NMC
Committed to Nuclear Excellence

Point Beach Nuclear Plant
Operated by Nuclear Management Company, LLC

October 15, 2004

NRC 2004-0108
10 CFR 50, Appendix E

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Point Beach Nuclear Plant, Units 1 and 2
Dockets 50-266 and 50-301
License Nos. DPR-24 and DPR-27

Revision to Emergency Action Levels

Reference: (1) Letter from NMC to NRC dated June 25, 2004 (NRC 2004-0064).

In Reference 1, Nuclear Management Company, LLC (NMC), submitted a proposed Emergency Plan and procedure changes, upgrading the Point Beach Nuclear Plant (PBNP) emergency action levels (EALs) based on NEI 99-01, Revision 4, "Methodology for Development of Emergency Action Levels," using the guidance of Regulatory Issue Summary (RIS) 2003-18, Supplement 1, "Use of Nuclear Energy Institute (NEI) 99-01, 'Methodology for Development of Emergency Action Levels,' " dated July 13, 2004.

This submittal was discussed with Nuclear Regulatory Commission (NRC) staff during a public meeting on September 2, 2004, at the NRC Headquarters in Rockville, MD. As a result of this meeting, NMC committed to evaluate the need to supplement Reference 1. This submittal satisfies this commitment and supercedes Reference 1 in its entirety.

Nuclear Management Company, LLC, (NMC) is transmitting for NRC review and approval, revisions to the PBNP EALs. This revision implements new EALs based on NEI 99-01, Revision 4.

The enclosed security EALs are in compliance with NEI 99-01, Revision 4, but are not aligned with the "Order For Interim Safeguards and Security Compensatory Measures for - Point Beach Nuclear Plant, Units 1 & 2" dated February 25, 2002. The PBNP response to that Order is dated September 4, 2002. The NRC has indicated that additional security EALs are being developed for threat advisories. If revised security EALs are issued before the enclosed EALs are approved, NMC will provide a supplement to reflect the updated security EALs. NMC intends to remain in compliance with the security EALs in the September 2002 security Order response, as modified by the threat advisories, until the NRC approves new security EALs for PBNP.

A045

6590 Nuclear Road • Two Rivers, Wisconsin 54241
Telephone: 920.755.2321

The current EAL scheme in use at PBNP is based on NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants."

This request contains the following enclosures:

Enclosure I: Table of Contents
Enclosure II: Summary Explanation
Enclosure III: State/Local Government Official Agreement Documentation
Enclosure IV: Proposed Technical Basis Document, Emergency Plan, and Procedure Changes
Enclosure V: Justification Matrix
Enclosure VI: Reference Material

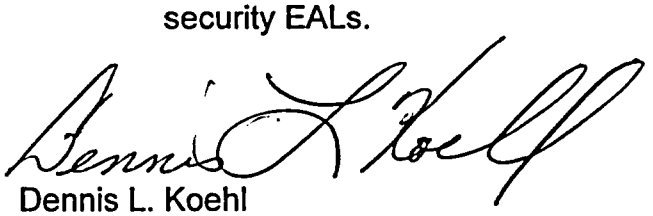
These proposed EALs have been discussed and agreed to by applicable state and local government officials, and have been reviewed and approved by the Plant Operations Review Committee.

It is requested that the enclosed EAL revision be approved by March 31, 2005.

Summary of Commitments

This letter makes the following new commitment:

1) The NRC has indicated that additional security EALs are being developed for threat advisories. If revised security EALs are issued before the enclosed EALs are approved, NMC will provide a supplement to reflect the updated security EALs.



Dennis L. Koehl
Site Vice-President, Point Beach Nuclear Plant
Nuclear Management Company, LLC

Enclosures (6)

cc: Administrator, Region III, USNRC
Project Manager, Point Beach Nuclear Plant, USNRC
Resident Inspector, Point Beach Nuclear Plant, USNRC
Spent Fuel Project Office

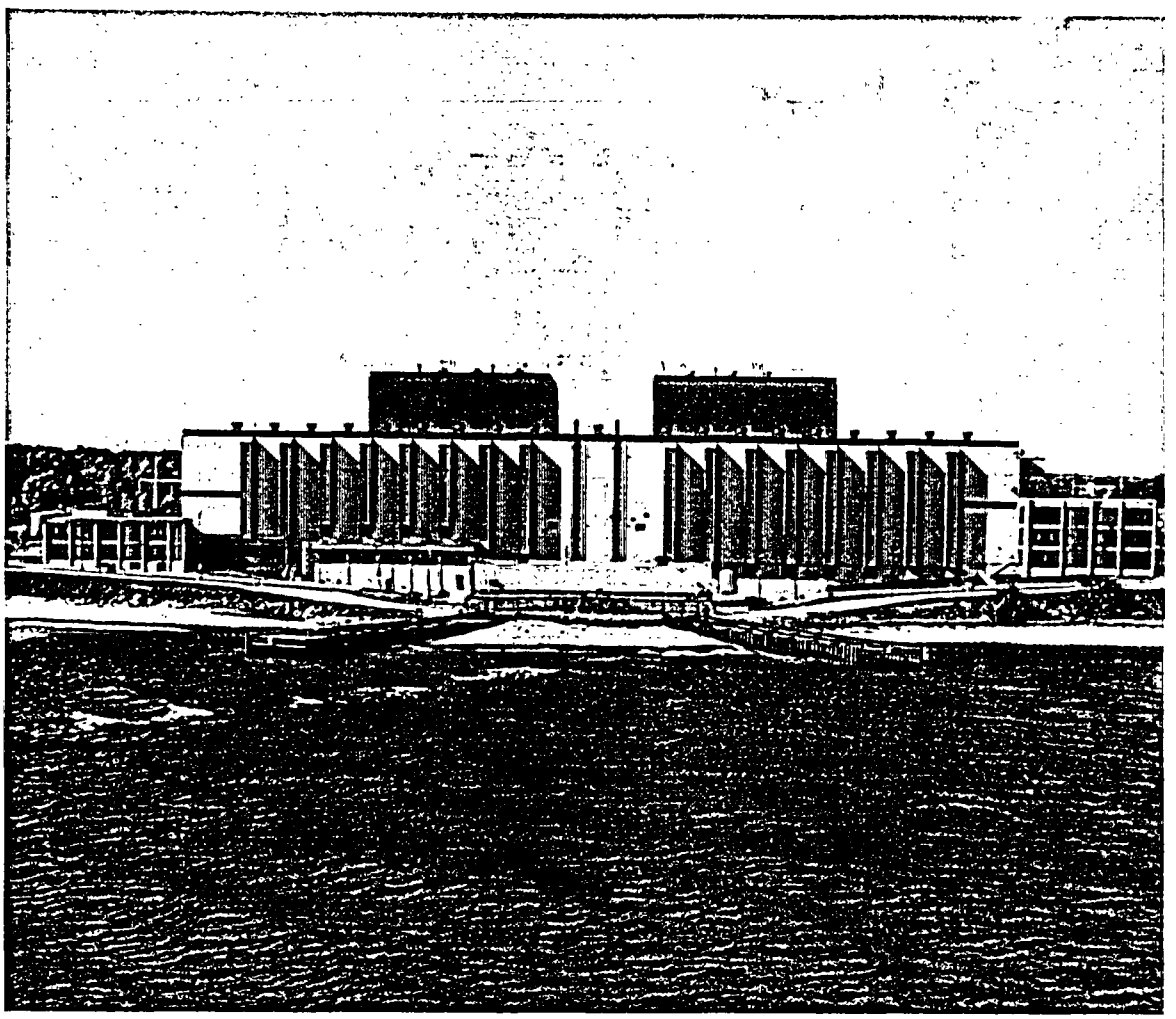
bcc (with enclosures):

M. Z. Ray	K. M. Locke (2)

bcc (without enclosures):

J. W. Connolly	D. E. Cooper	M. E. Holzmann
H. J. Kocourek (OSRC)	D. L. Koehl	F. D. Kuester (P460)
J. H. McCarthy	J. G. Schweitzer	J. D. Shaw
File	D. A. Weaver (P346)	E. J. Weinkam III

ENCLOSURE I



POINT BEACH
REVISED EAL SUBMITTAL
TABLE OF CONTENTS

ENCLOSURE I
TABLE OF CONTENTS

Enclosure II contains the Summary Explanation, or Executive Summary.

Enclosure III contains the State and Local Government Official Agreement Documentation.

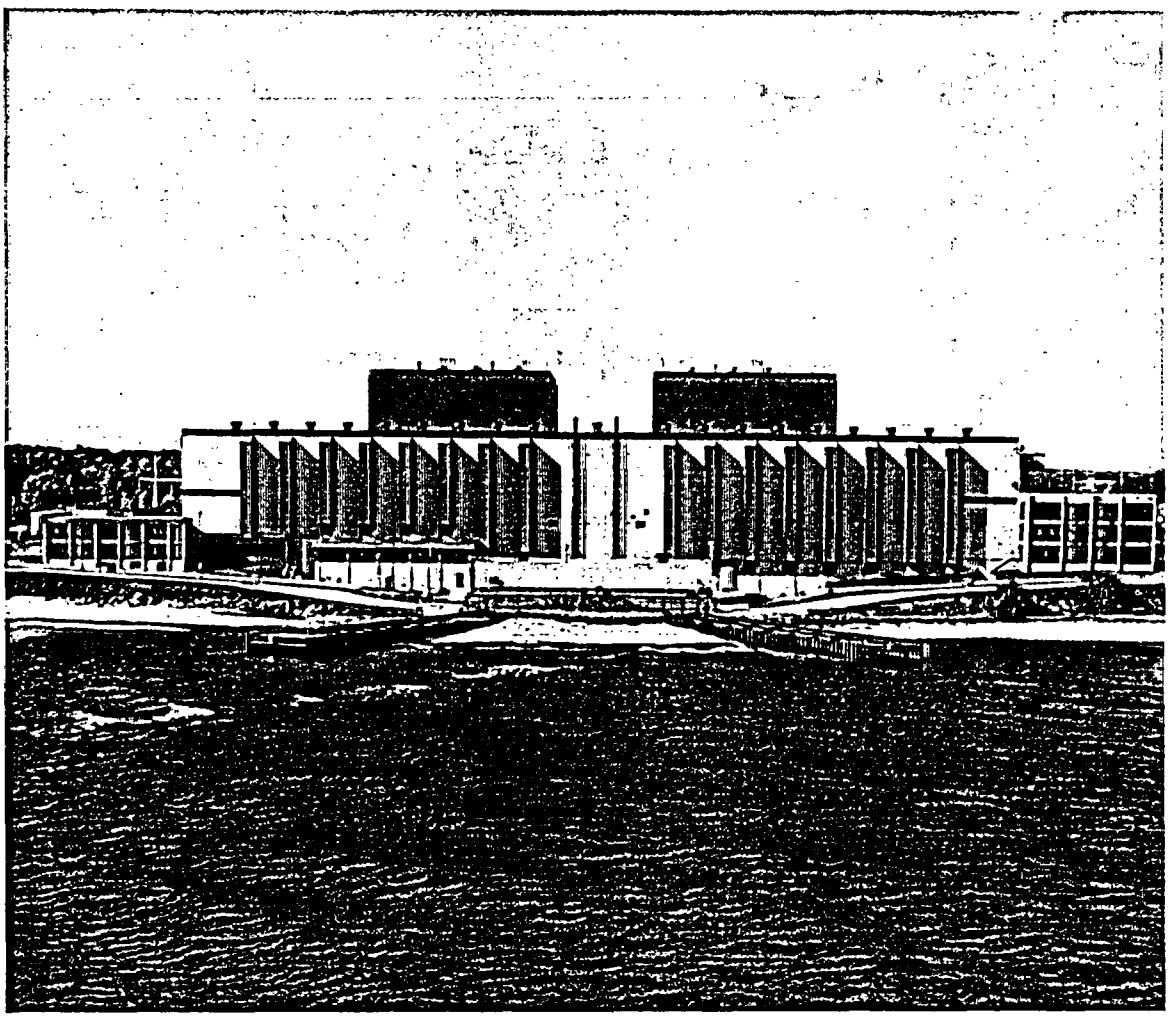
Enclosure IV is divided into three attachments:

Attachment 1: Red-line of the Technical Basis Document
Attachment 2: Clean copy of the Technical Basis Document
Attachment 3: Emergency Plan and Procedure Changes

Enclosure V contains the Justification Matrix.

Enclosure VI contains a compact disk of enclosures, references and supporting documentation.

ENCLOSURE II



POINT BEACH
REVISED EAL SUBMITTAL
EXECUTIVE SUMMARY

ENCLOSURE II
SUMMARY EXPLANATION

This submittal includes the transmittal letter and six enclosures. The enclosures include a table of contents (Enclosure I), this executive summary (Enclosure II), documentation of state and local government officials' agreements (Enclosure III), the proposed Technical Basis Document, Emergency Plan, and procedure changes (Enclosure IV), a detailed justification matrix (Enclosure V), and supporting reference material (Enclosure VI).

The Site Emergency Plan for the Point Beach Nuclear Plant (PBNP) currently uses the NUREG-0654 EAL scheme. Nuclear Management Company, LLC (NMC) requests approval to change the existing scheme for PBNP to that described in NEI 99-01, Revision 4, "Methodology for Development of Emergency Action Levels," January 2003, as endorsed by the Nuclear Regulatory Commission (NRC) in Regulatory Guide 1.101, "Emergency Planning and Preparedness for Nuclear Power Reactors," Revision 4, July 2003.

The following state and local government officials' agreements are contained in Enclosure III:

1) Letter from Nancy Crowley, Manitowoc County Emergency Management Director, to Monica Ray, Point Beach Nuclear Plant Emergency Preparedness Manager, "Review of Emergency Action Level Technical Basis Document," dated October 12, 2004.

2) Letter from Lori Hucek, Kewaunee County Emergency Management Director, to Monica Ray, Point Beach Nuclear Plant Emergency Preparedness Manager, "Review of Emergency Action Level Technical Basis Document," dated October 13, 2004.

3) Letter from Paul Schmidt, State of Wisconsin, Radiation Protection Section, to Monica Ray, Point Beach Nuclear Plant Emergency Preparedness Manager, "Review of Emergency Action Level Technical Basis Document," dated October 12, 2004.

4) Letter from William Clair, Wisconsin Emergency Management Planning Section Supervisor, to Monica Ray, Point Beach Nuclear Plant Emergency Preparedness Manager, "Thursday, October 7, discussion regarding EAL changes for the Point Beach Nuclear Power Plant," dated October 15, 2004.

The proposed EAL changes are contained in Enclosure IV. There are three attachments within Enclosure IV. Attachment 1 contains a red-line, highlighted copy of the Technical Basis Document. This document includes the pertinent information to describe each EAL (category, description, modes, basis, etc). The red-line and highlighted areas indicate changes made to the information contained in NEI 99-01, Revision 4, in order to develop site-specific EALs. All changes are described in the detailed justification matrix (Enclosure V) as either a difference or a deviation. Attachment 2 contains a clean copy of the Technical Basis Document.

Attachment 3 contains the changes to the PBNP Emergency Plan and procedures.

The detailed justification matrix for the proposed EAL changes is contained in Enclosure V. This matrix provides the cross-reference comparing the current NEI 99-01, Revision 4 EALs, to the proposed EALs, specific identification and discussion of differences and deviations, and mode applicability.

The Technical Basis Document, justification matrix, and supporting reference material are contained on compact disk in Enclosure VI.

Summary of Matrices

The matrices contain justifications for site-specific information, differences and deviations identified in the IC's, EAL Thresholds and Basis documents. The matrices are divided into sections following the format of the Technical Basis Document, (e.g., Abnormal Rad/Effluent, Cold Shutdown, ISFSI, Fission Product Barriers, Hazards, System Malfunctions). A section identifying Generic Differences is at the front of the document.

Overview of Deviations

Deviations identified in the matrices include the following:

1) Classification utilizing level indication for the bottom of the RCS Loops instead of six inches below the loops as identified in the NEI document - this deviation is required due to the fact that there is no instrumentation included in the PBNP Plant design, which reads below the bottom of the RCS loops. This deviation affects EALs CS1.1, CS1.2, CS2.1, and CS2.2.

2) No classification is available in Cold Shutdown Mode for RCS activity of Failed Fuel indication based on Technical Specifications - PBNP does not have a Tech Spec applicable in Modes 5 and 6 (Cold Shutdown/Refueling) on which to base this classification. RCS activity and fuel failure instrumentation is limited to Modes 1,2 and 3 based on the PBNP Technical Specifications. This affects EALs CU5#1 and CU5#2.

3) Classification based on CSFSTs in the Fission Product Barriers requires use of GREATER THAN OR EQUAL TO to be in accordance with site procedures. The NEI document references GREATER THAN only. This affects EALs FC LOSS #3, FC Potential Loss #3, and FC Potential Loss #4.

Overview of Differences

Significant Differences identified in the matrices include the following:

1) Elimination of EALs associated with plant equipment not on site - this difference is primarily associated with off-site perimeter monitoring and real time dose assessment. This affects EALs RU1#4, RU1#5, RA1#4, RA1#5, RS1#3, and RG1#3.

2) Use of "or" statement for Reactor Vessel inventory indication – PBNP utilized two indications for this classification, Containment Sump A "or" Waste Hold Up Tank. The "or" statement was used instead of the NEI wording "and" because there would not be spontaneous indication in both locations. This affects EALs CU2.2, CA1.2, CA2.2, CS1.1, CS1.2, and CG1.1.

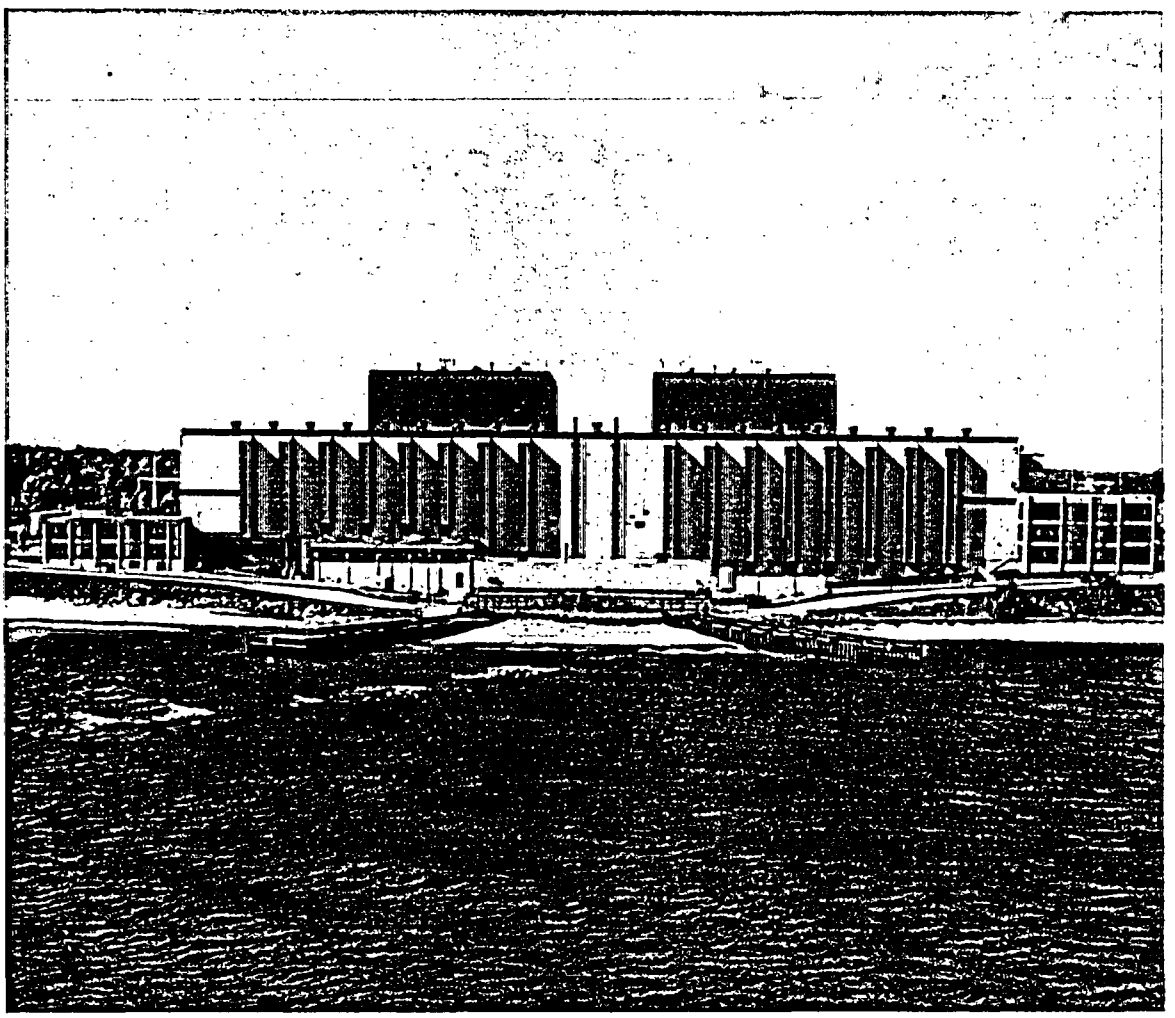
3) Use of "busses" statement for loss of offsite power – PBNP utilized bus indication in the classification due to site-specific design criteria associated with the transformers. To clarify the intent of the EAL, the word "offsite" was bolded. This affects EALS CU3.1, CA3.1, SU1.1, SS1.1, and SG1.1.

Minor Differences:

Additional minor wording changes have been identified in the generic differences section as well as in the justification section for the applicable EAL. These differences do not alter the meaning or intent of the EALs.

In summary, this submittal provides the basis and justification for changing the PBNP EAL scheme from the NUREG-0654 requirements to the NEI 99-01 requirements and demonstrates compliance with 10 CFR 50.54(q).

ENCLOSURE III



POINT BEACH
REVISED EAL SUBMITTAL

STATE AND LOCAL
GOVERNMENT
OFFICIAL AGREEMENT

Offsite Agency Review of New NEI 99-01 EALs

October 7, 2004

Stevens Point, Wisconsin

Attendees:

- Wisconsin Emergency Management
- Wisconsin DHFS – Radiation Protection Section
- Kewaunee County Emergency Management
- Manitowoc County Emergency Management
- Kewaunee Nuclear Power Plant (KNPP)
- Prairie Island Nuclear Generating Plant (PINGP)
- Point Beach Nuclear Plant (PBNP)

Handouts for Kewaunee:

- KNPP
  - EAL Technical Basis Document Draft
  - Differences from current EALs (NUREG-0654) scheme to new EALs (NEI 99-01) scheme
    - Kewaunee EAL Comparison
    - Kewaunee Additional EALs
  - EAL Agreement Letter

- PINGP
  - EAL Technical Basis Document Draft
  - Differences from current EALs (NUREG-0654) scheme to new EALs (NEI 99-01) scheme
  - EAL Agreement Letter

- PBNP
  - EAL Document
  - EAL Agreement Letter

Major Differences in New EALs

BIG PICTURE

- NRC endorsed the new EAL scheme in NEI 99-01, Rev. 4 via Reg. Guide 1.101, Rev. 4, July 2003
- New IC/EAL Scheme added generic:
  - Shutdown and Refueling IC/EALs
  - ISFSI IC/EALs
- New generic approach to Fission Product Barrier IC/EALs
- The PBNP EALs are divided into five broad groups:
  - EAL Group **S** – EALs that are related to **system** or equipment malfunctions
  - EAL Group **R** – EALs that are **radiological** in nature
  - EAL Group **H** – EALs that are related to external **hazards** such as security events, fires or natural events
  - EAL Group **E** – EALs associated with the Independent Spent Fuel Storage Installation **(ISFSI)**
  - EAL Group **F** – EALs that are related to loss or challenge of one or more **fission product barriers**
- New IC/EAL Scheme is plant operating Mode Specific
  - Power Operation -- critical and >5% power.
  - Startup -- critical and ≤5% power.
  - Hot Standby – Reactor Coolant Tavg ≥350°F.
  - Hot Shutdown – Reactor Coolant 350°F > Tavg > 200°F
  - Cold Shutdown -- Reactor Coolant Tavg ≤200°F
  - Refueling -- One or more reactor vessel head closure bolts less than fully tensioned.
  - Defueled -- Reactor Vessel contains no irradiated fuel
- IC/EALs are presented as Categories and Subcategories
  - Example: Category – Reactor Fuel
    ⇒ Subcategory – Inadvertent Criticality

Major Differences in New EALs

REVIEW OF ICS/EALS

- Reactor Fuel – Inadvertent Criticality: New UE EAL. This was not in old EAL scheme.
- Reactor Fuel – Coolant Activity & RCS letdown Radiation: Only UE. No Alert & SAE compared to old EAL scheme because these conditions are addressed under the Fission Product Barrier IC/EALs.
- Reactor Fuel – Refueling Accidents: New UE EAL. No SAE EAL because those conditions are addressed under Rad Release SAE.
- RCS Leakage – Higher setpoint. Leakage >10 gpm unidentified (higher setpoint -- changed from > TS 1gpm). Greater than TS will be reportable under 10CFR50.72. No Alert, SAE or GE because these conditions are addressed under the Fission Product Barrier IC/EALs.
- Communications Loss – New UE EAL.
- Rad release Area Rad – Effluent Monitors: New UEs are > 2X Plant Limits for 60 minutes instead of old EAL > Plant Limits. New Alerts are > 200X Plant Limits for 15 minutes instead of old EAL 10X Plant Limits. New SAE & GE similar to old EAL scheme based on releases that would produce 100 mrem, 1000 mrem TEDE at site boundary using historical averaged met data 4 hour projected release and 4 day dose.
- Rad release Area Rad – Dose Projections or Environmental Measurements: New UE samples are > 2X Plant Limits for 60 minutes. New Alert > 200X Plant Limits for 15 minutes or dose projection > 10 mrem TEDE. New SAE dose projection > 100 mrem. New GE dose projection > 1000 mrem.
- Rad release Area Rad – Area Rad Levels: New UE > 100X alarm vs old scheme had 1000X normal would be an Alert. New Alert uses rad levels that would impede operation of systems required to maintain safe operations.
- Hazards – Security: New UE, Alert, SAE, & General similar to old EAL scheme and still address the newer NRC Security Orders related to "post 9/11".
- Hazards – Fire or Explosion: New UE fire>15 minutes vs old scheme fire > 10 minutes. New UE explosion within Protected Area resulting in damage vs old scheme Near or Onsite explosion. New Alert fire or explosion in any safe shutdown equipment area similar to old scheme. No missile Alert or missile or explosion EAL in new scheme because these would be addressed by security or other equipment malfunction EALs.
- Hazards – Vehicle Crash: New scheme uses vehicle to be air, land, or water (plane, helicopter, barge, car or truck). New UE crash in plant protected area vs old scheme had crash as an Alert. The old scheme UE was suspicious activity. New Alert is a crash that causes damage to equipment in safe shutdown equipment areas vs old scheme had this as a SAE.
- Hazards – Toxic or Flammable Gases: New UE toxic projected or occurring in plant protected area vs old scheme UE toxic was near site or out of plant. Old scheme had toxic inplant as an Alert. New Alert Toxic is toxic or flammable in areas affecting safe shutdown equipment areas vs old scheme defined this as a SAE.

Major Differences in New EALs

- Hazards – Natural Events: New Earthquake UE & Alert similar to old scheme. No SAE or GE earthquake because this would be classified in other EALs under malfunction of plant equipment.
- Hazards – Natural Events: New Tornado UE within plant protected area vs old Tornado UE was tornado visible from site. Old Tornado Alert was tornado striking the facility. New Tornado Alert is Tornado causing damage to safe shutdown equipment areas. No GE tornado because this would be classified in other EALs under malfunction of plant equipment.
- Hazards – Natural Events: New High Winds UE > 100mph vs no old scheme High Winds. New Alert High Winds > 100 mph resulting in damage to safe shutdown equipment areas vs old Alert was winds > 90 mph. No SAE or GE High Winds because this would be classified in other EALs under malfunction of plant equipment.
- Hazards – Natural Events: New Flood & Low water level UE uses water levels comparable to old scheme Alert levels. The UE levels are precursors to more severe levels that may threaten operability of plant cooling systems. The New Flood & Low water level Alert uses water levels comparable to the old scheme SA levels, which are design levels for plant vital equipment operation. No SAE or GE water level EALs because this would be classified in other EALs under malfunction of plant equipment. There are new plant internal flooding UE and Alert EALs which were not in old EAL scheme.
- Control Room Evacuation: New UE and Alert similar to old EAL scheme.
- Other: New UE, Alert, SAE, & GE use Emergency Director judgment applied to the standard definition of these classifications. The old scheme did not provide for the one to one correlation to the classification definitions.
- ATWS (Failure of Reactor Protection System or Reactor Trip System): New ATWS Alert, SAE, and GE similar to old scheme.
- Loss of AC Power Sources during plant operation: New loss of AC power UE, Alert and SAE similar to old scheme. There is the new loss of AC power "> 15 minute" criteria for UE and Alert which was not in the old scheme. The old Loss of onsite Diesel Generators UE was deleted. This would require plant shutdown and reportable under 10CFR50.72. The new GE requires loss of power expected > 4 hours or plant is in a core cooling Red path functional restoration procedure.
- Loss of DC Power Sources: New Loss of DC power > 15 minutes during plant shutdown modes is an UE. New Loss of DC power > 15 minutes during plant operating modes is an SAE. The old scheme had Loss of DC power as an Alert and Loss of DC power > 15 minutes SAE.
- Equipment Failures – Technical Specifications: New plant TS shutdown UE similar to old scheme.
- Equipment Failures – Turbine Failures: New Turbine Failure UE is more similar to old Alert scheme. While New Turbine Failure Alert relates to turbine failure missile causing damage to safe shutdown equipment areas.
- Equipment Failures – Loss of Annunciators or Alarms: New UE Loss of Annunciators similar to old Alert scheme. New Alert Loss of Annunciators similar to old SAE scheme. New SAE Loss of Annunciators now includes the loss of monitoring all critical safety function status.

Offsite Agency Review of New NEI 99-01 EALs

October 7, 2004

Stevens Point, Wisconsin

Attendees List:

Wisconsin Emergency Management

Wisconsin DHFS – Radiation Protection Section

Dan Stefonek

Kewaunee County Emergency Management

~~Terrie Coleman, EP MGR~~ JC 10/7/04

Lori Heuer, Director

Manitowoc County Emergency Management

Nancy H. Cooley, Dir.

Kewaunee Nuclear Power Plant (KNPP)

EP Coordinator

Terrie Coleman

Prairie Island Nuclear Generating Plant (PINGP)

Steven Skoyen - NMC Prairie Island EP Manager

Point Beach Nuclear Plant (PBNP)

Monica Kay - EP Manager

Bill Hennessy - Engineering

Other

Brian McBride - Dominion Resources EP Mgr

NPL 2004-0223

October 1, 2004

Ms. Nancy Crowley
Manitowoc County Emergency Management
1025 South 9th Street
Manitowoc, WI 54220

REVIEW OF EMERGENCY ACTION LEVEL (EAL) TECHNICAL BASIS DOCUMENT

Dear Ms. Crowley:

Please review the revised EAL Technical Basis Document enclosed with this letter.

It is our intention at Point Beach Nuclear Plant (PBNP) to replace the current classification methodology of NUREG 0654 with NEI 99-01, Methodology for Development of Emergency Action Levels. This methodology was used to create the enclosed document.

In accordance with 10 CFR 50, Appendix E, Paragraph IV. B, "These emergency action levels shall be discussed and agreed on by the applicant and State and local governmental authorities and approved by NRC." You will be informed prior to the new methodology being implemented at PBNP. In the meantime, the NUREG 0654 methodology will remain in effect. To document your agreement to these changes, please sign the attached letter, and return this document to the PBNP Emergency Preparedness Department, Attn: Monica Ray.

Please call Monica Ray at (920) 755-6557 if you have any questions or concerns.

for

Dennis L. Koehl
Site Vice-President, Point Beach Nuclear Plant
Nuclear Management Company, LLC

Enclosure

NMC
Committed to Nuclear Excellence

Point Beach Nuclear Plant
Operated by Nuclear Management Company, LLC

NPL 2004-0224

October 1, 2004

Ms. Lori Hucek
Kewaunee County Emergency Management
416 Freemont Street
Kewaunee, WI 54201

REVIEW OF EMERGENCY ACTION LEVEL (EAL) TECHNICAL BASIS DOCUMENT

Dear Ms. Hucek:

Please review the revised EAL Technical Basis Document enclosed with this letter.

It is our intention at Point Beach Nuclear Plant (PBNP) to replace the current classification methodology of NUREG 0654 with NEI 99-01, Methodology for Development of Emergency Action Levels. This methodology was used to create the enclosed document.

In accordance with 10 CFR 50, Appendix E, Paragraph IV. B, "These emergency action levels shall be discussed and agreed on by the applicant and State and local governmental authorities and approved by NRC." You will be informed prior to the new methodology being implemented at PBNP. In the meantime, the NUREG 0654 methodology will remain in effect. To document your agreement to these changes, please sign the attached letter, and return this document to the PBNP Emergency Preparedness Department, Attn: Monica Ray.

Please call Monica Ray at (920) 755-6557 if you have any questions or concerns.

for

Dennis L. Koehl
Site Vice-President, Point Beach Nuclear Plant
Nuclear Management Company, LLC

Enclosure

6610 Nuclear Road • Two Rivers, Wisconsin 54241-9516
Telephone: 920.755.2321 • Fax: 920.755.6233

NPL 2004-0221

October 1, 2004

Mr. Bill Clare
Wisconsin Emergency Management
2400 Wright Street
PO Box 7865
Madison, WI, 53707-7865

REVIEW OF EMERGENCY ACTION LEVEL (EAL) TECHNICAL BASIS DOCUMENT

Dear Mr. Clare:

Please review the revised EAL Technical Basis Document enclosed with this letter.

It is our intention at Point Beach Nuclear Plant (PBNP) to replace the current classification methodology of NUREG 0654 with NEI 99-01, Methodology for Development of Emergency Action Levels. This methodology was used to create the enclosed document.

In accordance with 10 CFR 50, Appendix E, Paragraph IV. B, "These emergency action levels shall be discussed and agreed on by the applicant and State and local governmental authorities and approved by NRC." You will be informed prior to the new methodology being implemented at PBNP. In the meantime, the NUREG 0654 methodology will remain in effect. To document your agreement to these changes, please sign the attached letter, and return this document to the PBNP Emergency Preparedness Department, Attn: Monica Ray.

Please call Monica Ray at (920) 755-6557 if you have any questions or concerns.

Dennis L. Koehl
Site Vice-President, Point Beach Nuclear Plant
Nuclear Management Company, LLC

Enclosure

NPL 2004-0222

October 1, 2004

Mr. Paul Schmidt
Radiation Protection Section
1 West Wilson Street
Madison, WI 53702

REVIEW OF EMERGENCY ACTION LEVEL (EAL) TECHNICAL BASIS DOCUMENT

Dear Mr. Schmidt:

Please review the revised EAL Technical Basis Document enclosed with this letter.

It is our intention at Point Beach Nuclear Plant (PBNP) to replace the current classification methodology of NUREG 0654 with NEI 99-01, Methodology for Development of Emergency Action Levels. This methodology was used to create the enclosed document.

In accordance with 10 CFR 50, Appendix E, Paragraph IV. B, "These emergency action levels shall be discussed and agreed on by the applicant and State and local governmental authorities and approved by NRC." You will be informed prior to the new methodology being implemented at PBNP. In the meantime, the NUREG 0654 methodology will remain in effect. To document your agreement to these changes, please sign the attached letter, and return this document to the PBNP Emergency Preparedness Department, Attn: Monica Ray.

Please call Monica Ray at (920) 755-6557 if you have any questions or concerns.

for

Dennis L. Koehl
Site Vice-President, Point Beach Nuclear Plant
Nuclear Management Company, LLC

Enclosure

MANITOWOC COUNTY
EMERGENCY SERVICES DIVISION

October 12, 2004

Monica Ray, EP Manager
Point Beach Nuclear Plant
6610 Nuclear Road
Two Rivers WI 54241

Re: Review of Emergency Action Level Technical Basis Document

Dear Monica:

I have reviewed the Point Beach Nuclear Plant Emergency Action Levels and agree with the proposed changes. I understand the change to the new classification methodology may result in different and/or lower classifications than the current NUREG 0654 Emergency Action Level scheme.

I also agree to provide appropriate notification to the site in the event that an offsite hazard may require protection of personnel onsite, in support of the hazard classification category.

Sincerely,

Nancy H. Crowley

Nancy H. Crowley, R.N., C.E.M.
Emergency Management Director

NHC:mlh

nuke\ealtech

Nancy H. Crowley, R.N., C.E.M
Division Coordinator
Emergency Management Director
Phone: 920-683-4207
Fax: 920-683-4568
e-mail: nhcrowley@sbcglobal.net

Kay Beilke
Administrator
Joint Dispatch Center
Phone: 920-683-5033
Fax: 920-683-4946
e-mail: klb0803@mtso.manitowoc.wi.us

1025 S. 9th Street • Manitowoc, Wisconsin • 54220

Kewaunee County Emergency Management
Lori Hucek, Director

Monica Ray
Emergency Preparedness Manager
Point Beach Nuclear Plant
6610 Nuclear Road
Two Rivers, WI 54241

REVIEW OF EMERGENCY ACTION LEVEL TECHNICAL BASIS DOCUMENT

Dear Ms. Ray,

I have reviewed the Point Beach Nuclear Plant Emergency Action Levels and agree with the proposed changes. I understand that the change to the new classification methodology may result in different and/or lower classifications than the current NUREG 0654 Emergency Action Level scheme.

I also agree to provide appropriate notification to the site in the event that an offsite hazard may require protection of personnel onsite, in support of the Hazard classification category.

Lori Hucek TR — 10/13/2004

Ms. Lori Hucek, Kewaunee County Emergency Management — Date

416 Fremont Street • Algoma, WI 54201 • Phone (920) 487-2940 • Fax (920) 487-2963

Monica Ray
Emergency Preparedness Manager
Point Beach Nuclear Plant
6610 Nuclear Road
Two Rivers, WI 54241

REVIEW OF EMERGENCY ACTION LEVEL TECHNICAL BASIS DOCUMENT

Dear Ms. Ray,

I have reviewed the Point Beach Nuclear Plant Emergency Action Levels and agree with the proposed changes. I understand that the change to the new classification methodology may result in different and/or lower classifications than the current NUREG 0654 Emergency Action Level scheme.

I also agree to provide appropriate notification to the site in the event that an offsite hazard may require protection of personnel onsite, in support of the Hazard classification category.

Paul Schmidt — 10-12-04

Mr. Paul Schmidt, Radiation Protection Section — Date

STATE OF WISCONSIN \ DEPARTMENT OF MILITARY AFFAIRS
WISCONSIN EMERGENCY MANAGEMENT

2400 WRIGHT STREET
P.O. BOX 7865
MADISON, WISCONSIN 53708-7865

October 15, 2004

Ms. Monica Ray
Emergency Preparedness Manager
Point Beach Nuclear Power Plant
6610 Nuclear Road
Two Rivers, WI 54241

Dear Ms. Ray:

Re: Thursday, October 7, discussion regarding EAL changes for the Point Beach Nuclear Power Plant.

Bob Host participated in the October 7th meeting discussion regarding the proposed changes to the Point Beach Nuclear Power Plant Emergency Action Levels (EALs); Teri Engelhart also reviewed the proposed changes.

The proposed changes discussed will be included in the Point Beach Emergency Plan in the following documents:

EP Appendix B

10 CFR 50, Appendix E, states "...emergency action levels shall be discussed and agreed on by the applicant and State and local governmental authorities and approved by the NRC."

I have reviewed the changes and concur with Point Beach's plan to implement these changes later today.

If you have any questions or if I can be of further assistance please contact me.

Sincerely,

William Clare
Planning Section Supervisor

Cc: Johnnie L. Smith, WEM Administrator

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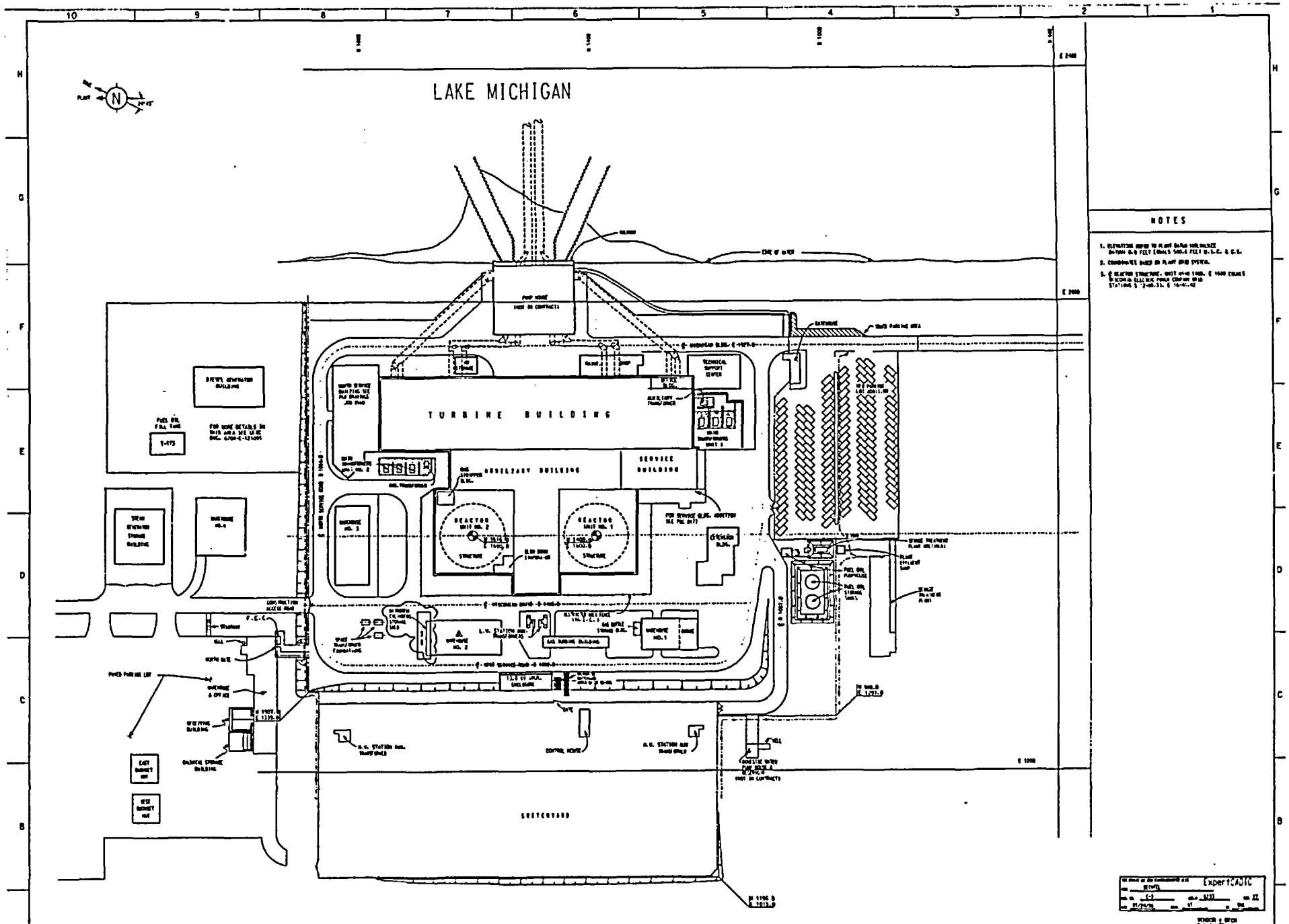

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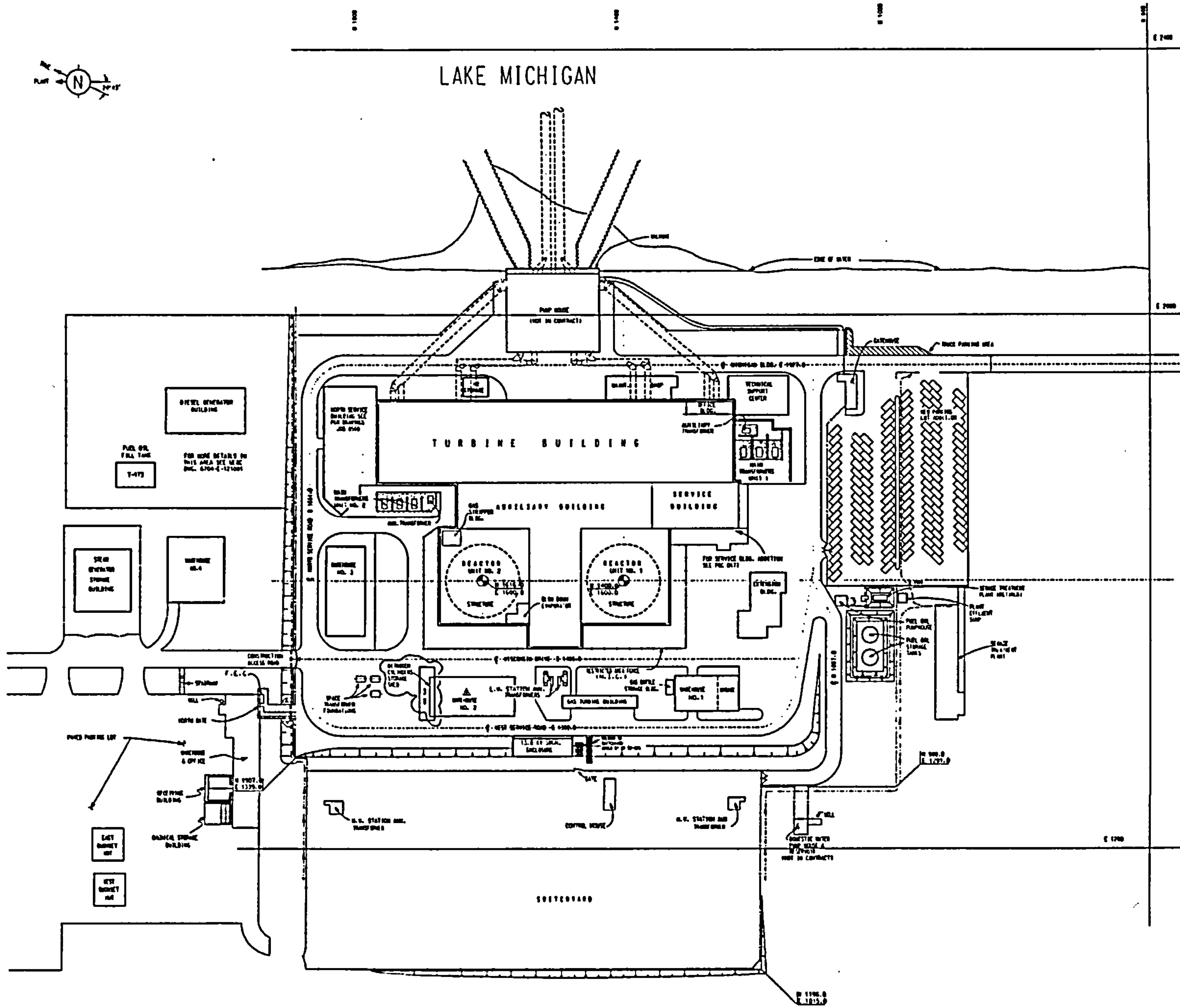

NOTES

BECH 6118 C-3

055984

58412

PLANT AREA

POINT BEACH N.P. UNIT 1&2

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SUMMARY FOR AOP-10A

This procedure provides guidance to evacuate the control room and place both units in a safe shutdown condition remotely. Reasons for control room evacuation include habitability issues such as smoke, toxic gas or radiation as well as a loss of control functions from the control room. Loss of control functions could occur due to a fire in the control room, cable spreading room, or the 4kv switchgear room.

This procedure is based on the following:

The Technical Specification shift compliment of trained and equipped personnel are available for shutdown activities and a fire brigade simultaneously.

No additional single failures are considered other than those directly attributable to the fire.

The gas-turbine generator (G-05) is the accredited power supply for safe shutdown. As an alternate means of power, emergency diesel generators G-03 and G-04 are assumed operable under remote control.

No safe shutdown equipment is out of service. Minimum safe shutdown equipment consists of:

a. One charging pump per unit.

b. TDAFW pump for each unit feeding its respective B S/G.

c. Alternate powered instrumentation for the B loop.

d. Support systems for the AFW pumps and Emergency Diesels.

e. All mechanical components are operable manually.

NOTE: Entry into EOP-0, REACTOR TRIP OR SAFETY INJECTION, is not required.

This procedure note states that the manual trip directed by this procedure does not require entry into the emergency operating procedures. This procedure shall not be exited until hot shutdown is achieved, and exit conditions are met.

STEP 1 : Initiate Manual Reactor Trip For BOTH Units

Both reactors are tripped to expedite the actions required prior to control room evacuation. Entry into EOP-0, REACTOR TRIP OR SAFETY INJECTION, is not required.

STEP 2 : Shut PORV Block Valves

This step isolates the pressurizer PORVs to mitigate the possibility that a "hot smart short" could cause the pressurizer PORVs to fail open resulting in a depressurization of the RCS and a loss of inventory. (CR 97-1499, MOVs SUSCEPTIBLE TO HOT SMART SHORT DAMAGE)

STEP 3 : Shut Main Steam Isolation Valves

This step backs up the turbine trip signal and ensures steam is isolated to the turbine hall. This step is performed early to prevent an inadvertent cooldown from initiating an automatic safety injection signal.

STEP 4 : De-Energize The Following:

This step removes power from the MCC's which supply power to the PORV block valves and the SI Accumulator discharge valves. This will help mitigate the possibility that a "hot smart short" could cause the pressurizer PORVs to fail open resulting in a depressurization of the RCS and a loss of inventory. The accumulator outlets are de-energized to prevent a hot short from closing the valves, and isolating the accumulators from the RCS. (CR 97-1499, MOVs SUSCEPTIBLE TO HOT SMART SHORT DAMAGE)

STEP 5 : Place Atmospheric Steam Dump Controllers To - MANUAL AND SHUT

This step minimizes chances of inadvertent operation of the atmospheric steam dumps. Steam release and RCS temperature control during the initial stages of control room evacuation is by means of the steam generator safeties until local control is established. If the atmospheric steam dumps open inadvertently, excessive primary system cooldown could occur.

STEP 6 : Initiate Containment Isolation

This step isolates the containments of both units to prevent possible inadvertent valve operations from adversely affecting safe shutdown conditions. The primary concern is a loss of RCS inventory.

STEP 7 : Check Control Room Habitable

Control room habitability is checked in this continuous action step to determine if the control room should be evacuated. Subsequent steps are actions that place the plant in a more reliable lineup. The intent is to limit vulnerability to inadvertent actuation of equipment until local control of safe shutdown systems can be established.

If subsequent steps can not be accomplished from the control room, alternate local actions will be performed to ensure plant control can be maintained. If at any time after this step personnel safety is in jeopardy, the SM should initiate immediate control room evacuation.

STEP 8 : Dispatch Operator To Perform Steps 17 Through 20, AND Step 24 RNO a. AND b.

It is assumed that only minimum shift compliment is available and the remaining operators are fighting the fire. It may be necessary to dispatch an operator from the control room to perform these steps.

STEP 9 : Place RCPs To - PULLOUT

The RCP control switches are placed in pullout before control room evacuation to minimize the possibility of inadvertent operation. Inadvertent operation may be caused by hot short of DC control power due to fire. Inadvertent starting of RCPs could result in seal damage, and subsequent loss of RCS inventory. Ensuring the RCPs remain secured also reduces the heat input into the RCS.

STEP 10 : Place Main Feed Pumps To - PULLOUT

The MFP control switches are placed in pullout before control room evacuation to minimize the possibility of inadvertent operation. Inadvertent operation could result in rapid filling of the steam generators resulting in a positive reactivity insertion due to cooldown.

STEP 11 : Place Motor-Driven Auxiliary Feed Pumps To - PULLOUT

The motor-driven AFW pumps are placed in pullout to minimize the possibility of inadvertent operation. Inadvertent operation could fill the steam generators resulting in a reactivity addition as a result of cooldown.

STEP 12 : Check G-05. Gas Turbine - NOT RUNNING

This step checks the gas turbine not running. If the gas turbine is running, the operator is directed to stop the gas turbine from the control room. This will expedite the shutting down of the gas turbine allowing local actions to be completed in a shorter period of time.

STEP 13 : Check Offsite Power To Safeguard Buses - AVAILABLE

If offsite power is available, the emergency diesels are secured in the following step. If offsite power is not available, the diesels remain running until secured at a later time.

NOTE: Entry into ECA-0.0, LOSS OF ALL AC POWER, is not required.

During the evacuation of the control room only AOP-10A is applicable. Actions directed by ECA-0.0 can not be accomplished during this event so entry is not required.

STEP 14 : Isolate In-Plant Buses From EDG's

If offsite power is available, the diesels output breakers are opened. This will help to prevent a hot short from closing the tie breakers to the respective safeguard buses. Closing the tie breakers to the respective bus out of phase can cause severe damage to the diesels. Buses are systematically restored in subsequent steps.

STEP 15 : Check Control Room Functions - AVAILABLE

This continuous action directs the operator to determine if control of safe shutdown equipment is still available from the control room. This is determined by checking that normal off-site power is available to the safeguards buses (B03 and B04). Control circuits must by available to operate a charging pump, a component cooling pump, and auxiliary feedwater pump and a service water pump. There must also be the capability to establish 200 gpm total auxiliary feedwater flow. This does not necessarily mean the B steam generator should be fed at 200 gpm at this time. If, at any time, any of these functions are not available, the operator must de-energize DC control power to main control panels 1C03 and 2C03 and then immediately evacuate the control room.

STEP 16 : STA Report To TSC And Implement Emergency Plan

The STA reports to the TSC to aid the SM in implementation of the emergency plan. The SM must remain in the TSC until relieved. He will be informed of the completion of major steps as they occur.

STEP 17 : At MCC 1B32, Open The Following Breakers:

Previous steps removed power from this bus in order to prevent a hot short from operating the PORV block and containment sump B valves. This step is needed to be performed expeditiously to prevent loss of inventory. These breakers are being locally opened so the MCC can be reenergized in a later step.

STEP 18 : At MCC 1B42, Open The Following Breakers:

Previous steps removed power from this bus in order to prevent a hot short from operating the PORV block and containment sump B valves. This step is needed to be performed expeditiously to prevent loss of inventory. These breakers are being locally opened so the MCC can be reenergized in a later step.

STEP 19 : At MCC 2B32, Open The Following Breakers:

Previous steps removed power from this bus in order to prevent a hot short from operating the PORV block and containment sump B valves. This step needed to be performed expeditiously to prevent loss of inventory. These breakers are being locally opened so the MCC can be reenergized in a later step.

STEP 20 : At MCC 2B42, Open The Following Breakers:

Previous steps removed power from this bus in order to prevent a hot short from operating the PORV block, containment sump B, and normal charging valves. This step needed to be performed expeditiously to prevent loss of inventory and ensure charging remains aligned to the RCS. These breakers are being locally opened so the MCC can be reenergized in a later step.

STEP 21 : Check Steps 17 Through 20 Complete

The following step will reenergize the busses, and re-introduce the possibility of a hot short repositioning equipment. The breakers must be open prior to continuing.

STEP 22 : Re-energize The Following MCC's:

The previous steps opened the breakers for the PORV block and SI Accumulator discharge valves. These MCC's are now re-energized to ensure power is available for performing the remaining steps prior to evacuation of the control room.

STEP 23 : Isolate Letdown

These valves are shut to provide redundant protection from a loss of RCS inventory due to a hot smart short.

STEP 24 : Align Unit 1 And Unit 2 Charging

The charging pumps are aligned to the RWST to ensure an adequate amount of borated water is available for makeup to the RCS to compensate from inventory loss from the RCP seals, and shrinkage from the subsequent cooldown to cold shutdown. The VCT is isolated from the charging pumps to prevent air binding when the VCT goes dry due to the loss of letdown. The P-2C charging pump is selected as the preferred pump to operate because later steps will align the P-2A and P-2B pumps to their alternate power supplies. If these pumps were running when the power transfer occurs, it would require locally opening the breakers under load.

STEP 25 : Place Unit 1 And Unit 2 RHR Pump Control Switches To - PULLOUT

This step places the RHR pumps in a condition which will minimize the chance of inadvertent operation due to a hot smart short.

STEP 26 : Ensure Unit 1 and Unit 2 B Component Cooling Water Pump - RUNNING

The intent of this step is to maintain sufficient component cooling water flow to each unit while minimizing operating equipment and electrical loading requirements. During performance of the attachments where offsite power is the selected option, only the P-11B pumps will have their breakers closed and power available. All other options have the CCW pumps secured.

STEP 27 : Place Unit 1 and Unit 2 A Component Cooling Water Pump Control Switches In - PULLOUT

This step prevents any other component cooling water pumps from starting during subsequent actions.

STEP 28 : Isolate Unit 1 And Unit 2 Main Feed

This minimizes the chance of inadvertent operation causing steam generator overfill, and positive reactivity insertion due to the resultant cooldown.

The condensate and heater drain pumps are not pulled out in this step. If offsite power is still available, the continued operation of these pumps will help to cooldown and stabilize the secondary system.

STEP 29 : Establish Auxiliary Feed Flow To Unit 1 And Unit 2 B S/G

This step aligns the steam driven auxiliary feed pumps to provide sufficient feed flow to maintain safe shutdown conditions. Steam is supplied from the B steam generators and auxiliary feedwater flow is aligned to the B steam generators. The B steam generator is used because of credited alternate shutdown instrumentation.

STEP 30 : Isolate Unit 1 And Unit 2 Main Generators

This step backs up the automatic trip that should have occurred from the automatic turbine trip. Control switches for the main generator and exciter field breakers are placed in pullout to minimize the chance of inadvertent operation.

NOTE: The preferred service water pumps are P-32A and P-32D.

These are the preferred pumps because they can be powered from G-05 via B-08 and B-09, which are the accredited power supplies.

STEP 31 : Ensure At Least 2 Service Water Pumps - RUNNING

Important loads requiring cooling include the main turbine lube oil coolers, component cooling water heat exchangers, and the containment fan coolers.

If at least two service water pumps can not be started, equipment damage may occur to non-safe shutdown components. However a complete loss of service water does not prevent the units from reaching safe shutdown. Diesel generators G01 and G02 are not used and fire water is aligned to automatically provide a backup supply of cooling water to operate the turbine-driven auxiliary feedwater pumps.

STEP 32 : Shut Unit 1 And Unit 2 RWST To RHR Pump Suctions

This is a precautionary step to ensure the RWST does not drain to the containment if SI-851A or SI-851B should come open due to a hot smart short. The hydraulic valves (SI-850A and SI-850B) have been known to have reverse leakage to containment.

STEP 33 : Place Unit 1 And Unit 2 Containment Spray Pump Control Switches In - PULLOUT

This step places the containment spray pumps control switches to pullout to minimize the chance of inadvertent operation.

STEP 34 : Place Unit 1 And Unit 2 SI Pump Control Switches In - PULLOUT

This step places the safety injection pump control switches to pullout to minimize the chance of inadvertent operation.

STEP 35 : De-Energize DC Control Power

This step directs the operator to open breakers in DC distribution panels D18 and D21. This de-energizes control power to main control panels 1C03 and 2C03. This will minimize the inadvertent operation of electrical breaker switches or any safeguard equipment control switches. This includes the control power for CV-313, to ensure the seal return line remains isolated. Reopening of CV-313 would result in unanalyzed conditions associated with RCP seal leakage during a potential loss of seal cooling.

NOTE: If time permits, notify plant personnel of control room evacuation.

Plant personnel should be notified by Gai-tronics.

STEP 36 : Evacuate Control Room

This step prepares operators for control room evacuation. The AOP-10A packs contain attachments and tools the operators will need during local operator actions.

Under the worst circumstances, portable radios on channel 4 may be the only reliable communications. In most situations, however, the standard methods of communications i.e., normal radio channels, telephones, and gai-tronics will be available.

STEP 37 : Ensure Radios Selected For Point To Point

During the performance of local actions in the subsequent attachments of AOP-10A, portable radios will provide the most convenient means of communication.

STEP 38 : Check Offsite AC Power Available To Unit 1 And Unit 2

This step directs the SM to check the availability of 480 volt safeguards power and ensure there are no fires in the safe shutdown areas of the plant. If these conditions are satisfied, the offsite power option will be utilized when performing the subsequent attachments of AOP-10A. If any of these conditions are not satisfied, the SM must select an appropriate 480 Vac power option and inform the operators of that selection. The selection is based upon the location of the fire and the equipment available. The G-05 option is preferred if offsite power is not available to the B-03 and B-04 buses.

STEP 39 : SM Inform Operators Of Selected Power Source

The operators need to know which power source will be used for recovery actions as they have steps to be performed in the attachments which are specific to the selected power source. If offsite power is not available, G-05 should be selected as it is the only accredited power supply.

STEP 40 : Check Selected Power Source Remains Reliable

The DOS, upon recognition the selected power source has become unreliable, will return to Step 39 and inform the operators of the new power source. The operators will return to the step in their associated attachment and start from the beginning.

STEP 41 : Perform Local Actions Per Attachments For Selected Source

Operators leave the control room at this step to perform their local actions as indicated. Upon completion of the local actions per the attachments, each operator will request a new assignment from the DOS. The operator assignments in relation to the fire brigade and control room manning are identified in OM-3.27, CONTROL OF FIRE PROTECTION & APPENDIX R SAFE SHUTDOWN EQUIPMENT.

CAUTION: CHANGES IN AUXILIARY FEEDWATER FLOW MUST BE CAREFULLY COORDINATED TO PREVENT EXCESSIVE CHANGES IN RCS TEMPERATURE AND PRESSURE.

This caution warns the operator to pay particular attention to RCS parameters when making adjustments to auxiliary feedwater flow.

NOTE: Unit 1 Control Operator should remain in the AFW pump room to control auxiliary feedwater flow to the steam generators as directed.

This step note is to inform the Unit 1 Control Operator of the requirement to remain in the auxiliary feed pump room once he has completed the local actions of his attachment. It is intended that he maintain local control of the B steam generator levels.

STEP 42 : Maintain B S/G Level - BETWEEN 300 AND 330 INCHES

This continuous action step is accomplished by the operators in the field.

It is intended that operators continue actions to establish the required steam generator level while continuing with subsequent steps in this procedure. Minimum steam generator level must be established prior to commencing RCS cooldown in AOP-10B.

The B S/G was selected because its level indicator has been credited, whereas, although A S/G has level indication, it has not been credited for this event.

NOTE: Solid plant conditions may be required to maintain RCS subcooling.

This step note informs the operator that it is a priority to maintain RCS subcooling margin greater than 35°F to prevent head voiding. A 35°F subcooling curve is provided in Figure 1. Even if the pressurizer is approaching solid plant conditions, charging pumps must be cycled to maintain pressure control to ensure subcooling remains within the operating region.

NOTE: The Unit 2 Control Operator should remain in the area of the charging flow local control station to control charging flow as directed.

It is intended that he maintain local control of charging flow to the RCS for inventory and pressure control.

NOTE: Unit 1 RCS makeup will be supplied via aux charging 1CV-1296. Unit 2 RCS makeup will be through normal charging if 2CV-1298 is open. If 2CV-1298 is shut, makeup will be supplied via aux charging 2CV-1296.

This note informs the operator of the makeup flow paths which will be used.

Unit 1 will be supplied from 1CV-1296, regardless of the position of 1CV-1298, because the original design function of 1CV-1296 has been restored by the completion of MR 02-027 and 1CV-1298 being locally isolated. Until MR 02-028 is complete for Unit 2, the charging flow path used will depend on the position of 2CV-1298.

STEP 43 : Maintain RCS Conditions

This continuous action step directs the operator to maintain RCS conditions which are based on inventory and subcooling margin. A 35°F subcooling curve is shown in Figure 1. Charging flow must be controlled to maintain RCS inventory (Pressurizer level greater than 20%) and, if solid, to maintain minimum subcooling margin. Charging flow and pressurizer heaters are operated when available and as required to maintain both minimum inventory and subcooling requirements. If seal leakage is minimal, the pressurizer may fill to a water solid condition. Solid conditions may be necessary to maintain the minimum subcooling margin. (Reference CR-96-003)

STEP 44 : Locally Check Service Water Pressure - GREATER THAN 60 PSIG

Service water pressure is verified to be at normal operating pressure to prepare for cooldown to cold shutdown. The RNO provides actions to help minimize the use of service water to ensure cooling is maintained to required components. If service water is not available, plant conditions can be maintained at safe shutdown, however, actions to restore service water must be taken to cooldown to cold shutdown.

Service water flow is desired to maintain cooling to the turbine lube oil system. (Reference CR 93-113)

STEP 45 : Open Service Water Overboards

Due to both units circ water systems being secured, opening both service water overboards will ensure sufficient flow paths for service water.

STEP 46 : Purge Unit 1 And Unit 2 Main Generator Hydrogen Per OI-32B, PURGING MAIN GENERATOR AND H_2 DRYER WITH CO_2 AND CO_2 WITH AIR

This step provides a reminder to purge the main generators of hydrogen. A loss of seal oil will result in releasing hydrogen to the turbine hall creating a fire hazard. This action should be completed in a timely manner as manpower becomes available.

STEP 47 : Check Service Water Available To Auxiliary Feedwater Suction

This step directs the operator to hook up fire hoses to the CST's and maintain CST level from the diesel driven fire pump. Attachment F, ALTERNATE AUXILIARY FEEDWATER SYSTEM SOURCES, provides direction for establishing fire hoses to the CSTs.

STEP 48 : Place Available Battery Chargers In Service:

The selected power source will dictate how many (if any) battery chargers will be in service. This step should be performed as soon as power becomes available with a goal of having all available chargers in service.

STEP 49 : Check Normal Instrument Air Available To Charging Pumps

If instrument air is not available to the charging pumps, the operators are directed to implement Attachment H, BACKUP AIR FOR CHARGING PUMPS. This attachment aligns the backup air compressor and receiver to provide air to the charging pump control system. This allows for long term operation of the charging pumps in addition to the nitrogen backup system.

STEP 50 : Check Ventilation Systems Available

If ventilation is not available, the operators are directed to implement Attachment E, EMERGENCY VENTILATION FOR SAFE SHUTDOWN AREAS. This attachment monitors room temperatures and runs temporary ventilation ducts and blowers to maintain room temperatures. Ventilation requirements have been established by CR 92-372.

STEP 51 : Determine If Plant Cooldown Can Be Performed From Control Room

This step directs the operators to determined if control of safe shutdown equipment can be returned to the control room for one or both units. At this point an evaluation of plant conditions is performed and a recovery procedure must be developed. The intent here is to maintain stable safe shutdown conditions in accordance with the actions in this procedure until a recovery procedure is developed.

If cooldown to cold shutdown is required, and control of safe shutdown equipment can not be returned to the control room, then the transition must be made to AOP-10B for the appropriate unit. AOP-10B, SAFE TO COLD SHUTDOWN IN LOCAL CONTROL, provides guidance to perform the cooldown and depressurization to cold shutdown conditions.

DOS LOCAL ACTIONS

SUMMARY FOR ATTACHMENT A

This attachment provides direction for the DOS to perform actions needed to place the plant in a safe shutdown condition.

NOTE: Emergency lighting mark egress route.
Access to PAB is through turbine hall 8' El.
Access outside plant is through truck access.

This note informs the operators that even though emergency lighting is provided in safe shutdown areas, some of the egress routes to remote locations may not be adequately lit. The flashlights in the AOP-10 packs are provided for lighting in these areas.

This note also informs the operator of the access routes that have been defined and equipped with emergency lighting. These routes should be used by the operators when performing local actions per the AOP-10A attachments.

Emergency light issues are documented by LER 97-023 and CR 97-1343.

STEP 1 : Direct CAS Operator To Initiate PBSRP 1.6.3, CONTROL ROOM OR SWITCHGEAR ROOM INACCESSIBILITY

The CAS operator must initiate the security actions required for a control room evacuation.

DOS LOCAL ACTIONS

STEP 2 : De-Energize DC Control Power

This step de-energizes control power to 4160 and 480 volt buses to prevent inadvertent starting of equipment caused by a hot short.

The breakers that are opened are specific to DC control power circuits. If the fire prevents access to these panels, the RNO directs the operator to de-energize the entire DC panel. The intent is to open the breakers at any of the panels in the cable spreading room that are accessible before going to the main DC panels. The other operators are informed control power has been de-energized so they can rack out breakers without the possibility of a hot short operating the breaker while racking out.

If G05 is the desired power supply, the operator is directed to deenergize 1B03 and 2B03 to protect the A charging pump from gas binding due to the VCT not being isolated.

NOTE: Monitor Charging Pump nitrogen supply pressure periodically at PI-7115. Nitrogen 12-packs should be changed when pressure is less than 115 psig.

Due to use of the vari-drive on the charging pumps to maintain RCS inventory, nitrogen pressure will slowly be used. When pressure is less than 115 psig, control of the charging pumps may not be possible so the nitrogen 12-packs should be changed at this time.

STEP 3 : At 8' El. Unit 2 Turbine Hall Entrance To PAB, Align Backup Nitrogen Bank To Charging Pump Controllers:

It is assumed that instrument air has been lost, therefore the backup supply of nitrogen must be aligned to provide speed control for the charging pumps.

DOS LOCAL ACTIONS

NOTE: Monitor Charging Pump nitrogen supply pressure periodically at PI-7113. Nitrogen 12-packs should be changed when pressure is less than 115 psig.

Due to use of the vari-drive on the charging pumps to maintain RCS inventory, nitrogen pressure will slowly be used. When pressure is less than 115 psig, control of the charging pumps may not be possible so the nitrogen 12-packs should be changed at this time.

STEP 4 : At 8' El. Unit 1 Turbine Hall Entrance To PAB, Align Backup Nitrogen Bank To Charging Pump Controllers:

It is assumed that instrument air has been lost, therefore the backup supply of nitrogen must be aligned to provide speed control for the charging pumps.

STEP 5 : Disable G-01 As Follows:

This step directs the DOS to place G-01 in local control and to de-energize the starting circuits. If the diesel started before control power was removed, the diesel is locally stopped. Neither G-01 or G-02 are considered reliable power supplies for this event due to cable runs in potential fire areas.

STEP 6 : Shut Service Water Valve To G-01 Cooler Inlet

Service water is isolated to the diesel coolers to help maintain adequate service water pressure to other components supplied by the service water system.

STEP 7 : Disable G-02 As Follows:

This step directs the DOS to place G-02 in local control and to de-energize the starting circuits. If the diesel started before control power was removed, the diesel is locally stopped. Neither G-01 or G-02 are considered reliable power supplies for this event due to cable runs in potential fire areas.

DOS LOCAL ACTIONS

STEP 8 : Shut Service Water Valve To G-02 Cooler Inlet

Service water is isolated to the diesel coolers to help maintain adequate service water pressure to other components supplied by the service water system.

STEP 9 : Check G-05 Is Selected Power Source

The G-05 power option is the preferred source if the safeguards buses are not powered from offsite power. This section of Attachment A was written for the G-05 power option and it is the intent of this step to confirm that G-05 is the selected option before proceeding in this attachment. If it is discovered that G-05 is not the selected power source, the DOS must return to the main body of AOP-10A to determine the power option that should be selected.

STEP 10 : Align Service Water Pumps To Alternate Power

This step directs the DOS to align service water pumps P-32C/P-32E and P-32B/P-32F to alternate power sources for the G-05 option. The third reactor operator has been assigned to align the H-01 bus and start the gas turbine to supply power. Power from H-01 will be aligned to B-08 and B-09 in subsequent steps to power safeguards components through their alternate supplies at C-45.

STEP 11 : Disable G-03 As Follows:

This step removes control from G-03 by de-energizing C-81 to prevent the fire from causing inadvertent operation.

STEP 12 : Check G-03 Shutdown

This step directs the DOS to verify that G-03 is secured in the event that it may have inadvertently started before control circuits were isolated.

DOS LOCAL ACTIONS

STEP 13 : Disable G-04 As Follows:

This step removes control from G-04 by de-energizing C-81 to prevent the fire from causing inadvertent operation.

STEP 14 : Check G-04 Shutdown

This step directs the DOS to verify that G-04 is secured in the event that it may have inadvertently started before control circuits were isolated.

STEP 15 : Obtain Verification From Third Reactor Operator That G-05 Is Supplying Bus H-01

This check will ensure H-01 is energized prior to continuing.

STEP 16 : At C-45, Align Alternate Power To Charging And Service Water Pumps

The DOS is directed to align the breakers at C-45 to energize B-08 and B-09. Subsequent substeps align alternate breakers to the service water and charging pumps.

STEP 17 : Report Completion Of Attachment A, DOS LOCAL ACTIONS To SM

AOP-10A and its attachments were developed in such a way to allow the SM to be free of local tasks which permits him to maintain command and control throughout the procedure. This allows the SM to remain current as to the status of this attachment and relay appropriate information to operators performing the other attachments related to AOP-10A.

STEP 18 : Return To, Step 44

This step marks the end of the actions for Attachment A, DOS LOCAL ACTIONS.

THIRD REACTOR OPERATOR LOCAL ACTIONS

SUMMARY FOR ATTACHMENT B

This attachment provides direction for the third reactor operator to perform local actions necessary to establish safe shutdown.

NOTE: Emergency lighting mark egress route.
Access to PAB is through turbine hall 8' El.
Access outside plant is through truck access.
Instructions for local breaker operation is provided in Attachment G, LOCAL BREAKER OPERATION.

This note informs the operators that even though emergency lighting is provided in safe shutdown areas, some of the egress routes to remote locations may not be adequately lit. The flashlights in the AOP-10 packs are provided for lighting in these areas.

This note also informs the operator of the access routes that have been defined and equipped with emergency lighting. These routes should be used by the operators when performing local actions per the AOP-10A attachments.

Emergency light issues are documented by LER 97-023 and CR 97-1343.

STEP 1 : Perform Actions For Selected Power Supply

This step directs the operator to the appropriate section of this attachment based on the power option that was selected by the SM. Each section of this attachment is applicable to a specific power option.

STEP 2 : Obtain Verification From DOS That DC Control Power Is - DE-ENERGIZED

This is a hold point for the third reactor operator. In the following step he is directed to locally operate breakers at the 1B-03 bus. However, these breakers should not be operated until the control power has been de-energized to the respective buses.

THIRD REACTOR OPERATOR LOCAL ACTIONS

STEP 3 : Ensure Power From 1B-03 To Safe Shutdown Equipment - AVAILABLE

This step closes the breakers on 1B-03 required for charging and service water pump operation. The remaining breakers are opened to prevent spurious operation of equipment not required for safe shutdown. Opening these breakers will also protect the diesel from excessive load if it is the chosen power source.

STEP 4 : Obtain Verification From Unit 1 Control Operator That DC Control Power Is - DE-ENERGIZED

This is a hold point for the third reactor operator. In the following step he is directed to locally operate breakers at the 1B-04 bus. However, these breakers should not be operated until the control power has been de-energized to the respective buses.

STEP 5 : Ensure Power From 1B-04 To Safe Shutdown Equipment - AVAILABLE

This step closes the breakers on 1B-04 required for charging, service water, and CCW pump operation. The remaining breakers are opened to prevent spurious operation of equipment not required for safe shutdown. Opening these breakers will also protect the diesel from excessive load if it it the chosen power source.

STEP 6 : Ensure Power From 2B-03 To Safe Shutdown Equipment - AVAILABLE

This step closes the breakers on 2B-03 required for charging and service water pump operation. The remaining breakers are opened to prevent spurious operation of equipment not required for safe shutdown. Opening these breakers will also protect the diesel from excessive load if it is the chosen power source.

THIRD REACTOR OPERATOR LOCAL ACTIONS

STEP 7 : Ensure Power From 2B-04 To Safe Shutdown Equipment - AVAILABLE

This step closes the breakers on 2B-04 required for charging, service water, and CCW pump operation. The remaining breakers are opened to prevent spurious operation of equipment not required for safe shutdown. Opening these breakers will also protect the diesel from excessive load if it is the chosen power source.

STEP 8 : Ensure Power To 1B-03 - AVAILABLE

This step checks that breakers on 1A-05 are aligned to supply power to 1B-03 from offsite. If the breakers are not aligned properly, the RNO sends the operator back to Step 1 to choose another power option. The breakers are not closed locally because they are not designed to be closed under load safely.

STEP 9 : Isolate Diesels From Offsite Power

This step opens G-01 and G-02 output breakers to prevent motorizing the diesels from off site power should a hot short close the output breaker. These breakers can be safely opened locally.

STEP 10 : Disable SI Pump 1P-15A

This step opens the SI pump breaker to ensure it does not spuriously start due to a hot short. Spurious starting of an SI pump could cause the RCS to go solid and make pressure control difficult.

STEP 11 : Ensure Power To 2B-03 - AVAILABLE

This step checks that breakers on 2A-05 are aligned to supply power to 2B-03 from offsite. If the breakers are not aligned properly, the RNO sends the operator back to Step 1 to choose another power option. The breakers are not closed locally because they are not designed to be closed under load safely.

THIRD REACTOR OPERATOR LOCAL ACTIONS

STEP 12 : Isolate Diesels From Offsite Power

This step opens G-01 and G-02 output breakers to prevent motorizing the diesels from offsite power should a hot short close the output breaker. These breakers can be safely opened locally.

STEP 13 : Disable SI Pump 2P-15A

This step opens the SI pump breaker to ensure it does not spuriously start due to a hot short. Spurious starting of an SI pump could cause the RCS to go solid and cause difficulties with RCS pressure control.

STEP 14 : De-Energize 1A-06 DC Control Power

This step de-energizes control power to 4160 volt bus 1A-06 to prevent spurious starting of equipment. A major concern is spurious operation of a safety injection pump which could cause solid plant conditions, and create difficulties with RCS pressure control. An additional concern is spurious start of a steam generator feed pump which could overfill the steam generators into the main steam lines.

STEP 15 : Ensure Power To 1B-40 - AVAILABLE

This step aligns the breakers located on 1A-06 to supply power to 1B-40. This MCC supplies power to the support equipment for G-04 in the event G-03 is later designated as the desired power supply.

STEP 16 : Disable SI Pump 1P-15B

This step opens the SI pump breaker to ensure it does not inadvertently start due to a hot short. Spurious starting of an SI pump could cause the RCS to go solid and make pressure control difficult.

THIRD REACTOR OPERATOR LOCAL ACTIONS

STEP 17 : At C-81, Place G-03 Local/Remote Switch In - LOCAL

This step places the G-03 control in local as a backup to prevent the fire from causing spurious diesel start.

STEP 18 : At C-81, Place Control Switch For G-03 Output Breakers In - PULLOUT

This action is a backup to opening the output breaker to prevent spurious operation due to hot short. Offsite power will be made available and spurious closing of the output breaker would motorize the diesel causing serious damage.

STEP 19 : De-Energize 2A-06 DC Control Power

This step de-energizes control power to 4160 volt bus 2A-06 to prevent spurious starting of equipment. A major concern is spurious operation of a safety injection pump which could cause solid plant conditions, and create difficulties with RCS pressure control. An additional concern is spurious start of a steam generator feed pump which could overfill the steam generators into the main steam lines.

STEP 20 : Ensure Power To 2B-40 - AVAILABLE

This step aligns the breakers located on 2A-06 to supply power to 2B-40. This MCC supplies power to the support equipment for G-04 in the event G-04 is later designated as the desired power supply.

STEP 21 : Disable SI Pump 2P-15B

This step opens the SI pump breaker to ensure it does not spuriously start due to a hot short. Spurious starting of an SI pump could cause the RCS to go solid and make pressure control difficult.

THIRD REACTOR OPERATOR LOCAL ACTIONS

STEP 22 : At C-82, Place G-04 Local/Remote Switch In - LOCAL

This step places the G-04 control in local as a backup to prevent the fire from causing spurious operation.

STEP 23 : At C-82, Place Control Switch For G-04 Output Breakers In - PULLOUT

This action is a backup to opening the output breaker to prevent spurious operation due to hot short. Offsite power will be made available and spurious closing of the output breaker would motorize the diesel causing serious damage.

STEP 24 : Report Completion Of Attachment B, Steps B1 Through B24 To SM

The operator is directed to report the completion of the steps in the attachment for the offsite power option.

STEP 25 : Check G-05 Is The Desired Power Supply

The gas turbine is the preferred power source when offsite power is not available. The gas turbine is also the only accredited power supply. If G-05 is not available, the operator returns to Step B1 and chooses another power supply.

STEP 26 : Check G-05 - NOT RUNNING

This step directs the operator to check the gas turbine not running. If the gas turbine is running, the operator will locally stop the gas turbine. This will place the gas turbine in a shutdown mode to ensure the gas turbine is in the standby mode when shifting the isolate switches.

STEP 27 : Isolate H-01 From Offsite Power

The purpose of this step is to isolate bus H-01 in preparation for aligning G-05 to the H-01 bus. Control power should be available for the 13.8 kV buses, so the breakers should be operated from the switches at the local distribution panels (C221/C222/C223). If control power is not available, the breakers can be operated locally at the breaker cubicles.

THIRD REACTOR OPERATOR LOCAL ACTIONS

STEP 28 : Align Gas Turbine To X-08

The X-08 transformer supplies power to MCC's B-08 and B-09. These are the accredited Appendix R power supplies for safe shutdown loads.

NOTE: Gas turbine G-05 will not auto synchronize to a dead bus.

This note informs the operator that if G05 gas turbine is being closed onto a dead bus, it will not automatically synchronize onto the bus as is normally done. Speed and voltage control adjustments must be made manually, and the output breaker (H52-G-05) must also be closed manually.

STEP 29 : Take Local Control Of G-05 Gas Turbine

All remote controls and indication circuits to the main control room are isolated by local isolation switches (ISO1 though ISO6) located on the G-05 switchgear in the gas turbine building.

Isolation switches ISO1 though ISO3 must be opened before opening isolation switches ISO4 though ISO6. Failure to adhere to this sequence will result in blown fuses in GO5 control power circuits.

STEP 30 : Check G-05 - RUNNING

This step provides directions to start G-05 locally if G-05 is not already running.

STEP 31 : Check G-05 Output Breaker - CLOSED

This step provides directions on how to locally load G-05 if the output breaker is not shut already.

THIRD REACTOR OPERATOR LOCAL ACTIONS

STEP 32 : Operate G-05 Per OI-110, GAS TURBINE OPERATION

This step references additional procedural direction for gas turbine operation. When time permits, the operator should use this procedure to ensure turbine is operating as expected.

STEP 33 : Report Completion of Attachment B, Steps B25 Through B33 To DOS

The operator is directed to report the completion of the steps in the attachment for the G-05 power option.

STEP 34 : Check G-03 Is The Desired Power Supply

This step is intended as a check for the operator to ensure he is in the appropriate section of this attachment.

STEP 35 : Obtain Verification From DOS That DC Control Power Is - DE-ENERGIZED

This is a hold point for the third reactor operator. In subsequent steps he is directed to locally operate breakers at various buses. These breakers must not be operated until the control power has been de-energized. This will ensure spurious breaker operation does not occur while the operators are in the breaker cubicles.

STEP 36 : Ensure Power From 1B-03 To Safe Shutdown Equipment - AVAILABLE

This step closes the breakers on 1B-03 required for charging and service water pump operation. The remaining breakers are opened to prevent spurious operation of equipment not required for safe shutdown. Opening these breakers will also protect the diesel from excessive load. If the B-04 to B-03 tie breaker can not be locally closed, the operator must select a different power supply as this breaker should not be locally operated under load.

THIRD REACTOR OPERATOR LOCAL ACTIONS

STEP 37 : Open ALL Breakers On 1A-05

There are no loads off of this bus required for safe shutdown when G-03 is the power source. These breakers are opened to prevent spurious operation from a hot short. The SI pump breaker is opened to prevent a spurious start from filling the pressurizer and making RCS pressure difficult to control.

STEP 38 : Obtain Verification From Unit 1 Control Operator That DC Control Power Is - DE-ENERGIZED

This is a hold point for the third reactor operator. In subsequent steps he is directed to locally operate breakers at various buses. These breakers must not be operated until the control power has been de-energized. This will ensure spurious breaker operation does not occur while the operators are in the breaker cubicles.

STEP 39 : Ensure Power From 1B-04 To Safe Shutdown Equipment - AVAILABLE

This step closes the service water pump supply breaker, and the supply breaker to B-43, which will supply power to the X-30 radio transmitter. The remaining breakers are opened to prevent spurious operation of equipment not required for safe shutdown. Opening these breakers will also protect the diesel from excessive load. If the operator is unable to close the supply breaker from 1X-14 to 1B-04, then another power supply must be chosen.

STEP 40 : Open ALL Breakers On 2A-05

There are no loads supplied by this bus required for safe shutdown when G-03 is the power source. These breakers are opened to prevent spurious operation from a hot short. It is possible that RCS pressure may drift down below SI pump shutoff head due to loss of RCS inventory through the RCP seals. The SI pump breaker is opened to prevent a spurious start from filling the pressurizer solid and making RCS pressure difficult to control.

THIRD REACTOR OPERATOR LOCAL ACTIONS

STEP 41 : At 1A-03, Open 1A-01 to 1A-03 Bus Tie

Opening the supply breaker will prevent spurious operation of equipment powered from 1A-01. The major concern is spurious operation of reactor coolant and steam generator feed pumps. Spurious start of a reactor coolant pump could force a pocket of cold or low boron concentration water into the core and compromise shutdown margin. Spurious start of a steam generator feed pump could lead to steam generator overfill, compromising the integrity of the main steam lines due to the weight of the water.

STEP 42 : At 1A-04, Open 1A-02 To 1A-04 Bus Tie

Opening the supply breaker will prevent spurious operation of equipment powered from 1A-02. The major concern is spurious operation of reactor coolant and steam generator feed pumps. Spurious start of a reactor coolant pump could force a pocket of cold or low boron concentration water into the core and compromise shutdown margin. Spurious start of a steam generator feed pump could lead to steam generator overfill, compromising the integrity of the main steam lines due to the weight of the water.

STEP 43 : At 2A-03, Open 2A-01 To 2A-03 Bus Tie

Opening the supply breaker will prevent spurious operation of equipment powered from 2A-01. The major concern is spurious operation of reactor coolant and steam generator feed pumps. Spurious start of a reactor coolant pump could force a pocket of cold or low boron concentration water into the core and compromise shutdown margin. Spurious start of a steam generator feed pump could lead to steam generator overfill, compromising the integrity of the main steam lines due to the weight of the water.

THIRD REACTOR OPERATOR LOCAL ACTIONS

STEP 44 : At 2A-04, Open 2A-02 To 2A-04 Bus Tie

Opening the supply breaker will prevent spurious operation of equipment powered from 2A-02. The major concern is spurious operation of reactor coolant and steam generator feed pumps. Spurious start of a reactor coolant pump could force a pocket of cold or low boron concentration water into the core and compromise shutdown margin. Spurious start of a steam generator feed pump could lead to steam generator overfill, compromising the integrity of the main steam lines due to the weight of the water.

STEP 45 : De-Energize 2A-06 DC Control Power

This step de-energizes control power to 4160 volt bus 2A-06 to prevent spurious starting of equipment while the operators are in the breaker cubicles. Another major concern is spurious operation of a safety injection pump which could cause solid plant conditions, and create difficulties with RCS pressure control. An additional concern is spurious start of a steam generator feed pump which could overfill the steam generators into the main steam lines.

STEP 46 : Isolate G-04 As Follows:

This step isolates G-04 remote control circuits by shifting control to local. This is done to prevent spurious operation that could result from short circuits caused by fire. This step also opens the output breakers to ensure spurious closure does not motorize the generator.

STEP 47 : De-Energize 1A-06 DC Control Power

This step de-energizes control power to 4160 volt bus 1A-06 to prevent spurious starting of equipment while the operators are in the breaker cubicles. Another major concern is spurious operation of a safety injection pump which could cause solid plant conditions, and create difficulties with RCS pressure control. An additional concern is spurious start of a steam generator feed pump which could overfill the steam generators into the main steam lines.

THIRD REACTOR OPERATOR LOCAL ACTIONS

STEP 48 : At 1A-06, Perform The Following:

This step isolates 1A-06 from offsite power to protect the G-03 diesel. This will ensure spurious breaker operation will not parallel the diesel with offsite power out of phase. The SI pump breaker is opened to prevent spurious operation from filling the RCS solid. This step aligns power via the 1X-14 transformer to 1B-04 to supply various safe shutdown loads. The supply breaker to 1B-40 is closed which supplies power the G-03 support equipment.

STEP 49 : At 1B-40, Open Vital To Non-Vital Tie Breaker

This step opens the 1B-40 non vital tie breaker to minimize diesel loading from spurious operation of equipment not vital to safe shutdown.

STEP 50 : At C-81, Start G-03 As Follows:

This step locally starts G-03 to supply safe shutdown loads. If the diesel does not start, the operator is to perform a fast start. If the output breaker can not be locally closed, then another power supply must be selected.

STEP 51 : Report Completion Of Attachment B, THIRD REACTOR OPERATOR LOCAL ACTIONS To SM And Request New Assignment From SM

The operator is directed to report the completion of the steps in the attachment for the G-03 power option.

STEP 52 : Check G-04 Is The Desired Power Supply

This step is intended as a check for the operator to ensure he is in the appropriate section of this attachment. If G-04 is not the desired power supply, the operator returns to the step which chooses an alternate supply.

THIRD REACTOR OPERATOR LOCAL ACTIONS

STEP 53 : Obtain Verification From DOS That DC Control Power Is - DE-ENERGIZED

This is a hold point for the third reactor operator. In subsequent steps he is directed to locally operate breakers at various buses. These breakers must not be operated until the control power has been de-energized. This will ensure spurious breaker operation does not occur while the operators are in the breaker cubicles.

STEP 54 : Ensure Power From 2B-04 To Safe Shutdown Equipment - AVAILABLE

This step closes the breakers on 2B-04 required for service water pump operation. The remaining breakers are opened to prevent spurious operation of equipment not required for safe shutdown. Opening these breakers will also protect the diesel from excessive load.

STEP 55 : Obtain Verification From Unit 1 Control Operator That DC Control Power Is - DE-ENERGIZED

This is a hold point for the third reactor operator. In subsequent steps he is directed to locally operate breakers at various buses. These breakers must not be operated until the control power has been de-energized. This will ensure spurious breaker operation does not occur while the operators are in the breaker cubicles.

STEP 56 : Ensure Power From 2B-03 To Safe Shutdown Equipment - AVAILABLE

This step closes the charging pump supply breakers, and the supply breaker to B-33, which will supply power to the X-30 radio transmitter. The remaining breakers are opened to prevent spurious operation of equipment not required for safe shutdown. Opening these breakers will also protect the diesel from excessive load. If the operator is unable to close the 2B-03 to 2B-04 bus tie, then another power supply must be chosen.

THIRD REACTOR OPERATOR LOCAL ACTIONS

STEP 57 : Open ALL Breakers On 1A-05

This step checks unnecessary breakers open in case the fire caused spurious operation. These breakers can be safely opened locally.

STEP 58 : Open ALL Breakers On 2A-05

This step checks unnecessary breakers open in case the fire caused spurious operation. These breakers can be safely opened locally.

STEP 59 : At 1A-03, Open 1A-01 to 1A-03 Bus Tie

Opening the supply breaker will prevent spurious operation of equipment powered from 1A-01. The major concern is spurious operation of reactor coolant and steam generator feed pumps. Spurious start of a reactor coolant pump could force a pocket of cold or low boron concentration water into the core and compromise shutdown margin. Spurious start of a steam generator feed pump could lead to steam generator overfill, compromising the integrity of the main steam lines due to the weight of the water.

STEP 60 : At 1A-04, Open 1A-02 To 1A-04 Bus Tie

Opening the supply breaker will prevent spurious operation of equipment powered from 1A-02. The major concern is spurious operation of reactor coolant and steam generator feed pumps. Spurious start of a reactor coolant pump could force a pocket of cold or low boron concentration water into the core and compromise shutdown margin. Spurious start of a steam generator feed pump could lead to steam generator overfill, compromising the integrity of the main steam lines due to the weight of the water.

THIRD REACTOR OPERATOR LOCAL ACTIONS

STEP 61 : At 2A-03, Open 2A-01 To 2A-03 Bus Tie

Opening the supply breaker will prevent spurious operation of equipment powered from 2A-01. The major concern is spurious operation of reactor coolant and steam generator feed pumps. Spurious start of a reactor coolant pump could force a pocket of cold or low boron concentration water into the core and compromise shutdown margin. Spurious start of a steam generator feed pump could lead to steam generator overfill, compromising the integrity of the main steam lines due to the weight of the water.

STEP 62 : At 2A-04, Open 2A-02 To 2A-04 Bus Tie

Opening the supply breaker will prevent spurious operation of equipment powered from 2A-02. The major concern is spurious operation of reactor coolant and steam generator feed pumps. Spurious start of a reactor coolant pump could force a pocket of cold or low boron concentration water into the core and compromise shutdown margin. Spurious start of a steam generator feed pump could lead to steam generator overfill, compromising the integrity of the main steam lines due to the weight of the water.

STEP 63 : De-Energize 1A-06 DC Control Power

This step de-energizes control power to 4160 volt bus 1A-06 to prevent spurious starting of equipment while the operators are in the breaker cubicles. Another major concern is spurious operation of a safety injection pump which could cause solid plant conditions, and create difficulties with RCS pressure control. An additional concern is spurious start of a steam generator feed pump which could overfill the steam generators into the main steam lines.

STEP 64 : Isolate G-03 As Follows:

This step isolates G-03 remote control circuits by shifting control to local. This is done to prevent spurious operation that could result from from short circuits caused by fire. This step also opens the output breakers to ensure spurious closure does not motorize the generator.

THIRD REACTOR OPERATOR LOCAL ACTIONS

STEP 65 : De-Energize 2A-06 DC Control Power

This step de-energizes control power to 4160 volt bus 2A-06 to prevent spurious starting of equipment while the operators are in the breaker cubicles. Another major concern is spurious operation of a safety injection pump which could cause solid plant conditions, and create difficulties with RCS pressure control. An additional concern is spurious start of a steam generator feed pump which could overfill the steam generators into the main steam lines.

STEP 66 : At 2A-06, Perform The Following:

This step isolates 2A-06 from offsite power to protect the G-04 diesel. This will ensure spurious breaker operation will not parallel the diesel with offsite power out of phase. The SI pump is racked out to prevent spurious operation from filling the RCS solid. This step aligns power via the 2X-14 transformer to 2B-04 to supply various safe shutdown loads. The supply breaker to 2B-40 is closed which supplies power the G-04 support equipment.

STEP 67 : At 2B-40, Open Vital To Non-Vital Tie Breaker

This step opens the non vital load to minimize diesel loading from spurious operation of equipment not vital to safe shutdown.

STEP 68 : At C-82, Start G-04:

This step locally starts G-04 to supply safe shutdown loads. If the diesel does not start, the operator is to perform a fast start. If the output breaker can not be locally closed, then another power supply must be selected.

THIRD REACTOR OPERATOR LOCAL ACTIONS

STEP 69 : Report Completion Of Attachment B, Steps B52 Through B69 To SM

The operator is directed to report the completion of the steps in the attachment for the G-04 power option.

UNIT 1 CONTROL OPERATOR LOCAL ACTIONS

SUMMARY FOR ATTACHMENT C

This attachment provides direction for the Unit 1 Control Operator to perform local actions necessary to establish safe shutdown.

NOTE: Emergency lighting mark egress route.
Access to PAB is through turbine hall 8' El.
Access outside plant is through truck access.

This note informs the operator of the access routes that have been defined and equipped with emergency lighting. These routes should be used by the operators when performing local actions per the AOP-10A attachments.

Emergency light issues are documented by LER 97-023 and CR 97-1343.

STEP 1 : De-Energize DC Control Power

This step de-energizes control power to 4160 and 480 volt buses and the G01(G02) diesel generator to prevent spurious operation of equipment due to fire damage. The third reactor operator and the DOS is informed control power has been de-energized so that he may safely continue with the local breaker operation.

STEP 2 : Isolate Air To Unit 2 Atmospheric Dumps And MSIVs:

Isolating air to the atmospheric dump and main steam stops ensure the valves remain shut. The secondary is allowed to ride the main steam safety valves. Isolating air will prevent a hot smart short from causing spurious operation of these valves.

UNIT 1 CONTROL OPERATOR LOCAL ACTIONS

STEP 3 : Isolate Air To Unit 1 Atmospheric Dumps And MSIVs:

Isolating air to the atmospheric dump and main steam stops ensure the valves remain shut. The secondary is allowed to ride the main steam safety valves. Isolating air will prevent a hot smart short from causing spurious operation of these valves.

STEP 4 : Align Steam Supply To Turbine-Driven AFW Pumps:

Each units turbine-driven auxiliary feed pump is aligned to the B steam generator. The B S/G has accredited instrumentation and will later be used to reach cold shutdown. This backs up actions that may have been done from the control room. It also checks the line up in the event spurious operation of valves occurred prior to DC power being deenergized.

STEP 5 : At PAB El. 26' Pipeway #2, Isolate Instrument Air To Unit 1 Containment:

This step isolates instrument air to Unit 1 containment and bleeds down the air header inside containment. This action prevents any spurious operation of air operated valves inside containment. The primary valves of concern are the pressurizer Power Operated Relief Valves. The intent is to maintain RCS inventory.

STEP 6 : At PAB El. 26' Pipeway #3, Isolate Instrument Air To Unit 2 Containment:

This step isolates instrument air to Unit 2 containment and bleeds down the air header inside containment. This action prevents any spurious operation of air operated valves inside containment. The primary valves of concern are the pressurizer Power Operated Relief Valves. The intent is to maintain RCS inventory.

UNIT 1 CONTROL OPERATOR LOCAL ACTIONS

STEP 7 : Place Turbine-Driven AFW Pumps In Service:

This step aligns both units turbine-driven auxiliary feed water pumps to deliver approximately 50 gpm flow to each units B steam generator. Backup to service water cooling to the turbine-driven AFW pump can be provided by the diesel fire pump.

This step also checks sufficient auxiliary feed pump suction. If sufficient suction is not available, the operator is directed to align service water to the auxiliary feed pump suction. The operator should be aware that if service water is not available that fire water connections are available to supply the CSTs if required.

STEP 8 : Place Unit 1 Appendix R Instrumentation In Service:

These indications are used to stabilize both plants in a safe shutdown condition. Subsequent procedural steps will utilize these indications for plant cooldown.
There is no accredited instrumentation for the A steam generator. For this reason A steam generator is bottled up for the duration of this procedure.

STEP 9 : Place Unit 2 Appendix R Instrumentation In Service:

These indications are used to stabilize both plants in a safe shutdown condition. Subsequent procedural steps will utilize these indications for plant cooldown.
There is no accredited instrumentation for the A steam generator. For this reason A steam generator is bottled up for the duration of this procedure.

STEP 10 : Report Completion Of Attachment C, UNIT 1 CONTROL OPERATOR LOCAL ACTIONS, To DOS

AOP-10A and its attachments were developed in such a way to allow the SM to be free of local tasks, which permits him to maintain command and control throughout the procedure. The Unit 1 Control Operator is directed to inform the DOS upon the completion of this attachment. This allows the DOS to remain current as to the status of this attachment and relay appropriate information to operators performing the other attachments related to AOP-10A. The DOS should then inform the SM of any major steps that have been completed.

UNIT 1 CONTROL OPERATOR LOCAL ACTIONS

STEP 11 : Return to, Step 42

The control operator returns to the main body and maintains B S/G level control using the auxiliary feed pump discharge valves.

UNIT 2 CONTROL OPERATOR LOCAL ACTIONS

SUMMARY FOR ATTACHMENT D

This attachment provides direction for the Unit 2 Control Operator to perform local actions necessary to establish a safe shutdown condition in local control.

NOTE: Emergency lighting mark egress route.
Access to PAB is through turbine hall 8' El.
Access outside plant is through truck access.

This note informs the operators that even though emergency lighting is provided in safe shutdown areas, some of the egress routes to remote locations may not be adequately lit. The flashlights in the AOP-10 packs are provided for lighting in these areas.

This note also informs the operator of the access routes that have been defined and equipped with emergency lighting. These routes should be used by the operators when performing local actions per the AOP-10A attachments.

STEP 1 : Gag Open Turbine-Driven AFW Mini-Recirc

The turbine-driven AFW mini-recirc valves are gagged open to prevent pump overheat due to low flow. These valves may be throttled shut if necessary to increase flow to maintain steam generator level. The mini-recirc valves fail shut on a loss of instrument air or DC electrical power.

STEP 2 : Establish Cooling Flow To Turbine-Driven AFW Pumps:

Opening these valves ensures bearing cooling is provided to the turbine-driven AFW pumps. The step is placed at this point in the attachment to ensure the valves are opened within the 37 minute time requirement to have these valves open. (Reference Engineering Evaluation 2004-0002)

UNIT 2 CONTROL OPERATOR LOCAL ACTIONS

STEP 3 : At PAB El. 8' Align Valves

For Unit 1, the alternate charging flow path is aligned to provide RCS makeup control. The normal charging flow path is isolated. This is because, for Unit 1, 1CV-1296 has been configured to its original design function of relieving pressure to the RCS at 248 psid. (Reference MR 02-027, Return 1CV-1296 To Original Design Specification)

For Unit 2, the nomal charging flow path is aligned to provide RCS makeup control. The normal charging flow path is used to provide level control for the pressurizer. This is because 2CV-1296 has not yet been configured to relieve at the original design pressure of 248 psid.

Charging must be aligned to the RWST early in the event prior to loss of VCT level due to loss of letdown flow. If the VCT goes dry the charging pumps will become gas bound.

STEP 4 : At PAB El. 26' Align Valves

This step checks the gas decay tank control trip valve shut to isolate any gaseous release that might have been in progress when the control room was evacuated.

STEP 5 : At PAB El. 26' Panel D-04, De-Energize Yellow Inverter

Yellow instrument bus inverters are stripped from battery D-106 to conserve battery power. CR 97-1964 requires battery discharge rate be reduced to extend battery life to 8 hours.

STEP 6 : Shut Seal Injection Inlet Valves

It is assumed the charging pumps have been deenergized due to a loss of offsite power. As a result, the RCP seals are assumed to be hot, and are isolated to prevent thermal shock. (Reference DW 94-011)

UNIT 2 CONTROL OPERATOR LOCAL ACTIONS

NOTE: Inform SM any time a different power source must be implemented.

Each operator must inform the SM when they are not able to perform one of the steps in the respective attachments. The SM should then select an alternative power supply. This procedure was written to allow stopping in the middle of any step, and choosing another power supply and continuing from that point.

STEP 7 : Perform Actions For Selected Power Supply

This step directs the operator to the appropriate section of this attachment based on the power supply that was selected when the control room was evacuated. Each section of this attachment is applicable to a specific power option.

STEP 8 : Check Offsite AC Is Desired Power Supply

Offsite power is assumed to be lost as a requirement of Appendix R. This does not mean offsite power can not be used as a means to mitigate this event. This procedure will provide the necessary direction to achieve hot shutdown using a variety of power sources.
If at any time the operator has reason to believe the chosen power supply is no longer reliable, he is directed to choose an alternative power supply.

STEP 9 : At MCC B-43 Perform The Following:

This step ensures power is available to maintain radio communications. The remaining breaker on the MCC's are opened in the event offsite power is not the selected power supply, thereby minimizing diesel load.

UNIT 2 CONTROL OPERATOR LOCAL ACTIONS

STEP 10 : At MCC B-33, Open ALL Breakers

This step directs the operator to open all breakers on MCC B-33 to reduce load on the diesel.

STEP 11 : Go To Step D32

This step marks the end of the actions for the offsite AC power option. The operator is directed to transition to Step 32 to complete additional steps common to all power options before transitioning back to the main body of AOP-10A.

STEP 12 : Check G-05 Is Desired Power Supply

If offsite power is not available or not considered to be reliable, the gas turbine should be selected as the power source for achieving safe shutdown. The gas turbine is the only source of power that is actually taken credit for in this event. Each section of this attachment is applicable to a specific power option. This step ensures the operator has chosen the correct section of the procedure before continuing.

STEP 13 : Align 1P-2A Charging Pump To Alternate Shutdown Power

This step directs the Unit 2 Control Operator to locally align charging pump 1P-2A to its alternate power source for the G-05 option. The third reactor operator has been assigned to align the H-01 bus and start the gas turbine to supply power from G-05. Power from H-01 will be aligned to B-08 and B-09 in subsequent steps to power safeguards components through their alternate supplies.

STEP 14 : Inform DOS That 1P-2A Aligned For Alternate Power Supply

When the third reactor operator has started the gas turbine and it has been aligned to the H-01 bus, then the DOS can align the breakers at C-45 to energize B-08 and B-09, and then close the alternate power supply breaker for the P-2A charging pump.

UNIT 2 CONTROL OPERATOR LOCAL ACTIONS

STEP 15 : Align 2P-2A Charging Pump To Alternate Shutdown Power

This step directs the Unit 2 Control Operator to locally align charging pump 2P-2A to its alternate power source for the G-05 option. The third reactor operator is assigned to align the H-01 bus and start the gas turbine to supply power from G-05. Power from H-01 will be aligned to B-08 and B-09 in subsequent steps to power safeguards components through their alternate supplies.

STEP 16 : Inform DOS That 2P-2A Aligned For Alternate Power Supply

When the third reactor operator has started the gas turbine and it has been aligned to the H-01 bus, then the DOS can align the breakers at C-45 to energize B-08 and B-09, and then close the alternate power supply breaker for the P-2A charging pump.

STEP 17 : Go To Step D32

This step marks the end of the actions for the G-05 power option. The operator is directed to transition to Step 32 to complete additional steps common to all power options before transitioning back to the main body of AOP-10A.

STEP 18 : Check G-03 Is Desired Power Supply

If neither offsite power nor the gas turbine are available, the operator will be required to choose one the diesels as a power supply.

STEP 19 : At 2B337B-1B313B, Align 2P-2B Charging Pump To 1B-03

This step directs the Unit 2 Control Operator to locally align charging pump 2P-2B to its cross-tie power source from the opposite unit safeguards bus. This will allow charging pump operation for the purpose of maintaining RCS inventory. The operator aligns all Unit 2 breakers in this step and will align associated Unit 1 breakers in the following step.

UNIT 2 CONTROL OPERATOR LOCAL ACTIONS

STEP 20 : At 1B313B-2B337B, Align 2P-2B Charging Pump To 1B-03

This step directs the Unit 2 Control Operator to locally align charging pump 2P-2B to its cross-tie power source from the opposite unit safeguards bus. This will allow charging pump operation for the purpose of maintaining RCS inventory. The operator aligns all Unit 1 breakers in this step following the the alignment of all Unit 2 breakers in the previous step.

STEP 21 : Align Nitrogen Backup To 1P-2B Charging Pump

This step aligns nitrogen to 1P-2B since instrument air is lost and the P-2B charging pump is used for inventory control.

STEP 22 : Align Nitrogen Backup To 2P-2B Charging Pump

This step aligns nitrogen to 2P-2B since instrument air is lost and the P-2B charging pump is used for inventory control.

STEP 23 : At MCC B-43 Perform The Following:

This step directs the operator to locally open all breakers on motor control center B-43 with the exception of the breaker on B-43 supplying power to the radios which is left energized to maintain communications.

STEP 24 : At MCC B-33, Open ALL Breakers

This step directs the operator to open all breakers on MCC B-33 to reduce load on the diesel.

STEP 25 : Go To Step D32

This step marks the end of the actions for the G-03 AC power option. The operator is directed to transition to Step 32 to complete additional steps common to all power options before transitioning to the main body of AOP-10A.

UNIT 2 CONTROL OPERATOR LOCAL ACTIONS

STEP 26 : Check G-04 Is Desired Power Supply

If neither offsite power nor the gas turbine are available, the operator will be required to choose one the diesels as a power supply.

STEP 27 : At 1B313B-2B337B, Align 1P-2B Charging Pump Breakers To 2B-03

This step directs the Unit 2 Control Operator to locally align charging pump 1P-2B to its cross-tie power source from the opposite unit safeguards bus. This will allow charging pump operation for the purpose of maintaining RCS inventory. The operator aligns all Unit 1 breakers in this step and will align associated Unit 2 breakers in the following step.

STEP 28 : At 2B337B-1B313B, Align 1P-2B Charging Pump Breakers To 2B-03

This step directs the Unit 2 Control Operator to locally align charging pump 1P-2B to its cross-tie power source from the opposite unit safeguards bus. This will allow charging pump operation for the purpose of maintaining RCS inventory. The operator aligns all Unit 2 breakers in this step following the the alignment of all Unit 1 breakers in the previous step.

STEP 29 : Align Nitrogen Backup To 1P-2B Charging Pump

This step aligns nitrogen to 1P-2B since instrument air is lost and the P-2B charging pump is used for inventory control.

STEP 30 : Align Nitrogen Backup To 2P-2B Charging Pump

This step aligns nitrogen to 2P-2B since instrument air is lost and the P-2B charging pump is used for inventory control.

UNIT 2 CONTROL OPERATOR LOCAL ACTIONS

STEP 31 : At MCC B-33, Perform The Following:

This step directs the operator to locally open all breakers on motor control center B-33 with the exception of the breaker on B-33 supplying power to the radios which is left energized to maintain communications.

STEP 32 : At MCC B-43, Open ALL Breakers

This step directs the operator to open all breakers on MCC B-43 to reduce load on the diesel.

STEP 33 : Place Unit 1 And Unit 2 RCS Instrumentation In - LOCAL

This step directs the Unit 2 Control Operator to place the RCS instrumentation to local for both units. This transfers indication of safe shutdown parameters from the control room to local panels 1N11 and 2N04. Indications include pressurizer level and RCS pressure.

STEP 34 : Report Completion Of Attachment D, UNIT 2 CONTROL OPERATOR LOCAL ACTIONS To DOS

AOP-10A and its attachments were developed in such a way to allow the SM to be free of local tasks, which permits him to maintain command and control throughout the procedure. The Unit 2 Control Operator is directed to inform the DOS upon the completion of this attachment. This allows the DOS to remain current as to the status of this attachment and relay appropriate information to operators performing the other attachments related to AOP-10A. The DOS should then inform the SM of any major steps that have been completed.

STEP 35 : Return To Step 43

The control operator returns to the main body and maintains RCS pressure control using the charging pumps and auxiliary spray. If the pressurizer goes solid, the operator may be required to cycle the charging pumps as necessary to maintain subcooling greater than 35°F as required by the subcooling curve.

EMERGENCY VENTILATION FOR SAFE SHUTDOWN AREAS

SUMMARY FOR ATTACHMENT E

This attachment provides guidance to establish emergency ventilation in areas the contain components and instrumentation important to maintaining safe shutdown. Areas include the computer room, cable spreading room, vital switchgear room, PAB electrical equipment rooms, control room and AFW pump room. If the ambient temperature in any of these areas approaches the short term limit, the operator is instructed to establish emergency ventilation using portable ducts and electric blowers. A portable power supply is also provided in the event electrical power is not available.

NOTE: To ensure room temperature limits are not exceeded, Steps E1, E3, and E4 should be performed in parallel.

To expedite providing temporary cooling to the rooms, this note allows the performance of the steps in this attachment to be performed in parallel. The steps to be performed first are dependent on temperature and manpower availability.

STEP 1 : Connect X-71, 30 kva Portable Power Supply

This step provides the operator with guidance for the installation and operation of the portable power supply. The power supply is stored on the 26' El. of Unit 2 Turbine Hall and should be positioned appropriately.

EMERGENCY VENTILATION FOR SAFE SHUTDOWN AREAS

NOTE: Emergency ventilation must be established for the AFW Pump Room and the PAB Electrical Equipment Room within the given time limit. All other room time limits are dependent on location of fire and equipment availability.

A fire that requires control room evacuation (i.e., fires in the control room, vital switchgear room, computer room, or cable spreading room) only requires temporary cooling of the PAB electrical equipment room and AFW pump room to protect heat sensitive equipment.

FOP-1.2 references AOP-10A for the establishment of temporary cooling also. Temporary ventilation for fires in other plant areas should be established per this step. (Reference SCR 2004-0070)

STEP 2 : Select Priority For Establishing Emergency Ventilation to Safe Shutdown Areas Based Upon Highest Room Temperature

This step provides a diagnostic tool to aid the operator in determining the need to establish auxiliary ventilation to any of the safe shutdown areas. A table is provided to list each safe shutdown area and the expected temperature rise based on heat loads in that area. When the maximum temperature for any area is reached, emergency ventilation should be established for that area.

The bulleted substeps direct the operator to the appropriate step to establish emergency ventilation for the specific safe shutdown area identified in the table.

EMERGENCY VENTILATION FOR SAFE SHUTDOWN AREAS

NOTE: Equipment stored in unit 2 turbine hall El. 26' is only required if B08/B09 or 2B03 are the only power sources available.

This note informs the operator of when X-71 is required to be used.

STEP 3 : Establish Emergency Ventilation To Computer Room

This step provides guidance for establishing emergency ventilation for the Computer Room. The fans and temporary ducts are pre-staged in the Computer Room. The fans should be positioned outside the Computer Room door with the door propped open and the ducting extended into the room. The fans can be plugged into any available 120 Volt source. Extension cords are provided with each fan to extend from the portable power supply to the appropriate fan.

EMERGENCY VENTILATION FOR SAFE SHUTDOWN AREAS

NOTE: Emergency Ventilation for the cable spreading room is stored in unit 2 turbine hall El. 26.

This note informs the operator the location of the portable ventilation equipment for the cable spreading room.

NOTE: X-71 (30 kva 480-120 vac) portable power supply with 480 vac extension cord only required if B08/B09 or 2B03 are the only power sources available.

This note informs the operator of when X-71 is required to be used.

NOTE: Only 3 portable fans for the cable spreading room are required to be in place within the required time limit. The required time limit for the fourth fan is 15 hours.

Only 3 portable fans must be in place within the time limit of 1.75 hours for the cable spreading room. Per calculation CALC-WE0005-01-02-C, the fourth CSR portable fan is required to be in place within 15 hours to maintain long term room temperature below 104°F. This note informs the operator of this time limit so as not to impact the performance of other time critical actions.

STEP 4 : Establish Emergency Ventilation To Cable Spreading Room

This step provides guidance for establishing emergency ventilation for the Cable Spreading Room. The fans and temporary ducts are stored in Unit 2 Turbine Hall. The fans should be positioned outside the Cable Spreading Room doors with the doors propped open and the ducting extended into the room. The fans can be plugged into any available 120 Volt source. Extension cords are provided with each fan to extend from the portable power supply to the appropriate fan.

EMERGENCY VENTILATION FOR SAFE SHUTDOWN AREAS

NOTE: X-71 (30 kva 480-120 vac) portable power supply with 480 vac extension cord only required if B08/B09 or 2B03 are the only power sources available.

This note informs the operator of when X-71 is required to be used.

STEP 5 : Establish Emergency Ventilation To Vital Switchgear Room

This step provides guidance for establishing emergency ventilation for the Vital Switchgear Room. The fans and temporary ducts are stored in Warehouse 3. The fans should be positioned outside the Vital Switchgear Room door with the door propped open and the ducting extended into the room. The fans can be plugged into any available 120 Volt source. Extension cords are provided with each fan to extend from the portable power supply to the appropriate fan.

NOTE: X-71 (30 kva 480-120 vac) portable power supply with 480 vac extension cord only required if B08/B09 or 2B03 are the only power sources available.

This note informs the operator of when X-71 is required to be used.

STEP 6 : Establish Emergency Ventilation To PAB Electrical Equipment Rooms

This step provides guidance for establishing emergency ventilation for the PAB Electrical Equipment Rooms. The fans and temporary ducts are stored in Warehouse 3. The fans should be positioned outside the PAB Electrical Equipment Rooms doors with the doors propped open and the ducting extended into the rooms. The fans can be plugged into any available 120 Volt source. Extension cords are provided with each fan to extend from the portable power supply to the appropriate fan.

EMERGENCY VENTILATION FOR SAFE SHUTDOWN AREAS

NOTE: X-71 (30 kva 480-120 vac) portable power supply with 480 vac extension cord only required if B08/B09 or 2B03 are the only power sources available.

This note informs the operator of when X-71 is required to be used.

STEP 7 : Establish Emergency Ventilation To Control Room

This step provides guidance for establishing emergency ventilation for the Control Room. The fans and temporary ducts are stored in Warehouse 3. The fans should be positioned outside the Control Room door with the door propped open and the ducting extended into the room. The fans can be plugged into any available 120 Volt source. Extension cords are provided with each fan to extend from the portable power supply to the appropriate fan.

NOTE: X-71 (30 kva 480-120 vac) portable power supply with 480 vac extension cord only required if B08/B09 or 2B03 are the only power sources available.

This note informs the operator of when X-71 is required to be used.

STEP 8 : Establish Emergency Ventilation To Auxiliary Feedwater Pump Room

This step provides guidance for establishing emergency ventilation for the Auxiliary Feedwater Pump Room. The fan and temporary ducts are stored in Warehouse 3. The fan should be positioned outside the Auxiliary Feedwater Pump Room door with all of the doors propped open and the ducting extended into the room. The fan can be plugged into any available 120 Volt source. An extension cord is provided with the fan to extend from the portable power supply to the fan.

EMERGENCY VENTILATION FOR SAFE SHUTDOWN AREAS

STEP 9 : Provide Other Ventilation As Required

This step directs the operator to consider any ventilation needs in other generic areas of the plant and to take appropriate action to improve ventilation. The example sited is opening the garage doors to the Circulating Water Pump House to help reduce temperatures.

Attachment F
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ALTERNATE AUXILIARY FEEDWATER SYSTEM SOURCES

SUMMARY FOR ATTACHMENT F

This attachment aligns fire water to the CST in the event service water supply is not available. The diesel-driven fire pump will supply fire water in the event of a loss of offsite power.

NOTE: 4 strainer assemblies are stored in the AOP-29 equipment box in the G-01 room.

NOTE: The Y-strainers will pass approximately 135 gpm at 7 psid. The Y-strainers should be blown down prior to exceeding 10 psid.

STEP 1 : Establish flow to "A" condensate storage tank:

Two fire hoses are connected to the CST which will supply 200 gpm of total flow.

STEP 2 : Establish flow to "B" condensate storage tank:

Two fire hoses are connected to the CST which will supply 200 gpm of total flow.

STEP 3 : Open Strainer Blowdown Valve As Needed To Maintain Adequate CST Level

Makeup is being provided by the fire water header via fire hoses conected through strainers. The operator is to control CST fill via the strainer blowdown valve.

LOCAL BREAKER OPERATION

SUMMARY FOR ATTACHMENT G

This attachment provides instructions for local operation of all breakers required to be manually opened in this procedure.

STEP 1 : Locally Open A BBC Brown Boveri 13.8 Kva Breaker:

This step provides guidance on the local operation of the BBC brown boveri breaker.

STEP 2 : Locally Close A BBC Brown Boveri 13.8 Kva Breaker:

This step provides guidance on the local operation of the BBC brown boveri breaker.

STEP 3 : Locally Open A 4160 Vac Breaker:

This step provides guidance on the local operation of 4160 Vac breaker.

STEP 4 : Locally Close A 4160 Vac Breaker:

This step provides guidance on the local operation of 4160 Vac breaker.

STEP 5 : Locally Open A 480 Vac Breaker:

This step provides guidance on the local operation of 480 Vac breaker.

STEP 6 : Locally Close A 480 Vac Breaker:

This step provides guidance on the local operation of 480 Vac breaker.

BACKUP AIR FOR CHARGING PUMPS

SUMMARY FOR ATTACHMENT H

This attachment provides guidance to establish backup air to the charging pump speed control system. The nitrogen backup to the charging pumps is aligned in previous sections. The nitrogen backup has a limited capacity, which necessitates the use of the backup air supply for long term operation. The air compressor/receiver assembly is located on the 8' El. of the Unit 2 turbine hall near Column F-14. Hoses and adapter fittings are stored in an Appendix R cabinet in the same area. An extension cord is stored in an Appendix R cabinet on the 26' El. of the Unit 2 turbine hall near PP-70. A portable power supply is also provided in the event normal electrical power is not available.

NOTE: The nitrogen backup system is designed to supply 8 hours of backup capacity to the charging pump speed control system.

This note informs the operators of the design limitations of the nitrogen backup system. The nitrogen backup system to the charging pumps is aligned in previous sections. The nitrogen backup system's limited capacity necessitates the use of the backup air supply for long term operation.

STEP 1 : Connect X-71, 30 kva Portable Power Supply

This step provides the operator with guidance for the installation and operation of the portable power supply. The power supply is stored in Unit 2 Turbine Hall and should be positioned appropriately.

STEP 2 : Check Secondary Feeder, B52-X71-2, on X-71 - OPEN

This step ensures that the compressor power cord will be plugged into a dead 480 vac outlet. This is an electrical safety good practice.

BACKUP AIR FOR CHARGING PUMPS

STEP 3 : Plug K-46, 1/2P-2A/B/C Charging Pump Speed Controller Backup Air Compressor, Power Cord Into 480 Vac Power Receptacle PR-X71-PR On X-71.

This step connects the compressor to the power supply. The extension cord from the Appendix R cabinet near PP-70, should be routed across the 26' El. and dropped down to the 8' El. through a flood penetration near MCC 2B-41. The power cord should **NOT** be routed through the stairwell.

STEP 4 : Close Secondary Feeder, B52-X71-2, on X-71.

This step aligns power to the air compressor.

STEP 5 : Ensure IA-1814, K46 Air Receiver Outlet Valve - SHUT.

This step ensures the air receiver outlet valve is isolated. Because the air compressor/receiver is not in normal use, the receiver may be completely depressurized. It is preferable to start the air compressor and pressurize the air receiver prior to aligning the system to the charging pump air system.

STEP 6 : Connect K-46, 1/2P-2A/B/C Charging Pump Speed Controller Backup Air Compressor, to Unit 2:

This step directs the connection of the air hoses form the air receiver to the charging pump air system. It also requires the installation of a coupling fitting between the air hose and the instrument air valve.

STEP 7 : Connect K-46, 1/2P-2A/B/C Charging Pump Speed Controller Backup Air Compressor, to Unit 1:

This step directs the connection of the air hoses form the air receiver to the charging pump air system. It also requires the installation of a coupling fitting between the air hose and the instrument air valve. The Unit 1 installation also requires that some normally closed doors be blocked open to allow the hoses to go from the Unit 2 turbine hall to the Unit 1 turbine hall. This will require some coordination with Security.

BACKUP AIR FOR CHARGING PUMPS

STEP 8 : Check K-46 oil level greater than or equal to 1/2 the sightglass.

This step checks that the compressor is ready to operate. Oil should be added if the sightglass is less than 1/2 full. Proper oil type can be found in the lubrication manual.

STEP 9 : Reset the K-46 motor starter and start the compressor.

This step starts the compressor. This will also begin the pressurization of the air receiver. The compressor should be monitored for excessive noise, vibration and oil level while it is running.

STEP 10 : WHEN the Air Receiver pressure is greater than 150 psig, THEN open IA-1814, K-46 Air Receiver Outlet.

This step aligns the air receiver to the air hoses connected to each unit's charging pump air systems. The compressor pressure switch is set to start the compressor at ~145 psig decreasing, and stop the compressor at ~175 psig increasing. The air receiver relief valve is set at 180 psig.

STEP 11 : Align Backup Air to Unit 2:

This step aligns the outlet of the air receiver to the Unit 2 charging pump air system. It also isolates the nitrogen backup system, allowing for the changout of the nitrogen 12-pack.

STEP 12 : Align Backup Air to Unit 1:

This step aligns the outlet of the air receiver to the Unit 1 charging pump air system. It also isolates the nitrogen backup system, allowing for the changout of the nitrogen 12-pack.

Figure 1
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SUBCOOLING CURVE

SUMMARY FOR FIGURE 1

This figure provides RCS pressure and temperature limits for a Natural Circulation Cooldown. The graph shows a normal operating region as well as regions where head voiding and pressurized thermal shock (PTS) may occur.