CP&L

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SERIAL: BSEP 95-0511
10 CFR 50.4(b)(5)
10 CFR 50.54(q)

October 19, 1995

United States Nuclear Regulatory Commission
ATTENTION: Document Control Desk
Washington, DC 20555

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-325 AND 50-324/LICENSE NOS. DPR-71 & DPR-62
CHANGE TO EMERGENCY PLAN - ELIMINATION OF COMMITMENT TO INCORPORATE THE TECHNICAL SUPPORT CENTER INTO THE PROTECTED AREA

Gentlemen:

In accordance with 10 CFR 50.54(q), Carolina Power & Light Company (CP&L) requests approval of a proposed change to the Radiological Emergency Response Plan for the Brunswick Steam Electric Plant (BSEP), Unit Nos. 1 and 2. The requested change consists of an exception to the Technical Support Center (TSC) location guidance in Supplement 1 to NUREG-0737, "Clarification of TMI Action Plan Requirements, Requirements for Emergency Response Capability." Currently the TSC is located outside, and adjacent to, the protected area during non-emergency conditions. When the TSC is activated in response to an emergency, the protected area is expanded to incorporate the TSC. Specifically, the requested change would eliminate the current Radiological Emergency Response Plan commitment to incorporate the TSC, upon activation, into the protected area.

Approval of this requested change will result in decreasing the time required to activate the TSC and alleviating the necessity of diverting security manpower for realignment of the protected area boundary at the onset of an emergency requiring TSC activation. The requested change will also eliminate the need to maintain and/or upgrade specific security equipment whose sole function is to support a realignment of the protected area boundary. Existing compensatory measures will continue to ensure that effective methods are in place to provide for the necessary management interaction and exchange of technical information between the Control Room and the TSC. If emergency response organization personnel should be required to travel from the TSC to the Control Room during an emergency, existing compensatory measures would ensure easy access between the two facilities.

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Enclosure 1 provides a description of the requested change, its justification, and the relevant compensatory measures.

The same exception to the TSC location guidance in Supplement 1 to NUREG-0737 has previously been approved, as part of the NRC review of emergency response facility implementation in the 1980s, for the Beaver Valley Power Station, the Peach Bottom Atomic Power Station, Units 2 and 3 and the Davis-Besse Nuclear Power Station. By letter dated September 18, 1995, the NRC approved a similar exception for CP&L's H. B. Robinson Steam Electric Plant, Unit 2. The CP&L justification and compensatory measures, described in Enclosure 1 for the Brunswick Steam Electric Plant are equivalent in function to those adopted by these other plants.

The proposed wording change to Plant Operating Manual, Volume XIII, "Radiological Emergency Response Plan", Rev. 41, is provided in Enclosure 2. Upon approval of the change, the BSEP Industrial Security Plan will be revised to delete Section 3.3 and Figures 3.10 and 3.11, and will be submitted in accordance with 10 CFR 50.54(p).

We have concluded that the requested change, when considered by itself, may be considered to decrease the effectiveness of the original Radiological Emergency Response Plan, as approved by the NRC. However, due to the compensatory measures, the change will provide an enhancement to the overall effectiveness of the BSEP Radiological Emergency Response Plan.

CP&L requests that by December 15, 1995, the NRC provide concurrence with the change described herein in order to integrate this change with ongoing enhancements to the site's security barriers and access control stations.

Please refer any questions regarding this letter to Mr. George Homna at (910) 457-2741.

Sincerely,

G. D. Hicks
Manager - Regulatory Affairs
Brunswick Nuclear Plant

GMT/

Enclosures:

1. Basis for Request
2. Proposed Change to Emergency Plan
3. List of Regulatory Commitments

cc: Mr. S. D. Ebneter, NRC Regional Administrator, Region II
Mr. C. A. Patterson, NRC Senior Resident Inspector - Brunswick Plant
Mr. D. C. Trimble, Jr., NRR Project Manager - Brunswick Plant
The Honorable H. Wells, Chairman - North Carolina Utilities Commission

ENCLOSURE 1

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2
NRC DOCKET NOS. 50-325 AND 50-324
OPERATING LICENSE NOS. DPR-71 AND DPR-62

CHANGE TO EMERGENCY PLAN
ELIMINATION OF COMMITMENT TO INCORPORATE THE TECHNICAL SUPPORT CENTER INTO THE PROTECTED AREA

BASIS FOR REQUEST

INTRODUCTION

The Brunswick Steam Electric Plant (BSEP), Unit Nos. 1 and 2 Radiological Emergency Response Plan stipulates that the Technical Support Center (TSC) is to be located within the protected area upon activation. Prior to activation of the TSC, security force members must realign the protected area boundary to envelope that portion of the TSC/EOF Training Building that currently houses the TSC facilities. The realignment normally involves performance of a lengthy search of all areas of the TSC and compensatory measures to enhance intrusion detection.

This commitment in the BSEP Radiological Emergency Response Plan was adopted during the initial design of the emergency response facilities in response to the following NRC guidance:

- NUREG-0737, "Clarification of TMI Action Plan Requirements, Requirements for Emergency Response Capability, Supplement 1" (Generic Letter 82-33), dated December 17, 1982, Section 8.2, Technical Support Center (TSC), which states, in part:

  The TSC will be ". . . located within the site protected area so as to facilitate necessary interaction with control room, OSC, EOF and other personnel involved with the emergency."

- NUREG-0696, "Functional Criteria for Emergency Response Facilities - Final Report," dated January 1, 1981, Section 2.2, which states:

  "During recent events at nuclear power plants, telephone communications between the facilities were ineffective in providing all of the necessary management interaction and technical information exchange. This demonstrates the need for face-to-face communications between TSC and control room personnel . . ."

  "The TSC shall be as close as possible to the control room . . . ."

  "The walking time from the TSC to the control room shall not exceed two minutes . . ."

"The two minute travel time . . . does include the time required to clear any security checkpoints. There should be no major security barriers between the two facilities other than access control stations for the TSC and control room."

The BSEP commitment to incorporate the TSC into the protected area upon activation is found in CP&L correspondence, dated April 9, 1982, docket Nos. 50-261 and 50-324/325, which provided drawings to the NRC and requested concurrence with the locations for the TSC and EOF. In this correspondence, CP&L states the following. "...The proposed location and security provisions allow timely access from the TSC to the control room with no intervening security barriers . . ."

Furthermore, CP&L correspondence dated April 15, 1983, Docket Nos. 50-261 and 50-324/325, responding to Generic Letter 82-33 states . . . "We anticipate being able to meet NRC requirements listed in Supplement 1 to NUREG-0737 for the construction of Emergency Response Facilities . . ."

DESCRIPTION OF THE CHANGE

Since the initial commitment to comply with the TSC location guidance in Supplement 1 to NUREG-0737, significant experience has been gained via activation of the TSC during numerous drills, exercises, and real events; and significant program enhancements have occurred, for example, installation of the Emergency Response Facility Information System (ERFIS). The intent of the TSC location guidance, as indicated in the previously quoted portion of NUREG-0696, is to provide for the necessary management interaction and exchange of technical information between the Control Room and the TSC. Our review of this basis resulted in the determination that the intent of the TSC location guidance can be met without requiring the TSC to be enveloped into the protected area.

We request approval to change Section 5.2 of the BSEP Radiological Emergency Response Plan to take exception to the TSC location guidance in Supplement 1 of NUREG-0737. The specific proposed wording change to the Emergency Plan is provided in Enclosure 2.

JUSTIFICATION OF THE CHANGE

We have compared the current emergency response capabilities at the BSEP with those at Beaver Valley Atomic Power Station, Peach Bottom Atomic Power Station, Units 2 and 3, the Davis-Besse Nuclear Power Station, and the H. B. Robinson Steam Electric Plant, Unit 2 and have concluded that the same pertinent capabilities, as discussed above, are in place at the BSEP site. We have determined that the cessation of the practice of incorporating the TSC into the protected area prior to its activation is justifiable and does not decrease the overall effectiveness of the BSEP Radiological Emergency Response Plan.

Sufficient data and information from the Control Room are available in the TSC via diverse communication and data acquisition and display systems. In addition, the Emergency Response Organization includes a position responsible for the coordination of Control Room/TSC activities. These capabilities, which are described in more detail in the following discussion of Compensatory Measures, effectively provide for sufficient management interaction and exchange of technical information between the Control Room and the TSC, as demonstrated through numerous drills/exercises and actual events.

Experience demonstrates that the need to dispatch Emergency Response Organization personnel from the TSC to the Control Room has not been realized and is clearly not identifiable as a critical capability in responding effectively to an emergency event.

Existing procedures are adequate for such circumstances as loss of communications, loss of data display, adversarial attack, or other contingencies without incorporating the TSC within the protected area. For example, loss of a communications system is considered in existing plans by the designed defense in depth of communications systems. Loss of data display is compensated by the redundant capability of the ERFIS computer system, or by obtaining data manually via individuals serving as data communicators. The Security Program incorporates contingencies for responding to potential adversarial attacks. With the exception of the physical search before incorporation of the TSC into the protected area, the effectiveness of security measures available to protect the TSC against adversarial attack would remain the same regardless of whether the TSC is incorporated into the protected area.

Typically, the requirement to incorporate the TSC into the protected area delays the activation of the TSC for up to 30 minutes for all emergency classifications while the security force establishes the TSC protected area boundary and undertakes security searches of the enveloped area. Accounting for this duration, the total activation time for the TSC averages approximately 60 to 70 minutes. This detracts from the timely activation of the TSC and delays the transfer of responsibilities from the Control Room staff to key Emergency Response Organization staff located in the TSC.

The capability to place the TSC inside the protected area requires the allocation of critical security manpower and maintenance of additional security hardware. The availability of the security forces to respond to emergencies, especially security events, would be enhanced if this requirement were deleted. In addition, a reduction in security hardware and associated maintenance costs would be achieved.

COMPENSATORY MEASURES

The following communication capabilities are currently in place and provide the TSC and Control Room staff with numerous methods for exchange of information and receipt of response data, limiting the need to send TSC personnel to the Control Room:

BSEP capabilities, as described in Appendix A of the BSEP Radiological Emergency Response Plan include the following:

- Emergency Response Facility Information System (ERFIS)
- Public Address System
- PBX Telephone System
- Selective Signaling System
- Facsimile Transmission Capabilities
- VHF Radio
- NRC Emergency Notification System (i.e., FTS 2000)
- Emergency Response Data System (ERDS) that provides real time plant status

Additional measures that are used to provide personnel in the TSC with information needed to perform the TSC functions include:

- Automatic Ring Down (ARD) telephone which provides a communication link between the Shift Superintendent in the Control Room and the Plant Operations Director in the TSC.

- An Emergency Response Organization (ERO) communicator position whose function is to transmit ERFIS data points from the Control Room indicators to the TSC in the event of ERFIS failure.

In particular, the installation and integration of the ERFIS and the Safety Parameter Display System (SPDS), a subset of ERFIS, on October 2, 1991 at BSEP provided a significant enhancement to the ability to receive plant data in the TSC. The ERFIS/SPDS system has redundant processors and power supplies and is described in CP&L's September 30, 1993 response (Serial No. LAP-83-408) to Supplement 1 to NUREG-0737, "Requirements for Emergency Response Capability (Generic Letter No. 82-33). Calculated values, process variables, and selected valve positions are among the hundreds of data points which can be viewed from a system terminal. The Emergency Response Organization (ERO) communicator transmits selected ERFIS data points from the Control Room indicators to the TSC in the event of ERFIS failure. A sample ERFIS data sheet is provided as Attachment 1. The integration of ERFIS/SPDS further reduces the limited need to dispatch personnel from the TSC to the Control Room.

To further facilitate effective management interaction and exchange of technical information between the TSC and the Control Room, the BSEP Emergency Response Organization includes a position titled "Plant Operations Director." This position is manned by a senior operations individual who is responsible for the coordination of activities between the TSC and Control Room. The Plant Operations Director reports to the TSC and actively coordinates accident mitigation efforts and plant status information between the two facilities, relying on resources available in the TSC (primarily ERFIS data).

If it should become necessary to travel between the TSC and the Control Room, the increase in travel time with the TSC outside the protected area is minimal. Therefore, typical radiological protective measures would be sufficient for personnel traveling between facilities.

The current routes of travel from the TSC to the Control Room are described in Attachment 1 and as follows:

Route 1: Proceed from the TSC out the North door of the TSC/EOF Training Building by the Single Point Access (SPA) to the Control Room. The distance traveled for this route is approximately 560 feet.

Route 2: Proceed from the TSC out the North door of the TSC/EOF Training Building to the outside stairs of the Unit 2 Reactor Building to the Control Room. The distance traveled for this route is approximately 816 feet.

The four (4) potential routes of travel from the TSC to the Control Room (if the TSC is not incorporated into the protected area) are also described in Attachment 1 and as follows:

Route 1A : Proceed from the TSC out the East door of the TSC/EOF Training Building and into the protected area through the Secondary Access Point (SAP); proceeding by the Single Point Access (SPA) to the Control Room. The distance traveled for this route is approximately 1538 feet.

Route 2A: Proceed from the TSC out the West door of the TSC/EOF Training Building into the protected area through the Primary Access Point (PAP); proceeding by the Single Point Access (SPA) to the Control Room. The distance traveled for this route is approximately 988 feet.

Route 3A: Proceed from the TSC out the East door of the TSC/EOF Training Building and into the protected area through the Secondary Access Point (SAP); up the outside stairs of the Unit 2 Reactor Building and to the Control Room. The distance traveled for this route is approximately 1326 feet.

Route 4A: Proceed from the TSC out the West door of the TSC/EOF Training Building and into the protected area through the Primary Access Point (PAP); up the outside stairs of the Unit 2 Reactor Building and to the Control Room. The distance traveled for this route is approximately 1194 feet.

Under the proposed change, personnel in the TSC travelling to the Control Room must ingress to, and egress from, the protected area through the secured gate in the protected area boundary fence, which increases the transit time for all four (4) potential routes of travel. This increase in transit time exceeds the guidance in NUREG-0696, Section 2.2 which states, "The walking time from the TSC to the Control Room shall not exceed 2 minutes." However, the difference in the transit time of any potential route is offset by the reduction in the time to activate the TSC, and the enhanced communications capabilities available between the TSC and the Control Room.

Using the conservative methodology established to evaluate the ingress and egress from the Control Room to any plant building under loss-of-coolant accident conditions (See UFSAR Section 15.6.4.5.5.2) the individual would remain well below the 10CFR20 limits allowed a radiation worker. This methodology assumes that for the entire route the dose rate remains as if the individual were still within 50 feet of the Reactor Building, and takes 40 seconds to travel 200 yards. With these assumptions, an individual using the most direct of current routes (1), could receive approximately 747 mrem whole body, and for the longer route (2) 1088 mrem whole body. The longest proposed route (1A) could result in approximately 2051 mrem whole body, with the shortest route (2A) resulting in an exposure of 1318 mrem whole body.

Protective measures are also available to limit the radiation dose received by personnel traveling between the TSC and Control Room under severe accident conditions. Both the Control Room and TSC are stocked with emergency kits which include anti-contamination clothing, respirators, and dosimetry. This equipment, as well as consideration of the

optimum travel route between the facilities, will serve to minimize radiation dose received by personnel traveling between the TSC and Control Room under emergency conditions involving radioactive releases.

The Physical Security Program at BSEP includes the capability to expedite the movement of personnel into the protected area during emergency situations. Exemption from search requirements and access through normally secured locations may be invoked when an emergency condition involving the release of radioactive material is imminent or in progress. This process is addressed in Section 3.2 of the BSEP Industrial Security Plan. The latest revision of the Industrial Security Plan was submitted to the NRC by letter dated September 15, 1995 (Serial No. BSEP 95-0489), in accordance with 10 CFR 50.4(b)(4).

Current Security Instructions which address access control and security aspects during emergency conditions include:

- OSI09, "Personnel Access Control, Authorization Control and Identification"
- OSI18, "Emergency Plan Support"
- OSI19, "Safeguards Contingency Events"

The existing multiple ingress and egress processing lanes that accommodate large numbers of personnel in a short time period during normal shift change demonstrates that ingress and egress during emergency conditions can also be accomplished without delays. In addition, an exemption from the provisions of 10 CFR 73.55(d)(5) has been approved by the NRC, and a hand geometry system was implemented in August 1995 to improve protected area ingress.

Summary

The current practice of placing the TSC inside the protected area at BSEP provides no benefit to BSEP emergency response capabilities. The time delay to activate the TSC and the security manpower diversion to perform the protected area extension under the present program are considered as detracting from the emergency preparedness and security programs.

The existing emergency response compensatory measures provide effective management interaction and exchange of technical information between the TSC and Control Room, and sufficient latitude exists to ensure timely travel between the facilities should the need arise.

For these reasons, we request that this change to the BSEP Radiological Emergency Response Plan be approved.

ATTACHMENT 1

TO

ENCLOSURE 1

ERFIS/SPDS DATA SHEET

(SAMPLE)

EXHIBIT 2.6.21-5
SAFETY PARAMETER DISPLAY SYSTEM LIST

Time _____ Unit _____ Report Number _____ Date _____

OPerable INoperable SB - StandBy Running Yes No ISolated NA - Not Available

CRITICAL PLANT VARIABLES		
1 Rx Power	(APRM%)	
2 Reactor Level	(in)	
3 Reactor Pressure	(psig)	
4 Drywell Pressure	(psig)	
5 Drywell Temp (Avg)	(°F)	
6 Suppression Pool Level	(in)	
7 Suppression Pool Temp (Avg)	(°F)	
8 Group 1 Isolation	(Yes/No)	
9 Off-Site Power Available*	(Yes/No)	
SAFETY SYSTEM STATUS		
10 HPCI Flow	(kgpm)	
11 RCIC Flow	(gpm)	
12 RHR A Flow □ LPCI □ SDC □ Torus Cooling	(kgpm)	
13 RHR B Flow □ LPCI □ SDC □ Torus Cooling	(kgpm)	
14 Core Spray A Flow	(kgpm)	
15 Core Spray B Flow	(kgpm)	
16 CRD Flow	(gpm)	
17 SLC Injecting	(Yes/No)	
EMERGENCY DIESEL GENERATORS		
18 EDG #1 Load	(kw)	
19 EDG #2 Load	(kw)	
20 EDG #3 Load	(kw)	
21 EDG #4 Load	(kw)	
PRIMARY CONTAINMENT INDICATORS		
22 Drywell H_2 4409	(% conc.)	
23 Drywell H_2 4410	(% conc.)	
24 Drywell O_2 4409	(% conc.)	
25 Drywell O_2 4410	(% conc.)	
DRYWELL HIGH RAD MONITORS		
26 D22-RM-4195 - 30 ft El.	(R/hr)	
27 D22-RM-4196 - 57 ft El.	(R/hr)	
28 D22-RM-4197 - 23 ft El.	(R/hr)	
29 D22-RM-4198 - 57 ft El.	(R/hr)	

SECONDARY CONTAINMENT INDICATORS		
30 RB Negative Press(inches of water vacuum)		
31 SBGT Flow A	(scfm)	
32 SBGT Flow B	(scfm)	
33 RB 80 ft Ventilation Monitor	(mR/hr)	
PROCESS RAD MONITORS		
34 MSL RAD Monitor A	(mR/hr)	
35 MSL RAD Monitor B	(mR/hr)	
36 MSL RAD Monitor C	(mR/hr)	
37 MSL RAD Monitor D	(mR/hr)	
38 SJAE A	(mR/hr)	
39 SJAE B	(mR/hr)	
EFFLUENT MONITORING		
40 Main Stack Flow Rate	(kscfm)	
41 Main Stack Gas Monitor	(µCi/sec)	
42 U-1 RB Roof Vent Flow	(kscfm)	
43 U-1 RB Roof Vent Rad Monitor (Noble Gas)	(cpm)	
44 U-1 TB Roof Vent Flow	(kscfm)	
45 U-1 TB Roof Vent Monitor	(µCi/sec)	
46 U-2 RB Roof Vent Flow	(kscfm)	
47 U-2 RB Roof Vent Rad Monitor (Noble Gas)	(cpm)	
48 U-2 TB Roof Vent Flow	(kscfm)	
49 U-2 TB Roof Vent Monitor	(µCi/sec)	
50 Service Water Rad Monitor	(cps)	
AREA RAD MONITORS		
51 RB 20 ft Airlock	(mR/hr)	
52 RB 50 ft Sample Station	(mR/hr)	
53 RB 50 ft Airlock S. E. Corner	(mR/hr)	
54 RB North of Fuel Pool	(mR/hr)	
55 Between Fuel Pool and Drywell	(mR/hr)	
56 Turbine Bldg Sample Station*	(mR/hr)	

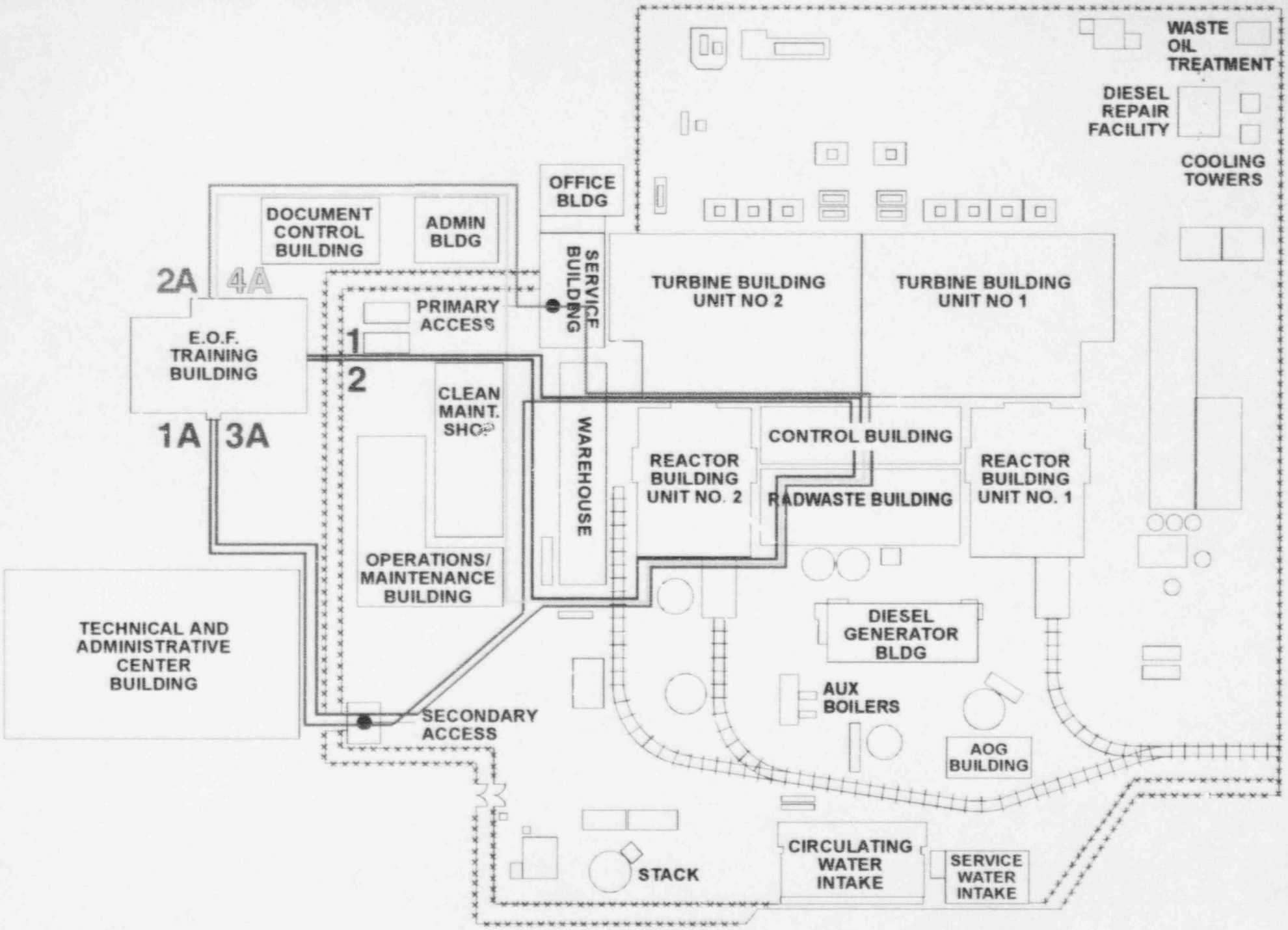
*Must be obtained locally from Control Room

ATTACHMENT 2

TO

ENCLOSURE 1

BSEP SITE MAP


WASTE OIL TREATMENT
DIESEL REPAIR FACILITY
COOLING TOWERS
OFFICE BLDG
DOCUMENT CONTROL BUILDING
ADMIN BLDG
SERVICE BUILDING
TURBINE BUILDING UNIT NO 2
TURBINE BUILDING UNIT NO 1
2A
4A
PRIMARY ACCESS
1
2
E.O.F. TRAINING BUILDING
1A
3A
CLEAN MAINT. SHOP
WAREHOUSE
REACTOR BUILDING UNIT NO. 2
CONTROL BUILDING
RADWASTE BUILDING
REACTOR BUILDING UNIT NO. 1
OPERATIONS/ MAINTENANCE BUILDING
DIESEL GENERATOR BLDG
TECHNICAL AND ADMINISTRATIVE CENTER BUILDING
AUX BOILERS
SECONDARY ACCESS
AOG BUILDING
STACK
CIRCULATING WATER INTAKE
SERVICE WATER INTAKE