FEB - 2 1994

Docket Nos.: 50-325, 50-324
License Nos.: DPR-71, DPR-62

Carolina Power and Light Company
ATTN: Mr. R. A. Anderson
Vice President
Brunswick Steam Electric Plant
P. O. Box 10429
Southport, NC 28461

Gentlemen:

SUBJECT: MEETING SUMMARY - BRUNSWICK

This refers to the management meeting conducted in the Region II Office on January 24, 1994. The purpose of the meeting was to discuss the Brunswick Unit 2 refueling outage and recent refueling floor activities. It is our opinion that this meeting was beneficial in that it provided a good understanding of your planned outage and contamination event. A list of attendees, and a copy of your slides are enclosed.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and its enclosures will be placed in the NRC Public Document Room.

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

Sincerely,

/S/

Ellis W. Merschoff, Director
Division of Reactor Projects

Enclosures:
1. List of Attendees
2. Licensee Slides

cc w/encls:
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Vice President
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Carolina Power & Light Company
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(cc w/encls cont'd - See page 2)

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

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NRC Resident Inspector
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Star Route 1, Box 208
Southport, NC 28461

RII:DRP RII:DRP

HChristensen DVerrelli
02/ /94 02/ /94

ENCLOSURE 1

List of Attendees

Licensee Attendees:

R. Anderson, Vice President, Brunswick Site
C. Warren, Acting Director, Site Operations - Brunswick
B. Poteate, Acting Plant Manager, Unit 2 - Brunswick
J. Titrington, Manager, Plant Operations - Unit 2
G. Homml, Manager, Licensing

Nuclear Regulatory Commission:

S. D. Ebneter, Regional Administrator, Region II (RII)
L. A. Reyes, Deputy Regional Administrator, RII
A. F. Gibson, Director, Division of Reactor Safety, RII
J. R. Johnson, Deputy Director, Division of Reactor Projects (DRP), RII
D. M. Verrelli, Chief, Reactor Projects Branch 1, DRP, RII
H. O. Christensen, Chief, Reactor Projects Section 1A, DRP, RII
R. L. Prevatte, Senior Resident Inspector - Brunswick, DRP, RII

ENCLOSURE 2

Carolina Power & Light
Brunswick Nuclear Plant

Presented to the
Nuclear Regulatory Commission
January 24, 1994

Brunswick Unit 2
Outage Management

- UNIT 2 PLANT MANAGER
  CLAY WARREN

- UNIT 2 OUTAGE MANAGER
  BLAIR POTEATE

- UNIT 2 OPERATIONS MANAGER
  JOHN TITRINGTON

Agenda

- Outage Philosophy and Control — Clay Warren
- Outage Overview — Blair Poteate
- Shutdown Risk Assessment — John Titrington
- RHR Chemical Decon — John Titrington

Outage Philosophy

- Outages are Controlled by the Plant Manager
- Outage Scope and Schedule Has Been Developed by an Interdisciplinary Group
- Shift Outage Managers are Currently Licensed SRO's
- Plant Ownership of Projects and Activities
- Control of Contractors
- Assessment of Readiness to Startup
- Controlled Startup Plan

Pre-Outage Preparation

▪ System Walkdowns	Complete
▪ Interdisciplinary Scope Reviews	Complete
▪ Outage Scope Frozen	Complete
▪ Outage Schedule	
▸ Initial	Complete
▸ Final	02/25/94
▪ Shutdown Risk Assessment	
▸ Initial	Complete
▸ Final	02/18/94
▪ Maintenance Planning Completion	Complete
▪ Modification Planning Completion	01/28/94
▪ Clearances Approved	02/11/94
▪ All Material On Site	03/04/94
▪ Site Training on Schedule	03/04/94 (Start)
▪ Unit 2 Outage	03/25/94 (75 Days)

Outage Goals

Category	Description	Goal
Industrial Safety	Lost Time Accidents	0
	Permit Violations	0
	Tag Violations	0
ALARA	Radiation Exposure	≤312 Rem
Quality	No Forced Cooldown Due to Outage Activities	100 Day Run
	LER's Due to Personnel Error	0
	Level 1 ACR's Due to Personnel Error	<2
Financial	Budget	Within Budget
Production	Scope Management	<25% Growth
	Outage Duration	<75 Days
	Completion of Original Work	≥ 95%

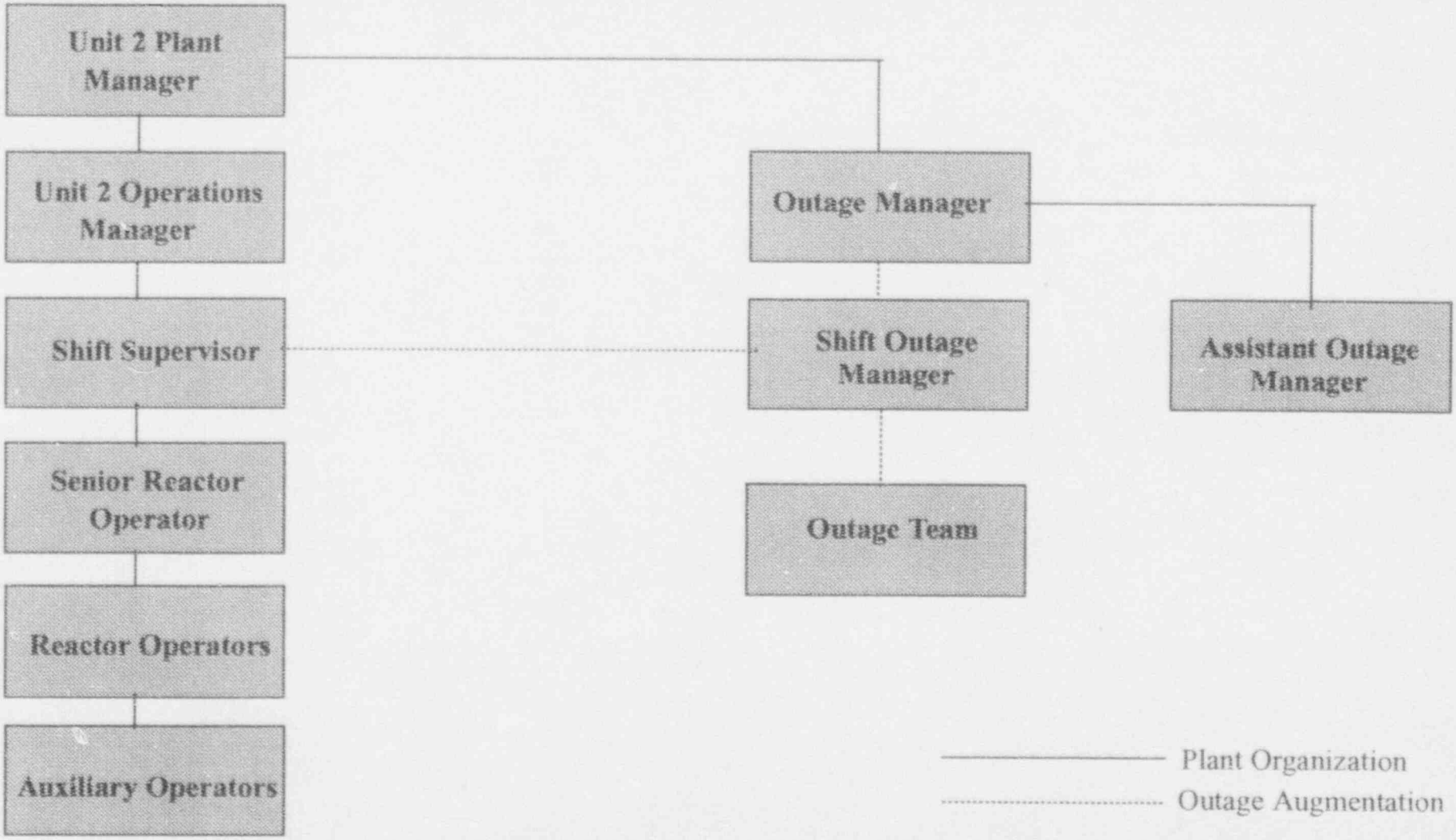
Outage Scope

- Corrective and Preventive Maintenance
  - 1400 Corrective Maintenance Tasks - Outage Required
  - 1800 Preventive Maintenance Tasks
- In-Service Inspection Program
- Major Projects and Modifications
  - Reactor Feedwater Digital Control Replacement
  - Core Shroud Inspection
  - Core Shroud Head Bolt Replacement
  - Service Water System Inspection
  - Circulating Water Betterment

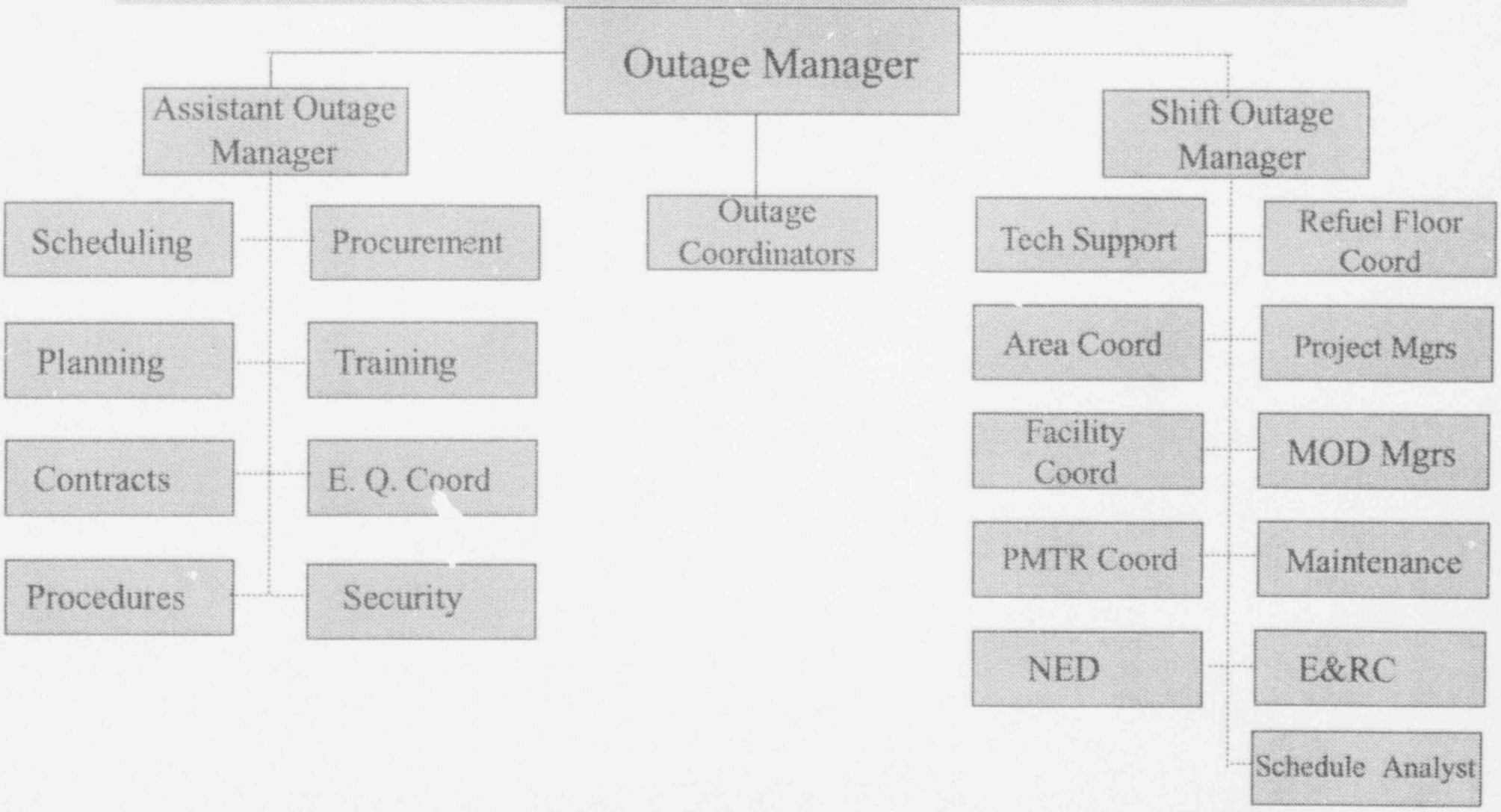
Outage Scope

- Major Projects and Modifications (Continued)
  - Torus Coating Refurbishment
  - RHR Valve Replacements
  - Structural Steel Upgrades
  - NUMAC Steam Detection Upgrade
  - RPV Level Reference Leg Modification
  - SAT Transformer "Y" Winding Bus Duct Replacement
  - Diesel Generator Service Water Piping Replacement
  - Reactor Feedpump Turbine Overhaul
  - Turbine Generator Overhaul
  - VOTES Testing
  - Jet Pump Hold-Down Beam Replacement

Unit 2 Outage Organization



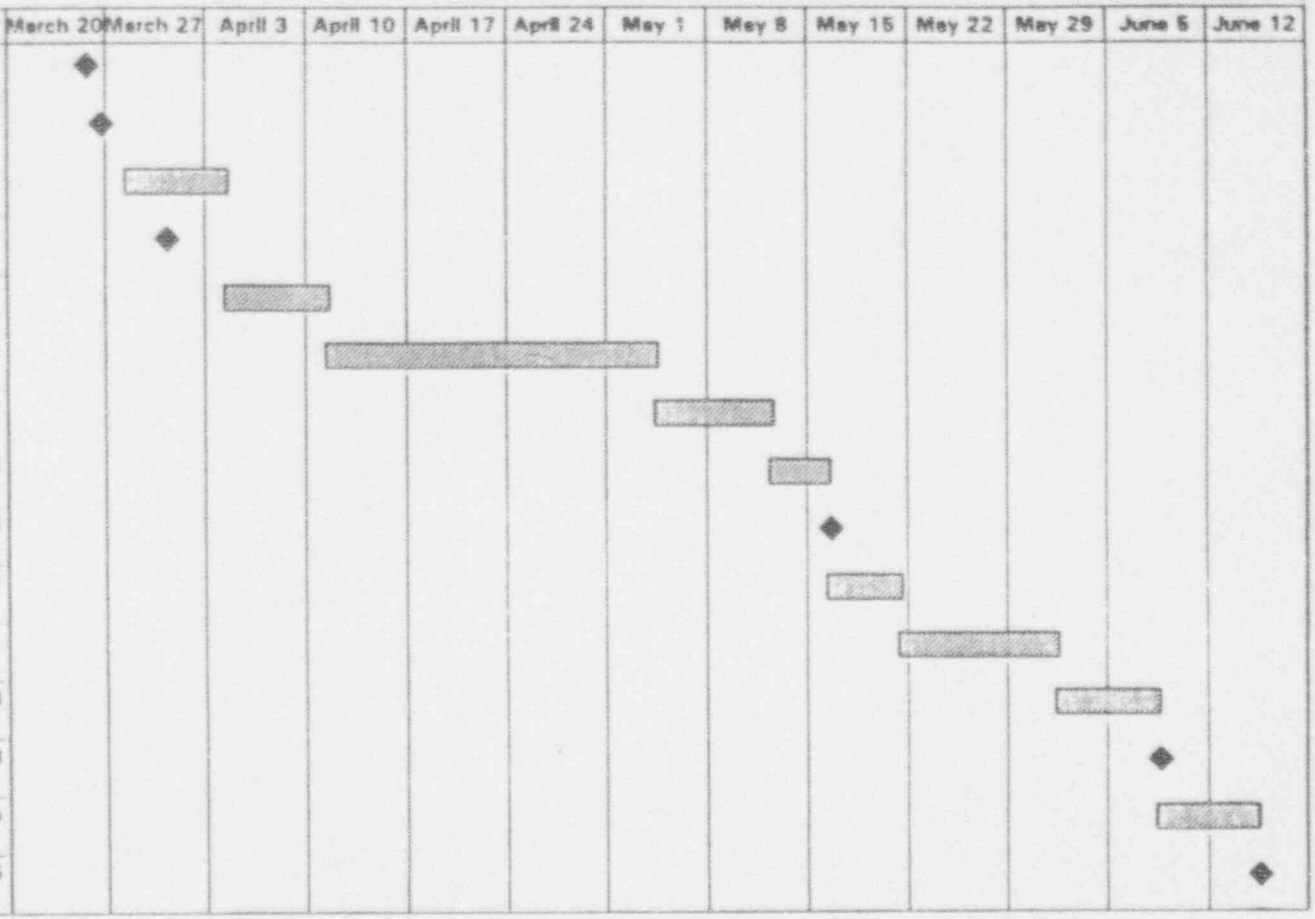
Outage Management Organization



BRUNSWICK NUCLEAR PLANT
UNIT 2 1994 REFUELING OUTAGE
CRITICAL PATH

Preliminary

Name	Scheduled	Scheduled F
LEAVE GRID (BREAKER OPEN)	March 25	March 25
UNIT 2 -ENTER MODE 4 (COLD SHUTDOWN)	March 26	March 26
UNIT 2 - REACTOR DISASSEMBLY FOR FUEL	March 28	April 4
ENTER MODE 5	March 31	March 31
UNIT 2 - REACTOR CORE OFFLOAD	April 4	April 11
UNIT 2 RHR VALVE REPLACEMENT A & B	April 11	May 4
UNIT 2 - REACTOR CORE RELOAD	May 4	May 12
UNIT 2 - REACTOR REASSEMBLY	May 12	May 16
ENTER MODE 4	May 16	May 16
UNIT 2 - RPV HYDRO	May 16	May 21
UNIT 2 - SYSTEMS RESTORATION & PMTRS -	May 21	June 1
UNIT 2 - REACTOR STARTUP, HEATUP & SYNCH TO GRID	June 1	June 8
UNIT 2 - SYNCH TO GRID - CLOSE BREAKER	June 8	June 8
UNIT 2 - LOW POWER TESTING & POWER ASCENSION TO	June 8	June 15
UNIT 2 - 100% POWER MILESTONE	June 15	June 15



Project:
Date: 1/18/94

Critical
Noncritical
Progress
Milestone
Summary
Rolled Up

Shutdown Risk Assessment

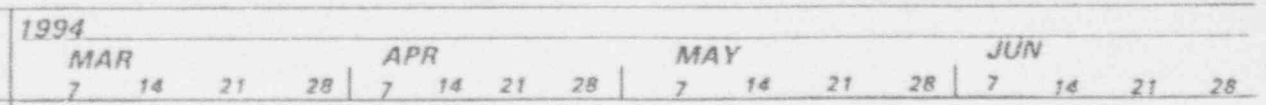
- Process Consistent With NUMARC Guidelines
- Defense in Depth for Key Safety Functions
- Schedule Review by Multi-Disciplinary Team
- Review and Approval Process
  - Initial Review — Complete
  - Subsequent Review — February, 1994
  - PNSC Review and Approval — Early March, 1994
- Risk Assessment of Emergent Work and Activity Changes

Shutdown Risk Interface Control

- Formal Training for Operations
- Daily Scorecards on System Availability
- Management Review of Emergent Work
- Communication

BRUNSWICK NUCLEAR PLANT
UNIT 2 1994 REFUELING OUTAGE

Preliminary



ACTIVITIES	START	FINISH
DECAY HEAT REMOVAL		
RHR A WORK WINDOW	11-APR-94	4-MAY-94
RHR B WORK WINDOW	11-APR-94	4-MAY-94
RHR A AVAILABLE WINDOW	25-MAR-94	11-APR-94
RHR B AVAILABLE WORK WINDOW	4-MAY-94	8-JUN-94
FUEL POOL COOLING WORK		
FUEL POOL COOLING AVAILABLE	11-APR-94	4-MAY-94
SSFPC AVAILABLE	11-APR-94	4-MAY-94
MAKEUP (FLOODING)		
CORE SPRAY A WORK	24-APR-94	5-MAY-94
CORE SPRAY B WORK	11-APR-94	24-APR-94
CORE SPRAY A AVAILABLE	25-MAR-94	24-APR-94
CORE SPRAY B AVAILABLE	24-APR-94	8-JUN-94
ELECTRICAL POWER DISTRIBUTION		
UAT WORK	9-MAY-94	19-MAY-94
SAT WORK	28-MAR-94	10-APR-94
DG 3 WORK	11-APR--94	18-APR-94
	25-APR-94	2-MAY-94
DG 4 WORK	18-APR-94	25-APR-94
	2-MAY-94	9-MAY-94
UAT IN SERVICE	25-MAR-94	9-MAY-94
	20-MAY-94	4-JUN-94
SAT IN SERVICE	10-APR-94	4-JUN-94
DG 1 AVAILABLE	25-MAR-94	8-JUN-94
DG 2 AVAILABLE	25-MAR-94	8-JUN-94
DG 3 AVAILABLE	25-MAR-94	11-APR-94
	18-APR-94	25-APR-94
	2-MAY-94	8-JUN-94
DG 4 AVAILABLE	25-MAR-94	18-APR-94
	25-APR-94	2-MAY-94
	9-MAY-94	8-JUN-94

RHR System
Chemical Decon Overview

- SCOPE
  - Both Loops
  - Pump Casings
  - Pump Suction and Discharge Piping

- BENEFIT
  - 286 Manrem / 5 years
  - DF - 8 general area - 20 contact

- DURATION
  - 1 Step - 3.5 days
  - 3 Step - 5.5 days

- METHOD
  - Citrox - 3 Step
  - Citrox - AP - Citrox

RHR System Decon Preferred Method

- Perform Decon On-Line
  - Perform One Loop at a Time - 7 Day LCO
  - Renders Loop Inop, But Can be Restored Within 2 Hours
  - Loop Unavailability Time - 5.5 days max.

- Advantages
  - Low Effect on Nuclear Safety
  - ALARA
    - Maximum Exposure Reduction
    - Minimum Exposure to Perform Decon

RHR System Decon Evaluation of Alternatives

- Perform Decon After Shutdown Prior to Core Offload
  - Disadvantage
    - Greater Safety Risk Than Preferred Method
    - ALARA - More Exposure Than Preferred Method

- Perform Decon After Shutdown After Core Offload
  - Disadvantage
    - ALARA - More Exposure Than Preferred Method
      - Higher Rad Levels

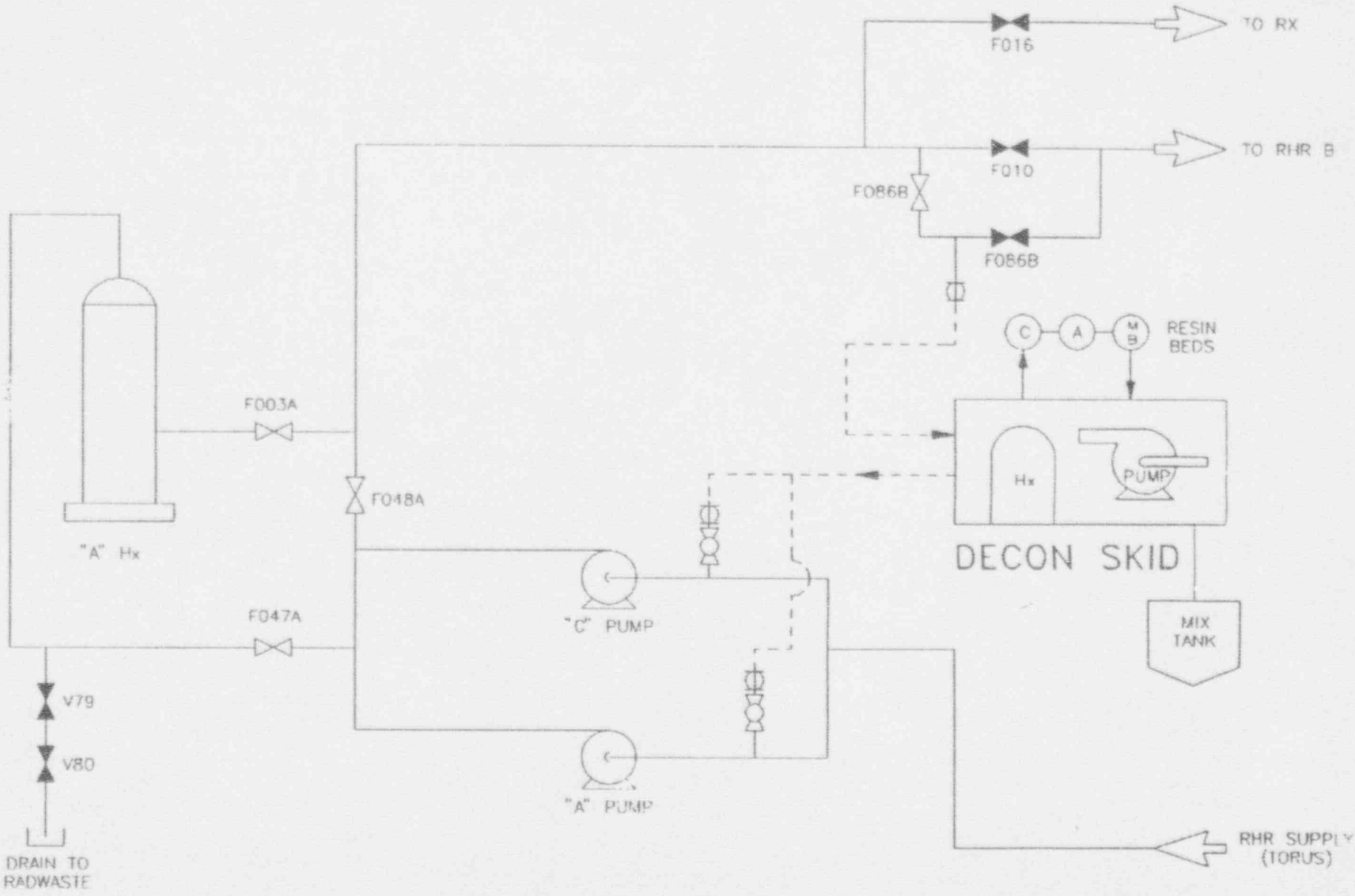
RHR Chemical Decon Management Controls

- Dedicated Operators
- Operator Training
- System Recovery Procedure
- Contingency Planning
- Work Restrictions on Redundant Equipment

RHR Decon Schedule

▪ PRA Preliminary Review	Complete
▪ PRA Final Review	02/07/94
▪ Safety Review	02/09/94
▪ Procedure Approval	02/16/94
▪ PNSC Review	02/17/94
▪ Training on Project	02/24/94
▪ RHR A-Loop Decon	02/26/94
▪ RHR B-Loop Decon	03/05/94

A – RHR SYSTEM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DECON SKID
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"C" PUMP
MIX TANK
F047A
V79
V80
"A" PUMP
RHR SUPPLY (TORUS)
DRAIN TO RADWASTE

Carolina Power & Light

Presented To The
Nuclear Regulatory Commission
January 24, 1994

Agenda

- Sequence Of Events
- Results Of Occurrence
- Analysis Of Occurrence
- Corrective Actions

Sequence Of Events

- 1/4 - 13/94
  - Three meetings to discuss cavity decon occurred
- 1/19/94 - 1900
  - Night Shift turnover occurred
- 2015
  - GE pre-job briefing with craft
    - Plan called for two separate evolutions
    - First, remove flange protectors, clean flange with scotch brite and rags, and remove old O-Ring
    - Second, GE inspect for cleanliness
- 2050
  - HP pre-job briefing with GE completed
    - HP not aware of abrasive tools being taken into cavity for cleaning use

Sequence Of Events (Continued)

- 2100 - 2130
  - Evolution begins
  - Flange protectors removed (3 of 5 raised to refuel floor without wrapping)
  - Commenced cleaning of flange face
  - Shoe contamination found on a number of individuals (3 HP Techs and 1 GE Tech working on overhead crane)
- 2135
  - Began characterization and control of contamination
    - Gross Masslin performed with contamination found in front of step off pad
    - Began air sample in clean area

Sequence Of Events (Continued)

- 2154
  - Restricted access to refueling floor
- 2200
  - 117' work stopped and personnel removed
- 2210
  - Identified contamination on 117, 98, 80 East and West, and 20 foot elevations
  - Identified 7 shoe contaminations and 2 skin contaminations
- 1/20/94
  - Decontamination Effort Proceeded
  - CP&L Site Incident Investigation Team Authorized
  - HP Investigation found no internal contaminations

Results Of Occurrence

- Minimal Contamination Of Areas
  - Elevations 117, 98, 80 East and West, 20
- Minor Contamination Of Personnel
  - 9 of 57 With Minimal External Contamination
  - No Internal Contaminations Occurred
- Conclusion
  - Minimal Radiological Consequence

Analysis Of Occurrence

- Management Expectations
  - PLP-17 Not Used
  - HP Desk Top Guide
  - Procedure Not Followed

Corrective Actions

- Stressed Importance Of Pre-Job Expectations
- Development Of Pre-Job Briefing Procedure For HP
- Site Investigation Team Formed
  - Further Corrective Actions Will Be Reviewed