlled and safe manner. Proper barriers were placed around the work area and access to the switch gear room was controlled. Communications were established with the control room, and the DCR test procedures were rigorously followed. At one point during the testing, the system engineer had a question

concerning a procedure step. After discussing the matter with the shift superintendent, the conservative decision was made to convene a Station Operation Review Committee (SORC) to resolve the question rather than take the chance of changing or violating the procedure.

The inspector identified no inadequacies in the licensee implementation of this DCR for UPS-I-1F. DCR implementation for UPS-I-1E is scheduled to be performed in conjunction with the required 'A' train electrical system outage.

7. Quality Assurance/Corrective Action Activities

7.1 Low Power Test Program Audit

As discussed in NRC Region I Inspection Report 50-443/88-12, inspectors noted that the licensee QA department had not formulated any plans for providing a level II oversight review of the facility's proposed startup test program. As a result of this NRC concern, the licensee committed to performing a test surveillance program during low power tests. NHY QA Audit Report No. 89-A-05-05, "Low Power Test Program," dated August 15, 1989, summarizes the results of an audit designed to evaluate the licensee's compliance and implementation of the Low Power Testing Program.

The inspector reviewed the QA audit report. The report fulfills the commitment made by the licensee documented in Inspection Report 50-443/88-12. The audit provided broad coverage including review of control room activities and administrative controls associated with mode changes, housekeeping, chemistry, health physics and security. The multidisciplined team conducted the audits over a two month period and identified no deficiencies. However, the audit report did provide recommendations to enhance program performance. The inspector concluded that an adequate audit of the Low Power Test Program was conducted.

7.2 Corrective Action Plan Review

Item 1.C-1: revise policy on control room access to establish the maximum number of personnel allowed in the control room and the horseshoe area of the control room.

Operations Management Manual (OPMM) Revision 18 included changes to Chapter 3, Shift Operations, regarding control room manning and access. Subsection 1.F, Watch Station Conduct, has been revised to indicate that additional operators may be assigned to perform specific functions during complex evolutions. It further specifies that each operator be informed of the presence of additional personnel and be made aware of their function and limits. The revision also requires that access be limited to persons with official business or management authorized activities.

The authority and responsibility for controlling access is assigned to the control room commander (defined elsewhere in the OPMM). Examples of persons with official business in the control room are given. Additionally, requirements on Special Testing Activities and termination of those activities, along

with provisions for handling observers and visitors, are specified. Specific numerical limits for observers and visitors have been established. These numbers may only be exceeded with written authorization of the Operations Manager, who will specify by name personnel permitted access as observers and visitors for a specific activity. Authority and responsibility for controlling access to the horseshoe or "sacred" area is assigned to the senior on-shift operator. The inspector reviewed Revision 23 to the OPMM, dated November 10, 1989 and confirmed that the requirements have been carried over in subsequent revisions.

2.A-6: review the event evaluation procedure to determine if enhancements are required concerning the post-trip review, assignment of personnel, post-trip critiques and written chronologies.

The inspector reviewed Revision 2 to New Hampshire Yankee Procedure 12830, Event Evaluation and Reduction Program. The procedure has been strengthened. It now clearly states, as a requirement, that personnel are to receive training in the evaluation program prior to being called upon to perform an evaluation. The most significant improvement is the requirement to perform a critique for any event on site. This critique is to be conducted with all personnel who participated in or witnessed the event. This critique is to be conducted prior to releasing personnel from the site. The critique includes written descriptions of the event by all involved personnel and the generation of a synopsis and chronology by the Event Team Leader. This will ensure that the information is gathered and collated while it is still fresh in the minds of the participants.

Based upon the licensee's implementation of actions to address the control room access/work control and event evaluation concerns raised in Correction Action Plan items 1.C-1 and 2.A-6, no additional NRC inspection effort of this issue is required. Routine inspection of control room activities and the event analysis and evaluation process in the future will monitor the effectiveness of these corrective measures.

8. Follow-up of Licensee Reports and Open Items

8.1 Licensee Event Reports (LERs)

(Closed) LER No. 89-009, Technical Specification Surveillance Not Properly Performed and LER No. 89-013, Noncompliance with Technical Specification Action Requirements. Both of these LERs involved a violation of technical specification action statements caused by separate personnel errors. In the first case, a chemistry technician incorrectly performed the analysis of an effluent sample taken from the primary component cooling water (PCCW) head tank. Since the PCCW head tank rate of change alarm was out of service, sampling was required every twelve hours by a technical specification 3.3.3.9 action statement. Correctly analyzed samples taken before and after the subject sample indicated no actual activity problems, but the time duration between these valid samples exceeded the allowable technical specification duration. Hence, the violation was reported as a licensee event under 10 CFR 50.73.

In the second case, a portable monitor, installed to meet the action statement of technical specification 3.3.3.1 with the containment post-LOCA monitor out of service, was mistakenly unplugged for approximately five hours. The HP technician who unplugged the monitor to use the electrical receptacle for another purpose was not familiar with the technical specification requirements or aware of the consequences of unplugging the portable monitor.

In both cases, the technicians involved were counseled, additional training was conducted within the departments, and procedures were reviewed to ensure accuracy and clarity of directions provided to the technicians performing the work. A caution as to the consequences of unplugging energized equipment within the plant was also discussed in a station newsletter disseminated throughout the site and caution tag usage for electrical power cords was incorporated into health physics procedures for portable equipment.

The inspector reviewed the LERs and the licensee corrective action and determined that the discretionary criteria of 10 CFR 2, Appendix C, section V.G.1 have been satisfied. Based upon licensee identification, reporting and initiation of comprehensive corrective measures with respect to both of these examples of noncompliance with technical specification requirements and also in consideration of the minimal safety significance of the actual events, these violations are not being cited. Non-cited violation number 89-13-02 documents identification of this issue, which is hereby closed.

8.2 10 CFR 21 Report

(Closed) 10 CFR Part 21 Report No. 89-00-01: Potential Failure of Rosemount Transmitters. As discussed in NRC Region I Inspection Report 50-443/89-01, a potential defect involving the loss of oil in the transmitter sensing module was identified by Rosemount, Inc., for certain transmitters manufactured prior to July, 1989. The licensee's review has found 61 of the subject Rosemount Model 1153 and 1154 transmitters installed at Seabrook.

Since the problem with potential oil loss occurs slowly over time, the licensee's corrective action plan includes a special calibration program, transmitter performance trending, and replacement of the pressurizer pressure transmitters and any spare Rosemount transmitters in stock on a schedule which is consistent with the support of station activities. The inspector verified that all the subject transmitters had been or were being calibrated in a manner which would check for any degradation due to oil loss. The inspector also reviewed the Rosemount 10 CFR 21 notification, dated February 7, 1989, and evaluated the licensee's plan for addressing the stated concerns, based upon Rosemount's discussion of how the transmitters would exhibit reduced performance. It was also noted that testing by Rosemount, Inc. was conducted to determine limits in the performance degradation and methods in the detection of affected transmitters. The inspector confirmed that the licensee has reviewed and evaluated all of the latest relevant Technical Bulletin and report information from Rosemount, Inc., on this potential problem.

The inspector determined that licensee response and corrective action planning for this Rosemount Part 21 report to be both timely and comprehensive. Given the slowly developing nature of the potential problem, the licensee's monitoring program was assessed as adequate. Quarterly channel checks, over-range tests and normal calibrations of the subject transmitters should indicate performance degradation prior to component failure. Special calibrations, recently accomplished, provide adequate indication of transmitter acceptability and a baseline for future performance. The inspector considers licensee measures to address this vendor identified problem to be extensive and conducive to the identification of any actual hardware problems in the future.

10 CFR 21 Report No. 89-00-01 is closed.

8.3 Licensee Action on Previously Identified Items

(Closed) Unresolved Item 89-08-01: Unmonitored Release from the Turbine Building Sump. The inspector reviewed the licensee analysis of technical specification action statement requirements relative to Station Information Report SIR 89-042. The specific incident involving bypass of the turbine building sump radiation monitor was evaluated from both design basis and control adequacy standpoints. While it was determined that the turbine building sump was not intended to be dedicated solely to processing radioactive effluents, the program used to control temporary sump pump usage and coordinate action statement status requirements with control room operators required improvement. A procedure for the installation of temporary pumps was issued on October 5, 1989 to delineate the necessary administrative controls and coordination requirements. The use of Temporary Pump Request forms was formalized.

The inspector reviewed station operating procedure UNO599.047 governing temporary pump controls and checked other operating procedures affected by its issuance. Temporary Pump Requests were spot-checked, both in-process in the control room and in their final documented closeout format. Technical specification action statement coordination and clearance were noted to be properly controlled for the times the temporary turbine building sump pump was installed. The inspector also determined that the program of controls established by the licensee to address the original problem was broad enough in scope to adequately cover all temporary pump usage within the protected area.

Licensee controls in this area have been strengthened and procedural compliance with the new program of controls was checked by the inspector. The inspector identified no concerns with the licensee's current program for installing temporary pumps within the station and no specific problems were found with the use of the temporary turbine building sump pump. This unresolved item is closed.

(Closed) Unresolved Item 89-09-03: Failure to Perform Technical Specification Surveillances. The inspector reviewed the licensee's reportability determination for SIR 89-061, in which it was documented that certain radioactive liquid effluent and gaseous effluent monitoring instrumentation surveillances

had not been performed in the time intervals required by the technical specifications. Although repetitive task sheets (RTS) had been issued to conduct monthly source checks of the subject radiation monitors, these surveillance activities are redundant to the automatic source check accomplished by the monitors on a daily basis. This daily source check is logged into the plant computer and an alarm would be generated if the check were not completed.

The inspector discussed the automatic source check feature of the radiation monitors with licensee personnel, verifying that failure of the check would alarm similar to a monitor failure. In fact, the monthly RTS work requirements actually use the daily source check feature in the performance of the technical specification surveillance activities. The inspector also spot-checked the computer logging history for certain radiation monitors to confirm evidence and documentation of daily instrument source checks.

Based upon the fact that the internal source check design feature of the radiation monitors provides compliance with surveillance requirements, the licensee's failure to complete the RTS activities represents neither a technical specification noncompliance nor a reportable event. This issue is therefore resolved and closed.

However, as discussed in section 8.1 of this inspection report, a non-cited violation resulted from personnel errors leading to noncompliances with technical specification action requirements. While no noncompliance resulted from the failure to perform the radiation monitor RTS surveillance discussed in this section, the cause of the failure to perform a scheduled RTS activity should be analyzed by the licensee in the same vein as the personnel errors resulting in the non-cited violation.

9. Physical Security Plan Implementation and Controls

Protected Area Barrier

On November 7, 1989, NRC on-site review of the protected area barrier (PAB) identified a need to upgrade the PAB between Unit 1 and Unit 2 to meet the criteria for a permanent PAB for Unit 1. Existing compensatory measures were found adequate. On November 8, 1989, the following exceptions relative to NRC criteria for a PAB were identified to the licensee.

THIS PAGE CONTAINS SAFEGUARDS INFORMATION
AND IS NOT FOR PUBLIC DISCLOSURE.
IT IS INTENTIONALLY
LEFT BLANK.

Following a discussion of the above concerns, the licensee committed to submit, within 10 working days, a schedule for completing an engineering study to resolve the concerns, and a revision to the Plan to update the Plan and incorporate additional compensatory measures. The licensee also committed to provide a schedule for implementation of the separation barrier upgrades upon completion of the engineering study. The engineering study would also investigate the possible existence of additional separation barrier weaknesses, other than those discussed above, and address their resolution.

10. Management Meetings

At periodic intervals during the course of this inspection, meetings were held with licensee personnel to discuss the scope and findings of this inspection. An exit meeting was conducted on December 12, 1989, to discuss the inspection findings during the period. During this inspection, the NRC inspector received no comments from the licensee that any of their inspection items or issues contained proprietary information. No written material was provided to the licensee during this inspection.

JAN 0 8 1990

Docket No. 50-443

Public Service Company of New Hampshire
ATTN: Mr. Edward A. Brown, President
and Chief Executive Officer
New Hampshire Yankee Division
Post Office Box 300
Seabrook, New Hampshire 03874

Gentlemen:

Subject: Inspection Report No. 50-443/89-15

This refers to the special licensed operator proficiency evaluation inspection conducted by Mr. L. Briggs of this office on November 27 through December 1, 1989. Also discussed in this report are the results of the December 14 and 15, 1989 inspection of your corrective actions taken to address certain Corrective Action Plan items which resulted from the June 23, 1989 Confirmatory Action Letter, 89-11. Both portions of the inspection were conducted at the simulator training facility, Seabrook, New Hampshire. Mr. Briggs discussed the results of this special inspection with Messrs. D. Moody and B. Drawbridge and others of your staff on December 1 and 15, respectively.

Areas examined during this inspection are described in the NRC Region I Inspection Report which is enclosed with this letter. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observation of all six operating crews performing simulator scenario exercises developed by the NRC during the operator proficiency evaluation.

We have concluded that all six crews demonstrated a satisfactory level of performance during the operator proficiency evaluation.

Within the scope of this inspection, no violations were observed.

No reply to this letter is required. Your cooperation with us in this matter is appreciated.

Sincerely,

Original Signed By:

Robert M. Gallo, Chief
Operations Branch
Division of Reactor Safety

Enclosure: NRC Region I Inspection Report No. 50-443/89-15

IE01

Public Service Company of New Hampshire 2

cc w/encl:
J. C. Duffett, President and Chief Executive Officer, PSNH
T. C. Feigenbaum, Senior Vice President and Chief Operating Officer, NHY
J. M. Peschel, Operational Programs Manager, NHY
D. E. Moody, Station Manager, NHY
T. Harpster, Director of Licensing Services
R. Hallisey, Director, Dept. of Public Health, Commonwealth of Massachusetts
S. Woodhouse, Legislative Assistant
Public Document Room (PDR)
Local Public Document Room (LPDR)
Nuclear Safety Information Center (NSIC)
NRC Resident Inspector
State of New Hampshire, SLO
Commonwealth of Massachusetts, SLO Designee
Seabrook Hearing Service List

bcc w/encl:
Region I Docket Room (with concurrences)
T. Martin, DRA
M. Hodges, DRS
E. McCabe, DRP
J. Johnson, DRP
SRI - Seabrook (w/concurrences)
V. Nerses, NRR
K. Abraham, PAO (20) SALP Reports and All Inspection Reports
P. Eselgroth, DRS
L. Bripg, DRS
D. Silk, DRS
L. Sherfey, PNL
DRS Files (3)

bcc w/o encl:
Management Assistant, DRMA

DRS:RI	DRS:RI	DRS:RI	DRS:RI	DRS:RI	DRA:RI
Briggs/dmg/ajk	Eselgroth	Gallo	Johnston	Hodges	Martin
01/2/90	01/2/90	01/4/90	01/4/90	01/5/90	01/8/90

RA:RI
Russell
01/9/90

OFFICIAL RECORD COPY BRIGGS/SEABROOK 50-443/89-15 - 0001.0.1
01/02/90

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No.: 50-443/89-15

License No.: NPF-67

Licensee: Public Service Company of New Hampshire
1000 Elm Street
Manchester, New Hampshire 03105

Facility: Seabrook Station, Unit 1

Location: Seabrook, New Hampshire

Dates: November 27 - December 1 and December 14 and 15, 1989

Inspectors: L. Briggs, Sr. Operations Engineer
D. Silk, Sr. Operations Engineer
R. Temps, Resident Inspector
L. Sherfey, PNL Examiner

Submitted by: Larry E Briggs 1/5/90
L. Briggs, Sr. Operations Engineer Date

Approved By: Robert Wallo 1/5/90
P. Eselgroth, Chief, PWR Section, Operations Branch, Division of Reactor Safety Date

INSPECTION SUMMARY

The November 27 through December 1 inspection was a special announced inspection which assessed the Seabrook Unit 1 operator proficiency and use of facility procedures, primarily the Emergency Operating Procedures (EOP), during emergency situations and transients. This inspection evaluated the performance of the on-shift operating crews using NRC developed scenarios on the Seabrook plant specific simulator.

No violations or deviations were identified. All six operating crews demonstrated satisfactory performance on the simulator scenarios.

The December 14 and 15 inspection reviewed and closed five items from the Corrective Action Plan. Details of the review are contained in Section 4.0 of this report.

DETAILS

1.0 PERSONS CONTACTED AND SHIFT SUPERINTENDENTS OF EVALUATED CREW

Licensee Representatives

\+ C. Beverly, Regulatory Compliance
* # + L. Carlsen, Operations Training Supervisor
M. David, Shift Superintendent
M. Debay, Shift Superintendent
\+ B. Drawbridge, Executive Director of Nuclear Production
L. Fritz, Shift Superintendent
* # + J. Grillo, Operations Manager
# + R. Hanley, Operations Training Manager
+ G. Kann, Program Support Manager
* T. Harpster, Director of Licensing Services
G. Kilby, Shift Superintendent
S. Kirchhoff, Simulator Instructor
+ G. Kline, Power Ascension Test Program Manager
* D. Moody, Station Manager
* # J. Peterson, Assistant Operations Manager
* # + P. Richardson, New Hampshire Yankee Training Manager
G. St. Pierre, Shift Superintendent
R. Strickland, Shift Superintendent

U.S. Nuclear Regulatory Commission

* # + L. Briggs, Senior Operations Engineer
* # A. Cerne, Senior Resident Inspector, Seabrook Station
* # P. Eselgroth, Chief, PWR Section, Operations Branch
* # L. Sherfey, Senior Development Engineer, PNL
* # + D. Silk, Senior Operations Engineer
* # R. Temps, Resident Inspector, Nine Mile Point Unit 1

* Denotes those present at the December 1, 1989 exit meeting.
# Denotes those personnel that observed the NRC assessment process at various times at the Seabrook simulator.
\+ Denotes those present at the December 15, 1989 exit meeting.

2.0 OVERVIEW OF REPORT

During the week of November 27, 1989, the NRC conducted an evaluation of the proficiency of the Seabrook Unit 1 operators. This evaluation was performed using scenarios that were developed by the NRC for use on the Seabrook specific simulator.

During the inspection of December 14 and 15, the NRC closed five items from the licensee's Corrective Action Plan. This was accomplished by verifying procedural modifications to the licensee's Operations Management

Manual and the Power Ascension Test Program, as well as observing operations and startup testing personnel during pretest briefings and simulator scenarios of startup tests.

3.0 PROFICIENCY EVALUATION

Crew performance was evaluated using the current operator licensing examiner standards, NUREG-1021. The examiner standards provided an objective and standardized basis to evaluate the operating crews. Evaluation criteria were specifically developed for the Shift Superintendent (SS), the Unit Shift Supervisor (USS), and the overall crew which included the SS and the USS. The criteria used are shown in Attachment 1.

Each crew participated in two (2) scenarios. Each crew consisted of the following personnel:

One Shift Superintendent - Senior Reactor Operator licensed
One Unit Shift Supervisor - Senior Reactor Operator licensed
One Senior Control Room Operator - Reactor Operator licensed
One Control Room Operator - Reactor Operator licensed
Five Auxiliary Operators (simulated) - non-licensed operators

Following each scenario the NRC observed the crew self critique their performance and then held additional discussions to note any NRC observations not identified by the crew or facility staff.

The following table summarizes the results of the NRC evaluation of the Seabrook Unit 1 Operating Crew performance. Performance was evaluated by the use of the criteria of Attachment 1.

	TOTAL CREWS EVALUATED	DEMONSTRATED SATISFACTORY PERFORMANCE	DEMONSTRATED UNSATISFACTORY PERFORMANCE
SHIFT SUPERINTENDENT	6	6	0
UNIT SHIFT SUPERVISOR	6	6	0
CREW	6	6	0

3.1 CONCLUSIONS

The NRC Operating Crew Performance Evaluation Team determined that the performance of all six (6) Operating Crews satisfactorily met the rating factors and acceptance criteria of Attachment 1.

The team did note some specific operational program areas that could be strengthened to further enhance the operating crews performance. Each area is discussed below.

1. COMMUNICATIONS

The inspection team noted that the level of detail of the communications varied from crew to crew and even within crews between the different crew members. In particular the feedback from some crew members in response to directions given by the USS during EOP performance was not formal and standardized. The team determined that overall communications were satisfactory, but could be improved by additional training emphasis on standardization and formalization.

The licensee stated that a Standard Work Practices document addressing communications was in draft and would be issued and fully implemented by June 1, 1990. In the interim period, communications will be emphasized during the current requalification cycle which will address all crews within the next six (6) weeks.

2. STANDARDIZATION OF CREW OPERATING PRACTICES

During the team evaluation the NRC observed minor differences in operations communications and shift turnover practices between the various operating crews. Although the facility has a shift turnover procedure, the various crews implemented it to different degrees prior to the start of the scenarios. Some examples of differences observed during crew turnover and simulator operations were:

- The formality and detail of crew briefings during shift turnover for the simulator scenarios was not consistent between operating crews.

- Annunciator testing, although not required by procedure, was performed by most crews when assuming the simulator shift; however, some crews did not.

- The level of detail of communications varied between operating crews (addressed above).

The team noted that, although the above differences were slight and did not significantly impact crew performance during the simulator scenarios, a stronger emphasis on standardization of operations would serve to further enhance crew performance.

The licensee stated that the identified differences will be addressed during the current cycle of requalification training.

4.0 CORRECTIVE ACTION PLAN REVIEW

In response to the events of June 22, 1989, Region I issued Confirmatory Action Letter 89-11 on June 23, 1989. Subsequently New Hampshire Yankee (NHY) developed a Corrective Action Plan (CAP) addressing specific action items. The CAP was submitted to the NRC on July 12, 1989 with additional CAP information on August 25, 1989. The following CAP items, using the NHY's alpha-numeric designators, were reviewed to ensure that corrective actions taken by NHY to address identified weaknesses were adequate to correct the problem. Following each item is a discussion of NRC findings for that item.

- Item 1.A-11, Enhance the Licensed Operator Training Program to include simulator training which challenges the operators with regard to following procedures.

  The licensee developed a list of procedure compliance related questions that was used as discussion and training topics in the current operator requalification training phase that began on October 10, 1989. Also, all operators and instructors have attended procedural compliance training classes. Before the end of January 1990, all operating crews will have undergone a week of training which will include classroom and simulator training on 13 of the most complex Power Ascension Tests and the Corrective Action Letter (CAL) items addressing the June 22 Natural Circulation Test. Classroom training is conducted in the morning, followed by simulator training in the afternoon (as of December 15, 1989 two of six crews had completed this training). Simulator scenarios incorporating power ascension tests were used by the licensee to train and evaluate the operators regarding procedural compliance. The licensee used criteria similar to that of the examiner standards, NUREG-1021, to evaluate crew performance. The NRC observed the two crews in four scenarios that challenged procedural compliance. The NRC determined that the crews performed satisfactorily during the simulator scenarios observed.

- Item 1.C-2, Revise the Startup Test Program to require that a comprehensive pretest briefing be provided prior to the crew assuming the shift to ensure that the crew understands the test criteria, expected parameters and required actions.

  The Startup Test Program Description was converted to the Power

Ascension Test Program (PATP) and was approved as Station Management Manual (SSMM) Procedure SM 8.1. Section 4.2.2 of SM 8.1 states that a pretest briefing will be conducted to ensure that the oncoming crew of test engineers and operations personnel understands the test criteria, expected parameters, and required actions prior to operations personnel assuming the shift. Individual duties and responsibilities are to be reviewed and abnormal plant conditions or system configurations to be encountered during the test are to be discussed. Figure 5.3 of SM 8.1, PRETEST BRIEFING DOCUMENT GUIDELINES, provides directions on how to conduct the briefing. The four pretest briefings observed by the NRC during the simulator scenarios on December 15, 1989 were extensive and detailed with good interface between the test engineers and operations personnel.

- Item 1.C-3, Revise the Startup Test Program to require that additional preparation, including simulator rehearsals when feasible, be given to test crews assigned to perform complex tests.

Section 4.4 of SM 8.1 states that specific licensed operators and test personnel will receive simulator training and/or classroom training on tests listed in section 4.4. Training is to be conducted within three months of the actual performance of the test. The NRC audited classroom training for ST-23, Dynamic Automatic Steam Dump Control, and ST-39, Loss of Offsite Power Test. The training was conducted by the Shift Test Director responsible for that test. The training was thorough, with interaction between the instructor and the participants to discuss details and questions related to the tests. Simulator training was also satisfactorily conducted by the operations and test personnel and observed by the NRC, as discussed in Item 1.A-11 above.

- Item 1.D-9,Revise the Operations Management Manual and the Power Ascension Test Program to clearly state the responsibilities of the Operations and Power Ascension Test personnel to raise any issue that is not understood, or to stop an evolution if they do not understand their responsibilities in the conduct of the test.

Operations Management Manual (DPMM) section 1.1.1 and SM 8.1 section 3.0 states the responsibilities of the operations and test personnel, respectively, to raise any issue that is not understood or to stop an evolution if their responsibilities in the conduct of the test are not understood. During the pretest briefings, the NRC observed good interaction between the test engineers and operations personnel. Any area that was not understood was fully discussed until all personnel understood the planned evolution. Responsibilities of involved personnel were also discussed, with a clear understanding prior to assuming the shift that licensed operations personnel were in charge of plant activities and responsible for safe plant operation. During each of the scenarios observed by the NRC the operations and test

personnel were challenged with procedural compliance or test result validity problems induced by simulated equipment failures or plant anomalies. During each scenario the test and operations personnel discussed the issue and either interrupted or terminated the test as appropriate for the plant conditions.

- Item 2.B-3, Revise the Operations Management Manual to: 1) Clarify the integration of Startup Test personnel with the shift operating crew; 2) Clarify responsibility and authority when supplemental operators are assigned to a shift; 3) Encourage non-shift licensed Operations personnel to provide a point of clarification or information when an assigned operator's actions appear to be inappropriate or are not understood by the observer; 4) Require the Operations Management licensed personnel to define their responsibilities when they enter the horseshoe area of the Control Room during testing.

  OPMM section 1.1.3, Test Group Responsibilities, defines the integrations of test engineers personnel with operations personnel including coordination of and recommendations regarding plant conditions. Section 1.7.1, number 5., clarifies the responsibilities of additional operators assigned to perform various control room activities such as reactor startup, or feedwater control. Section 1.6.2 encourages input from operations personnel observing the test if an apparent abnormal condition arises. In a November 10, 1989 memorandum, the Executive Director of Nuclear Production stated company policy regarding management personnel responsibilities in the control room "horseshoe area," such as being knowledgeable of the safety and operational limits of a special evolution or, when it is not possible to be familiar with an evolution, to inform the USS or the SS that they are observers; and if inside the control room, but outside the "horseshoe area," the managers are to be considered as observers. Strict formality was practiced when entry was made into the "horseshoe area" of the simulator control room with each person stating the purpose of entry prior to being allowed initial access. During each scenario the OPMM was properly implemented.

4.1 CONCLUSION

NRC review of the changes to the OPMM discussed above, indicates that changes were appropriate and address the concerns of the CAL. In addition, the NRC noted that test engineers and the operations staff functioned well as a team during simulator scenario performance and freely exchanged information during both the scenarios and the pretest briefings.

5.0 EXIT MEETINGS

An exit meeting was conducted on December 1, 1989, at the training complex with the licensee representatives noted in Paragraph 1.0 of this report. The inspection scope and findings as detailed in this report were summarized at the meeting.

A second exit meeting was conducted on December 15, 1989, in which the NRC informed the licensee that five of the Corrective Action Plan items were considered closed.

At no time during the inspection was written material concerning inspection results or determinations provided to the licensee by the inspectors. This report does not contain any information subject to 10 CFR 2.790 restrictions.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406

Docket No. 50-443

JAN 0 9 1990

Public Service Company of New Hampshire
ATTN: Mr. Edward A. Brown
President and Chief Executive Officer
New Hampshire Yankee Division
Post Office Box 300
Seabrook, New Hampshire 03874

Gentlemen:

Subject: NRC Region I Inspection Report No. 50-443/89-21

This refers to the above subject safety inspection at the Seabrook Station, Unit No. 1, Seabrook, New Hampshire. The results of the inspection are described in the enclosed report, and were discussed with Mr. D. Moody and other members of your staff at an exit meeting on January 5, 1990.

This report documents acceptability of certain issues relating to Confirmatory Action Letter CAL 89-11. Review and evaluation of the remaining issues related to the CAL are being performed separately.

No reply to this letter is required. Thank you for your cooperation.

Sincerely,

Jon R. Johnson

Jon R. Johnson, Chief
Projects Branch No. 3
Division of Reactor Projects

Enclosure: NRC Region I Inspection Report No. 50-443/89-21

cc w/encl:
J. C. Duffett, President and Chief Executive Officer, PSNH
T. C. Feigenbaum, Senior Vice President and Chief Operating Officer, NHY
J. M. Peschel, Operational Programs Manager, NHY
D. E. Moody, Station Manager, NHY
T. Harpster, Director of Licensing Services
R. Hallisey, Director, Dept. of Public Health, Commonwealth of Massachusetts
S. Woodhouse, Legislative Assistant
Public Document Room (PDR)
Local Public Document Room (LPDR)
Nuclear Safety Information Center (NSIC)
NRC Resident Inspector
State of New Hampshire, SLO
Commonwealth of Massachusetts, SLO Designee
Seabrook Hearing Service List

SEABROOK HEARING SERVICE LIST

Public Service Company of New Hampshire
ATTN: Mr. Edward A. Brown, President
and Chief Executive Officer
Post Office Box 300
Seabrook, New Hampshire 03874

Public Service Company of New Hampshire
ATTN: Mr. John C. Duffett
President and Chief Executive Officer
P. O. Box 330
1000 Elm Street
Manchester, New Hampshire 03105

Mr. Donald E. Moody
Public Service Company of New Hampshire
Post Office Box 300
Seabrook, New Hampshire 03874

Mr. Ted C. Feigenbaum
Public Service Company of New Hampshire
Senior Vice President & Chief Operating Officer
Post Office Box 300
Seabrook, New Hampshire 03874

Massachusetts Transportation Building
ATTN: Sarah Woodhouse
Legislative Assistant
Ten Park Plaza - Suite 3220
Boston, Massachusetts 02116

Thomas Dignan, Esq
John A. Ritscher, Esq.
Ropes and Gray
225 Franklin Street
Boston, Massachusetts 02110

Mr. Bruce Beckley, Project Manager
New Hampshire Yankee
P.O. Box 330
Manchester, New Hampshire 03105

USNRC Resident Inspector
Post Office Box 1149
Seabrook, New Hampshire 03874

Mr. T. Harpster
Public Service Company of New Hampshire
P.O. Box 300
Seabrook, New Hampshire 03874

Mr. James M. Peschel
Public Service Company of New Hampshire
Post Office Box 300
Seabrook, New Hampshire 03874

Mr. R. Hallisey, Director
Dept. of Public Health
Commonwealth of Masssachusetts
Radiation Control Program
150 Tremont Street, 4th Floor
Boston, MA 02111

E. Tupper Kinger, Esq.
Assistant Attorney General
Office of Attorney General
208 State House Annex
Concord, New Hampshire 03301

Jerard A. Crouteau, Constable
82 Beach Road
P. O. Box 5501
Salisbury, Massachusetts 01950

Dr. Murray Tye, President
Sun Valley Association
209 Summer Street
Haverhill, Massachusetts 08139

Robert A. Backus, Esq.
Backus, Meyer and Solomon
116 Lowell Street
P. O. Box 516
Manchester, New Hampshire 03106

Phillip Ahren, Esq.
Assistant Attorney General
Office of the Attorney General
State House Station #6
Augusta, Maine 04333

Steven Olesky, Esq.
Office of the Attorney General
One Asburton Place
P. O. Box 330
Boston, Massachusetts 02108

Ms. Diana P. Randall
70 Collins Street
Seabrook, New Hampshire 03874

Richard Hampe, Esq.
New Hampshire Civil Defense Agency
107 Pleasant Street
Concord, New Hampshire 03874

Mr. Calvin A. Canney, City Manager
City Hall
126 Daniel Street
Portsmouth, New Hampshire 03801

Board of Selectmen
RFD Dalton Road
Brentwood, New Hampshire 03833

Chairman, Board of Selectmen
Town Hall
South Hampton, New Hampshire 03827

Mr. Angie Machiros, Chairman
Board of Selectmen
for the Town of Newbury
25 High Road
Newbury, Massachusetts 01950

George D. Bisbee, Esq.
Assistant Attorney General
Office of the Attorney General
25 Capitol Street
Concord, New Hampshire 03301

Diane Curran, Esq.
Harmon and Weiss
2001 S. Street, N.W.
Suite 430
Washington, D.C. 20009

D. Pierre G. Cameron, Jr., Esq
General Counsel
Public Service Company of
New Hampshire
Manchester, New Hampshire 03105

Mr. Alfred V. Sargent, Chairman
Board of Selectmen
Town of Salisbury, MA 01950

Ms. Suzanne Breiseth
Town of Hampton Falls
Drinkwater Road
Hampton Falls, New Hampshire 03844

Senator Gordon J. Humphrey
ATTN: Tom Burack
U.S. Senate
531 Hart Senate Office Building
Washington, D.C. 20510

Mr. Owen B. Durgin, Chairman
Durham Board of Selectmen
Town of Durham
Durham, New Hampshire 03824

Rye Nuclear Intervention Committee
c/o Rye Town Hall
10 Central Road
Rye, New Hampshire 03870

Jane Spector
Federal Energy Regulatory Comm.
825 North Capitol Street, N.E.
Room 8105
Washington, D.C. 20426

Ms. Rosemary Cashman, Chairman
Board of Selectmen
Town of Amesbury
Town Hall
Amesbury, Massachusetts 01913

Honorable Peter J. Matthews
Mayor, City of Newburyport
City Hall
Newburyport, Massachusetts 01950

Administrative Judge
Alan S. Rosenthal, Chairman
Atomic Safety and Licensing Appeal Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Administrative Judge
Emmeth A. Luebke
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Edwin J. Reis, Esq.
Office of the General Counsel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Edward A. Thomas
Federal Emergency Management Agency
442 J. W. McCormack (POCH)
Boston, Massachusetts 02109

Paul McEachern, Esq.
Shaines and McEachern
25 Maplewood Avenue
Portsmouth, New Hampshire 03801

Board of Selectmen
10 Central Street
Rye, New Hampshire 03870

Mr. R. Sweeney
New Hampshire Yankee Division
Public Service Company of New Hampshire
Suite 610, Three Metro Center
Bethesda, Maryland 20814

Administrative Judge
Howard A. Wilber
Atomic Safety and Licensing Appeal Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Administrative Judge
Thomas S. Moore, Esq.
Atomic Safety and Licensing Appeal Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Administrative Judge
Jerry Harbour
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

H. Joseph Flynn, Esq.
Assistant General Counsel
Federal Emergency Management Agency
500 C. Street, S.W.
Washington, D.C. 20472

Carol S. Sneider, Esq.
Assistant Attorney General
Office of the Attorney General
One Ashburton Place, 19th Floor
Boston, Massachusetts 02108

Richard A. Haaps, Esq
Haaps and McNicholas
35 Pleasant Street
Concord, New Hampshire 03301

Allen Lampert
Civil Defense Director
Town of Brentwood
20 Franklin Street
Exeter, New Hampshire 03833

William Armstrong
Civil Defense Director
Town of Exeter
10 Front Street
Exeter, New Hampshire 03833

Anne Goodman, Chairman
Board of Selectmen
13-15 Newmarket Road
Durham, New Hampshire 03824

Norman C. Kantner
Superintendent of Schools
School Administrative Unit No. 21
Aluani Drive
Hampton, New Hampshire 03842

Jane Doughty
Seacoast Anti-Pollution League
5 Market Street
Portsmouth, New Hampshire 03801

Mr. Robert Carrigg, Chairman
Board of Selectmen
Town Office
Atlant Avenue
North Hampton, New Hampshire 03870

Sandra Gavutis, Chairman
Board of Selectmen
RFD #1, Box 1154
Kensington, New Hampshire 03827

Stanley W. Knowles, Chairman
Board of Selectmen
P. O. Box 710
North Hampton, New Hampshire 03862

Judith H. Mitzner
Silverglate, Gertner, Baker, Fine,
Good, and Mitzner
88 Broad Street
Boston, Massachusetts 02110

Gary W. Holmes, Esq.
Holmes and Ellis
47 Winnacunnet Road
Hampton, New Hampshire 03842

Adjudicatory File
Atomic Safety and Licensing Board
Panel Docket
U.S. Nuclear Regulatory Commission
Washington, DC 20555

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Docket/Report No.: 50-443/89-21 License No.: NPF-67

Licensee: Public Service Company of New Hampshire
1000 Elm Street
Manchester, N.H. 03105

Facility: Seabrook Station, Unit No. 1, Seabrook, New Hampshire

Dates: December 11, 1989 - January 5, 1990

Inspectors: A. Cerne, Senior Resident Inspector
N. Dudley, Project Engineer
J. Trapp, Senior Reactor Engineer
R. Fuhrmeister, Resident Inspector
S. Barr, Reactor Engineer
J. Yerokun, Reactor Engineer

Approved By: Ebe C. McCabe, Jr. 1/9/90
Ebe C. McCabe, Chief, Reactor Projects Section 3B Date

Areas Inspected: Corrective Action Plan Items, a TMI Action Plan Item, an allegation, NRC Open Items, and security issues.

Results: Corrective Action Plan implementation was found to be appropriate. NUREG 0737, Item II.B.2 was found to be adequately addressed. The allegation was found to be without substance. Two violations were closed. Security compensatory measures were found to be properly implemented.

TABLE OF CONTENTS

DETAILS

1.0 Summary

This inspection addressed issues raised in Confirmatory Action Letter 89-11. It also reviewed other issues related to readiness for safe full power operation. The inspection included review of documentation, observation of work in-progress, observation of training, and interviews. Corrective Action Plan status (Section 2), TMI Action Plan status (Section 3), allegations (Section 4), previously issued NRC violations (Section 5), and Site Security (Section 6) were inspected.

2.0 Confirmatory Action Letter Issues (92701)

In response to the problems associated with the June 22, 1989 Natural Circulation Test, NRC Region I issued Confirmatory Action Letter 89-11. Subsequently, New Hampshire Yankee (NHY) developed a Corrective Action Plan (CAP) addressing 55 specific points. The following paragraphs discuss NRC inspection of items from the CAP, using their corresponding alpha-numeric designations (e.g., 1.A-11).

a. CAP Item 1.B-9: Expand the MODE change checklist process to allow it to be used to perform the pre-test checklist for major system testing and integrated system testing.

Station Management Manual, SM 8.1, "Power Ascension Test Program," Form SM 8.1G, "Verification of Plant Material Condition," and Form SM 8.1H, "Outstanding Activity List," have been added to test procedures requiring "Specific Crew" training. A prerequisite for these procedures will be to complete these forms, which are essentially the same as those for mode changes. Each manager of major support organizations must review outstanding items and identify those which may affect test performance. Activities identified are tracked on Form SM 8.1G and must be closed prior to test performance.

A second prerequisite for test procedures requiring "Specific Crew" training requires the Test Director and the Shift Superintendent to verify that no open work requests on the systems/components identified on the System Readiness List will affect the performance or results of the test. The administrative control for the System Readiness List is presently in draft form.

The inspector reviewed Startup Test procedures and verified that the prerequisites required system readiness reviews. Test procedures, which did not require "Specific Crew" training, were also found to contain operability prerequisites for specific equipment required for test performance. The inspector found the action taken by the licensee to determine readiness of plant equipment, prior to power ascension testing, to be adequate.

This item is closed.

b. CAP Item 1.C-2: Revise the Startup Test Program to require a more comprehensive pre-test briefing prior to a test crew going on shift to ensure that the crew understands the test criteria, expected parameters, and required actions.

Station Management Manual SM 8.1, "Power Ascension Test Program," section 4.2.2 requires a pre-test briefing for all oncoming test and operations personnel prior to the oncoming crew assuming the shift. The briefing is to be conducted by the Test Director using the Pretest Briefing Document. The Pretest Briefing Document is required to be written and submitted for SORC approval with the test procedure. Pretest Briefing Document Guidelines are provided in SM 8.1, Figure 5.3.

The licensee has improved the training on conducting pre-test briefings by including pre-test briefings by the Test Directors as part of the simulator training. The briefings are then evaluated as is the rest of the training on the simulator.

The inspector reviewed SM 8.1 with regard to pretest briefing requirements and observed briefings being conducted as part of simulator training. The inspector concluded that the licensee has taken appropriate steps to assure quality pre-test briefings during the Power Ascension Program.

This item is closed.

c. CAP Item 1.C-3: Revise the Startup Test Program to require that additional preparation, including simulator rehearsals when feasible, be given to test crews assigned to perform complex tests.

See Detail 2.d write-up on CAP Item 1.C-4 below.

This item is closed.

d. CAP Item 1.C-4: Revise the Power Ascension Test Program to require that test specific training be conducted within three months of the conduct of the test.

Station Management Manual SM 8.1, "Power Ascension Test Program," section 4.4, "Training for Power Ascension Tests," describes training requirements for each power ascension test procedure. Licensed Operators and Test Personnel receive one week of training on power ascension test procedures. SM 8.1 specifies that this training shall be conducted no more than three months prior to test performance. Control of personnel training qualifications and records for power ascension tests are to be controlled in ST-1, "Startup Program Administration." Supplementary additional test specific training is to be provided, prior to test conduct, to individuals performing the more complex power ascension tests.

The inspector reviewed the administrative changes made to the Power Ascension Test Program and found the changes enhance the training provided to the power ascension test personnel and to the licensed operators. Providing additional simulator training within three months of test conduct is satisfactorily controlled by the procedures and is presently being accomplished.

This item is closed.

e. CAP Item 1.D-1: Review the Startup Test Program and remaining start-up Test Procedures and revise as appropriate to incorporate the guidance in the Station Management Manual and other applicable NHY manuals, and to ensure that the test procedure format and guidance are consistent with current Station Operating Procedure guidance.

The licensee has updated the Startup Test Program and Startup Test Procedures to incorporate guidance in Station Management Manual. NRC sampling checks found the test procedure format and guidance consistent with Station Operating Procedure guidance.

The format of the test procedures reviewed was in accordance with Station Operating Procedure SM 6.2, Revision 9, which provides the standards for preparing, reviewing and approving station operating and special procedures.

Power Ascension Test Program (FATP) procedure SM 8.1, Revision 0, contains guidance to ensure that test procedures are consistent with station operating procedures. SM8.1 requires that test procedures for power ascension be reviewed and revised in accordance with procedure SM 6.2.

The inspector (1) concluded that the licensee guidance provided in Procedures SM 8.1 and SM 6.2 was acceptable and (2) reviewed several power ascension test procedures and found that they were in accordance with SM 6.2.

This item is closed.

f. CAP Item 1.D-4: Revise the Startup Test Procedures which will be used for power ascension and similar testing to make them part of the Station Operating Procedure System.

See Detail 2.e write-up on CAP Item 1.D-1 above.

This item is closed.

g. CAP Item 1.D-5: Establish a new Power Ascension Test organization which that will work closely with Operations and which has clearly defined responsibilities specifying who is responsible for all aspects of the Power Ascension Test Program.

The licensee has established a new Power Ascension Test Organization. Station Procedure SM 8.1, revision 0, was issued to outline the administration of the power Ascension Test Program. The inspector reviewed SM 8.1 and found that it adequately outlines the responsibilities of the personnel involved with the PATP. The procedure provides directions on the Program's interface with operations and other departments within the station. SM 8.1 explains the organizational setup of the PATP and the responsibilities of the various groups and members of the organization. It also outlines the proper methods of conducting tests, reviewing test results, training personnel for test performance, and writing test procedures. The inspector witnessed implementation of the PATP procedure regarding personnel training. Ongoing simulator training of test personnel was observed. This training involved the Program's management, Operations and Quality Control departments, and PATP test directors.

This item is closed.

h. CAP Item 1.D-8: Review the Power Ascension Test Program to ensure that the Power Ascension Test Program Manager provides frequent briefings to the Executive Director - Nuclear Production, Station Manager and Operations Manager on program status and upcoming evolutions to ensure management involvement.

The Power Ascension Test Program ensures that the PATP Manager provides frequent briefings to the Executive Director - Nuclear production, Station Manager and Operations Manager on program status and upcoming evolutions to ensure management involvement in the power ascension program. Related instructions are provided in PATP Procedure SM 8.1, Revision 0. Section 4.1.1 of the procedure describes the responsibilities of the program Manager and also specifies that the Manager will provide frequent briefings to associated personnel. The inspector reviewed program Procedure SM 8.1 and found that it adequately provides for keeping the licensee's upper management abreast of program situations.

This item is closed.

i. CAP Item 1.D-10: Perform a safety evaluation of the Power Ascension Test Program procedures to verify that the conduct of the tests within the test parameters will not involve an unreviewed safety question.

To further assure that testing within the test parameters during the power Ascension Test Program will not involve an unreviewed safety question, the licensee is having Yankee Nuclear Services Division (YNSD) perform independent engineering reviews of all Power Ascension test procedures. After performing these reviews, YNSD transmits engineering evaluations to the Station. The purpose of the reviews is to ensure that the procedures' test objectives will be achieved

and that Regulatory Guide 1.68 and the commitments of the FSAR will be met. This review also evaluates the potential for unplanned trips or ESFAS actuation. The 10 CFR 50.59 applicability determination developed by the station is also reviewed for concurrence or improvement. YNSD then makes recommendations for improvements in the procedures, if any are deemed necessary. These YNSD comments are reviewed and discussed at the station and incorporated into the procedures prior to Station Operations Review Committee (SORC) approval. If a procedure has already been SORC approved, the procedure is revised (per Procedure SM 6.2) to incorporate YNPD's comments and taken through the SORC process again.

The inspector reviewed the engineering evaluations of ST-22 (Natural Circulation Test) and ST-24 (Automatic Reactor Control). These evaluations showed an in-depth technical review by YNSD. This additional and independent review and evaluation increases the assurance that testing within test parameters will not involve an unreviewed safety question.

This item is closed.

j. CAP Item 2.A-7: Revise the Post-Trip Review Procedure and the Event Evaluation Procedure to require that the Human Performance Evaluation System be utilized in the ultimate evaluation and resolution of unplanned reactor trips.

The licensee has made changes to the Post-Trip Review Procedure and to the Event Evaluation Procedure to include Human Performance Evaluation into the procedures.

The Human Performance and Evaluation System Coordinator is notified any time there is a Reactor Trip or ESF actuation. Post-Trip Review Procedure Step 7.4.1a requires human performance issues to be addressed prior to authorizing restart. The Event Evaluation and Reduction Program has been expanded to require an event evaluation and preliminary recommendations to be made prior to restart after trips which occur during the Power Ascension Program.

The inspector reviewed the changes made to assure human factors issues are addressed following reactor trips and found the action taken to be adequate.

This item is closed.

k. CAP Item 2.B-1: Issue letters of reprimand to the Operations chain of command management personnel who were present in the Control Room during the Natural Circulation Test, the personnel who were spoken to

by the NRC inspectors regarding the 17% pressurizer level trip criterion during the test, and the onshift operators and startup engineers who had the authority and responsibility to prevent the procedure violation.

The inspector reviewed eight letters of reprimand which were issued. All were dated July 11 or July 12, 1989. Each letter was signed by the appropriate manager and discussed the appropriateness of the reprimand action and the specific bases for the conclusion that the reprimand was necessary. Also discussed in the letters were expectations for improvement in each individual's future performance. The inspector interviewed licensee personnel and received confirmation that the letters were officially placed in the individual personnel files.

This item is closed.

l. CAP Item 2.B-4: Establish management personnel policy and briefing that focuses on the obligation to be cognizant of safety and operational limits associated with operations and test activities observed in the Control Room.

A memorandum was issued November 10, 1989 by the Executive Director - Nuclear Production promulgating the policy regarding performance of New Hampshire Yankee Line Management when they visit the Control Room. Managers in the Operations chain of command are encouraged to spend time in the plant and the Control Room. When in the "horseshoe area" of the Control Room, it is their responsibility to be knowledgeable of safety and operational limits of evolutions in progress in order to provide appropriate guidance and direction to the operating crew if required. In those cases where it is not possible for them to become familiar with a special evolution prior to entering the "horseshoe area," they are required to inform the Unit shift Supervisor (USS) or Shift Superintendent (SS) that they are there as an observer. When outside the "horseshoe area" they are understood to be acting as observers only, unless they inform the USS or SS otherwise. All line managers were briefed regarding this policy when it was implemented. This policy, which was found acceptable during this inspection, is to be included in the next revision of the Production Management Manual.

This item is closed.

m. CAP Item 2.B-5: Conduct operating philosophy and event analysis seminars for production management and licensed personnel.

The inspector observed an event analysis seminar on December 15, 1989. The seminar was led by the Executive Director - Nuclear Production. Participants were an operating crew consisting of licensed operators, startup personnel, and system engineers. The seminar reviewed two case studies of events at licensed reactors: the 1985 loss

of feedwater at Davis-Besse and the Natural Circulation Test at Seabrook. The crew review of the sequence of events in both cases pointed out problems and their probable causes. It was reiterated several times that the purpose of these case studies was to identify problems and possible solutions, not to lay blame. The session concluded with a discussion of the procedural compliance policy and effectiveness of the training being performed, whether or not it addressed identified problems from the June 22 event. NRC review concluded that such seminars provide valid training which met NHY CAP commitments and was acceptable.

This item is closed.

n. CAP Item 2.B-6: Rotate additional station operations managers through the INPO Senior Plant Management Course.

New Hampsnire Yankee (NHY) plans to send one additional person to the National Academy for Nuclear Training course titled Senior Nuclear Plant Management Course to be conducted in 1990. By the same letter, NHY requested slots be allocated for 2 more Seabrook management personnel in future courses. NRC review concluded that this planning acceptably fulfilled the NHY CAP commitment and was acceptable.

This item is closed.

3.0 TMI Action Plan Requirements (2515/65)

NUREG 0737, "Clarification of TMI Action Plan Requirements," forwarded the post-TMI requirements which had been approved for implementation by the Commission to operating power reactor licensees and applicants for operating licenses. During the inspection period the inspector reviewed the New Hampshire Yankee (NHY) response to the requirements of Clarification Item II.B.2, "Design Review of Plant Shielding and Environmental Qualification of Equipment for Spaces/Systems Which May Be Used in Post Accident Operations." This item required licensees to perform a radiation and shielding design review of the spaces around systems that may, as a result of an accident, contain highly radioactive materials, and to provide for adequate access to vital areas and protection of safety equipment during post accident operation of these systems.

The inspector initially discussed the matter with the NHY Health Physics Department supervisor and was informed that the required radiation and shielding review had been performed and was documented in the "Seabrook Station Post-Accident Dose Engineering Manual." A copy of the manual was provided to the inspector, and upon review, it was determined that the manual addressed the majority of the requirements stated in Item II B.2. The manual describes the post-accident radiation environment for Seabrook Station, including accident dose rate zone maps and post-accident dose rates and time-integrated doses for various pipe/equipment configurations. Also contained in the manual are several chapters describing the methodology and bases used to generate these zone maps and dose tables. Through

discussions with the Health Physics supervisor and inspection of the "Post-Accident Dose Engineering Manual," the inspector determined that the guidelines provided in NUREG 0737, Item II.B.2, had been used by NHY in their post-accident radiation and shielding reviews. All required source terms, vital areas, systems, and dose rate criteria were found to be properly addressed by the licensee. The one area required by Item II.B.2 to be reviewed but not addressed by the "Post-Accident Dose Engineering Manual" is radiation qualification of safety-related equipment. To ensure that this area had been addressed, the inspector interviewed the NHY Equipment Qualification (EQ) Program supervisor and was provided access to the licensee EQ files and reports. Through inspection of Qualification Evaluation Worksheets and qualification reports of equipment important to safety, the inspector determined that the proper source terms had been considered and that all required safety-related equipment had been qualified per Item II.B.2.

Through discussions with NHY personnel and through inspection of licensee documentation, the inspector concluded that all requirements of NUREG 0737, Item II.B.2, had been met by the licensee. This item is closed.

4.0 Allegation RI-89-A-0146 on Procedure Inadequacies (71707)

The NRC Region I office received an allegation in the beginning of the inspection period concerning procedure inaccuracies at Seabrook Station. Specifically, the alleger stated that a breakdown in the accuracy of procedures had occurred during the transition from the use of symbols in procedures to the strict use of text. The alleger also stated that procedures lacked complete information such as leaving procedure cross-references blank, and specified two procedures that did so.

Inspector follow-up found that the procedure numbers provided by the alleger did not exist at Seabrook. Procedure numbering at the site is different than that referred to by the alleger. The inspector reviewed certain procedures whose numerical designations resembled those specified by the alleger, but no deficiencies of the type alleged were identified.

Beginning in early 1986, operating procedures at Seabrook have been inspected in accordance with the NRC manual chapter governing inspection of operating reactors. Initial review had questioned some procedure aspects (e.g., reference usage), but overall procedure adequacy has not been a concern. To address NRC concerns, NHY established a continuing Procedure Consistency Review Program in 1986. NRC inspection of procedures, including procedural consistency and overall quality, have since identified acceptable corrective actions, no unresolved safety concerns, and overall acceptability of station procedures.

To further assess whether problems exist in this area, the inspector reviewed a sampling of operating, maintenance, chemistry and radiological control, and emergency operating procedures. The inspector identified no problems described by the alleger. Two typographical errors with no

safety significance were found. The procedures reviewed were adequately written. As additional follow-up, the inspector discussed the matter with the NHY Production Services Manager (who supervises the Records Management Department), the reactor engineer who had supervised the Procedure Consistency Review Program over the past three years, several operating crew Shift Superintendents, and the Assistant Operations Department Manager. The inspector determined that the Operations Department was the only department on site that had a dedicated effort to convert symbols to text in their procedures, and that neither the Procedure Consistency Review Program, the operating crews, nor operations management had identified any problems with the conversion process. The personnel interviewed by the inspector cited one typographical error that had been identified and corrected by the normal, in-place procedure review process and, in addition, explained that the "greater than" and "less than" symbology had been removed from Emergency Operating Procedure E.0, Attachment 1, in order to avoid any misunderstanding by the operators who use that procedure. Both of these corrections/changes to procedures were licensee-identified and accomplished months prior to the submission of the allegation. The inspector found the interviewed personnel aware of and familiar with the guidelines and rules for procedure writing and correction as delineated in station administrative procedures OP-11.2, "Operating Procedures Writer's Guide," and SM-6.2, "Station Operating Procedures."

The inspector reviewed various station procedures and discussed the issues of symbol-to-text conversion and incomplete information in station procedures with licensee personnel in light of the received allegation. That effort identified no deficiency described by the alleger. This allegation was unsubstantiated.

5.0 Licensee Action on Previous NRC Open Items (92702)

a. (Closed) Violation (89-82-01), Failure to Follow Startup Test Procedures. New Hampshire Yankee (NHY) undertook a number of actions to address this violation. These actions are described in, and were implemented as part of, the Corrective Action Plan. Actions taken in response to this violation included shift meetings to review the procedure compliance policy, issuance of a memorandum by the NHY President to all Seabrook site staff re-emphasizing the requirement to follow procedures, revising the Startup Test Program Description to include it in the Power Ascension Test Program, and strengthening its requirements for equipment status verification and pre-test briefings, replacement of the Startup Test Department with a Power Ascension Test Program organization that has more clearly defined and documented interfaces with the Operations department, revising the remaining Startup Test Procedures to include the changes implemented in the programs and to provide additional guidance on terminating tests and exiting test procedures, and providing crew training on PATP test procedures in the simulator. CAL 89-11 is being separately processed for closure and, upon completion of that action, this violation is also closed.

b. (Closed) Violation (89-82-02), Inadequate Corrective Action, Natural Circulation Test. Actions taken by NHY to address this violation included including the Startup Test Program in the Power Ascension Test Program with strengthened requirements for comprehensive pre-test briefings; additional guidance on terminating tests and exiting test procedures; simulator training of operating crews on test procedures; more clearly defined authority, responsibility, and interfaces for operations and testing personnel; relieving the Vice President - Nuclear Production and replacing him with an Executive Director - Nuclear Production; requiring Event Evaluation Reports to be complete prior to recommending restart if a reactor trip occurs during testing; and making the human performance evaluation system a part of the post-trip review. CAL 89-11 is being separately processed for closure and, upon completion of that action, this violation is also closed.

c. (Open) Unresolved Item (89-07-01), Emergency Feedwater Pump Turbine (EFWPT) Control Valve Leakage. NHY has taken the following actions in order to resolve the problem of steam leaking through the EFWPT control valves and causing cycling of the downstream check valves:

Engineering evaluation 89-021 has been performed to determine the effects of leakage past the steam supply control valves.

The steam supply control valves were replaced under Design Change Request (DCR) 89-041. The replacement valves were designed and manufactured to the codes and standards applicable to the original valves. The differences in style are to provide improved reliability and reduce maintenance. The replacement valves are considered by NHY to be better suited to operate under the anticipated system conditions.

A drain trap has been installed on each steam supply header between the isolation valve (MS-V-393/394) and the downstream check valve (MS-94/96) to help prevent check valve cycling (the MS-V-393/394 replacement valves were ordered to the lowest achievable seat leakage criteria, but an absolutely steam tight condition is not expected). Each steam trap arrangement includes a normally open maintenance isolation valve, a flow restricting orifice, and a 'Bestobell' steam trap.

Check valves 94 and 96 were disassembled and inspected for damage. Valve 94 was found to be damaged and was refurbished. Valve 96 was found to be excessively degraded and was cut out and replaced. Post-maintenance testing is to be performed under Special Test STP-121, "Turbine Driven Emergency Feedwater Pump Start Verification Test."

The inspector reviewed the response to the unresolved item, the Engineering Evaluation, the DCR, and the work requests used to refurbish/replace the check valves. Discussions were also held with personnel

in the NHY Engineering organization. The inspector conducted an independent walkdown of the installed drain/trap arrangement and the new steam supply control valves. This item remains open pending completion of the testing under STP-121.

d. (Open) Unresolved Item (89-07-02), RHR Check Valves RH-15, 29, 30, and 31 Leakage. The following corrective actions have been taken regarding the resolution of the RHR Check Valve leakage problem:

A "Request for Engineering Services" (RES) was issued and NHY consulted the check valve supplier.

All four check valves were disassembled and refurbished. The valve seats were lapped and proper seating was verified using the "Blue Dye Testing" method.

NHY reviewed pressure isolation valves in other systems connected to the Reactor Coolant System to determine if similar seat leakage conditions could be encountered.

NHY has committed to performing post-maintenance testing on these valves by subjecting them to the same conditions under which the leakage had originally occurred (low differential pressure).

The inspector reviewed the Engineering Evaluation (89-025) and discussed its contents with members of the station engineering group. The work documents used for refurbishing the leaking valves were reviewed to determine what work was performed, and what post-work testing is appropriate. In addition to the required seat leakage and In-Service tests, NHY plans to perform a leak rate test under conditions duplicating those which originally resulted in the leakage problem (low differential pressure). This item remains open pending successful completion of post-maintenance testing.

6.0 Security (81052)

Short term compensatory measures and long-term upgrades of the plant security barriers have been reviewed by regional security specialists in NRC Region I Inspection Report 50-443/89-13.

The inspector verified that the short term compensatory actions to which NHY committed were in place and that additional compensatory actions were planned if a full power license is issued, and had no further questions.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406

09 JAN 1990

Docket No. 50-443

Public Service Company of New Hampshire
ATTN: Mr. Edward A. Brown
President and Chief Executive Officer
New Hampshire Yankee Division
Post Office Box 300
Seabrook, New Hampshire 03874

Gentlemen:

Subject: Seabrook Operational Readiness Assessment Team Inspection 50-443/89-83 (11/13-20/89)

The enclosed report describes the findings of an NRC Operational Readiness Assessment Team (ORAT) inspection. For the areas reviewed, safe control of activities and compliance with NRC requirements were demonstrated. Program elements for safe operation were present. Positive findings in each inspection area included management and staff emphasis on operational programs. The ORAT concluded that upon resolution of the three items noted in this letter, New Hampshire Yankee (NHY) is ready and able to safely operate the Seabrook Nuclear Power Plant.

As discussed with members of your staff at the inspection exit meeting on November 20, 1989, you agreed to the following:

(1) Verify that local operating and alarm response procedures are available and useable at local operating and alarm stations. Safety-related procedures were to be verified prior to restart; non-safety-related procedures will be completed prior to entering Mode 4. Your staff has since indicated partial completion of this item, which is being inspected separately.

(2) Verify that Technical Specification Clarifications and Interpretations do not contravene the Final Safety Analysis Report or Technical Specifications prior to entering the applicable operating mode.

(3) Provide a summary of the effectiveness of corrective actions based on NRC Confirmatory Action Letter 89-11 (accomplished by NHY letter dated December 21, 1989) and obtain Regional Administrator concurrence that the plant may be restarted (addressed in separate correspondence).

In addition to the items identified above, the ORAT assessed the following items as having a significant potential for improving performance. These items are forwarded for your consideration.

-- Reducing maintenance backlog and maintenance personnel overtime.

-- Providing formal refresher and significant process change training on 10 CFR 50.59 safety evaluations for the Station Operations Review Committee (SORC).

-- Reducing the administrative burden on SORC.

-- Increasing the in-field presence of middle management.

-- Establishing a challenging set of ALARA goals, and training job supervisors and radiological controls technicians in ALARA techniques.

-- Providing continuing radiological controls training for temporary radiological controls personnel who are employed for extended continuous periods at Seabrook.

-- Providing specific training for radiological controls and operations personnel on the radiological hazards expected from power operation.

-- Providing additional engineering review of Annunciator Response Procedures.

Thank you for the cooperation extended to our inspection team.

Sincerely,

William F. Kane, Director
Division of Reactor Projects

Enclosure: Region I Inspection Report No. 50-443/89-83

cc w/encl:
J. C. Duffett, President and Chief Executive Officer, PSNH
T. C. Feigenbaum, Senior Vice President and Chief Operating Officer, NHY
J. M. Peschel, Operational Programs Manager, NHY
D. E. Moody, Station Manager, NHY
T. Harpster, Director of Licensing Services
R. Hallisey, Director, Dept. of Public Health, Commonwealth of Massachusetts
S. Woodhouse, Legislative Assistant
Public Document Room (PDR)
Local Public Document Room (LPDR)
Nuclear Safety Information Center (NSIC)
NRC Resident Inspector
State of New Hampshire, SLO
Commonwealth of Massachusetts, SLO Designee
Seabrook Hearing Service List

SEABROOK HEARING SERVICE LIST

Public Service Company of New Hampshire
ATTN: Mr. Edward A. Brown, President
and Chief Executive Officer
Post Office Box 300
Seabrook, New Hampshire 03874

USNRC Resident Inspector
Post Office Box 1149
Seabrook, New Hampshire 03874

Public Service Company of New Hampshire
ATTN: Mr. John C. Duffett
President and Chief Executive
Officer
P. O. Box 330
1000 Elm Street
Manchester, New Hampshire 03105

Mr. T. Harpster
Public Service Company of
New Hampshire
P.O. Box 300
Seabrook, New Hampshire 03874

Mr. Donald E. Moody
Public Service Company of New Hampshire
Post Office Box 300
Seabrook, New Hampshire 03874

Mr. James M. Peschel
Public Service Company of New
Hampshire
Post Office Box 300
Seabrook, New Hampshire 03874

Mr. Ted C. Feigenbaum
Public Service Company of New Hampshire
Senior Vice President & Chief Operating
Officer
Post Office Box 300
Seabrook, New Hampshire 03874

Mr. R. Hallisey, Director
Dept. of Public Health
Commonwealth of Masssachusetts
Radiation Control Program
150 Tremont Street, 4th Floor
Boston, MA 02111

Massachusetts Transportation
Building
ATTN: Sarah Woodhouse
Legislative Assistant
Ten Park Plaza - Suite 3220
Boston, Massachusetts 02116

E. Tupper Kinger, Esq.
Assistant Attorney General
Office of Attorney General
208 State House Annex
Concord, New Hampshire 03301

Thomas Dignan, Esq
John A. Ritscher, Esq.
Ropes and Gray
225 Franklin Street
Boston, Massachusetts 02110

Jerard A. Crouteau, Constable
82 Beach Road
P. O. Box 5501
Salisbury, Massachusetts 01950

Mr. Bruce Beckley, Project Manager
New Hampshire Yankee
P.O. Box 330
Manchester, New Hampshire 03105

Dr. Murray Tye, President
Sun Valley Association
209 Summer Street
Haverhill, Massachusetts 08139

Robert A. Backus, Esq.
Backus, Meyer and Solomon
116 Lowell Street
P. O. Box 516
Manchester, New Hampshire 03106

Phillip Ahren, Esq.
Assistant Attorney General
Office of the Attorney General
State House Station #6
Augusta, Maine 04333

Steven Olesky, Esq.
Office of the Attorney General
One Asburton Place
P. O. Box 330
Boston, Massachusetts 02108

Ms. Diana P. Randall
70 Collins Street
Seabrook, New Hampshire 03874

Richard Hampe, Esq.
New Hampshire Civil Defense Agency
107 Pleasant Street
Concord, New Hampshire 03874

Mr. Calvin A. Canney, City Manager
City Hall
126 Daniel Street
Portsmouth, New Hampshire 03801

Board of Selectmen
RFD Dalton Road
Brentwood, New Hampshire 03833

Chairman, Board of Selectmen
Town Hall
South Hampton, New Hampshire 03827

Mr. Angie Machiros, Chairman
Board of Selectmen
for the Town of Newbury
25 High Road
Newbury, Massachusetts 01950

George D. Bisbee, Esq.
Assistant Attorney General
Office of the Attorney General
25 Capitol Street
Concord, New Hampshire 03301

Diane Curran, Esq.
Harmon and Weiss
2001 S. Street, N.W.
Suite 430
Washington, D.C. 20009

D. Pierre G. Cameron, Jr., Esq
General Counsel
Public Service Company of
New Hampshire
Manchester, New Hampshire 03105

Mr. Alfred V. Sargent, Chairman
Board of Selectmen
Town of Salisbury, MA 01950

Ms. Suzanne Breiseth
Town of Hampton Falls
Drinkwater Road
Hampton Falls, New Hampshire 03844

Senator Gordon J. Humphrey
ATTN: Tom Burack
U.S. Senate
531 Hart Senate Office Building
Washington, D.C. 20510

Mr. Owen B. Durgin, Chairman
Durham Board of Selectmen
Town of Durham
Durham, New Hampshire 03824

Rye Nuclear Intervention Committee
c/o Rye Town Hall
10 Central Road
Rye, New Hampshire 03870

Jane Spector
Federal Energy Regulatory Comm.
825 North Capitol Street, N.E.
Room 8105
Washington, D.C. 20426

Ms. Rosemary Cashman, Chairman
Board of Selectmen
Town of Amesbury
Town Hall
Amesbury, Massachusetts 01913

Honorable Peter J. Matthews
Mayor, City of Newburyport
City Hall
Newburyport, Massachusetts 01950

Administrative Judge
Alan S. Rosenthal, Chairman
Atomic Safety and Licensing Appeal Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Administrative Judge
Emmeth A. Luebke
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Edwin J. Reis, Esq.
Office of the General Counsel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Edward A. Thomas
Federal Emergency Management Agency
442 J. W. McCormack (POCH)
Boston, Massachusetts 02109

Paul McEachern, Esq.
Shaines and McEachern
25 Maplewood Avenue
Portsmouth, New Hampshire 03801

Board of Selectmen
10 Central Street
Rye, New Hampshire 03870

Mr. R. Sweeney
New Hampshire Yankee Division
Public Service Company of New Hampshire
Suite 610, Three Metro Center
Bethesda, Maryland 20814

Administrative Judge
Howard A. Wilber
Atomic Safety and Licensing Appeal Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Administrative Judge
Thomas S. Moore, Esq.
Atomic Safety and Licensing Appeal Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Administrative Judge
Jerry Harbour
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

H. Joseph Flynn, Esq.
Assistant General Counsel
Federal Emergency Management Agency
500 C. Street, S.W.
Washington, D.C. 20472

Carol S. Sneider, Esq.
Assistant Attorney General
Office of the Attorney General
One Ashburton Place, 19th Floor
Boston, Massachusetts 02108

Richard A. Haaps, Esq
Haaps and McNicholas
35 Pleasant Street
Concord, New Hampshire 03301

Allen Lampert
Civil Defense Director
Town of Brentwood
20 Franklin Street
Exeter, New Hampshire 03833

William Armstrong
Civil Defense Director
Town of Exeter
10 Front Street
Exeter, New Hampshire 03833

Anne Goodman, Chairman
Board of Selectmen
13-15 Newmarket Road
Durham, New Hampshire 03824

Norman C. Kantner
Superintendent of Schools
School Administrative Unit No. 21
Aluani Drive
Hampton, New Hampshire 03842

Jane Doughty
Seacoast Anti-Pollution League
5 Market Street
Portsmouth, New Hampshire 03801

Mr. Robert Carrigg, Chairman
Board of Selectmen
Town Office
Atlant Avenue
North Hampton, New Hampshire 03870

Sandra Gavutis, Chairman
Board of Selectmen
RFD #1, Box 1154
Kensington, New Hampshire 03827

Stanley W. Knowles, Chairman
Board of Selectmen
P. O. Box 710
North Hampton, New Hampshire 03862

Judith H. Mitzner
Silverglate, Gertner, Baker, Fine,
Good, and Mitzner
88 Broad Street
Boston, Massachusetts 02110

Gary W. Holmes, Esq.
Holmes and Ellis
47 Winnacunnet Road
Hampton, New Hampshire 03842

Adjudicatory File
Atomic Safety and Licensing Board
Panel Docket
U.S. Nuclear Regulatory Commission
Washington, DC 20555

U. S. NUCLEAR REGULATORY COMMISSION
REGION I

License: NPF-67 Docket No.: 50-443 Report No.: 50-443/89-83

Licensee: Public Service Company of New Hampshire
New Hampshire Yankee Division
Post Office Box 300
Seabrook, New Hampshire 03874

Inspection At: Seabrook, New Hampshire

Dates: November 13-20, 1989

Inspection Team:

Team Leader:	F. Young, Senior Resident Inspector, TMI
Assistant Team Leader:	L. Kolonauski, Project Engineer, DRP
Inspectors:	A. Cerne, Senior Resident Inspector, Seabrook
	S. Barr, Reactor Engineer, DRP
	N. Dudley, Project Engineer, DRP
	H. Gray, Senior Reactor Engineer, DRS
	R. Nimitz, Senior Radiation Specialist, DRSS
	W. Oliveira, Senior Reactor Engineer, DRS
	J. Trapp, Senior Reactor Engineer, DRS
	G. Wunder, Project Manager, NRC:NRR

Purpose: To assess readiness for safe power operation through reviews of operations and operations support programs.

Findings: This inspection found the Seabrook Nuclear Power Station capable of conducting and supporting safe power operation. Items identified for resolution were: assuring that local operating and alarm response procedures are usable and available at local stations; and confirming that Technical Specification (TS) clarifications and interpretations do not change any TS or alter the intent or commitments in the Final Safety Analysis Report. All Confirmatory Action Letter CAL 89-11 items inspected by the ORAT were found acceptable; the remaining CAL 89-11 items were assinged to other inspections.

Approved by: Ole C. McCabe, Jr. 1/6/90
E. C. McCabe, Jr., Team Manager Date

TABLE OF CONTENTS

Table of Contents

Table of Contents

ATTACHMENTS

FIGURES

DETAILS

1.0 FINDINGS SUMMARY

This Operational Readiness Assessment Team (ORAT) inspection sample showed that, upon resolution of the items below, New Hampshire Yankee (NHY) is prepared to safely operate Seabrook above five percent power.

(1) Verification that local operating and alarm response procedures are available and useable at local operating and alarm stations.

(2) Verification that all Technical Specification clarifications and interpretations do not contravene the intent of the Final Safety Analysis Report or the Technical Specifications.

(3) Completion of licensee actions required by CAL 89-11.

The ORAT also identified the following for consideration as potential performance improvements.

-- Increasing the in-field presence of middle management.

-- Providing formal refresher and significant process change training on 10 CFR 50.59 safety evaluations for Station Operations Review Committee (SORC).

-- Reducing the administrative burden on the SORC.

-- Reducing maintenance backlog and maintenance personnel overtime.

-- Providing continuing radiological controls training for temporary radiological controls personnel who are employed for extended continuous periods.

-- Establishing challenging ALARA goals and training job supervisors and radiological controls technicians in ALARA techniques.

-- Providing specific training for radiological controls and operations personnel on the radiological hazards expected from power operation.

-- Providing additional engineering review of Annunciator Response Procedures.

2.0 OVERVIEW

2.1 Background

On May 26, 1989, New Hampshire Yankee (NHY or the licensee) was granted low power license NPF-67 for Seabrook Station Unit 1 (Seabrook, the plant or the facility). NPF-67 superseded zero power license NPF-56. Upon receipt of the low power license, New Hampshire Yankee completed a transition from zero power operating procedures to normal operating procedures. The NRC specified

that, before the Seabrook Nuclear Power Station would be authorized to operate above 5% power, an operational readiness assessment would be made. An initial operational readiness assessment was made during inspection from May 27-June 1, 1989, and the results were acceptable.

On June 22, 1989, the operating crew failed to manually trip the reactor during a natural circulation test when required by the startup test procedure. Low power operation was suspended. The licensee and the NRC reviewed the event in detail. NHY developed specific corrective actions that were be to performed prior to resuming low power operation.

2.2 Inspection Scope

This ORAT inspection was conducted to further assess the licensee's ability to operate at power. Team members inspected licensee readiness for plant startup, power ascension, and operation. Radiological controls, maintenance, surveillance, engineering and technical support, and selected licensee commitments (based on the June 22 event) were also reviewed.

The ORAT inspection involved 458 inspection hours and emphasized activities subsequent to June 1989, with program and procedure changes receiving particular attention. In addition to compliance with NRC requirements and licensee commitments, ORAT members assessed licensee readiness for safe operation based on their judgement.

During the inspection and associated licensee meetings, the inspectors contacted and interviewed workers, first line supervisors, section, department, and division managers, and corporate personnel.

2.3 Results Summary

Facility management staffing, qualifications, and performance were found to be acceptable. Key staff members were found to have the proper safety perspective and demonstrated a good understanding and a conservative approach to Seabrook operation.

The Operations Department was adequately staffed with capable managers, licensed operators, and administrative personnel. Operators were knowledgeable of their responsibilities and were provided with the equipment and procedures needed for safe operation. Station configuration control and self-assessment methods were rigorous. Interfaces between operations and operations support groups were acceptable.

The maintenance organization staff and experience were adequate to support power ascension. Work control, material control, procurement, equipment calibration, and management functions were in place to support maintenance. However, the maintenance staff is working significant overtime and the backlog of work requests remains high. Maintenance staffing needs licensee consideration in relation to long-term adequacy.

The Technical Specification Surveillance Program has been successfully implemented for Mode 5 operation. Staffing levels and procedures are in place to support full power operation surveillance testing. The professionalism and knowledge of personnel conducting technical specification surveillances were strong.

NHY has established and implemented a generally well defined radiological controls program cabable of supporting power ascension and full power operations. Some areas for improvement were identified, and the licensee initiated immediate and appropriate corrective actions during the inspection. The licensee was in the process of reassigning responsibilities for radwaste management and transportation. That reorganization was not assessed during this ORAT. (Programmatic inspection of this area is scheduled for January 8-12, 1990 and will be documented in Report 90-03.)

Engineering and Technical Support programs were in place to adequately support full power operation. Inspector findings regarding the availability and useability of the local emergency diesel generator procedures were resolved by the licensee during the inspection. No other safety-related local procedure deficiencies were found. The licensee initiated action to confirm the availability and useability of all local alarm response procedures.

Licensee implementation and management oversight of the Corrective Action Plan for CAL 89-11 has been good. The ORAT inspection concluded that the licensee, upon completion and closure of all CAL items, and within the scope of this review, will be able to operate Seabrook Station safely and in accordance with NRC regulations.

3.0 FACILITY MANAGEMENT

3.1 Review Scope

The inspectors reviewed facility management readiness by examining the Seabrook organization and staffing (see Figures 1 through 6), interviewing licensee managers, and observing management involvement in activities. The purpose of this assessment was to:

-- assess whether the NHY managerial organization is able to assure safe operation;

-- confirm that the station was adequately staffed and that employees exhibited an appropriate safety attitude; and

-- evaluate the effects of the recent NHY upper management changes.

3.2 Findings

After the natural circulation test event, the licensee undertook NHY management changes and realignment. (Figure 1 represents the revised NHY organization.) First, the licensee relieved the Vice President - Nuclear Production

(VP-NP) of his duties at the Seabrook Station. That individual subsequently resigned. (CAL 2.A-1)* To improve management control and accountability, the VP-NP position was replaced with the new position of Executive Director - Nuclear Production. A new position, Senior Vice President and Chief Operating Officer, was also added. (CAL 2.A-2) This restructuring placed more emphasis on plant operations. Functions not directly contributing to the support of plant operations were moved into other areas of the company. With this change, NHY more clearly defined the responsibility and authority of key positions.

The ORAT found the above-mentioned senior managers to be appropriately trained for their positions with respect to formal education and experience. The team did note that the Executive Director - Nuclear Production was a Yankee Atomic Electric Co. employee on loan to NHY. The licensee indicated that this was a temporary assignment. The ORAT noted no inadequacy because of this temporary assignment.

Through interviews, the ORAT concluded that the NHY upper managerial team demonstrated a conservative approach to problem resolution and an appropriate safety perspective. Management was informally tracking performance and was adequately determining the status of problem areas.

The ORAT observed an absence of middle management oversight in the plant. No associated in-plant activity inadequacy was noted. Several licensee managers indicated that they recognized this as a problem, and that actions would be taken to increase management's in-plant presence. The ORAT concluded that this issue represents a potential area for performance improvement.

Station Operations Review Committee (SORC)

The inspectors evaluated the SORC process through document review and attendance at SORC meetings. SORC members were found to be knowledgeable of their responsibilities and of the matters discussed.

ORAT review found the licensee lesson plan (TS1002C) and instructor guide on 10 CFR 50.59 safety evaluations to be accurate and thorough. In reviewing SORC member training, the inspector noted that the SORC members last received formal 10 CFR 50.59 training in 1987. The licensee had no plans to schedule periodic SORC member refresher training on the safety evaluation process.

In addition, the inspector noted that the licensee recently incorporated NSAC 125, "Guidelines for 10 CFR 50.59 Evaluations," developed by the Nuclear Safety Analysis Center for the Electric Power Research Institute (EPRI), into its safety evaluation process and planned to provide additional SORC member training through the required reading process. The inspector questioned the adequacy of such training in view of the complexity and importance of the process. The lack of formal 10 CFR 50.59 refresher training and of formal training on significant changes to the process were considered program weaknesses and were identified to the licensee for consideration.

*Refers to licensee corrective action identification per CAL 89-11; see Paragraph 9.0 and Attachment 1.

All SORC meetings have a formal agenda that is prepared and distributed by the SORC secretary well in advance of the meetings. All documents for SORC review, with the exception of "walk-thrus," are distributed to SORC subcommittee members in advance of the meeting. The agendas include review items with a listing of their respective subcommittees. SORC members not designated to serve on a particular subcommittee can participate in the subcommittee review. Subcommittee members provide written comments to the person responsible for the item; these comments normally are resolved prior to the SORC meeting. If comments are not received or remain unresolved, the item is dropped from the agenda and is rescheduled. The inspector noted that the Seabrook Station Management Manual (SSMM) provides explicit review instructions to SORC subcommittee members.

Walk-thrus were evaluated for adequacy of SORC review. SORC members stated that walk-thrus are rare. SSMM 5.0 limits walk-thrus to those which the SORC Chairman considers impractical to conduct during a normally scheduled meeting or which require immediate attention during normally scheduled meetings. Procedure changes are normally treated as walk-thrus. Procedure changes differ from procedure revisions, which are major upgrades and require full processing. Changes are lesser modifications which alter only a small part of a procedure. Some changes are nonetheless intent changes (i.e., they alter procedure method, scope or acceptance criteria). Intent changes require SORC review prior to implementation. The ORAT found that both the observed SORC review of specific changes and the change review practices were adequate. However, inasmuch as some changes may neither require immediate attention nor be impractical to conduct during regularly scheduled meetings, the licensee was encouraged to modify SSMM 5.0 to specifically authorize the existing practice or to modify the existing practice to conform to the NHY policy on strict procedure compliance.

Non-intent changes can be implemented prior to SORC review and receive the review and approval of the onshift Shift Superintendent (SS) or Unit Shift Supervisor (USS) and a station staff supervisor knowledgeable in the area affected by the change. Additionally, non-intent changes receive responsible department manager approval prior to SORC review and approval, which is required within 14 days of implementation. Intent changes cannot be implemented prior to SORC review and approval; they also receive responsible department head review and approval prior to SORC review. The SSMM requires that SORC members evaluate all procedure changes for 10 CFR 50.59 considerations and the potential effect on their respective areas of responsibility. Through interviews, the inspectors found individual SORC members to be aware of this responsibility. The inspectors concluded that procedure changes receive adequate review prior to their implementation.

There was increased management emphasis on strict procedure compliance after the June 22 event, and the licensee noted a marked increase in the number of procedure changes initiated by plant personnel. ORAT inspectors noted that, for the SORC meetings observed, procedure changes consumed almost half of the SORC meeting time. In discussions with the SORC Vice Chairman (VC), the inspectors learned that plant personnel find that what was previously acceptable

in terms of procedure accuracy is no longer acceptable. While the increased sensitivity to procedural compliance is appropriate, the increase in procedure changes has introduced an increased SORC burden and reduced the time available to SORC members for their other responsibilities. The SORC VC stated that he felt the burden would not continue at this level indefinitely as the procedures would eventually become "fine-tuned." He was also reluctant to decrease SORC review efforts because he wanted the responsible managers to thoroughly assess the potential effect of each change on their departments and provide additional unreviewed safety question reviews. ORAT review found no safety inadequacies in the present approach, and noted that licensee management continues to carefully address this issue to assure that both SORC and departmental functions are adequately implemented.

The inspector reviewed the licensee's Independent Review Team (IRT) assessment of the SORC function and found it to be well prepared and thorough. Recommendations, especially those related to the reduction of SORC burden on SORC members, identified important considerations. (CAL 3-8)

3.3 Conclusions

Facility management, as structured, is capable of directing and supporting safe power operation. Facility management staffing, qualifications, and performance were acceptable. The reorganization strengthened lines of responsibility, authority, and accountability. By creating a Chief Operating Officer, the licensee developed a single focal point for control and operation of Seabrook. The ORAT concluded that key individuals exhibited the proper safety perspective and that the necessary managerial attributes exist.

4.0 PLANT OPERATIONS

4.1 Review Scope

The inspectors reviewed operations and operations support functions to evaluate the licensee's capability to safely operate the facility. The purpose of the evaluation was to:

-- determine whether the Operations Department is sufficiently staffed with capable operators and managers;

-- determine whether the licensee has provided the Operations Department with the necessary procedures, equipment, administrative and technical support; and,

-- assess the effectiveness of the interface between the operations and operations support departments.

4.2 Findings

4.2.1 Operations Staff

The inspectors found the Operations Department to be adequately staffed with experienced and knowledgeable operators and managers. It was noted, however, that NHY has 22 operators with active licenses, and the six shift rotation requires 24. Active license holders staff the two open positions on an overtime basis. The inspectors determined that this did not place an undue burden on the operating shifts, mainly because of the current plant outage condition. The inspectors also noted that 12 candidates sat for NRC license examinations during the inspection (November 13, 1989).

The two senior reactor operator (SRO) licensed positions required by Technical Specifications are manned by the Shift Supervisor (SS) and Unit Shift Supervisor (USS). Currently, all but one of the Supervisory Control Reactor Operators (SCROs), who are required to have only reactor operator (RO) licenses, hold SRO licenses. The Operations Management Manual (OPMM) states that it is expected that all SCROs will obtain SRO licenses within a reasonable time. This is more than is required by Technical Specifications (TS). The inspectors found this to be a positive operations management decision to increase onshift qualifications.

In addition to the licensed operators, each operating shift is staffed with a minimum of five Auxiliary Operators (AOs) and two fire fighters. Three AOs serve on the fire brigade to supplement the two fire fighters assigned to each shift. Both the AOs and the fire fighters report directly to the USS. The fire fighters perform routine inspections and surveillances in support of the fire protection and housekeeping programs as outlined in the Station Fire Protection Manual (SSFP).

Currently, no AOs hold RO licenses, and it is not required that they do. NHY has established the Alternate Control Room Operator (ACRO) position, which is an RO-licensed position, in addition to those required by the regulations. The inspectors viewed this as a positive initiative, but noted that this position is not presently staffed due to unavailability of licensed operators.

The inspectors found that NHY has a number of alternate positions available for licensed operator advancement. In addition to the training department, licensed operator promotions are available in the Independent Review Team (IRT), which is discussed below, and in the planned Operations Support Group (OSG). Such advancement opportunities provide an incentive for operators to obtain NRC licenses beyond those required and thereby improve overall station operating qualifications.

Currently, all designated SSs are qualified to serve as Shift Technical Advisors (STAs). Several USSs are also qualified as STAs, and would serve in this position if the onshift SS was not qualified. As specified in the OPMM, while the SS and the USS are allowed to assume the STA position as a collateral duty, other NHY personnel qualified to serve as STAs (including SCROs, CROs and

personnel outside of the Operations Department) are prohibited from assuming other duties while serving as an STA because of the potential for interference with the STA function. (CAL 2.B-2)

The onshift operations staff has experienced an approximate 10% annual turnover rate. The inspectors did not view this as excessive; 75% of the current onshift operators have held licenses at Seabrook for over four years. In addition, many have previous commercial or naval nuclear power operating experience. The licensee stated that several of those leaving the onshift operations staff had relocated to other positions within NHY and their operating experience was not lost to the organization.

The inspectors noted that the licensee is planning to institute an Operations Support Group (OSG) to alleviate the operations administrative workload and provide Operations with their own technical review group. The OSG will report to the Operations Administrative Supervisor (OAS) and will consist of two subgroups: a technical support group with a supervisor and three engineers, and a procedure group with a supervisor and two procedure writers/reviewers. The inspectors concluded that the proposed OSG could reduce the administrative load on Operations and improve the consistency and quality of procedure preparation and review. While the proposal for establishing an OSG is a positive initiative, it has no bearing on the existing readiness to conduct power operation.

The inspectors found the onshift operators to be capable and professional. High operator morale was indicated by their positive attitudes and pride in their work. Operators maintained a professional control room atmosphere. The SS and USS asserted appropriate control and command. Control room access and activities were appropriately controlled. Potentially distracting activities were not observed. Operator response to annunciators was found to be appropriate and timely.

The ORAT observed several shift turnovers and found them to be thorough and complete. The formal shift turnover checklist was effective in assuring complete and consistent turnovers. Onshift operating logs (TS log, locked valve log, temporary modifications log, temporary setpoint change log) were detailed, concise, and useful to the onshift crew.

The inspectors observed effective operator communications and cooperation with other departments. The interface between operations and the Quality Assurance group was particularly noteworthy.

In addition to their control room responsibilities, the OPMM requires that SSs make monthly tours with the AOs, such that each of the three major plant AO assignments is covered during each quarter. The SSs are directed to inspect plant areas for equipment material condition, housekeeping, safety, radiological controls, and security. The inspectors viewed this as a positive licensee initiative.

4.2.2 Operations Procedures

The inspectors found the operations procedures to be sufficiently detailed and accessible by control room personnel. Operators were observed to adhere to these procedures, including those for configuration control.

A weakness in document control was identified and corrected by the licensee during the inspection: the licensee's initial practice was to remove all controlled copies of procedures that had exceeded their routine review period. When document control personnel attempted to remove an overdue abnormal procedure from the control room, the operators prohibited the removal. Recurrence was prevented by revising procedures to omit this practice. This was an instance of effective upgrading of facility practices.

The missed procedure review was initiated. This was an isolated instance of failure to review a procedure listed on the monthly listing of procedures due for review during the next 12 months. The licensee is assessing whether additional controls are needed to assure reviews are timely. The ORAT had no further questions.

4.2.3 Equipment Configuration and Operability Controls

Operations establishes proper system configuration by using system lineup sheets that are included as part of each specific system operating procedure. Once a system is lined up for the relevant plant mode, the lineup sheets are logged and maintained in the control room. Any variations to the required lineup are documented in lineup exception sheets which are also filed in the control room for reference. To control system lineups for a mode change, the Operations Department has developed mode change checklists that operators use to ensure that systems are properly aligned for the new mode. Operations support departments are alerted to the approaching mode change through mode change notices. These notices allow a controlled and integrated licensee effort to ensure compliance with Technical Specifications and other operating requirements during mode changes.

Additional system configuration control is provided by the locked component log, in which the operating crew tracks normally locked components which have been placed out of position. For systems or components on which work is being performed, configuration is controlled with a tag-out log. System tag-outs are prepared outside of the control room; this reduces control room distractions and the administrative burden on the onshift operators.

Random ORAT comparisons of local component indications and associated control room documentation identified no discrepancies. The system configuration control system was assessed as thorough and effective.

4.2.4 Housekeeping

The plant was in an outage during the inspection, and the ORAT noted that housekeeping and material control improvements could be made. This was particularly true where work had been completed but the area not subsequently cleaned. However, the ORAT identified no housekeeping issues that threatened equipment operability. Overall, housekeeping was assessed as adequate.

4.2.5 Response to Operational Events

To assess the NHY response to operational events, the ORAT reviewed NHY programs for and performance of event reporting, post-event review, and self-assessment. The NHY Reporting Manual (NYRE) provides for the timely submittal of periodic and special reports to NHY management and regulatory agencies.

NYRE Chapter 2, "Report and Commitment Identification," contains requirements and procedures for the initiation and preparation of Station Information Reports (SIRs). An SIR is used to report and evaluate operational events which may require further investigation or regulatory agency notification. NYRE Chapter 2 lists conditions and events which require initiation of an SIR. The procedure requires that the Shift Superintendent be informed of any questionable conditions and be provided a copy of the SIR in order to determine any immediate reporting requirements. NYRE Chapter 3, "Regulatory Reports," contains the directions for reports required by the NRC and provides instructions for how and where to submit them.

Subsequent to an event, to documentation in an SIR, and to the submittal of required immediate NRC reports, NHY evaluation is provided for in Procedure 12830, "Event Evaluation and Reduction Program." The program is normally used to evaluate reactor trips and Engineered Safety Feature actuations but may also be used for other events as requested by NHY management. Initial evaluation of SIRs and Post-Trip Reviews (Station Operating Procedure OS1000.08) is followed by review and assignment of appropriate corrective actions by the Station Operations Review Committee (SORC) with further review by a standing Nuclear Safety Audit and Review Committee (NSARC) subcommittee.

As part of the event evaluation process, a root cause evaluation is performed in accordance with NHY Procedure 12810, "Root Cause Analysis." Analysis results are included in the SIR package, which must be completed by the Event Evaluation Team Leader within five business days of the event. SORC review must be accomplished within ten days. The final NSARC report, including any assigned action items, is required to be issued within 30 business days of the event.

4.2.6 Self-Assessment Programs

In addition to the above event evaluation process, the licensee has several programs to provide self-assessment of NHY operations. The NSARC, besides its NHY 12830 responsibilities, is committed through Technical

Specifications to provide to the licensee President a means of independently ascertaining whether activities related to nuclear safety are performed safely and in accordance with the policies of NHY and the requirements of the NRC.

Another program committed to in Technical Specifications is the Independent Safety Engineering Group (ISEG), which is responsible for maintaining surveillance of station activities to improve station safety. The ISEG examines station operating characteristics, NRC issuances, industry advisories, Licensee Event Reports and other station design and operating experience information which may indicate areas for improving station safety.

NHY Procedure 12820, "Human Performance Evaluation System (HPES)," outlines an additional program to reduce human errors. The HPES provides a process for reviewing and evaluating situations where human performance either did cause, or could have caused, an inappropriate occurrence.

The licensee has also provided for a top level, independent assessment group in NHY Procedure 11260, "Independent Review Team (IRT)." The IRT performs independent reviews, evaluations and assessments and provides reports and recommendations as directed by senior licensee management. The IRT is presently composed of an IRT Manager and a team of on-loan NHY personnel forming a Self-Assessment Team (SAT). The current SAT was formed in October 1989 and is charged with assessing and evaluating the licensee full power and power ascension program. The previous SAT existed from August 1988 until September 1989 and evaluated the low power testing program. Since its inception in 1984, the IRT has performed over 250 evaluations for NHY management. In addition to on-loan personnel, the licensee plans to permanently assign two individuals with operational backgrounds as core members of the IRT.

Through review of the NHY Manual, the NHY Reporting Manual, and the Seabrook Station Unit 1 Technical Specifications, the ORAT concluded that NHY has established a well-defined program for event tracking and self-assessment. The above-mentioned procedures and programs were all cross-referenced, and all requirements for further review of an event were noted to be clearly delineated in the inspected documents.

To verify that the in-place programs have been properly implemented, the inspectors interviewed several licensed operators, members of the Operations Department management staff, the IRT Manager (who is also a standing member of the NSARC) and the Director of the Office of Quality Programs. The operators interviewed were Supervisory Control Room Operators, Unit Shift Supervisors and Shift Superintendents. All were aware of what types of events were reportable per 10 CFR 50.72 and what events required initiation of an SIR.

The inspector reviewed the lesson plan for operator training on event identification and reporting. No discrepancies were noted. All interviewed members of NHY management were knowledgeable of their roles and responsibilities in the event evaluation and self-assessment processes.

As a follow-up to the personnel interviews, the inspector audited the SIR documentation for two of the more significant events which had recently occurred at Seabrook: a failure to manually trip during the natural circulation test (SIR 89-039) and the loss of residual heat removal shutdown cooling capability (SIR 89-066). Both SIR packages contained the required documentation, including the SIR initiation sheet, NRC Event Notification Worksheet, Event Evaluation Team report, and root cause analysis worksheets. In addition, SIR 89-039 included the post-trip review documentation and an IRT analysis report. Both SIRs were determined to be thorough and complete.

The inspectors noted that, subsequent to the natural circulation test reactor trip event, the licensee improved their event reporting and evaluation process. For example, the Event Evaluation Report for that event was required to be completed before the reactor could be restarted. This was accomplished just prior to the ORAT arriving on site. (CAL 2.A-3) Also, procedure OS1000.08 was revised to require discussion of any reactor trip with the NRC prior to reactor restart, and Revision 21 of the NHY Reporting Manual was implemented to require the SS and the USS to complete an NRC Event Notification Worksheet prior to making a 10 CFR 50.72 report to the NRC Operations Center. (CAL 2.A-4 & CAL 2.A-5)

Based on the discussions with NHY personnel, the review of the in-place programs, and the inspection of completed SIR packages, the ORAT concluded that the NHY staff is able to effectively assess and respond to operational events.

4.2.7 Technical Operations Support Programs

The licensee has established two operating experience feedback programs. One reviews plant events and the other reviews industry events. The ORAT found these programs to be adequately staffed with experienced engineers. Licensee actions in response to events are tracked to completion using the licensee's SIR process (for internal events) or the Integrated Commitment Tracking System (ICTS, for industry events.) The inspectors concluded that the feedback programs are capable of performing their intended function.

In addition to the operating experience feedback programs, the licensee's engineering group recently established a scram avoidance program. Because a large percentage of pressurized water reactor trips are caused by feedwater system problems, the group is currently focusing on the feedwater and feedwater control systems. The group is working with a computer model for these systems and plans to incorporate their findings into the operator training program. Operations personnel are also involved with the scram avoidance program through specialized training and evaluations. The ORAT assessed this program as a positive licensee initiative.

4.3 Assessment

The Operations Department is adequately staffed with capable managers, licensed operators, and administrative personnel. Operators are knowledgeable of their responsibilities and are provided with the necessary procedures,

equipment, and administrative support to allow them to conduct safe operations. The ORAT observed that the operators interfaced effectively with each other and control room equipment.

Station configuration control and self-assessment methods are rigorous. Interfaces between operations and the operations support groups are acceptable.

4.4 Conclusions

The Seabrook Operations Department is capable of conducting safe power operations.

5.0 MAINTENANCE

5.1 Review Scope

The inspectors reviewed the New Hampshire Yankee maintenance program to ascertain whether the program was implemented effectively and could support the power ascension program and power operation. The review included the maintenance organization manuals, procedures, work control programs, and the planning and tracking programs. Interviews were conducted with management personnel, supervisory personnel, and technicians. Observations were made of the assignment and performance of work.

5.2 Findings

5.2.1 Management, Organization, and Staffing

The Station Management Manual describes the organization of the maintenance function. (See Figure 4.) The Maintenance Manager reports directly to the Station Manager; three Department Supervisors report to the Maintenance Manager. The Maintenance Department Supervisor is responsible for corrective and preventive maintenance on mechanical and electrical equipment. The Instrumentation and Controls (I&C) Department Supervisor is responsible for maintaining the on-site station instrumentation and control equipment and for operation of the calibration facility. The Utilities Department Supervisor is responsible for operation of dry radioactive waste packing equipment and performance of maintenance on fire doors and other general utility and upkeep work on buildings.

The Maintenance Department Supervisor is supported by 87 personnel including a Mechanical Supervisor, an Electrical Supervisor, a Training Coordinator, a Lead Planner, seven working mechanical foremen, four working electrical foremen and four contractors. The I&C Department Supervisor is supported by 64 personnel including four I&C Supervisors, a Training Coordinator, a Lead Planner, nine I&C working foremen, and three contractors. The Utilities Department Supervisor is supported by 37 personnel including three supervisors, a planner and five working foremen.

The manpower resources match the station allotments as indicated on the organizational chart provided in Figure 4. However, the technicians are working a 60-hour work week. This extensive overtime use was assessed as warranting specific licensee management attention.

5.2.2 Work Control

The ORAT interviewed and observed the working foremen and technicians in the conduct of their duties.

The Maintenance Manager meets with the department supervisors and the mechanical and electrical supervisors each morning to review major jobs scheduled for the day and to resolve potential conflicts. A plan of the day (POD) meeting is held at 1:30 p.m. daily at the supervisor, working foreman, and planner level to review planned maintenance including proper documentation, plant conditions, availability of parts and support from other groups.

The working foremen report to supervisors and are responsible for maintaining the equipment in their assigned systems. As a result, the same system engineers and technicians routinely work together. The department planners identify emerging work, and the working foremen are responsible for accomplishing the work. A working foreman directs the work of five or six technicians and coordinates and interfaces with other departments to resolve problems.

The licensee uses a computerized system to track Work Requests, Design Coordination Reports, Document Revision Reports, Requests for Engineering Services, Nonconformance Reports, and Facility Service Requests. The tracking system follows each document through 21 stages from initiation to final document control center closeout. Over ten different types of reports can be produced. A report listing the outstanding work requests by responsible working foreman is issued daily.

A weekly report on the backlog of work requests receives wide distribution and is displayed throughout the station. The licensee's goal is to have less than 750 work requests outstanding, not counting work requests held for plant conditions or paper work close out. The present back log is approximately 1200 work requests and has been decreasing since mid-October 1989. The following tables summarize licensee report information or maintenance work status.

TABLE 5.2.a

OVERALL MAINTENANCE BACKLOG

TYPE	NUMBER	OLDER THAN 3 MONTHS	OLDER THAN 12 MONTHS
Emergency and Priority 1: Needed to Restore System to Operable Status	2	0	0
Priority 2: Could Lead to System Inoperability	83	13	0
Priority 3: Can Be Performed As Manpower and Schedule Allow	708	243*	60*
Priority 4: To Be Completed As Fill-In Work.	245		

*Includes Both Priority 3 and 4 Items.

TABLE 5.2.b

MODE DEPENDENT MAINTENANCE BACKLOG

TYPE	NUMBER
Needed to Enter Mode 4	142
Needed to Enter Mode 3	12
Needed to Enter Mode 2	4
Needed to Enter Mode 1	13

ORAT review concluded that maintenance was being adequately tracked and prioritized. Review and observation of selected portions of the maintenance activities and procedures listed in Attachment 2 identified no deficiencies.

The ORAT concluded that the POD meetings were effective in establishing the status of work requests and establishing priorities for planning and procurement. Working foremen were effective in implementing and supervising the conduct of the prioritized work. The ORAT concluded that the open requests were effectively tracked, that the status of each open work request was well documented, and that the open work requests were appropriately coordinated with operational controls so that the impact on component operability was being properly addressed.

5.2.3 Material Control and Procurement

The ORAT reviewed the Procurement Manual, held discussions with the Material Requirements Department Supervisor, the Administrative Services Manager, and receipt inspectors, and observed a portion of the receipt inspection of valves in the warehouse.

The licensee has developed a computerized program for common components and is completing the data base. This program assigns a tag number to every component in the plant. The tag number identifies the technical attributes of the component, the parts needed to repair it, and the number of parts in inventory. Since common components have the same tag number, inventories for common replacement parts are better managed by this system.

The licensee has undertaken a program for improving the dedication of commercial grade parts for use in safety systems. That program is described in Engineering Procedure 32510, "Engineering Review of Commercial Grade Dedication," and provides for implementation of EPRI NP-5652, "Guidelines for the Utilization of Commercial Grade Items in Nuclear Safety-Related Applications," which was conditionally accepted by the NRC in Generic Letter 89-02. Program development is beginning, and 15 contractors have been hired to conduct the work. The ORAT concluded that installed equipment and spares are presently acceptable based upon construction, preoperational, and operational controls and tests, and licensee reviews.

The Procurement Department identifies the receipt of all quality controlled items with a company identification number (CID) which is entered in a computer tracking program. The computer program tracks the detailed information on the component's shelf-life (if applicable), the work order under which the component is issued, and the location of the item in the warehouse.

Receipt inspections are conducted by the Procurement Department. The ORAT reviewed the documentation for the receipt inspection of Copes-Vulcan, Inc. valves and discussed the receipt and issuing tracking system with licensee receipt inspectors. Receipt inspection included review of documentation of identification numbers, shipping list certification of conformance, physical damage, and special tests needed. For the receipt inspections reviewed, over ten Purchase Information Requests had been issued requesting clarifications, authorization for acceptance, and identification of noted deficiencies. The inspector concluded that this limited sample of receipt inspection for the reworked valves showed extensive, detailed and well-documented receipt inspection.

The inspector concluded that the procurement and receipt programs are adequate to support power ascension and that program enhancements are being developed.

5.2.4 Calibration and Test Equipment Control

The ORAT reviewed the Measuring and Test Equipment (M&TE) chapter of the Station Maintenance Manual, held discussions with the working foreman of the M&TE Laboratory and the Maintenance Supervisor, and toured the calibration lab.

The calibration lab maintains standards for electronic meters, accelerometers and pressure, temperature, time, leak rate, and radiation equipment. Special test equipment is calibrated by vendors on an as-needed basis. Equipment used in the field is staged in one of four major tool cribs for sign-out by users. Equipment calibration frequency is determined by date or frequency of use. The calibration lab provides a computer listing to each tool crib, indicating instruments which are due for calibration. For equipment calibrated on a usage basis, the tool crib supervisors maintain a sign-out list and return instruments for calibration when the usage limit is met. Equipment users are aware of the usage limits and notify the tool crib supervisor when equipment requires calibration. When a user identifies a problem with a piece of equipment, the equipment is taken out of service, tagged, and returned to the calibration lab. If a piece of equipment is not used for six months, it is removed from the crib and is stored by the calibration lab.

Five technicians work in the calibration lab and are assigned responsibility for specific types of measuring devices. Experience for technicians at the lab ranges from three months to six years. The laboratory has operated for seven years and the calibration program has been changed to meet the needs of the station. Next day calibration service is provided for urgent requests. The backlog is presently 200 pieces of equipment and the technicians are working an overtime schedule. No associated work delays or inadequacies were identified.

While calibration equipment is stored in the Radiological Controlled Area, the licensee has not established a hot (radioactively contaminated) calibration lab. Plans have been discussed for a temporary hot calibration lab; a trailer and most required calibration equipment are onsite. The licensee estimates that a temporary facility could be placed in service within two months, but no definitive plans have been developed. The absence of a hot calibration facility was assessed as a potential problem with calibration efficiency. However, NRC requirements were found to be met.

The calibration program was well established. It provides adequate tracking and control of equipment requiring calibrations. The technicians who use calibrated equipment are conscious of calibration requirements. A larger staff could reduce backlog and overtime, but the present staff was assessed as adequate to maintain equipment in calibration.

The ORAT concluded that the present calibration facilities are adequate to support power ascension and that support of extended power operation would be enhanced by a facility for calibrating contaminated equipment.

5.2.5 Personnel Control

The ORAT observed maintenance personnel during assignment of work and during the performance of maintenance and calibration activities, held discussions with working supervisors, training coordinators, department supervisors, and the Maintenance Manager, and reviewed selected training records and qualifications of technicians.

Maintenance support is provided on shift, requiring each technician to work on a rotating shift for a six-week period twice a year. The maintenance staff is working ten-hour days, six days a week to complete the required work during the current outage.

Most maintenance technicians, working foremen, and supervisors have held their positions for over four years and are qualified to the highest licensee level. Specialty and refresher training is ongoing to maintain and increase technicians' knowledge and proficiency. Working supervisors maintain a listing of the technicians who have completed specialty training courses and ensure that technicians are assigned to jobs for which they are qualified. The maintenance training programs are being prepared for industry accreditation in the summer of 1990. Department training coordinators and technicians are assigned to assist in job task analyses and lesson plans preparation.

Lead technicians and supervisors are taught the responsibilities of the next level of management by on-the-job training and through acting for their immediate supervisor when the supervisor is absent.

The ORAT concluded that the Maintenance Department is adequately staffed with motivated and technically competent personnel and that the maintenance departments can support power ascension. Maintenance personnel interface effectively within their assigned crafts, with other crafts, with engineers, and with operations personnel. The maintenance personnel observed displayed a professional attitude toward the completion of their assigned tasks.

5.2.6 Management Support and Assurance of Quality

The ORAT discussed management support with managers and supervisors and assessed the effectiveness of the quality assurance program by observing technicians and supervisors in the field.

Management provides direction and guidance for completing the maintenance program. Daily staff meetings and plan of the day meetings are used to track and plan identified maintenance work. The work request system provides direction to working supervisors and the technicians for the completion of identified tasks.

ORAT observations found quality to be an integral part of the conduct of jobs. The ORAT observed the following examples of technicians stopping work to verify that proper quality assurance was maintained. An I&C technician stopped work on the diesel generator and requested engineering support to

evaluate the acceptability of a split in the plastic covering on the cable of a temperature detector. An electrician stopped work on an isolated residual heat removal cross-connect valve when he sensed flow and requested operations verification of the isolation of the valve. A mechanic assisted an operator in determining the status of the diesel generator fuel racks. An I&C technician stopped work on repair of an accumulator level meter to verify that the issued repair part was the proper replacement part.

Second person verifications, QA hold points, and working foreman reviews are included in procedures and work requests. Working foremen were observed at most job sites, but supervisors and managers were not observed in the field.

The ORAT observed the pretest briefing prior to testing the diesel generator. The mechanical working foreman and control room personnel discussed the test, the sequencing of required actions, and the operating precautions. Based on the inspectors' observations and the successfully conducted test, the ORAT concluded that the pre-test briefing was effective.

The ORAT concluded that management support and assurance of quality is adequate to support power ascension and power operation.

5.3 Assessment

Preventive and corrective maintenance is being adequately performed by a technically competent and highly motivated staff which exhibited high morale. That staff is routinely working significant overtime. No associated inadequate work was identified, but excessive overtime and a high work backlog are a potential detriment to effective operations support.

The assignment, conduct, and documentation of maintenance work is well defined and was implemented in accordance with the licensee's program. Outstanding work requests and overdue preventive maintenance items are closely tracked.

Material procurement and control adequately supports maintenance. Receipt inspections and the tracking of material is well established. The procurement process, including the qualification of commercial grade parts is evolving and improving.

The calibration lab is well established and adequately supports the maintenance work. However, the lack of a hot calibration facility will complicate calibration of contaminated components.

The maintenance staff is experienced and well qualified. Communications within the maintenance organization are good and effective interfaces are established with other on-site organizations.

Management provides adequate direction and support. Assurance of quality function is effective at the technician level, with appropriate independent evaluation and verification.

5.4 Conclusions

The maintenance organization is adequately staffed and experienced. Effective work control, material control, procurement, equipment calibration, and management functions are in place. The staff is working significant overtime and the backlog of work requests remain high. Present staffing levels, and calibration facilities may not be fully effective in supporting extended power operation.

6.0 SURVEILLANCE

6.1 Review Scope

The ORAT reviewed the Technical Specification Surveillance Program and implementing procedures for readiness to assess the following.

-- Whether administrative procedures are available and adequate to control Technical Specification surveillance testing.

-- Whether station staffing is adequate to administer and conduct the Technical Specification Testing Program.

-- Whether surveillance testing is being successfully executed and adequately controlled.

-- Whether the SPECAPPRAISAL computer data base assured that Technical Specification surveillances are properly modeled in the data base.

6.2 Findings

The Technical Specification (TS) Test Program is controlled by administrative procedure MT10.1, Rev 2, "Technical Specification Surveillance Scheduling and Performance." Surveillances are tracked and scheduled using a computer-based system. Routine surveillances which are performed more often then once every seven days are administratively controlled by department procedures and are not tracked on a computer-based system.

The Surveillance Test Program is controlled by the Technical Support Department. The Lead Surveillance Engineer, who reports to the Program Support Department Manager, has two Engineering Analysts and an Engineering Aide working for him. Both Engineering Analysts are contract engineers; the licensee is pursuing filling these positions with NHY personnel.

The ORAT reviewed License Event Reports (LERs) for the past two years to identify missed Technical Specification (TS) Surveillances. Two 1988 LERs (88-02 and 88-06) identified missed surveillances. Both missed surveillances were attributed to not properly identifying equipment required to be tested. The ORAT concluded that these missed TS surveillances (in two years) did not indicate a generic program weakness.

Station Information Reports (SIRs) were reviewed for the past two years by the licensee to identify surveillance deficiencies. SIR 89-061 describes TS surveillance tests 4.3.3.9 and 4.3.3.10 for the liquid and gaseous effluent monitoring systems as being missed: monthly source checks of various effluent gas and liquid monitors were not conducted per the surveillance procedure. The licensee later identified that the source checks had been performed automatically by the monitoring systems, therefore, the monitors were operable. Because the monitors were operable, an LER was not required. The root cause of the missed surveillance test was identified as inability of the SPECAPPRAISAL computer program to track and reschedule partially completed surveillances. MT10.1 was changed so that partially completed surveillance tests can be input into the SPECAPPRAISAL program, and equipment not tested is now maintained on the limiting condition for operation (LCO) action statement status log sheets.

The ORAT independently verified the accuracy of the daily TS surveillance 4.1.1.2 for shutdown margin. The shutdown margin was recorded as item 31 on the TS Mode 5 log sheet.

The ORAT observed selected portions of surveillance procedures OX1413.01, Rev. 5, "RHR Quarterly Flow and Valve Stroke Test and 18 Month Valve Stroke Observation," and OX1426.05, Rev. 3, "D/G 1B Monthly Operability Surveillance." During performance of section 8.2 of procedure OX1413.01, the licensee identified that the discharge pressure gage was not adequate for the Inservice Testing (IST) surveillance of the RHR pump. The gage was temporarily replaced by pressure gage of acceptable accuracy. The licensee stated that the test procedure would be changed to specify installation of a more accurate pressure gage.

During performance of procedure OX1426.05 the inspector observed strong Quality Control involvement. Also, Maintenance provided assistance in test performance. In addition, Operations used the assistance of the system engineer and system I&C foreman to resolve the discharge pressure gage issue described above.

6.3 Assessment

Administrative procedures were available and adequate to successfully execute the Technical Specification Surveillance Program. Staffing to schedule and track surveillances was adequate; all positions were filled. Test procedures reviewed were detailed and technically sound. The professionalism and knowledge of personnel conducting TS surveillances was evaluated as strong.

6.4 Conclusions

The Technical Specification Surveillance Program has successfully been implemented for Mode 5 operations at Seabrook. Staffing levels and procedures are in place to support power operation surveillances.

7.0 RADIATION PROTECTION

7.1 Review Scope

The readiness and capability of the licensee's radiological controls program to support power ascension and full power operations was reviewed by the ORAT. Readiness and capability were evaluated against criteria in applicable regulatory requirements, Final Safety Analysis Report Commitments, and Technical Specification requirements. The ORAT evaluated the licensee's performance in this area by independent observations during plant tours, discussions with personnel, reviews of documentation, and independent walkdown of systems.

7.2 Findings

7.2.1 Organization and Staffing

The licensee has a well defined radiological controls organization (see Figure 5). The current, approved organization is fully staffed. ORAT review noted that the licensee hired 12 contractors to augment the organization and that there may be a need to provide additional permanent personnel (e.g. in dosimetry records) if the contractor support is terminated. This was based on inspector observation of work activities. The licensee's radiological controls representatives indicated that additional permanent personnel have been requested and that the qualified contractor personnel would be retained if needed.

The ORAT found the organization and staffing of the radiation protection portion of the radiological controls organization, with its contractor support, to be fully capable of supporting power operation.

The ORAT noted, during discussions with the licensee's radiological controls representatives, that the radwaste management and radwaste transportation organizational responsibilities were being changed. Those changes were not evaluated during this ORAT inspection. (This aspect will be reviewed from January 8-12, 1990 and documented in Report 90-03).

7.2.2 Qualification and Training

The ORAT reviewed the qualifications, training and continuing training for radiation protection personnel in the radiological controls organization. The review included technicians, supervisors, and managers.

The ORAT considered the personnel to be highly qualified and trained. Continuing training was being provided to permanent personnel as appropriate. Both permanent and contractor personnel were provided with timely training in new or revised procedures and industry events.

The ORAT noted that the contactor radiological controls technicians, hired to augment the staff during initial plant startup, have not been included in the formal continuing training program. Those contactors were provided initial

training and qualification when they were hired. The licensee indicated that the continuing training of contractors would be reviewed. Licensee attention is warranted to assure that this lack of continuing training does not develop into a qualification inadequacy.

Qualifications and training of radiation workers were reviewed during the May-June 1989 readiness inspection and were found acceptable. Current training was found by the ORAT to be adequate to support full power operation.

The ORAT noted that there was no specific training for radiological controls or operations personnel on the expected radiological conditions associated with plant systems which will present radiological hazards during power operation (e.g., expected areas of continuing and transient high radiation dose rates). These personnel may access such areas during startup and operation. Such training is especially appropriate for operations personnel since they are permitted to monitor their own entries into High radiation areas. The licensee initiated a review of this matter, which the ORAT considers a potential program improvement.

7.2.3 Communications, Morale and Attitude

The ORAT evaluated radiological controls, communications, morale and attitude. A positive attitude was evident during ORAT discussions with personnel. Radiological controls personnel communications with operations department personnel was acceptable. Generally, communications were good and were enhanced by attendance at frequent meetings with all levels of the organization.

The ORAT noted that the licensee had identified two instances where radiological controls personnel had not performed assigned tasks as expected. The licensee had thoroughly evaluated these instances and concluded that the individuals displayed poor attitudes and an apparent lack of professionalism and pride in their work. The ORAT noted that the licensee's management was notified of the apparent problem by the workers' peers. The ORAT found that the licensee had performed a thorough review of the issue and instituted measures to more closely monitor worker performance. These instances were considered to be isolated and not indicative of a pervasive problem. The ORAT considered overall attitude and morale to be very good.

7.2.4 Facilities and Equipment

The ORAT reviewed the radiological controls facilities and equipment and noted that there were ample supplies (both consumable and nonconsumable) to support the radiological controls program, including the external, internal and respiratory protection programs. The inventory of consummables (e.g. protective clothing) was computer tracked. Supplies were reordered when needed.

A state-of-the-art instrument calibration facility, which provides for calibration of monitoring instruments directly traceable to the National Institute of Standards Technology, was operational.

7.2.5 External Exposure Controls

The ORAT reviewed the following elements of the external exposure control program.

-- Procedures.
-- Dosimetry devices.
-- Radiation work permits.
-- Records and reports.
-- Number and types of survey meters.
-- High radiation area access controls.
-- Posting and barricading of radiological areas.
-- Calibration facilities and radiation sources used.
-- Area radiation monitors and calibrations.
-- Control and leak checking of radioactive sources.

The ORAT found that the overall external exposure controls program was well defined and capable of supporting power ascension and full power operation. Procedures were of good quality. Tours by ORAT members found radiological controlled areas to be properly posted.

The licensee has assigned a radiological controls individual to the planning and scheduling department. That individual reviews work requests and acts as an intermediary between the radiation protection group and work groups. This coordination was assessed as a benefit to radiological controls work review and planning.

The inspector identified the following weaknesses for which the licensee implemented prompt and acceptable corrective actions.

-- Procedure guidance explaining the methods of continuous coverage of personnel working in high radiation areas were subjective and open to interpretation.

-- Procedures did not provide good controls for tracking of extremity exposures during work.

-- Procedures did not provide a clear indication of the minimum radiological surveys needed to support radiation work permit work.

7.2.6 Internal Exposure Controls

The ORAT reviewed the following elements of the internal exposure control program.

-- Procedures.
-- Bioassay methods and equipment.
-- Records and reports.
-- Respiratory protection equipment.

-- Engineering controls.
-- Posting.

The ORAT concluded that the overall internal exposure control program was generally well defined and capable of supporting power ascension and full power operation. Ample supplies of respiratory protection and airborne radioactivity sampling equipment were available. The internal dosimetry program was fully implemented. Bioassay methods were established and implemented.

The ORAT observed candy wrappers in the radiological controlled area (RCA). Ingestion of food is prohibited in the RCA. The licensee initiated acceptable action to reinform personnel of the prohibition.

7.2.7 Safety-Related Ventilation Systems

The ORAT reviewed the surveillance testing of the control room emergency ventilation system and the containment enclosure ventilation system. These systems were visually inspected by the ORAT to determine their condition and to compare them to approved drawings.

The two systems were being retested to determine their operability as defined in the Technical Specifications (TSs). The retesting was consistent with TS requirements, with the following being noted.

-- A test to determine if the control room emergency ventilation system appropriately realigns and goes into the filter recirculation mode when ordered has not yet been done. That test is to be completed prior to going into Mode 4 after completion of the control room emergency ventilation system design change. Licensee controls to assure conduct and adequacy of this testing were assessed as acceptable.

-- The wattage test results for the installed heaters for the control room emergency ventilation system exceeded the TS specified wattage. No inability to meet operational requirements was involved.

The licensee had completed a technical clarification specifying that the heater wattage was acceptable and no change in Technical Specification was required. The inspector informed the licensee that the TSs should be changed to reflect the higher wattage. The licensee indicated that this and other technical clarifications were under review to evaluate the need to change the TSs. This unresolved item is considered part of an overall issue of whether any TS or FSAR provision has been altered by the licensee's interpretations and clarifications (443/89-83-01).

7.2.8 ALARA Program

The licensee has established a procedurally described program to control personnel ALARA (as low as reasonably achievable) exposures to radiation and radioactive material. That program places the ALARA review responsibility on job supervisors. The ORAT noted that job supervisors have received limited ALARA training.

The ALARA program also allows radiological controls technicians to issue radiation work permits for work involving accumulated personnel radiation exposure of less than two person-rem. These individuals have also received limited ALARA training.

In addition, the inspector noted that no formal program for establishing challenging ALARA goals was in place.

The ORAT concluded that a basic ALARA program was in place, with room for improvements in the assurance of ALARA proficiency of job supervisors and radiological controls technicians, and in establishing challenging and specific ALARA goals.

7.2.9 Industrial Safety and Housekeeping

The ORAT reviewed industrial safety and housekeeping during plant tours. NHY has established procedures for industrial safety and housekeeping.

Tours of the station by ORAT members noted some examples of failure of workers to use the safety equipment supplied by the licensee. For example, personnel were not using safety glasses or safety belts when working in the Refueling Cavity. The licensee immediately initiated review and acceptable corrective action.

During tours, questionable safety and fire protection practices were observed. Painters were noted to be cleaning brushes in an enclosed, non-ventilated room, and the paint fume smell was strong. Safety personnel had not been notified of this concern by the work supervisor, and no airborne sampling of atmospheric contaminates was done. The painters did not wear respirators, and left flammable, thinner-soaked rags in plastic bags.

The conditions noted above were assessed as poor practices which, though uncharacteristic, merit licensee attention. (Subsequent inspection confirmed correction of the specific items noted.) Continued adequacy of industrial safety and housekeeping will be regularly evaluated during routine NRC inspection.

7.2.10 Process and Area Radiation Monitors

The ORAT reviewed the calibration and surveillance of process and area radiation monitors described in the TSs. Instruments reviewed included control room isolation instrumentation, main steam line radiation monitors, and reactor coolant leakage detection instrumentation. The ORAT also reviewed the calibration of general area radiation monitors.

The ORAT found that the licensee established well defined procedures for surveillance testing and calibrating the instruments. All instruments were tested in accordance with TS requirements, and alarms were properly set.

The ORAT observed that the individuals performing calibration and testing had a high degree of system and procedure knowledge. Also, the ORAT noted that procedures required a second individual to verify that instrumentation was properly returned to service.

7.2.11 Radioactive Material and Contamination Control

The ORAT reviewed radioactive material and contamination control, including personnel contamination and the surveys and equipment used to check material being released from radiologically controlled areas (RCAs).

The ORAT found that the licensee had established well-defined procedures for posting and labeling of radioactive and contaminated material, for providing guidance for surveying material removed from RCAs, and for use of protective clothing. Material removed from the RCAs was surveyed by radiological controls personnel.

There was limited radioactive material stored at the station. The radioactive material present was primarily residue from calibration of equipment. No contaminated areas were identified. A routine survey program to check for station contamination has been established. Although no significant contamination currently exists, equipment and materials were thoroughly checked prior to being removed from the RCAs. Properly calibrated state-of-the-art personnel contamination monitors were being used by personnel exiting RCAs.

The ORAT noted no formal identification of all areas in the station where radioactive material was authorized to be stored. Identification of such areas as authorized for storage is a good practice. This was identified to the licensee for consideration.

The ORAT concluded that the radioactive material and contamination control program is capable of supporting power ascension and full power operation.

7.3 Conclusions

The licensee has established and implemented a generally well-defined radiological controls program capable of supporting power ascension and full power operation. NHY initiated immediate corrective actions on the concerns identified.

8.0 ENGINEERING AND TECHNICAL SUPPORT

8.1 Review Scope

The ORAT evaluated operational readiness of the engineering and technical support organizations through review of organization and staffing, modification and configuration controls, and interdepartmental interfaces. Some ongoing and recently completed modifications were reviewed for the quality of design planning, independent verification, installation, and testing. Also, the inspectors reviewed the licensee's process for determining whether a modification required completion prior to power operation. Planning for accomplishment of outstanding modifications was reviewed as well. Engineering staffing levels and qualifications were evaluated for adequacy of engineering support to the operating staff. During interviews with engineers and engineering supervisors, staff attitude and morale were assessed.

Working relationships between the organizational elements involved in engineering support activities were evaluated through interviews and by observations during licensee meetings. In addition, the ORAT reviewed the licensee's recent self-assessment and QA audits and actions on the findings to assess the effectiveness of the licensee's management oversight and commitment to program improvements.

8.2 Findings

8.2.1 Engineering and Technical Support Staffing

The on-site Seabrook Station engineering structure consists of the Plant Technical Support Department and the New Hampshire Yankee (NHY) Engineering Group. (See Figures 3A and 3B.) These staffs are supplemented by engineers from the Yankee Atomic Electric Company (YAEC) headquarters office. The Engineering and Technical Support staffing was assessed as adequate and had a very low turnover rate. The inspectors noted good working conditions, including sufficient facilities and equipment.

Persons contacted in the Engineering, Technical Support, and Quality Assurance (QA) areas were enthusiastic about their work and participation in preparation for plant operation. The overall favorable staff attitude and morale was further evidenced by the low turnover.

8.2.2 Station Modifications

The Technical Support Department evaluates requests for engineering services (RESs) that have been initiated by plant departments including Operations and Maintenance. RESs requiring plant changes are converted to Design Coordination Reports (DCRs) or minor modifications (M-Mods) by NHY Engineering through evaluation, review and approval prior to Work Request (WR) preparation.

Technical Support implements Station Operation Review Committee (SORC) approved DCRs and M-Mod packages. This is accomplished by preparation of a WR that defines the work to be accomplished and provides the applicable drawings, procedures, instructions and documentation requirements. Technical support to accomplish a DCR or M-Mod work is performed by systems engineers from the Technical Support staff.

The ORAT reviewed the RES, DCR, and M-Mod processes and sampled DCRs and M-Mods to establish their technical quality. Associated WRs and the field condition of affected components were examined. The inspectors found that the Engineering Group and Technical Support Department were effectively controlling plant modifications to ensure that plant system and components were in the condition required by plant design and regulatory requirements. Where work was not completed, review of scheduling and tracking of work progress, including operational hold points, showed that the licensee's program was effective in preventing component or system startup until work was completed. Proper equipment and system operability are confirmed by post-installation and startup testing.

The NHY Engineering Group staff's time is divided among DCR development, processing operational experience concerns, commitments and regulatory requirements, and conducting engineering reviews and developing improvements.

8.2.3 Plant Safety and Reliability

The ORAT found that both Engineering and Technical Support personnel were involved in tasks related to optimizing plant safety and reliability. These tasks include items such as emergency diesel generator (EDG) failure modes and effects analyses, non-nuclear balance of plant (BOP) systems review, and development of a motor-operated valve operational test method using valve stem strain gage measurements to quantify valve loading.

The control room and local annunciator response procedures (ARPs) for the emergency diesel generators (EDGs) were sampled by the ORAT inspectors. Operations had prepared these procedures and they had been reviewed by SORC. Other than through the SORC process, Engineering and Technical Support were not involved with the review and evaluation of the ARPs to establish that the defined operator actions are optimum. Such review and evaluation was assessed as a potential performance improvement item.

The ORAT evaluated the availability and useability of the EDG ARPs and noted the following.

-- The reviewed EDG ARPs were adequate in that they defined a suitable set of operator actions for each annunciator.

-- EDG local panel ARPs were not available for operator use in either of the two EDG buildings.

-- The index or identification of the ARPs was not consistent with the panel annunciator identifications; that is, the procedures used an alpha-numeric identification while the panel annunciators were identified by numbers only. This could delay operator response while the appropriate procedure was located.

The above problems were acknowledged by the licensee and corrected prior to the close of this inspection. Further, the licensee committed to review the availability of all safety-related ARPs for operator use at the local panels and confirm procedure useability, including verification that a direct correlation between the panel designator and the procedure designator existed. This was identified as an unresolved item (443/89-83-02) and is scheduled for resolution prior to plant restart.

In summary, the ORAT found that Engineering and Technical Support had generally provided the input necessary to assure that plant systems are in the as-designed condition and will function as intended.

8.2.4 Integrated Readiness Document (IRD)

The ORAT reviewed the licensee's Integrated Readiness Document (IRD) program with the Licensing Manager, who is responsible for the IRD. The objectives of the IRD are: (1) to track all activities required to be completed before issuance of the full power operating license (FPOL); and (2) to track activities for which the NRC has requested status at the time of licensing. The IRD consisted of 120 items and was being updated weekly. It included data on NRC Bulletins, Safety Evaluation Reports (SERs), Confirmatory Action Letter (CAL) 89-11 actions, Generic Letters, Inspection Reports, 10 CFR 21, NUREG-0737, Emergency Preparedness issues, Licensee Event Reports, and Self-Assessments.

The inspectors selected regulatory-driven Design Coordination Reports (DCRs) 87-311, 89-045, and 89-055. These DCRs were found in the IRD and their status was current and complete.

8.2.5 QA/QC Interface in Engineering Modifications

Design Coordination Reports (DCRs) for engineering modifications are reviewed and approved by Nuclear Quality Assurance (NQA) in accordance with Section 6 of the NHY QA Management Manual and Engineering Procedure 31312. The QA

engineer's scope of review includes the 10 CFR 50.59 safety evaluation, the analyses and calculations, the FSAR changes, procurement QA, and procedural and document changes.

When a DCR is SORC approved, the Technical Support Implementing Engineer develops the associated Work Request (WR) package. QA and Quality Control (QC) review the WR package, establish QC hold points, determine QA surveillances to be conducted during the implementation phases (e.g., walkdowns, testing, and turnover to Operations). QA engineers also support QC by participation in hold points. The QA engineers interface with the Technical Support Engineers in defining the QA requirement in areas such as nondestructive evaluation, welding, test procedures, corrective and preventive action.

The ORAT reviewed QA/QC involvement during the walkdown of DCRs 87-311, 87-422, and discussions regarding DCRs 88-182, 89-055, and 86-709. The first four DCRs dealt mainly with valve work; DCR 86-709 dealt with the control Room Habitability System. It was concluded that these engineering modifications were reviewed by an adequately staffed and trained NQA Engineering Group.

The ORAT reviewed Safety Audit and Review Committee Meeting 89-06 minutes of October 25, 1989. Those minutes included trending and analyses of Management Action Requests (MARs) and QA reports of Inspection, Surveillance, Audit, and Corrective Action. The ORAT also reviewed 15 Quality Assurance Surveillance Reports (QASRs), four QA Audit Reports (QAARs), one MAR, and Independent Review Team (IRT) QA Review Update Report No. 4. That update report monitors the IRT recommendations based on SALP Report 50-443/87-99. The ORAT found that NQA was keeping management apprised of the quality of work at the Seabrook Station.

To meet their Operational QA Program responsibilities, NQA identified plans to add selected technical expertise on the QA Audit Teams, use a more selective, in-depth technical and integrated approach to DCR review, increase QA Engineering involvement in DCR implementation, complete Level II (plant specifics; e.g., component design) and Level III (system) training for NQA personnel, and add permanent personnel with licensed operator experience on their staff. (NQA currently has two contractors with SRO experience.) ORAT review concluded that these are positive initiatives but do not affect present readiness for power operation.

8.2.6 Confirmatory Action Letter 89-11 Items

With respect to Confirmatory Action Letter 89-11, Engineering actions were noted to be complete or in progress. (Attachment 1 to this report contains CAL item status.)

During the inspection of the Engineering and Technical Support area and the review of related Quality Assurance activities, certain DCRs, M-Mods, LERs, and Maintenance and Operations Manual procedural changes were examined to confirm timely completion of CAL items. The team verified that significant

engineering involvement and effort had contributed to the corrective action implementation of the 1B CAL area. As a result of this inspection, CAL Items 1.B-1 through 1.B-8 were found to have been adequately addressed by licensee corrective measures and NHY management attention to their completion.

8.3 Conclusions

The ORAT concluded that Engineering and Technical Support have appropriate programs in place and have provided the engineering input to assure that plant systems and components are in the as-designed condition and will function as designed.

The integrated Readiness Document (IRD) adequately tracks items required for completion. Engineering and Technical Support activities have been audited and are under periodic surveillance by Nuclear Quality Assurance (NQA).

Overall, the ORAT concluded that Engineering and Technical Support is ready for power operation.

9.0 CONFIRMATORY ACTION LETTER CAL 89-11 CORRECTIVE ACTION PLAN (CAP)

9.1 Background

Based upon the licensee's failure to manually trip the reactor as required during the natural circulation test on June 22, 1989 and the failure to implement a comprehensive post-event analysis, CAL 89-11 was issued by NRC Region I on June 23, 1989. That CAL documents the licensee's agreement to review corrective actions and post-trip review results with the NRC. The licensee submitted, as an enclosure to its response (NYN-89086) to the CAL, a Corrective Action Plan which detailed specific areas for evaluation and action. On October 23, 1989, the licensee provided an updated submittal (NYN-89128) of its Corrective Action Plan. This document included a total of 55 corrective action items divided into seven general areas as follows:

-- 1A - Procedural Compliance
-- 1B - Equipment Readiness
-- 1C - Pretest Preparation
-- 1D - Power Ascension Test Program
-- 2A - Post Event Management
-- 2B - Operations Management
-- 3 - Management Oversight

The ORAT reviewed several of these corrective actions (discussed in this report as CAL items 1A-1 thru 3-8). Attachment 1 to this report documents the ORAT review status for CAL items and references the ORAT report section where the CAL item is discussed. All CAL items reviewed were found acceptable.

9.2 Management Oversight

The ORAT examined licensee management attention to, involvement in, and oversight of CAL 89-11 for CAL items 3-1 through 3-8. Documented evidence of the progress, tracking and review of specific corrective actions to completion was examined. Also, the ORAT reviewed the New Hampshire Yankee Core Values and Work Ethic Policy and the associated development of a "Values for Excellence" culture.

NHY has conducted independent assessments of the effectiveness of the CAL corrective measures. The results of several evaluations of the overall content and direction of the Corrective Action Plan have been provided to NHY executive management. The ORAT interviewed several onsite managers and discussed the impact of the newly implemented policies and program revisions on employee morale, understanding, conduct of work, and organizational goals.

The NRC had previously witnessed formal licensee training on the NHY procedural adherence and core values policies. In succeeding weeks, there were examples of management's dissemination of policy information in weekly news flyers, in the "Week in Review," and in the "Station Manager's Messenger." These contained articles on values for excellence, work performance, station goals and problem areas, and discussed both NHY policy and examples of where the work ethic can be appropriately applied. Random interviews with plant personnel by the ORAT confirmed that station personnel were receiving and acknowledging the intent of management's messages. One indicator was the increase in procedure changes initiated by employees, as discussed earlier in this report.

The ORAT also reviewed a Nuclear Quality Group review of the effectiveness of the NHY procedure compliance policy upgrade, a June 22 event case study which has been or is to be presented to personnel involved with the power ascension test program, and plans for the review of operating experience gained from startup test problems identified at other plants. Additionally, in assessing the effectiveness of the Station Operation Review Committee (SORC), the ORAT reviewed a SORC Effectiveness Evaluation conducted by an independent team of experienced nuclear personnel under the auspices of the NHY Independent Review Team.

Management oversight of the licensee's overall program of corrective measure implementation of CAL 89-11 was discussed with the NHY Senior Vice President and Chief Operating Officer (COO). He was thoroughly cognizant of both the status of corrective and ongoing review efforts and the need to assess the implementation of additional recommendations resulting from internal reviews. The Senior VP and COO was asked to provide the NRC with a letter discussing the NHY upper management perspective on the effectiveness of the corrective action program and upon the insights gained from the several independent reviews that have been conducted. The Senior VP and COO agreed to provide such an assessment as part of any further request to the NRC to lift the CAL constraints from Seabrook operation, after completion of the NHY Corrective Action Plan program implementation.

9.3 Procedure Compliance

Items 1.A-1 through 1.A-11 of the licensee's Corrective Action Plan constitute the licensee's response to improving operator understanding of the NHY Procedural Compliance Policy. This response consisted largely of developing, issuing, and conducting training on an improved policy on Procedural Compliance. The response also contained an instruction for the establishment of a Human Performance Evaluation System (HPES) and a revision of the Natural Circulation Test Procedure.

ORAT inspection consisted of a review of the licensee's proposed corrective action for each issue, and a comparison of the completed corrective action to the intent of the proposed corrective action. In addition, the ORAT reviewed training and Quality Assurance programs as they related to procedural compliance.

To address procedure compliance, the licensee took three basic steps. First, the policy on procedural compliance was clarified to more accurately reflect management's intent that all procedures are to be followed unless an overriding safety concern prohibits such action. The second step was to issue the revised policy statement once it was approved. The third step was to ensure that all site workers were aware of and understood the Procedure Compliance Policy. To meet this goal, a program designed to ensure that all workers receive training on the policy was established.

Station Procedure 10000 discusses the NHY policy on procedural compliance and states in part that, "procedure compliance is the foundation for the conduct of business..." It goes on to state that noncompliance with procedural requirements is only permissible when there are immediate overriding safety concerns involving:

-- protection of the health or safety of the public,
-- prevention of injury or life threatening situation,
-- prevention of damage to major plant equipment.

The policy also provides guidance on what to do if an approved procedure is found to be unclear or in error. The Procedure Compliance Policy, as stated in Station Procedure 10000, is quoted in the Seabrook Station Management Manual (SSMM), in the Production Management Manual (NPMM), and in the Operations Management Manual (OPMM). As an additional indication of the emphasis management places on procedural compliance, NHY meetings were held with all shifts to discuss the issue.

Ensuring that all workers are aware and have a proper understanding of procedural compliance was addressed in items 1.A-9 and 1.A-11 of the Corrective Action Plan. Item 1.A-9 specifically deals with the problem of ensuring that all site workers receive training on the basic Procedural Compliance Policy. In resolving this item, a training lesson on procedural compliance was prepared for approval by the Training Group Manager. In addition, a memorandum from the Executive Director-Nuclear Production was distributed to managers, department

supervisors, and training liaison personnel. That memorandum emphasized the importance of ensuring that all people for whom the individual manager was responsible received training. A memorandum from the Training Group Manager to the Executive Director-Nuclear Production addressed the actions being taken to resolve the problems encountered in achieving 100% compliance.

In a memorandum dated October 12, 1989, the Training Group Manager stated that current simulator training scenarios satisfactorily challenge operator judgement on procedural compliance. In a memorandum dated November 10, 1989, the Training Group Manager went on to state that Procedural Compliance Policy training for all operators and instructors is complete, that extensive EOP training on procedural compliance was conducted and witnessed by QA personnel, and that further intensive training for operating crews is scheduled.

Some items did not specifically deal with procedural compliance, yet were designed to improve procedures, their development and revision and overall contents (1.A-7, 1.A-8 and 1.A-10). Item 1.A-8 dealt with the reorganization of the Operations Department to provide people to perform the required development and review of Operations procedures. The resolution of this issue involved increasing Operations Department staffing from 94 to 103 people. In addition, each shift would be reorganized in an attempt to better support both ongoing maintenance and procedural review.

Item 1.A-10 involved the implementation of a Human Performance Evaluation System (HPES). The resolution of this item involved the appointment and qualification of a HPES Coordinator, and the adoption of industry accepted methodologies into a NHY program.

Items 1.A-7 involved the rewriting of the Natural Circulation Test procedure to allow for testing on decay heat rather than during low power critical operations. This change will involve a change to the FSAR and to previous commitments. The licensee has submitted a request to perform the test under actual decay heat conditions. This issue is under review by the NRC staff.

9.4 Power Ascension Test Program Review

CAL 89-11 identified items that required significant Startup Test Program involvement. Listed below are the stated corrective actions and the documents reviewed by the ORAT team to verify completion of the actions. No inadquacies were identified.

(1.D-2) Revise the Startup Test Program to remove the reactivity computer from the horseshoe area when it is not required for testing. Station Management Manual, SM 8.1, Power Ascension Test Program, Section 4.2.3, test performance, now requires this.

(1.D-3) Revise the Startup Test Procedures to provide additional guidance for terminating a test and exiting the test procedure when equipment malfunctions occur. ORAT review confirmed that this had been provided in the Station Management Manual, SM 8.1, Power Ascension Test Program, Section 4.2.3, 4.2.6 and 4.2.7.

(1.D-6) Revise the Power Ascension Test Program to include NHY Executive Management "review points" at the key plateaus of 5%, 30%, 50% and 75%. This is now required by the Station Management Manual, SM 8.1, Power Ascension Test Program, Section 4.3.2, Review and Approval of Results.

(1.D-7) Revise the Power Ascension Test Program to require that each procedure has a background document that describes the reason the test is being conducted, the basis for any set point and criteria, or other such information related to the test. The background document will be included in the procedure throughout the review, approval and implementation cycles. Doing so is now required by the Station Management Manual, SM 8.1, Power Ascension Test Program, Section 4.6.12, Attachments and Figure 5.4, Power Ascension Test Background Document Guideline.

9.5 Assessment

The development and issuance of the Procedural Compliance Policy as discussed in items 1.A-1, 1.A-2, 1.A-3, 1.A-4, and 1.A-6 was assessed as conservative. Management's intent that all procedures are to be followed unless an overriding safety concern prevents such action is abundantly clear. Guidance as to what constitutes an overriding safety concern and what to do if a procedure is ambiguous or in error is also provided in the policy. The policy was formally issued as a part of Station Procedure 10000. In addition, it has been quoted in the SSMM, the NPMM and the OPMM. The policy and its issuance have received ample management attention at all levels.

The effect that the enhanced policy on procedural compliance has had on station activities is discussed in other parts of this inspection report, as applicable (e.g., the increase in the number of procedures requiring revision because of increased sensitivity to procedural wording on the part of licensee personnel). Attention to operations has been high, and ORAT and other reviews have found very rigid adherence to procedures. The licensee's policy is conservative, clear, and has received adequate emphasis and management attention. Therefore, items 1.A-1, 1.A-2, 1.A-3, 1.A-4, 1.A-5 and 1.A-6 of the Corrective Action Plan have been adequately implemented.

The training conducted on procedural compliance, as discussed in item 1.A-9, is adequate to provide reasonable assurance that all site workers are or will be made aware of NHY policy. The various memoranda from the Training Group Manager indicate that management is taking a serious and active role in ensuring 100% training. Further, the lesson plan for Procedural Compliance Policy training has received adequate management review. The training program

is ongoing, and there is reasonable assurance that it will continue to be managed properly. Therefore, item 1.A-9 has been properly implemented by the licensee.

As part of the response to item 1.A-11, Licensed Operator Training Program, the Training Group Manager reviewed current simulator scenarios with regard to their ability to challenge operator judgement on procedural compliance. The scenarios were found to be adequate. As another part of the response to this item, a memorandum from the Training Group Manager stated that extensive SOP training with the focus on procedural compliance had been conducted and witnessed by QA personnel. NHY QA observers made no written comment on the training. Licensee training and QA managers were advised of the benefits of written QA assessments of training.

As the final part of the response to this item, a series of meetings between management and the operating crews was held. A summary of the questions that arose during these meetings, along with the answers to those questions, was distributed to all operators.

Although formal test results and comments by the QA department would have improved the licensee's response to this issue, it was apparent that management has given adequate attention to the review of the Licensed Operator Training Program as it regards procedural compliance. Licensed operator training will be the subject of future NRC inspections and Item 1.A-11 will receive additional NRC attention during those inspections. No evidence of inadequate training or lack of attention on the part of the training department to this issue were identified during this ORAT inspection.

The response to item 1.A-8, reorganization of Operations, was found to be appropriate to the needs of the NHY organization. An increase in the size of the Operations Department is ongoing. The form of the reorganization has not been finalized, but it was apparent that there was a dedicated management effort to complete the project. No further inspection of Item 1.A-8 is required because of the NHY management attention and direction to this area.

The response to item 1.A-10 consisted of the inception of a Human Performance Evaluation System (HPES). NHY procedure 12820 establishes the HPES and defines responsibilities. The HPES coordinator and the training manager were trained on the principles of HPES management. The HPES instruction references the proper documents. Therefore, the licensee's response adequately meets the commitment to establish a HPES. The ORAT had no further questions on Item 1.A-10.

NHY's response to item 1.A-7 was revision 3 to the Natural Circulation Test procedure. That procedure is currently under review by the NRC staff. This issue will be addressed in the context of the NRC review of the licensee's submittal (NYN-89140) of FSAR Chapter 14 revisions to their Power Ascension Test Program. Additionally, NRC inspection of the conduct of Natural Circulation

Testing is planned. While Item 1.A-7 cannot be considered finally closed until the FSAR change is approved, the planned resolution mechanism is considered acceptable, and no further direct inspection of CAL 1.A-7 is required.

With regard to items 3-1 through 3-8, review of licensee training material, internal evaluation reports, procedural revisions and policy messages, and interviews with NHY employees from the senior management level down have confirmed a strong management involvement with the NHY CAL corrective action program. While continued upper management oversight of the overall program is essential to the effectiveness of the implemented corrective measures, no additional NRC inspection, other than the routine planned operations and test program efforts of items 3-1 through 3-8, is required. Future NRC inspections of a routine nature will check station operator and support personnel attitudes, knowledge, and compliance with the revised NHY programs and procedures and how such programs effectively ensure an overall policy of safe plant operation. The ORAT had no further questions on the adequacy of licensee actions on these items.

9.6 Conclusions

The licensee's implementation of a Corrective Action Plan in response to CAL 89-11 is ongoing and well directed. Corrective measures are substantially complete for the corrective action items.

Management oversight of the NHY integrated program of corrective action implementation has been a strong and continuous effort. Senior licensee management personnel are aware that such monitoring and oversight must continue. The independent assessments of corrective action effectiveness of individual items were a positive initiative.

Overall, licensee implementation and management oversight of the Corrective Action Plan to CAL 89-11 has been good. ORAT inspection of licensee corrective measure response has provided evidence that the licensee, upon completion and closure of all CAL items, will be able to competently and safely operate Seabrook Station in accordance with NRC regulations and a conservative station philosophy.

10.0 EXIT MEETING

An exit meeting was held on November 20, 1989. Attendees are listed in Attachment 3 to this report.

ATTACHMENT 1 TO REPORT 50-443/89-83

NRC CONFIRMATORY ACTION LETTER 89-11 ITEMS REVIEWED

On June 23, 1989, the NRC issued Confirmatory Action Letter (CAL) 89-11 in response to the June 22, 1989 natural circulation test event. On July 12, 1989, the licensee addressed CAL 89-11 by submitting a detailed corrective action plan. The licensee submitted plan updates on August 25 and October 23, 1989. The plan includes specific action items which address the root causes of the event.

The ORAT reviewed the completion of selected CAL action items and found each item reviewed to be acceptable. Those CAL items inspected are listed below, with reference to applicable sections of this inspection report.

1A Procedure Compliance

Measures to assure procedure compliance were assessed as acceptable (see Report Details 9.2 through 9.5). (Items 1.A.1 through 1.A.10 were closed.)

1B Equipment Readiness

Equipment readiness was found by the ORAT inspection to be properly assured through staff qualifications, appropriate operations procedures, and system configuration and operability controls (see Detail 8.2.6). (Items 1.B.1 through 1.B.8 were closed.)

1C Pretest Preparation

Adequacy of pretest preparations was not assessed by the ORAT. This aspect is addressed in Inspection Report 50-443/89-21.

1D Power Ascension Test Program

ORAT review found acceptable Startup Test Program Corrective Actions (see Detail 9.4). (Items 1.D.2, 1.D.3, 1.D.6, and 1.D.7 were closed.) Acceptability of the Startup Test Program is further documented in Inspection Report 50-443/89-21.

2A Post Event Management

Complete review of post-event reviews requirements for comprehensive consideration of human performance and other evaluative criteria was not accomplished by the ORAT, but the conclusion was drawn that NHY upper management showed a conservative approach to problem resolution and an appropriate safety perspective (Detail 3.2). Also, the ORAT found plant operators and managers to be appropriately trained (Detail 4.2). Further, the ORAT found NHY's program for response to operational events to be acceptable (Detail 4.2.5) and noted that the NHY event reporting and evaluation process had been improved (Detail 4.2.6). The ORAT did confirm NHY plans

for corrective measures to ensure that post-event review requirements specifically require resolution of both human factors and equipment failure aspects. (Items 2.A.1 through 2.A.5 were closed.) Final inspection of these Event Evaluation and Post-Trip Review issues is addressed in Inspection Reports 50-443/89-13 and 50-443/89-21.

2B Operations Management

Operations staffing and management was found to be acceptable for power operation (see Details 3.2, 3.3, 4.2). (Item 2.B.2 was closed.)

3 Management Oversight

Management oversight of facility activities was found to be acceptable (see Details 3.0, 9.2 through 9.8). (Items 3.1 through 3.8 were closed.)

ATTACHMENT 2 TO REPORT 50-443/89-83

MAINTENANCE PROCEDURES REVIEWED OR OBSERVED

WR 88-6485	Emergency Diesel Generator Exhaust System; Repair Leaks
WR 89-2648	Disassemble Valve RH-21; Examine Seat and Disk
MS 0514.05	Movats Testing of Raising Stem Motor Operated Valves
ES 1809.001	Master Integrity Test Procedure
OX 1456.81	Operability Testing of IST Valves
WR 89-5278	SW/PCCW HX Eddy Current Testing
MS 0515.19	PCCW "A" and "B" Heat Exchanger Channel Head Cover Removal/Installation
MS 0517.03	Installation of Piping, Pipe Supports and STOW Supports
MS 0517.08	Installation of Structural Steel
MS 0517.10	Installation and Repair
DCR 87-193	Lifting Device for 1-CC-E17A&B Covers
MS 0518.08	Piping Support Spring Can Setting and System Balancing

ATTACHMENT 3 TO REPORT 50-443/89-83

EXIT MEETING ATTENDEES

New Hampshire Yankee

W. Temple, NRC Coordinator
R. Conolly, Lead QC Inspector
J. Warnock, Nuclear Quality Manager
D. Sovill, NQG Surveillance Supervisor
J. Cady, Independent Safety Engineering Group Supervisor
D. Perkins, Licensing Engineer
D. McLain, Production Services Manager
R. Sweeney, Bethesda Licensing Manager
F. Sowetsky, Technical Projects Supervisor
J. Peterson, Assistant Operations Manager
J. Malone, Operations Administrative Supervisor
W. Cash, Health Physics Department Supervisor
J. Linville, Chemistry Department Supervisor
T. Murphy, I&C Department Supervisor
P. Richardson, Training Manager
C. Vincent, QC Department Supervisor
J. Peschel, Regulatory Compliance Manager
R. DeLoach, Executive Director - Engineering/Licensing
T. Harpster, Director, Licensing Services
S. Buchwald, QA Supervisor
D. Moody, Station Manager
N. Pilisbury, Director of Quality Programs
B. Drawbridge, Executive Director of Nuclear Production
T. Feigenbaum, Senior Vice President and Chief Executive Officer
J. Grillo, Operations Manager
R. Cyr, Maintenance Manager
W. DiProfio, Assistant Station Manager

U.S. Nuclear Regulatory Commission

J. Johnson, Chief, Projects Branch No. 3, Division of Reactor Projects (DRP)
L. Kolonauski, Project Engineer, Technical Support Section, DRP
R. Fuhrmeister, Resident Inspector, Seabrook
R. Wessman, Director, Project Directorate I-3, NRR
V. Nerses, Project Manager, PD I-3, NRR
N. Dudley, Project Engineer, Projects Branch No. 4, DRP
A. Cerne, Senior Resident Inspector, Seabrook
F. Young, Senior Resident Inspector, Three Mile Island

FIGURE 1

NHY MANAGEMENT ORGANIZATION

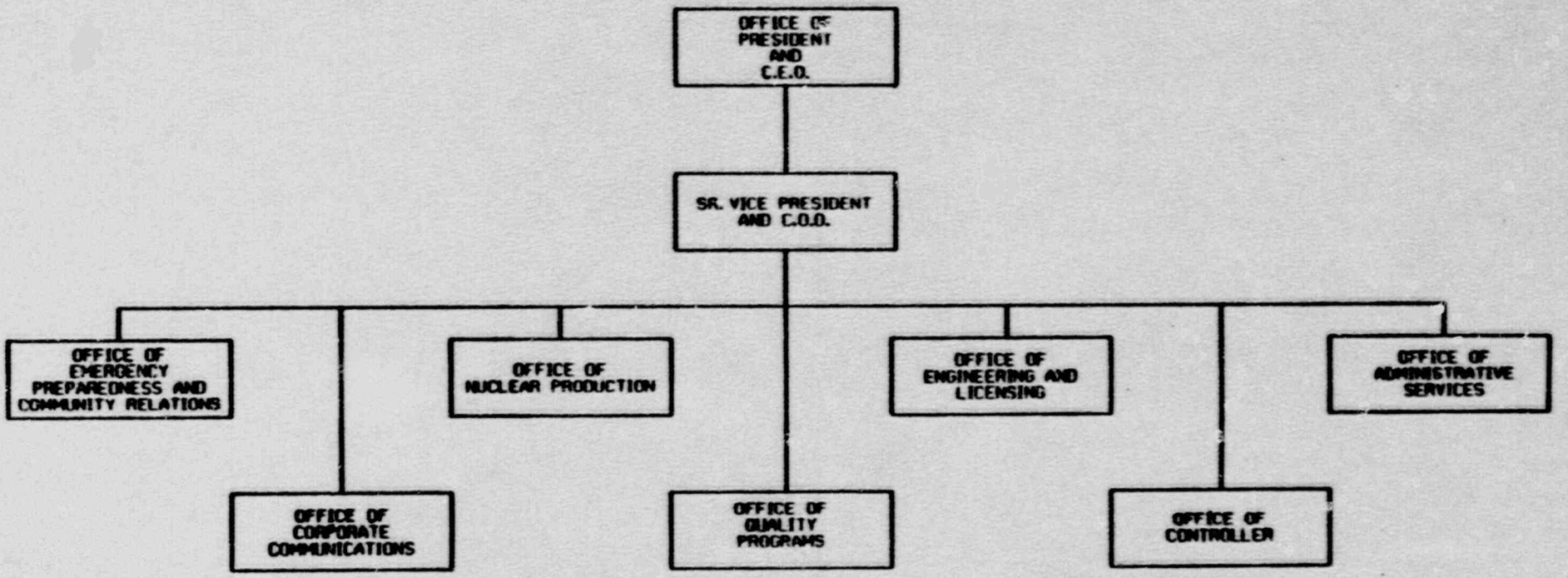
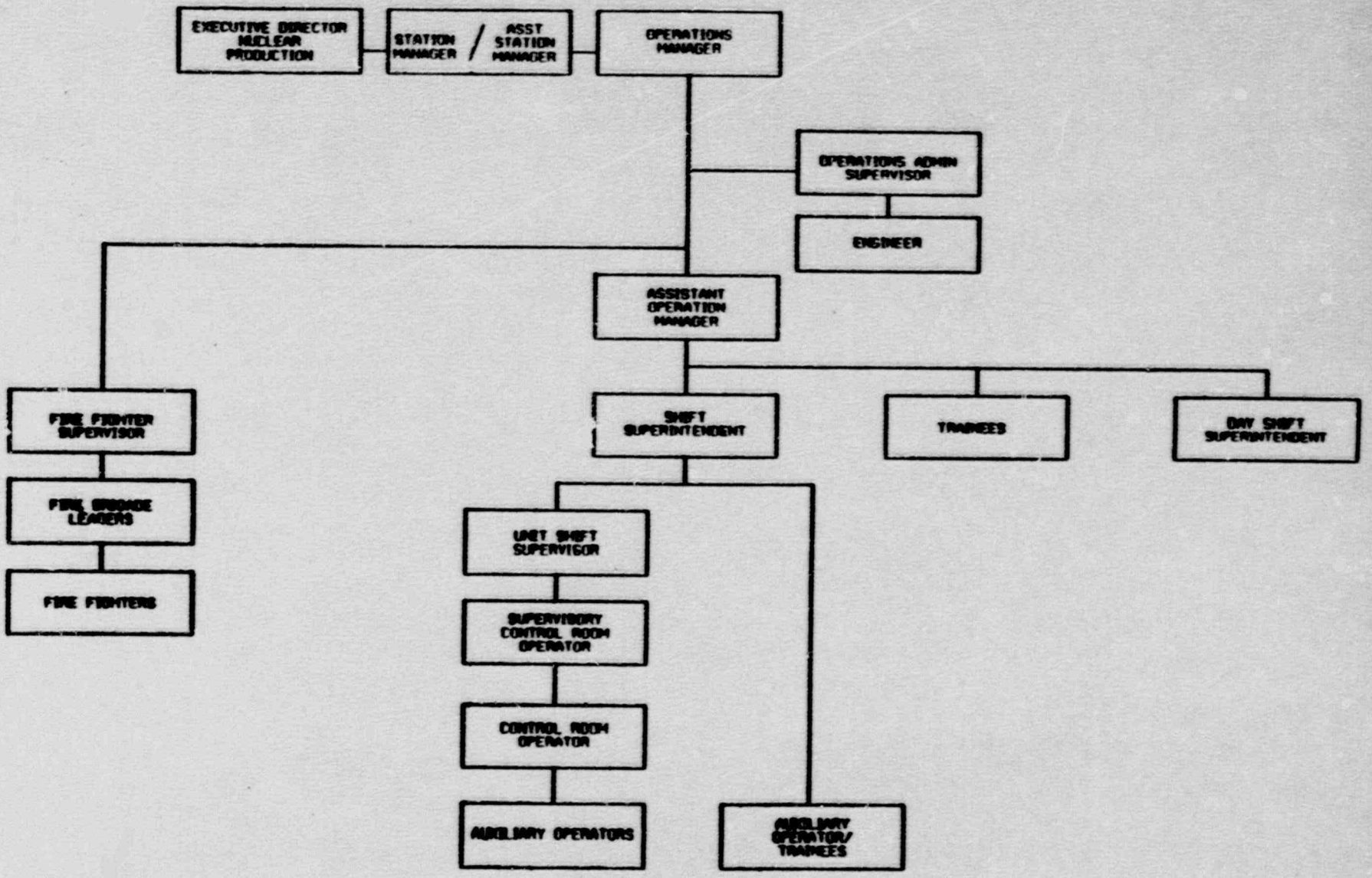


FIGURE 2

NHY OPERATIONS DIVISION



NHY NUCLEAR ENGINEERING DEPARTMENT (CORPORATE)

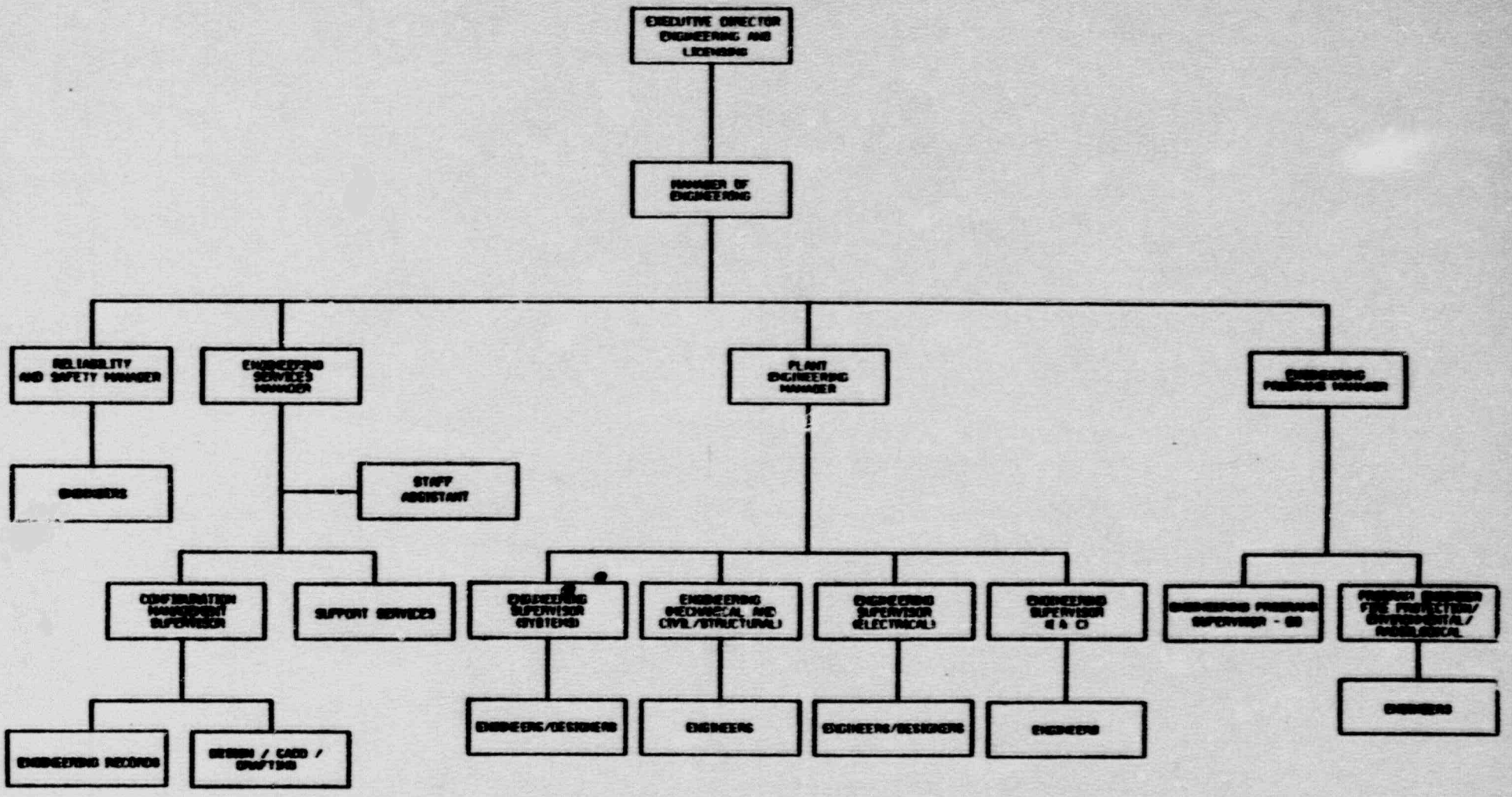


FIGURE 3B

NHY ENGINEERING DEPARTMENT (TECHNICAL SUPPORT)

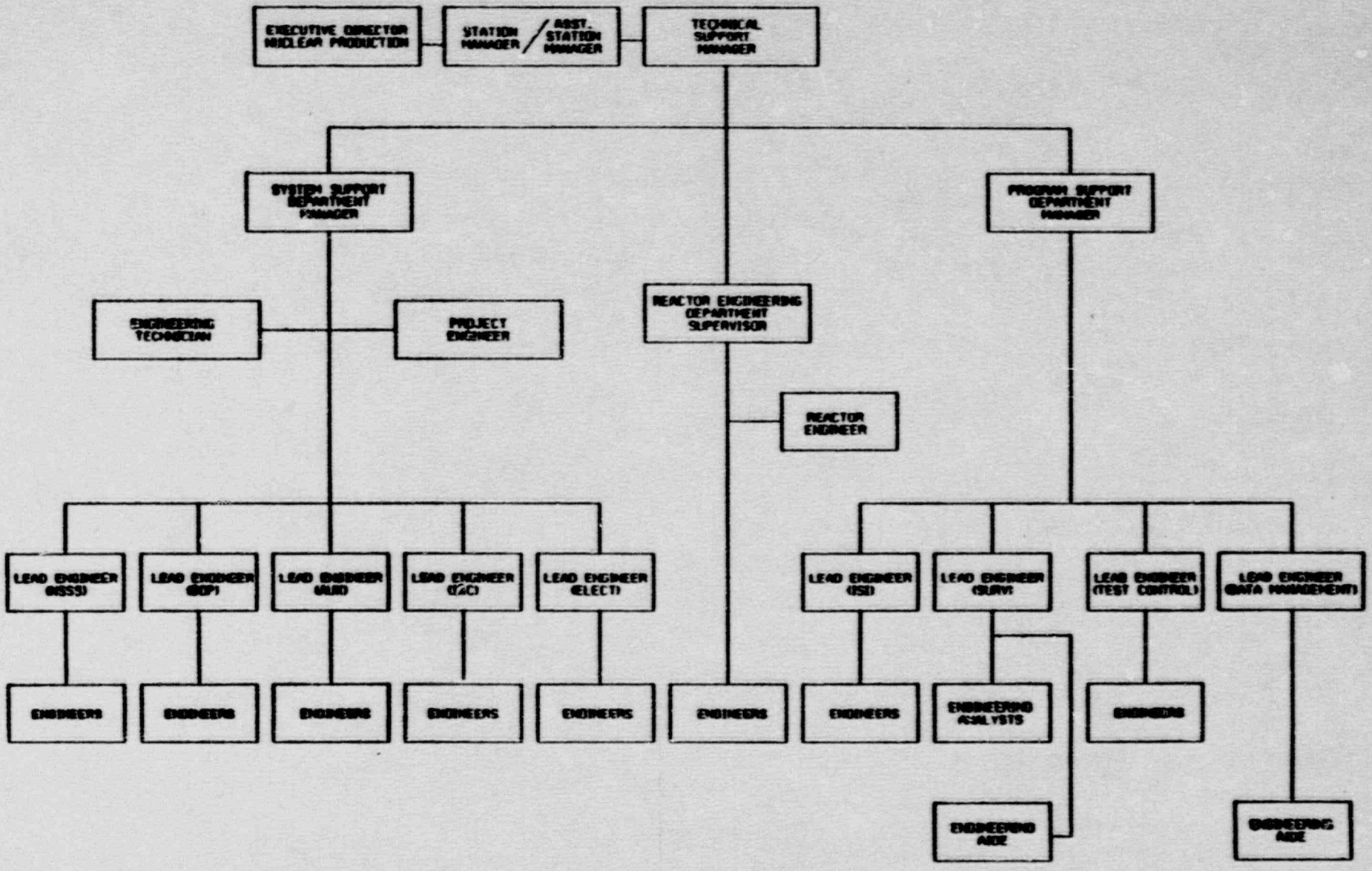


FIGURE 4

NHY SITE MAINTENANCE DIVISION

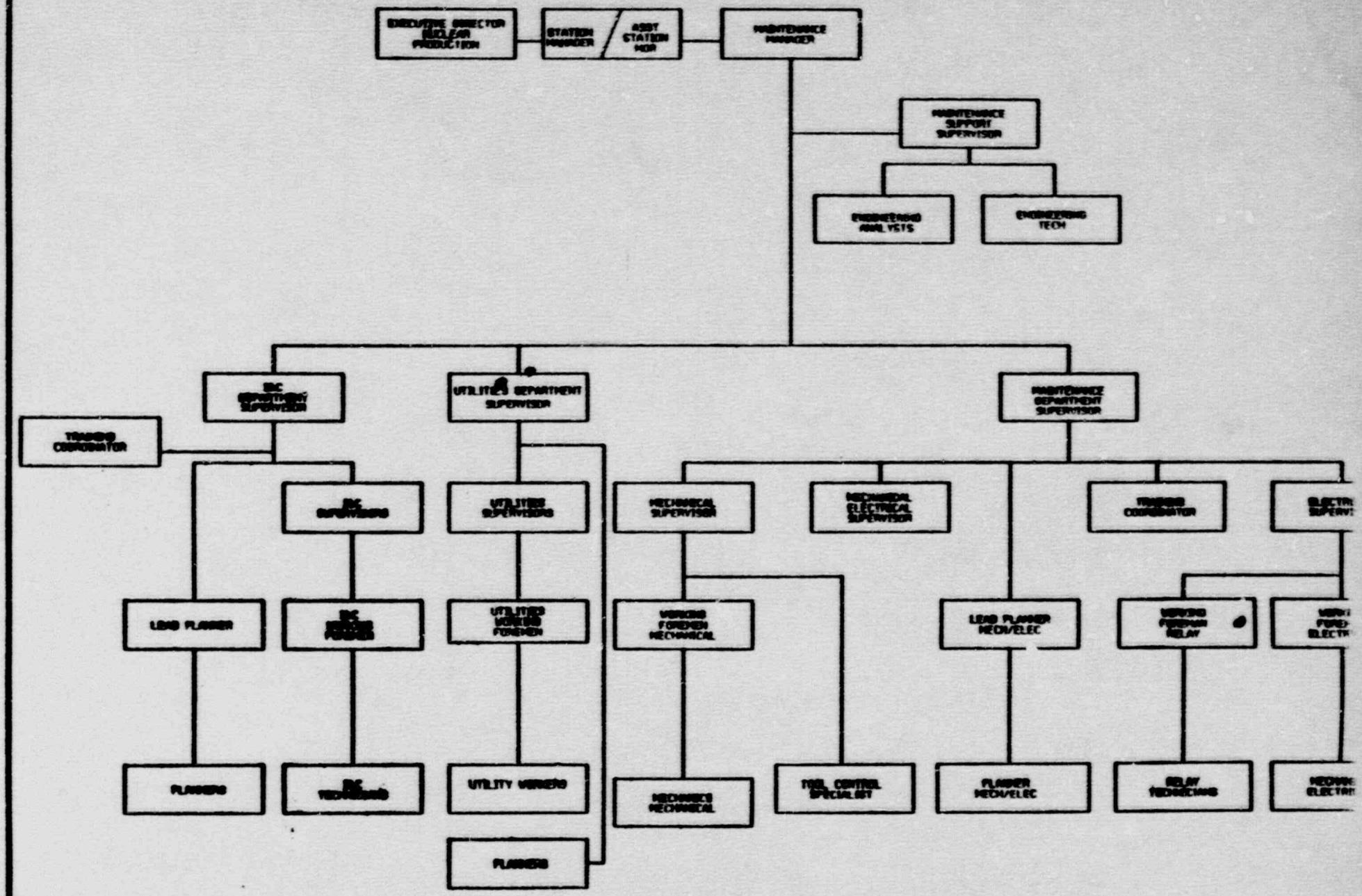
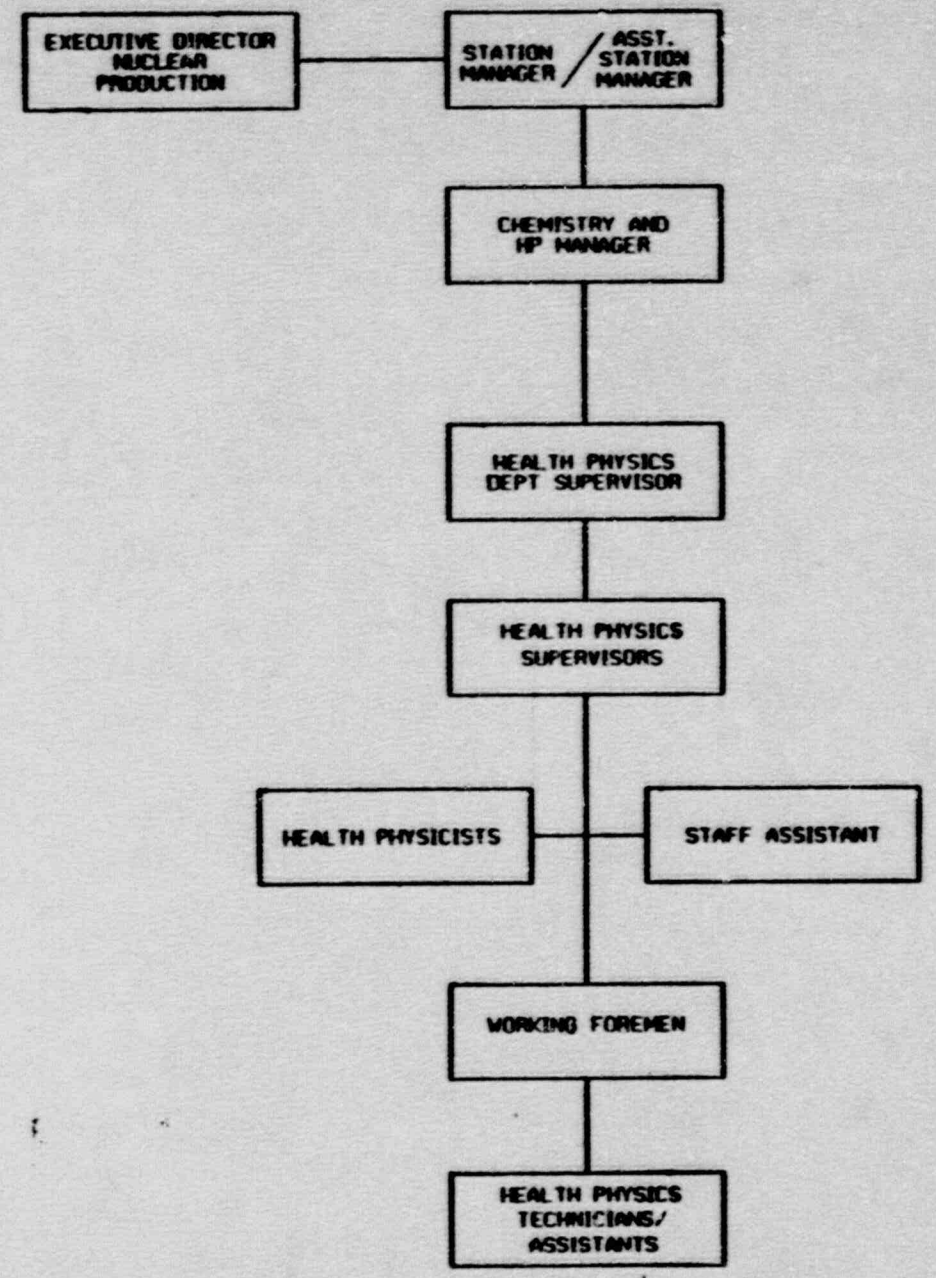


FIGURE 5

NHY HEALTH PHYSICS ORGANIZATION



NHY OUTAGE/MODIFICATIONS DIVISION

FIGURE 6