WISCONSIN ELECTRIC POWER COMPANY

POINT BEACH NUCLEAR PLANT

EMERGENCY PLAN MANUAL

FOR INFORMATION ONLY

POINT BEACH NUCLEAR PLANT

EMERGENCY PLAN

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INTRODUCTION

1.0 PURPOSE

The purpose of the Emergency Plan is to describe an organization for managing emergency situations, to classify emergencies according to severity, to define and assign responsibilities and authorities, to clearly outline an effective course of action and protective measures required to mitigate the consequences of an accident, and to safeguard the public and plant personnel in the event of an accident at the Point Beach Nuclear Plant (PBNP). Detailed Emergency Plan Implementing Procedures (EPIP's) required to implement the Emergency Plan have been developed and are available for use at the plant site. These procedures take into account such items as radiation hazards, weather conditions, availability of technical and operating personnel, communications links, and support agencies.

2.0 SCOPE & APPLICABILITY

This Emergency Plan is applicable to the Point Beach Nuclear Plant operated by the Wisconsin Electric Power Company (WE) and located at 6610 Nuclear Road, Two Rivers, Wisconsin 54241. The Emergency Plan describes the consideration of advance planning elements and the provisions and implementing procedures developed for emergency situations. The EPIP's for this Plan consist of the plant procedures which are used by plant personnel in emergency situations. Other plant procedures that play a role in emergency situations include plant operating, radiological control, security, and administrative procedures. These procedures are compatible with the Plan and will be used to mitigate the consequences of any emergency.

The interrelationships among the various elements of onsite emergency response and the elements of offsite emergency response are described in this Emergency Plan along with the appropriate Federal, State, and local agencies participating in radiological emergencies.

EMERGENCY PLAN DEFINITIONS

1.0 KEY ABBREVIATIONS

The following key and readily recognizable abbreviations are used throughout this Plan:

DCS	Duty & Call Superintendent
DTA	Duty Technical Advisor
EAL	Emergency Action Level
EIC	Energy Information Center
ENC	Emergency News Center
EPIP	Emergency Plan Implementing Procedures
ESC	Emergency Support Center
NES	Nuclear Engineering Section
OSC	Operations Support Center
PBNP	Point Beach Nuclear Plant
SBCC	Site Boundary Control Center
TSC	Technical Support Center
WE	Wisconsin Electric Power Company

2.0 DEFINITIONS

This section provides definitions of terms that are applicable to the PBNP Emergency Plan.

2.1 Accident

An unforeseen and/or unintentional event and its consequences that may result in an emergency.

2.2 Administrative & Logistics Manager

A designated officer or senior manager of WE who is responsible for providing administrative, logistic, communications, and

personnel support for the emergency response and recovery operations. See Table 5-1 for normal organizational title and Appendix "A", Section 3.0 for function and responsibilities.

2.3 Assessment Actions

Those actions taken during or after an accident to obtain and process information that is necessary to make decisions to implement specific emergency measures and the making of those decisions.

2.4 Clean Area

That area within the protected area excluding the controlled area.

2.5 Controlled Area (Controlled Zone)

The area within the protected area in which radioactive materials and radiation are present or could normally be expected to be present in sufficient quantities to require protective measures. This area typically includes the containments, facades, auxiliary building, the area surrounding these buildings and parts of the service building. This area is controlled by administrative means.

2.6 Control Room

The control room is operated under the direction of the Shift Supervisor. It is the primary place where conditions are monitored and corrective actions for both units are taken to mitigate any abnormal occurrence. It is the location where primary assessment and classification of an accident begins. Its purpose is to monitor the conditions of both units and provide the main communications link between the plant and the TSC concerning analysis of reactor system problems, as well as long- and short-term guidance on corrective actions.

2.7 Corrective Actions

Those emergency measures taken to improve or terminate an emergency situation at or near the source of the problem in order to prevent or mitigate any release of radioactive material or to reduce the magnitude of the emergency situation, e.g., shutting down equipment, fire fighting, repair, and damage control.

2.8 Design, Construction & Planning Manager

A designated manager who coordinates the activities of plant modifications or other design and construction support required for the emergency response and recovery operations. He also has the requisite authority to coordinate and expedite plans and schedules for the Site Manager. See Table 5-1 for normal organizational title and Appendix "A", Section 23.0 for function and responsibilities.

2.9 Emergency

The situation or condition which may result in damage to property or risk to tne health and safety of the general public or plant personnel.

2.10 Emergency Actions

Those steps taken, as a result of exceeding an emergency action level in a plant emergency operating procedure or in this Emergency Plan, to assess the situation and ensure that the proper corrective and/or protective actions are taken.

2.11 Emergency Action Levels (EAL's)

Radiological dose rates; specific concentrations of airborne, waterborne, or surface-deposited contamination of radioactive materials; or specific instrument indications (including their rates of change) that are normally used as thresholds for initiating such specific emergency actions as designating a particular class of emergency, initiating a notification procedure, or initiating a particular protective action.

2.12 Emergency Classification System

A classification system that arranges accidents in order of increasing severity and outlines an effective course of action and protective measures to safeguard the public and plant personnel. For the purposes of this plan, four emergency classifications are defined. They are as follows, listed in order of increasing severity:

- Unusual Event
- Alert
- Site Emergency
- General Emergency

2.13 Emergency Director

A designated corporate manager of the Company with the requisite authority to activate the WE emergency organization for PBNP and provide emergency plan management direction to the onsite emergency organization. See Table 5-1 for normal organizational title and Appendix "A", Section 1.0 for function and responsibilities.

2.14 Emergency News Center (ENC) (Two Rivers Community House)

This facility is under the direction of the Emergency News Center Director and functions as a single-point contact for disseminating information to the public during more severe emergencies.

2.15 Emergency News Center Director

A designated officer or senior manager of WE who is responsible for providing accurate and timely information to the public through the news media and coordinating news releases with Federal, State, and local public relations officials. See Table 5-1 for normal organizational title and Appendix "A", Section 4.0 for function and responsibilities.

2.16 Emergency Plan Implementing Procedures (EPIP's)

Specific procedures providing actions to implement this Emergency Plan in order to mitigate or terminate an emergency situation.

2.17 Emergency Planning Zone (EPZ)

Offsite area surrounding PBNP for which planning is conducted to ensure that prompt and effective actions can be taken to protect the public in the event of an accident. For the plume exposure pathway, the EPZ has a corresponding radius of approximately 10 miles; and for the ingestion exposure pathway, the EPZ has a corresponding radius of approximately 50 miles (see Appendix "C" and Appendix "J").

2.18 Emergency Support Center (ESC) (Lower and center floors of the Energy Information Center)

This facility is operated by the Emergency Support Manager for evaluating and controlling emergency situations that may affect the public. For example, radiological dose projections and verifications will be performed at the ESC and results will be provided to local, State, and Federal agencies as required for implementation of offsite emergency plans. The ESC also serves as the command center for direction of recovery operations.

2.19 Emergency Support Manager

A designated senior manager of the Company who operates the ESC and serves as the official utility contact with State and local governments. See Table 5-1 for normal organizational title and Appendix "A", Section 2.0 for function and responsibilities.

2.20 Exclusion Area (Site)

The area within the site boundary surrounding PBNP in which the plant personnel have the authority to determine all activities including exclusion or removal of personnel and property from the area. At PBNP, the outer boundary of the exclusion area is coincident with the site boundary (see Appendix "C").

2.21 Gatehouse (Secondary Alarm Station (SAS) or South Gatehouse)

The building at the southeast corner of the protected area manned by security force personnel and used for normal access to and egress from the plant buildings.

2.22 General Office (WE)

Wisconsin Electric Power Company (WE) corporate headquarters located at 231 West Michigan Street, Milwaukee, Wisconsin, 53201.

2.23 Ingestion Exposure Pathway

The principal exposure from this pathway would be from ingestion of contaminated water or foods such as milk, livestock feed, or vegetables. Depending on the magnitude and nature of the radiological emergency, the time of potential exposure may range in duration from hours to months.

2.24 Limited Plant Evacuation

The orderly withdrawal of personnel from a room, plant area, or building in the protected area.

2.25 Low Population Zone (LPZ)

The area immediately surrounding the exclusion area which includes a residential population of which the total number and density are such that appropriate protective actions can be readily taken in the event of a serious radiological accident (see Appendix "C" and Appendix "J").

2.26 Offsite

The area beyond the exclusion area of PBNP.

2.27 Onsite

All areas at PBNP within the exclusion area.

2.28 Operations Support Center (OSC) (Staging Area) (El. 8' of the TSC building)

This facility is an assembly area for plant personnel to report for instructions from the Plant Operations Manager or his staff. Communications are provided to the TSC.

2.29 Plant Evacuation

The orderly withdrawal of all personnel from areas within the fenced protected area, except personnel immediately involved in the emergency organization.

2.30 Plant Operations Manager

A designated manager of the Company with the requisite authority, plant operating experience, and qualifications to direct plant operations appropriately. See Table 5-1 for normal organizational title and Appendix "A", Section 6.0 for function and responsibilities.

2.31 Plume Exposure Pathway

The principal exposures from this pathway are whole body external exposure to gamma radiation from the plume and from deposited material; and internal exposure from inhalation of radioactive gas from the passing radioactive plume. Depending on the nature of the meteorological and radiological conditions, the time of potential exposure could range from hours to days.

2.32 Population-at-Risk

Those persons for whom protective actions are being or would be taken.

2.33 Projected Dose

The estimated dose that would be received by individuals if no protective actions were taken following a release of radioactive material.

2.34 Protected Area

The area within the PBNP security fence. This is sometimes referred to as "onsite" by the utility industry. However in this Plan, "onsite" is a defined term.

2.35 Protective Actions

Those measures taken in anticipation of or after an inadvertent release of radioactive material for the purpose of preventing or minimizing radiological exposures to persons that potentially could occur if the actions were not taken.

2.36 Protective Action Guides (PAG's)

The projected radiological dose (including dose commitment values) at or above which protective actions may be warranted.

2.37 RadCon/Waste Manager

A designated manager who has the requisite authority, nuclear experience, and technical expertise to manage the radioactive waste and radiological controls aspects of the emergency response and recovery operations. See Table 5-1 for normal organizational title and Appendix "A", Section 19.0 for function and responsibilities.

2.38 Radiological Emergency

A radiological emergency is defined as an accident that may result in some loss of control of radioactive materials or may involve a hazard or potential hazard to the health and safety of people, or to the safety of property or environment.

2.39 Recovery Operations

Those operations taken after the emergency to restore the plant as nearly as possible to its preemergency condition.

2.40 Security Building (Extension Building)

The building inside the protected area containing the central alarm station and the Security Supervisor's office. Office areas unrelated to security are also in the building.

2.41 Site Boundary Control Center (SBCC)

This facility is located at the south exclusion area boundary access road, approximately one mile southwest of the plant. It serves as a clearing center for evacuated plant contractor personnel, public visitors, and a center for offsite environmental monitoring by health physics personnel. It may also serve as a health physics control point for individuals entering or leaving the site. The facility is equipped with emergency radiation monitoring and sampling equipment, health physics supplies, protective and all-weather clothing, and other miscellaneous supplies for use during an emergency situation.

2.42 Site Manager

A designated officer or senior manager of the Company who has the requisite authority, management ability, and technical knowledge to manage the plant emergency response and recovery operations. See Table 5-1 for normal organizational title and Appendix "A", Section 5.0 for function and responsibilities.

2.43 Technical Support Center (TSC) (El. 8' of TSC building)

This facility is within two minutes walking distance of the control room and operates under the direction of the Site Manager. The facility has the capability to supply and display technical information for use by technical and designated management personnel in support of reactor operations and control room functions during emergency and recovery operations.

2.44 Technical Support Manager

A designated manager of the Company with the requisite authority, nuclear experience, and technical expertise to manage the Technical Support Group in support of the plant emergency response and recovery operations. See Table 5-1 for normal organizational title and Appendix "A", Section 12.0 for function and responsibilities.

SUMMARY OF EMERGENCY PLAN

1.0 GENERAL

The Emergency Plan defines the actions and responsibilities of PBNP personnel in the event of an emergency and delineates the support required from offsite groups during certain specific emergency situations. Emergency classifications graded by increasing severity are incorporated in the Emergency Plan. These classifications describe the degree of response by onsite and offsite personnel and agencies. The Emergency Plan is based on the following key objectives:

1.1 Identification & Evaluation

Identification and evaluation of various types of emergencies which could potentially occur at the plant and which could affect members of the public or plant personnel and equipment.

1.2 Organization & Direction

Organization and direction of plant personnel actions to limit the consequences of an incident.

1.3 Organization & Control

Organization and control of onsite and offsite surveillance activities to assess the extent and significance of any release of radioactive material.

1.4 Delineation of Protective Actions

Delineation of protective actions and measures which are based upon and are generally consistent with the EAL's specified in NUREG-0654, Revision 1, Appendix 1, "Emergency Action Level Guidelines for Nuclear Power Plants." The protective actions and measures are intended to protect members of the public and/or plant personnel and equipment in the event of an accident, including measures for recovery of and reentry to the facility.

1.5 Notification of Offsite Authorities

Notification of offsite authorities as required, and coordination of response activities with offsite support groups.

EMERGENCY CONDITIONS

1.0 EMERGENCY CLASSIFICATION SYSTEM

The Emergency Plan is based on potential situations ranging from incidents where effects on the plant status are negligible to highly unlikely major releases of radioactivity which could affect members of the offsite public. Each classification incorporates a specific emergency organization alerting and mobilization procedure and a set of actions to be taken by emergency organization personnel. Each classification is given a designation to indicate immediate required response of plant personnel when an emergency is announced over the public address (Gai-tronics) system.

The following emergency classification system is based on NRC NUREG-0654, Revision 1, Appendix 1, "Emergency Action Level Guidelines for Nuclear Power Plants," issued November, 1980. Within each classification is a description of immediate plant actions as well as recommended State and local government actions.

1.1 Unusual Event

An Unusual Event is declared as required by the initiating conditions and EAL's given in Table 4-1.

This classification applies to an unusual plant condition which either has occurred or is impending. This plant condition could eventually lead to a potential degradation in overall safety. Inherently, however, this is a situation in which time is available to take precautionary and constructive steps to prevent a more serious event or to mitigate any consequences that may occur.

The Unusual Event status places the plant in a readiness condition where there is a possible cessation of routine activities and possible need of shift personnel augmentation. No significant release of radioactive material is expected and, therefore, offsite response to a radiological release is not necessary.

This Unusual Event status will be maintained until an escalation in emergency class is initiated or a termination of the event is made by informing offsite authorities with the completion of the necessary documentation as specified in the EPIP's.

It should be noted that this classification is equivalent to "Notification of an Unusual Event" in NUREG-0654, Revision 1, Appendix 1.

1.2 Alert

An Alert is declared as required by the initiating conditions and EAL's given in Table 4-1.

An Alert classification is declared when events are in progress or have occurred which involve an actual or potential degradation of the level of plant safety. Although the potential for limited releases of radioactivity in excess of Technical Specification limits may exist, the initial assessment leading to this classification indicates that it is unlikely that an offsite hazard will be created.

The initiation of an Alert will institute prompt initial and followup notification to offsite authorities. The plant emergency response will be augmented by the actuation of the TSC and on-shift resource augmentation. Other centers may be activated as required by the Site Manager.

Plant evacuation would not be necessary in an Alert although limited plant evacuation may be necessary. In an Alert, notification is provided on a prompt basis, and follow-up information is provided to Federal, State and local authorities. If releases are expected, actions set forth in Table 4-2 will be recommended.

This Alert status will be maintained until a recommended escalation or reduction in emergency class occurs or the status is terminated by informing offsite authorities, which includes completion of the necessary documentation as specified in the EPIP's.

1.3 Site Emergency

A Site Emergency is declared as required by the initiating conditions and EAL's given in Table 4-1.

The Site Emergency classification is declared when events are in progress or have occurred which involve actual or impending major failures of plant functions. In these events, there is a potential for offsite releases which could have an impact on the public to the extent that protective actions are imminent. Therefore, if not already accomplished, the Site Manager will augment resources and personnel and initiate activation of the TSC, OSC, the ESC, the SBCC, and the ENC (optional).

Plant evacuation with or without offsite evacuation will be initiated if required. There may be a deployment of onsite and offsite radiological monitoring teams to assess radiation levels, with communication systems to transmit information back to the SBCC, ESC and TSC.

There will be a provision for an Emergency Support Manager at the ESC to provide status updates to offsite authorities. These status briefings to offsite authorities, if applicable, will be composed of meteorological information and projected dose estimates based on both actual and projected long-term release (calculated on foreseeable unit conditions). The Emergency News Center Director will establish and maintain communications with the ESC to provide information to the news media on the status of the incident.

The initiation of a Site Emergency requires prompt notification to State and local authorities so that they may activate their emergency control centers and dispatch key emergency personnel, such as State and/or local monitoring teams, to assess offsite consequences. If there is a potential for airborne release via the plume exposure pathway which would cause offsite projected doses of the United States Environmental Protection Agency (USEPA) Protective Action Guide limit to be exceeded, it will be recommended that State and local authorities initiate public protection as set forth in Table 4-2.

This Site Emergency status will be maintained until a recommended escalation or reduction in emergency class occurs or the status is terminated by informing offsite authorities, which includes completion of the necessary documentation as specified in the EPIP's.

1.4 General Emergency

A General Emergency is declared as required by the initiating conditions and EAL's given in Table 4-1.

The General Emergency classification indicates that events are in progress or have occurred which involve actual or imminent substantial core degradation/melting and a potential for loss of containment integrity.

There will be a prompt notification to the appropriate State and local offsite authorities of the General Emergency status. If the following items have not been initiated, they will be instituted during a General Emergency. Resources and personnel will be augmented by the activation of the TSC, OSC, ESC, SBCC, and the ENC. Plant evacuation or limited plant evacuation will be initiated as required. The onsite and offsite radiological monitoring teams will be dispatched. The Emergency Support Manager at the ESC will provide status updates to appropriate offsite authorities. These status briefings to offsite authorities will be composed of plant status, release of radioactive materials status, meteorological information, radiological dose projections, and affected EPZ areas. At the ENC the Emergency News Center Director will establish and maintain communication with the ESC to provide information to the news media on the incident status.

A General Emergency involves the potential or actual release of airborne radioactivity which is likely to result in offsite projected doses that would exceed the limit for the United States Environmental Protection Agency (USEPA) Protective Action Guides for plume exposure pathway. Therefore, recommendation to State and local authorities would be to activate full-scale emergency operations with the recommended protective actions as set forth in Table 4-2.

This General Emergency status will be maintained until a termination or recommended reduction in emergency class is made by informing offsite authorities, which includes completion of the necessary documentation as specified in the EPIP's.

2.0 SPECTRUM OF POSTULATED ACCIDENTS

The accidents that could occur at all commercial nuclear power plants have been classified by the United States Nuclear Regulatory Commission (USNRC) (Appendix E 10 CFR 50) according to their severity of consequences and probability of occurrence. These accidents applicable to a pressurized water reactor like PBNP are addressed in Table 4-1 from the viewpoint of initiating events, alarm actuation, and/or associated readings.

The inclusion of Table 4-1 in the Emergency Plan in no way concedes that all the listed scenarios are likely or even possible. This table is to be used by the plant operators as an emergency classification guide. Since some accident scenarios can be very complex, it is recognized that, with information available, knowledge and skill acquired, and years of operator training and experience, the swift classification of those accidents can be aided with a simplified table.

Specific emergency operating procedures are not written for all the included accidents. In order to deal with unlikely and complex scenarios, the EPIP's provide for sequenced actions indicating clear direction to be followed by PBNP operators. Table 4-1 provides guidance for EPIP response to varying accident situations and conditions. Table 4-1 should be used only if the reactor is critical or at hot shutdown unless specified otherwise in this plan.

Notes: - Duty & Call Superintendent
DSS - Duty Shift Supervisor
FSAR - Final Safety Analysis Report
MASP - Modified Amended PBNP Security Plan

TABLE 4-1

EMERGENCY CLASSIFICATION

Category	Initiating Condition	Indication Used	Emergency Classification
1. Safety System Functions	Unplanned initiation of emergency core cooling with injection to the primary system	Any of the following first-out reactor trip panel annunciation with indicator confirmation noted: 1. "Containment press hi", [PI-945, PI-947, PI-949 (2/3 >5 psig)] 2. "Steam line loop A lo-lo press" [PI-468, PI-469, PI-482 (2/3 <530 psig)] 3. "Steam line loop B lo-lo press" [PI-478, PI-479, PI-483 (2/3 <530 psig)] 4. "Pressurizer lo press SI" [PI-429, PI-430, PI-431 (2/3 <1735 psig)] 5. Wide range pressure <1500 psig	Unusual Event 1-Hour (7)
	Loss of containment integrity requiring shutdown by Technical Specifications	When shutdown commences as determined by DSS and DCS	Unusual Event 1-Hour (5)
	Loss of engineered safety feature requiring shutdown by Technical Specifications	When shutdown commences as determined by DSS and DCS	Unusual Event 1-Hour (5)
	Loss of fire protection system function requiring shutdown by Technical Specifications (i.e., both fire pumps inoperable) and no backup fire suppression system	When shutdown commences as determined by DSS and DCS	Unusual Event 1-Hour (5)
2. Abnormal Primary Leak Rate	Exceeding Technical Specification primary system leak rate (10 gpm)	When shutdown commences as determined by DSS and DCS	Unusual Event 1-Hour (5)

Category	Initiating Condition	Indication Used	Emergency Classification
	Leak rate >50 gpm	All of the following: 1. "Volume control tank level hi-lo" [LI-141 and/or LI-112 <8%] 2. Decreasing pressurizer level [LI-426, LI-427, LI-428] 3. "Charging pump speed hi" 4. Charging line flow (FI-128) >50 gpm more than letdown flow (FI-134)	Alert
	Leak rate in excess of available pump capacity including charging, high head SI and low head SI	All of the following: 1. "Volume control tank level hi-lo [LI-141 and/or LI-112 <8%] 2. No pressurizer level indicated [LI-426, LI-427, LI-428] 3. All available pumps running as indicated by the red light at the switch 4. Increasing core exit T/C temp as indicated by P-250 and confirmed on local readout.	Site Emergency
3. Abnormal Coolant Temperature/Pressure	Unexpected decrease in subcooling margin	Both of the following: 1. Alarm on P-250, if operable 2. Confirmation by manual calculation	Unusual Event
	Pressure >2735 psig DNBR <1.30	Pressure >2735 psig on PR-420 and "Code, safety or PORV not closed"	NRC only 1-hour open line (2)
4. Abnormal Primary/ Secondary Leak	Exceeding Technical Specification primary-secondary leak rate	When shutdown commences as determined by DSS and DCS	Unusual Event 1-Hour (5)

Category	Initiating Condition	Indication Used	Emergency Classification
	Gross failure of 1 SG tube (>400 gpm) & loss of offsite power (FSAR 14.2.4)	All of the following first-out reactor panel annunciation with confirmation indication: 1. "Pressurizer Lo Press SI," [PI-429, PI-430, PI-431 (2/3 <1735 psig)] 2. a. "Steam generator A level hi" [LI-461, LI-462, LI-463 (2/3 >70%)] or b. "Steam generator B level hi" [LI-471, LI-472, LI-473 (2/3 >70%)] 3. a. "4.16 kv bus undervoltage" & 0 volts on A03 & A04 voltmeters. b. X04 to A03 ammeter on C02 (0 amps) c. X04 to A04 ammeter on C02 (0 amps) 4. SI flow >400 gpm indicated by FI-924 & FI-925 and pump discharge pressure corresponding to flow.	Alert
	Rapid failure of >10 SG tubes (4000 gpm) with or without offsite AC	All of the following first-out reactor panel annunciation with confirming indication: 1. "Pressurizer lo press SI" [PI-429, PI-430, PI-431 (2/3 <1735 psig)] 2. a. "Steam generator A level hi" [LI-461, LI-462, LI-463 (2/3 >70%)] or b. "Steam generator B level hi" [LI-471, LI-472, LI-473 (2/3 >70%)] 3. SI flow >4,000 gpm indicated by FI-626, FI-928, FI-924 & FI-925	Site Emergency
5. Core Fuel Damage	Gross fuel damage in core indicated	Both of the following: 1. Letdown line radiation monitor (R9) (sample line R109) 100 x alarm setpoint. 2. Sustained offscale & chemical analysis shows fission product concentration increase by 100X.	Unusual Event

Category	Initiating Condition	Indication Used	Emergency Classification
	Massive fuel damage	300 µCi/cc iodine-equivalent as determined by by chemical analysis	Alert
	1. Massive loss of fuel clad integrity 2. With simultaneous loss of primary system integrity 3. With potential loss of containment integrity	Initiating Conditions Nos. 1, 2, 4 & 5 exist and No. 3 is possible: 1. 300 µCi/cc iodine-equivalent determined by chemical analysis 2. Primary system leak >1000 gpm indicated by SI flow >1000 gpm (FI-924 & FI-925) and pump discharge pressure corresponding to flow 3. Minimum containment pressure suppression equipment is not available (any of the following): a. No fan cooler operating and <2 spray pumps. b. No spray pump operating and <4 fan coolers c. <2 fan coolers running with 1 spray pump 4. "Containment press hi" [PI-945, PI-947, PI-949 (2/3 >5 psig)] 5. "Containment spray" with 2/3 + 2/3 >25 psig [PI-945, PI-947, PI-949] [PI-946, PI-948, PI-950]	General Emergency 1-Hour open line (3)
6. Secondary Coolant Anomaly	Reduction in feedwater enthalpy incident (FSAR 14.1.7)	1. a. Decreasing feedwater temp indicated by TO-418A & TO-438A on P-250 and b. confirmed by local temperature indicator on outlet of No. 5 feedwater heater. 2. Unexpected increasing power on excore nuclear instrumentation	Unusual Event
	Steam line break with primary to secondary leak rate in excess of 10 gpm (FSAR 14.2.5)	All of the following first-out reactor trip panel annunciation with confirmation: 1. Either: a. "Steam line loop A Lo-Lo press" [PI-468, PI-469, PI-482 (2/3 <530 psig)] or b. "Steam line loop B Lo-Lo press" [PI-478, PI-479, PI-483 (2/3 <530 psig)]	Alert 1-Hour open line (3)

Category	Initiating Condition	Indication Used	Emergency Classification
		2. Confirmed primary-to-secondary leak rate of at least 10 gpm. 3. Either: a. "Steam line loop A isol channel alert" [FI-464, FI-465 (1/2 >3.9×10^6 lb/hr)] or b. "Steam line loop B isol channel alert" [FI-474, FI-475 (1/2 >3.9×10^6 lb/hr)]	
Secondary Coolant Anomaly	Transient initiated by loss of feedwater, followed by loss of auxiliary feedwater for >1 hour (FSAR 14.1.11)	All of the following: 1. Decreasing SG levels - "A" SG [LI-461, LI-462, LI-463] "B" SG [LI-471, LI-472, LI-473] 2. No auxiliary feedwater flow - [FI-4002, FI-4007, FI-4014] [FI-4036, FI-4037]	General Emergency 1-Hour open line (3)
7. Abnormal Effluent	Radiological effluent Technical Specification limits exceeded but <10 times the limit (FSAR 14.2.3)	Airborne effluents only	Unusual Event 1-Hour (8)
	Radiological effluent Technical Specification limits exceeded (FSAR 14.2.2)	Liquid effluents only	Unusual Event 1-Hour (8)
	Radiological effluents >10 times Technical Specification instantaneous limits. (An instantaneous rate which, if continued for >2 hours, would result in a dose of about 1 mR at the site boundary under average meteorological conditions.)	Airborne effluents only	Alert 1-Hour (8)
8. Major Electrical Failures	Sustained loss of offsite power >15 minutes (FSAR 14.1.2)	All of the following: 1. "4.16 kv bus undervoltage" & 0 volts on A03 & A04 voltmeters. 2. X04 to A03 ammeter on CO2 (0 amps). 3. X04 to A04 ammeter on CO2 (0 amps)	Unusual Event

Category	Initiating Condition	Indication Used	Emergency Classification
	Sustained loss of onsite AC power capability (>15 minutes)	Both of the following: 1. "4.16 kv bus undervoltage" & 0 volts on A05 and A06 voltmeters 2. "Emergency Diesel Starting System Disabled" for both Diesels	Unusual Event 1-Hour (5)
	Loss of all vital onsite DC power >15 minutes	Both of the following: 1. "Annunciator power failure" on C01, C02, C03, and C04 2. <100 volts on the voltmeters for all batteries	Site Emergency
	Loss of offsite power and loss of all onsite AC power for >15 minutes	All of the following: 1. "4.16 kv bus undervoltage" 0 volts on A03, A04, A05, A06 & "Emerg Diesel starting system disabled" for both Diesels 2. X04 to A03 ammeter on C02 (0 amps) 3. X04 to A04 ammeter on C02 (0 amps)	Site Emergency
	Loss of offsite and all onsite AC power with loss of all auxiliary feedwater for >2 hours	All of the following: 1. Unit aux MW meter X02 on C02 (0 MW) 2. Station aux MW meter X04 on C02 (0 MW) 3. X04 to A03 ammeter on C02 (0 amps) 4. X04 to A04 ammeter on C02 (0 amps) 6. X02 to A01 ammeter on C02 (0 amps) 7. a. No auxiliary feedwater flow [FI-4036, FI-4037] b. Decreasing SG level - "A" SG [LI-461, LI-462, LI-463] "B" SG [LI-471, LI-472, LI-473]	General Emergency
9. Control Room Evacuation	Evacuation of control room >15 minutes & no control at remote shutdown station	As required by DSS	Site Emergency 1-Hour open line (3)
10. Fire	Fire in vital area or on the controlled side of plant lasting >10 minutes after initial use of fire extinguishing equipment.	As reported by Fire Brigade Chief	Unusual Event

Category	Initiating Condition	Indication Used	Emergency Classification
	Fire affecting 1 train of safety systems.	As reported by Fire Brigade Chief	Alert
	Fire affecting 2 trains of safety systems	As reported by Fire Brigade Chief	Site Emergency
11. Plant Shutdown Function	Nonfunctional indications or alarms in the control room on primary system parameters requiring plant	Both of the following: 1. "Annunciator power failure" on C04. 2. Failed indication as determined by DSS.	Unusual Event 1-Hour (5)
	Turbine mechanical failure with consequences	1. Annunciator "Turbine supervisory." 2. Indication on TR-6019 of bearing vibration >7 mils. 3. Bearing vibration alarm on back of C03. 4. Visual confirmation of turbine housing penetration by a blade or disc.	Unusual Event
	Significant loss of effluent monitoring capability & meteorological instruments which impairs ability to perform emergency assessment. Loss of effluent monitoring may/may not require plant shutdown.	1. Loss of LW16 (RE223) during a release or 2. Loss of R18 (RE218) during a release or 3. a. Loss of wind speed indication or wind direction indication and b. Loss of R14 (RE214) and RMS II Channel 1 (RE315, RE317, RE319) or c. Loss of R15 (RE215) and CR9 and RMS II Channel 5 (RE225, RE226) or d. Loss of R21 (RE221) and RMS II Channel 2 (RE325, RE327) or e. Loss of GW112 (RE224) and RMS II Channel 6	Unusual Event
	Failure of reactor protection system to complete a trip which brings reactor subcritical	All of the following: 1. Unplanned first out annunciator on C04 with confirmation from associated indicator 2. Intermediate range detector output not decaying 3. >1 RCC RPI indicates fully withdrawn	Alert 1-Hour open line (3)

Category	Initiating Condition	Indication Used	Emergency Classification
	All alarms (annunciators) lost >15 minutes while unit is not in cold shutdown	1. "Annunciator power failure" on C01, C02 & 1(2)C03, 1(2)C04	Alert
	Loss of functions needed for cold shutdown for >4 hours while at cold shutdown	Any of the following: 1. Loss of service water Unit 1 = south & west header Unit 2 = north & west header 2. Loss of both trains of RHR 3. Loss of component cooling	Alert
12. Abnormal Radiation Levels at Site	a. Effluent monitors detect levels corresponding to any of the following: (1) >50 mR/hr for ½ hour (2) >250 mR/hr for ½ hour for the thyroid (3) >500 mR/hr whole body for 2 minutes (4) >2500 mR/hr to the thyroid for 2 minutes at the site boundary for adverse meteorology	Airborne effluents only	Site Emergency
	b. Any of the above doses measured in the environs	As reported to DSS by HP Supervisor	
	c. Any of the dose rates projected, based on plant parameters		
	a. Effluent monitors detect levels corresponding to either: (1) 1 R/hr whole body (2) 5 R/hr thyroid at the site boundary under actual meteorological conditions	Airborne effluents only	General Emergency
	b. Either of the above doses measured in environs	As reported to DSS by HP Supervisor	
	c. Either of above dose rates projected based on other plant parameters		
13. Fuel Handling Accident	Major damage to irradiated fuel in containment	Both of the following: 1. As reported to DSS by Core Loading Supvr. 2. Alarm on Victoreen on manipulator & alarm on R211	Alert

Category	Initiating Condition	Indication Used	Emergency Classification
	Fuel damage accident with release of radioactivity to auxiliary building (FSAR 14.2.1)	Both of the following: 1. As reported to DSS by Supvr in charge of fuel handling & drumming area vent (R221) 2. Alarm on Victoreen on spent fuel pit bridge.	Alert
14. Serious or Fatal Injury	Transportation of seriously or fatally injured individual from site to hospital (Reference EPIP 11.1)	Reported as judged by DSS (expect hospitalization for at least 48 hours)	Unusual Event
15. Security Threat	Security threat or attempted sabotage or Ongoing security compromise	Per MASP	Per MASP & Appendices 1-Hour Red Phone Only (Open Line) (4)
16. Hazards to Plant Operation	Unusual aircraft activity over facility	Visual observation of Operations Supervisor or security force	Unusual Event
	Near or onsite explosion or flammable or toxic gas release	As reported to DSS by plant personnel making visual observation	Unusual Event
	Missile impacts from any source on facility	Visual observation by Operations Supervisor	Alert
	Missile impact causing damage to two trains of safety systems	Visual observation by Operations Supervisor	Site Emergency
	Aircraft crash in protected area (within the fence)	Visual observation by Operations Supervisor	Alert
	Known explosion damage to facility affecting plant operation. Toxic or flammable gases in facility environment excluding normal process gases	Visual observation by Operations Supervisor	Alert
	Toxic or flammable gases entering into vital areas (control room, auxiliary building, etc.) excluding normal process gases	Visual observation by Operations Supervisor	Site Emergency

Category	Initiating Condition	Indication Used	Emergency Classification
17. Natural Events	Any earthquake	Activation of >2 accelerographs and verified by actual physical ground shaking or by contacting Dr. David Willis, University of Wisconsin, Milwaukee Seismic Center at 1-414/963-4602.	Unusual Event
	Any tornado visible from site	Verification by Operations Supervisor	Unusual Event
	Low Lake Michigan water level	With no CW pumps running, water level is 3.9' below 0' on surge chamber level & confirmed by measuring forebay level at 10.9' below pumphouse floor (7' level)	Unusual Event
	Earthquake greater than operating basis earthquake	Earthquake with attendant structural damage of containment or spent fuel pit	Alert
	Any tornado striking the facility	Visual observation by Operations Supervisor	Alert
	Seiche near design level	>6" of water in turbine hall	Alert
	Winds in excess of design levels	Wind speed indicated as >100 mph	Alert
	Wind with damage	Structural damage to containment	Site Emergency
	Failure of protection for vital equipment at low levels (i.e., caused by seiche > design levels)	Any of the following: 1. >3' water in both EDG rooms. 2. >2' water in vital switchgear room. 3. >2' water in auxiliary feed pump room.	Site Emergency
18. Reactivity Transient	Uncontrolled rod withdrawal (FSAR 14.1.1 & 14.1.2)		Unusual Event
	CVCS Malfunction (FSAR 14.1.5)		Unusual Event
	Accidental Criticality		NRC Only (3)

Category	Initiating Condition	Indication Used	Emergency Classification
19. Load Transient	Loss of Electrical Load (FSAR 14.1.10)		Unusual Event
20. Other	Condition that warrants State and/or local official awareness	DCS & DSS concurrence	Unusual Event
	Condition that warrants establishment of technical support center & emergency support center	DCS & DSS concurrence	Alert
	Condition that warrants use of monitoring teams	DCS & DSS concurrence	Alert
	Personnel contamination	Health Physicist & DCS concurrence	NRC-only 1-hour (10)
	Any unplanned reactor trip	DCS & DSS concurrence	NRC-only 1-Hour (7)
	Strike by employees or guard force	DCS & DSS concurrence	NRC-only 1-Hour (12)
	Loss of red phone (ENS)	DCS & DSS concurrence	NRC-only 1-Hour (13)
	Personnel or procedural error	DCS & DSS concurrence	NRC-only 1-Hour (6)
	10 CFR 20.403	DCS & DSS concurrence	NRC-only 1-Hour (11)

TABLE 4-2

RECOMMENDED PROTECTIVE ACTIONS TO REDUCE WHOLE BODY & THYROID DOSE FROM EXPOSURE TO A GASEOUS PLUME

Projected Dose (Rem) to Individual in General Public		Recommended Actions[1]	Comments
Whole body or Thyroid	<1 <5	No planned protective actions.[2] State may issue an advisory to seek shelter and await further instructions. Monitor environmental radiation levels.	Previously recommended protective actions may be reconsidered or terminated.
Whole body or Thyroid	1 to <5 5 to <25	Seek shelter as a minimum. Consider evacuation. Evacuate unless constraints make it impractical. Monitor environmental radiation levels. Control access to the affected area.	If constraints exist, special consideration should be given for evacuation of children and pregnant women.
Whole body or Thyroid	5 and above 25 and above	Conduct mandatory evacuation. Monitor environmental radiation levels and adjust area for mandatory evacuation based on these levels. Control access to the affected area.	Seeking shelter would be an alternative if evacuation were not immediately possible.

(1) These actions are recommended for planning purposes. Protective action decisions at the time of the incident must take existing conditions into consideration.

(2) At the time of the incident, officials may implement low-impact protective actions in keeping with the principle of maintaining radiation exposure as low as reasonably achievable.

ORGANIZATIONAL CONTROL OF EMERGENCIES

1.0 DISCUSSION

Using the normal shift operating organization as a base, this section of the Emergency Plan describes the emergency organization that is activated onsite and its augmentation and extension offsite should offsite response become necessary. Authorities and responsibilities of key individuals and groups are delineated. The communications links established for notifying, alerting, and mobilizing emergency personnel are described.

2.0 NORMAL PLANT ORGANIZATION*

If both units are in a condition other than cold shutdown or refueling shutdown, each operating shift normally consists of eight qualified individuals. The Shift Supervisor, who holds a Senior Reactor Operator (SRO) license, is in direct charge of all plant operations during his assigned shift and is directly responsible for the actions of his crew. Other shift personnel are: One Operating Supervisor who holds a Senior Reactor Operator (SRO) or Reactor Operator (RO) license, two Control Operators who hold Reactor Operator licenses, three Auxiliary Operators and one person (could be an Auxiliary Operator) who holds a Reactor Operator license. There is at least one qualified health physics individual on each shift. A DTA, with special training in off-normal events, will be available at all times within 10 minutes to assist the evaluation and assessment capabilities of the Shift Supervisor. This normal operations organization is shown in Figure 5-1. Figure 5-2 shows the normal PBNP organization. Individual responsibilities for normal operations are defined in administrative procedures. The Operating Supervisor and Control Operators perform the immediate operator actions as stipulated by written and approved procedures during off-normal or emergency conditions. They are responsible for verifying that automatic control actions take place and for taking immediate operator action initiating a reactor trip when a reactor protection signal setpoint is exceeded or when they determine that the safety of the reactor, personnel, or the environment is in jeopardy.

In the event of an accident which could evolve into an emergency classification in accordance with the appropriate EAL's or in the case that initiating conditions exist that result in one of the EAL's being met directly, the Shift Supervisor has the responsibility and authority to take immediate action to mitigate the consequences of the emergency. He will consult with the DCS and assign the appropriate emergency classification and initiate the necessary EPIP's. The DTA will report to the control room and assume an advisory role. If the event is classified to be an Unusual Event, the Shift Supervisor will return the plant to a safe status and terminate the event using the organization shown in Figure 5-3.

*The crew of eight with two Senior Reactor Operators and three Reactor Operators is the staffing goal PBNP is actively pursuing.

If the Shift Supervisor, based on his judgement and in conjuction with the DCS, determines that the incident has the potential of or is actually exceeding predetermined EAL's (see Table 4-1), which will result in an Alert or higher level emergency, the normal shift organization shall be shifted into an emergency mode of operation depending on the situation and classification.

The Shift Supervisor will direct the plant response to assess and control the emergency and initiate the required plant and offsite notifications in accordance with Figures 5-9 and 5-10. If for some reason the Shift Supervisor is incapacitated, the Operating Supervisor will assume the responsibility and authority of the Shift Supervisor (until properly relieved by a qualified individual) and coordinate the plant response including the initiation of necessary offsite notifications.

3.0 ONSITE EMERGENCY ORGANIZATION

This section of the Emergency Plan describes the responsibilities of the onsite personnel during an event classified to be an Alert, Site Emergency, or General Emergency.

3.1 Direction & Coordination

The Shift Supervisor will be in the control room and maintain responsibility for operation of plant equipment and controls during emergency conditions other than fires. His preliminary emergency classification assessment will be determined by the EAL's (Table 4-1). If the incident is classified as an Alert or higher level emergency, the appropriate emergency centers as shown in Figures 5-4 through 5-6 may be activated and the shift personnel may be augmented. The Shift Supervisor will assume the responsiblilty of the Plant Operations Manager and continue to assess the emergency until relieved of this responsibility by the Plant Operations Manager (DCS).

The Plant Operations Manager is initially responsible for all onsite activities and personnel. He will operate from the TSC and coordinate all procedures involving the control room, TSC, onsite OSC (staging area), and security building. The Plant Operations Manager, upon assuming emergency assessment responsibility from the Shift Supervisor will conduct a detailed evaluation of plant conditions and offsite dose potential. Based upon this evaluation, he will reclassify the event if necessary.

3.2 Plant Staff Emergency Assignments

The organizations for each emergency classification are shown in Figures 5-3 through 5-6. Table 5-1 correlates the emergency organization titles with normal operational titles. Appendix "A" lists a general summary of the plant staff emergency assignments including titles, locations, basic functions, primary responsibilities, and in

some cases, working relationships. A brief description of the emergency organizational situations is as follows:

3.2.1 Unusual Event (Figure 5-3 and EP 4.0, Section 1.1)

This emergency organization consists of normal shift personnel. Appropriate procedures assigned to the control room will be accomplished under the direction of the Shift Supervisor (Appendix "A", Section 7.0). Maintenance staff augmentation will take place on a case-by-case basis.

3.2.2 Alert (Figure 5-4 and EP 4.0, Section 1.2)

Upon activation of appropriate emergency centers, responsibility for assessment, evaluation and recovery will be removed from the Shift Supervisor. The Plant Operations Manager will assume responsibility for assessment and perform a detailed evaluation of the plant condition. All onsite radiation surveys and monitoring will be conducted under the direction of the Chemistry/ Health Physics Supervisor. He will ensure that properly trained personnel are onsite at all times and capable of implementing these procedures in his absence. The Maintenance Supervisor will assume maintenance and repair coordination and search and rescue responsibilities. A backup DTA will advise the Technical Support Manager (Appendix "A", Section 12.0). Supervisory personnel will coordinate any limited plant evacuation and ensure accountability of their personnel. If appropriate, the TSC will be activated in approximately 30 minutes and fully operational in one hour. The ESC may be activated during an alert. If such is the case, the Site Manager will actuate the ESC within one hour and will assume overall responsibility for the emergency response and recovery operations and procedures of the plant emergency personnel until relieved by the Emergency Support Manager.

3.2.3 Site Emergency (Figure 5-5 and EP 4.0, Section 1.3)

Assessment of the event as a site emergency will require the actuation of the ENC to provide periodic press updates. Offsite radiation surveys will be initiated as necessary from the SBCC under the coordination of the Health Physics Director (Appendix "A", Section 20.0). These surveys will be under the direction of the Chemistry & Health Physics Supervisor until the ESC is fully operational. A group will be organized in the ESC under the direction of the RadCon/ Waste Manager (Appendix "A", Section 19.0) which will direct offsite surveys as well as perform offsite dose assessment procedures. The results of these surveys and assessment procedures will be communicated to the Site Manager and the Emergency Support Manager by the Rad/Con Waste Manager. Assigned technical personnel from the PBNP organization will report to the TSC to assist in the emergency response operations.

These personnel will augment the TSC staff within one hour of the beginning of an emergency. Additional personnel will provide logistic, administrative, and scheduling support. These personnel, under the Administrative & Logistics Manager (Appendix "A", Section 3.0), will ensure 24-hour continuity of all resources.

3.2.4 General Emergency (Figure 5-6 and EP 4.0, Section 1.4)

The General Emergency category requires that the emergency response organization be established to obtain and provide extensive amounts of plant data and information. To ensure this, the ESC will activate a group under the Design, Construction & Planning Manager (Appendix "A", Section 23.0) to provide detailed coordination with offsite technical support. This group will be activated under this emergency classification within two hours of the beginning of an emergency. The organization for a Site Emergency is also established.

4.0 AUGMENTATION OF ONSITE EMERGENCY ORGANIZATION

This section describes offsite supporting assistance available to the onsite staff emergency organization.

4.1 Headquarters Support

The PBNP normal organization as shown in Figure 5-2 has available the technical and administrative support services of the WE general office management and support organization as shown in Figure 5-7. This organization can and will respond, as necessary, to emergencies at PBNP. The Site Manager will inform the Assistant Vice President of those emergencies either requiring notification of, or reports to, offsite organizations and agencies as well as those situations where offsite assistance is needed. The Assistant Vice President will relay emergency information to the Executive Vice President for evaluation. If the situation warrants, the Executive Vice President will activate the WE emergency organization for PBNP (Figure 5-8).

The WE emergency organization for PBNP is responsible for offsite emergency management activities and will provide to, or obtain assistance for, the onsite emergency organization as required. These responsibilities include, but are not limited to:

4.1.1 Providing Emergency Plan management direction to the plant emergency organization.

4.1.2 Providing liaison and communications with the Federal, State, and local government organizations. If requested, the Company will send representatives to the appropriate State and local emergency operations centers.

4.1.3 Providing public relations coordination and making news releases.

4.1.4 Providing funds necessary to implement the PBNP Emergency Plan and the general office plan as applicable.

4.1.5 Providing security management direction and support.

4.1.6. Supporting the plant emergency organization in engineering and technical matters by obtaining the assistance of Bechtel Power Corporation, Westinghouse Electric Corporation, or other appropriate resources.

4.1.7 Coordinating the restoration and/or operation of all generation, transmission, and distribution facilities.

4.1.8 Supply logistic support for emergency personnel (e.g., transportation, temporary quarters, food and water, sanitary facilities in the field, and special equipment and supplies procurement).

4.1.9 Directing reentry and/or recovery operations and post-accident planning.

4.1.10 Assigning post-accident investigation and review responsibilities.

4.1.11 Providing general assistance for environmental monitoring.

The WE emergency organization for PBNP and associated functions and responsibilities are included in the organization described herein.

The Corporate Medical Director is a fully-licensed physician employed by WE. The Medical Director is qualified in radiological health and is available for assistance in an emergency if required.

4.2 Local Services Support

During the operation of PBNP, it may become necessary to request and utilize assistance provided by local organizations and agencies. Since it is essential that support from these organizations and agencies be available, the following agreements and understandings have been made:

4.2.1 Two Creeks Volunteer Fire Department

When requested, the Two Creeks Volunteer Fire Department will, as stated in Appendix "D", provide fire fighting assistance at PBNP.

4.2.2 Town of Two Creeks

The Township of Two Creeks, as stated in Appendix "D", will make available to WE the Two Creeks Town Hall to be used as

required during an emergency at PBNP. The Two Creeks Town Hall would also be used as an alternate offsite assembly area for plant and support personnel if the primary assembly areas become untenable during the course of an emergency situation.

4.2.3 Two Rivers Community Hospital

The Two Rivers Community Hospital will provide medical assistance to PBNP personnel. The agreement, attached in Appendix "D", provides for the treatment of personnel who suffer injuries complicated by radioactive contamination or radiation. Individuals may be transferred to the University Hospital & Clinics in Madison, Wisconsin, should the treatment required extend beyond the capabilities of the Two Rivers Community Hospital. The Two Rivers Community Hospital will maintain the capability and facilities to provide decontamination, first aid, and emergency stabilization medical treatment to injured personnel from PBNP. These services and facilities are available 24 hours a day.

4.2.4 City of Two Rivers

The City of Two Rivers will make available the facilities of the Two Rivers Community House for use by WE during an emergency at PBNP. This facility will be used as the primary location for the ENC. Details of this agreement are presented in Appendix "D". In addition, arrangements have been made with the City of Two Rivers to provide ambulance service to assist in transporting injured persons from PBNP.

4.2.5 University of Wisconsin Hospital & Clinics

As detailed in Appendix "D", the University of Wisconsin Hospital & Clinics will accept and provide treatment to personnel with injuries beyond the capabilities of the Two Rivers Community Hospital, even if complicated by radioactive contamination. The University of Wisconsin Hospital & Clinics are available 24 hours a day for either treatment or consultation.

4.2.6 Doctors Clinic, Ltd.

At least two licensed physicians of the Doctors Clinic, Ltd., Two Rivers, Wisconsin, will provide medical supervision and care for employees of PBNP (see Appendix "D"), who have medical conditions complicated by exposure to radiation. Both doctors have received training qualifying them to care for this type of patient.

4.2.7 Manitowoc County Sheriff's Department

When alerted, the Manitowoc County Sheriff's Department will respond within 10-20 minutes and will:

a. Assist in controlling traffic for the duration of the emergency.

b. Assist WE in keeping members of the general public from entering the PBNP exclusion area in the unlikely event that an emergency requires such assistance.

c. Provide assistance in security-related matters.

d. Implement protective actions as directed by the Division of Emergency Government.

Details of this agreement are presented in Appendix "D."

4.2.8 Wisconsin State Patrol

The Wisconsin State Patrol, District No. 3, when requested, will:

a. Assist the Manitowoc County Sheriff's Department in blocking roads and controlling traffic, including establishing road blocks and detour routes.

b. Provide assistance in keeping members of the general public from entering the exclusion area.

c. Provide assistance in security matters.

d. Assist the Manitowoc County Sheriff's Department in the evacuation of the general public.

Details of this agreement are presented in Appendix "D."

4.2.9 Kewaunee Nuclear Power Plant

The Kewaunee Nuclear Power Plant laboratory facility will provide assistance for radiological and chemical sample analysis for air, water and other needed samples during a radiological emergency at PBNP. Details of this agreement are presented in Appendix "D."

4.2.10 Kewaunee School District

The Kewaunee School District, when requested, will make available the facilities of the Kewaunee High School for use by WE during an emergency at PBNP. Details of this agreement are presented in Appendix "D."

Figure 5-10 describes the notification and coordination of these groups and agencies during emergencies.

5.0 COORDINATION WITH PARTICIPATING AGENCIES

This section identifies the principal State agency (designated State authority) and other governmental agencies (local, State, and Federal) having planning and/or implementation responsibilities for emergencies in the Manitowoc County and Kewaunee County area of PBNP in the State of Wisconsin.

5.1 State & Local Agencies

5.1.1 Wisconsin Department of Administration, Division of Emergency Government (DEG)

The Administrator of the DEG, Department of Administration, has been designated by the Governor of the State of Wisconsin as the State officer to assume the primary responsibility and authority for radiological emergency response planning. The DEG is to exercise principal supportive roles, in addition to other State agencies, whose involvement will be coordinated by the DEG. The DEG will brief the Governor as to the situation and actions taken by the Federal, State, and local agencies and activate the State emergency operating center (EOC) in the Hill Farms State Office in Madison, if necessary.

5.1.2 Wisconsin Department of Health & Social Services, Division of Health (DOH)

The Division of Health (DOH), Department of Health & Social Services, under the Radiation Protection Act, WIS STATS 140.50 to 140.60, is responsible to prevent exposure to ionizing radiation in amounts which are detrimental to health according to nationally accepted standards. The Chief of Radiation Protection Section, Bureau of Environmental Health of DOH, is the State Radiological Coordinator (SRC) of the State Radiological Response Team for peacetime radiological emergencies. Team members are personnel of the Section as designated by the SRC, augmented by selected personnel from the DEG and other State agencies trained specifically for radiological incidents. They will do the following: Conduct an initial survey to determine direct radiation levels and/or the severity and extent of the contaminated area, including soil, food and crop samples by taking readings and samples for analysis and making food chain dose estimates; advise how decontamination of the area should be accomplished; and assist in checking the evacuees of an involved area as to contamination or exposure.

5.1.3 Wisconsin Department of Transportation, Division of Enforcement & Inspection, State Patrol (SP)

The Wisconsin State Patrol supports the Division of Highways and local law enforcement services directing vehicular and pedestrian movement out of and around the area of the incident, controlling access into the area and providing security at the site. All of the SP field cars have standard civil preparedness radiation monitoring survey meters and all troopers have been trained in their use. Some troopers have been trained as Radiological Defense Officers. All troopers are trained in handling vehicular accidents involving hazardous materials. The SP academy also conducts courses available to local law enforcement officers for their training in these techniques. Besides mobile radios in all 500 Division of Enforcement & Inspection vehicles, the Office of Transportation Safety has a communication van which can serve as a forward command post at the site. Each district has a supply of walkie-talkies on a dedicated frequency that are available through emergency police services for local and State emergency communications at the site of an incident. The SP is available for courier service, by motor vehicle, for taking the State Radiological Response Team to the site, and delivering samples to the State Laboratory of Hygiene for analysis if necessary to expedite the response.

5.1.4 Wisconsin Department of Natural Resources, Division of Enforcement

The Conservation Wardens of the Division of Enforcement, Department of Natural Resources, can support the local law enforcement services as does the SP. There are standard civil preparedness radiation monitoring survey meters distributed among the wardens. About 6 to 12 wardens in each district receive some training in survey instrument use. The wardens have mobile radios in their cars on the SP frequency. The Department can provide courier service, by motor vehicles and plane, to take the State Radiological Response Team to the site if necessary to expedite the response.

5.1.5 Wisconsin Department of Transportation, Division of Highways

The Division of Highways, Department of Transportation, is responsible, when so ordered by the Administrator of DEG, for implementing the Emergency Highway Traffic Regulation Plan when, as a result of a radiological incident, a large area is cordoned off by the law enforcement services and vehicular traffic is directed to other roads.

5.1.6 Wisconsin Department of Agriculture

The Department of Agriculture has standard civil preparedness radiation monitoring survey meters and personnel trained in survey instrument use. Trained personnel are based in Madison, Barron, Green Bay, and Burlington. Under the Hazardous Substances Act, 100.37, the Department can ban the sale of foods emitting harmful levels of radioactivity. The Department can advise the use, sale, or disposal of animal feeds containing harmful levels of radioactive contamination. The Department can gather samples of milk and crops to determine radionuclide and related stable element concentrations, and can advise dairies as to the disposition of milk, farmers as to the feeding of their cows on stored feed, and growers as how to restore land to productivity. Arrangements can be made by the Department with respect to handling of animals exposed to radioactive contamination.

5.1.7 Wisconsin Department of Military Affairs

Section 21.11 of the Wisconsin Statutes contains the authority for the Governor to order all or any part of the Wisconsin National Guard personnel and/or equipment into active State service for public emergencies, disturbances or disasters. Because of the relatively short duration and immediate reaction time needed in a radiological incident, the National Guard, under the Department of Military Affairs, will be involved in such incidents only if the size of the area involved requires their support. The National Guard could provide additional traffic control, communications, emergency provisions of food, radiological monitoring and decontamination services. The Army National Guard has helicopters stationed in Madison and West Bend. If so ordered by the Governor, these can provide aerial reconnaissance and surveillance, insertion of personnel and equipment, aerial evacuation, aerial supply, illumination, communications and command and control. The Air National Guard has fixed wing aircraft at Madison and Milwaukee and, if so ordered by the Governor, could provide services similar to the helicopters with the exception of take-off and landing capabilities and providing illumination. Additional radiation monitoring equipment maintained and operated by the U.S. Army is available at armories throughout the State. Nearly every one of the 72 company-sized units has a two-to-five man team trained in chemical-radiological procedures.

5.1.8 Manitowoc & Kewaunee County

Under the provisions of the Wisconsin Statutes 22.16 and the Manitowoc and Kewaunee County Emergency Government Ordinances, authorities of both Counties have the responsibility and authority to coordinate offsite emergency activities in the event of a radiological incident. Each County has prepared a County Nuclear Facility Incident Response Plan to carry out this responsibility which is applicable to emergencies at PBNP (see EP 10.6 and EP 10.7).

Upon notification of an emergency at PBNP which requires participation of local or County agencies, each County will activate its emergency organization. Each emergency organization is under the direction of the County Board Chairman and is composed of representatives from various participating agencies which include the County Sheriff, County Emergency Government Director, County Highway Commissioner, fire fighting organizations, and school administrators. The Manitowoc and Kewaunee County Emergency Organization will provide or assist the emergency response activities by the following:

a. Provide notification to County and support agencies and local area residents that an incident has occurred at PBNP, if necessary.

b. Provide liaison and communication capabilities, with the plant facility and appropriate Federal, State and local organizations.

c. Assist in providing release of accurate public information concerning the offsite consequences of the emergency through all available media. In addition, advise and instruct area residents on what protective actions should be taken.

d. Assist in providing for medical treatment, health and sanitation services and mass care for members of the general public.

e. Assist in the evacuation of affected offsite locations, if such an action should be required.

5.1.9 Local Water Supply Utilities

In the unlikely event that an accidental discharge of liquid radioactive material occurs into Lake Michigan which exceeds prescribed limits, notification that the event has occurred will be made to the municipal water utilities of Two Rivers, Manitowoc and Green Bay as well as the State of Wisconsin,

Division of Emergency Government. These notifications will be made as soon as possible but no later than 12 hours after the initial start of the release.

5.2 Federal Government

Should an emergency situation or accident occur at PBNP, notification, reports, or requests for assistance may be made by WE to various Federal agencies and organizations. Details for notifying and making reports to these agencies, as well as for requesting and obtaining assistance, are provided in the EPIP's. The following agencies may, as the situation warrants, require notification or reports, or provide assistance if required:

5.2.1 NRC Operations Headquarters, Bethesda, Maryland

The NRC requires notification and reports as stated in EP 5.0, Section 6.0.

5.2.2 Nuclear Regulatory Commission (NRC)

Office of Inspection & Enforcement, Region III.

5.2.3 Department of Energy (DOE)

The DOE in Region 5 has agreed to provide radiological assistance upon request. This request can be made by either the Emergency Support Manager or the Wisconsin Division of Emergency Government. The Radiological Assistance Team will respond as directed by the Chicago Operations Office of DOE.

5.2.4 United States Coast Guard

When requested, the United States Coast Guard, Sturgeon Bay and Two Rivers, Wisconsin will evacuate all craft on Lake Michigan within a specified EPZ, control traffic into the zone, and instruct persons on the beaches within the zone to leave.

Details of the above agreements are contained in Appendix "D."

6.0 NUCLEAR REGULATORY COMMISSION (NRC) NOTIFICATION & REPORTS

The following section outlines the required notification and reporting procedures to the Nuclear Regulatory Commission (NRC). Notification to the NRC under this section should not necessarily mean the implementation of the Emergency Plan. The notification and reporting sequence is categorized into four distinct groups which are the following:

6.1 Notification of Significant Events (10 CFR 50.72)

Telephone notification to the NRC Headquarters and NRC Region III shall be made as soon as possible, and in all cases within one hour for any of the following significant events and shall identify that event as follows:

6.1.1 Any event requiring initiation of the Emergency Plan or any section of that plan.

6.1.2. The exceeding of any Technical Specification safety limit (Table 4-1, Item 3).

6.1.3 Any event that results in PBNP not being in a controlled or expected condition while operating or shut down.

6.1.4 Any act that threatens the safety of PBNP or site personnel, or the security of special nuclear material, including instances of sabotage or attempted sabotage (Table 4-1, Item 15).

6.1.5 Any event requiring initiation of shutdown of PBNP in accordance with Technical Specification limiting conditions for operations (Table 4-1, Item 1).

6.1.6 Personnel error or procedural inadequacy which, during normal operations, anticipated operational occurrences, or accident conditions, prevents or could prevent, by itself, the fulfillment of the safety function of those structures, systems, and components important to safety that are needed to:

a. Shut down the reactor safely and maintain it in a safe shutdown condition (Table 4-1, Item 11).

b. Remove residual heat following reactor shutdown (Table 4-1, Item 11).

c. Limit the release of radioactive material to acceptable levels or reduce the potential for such release. (Table 4-1, Item 12)

6.1.7 Any unplanned or unanticipated event resulting in manual or automatic actuation of engineered safety features, including the reactor protection systems. (Actuation of engineered safety features, including the reactor protection system which result from and are part of the planned sequence during surveillance testing are not included.) (Table 4-1, Items 1 & 20)

6.1.8 Any accidental, unplanned, or uncontrolled radioactive release. (Normal or expected releases from maintenance or other operational activities are not included.) (Table 4-1, Item 12)

6.1.9 Any fatality or serious injury occurring on the site and requiring transport to an offsite medical facility for treatment or observation for an extended period of time (greater than 48 hours). (Table 4-1, Item 14)

6.1.10 Any serious personnel radioactive contamination requiring extensive onsite decontamination or outside assistance. (Table 4-1, Item 20)

6.1.11 Any event meeting the criteria of 10 CFR 20.403 (Sections 6.2.2, 6.2.3, & 6.2.4, below) for notification. For reporting purposes Sections 6.2.3 and 6.2.4 require 24-hour and 30-day notification, respectively. (Table 4-1, Item 20)

6.1.12 Strikes of operating employees or security guards, or honoring of picket lines by these employees. (Table 4-1, Item 21)

6.2 Immediate Notification (10 CFR 20.403a)

Telephone and telegraph notification shall be made immediately (within one hour) to the NRC Headquarters and NRC Region III for any incident involving byproduct, source, or special nuclear material and which may have or threatens to cause:

6.2.1 Exposure of the whole body of any individual to 25 Rem or more of radiation; exposure of the skin of the whole body of any individual to 150 Rem or more of radiation; or exposure of the feet, ankles, hands, or forearms of any individual to 375 Rem of more of radiation.

6.2.2 The release of radioactive material in concentrations which, if averaged over a period of 24 hours, would exceed 5,000 times the limits specified for such materials in 10 CFR 20, Appendix B, Table II.

6.2.3 A loss of one working week or more of the operation of any facilities affected.

6.2.4 Damage to property in excess of $200,000.

6.3 Twenty-Four Hour Notification (10 CFR 20.403c)

Telephone and telegraph notification shall be made within 24 hours to the NRC Headquarters and NRC Region III for any incident involving licensed material and which may have caused or threatens to cause:

6.3.1 Exposure of the whole body of any individual to 5 Rem or more of radiation; exposure of the skin of the whole body of any individual to 30 Rem or more of radiation; or exposure of the feet, ankles, hands, or forearms to 75 Rem or more of radiation.

6.3.2 The release of radioactive material in concentrations which, if averaged over a period of 24 hours, would exceed 500 times the limits specified for such materials in 10 CFR 20, Appendix B, Table II.

6.3.3 A loss of one day or more of the operation of any facilities affected.

6.3.4 Damage to property in excess of $2,000.

6.4 Thirty-Day Notification (10 CFR 20.405)

Letter notification shall be made within 30 days to the Director, Office of Inspection & Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, with a copy to the Region III Office of Inspection & Enforcement, U.S. Nuclear Regulatory Commission for the following:

6.4.1 Any incident for which notification is required in Immediate Notification & Twenty-four Hour Notification.

6.4.2 Each exposure of an individual to radiation or radioactive material in excess of any applicable limit set forth in 10 CFR 20 or the facility license.

6.4.3 Levels of radiation or concentrations of radioactive material (not involving excessive exposure of any individual) in an unrestricted area in excess of 10 times any applicable limit set forth or the facility license.

6.5 Reports

Each written report required by Sections 6.2, 6.3 and 6.4 shall contain the following:

6.5.1 The extent of exposure of persons to radiation or to radioactive materials.

6.5.2 The levels of radiation and concentrations of radioactive material involved.

6.5.3 The cause of the exposure levels or concentrations.

6.5.4 Corrective steps taken or planned to ensure against recurrence.

Any report filed with the NRC pursuant to this shall be prepared so that names of individuals who have received exposure to radiation will be stated in a separate part of the report with each individual's social security number, date of birth, and an estimate of the individual's exposure.

7.0 METHODS OF NOTIFICATION

7.1 Notification of Offsite Agencies

Notification of offsite agencies is included in the EPIP's. The offsite notification EPIP's provide for an established message authentication scheme for each emergency classification, guidance on assuring and verifying that each agency is notified, and an incident report form for each emergency classification. The incident report form provides for message verification and information for the initial and follow-up messages. The initial messages contain information about the location of incident, name and title of caller, date/time of incident, class of emergency, whether a release is taking place, potentially affected population and areas, and whether protective actions may be necessary. The follow-up messages contain the basic information from the initial message with the following additional information if it is known and appropriate: The type and form of any actual or projected radiological release; meteorological conditions; estimate of quantity of radioactive material released or being released; actual or projected dose rates at site boundary and at 2, 5, and 10 miles, including sector(s) affected; surface contamination predictions; emergency response actions in progress; recommended emergency actions, including protective measures; request for any needed onsite support by offsite organizations; and prognosis for worsening or termination of the emergency.

The notification of offsite agencies will begin within 15 minutes of the classification of a Site Emergency or a General Emergency. For other classes, the notification will begin within one hour. Figure 5-10 describes the primary notification and coordination of offsite agencies during emergencies. Communications capabilities are discussed in EP 7.0 of this Emergency Plan.

7.2 Notification of the General Public

The general public will be notified through normal methods including press releases and news conferences of the lesser emergency classification where protective actions are not required of the general public such as Unusual Event and Alert. In emergencies, which may require some protective actions to be taken by the general public such as some General Emergencies, notification will be accomplished by the Manitowoc County Sheriff's Department and the State of Wisconsin, Division of Emergency Government. The primary method of notifying residents in the affected area would be by a siren system as described in EP 7.0, Section 9.0, and police and emergency vehicles driving in

the area with "yelp" sirens on, mobile public address systems, and door-to-door personal contact. This notification procedure will commence with the population within the area of greatest risk and incorporating the balance of the population within the EPZ as required.

TABLE 5-1

CORRELATION BETWEEN NORMAL & EMERGENCY ORGANIZATION TITLES

Emergency Organization	Normal Organization	
Title	Title	Alternate Title
Emergency Director	Executive Vice President	Assistant Vice President
Emergency Support Manager	Assistant Vice President	Manager - NES
Emergency News Center Director	Vice President, Communications	Superintendent - Information Services
Administrative & Logistics Manager	Director, Purchasing	Manager - Procurement Section
Site Manager	Manager - PBNP	Designated Alternate or DCS
Plant Operations Manager	General Superintendent	Superintendent - Operations or DCS
Shift Supervisor	Shift Supervisor	Shift Supervisor
Shift Support Coordinator	Nuclear Plant Engineer - Operations	Shift Supervisor
Maintenance Supervisor	Superintendent - Maintenance & Construction	Assistant to Superintendent - Maintenance & Construction
Training Supervisor	Superintendent - Training	Training Supervisor
Security Supervisor	Security Supervisor	Administrative Specialist

Emergency Organization	Normal Organization	
Title	Title	Alternate Title
Technical Support Manager	Superintendent - Technical Services	Superintendent - EQRS or DCS
Data Processing Coordinator	Nuclear Plant Engineer (Reactor Engineering)	Nuclear Plant Engineer (Reactor Engineering)
Administrative Supervisor	Supervisor - Administrative Services	Supervisor - Staff Services
System Analysis & Procedure Support Coordinator	Superintendent - Reactor Engineering, NES	Senior Project Engineer, NES
Chemistry/Health Physics Supervisor	Superintendent - CHP	Superintendent - System Engineering, NES
Instrumentation & Control Supervisor	Superintendent - I&C	I&C Supervisor
Core Physics Coordinator	Superintendent - Reactor Engineering	Nuclear Plant Engineer (Reactor Engineering)
RadCon/Waste Manager	Superintendent - Regulatory Affairs, NES	Project Engineer - Radiological Design, NES
Radwaste/Technical Support Coordinator	Superintendent - System Engineering, NES	Project Engineer - Mechanical System Engineering, NES
Licensing Support Coordinator	Project Engineer - NES	Licensing Engineer, NES

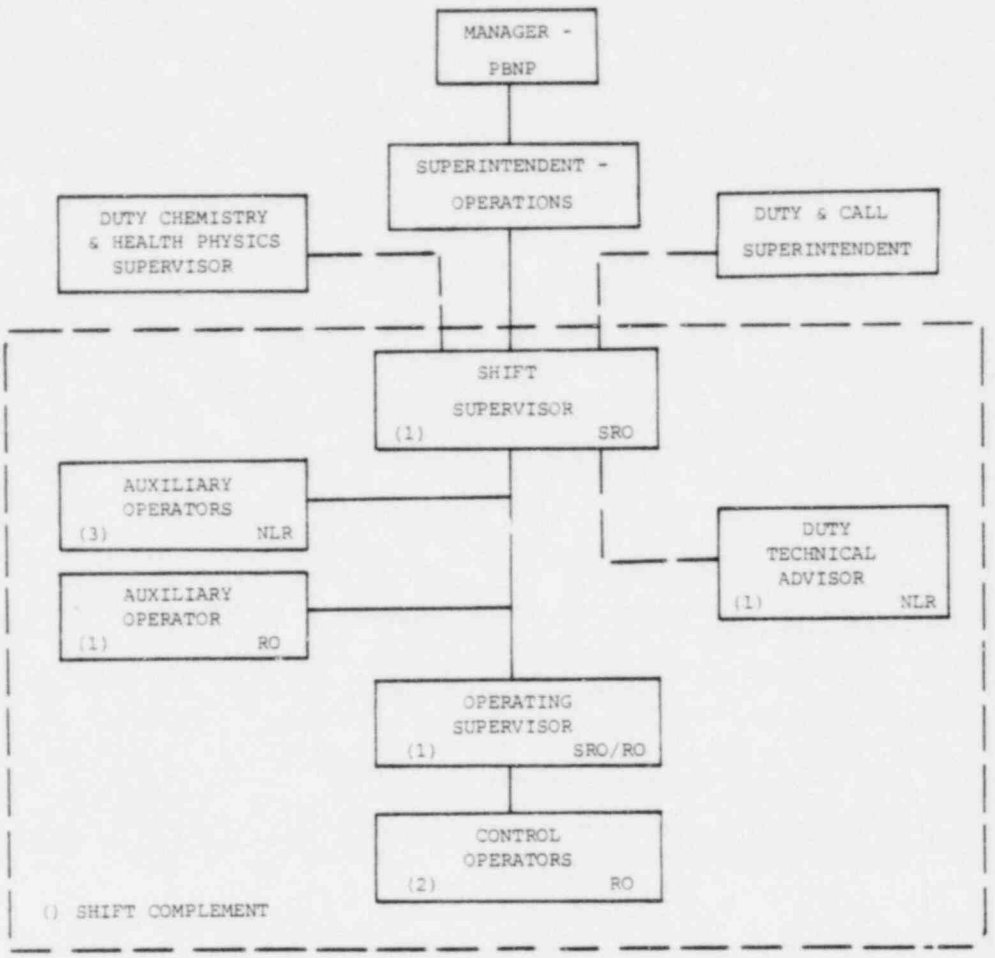
Emergency Organization	Normal Organization	
Title	Title	Alternate Title
Health Physics Director	PBNP Health Physicist	Senior Health Physics Supervisor
Design, Construction & Planning Manager	Manager - NES	Superintendent - Reactor Engineering or System Engineering, NES
Director, Quality Control	Superintendent - QAD	
Utility Engineering Director	Project Engineer, Mechanical System Engineering	

NOTES:

1. Duty & Call Superintendents (DCS), Technical Advisors (DTA), and other on-call supervision are not identified in this figure because the positions are filled not only by organization title but also by experience and other qualifications.

2. It is not intended to imply that either the personnel in the "normal organization" or the "alternate" are committed personnel to the extent that each position must be filled within one day. The personnel listed as filling the "emergency organization" are what one could expect in the long-term. Over the short-term the Assistant Vice President or Manager - Nuclear Operations can designate any qualified person to fill vacant positions.

3. It is not anticipated to have a person in the respective emergency centers for each "emergency organization" title 24 hours per day.



SRO - SENIOR REACTOR OPERATOR

RO - REACTOR OPERATOR

NLR - NO LICENSE REQUIRED

FIGURE 5-1

MINIMUM ORGANIZATION FOR NORMAL OPERATION

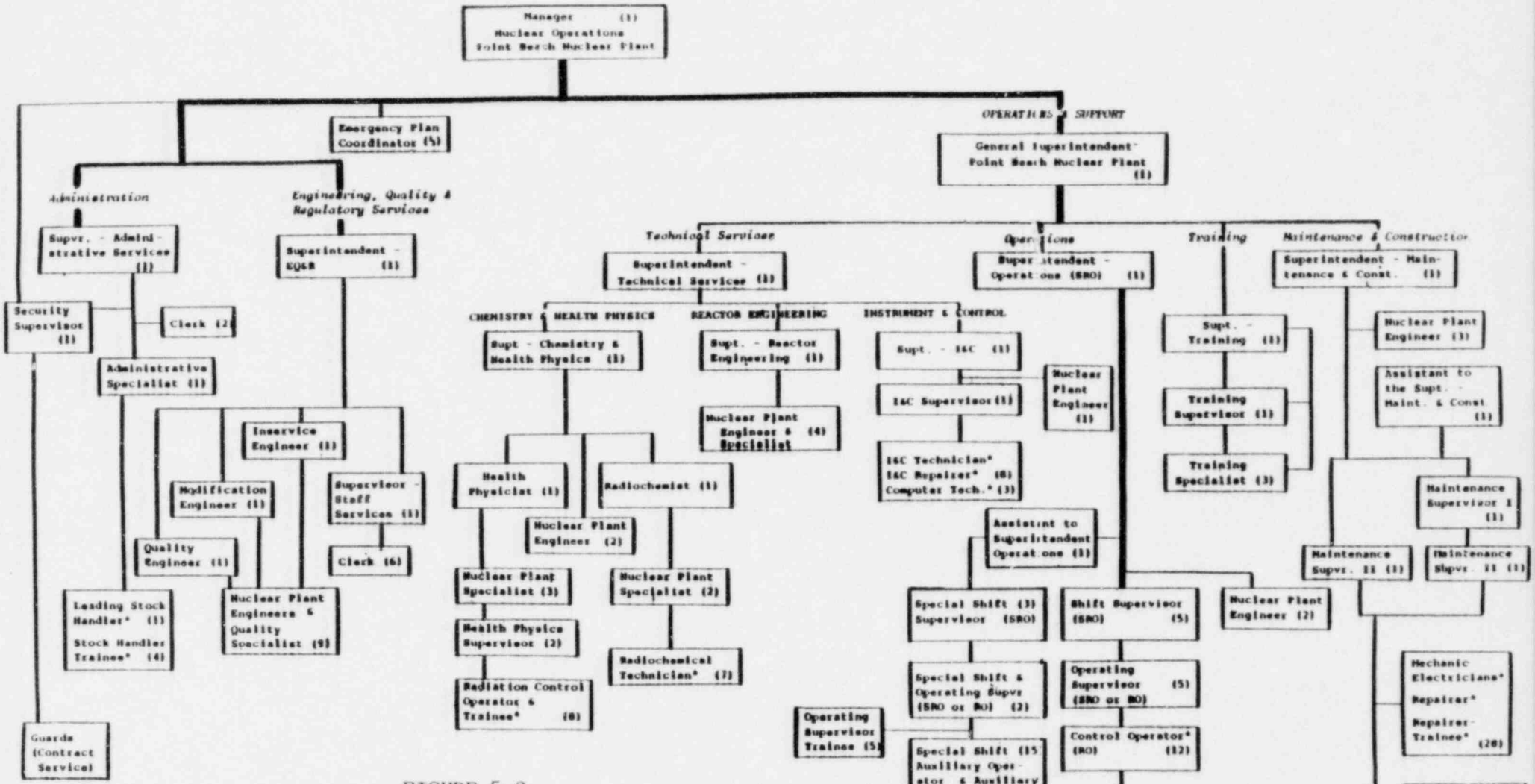


FIGURE 5-2

ORGANIZATION CHART
POINT BEACH NUCLEAR PLANT

EMERGENCY SUPPORT CENTER	TECHNICAL SUPPORT CENTER	OPERATIONS SUPPORT CENTER (STAGING AREA)	CONTROL ROOM	SECURITY BUILDING	SITE BOUNDARY CONTROL CENTER	EMERGENCY NEWS CENTER

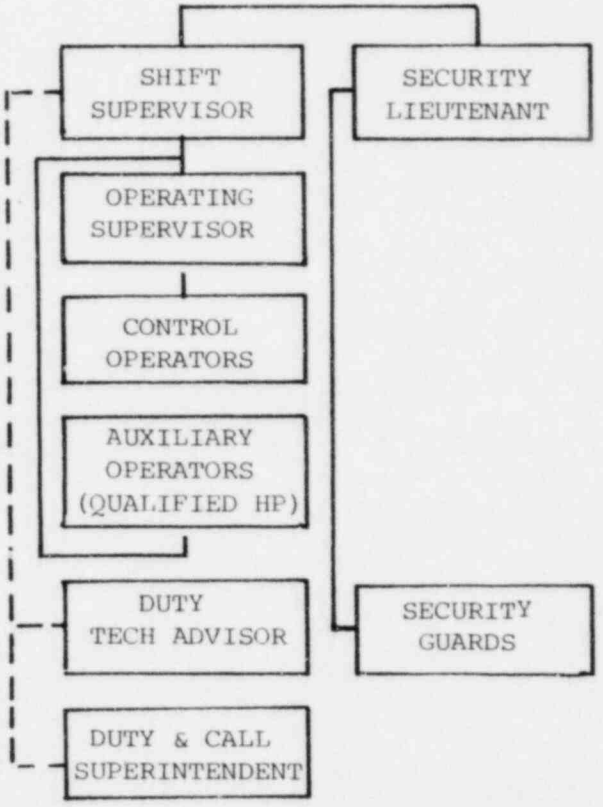
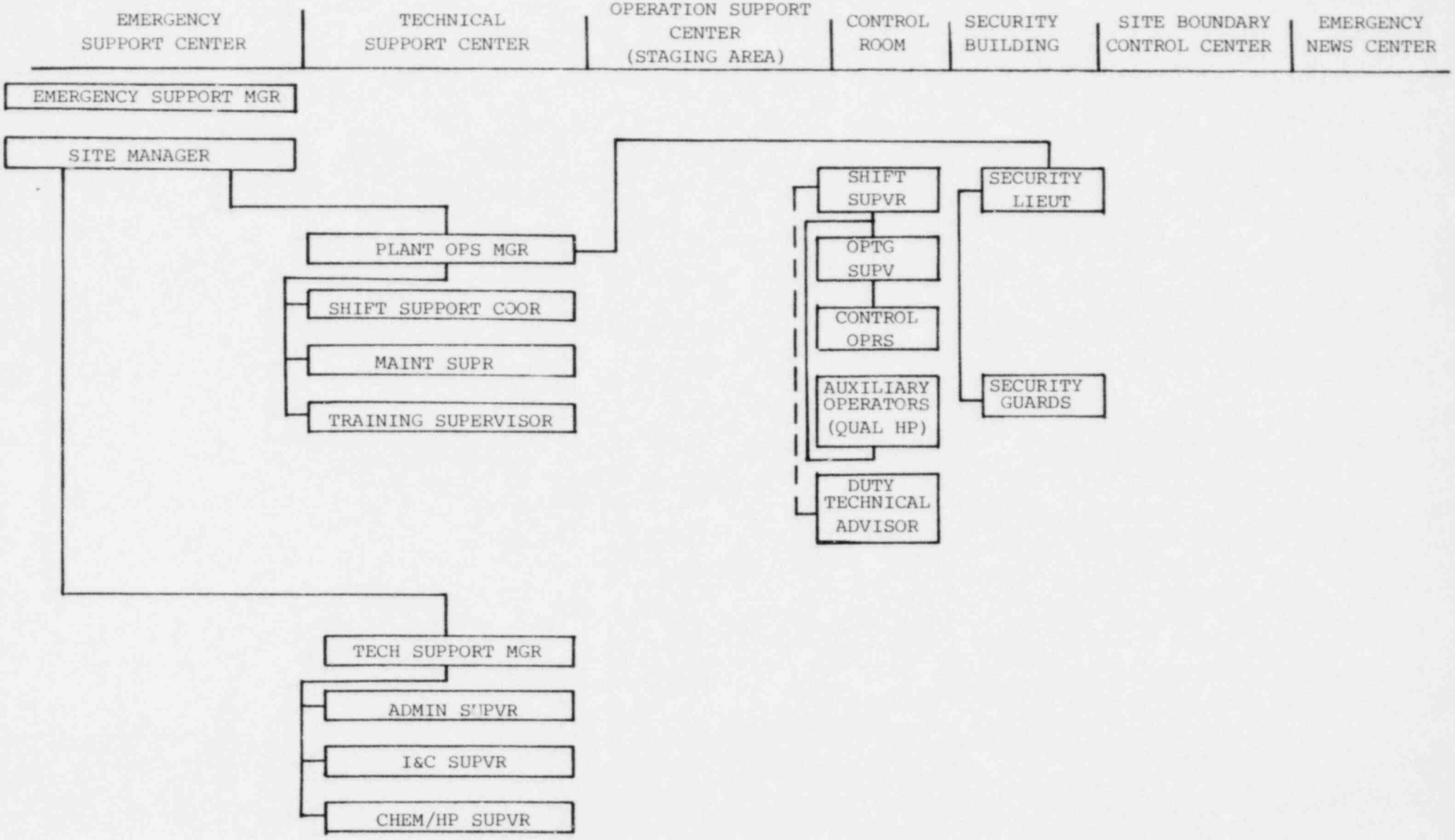


FIGURE 5-3

EMERGENCY ORGANIZATION - UNUSUAL EVENT

FIGURE 5-4

EMERGENCY ORGANIZATION - ALERT



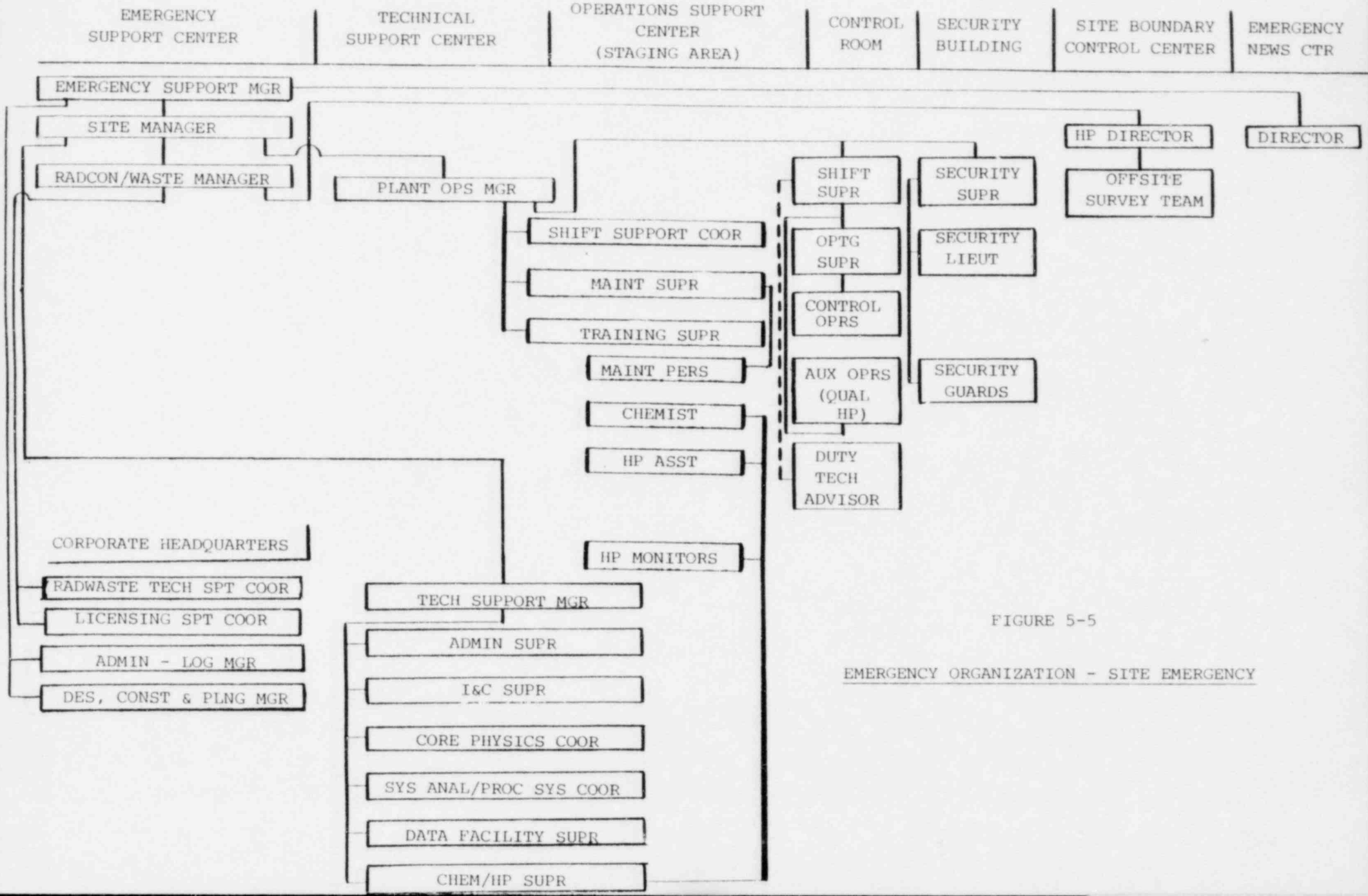


FIGURE 5-5

EMERGENCY ORGANIZATION - SITE EMERGENCY

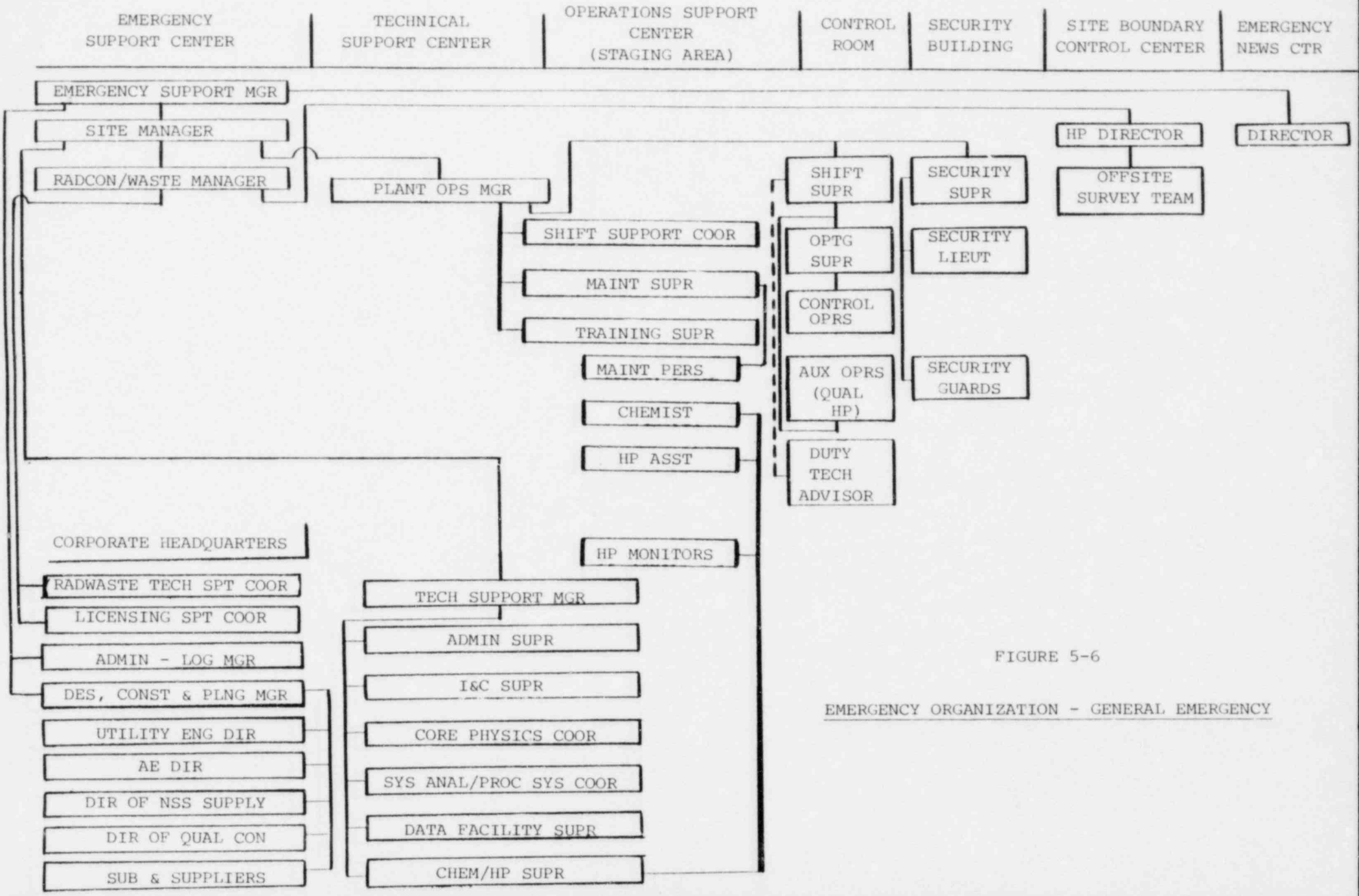


FIGURE 5-6

EMERGENCY ORGANIZATION - GENERAL EMERGENCY

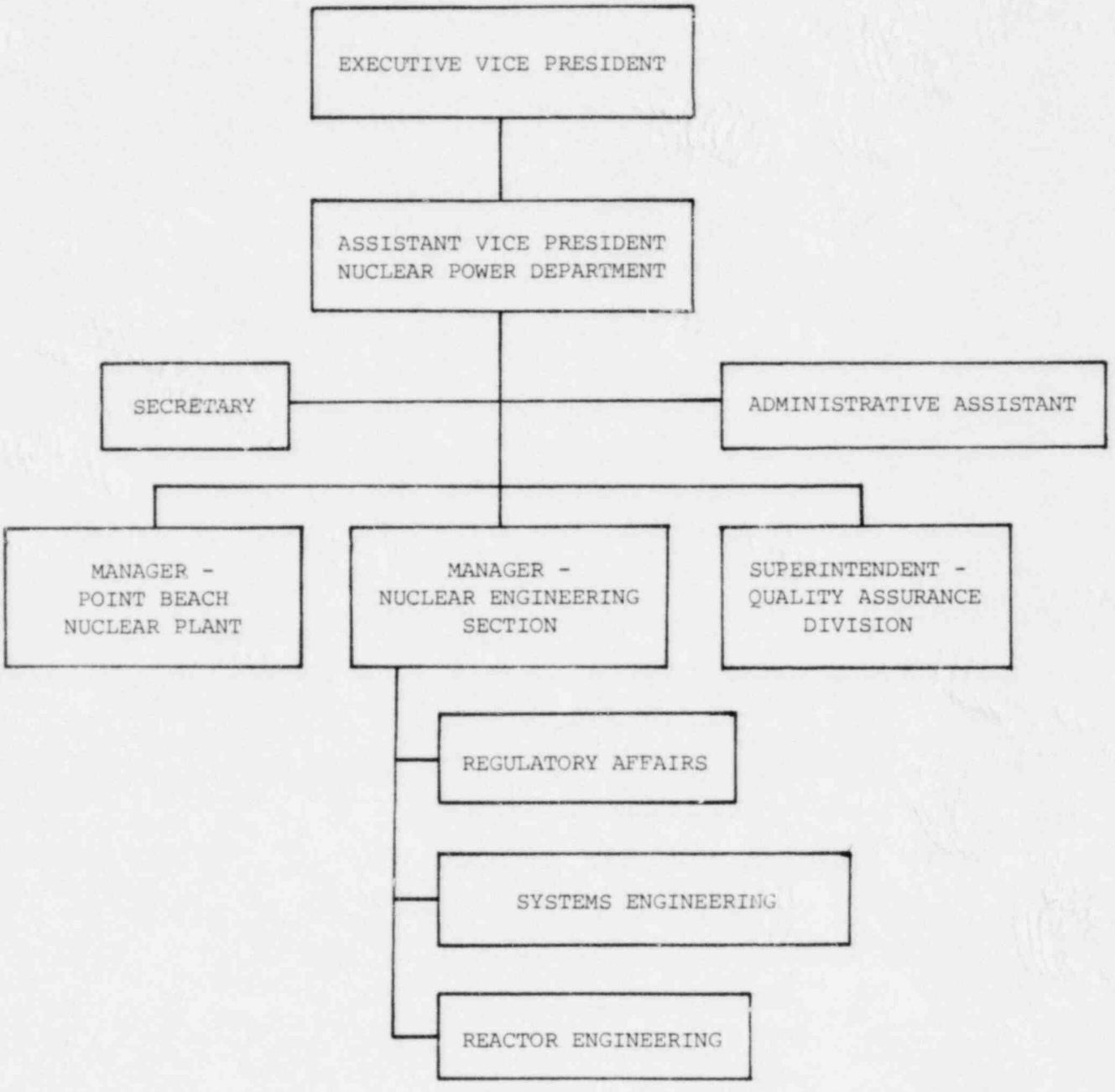
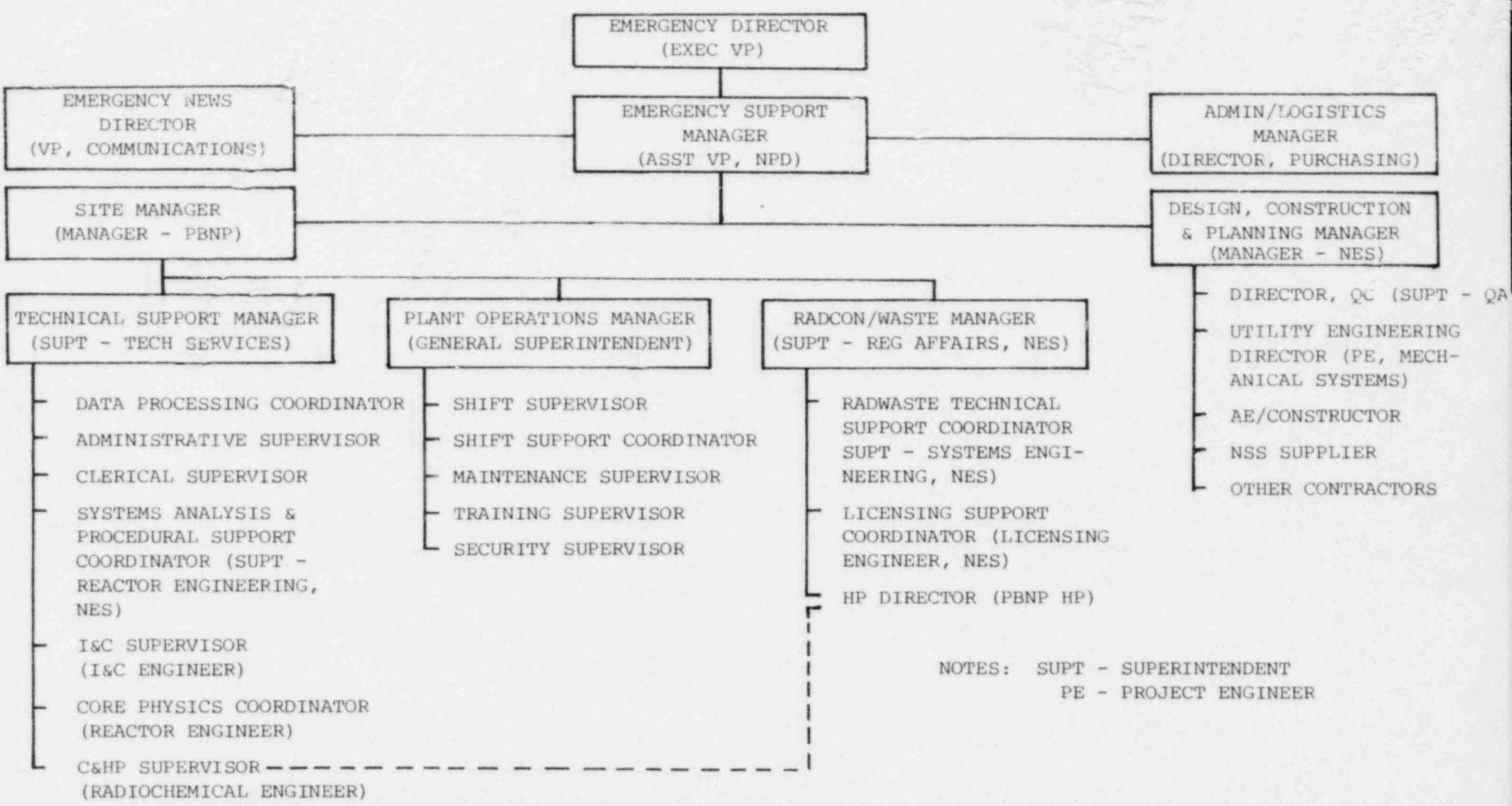


FIGURE 5-7

WE GENERAL OFFICE MANAGEMENT & SUPPORT ORGANIZATION

FIGURE 5-8

PBNP EMERGENCY ORGANIZATION[1]



(1) NORMAL ORGANIZATIONAL TITLES ARE SHOWN IN PARENTHESIS UNLESS OTHERWISE APPARENT.

(2) THE HEALTH PHYSICIST REPORTS TO THE C&HP SUPERVISOR FOR IN-PLANT HEALTH PHYSICS MATTERS AND TO THE RADCON/WASTE MANAGER ON OUTSIDE RADIOLOGICAL MATTERS; THE HEALTH PHYSICIST ALSO HAS AN OPTIONAL REPORTING LINE (NOT SHOWN) DIRECTLY TO THE SITE MANAGER.

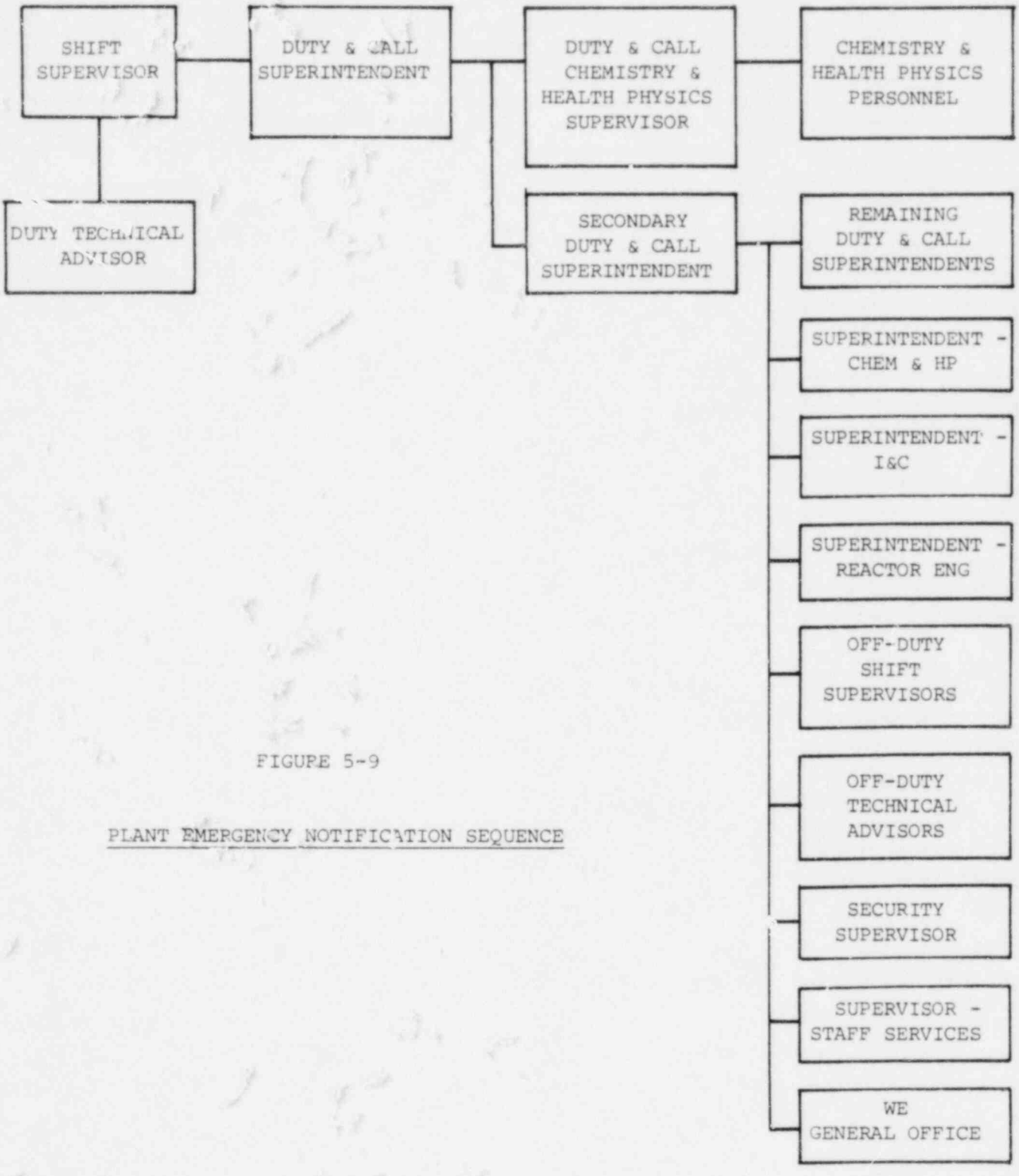


FIGURE 5-9

PLANT EMERGENCY NOTIFICATION SEQUENCE

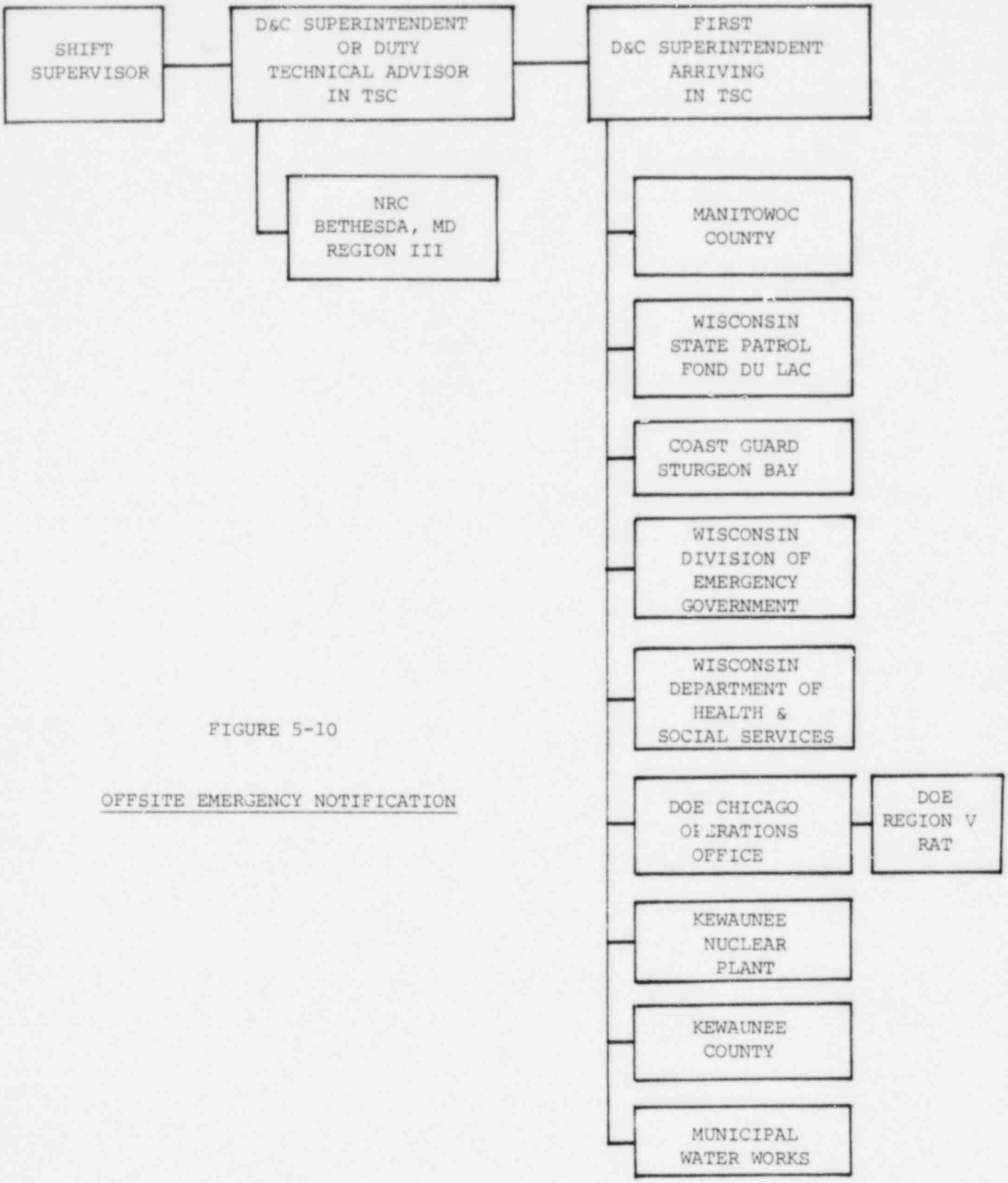


FIGURE 5-10

OFFSITE EMERGENCY NOTIFICATION

EMERGENCY MEASURES

1.0 DISCUSSION

Emergency measures begin with the identification and classification of an emergency and the activation of the appropriate emergency organization. Emergencies are classified in four distinct classes. Definitions for each class, criteria for classifying emergency situations, and examples of emergencies falling in each class are described in EP 4.0. The initial corrective and protective actions are recommended. The details of these various emergency measures are contained in the plant's EPIP's. A general outline of the method and format is presented here.

2.0 ACTIVATION OF EMERGENCY ORGANIZATION

The four classes of emergencies defined in EP 4.0, Sections 1.1 through 1.4 require a varying degree and scope of emergency organization. The emergency organizations for each class are depicted in Figure 5-3 through Figure 5-6. These figures have been designed to show titles of emergency personnel and the places to which they report during each classification of emergency. The function and responsibilities of these personnel are more fully described in EP 10.1.

The various emergency classifications can occur individually or in some order of progression over a period of time. The onsite emergency organization will be activated when the emergency is announced on the public address (Gai-tronics) system. The public address announcement will include the location and the classification of the emergency. Initially, the emergency organization will consist of the normal operating shift plant personnel who are qualified as emergency team members. Additional emergency team members, plant staff personnel are readily available during normal working hours and on a call-in basis during other than normal working hours per Figure 5-9. Activation of offsite emergency organizations will be accomplished in accordance with the severity of the emergency class. EPIP's provide for predetermined message formats for notification of offsite agencies, in conjunction with an established message authentication scheme for each emergency classification. The overall offsite notification of supporting groups and agencies is shown in Figure 5-10.

3.0 ASSESSMENT ACTIONS

3.1 Responsibility for Assessment

Effective coordination and direction of all elements of the emergency organization require continuing assessment throughout the duration of

the emergency situation. The assessment of plant conditions, radiation levels, and offsite consequences is initially coordinated by the Shift Supervisor and the Plant Operations Manager (DCS). The Shift Supervisor is in direct charge of all emergency operations until a DCS arrives at the plant. At this time, the DCS's emergency organization title becomes the Plant Operations Manager, and joint responsibility and decision-making by these two persons, (Plant Operations Manager and Shift Supervisor) shall prevail.

The assessment of emergencies can usually be accomplished by the normal operating shift under the direction of the Shift Supervisor. However, other members of the plant staff, including the use of the emergency organization as described in EP 5.0, Section 2.0, will be called upon as required. Technical services and support will be obtained from the combination of WE general office personnel, plant staff personnel, and outside support organizations as necessary and appropriate.

3.2 Types of Assessment Actions

The different types of assessment actions are described in Table 6-1. The details of the assessment function are incorporated in the EPIP's for each emergency classification. Continued assessment will be performed as required, with updating of offsite response agencies. In addition, the results may require additional notifications, emergency actions, or reclassification of the accident.

3.3 Methods of Assessment

Accidents involving releases of radioactive materials to the environment require special methods of assessment to ensure that responses are appropriate for the protection of the population-at-risk as well as plant personnel. The plant has an extensive system for monitoring radioactive materials released to the environment (e.g., liquid process, containment purge exhaust and auxiliary building ventilation exhaust, air ejector vent monitors). As a general requirement, the various process monitors are capable of initiating appropriate alarms or actuating control equipment to provide containment of radioactive materials if pre-established limits are reached. These systems will allow for monitoring releases of radioactivity during accident conditions. In any accident condition where releases are not monitored or able to be monitored, emergency procedures provide the basis for calculating theoretical worst case release rates corresponding to a design basis accident described in the PBNP, FFDSAR.

In addition, the site has a permanent meteorological installation so that wind speed and direction, as well as standard deviation of wind direction, are recorded continuously in the control room. In the event the above instrumentation is inaccessible or inoperative, such information can be obtained from Kewaunee Nuclear Power Plant, the local Coast Guard Station, or the National Weather Service.

The methodology and technique used to predict the offsite concentration of radioactive noble gases and iodine are as follows:

On determination of any emergency or potential emergency condition anticipated to have significant offsite dose consequences, a procedure is initiated to project doses. The Site Manager is responsible for ensuring that the appropriate EPIP's are performed. These concentration levels will be verified by offsite monitoring teams deployed with portable radiological and communications equipment. This information will aid State and local authorities in evaluating emergency action responses.

4.0 CORRECTIVE ACTIONS

Plant procedures contain steps to take corrective actions in order to avoid or mitigate serious consequences. Operator training is a vital factor in ensuring that corrective actions are taken in an expeditious manner. The instrumentation, control system monitors, and radiation monitoring system provide indications used by the operators to regulate systems necessary for the safe and proper operation of the plant.

These systems provide the operator with the information and controls needed to start up, operate at power, and shut down the plant. The systems also provide the means to cope with abnormal operating conditions should they occur. Control of systems and display of information from these various systems are centralized in the control room. This instrumentation provides a basis for initiation of corrective actions.

When necessary, the following additional corrective actions can be implemented during emergency situations:

4.1 Fire Fighting

Detailed procedures for responding to fire situations are defined in the PBNP Fire Protection Manual. The Fire Protection Manual describes detailed instructions on fire protection and fire fighting with the fire protection organization and individual responsibilities. If outside assistance is needed, the Two Creeks Fire Department would be called in to assist in extinguishing the fire.

4.2 Damage Control & Repair

For minor emergencies, the plant personnel will normally be able to handle the cleanup, repair, and damage control. For major emergencies, the support of other Company personnel or specialized outside contractors may be required to assist in the damage control, cleanup, and repair operation. Emergency response operations will be handled with the assistance of agencies available for that purpose.

Exposure to personnel during corrective actions should be controlled as stipulated in EP 6.0, Section 6.1.

5.0 PROTECTIVE ACTIONS

The EPIP used in classifying emergencies has predetermined EAL's that, when met or exceeded, will require protective actions to be taken. In addition, the Shift Supervisor and/or a DCS may initiate EPIP's as they determine necessary. EPIP's include assessment actions, corrective actions, and protective actions as appropriate. Protective actions will ensure that personnel, both on and offsite, will be notified and actions initiated for their protection in the event radiation or airborne activity levels from a radiological emergency onsite may exceed predetermined values, or when other situations threaten personnel safety.

Protective actions taken within the exclusion area are the responsibility of the Site Manager and Shift Supervisor, while those taken offsite beyond the exclusion area fall under the jurisdiction of the State of Wisconsin Division of Emergency Government with the resources of the State Division of Health & Social Services, Radiation Protection Section and the Manitowoc and Kewaunee County Emergency Governments. Recommendations of protective actions to be taken offsite will be made only by the Emergency Support Manager.

5.1 Protective Actions, Evacuation, & Personnel Accountability

This subsection provides for the timely relocation of individuals to prevent or minimize exposure to direct or airborne radiation hazards.

5.1.1 Exclusion Area

a. Exclusion Area Criteria

Protective actions for personnel onsite will be taken when a radiological emergency has occurred, or may occur, which will result in concentrations of airborne activity or radiation levels that exceed normal limits for a specific area or areas and cannot be readily controlled. In addition, protective actions will be taken for onsite personnel in such situations as fires, meteorological danger, etc., where personnel safety is threatened.

b. Notification & Response Time

The actuation of fire alarms, radiation alarms, plant evacuation alarm, telephone calls, and public address (Gai-tronics) announcements, as applicable, will alert onsite personnel to hazardous conditions and to actions they must take. Such actions may be to assemble in emergency teams, to report to assembly areas, to evacuate specific areas within the plant, or to evacuate the plant. Table 6-2 describes the assembly areas for onsite personnel which could include plant personnel, contractor personnel, and visitors to protect them from direct radiation or airborne hazards according to evacuation classification. The means and time required to

notify the above personnel are delineated as follows: Approximately two minutes are required in the control room to determine that an accident has occurred. In addition, it is conservatively estimated that eight minutes are required to determine local severity of the accident. Indications of importance for identification and assessment include pressurizer pressure, pressurizer level, containment pressure, and automatic initiation of safety injection. Therefore, the best estimate for initial notification of onsite personnel would be approximately 10 minutes or greater, depending on instrumentation response and assessment capability at the time of the incident. It is important to note that most credible accidents in a nuclear power plant develop slowly and "defense-in-depth" concepts delay the release of significant amounts of radioactivity.

c. Security & Site Access Control

The security program at PBNP is designed to deter, detect, and delay an intruder. The plant protected area is enclosed by a standard security fence. Plant personnel reporting to the plant during an emergency will assemble at the OSC (staging area). Personnel required to enter the protected area pass through the gatehouse at the entrance of the security fence. Security personnel will control access, log incoming personnel, and provide assistance, as required or requested. In the event these areas are uninhabitable, security control will be performed at the SBCC.

Provisions to restrict access to areas of the site outside the fenced protected area will be accomplished under the direction of the Shift Lieutenant. The Shift Lieutenant will assign a security force to control access to the plant property by barricading and manning the site roads with appropriate placement of lights, chains, traffic cones, padlocks, and gates. Access control will be performed with the aid and cooperation of the Manitowoc County Sheriff's Department as well as assistance from the Wisconsin State Patrol and the United States Coast Guard.

Plant security procedures are referenced in the EPIP's for various emergency situations (see Appendix "I").

d. Evacuation & Relocation

Evacuation at PBNP will depend on the nature of the emergency and the extent of the area affected. The Shift Supervisor will initiate any plant evacuation and

any limited plant evacuation. These evacuations will be made after careful consideration of the benefits and the risks involved. The details of the responsibilities and functions for plant personnel during an evacuation of the protected area are included in the EPIP's. In general, evacuations will be in accordance with the following guidelines:

(1) A limited plant evacuation will be considered when any of the following conditions exist:

(a) Unscheduled area radiation monitor high-level alarm.

(b) Unscheduled containment evacuation alarm.

(c) Unevaluated airborne radioactive concentrations in excess of the MPC's specified in Appendix B to 10 CFR 20.

(d) Excessive radioactive surface contamination levels (HP personnel may require evacuation of rooms, areas, or the affected portions thereof).

(e) Other emergency conditions, such as fire, that may endanger human life or health.

The criteria for these radiation levels and alarms do not apply to anticipated increases or alarms resulting from planned operations.

When a limited plant evacuation is ordered, personnel in the room, area, or building will proceed in accordance with the EPIP's, or as directed over the public address system. If evacuation is from areas within the controlled area, personnel will proceed to the HP station for accountability and radiation monitoring.

(2) A plant evacuation will be considered when the conditions that require a limited plant evacuation are not confined to a building of the plant, or when general area radiation levels outside of the controlled area exceed prescribed limits. In addition, a plant evacuation could be initiated following a limited plant evacuation if a hazard continues to increase in severity or spreads to other areas or the Shift Supervisor

deems it necessary to evacuate nonessential personnel from the plant. When a plant evacuation is ordered, personnel inside the protected area will proceed as follows:

(a) Visitors, the public on the beach and fishing pier, and contractor personnel will proceed to the SBCC where personnel accounting and monitoring for contamination will be accomplished.

(b) Duty shift operations personnel will report immediately to the control room and remain there until instructed otherwise.

(c) Essential personnel with assigned emergency duties shall proceed to the TSC or preassigned locations as previously directed.

(d) All other Company personnel with no assigned emergency duties shall proceed to the OSC assembly area located at El. 18.5' of the TSC building.

Individuals who do not have an emergency assignment may be released at the onsite OSC after radiation monitoring and personnel accounting have been completed.

e. Personnel Accountability

Personnel accountability is the responsibility of plant supervision with the coordination of the Security Supervisor. During an emergency situation which requires personnel in the plant to evacuate to the various support centers, the group supervisors are responsible for assuring that all personnel are accounted for and the results reported to the TSC. The security guard will furnish a list of all visitors and construction personnel to ensure complete accountability. If personnel are unaccounted for, teams will be dispatched to locate, and, if necessary, rescue the personnel. Personnel accountability procedures will be included in the EPIP's (see Appendix "A").

f. Monitoring Evacuees

All individuals within the protected area of the plant are required to have in their possession personnel monitoring devices capable of measuring the dose received from external sources of ionizing radiation. These devices consist of thermoluminescent dosimeter (TLD) for permanent record and/or a pocket dosimeter for day-to-day indication of external radiation exposures. A combination of checking dosimeters and questioning of evacuees will be used to determine if there were any significant external exposures involved in the emergency. For any known or suspected overexposures, the TLD's will be read as soon as possible, and further investigation will be conducted to determine the amount of exposure and the necessary action to be taken.

If normal contamination control is not possible, monitoring for contamination and internal exposure at the SBCC and OSC will be accomplished by using portable instrumentation and questioning. Any persons suspected or known to have ingested or inhaled radioactivity will be whole body counted as soon as conditions permit to assess internal exposure.

5.1.2 Offsite Area

a. Action Criteria

Required protective actions for offsite areas are discussed in the State and local plans. As mentioned, the plant shall classify the accident (EP 4.0, Section 1.0) and notify the Federal, State, and local authorities. The State plan has adopted the U.S. Environmental Protection Agency's Protective Action Guides for initiating actions to protect public health and safety. These are given in Table 4-2. The local communities and State agencies have detailed plans for activating their agencies and taking various protective actions and performing social services. Any recommendation of protective actions for people offsite will come only from the Emergency Support Manager.

The criteria for determining protective action strategies to be taken in areas beyond the plant exclusion area encompass a number of factors and considerations. The determination of what emergency protective actions should be implemented in any given accident situation must be based on the actual plant conditions that exist or that are projected at the time of the accident, with the consideration of weather conditions, local protection factors for typical residential units, evacuation

times, release potential and projected or potential doses. Therefore, the effective means in utilizing and applying protective actions in the event of an accident is an important consideration to reduce radiation exposure to the general public.

There are various types of protective actions that can be taken which include the following:

a. Population sheltering

b. Evacuation

c. Controlling food, milk, and water distribution

d. Prophylaxis (e.g., thyroid protection)

e. Individual protective actions (e.g., respiratory protection equipment and protective clothing)

Table 6-3 lists protective actions that may be recommended for various accident phases and approximate time periods as a function of exposure pathways following an initiation of an accident. This information should be useful for appropriate State and local agencies in making value judgments that are necessary to plan actions in limiting the radiation exposure to the general public during an emergency at PBNP.

(1) Sheltering & Evacuation

Protective actions such as sheltering and evacuation can provide protection for the public against exposure to gaseous radioactive fission products released during an accident at PBNP. Evacuation of the population in the plume exposure pathway to minimize public exposure to a passing radioactive material could be potentially 100% effective. However, the protective action of population sheltering may be more appropriate at the time of the accident with the consideration of such factors as weather conditions, wind direction, roadway conditions, duration and type of exposure, and projected or potential doses to the population.

(2) Shielding

Shielding estimates for several distinct building types have been made by using currently available shielding technology. Table 6-4 through Table 6-6

present these estimates and indicate the wide range of potential shielding factors afforded by normally inhabited structures, and that basements of both homes and large buildings offer very effective shielding against radiation. The shielding effectiveness of a structure is expressed in terms of a shielding factor which is the ratio of the dose received inside the structure to the dose that would be received outside the structure. The benefits of population sheltering can be maximized by recommending that windows and doors of homes be closed and sealed, and ventilation systems turned off to minimize the turnover rate of air within the building.

(3) Exposure Pathways

If there was an atmospheric release of radioactive materials, doses to the public could occur by external radiation as the cloud passes, by exposure to external radiation from radionuclides deposited on the ground and other surfaces, or by internal exposure due to inhalation or ingestion of radionuclides. Levels in excess of accepted protective action guides would generally occur closer to the source so that the protective actions could be recommended on a two-phased approach. The first phase would be to evacuate those individuals in these closer areas (i.e., within a 2-mile radius), while the second phase could be a recommendation to take shelter and institute food, water, and milk control since the need for evacuation versus sheltering in the 2- to 10-mile area may not be evident. However, beyond 10 miles there is little apparent distinction between the effectiveness of evacuation and sheltering in terms of minimizing projected health effects.*

The protective actions discussed above are only a few of the alternate courses of action which could be taken in a radiological emergency.

*Examination of Offsite Emergency Protective Measures for Core Melt Accidents. Aldrich, D. C., McGrath, P. E., Ericson, D. M., Jr., and Jones, R. B., of Sandia Laboratories, Alburquerque, New Mexico, and Rasmussen, N. C., Department of Nuclear Engineering, M. I. T., Cambridge, Massachusetts, as presented at the American Nuclear Society Topical Meeting on Probabilistic Analysis of Nuclear Reactor Safety, May 8-10, 1978.

b. Company Responsibilities During an Offsite Emergency

The responsibilities of the Company during an offsite emergency include the following:

(1) To provide the best possible effort to resolve the emergency onsite and thus alleviate the offsite conditions.

(2) To notify participating agencies in accordance with Figure 5-10. In addition, the Company will provide the best possible information, recommendations, and support services to these agencies in the least practicable time.

(3) To coordinate the Company's action with those of Federal, State and local agencies involved in offsite aspects of the emergency.

(4) To continue assessment of conditions throughout the emergency and provide current information to those concerned, as it becomes available.

c. Participating Agency Responsibilities

Participating agency responsibilities are denoted in EP 5.0, Section 5.0 and are further explained in the letters of agreement shown in Appendix "D."

e. Notification & Response Time

Notification of businesses, property owners and tenants, school administrators, recreation facility operators, and the general public within the EPZ's will be accomplished by local and State authorities as described in their response plans. An integrated siren system and the Emergency Broadcast System (EBS) will be used to notify the general public of an emergency requiring protective action. The State of Wisconsin has the responsibility of activating the integrated system including messages on EBS. These messages will include protective action instructions as well as general information concerning emergencies. The siren system controls are maintained and operated by the Sheriff's of Manitowoc and Kewaunee counties. The siren system is tested periodically. The details of the means and the times to evacuate the above persons are discussed in Appendix "J."

5.2 Use of Onsite Protective Equipment & Supplies

The use of protective equipment and supplies, as presented in Table 6-7, will be used to minimize external and internal radiological exposure and contamination to individuals on and offsite. Typical emergency

equipment lists are presented in Appendix "H." Detailed procedures on the use of protective equipment and supplies are incorporated in the Health Physics Administrative Control Policies & Procedures Manual and the EPIP's (see Appendix "I").

5.3 Contamination Control Measures

5.3.1 Exclusion Area

Measures will be taken to prevent or minimize direct exposure to or ingestion of radioactive materials within the onsite areas of the exclusion area. The details of the contamination control measures for onsite areas are contained in the Health Physics Administrative Control Policies & Procedures Manual at the plant. The following is a brief outline of these procedures:

a. Controls have been established at the plant to ensure that routine levels of removable contamination outside the boundaries of the controlled area are maintained below 100 dpm/100 cm^2 beta-gamma activity and nondetectable for alpha activity. Fixed surface contamination limits are 0.1 mRem/hr measured at one inch from surface for beta-gamma and 50 cpm as read by PAC-1SAGA survey instrument for alpha.

b. All tools and equipment used in the controlled area are checked for contamination before being taken from the controlled area. If the item is found to be contaminated and decontamination is not practical, the item remains controlled. Equipment and tools are unconditionally released for use outside the area if removable contamination and radiation levels are less than the allowable limits previously stated in EP 6.0, Section 5.3.1.a.

c. Removal of material and equipment from the controlled area with radiation and contamination levels in excess of the allowable limits must be approved for "conditional" release by HP personnel. Any item approved for "conditional" release will be packaged, sealed, labeled, and handled in accordance with applicable regulations to prevent the release of any contamination.

d. Personnel working within the controlled area are monitored by HP personnel. Radiation work permits (RWP's) are required by all personnel working in high radiation areas or contaminated areas. Specific instructions, precautions, and limitations are listed on the RWP.

e. Protective clothing is required to be worn by all individuals entering a contaminated area. Individuals leaving the controlled area are monitored for contamination before entering the clean area of the plant.

f. The quarterly integrated accumulation of radionuclides in the body shall not exceed that which would result from exposure to the maximum permissible concentrations (MPC's) of radionuclides in air or drinking water for occupational exposure as indicated in 10 CFR 20.103. In general, exposure to airborne concentrations higher than the MPC's are prevented or avoided to the extent practicable, but if exposures are necessary, the wearing of appropriate, properly fitted, respiratory protective equipment is required as determined by an HP Supervisor. Periodic air samples are taken in selected operational and work areas to ensure that MPC levels are not exceeded.

Decontamination following a radiological emergency will be conducted in accordance with approved EPIP's or approved routine HP procedures.

5.3.2 Offsite

For areas beyond the exclusion area, the State of Wisconsin Division of Emergency Government with the resources of the Division of Health & Social Services, Radiation Protection Section, is responsible for assessment and evaluation and will determine protective actions to be taken within the EPZ's. The State of Wisconsin Radiological Response Team(s) will identify levels and control access within the affected area. Other State agencies shall take actions, as necessary, under the direction of the Administrator of the Division of Emergency Government, to assess and control the dairy and agricultural products within the affected area. In addition, the Administrator of the Division of Emergency Government, along with principal supportive State agencies, will provide advisory information regarding the use of potentially affected home food and water supplies throughout the EPZ. These State agencies will also be responsible for ensuring that contamination levels are below the established criteria before normal use is restored.

Table 6-8 provides guidelines and recommendations for use by appropriate State and local agencies involved with response planning. This includes radiation protection activities involving protection against ingestion of contamination from the release of radioactivity to the environment. This table describes action levels and recommended protective actions for ground, food, milk, and water contamination control.

6.0 AID TO AFFECTED PERSONNEL

Provisions have been made to assist personnel who are injured or have received high radiation exposures. Company employees and some contractor personnel are trained in first aid and radiation protection procedures.

First aid and decontamination facilities are available onsite and offsite, and necessary transportation services are also available. The following subsections describe measures to be used to provide any necessary assistance.

6.1 Emergency Personnel Exposure Criteria

All personnel permanently employed at PBNP are issued a thermoluminescent dosimeter (TLD). Most also have a pocket dosimeter. Normal operating procedures require that these devices are picked up at the gatehouse and worn within the protected area. These requirements and associated normal procedures ensure that all plant personnel will have a monitoring device in the event of any plant emergency. It is the responsibility of HP personnel to ensure issuance of personnel monitoring devices to nonplant personnel whose services may be utilized during an emergency. Personnel monitoring devices are available at the HP station, gatehouse, and the SBCC.

In all situations, every reasonable effort will be made to minimize exposure to emergency personnel. In the event of injuries, fires, or minor radiation incidents, the limits set forth in 10 CFR 20, Section 20.101 shall apply. In addition, the customary PBNP administrative radiation exposure limits will be observed. These limits are summarized in Table 6-9. In the event of major radiation emergencies, administrative limits may be suspended by the Site Manager or his designated representative upon the recommendation of the Health Physics Director. In some situations, it is possible that certain activities or duties for the protection of persons or the substantial protection of property may result in whole body doses of 25 Rem when immediate action is required. When circumstances allow time and planned actions to be taken, the expressed approval of the Health Physics Director or Chemistry/Health Physics Supervisor and the Site Manager or his designated representative shall be obtained by emergency workers prior to exceeding doses in excess of PBNP administrative limits and 10 CFR 20 limits. When circumstances do not allow time for planned actions, an attempt should be made to obtain approval from a group supervisor trained in HP procedures and a senior manager to exceed doses in excess of PBNP administrative limits and 10 CFR 20 limits. The Health Physics Director, Chemistry/Health Physics Supervisor, and group supervisors are responsible to wisely allocate allowable exposure to emergency workers in excess of occupational limits. Individuals who have been exposed to more than 25 Rem to the whole body shall be removed from further emergency duty and referred to a physician for attention. Decisions to accept doses in lifesaving situations in excess of specified limits will be on a volunteer basis, and left to the judgment of the Health Physics Director and Chemistry/Health Physics Supervisor if available. However, it is suggested that voluntary lifesaving exposures should be restricted to 100 Rem to the whole body. The prospective volunteer should be made aware that whole body doses in the order of 100-200 Rem may result in radiation sickness, and whole body doses in excess of

200 Rem involve a risk of fatality. The volunteer should avoid risk in cases where the victim's exposure is known to be at a fatal level or the victim is already fatally injured from an accident. After completion of lifesaving efforts, personnel who have been exposed to greater than 25 Rem to the whole body will be removed from further emergency duty and referred to the care of a physician.

The emergency exposure criteria for nonplant personnel and volunteers involved in providing first aid, decontamination, ambulance service, and medical treatment to injured persons shall be limited to the following criteria:

6.1.1 In the event of injuries, fires or minor radiation incidents:

a. Nonplant personnel are evacuated from the area and denied reentry except for medical and fire personnel.

b. Medical and fire personnel may be exposed to limits specified in Table 6-9 and 10 CFR 20.

6.1.2 In the event of a major radiation emergency such as some Site Emergencies, the provisions of emergency exposure criteria that were set for plant personnel shall be applied to assisting nonplant personnel in the emergency response effort. When an assisting agency, e.g., DOE Region V Radiological Assistance Team or State of Wisconsin Section of Radiation Protection, has its own emergency plan, the provisions of that agency's plan shall apply to that agency's personnel.

6.1.3 Emergency Exposure Criteria for Airborne Concentrations

In the event of an emergency, exposure to airborne concentrations of radioactivity shall be limited by the following:

a. In the event of injuries, fires, or minor radiation incidents, normal plant limits apply. The 7-consecutive-day integrated accumulation of radionuclides in the body should not exceed that which would result from exposure to the MPC's of radionuclides in air for occupational exposure as listed in 10 CFR 20, Appendix B, Table I. The MPC's then, for breathing air, are the same as listed in 10 CFR 20 except as may be provided by:

(1) In any 7-consecutive-day period where the planned numbers of hours of exposure will be less than 40, the limits specified in 10 CFR 20, Appendix B, Table I may be increased proportionately.

(2) In any 7-consecutive-day period where the planned number of hours of exposure will be greater than 40, the limits specified in 10 CFR 20, Appendix B, Table I shall be decreased proportionately.

(3) Respiratory protection and stable iodine shall be used whenever appropriate to control inhalation doses (See Section 6.5 for details on administering thyroid-blocking agents).

(4) Limits for exposure to Xe-133 and other noble gases are based on beta plus gamma dose limits to the skin.

b. In the event of a major radiation emergency such as some Site Emergencies, exposure to airborne concentrations of radioactivity shall be limited by the following:

(1) Whenever practicable, total exposure of any individual during an emergency should be limited to 40 MPC-hours. MCP-hours are simply calculated by multiplying the concentration in terms of the number of MPC's by the total time of exposure.

(2) If emergency operations demand, total exposure of any individual shall be limited to 1,200 MPC-hours. This is roughly equivalent to the 3 Rem/quarter limit for external radiation exposure.

(3) Respiratory protection and stable iodine shall be used whenever appropriate to control inhalation doses (See Section 6.5 for details on administering thyroid-blocking agents).

(4) Limits for exposure to Xe-133 and other noble gases are based on beta plus gamma dose limits to the skin.

(5) It is the responsibility of all plant personnel, their supervisors, the Health Physics Director and the Chemistry/ Health Physics Supervisor to wisely allocate the exposure permitted by (1) or (2) above.

(6) An integrated exposure of 10,000 MPC-hours for nuclides with relatively short effective half-lives is roughly equivalent to an external, whole-body exposure of 25 Rem and should be received only with the approval of the Health Physics Director or Chemistry/Health Physics Supervisor and the Site Manager or his designated representative. Similar exposure to nuclides with long effective half-lives are to be avoided and should be restricted to 1,200 MPC-hours as in (2) above.

(7) Since the effects of external and internal exposure may be additive, personnel should avoid exposures over 10,000 MPC-hours, even in the event of life-saving or rescue action, unless external radiation fields are minimal and unless effective half-lives are short.

(8) Personnel who have been exposed to more than 10,000 MPC-hours shall be removed from further emergency duty and referred to a physician for attention.

6.1.4 Exposure Records & Control

Exposure records for emergency workers and forms are maintained for plant personnel at the extension building and OSC. This information will be utilized to determine emergency team assignments. It is the responsibility of the Health Physics Director and his designated personnel to establish and maintain the personnel monitoring program during emergency situations. Provisions for establishing an emergency dosimeter service within 24 hours are provided as is distribution of self-reading pocket dosimeter to determine doses received by emergency personnel. Detailed procedures for personnel monitoring are included in the EPIP's (see Appendix "I").

6.2 Decontamination & First Aid

Facilities for decontaminating personnel are available at the HP station or with available supplies at the SBCC. All personnel leaving the controlled area or leaving a contaminated area will be monitored for contamination by use of appropriate survey instruments. During emergencies, personnel onsite will be checked for contamination as necessary.

Personnel found to be contaminated will undergo decontamination under the direction of HP personnel. Such measures may include isolating affected areas, placing contaminated personnel in clean protective clothing before moving, and decontaminating personnel, their clothing, and equipment prior to release.

Emergency first aid and medical treatment will be given to injured or ill personnel. Shift personnel that are trained in first-aid are available onsite on a 24 hour-per-day basis and will assist injured or ill personnel either at the scene of the accident or in the first-aid room. If affected personnel must be transported to medical facilities, measures will be taken to prevent the spread of contamination if present. Such measures may include the placing of affected personnel in clean protective clothing or wrapping in blankets and alerting the organizations who will provide the transportation and treatment.

The plant maintains an onsite first-aid room located in the extension building on the second level. The first-aid room is equipped with facilities suitable for the temporary care of a victim of an accident or illness until the services of a physician can be obtained. Additional first-aid supplies are available at the following locations: Gatehouse, turbine building, switchyard, Unit 1 and Unit 2 facades, SBCC, TSC, and entrance to the controlled area.

6.3 Medical Transportation

An emergency vehicle maintained onsite will be used to transport injured and contaminated personnel. This vehicle is normally parked in the plant extension building garage. The vehicle is equipped with emergency first-aid and oxygen breathing equipment. In addition, arrangements have been made for backup assistance by the City of Two Rivers Fire Department emergency vehicle to provide transportation in case of the need to transport more than one injured party.

6.4 Medical Treatment

Arrangements have been made with Two Rivers Community Hospital for treatment of PBNP personnel. Hospital personnel have been instructed and trained with regard to potentially contaminated patients. In addition, at least two area physicians have taken radiological health instruction courses under the sponsorship of the Company and are on the Two Rivers Community Hospital Staff. The University of Wisconsin Hospital in Madison, Wisconsin, will provide backup services in the event that the services of Two Rivers Community Hospital become temporarily unavailable or that additional services are required. The University Hospital provides instruction and training on handling radiological accident patients. Letters or written agreements with respect to arrangements for both hospitals and medical services are included in Appendix "D."

6.5 Iodine Prophylaxis (Thyroid Protection)

6.5.1 Background

A number of chemical compounds can be ingested before or shortly after inhalation of radioactive material to inhibit the biological assimilation of inhaled radionuclides. Of these, stable iodine has received more attention as a chemical prophylactic agent than other elements because inhaled radioiodine presents a radiological hazard under certain types of nuclear reactor accidents.

Radioiodine is quickly absorbed into the blood stream and concentrates preferentially in the thyroid. This can result in significant doses to the thyroid gland. Therefore, a

protective action to be considered after an accident involving the release of a gaseous plume of radioactive material containing radioactive iodine, is the use of stable iodine as a thyroid-blocking agent. This can reduce the accumulation of radioactive iodine in the thyroid gland.

6.5.2 Criteria for Use

The criteria for administering a thyroid-blocking agent (Potassium Iodide) to emergency personnel depends on the projected absorbed dose to the thyroid and the severity and magnitude of the accident. If the initial estimate at the plant indicates that thyroid total absorbed doses of 0.9 Rem or more are projected, or if there is an inherent severity and magnitude of the accident, administration of a thyroid-blocking agent will be distributed to Company emergency and support personnel. For the greatest effectiveness, the thyroid-blocking agent should be administered as soon as possible, preferably within two hours of exposure. For most individuals the majority of radioiodine uptake by the thyroid occurs within 12 hours after a short-term exposure. The initial administration of a blocking agent will be of some value even as long as 4-8 hours after the exposure period. The determination of whether the thyroid-blocking agent should be continued on a daily basis will be determined by the Corporate Medical Director after evaluation of the situation.

TABLE 6-1

ASSESSMENT ACTIONS*

	Action	Description
1.	Surveillance of Control Room Instrumentation	Radiation levels, pressures, temperatures, levels, flows, and meteorological data are monitored. The control room operators can assess plant status by observing sensor readout. Most sensors have visual and audio alarms. Primary and secondary system data will be provided to the Technical Advisor as necessary for his assessment. Control room operators will take corrective actions as necessary.
2.	Personnel Accountability	A head count of all personnel onsite made by the emergency organization. Security log-in sheets and personnel rosters will assist in this assessment.
3.	In-plant Radiological Surveys	The radiation monitoring teams will perform these surveys. The radiation levels on the plant's fixed area and process monitoring systems will be obtained from the TSC or control room to assist in these evaluations. Surveys of equipment and personnel for contamination are done with portable equipment from the emergency lockers or other devices used routinely.
4.	Site Boundary Surveys	Handled in same fashion as in-plant surveys by the radiation monitoring teams.

*NOTE: DETAILED ASSESSMENT ACTIONS PROCEDURES ARE DESCRIBED IN THE EPIP'S FOR VARIOUS EMERGENCY CLASSIFICATIONS (SEE APPENDIX "I").

	Action	Description
5.	Offsite Consequence Assessment	The radiological assessment personnel will be using effluent monitors and meteorological data to make assessments of offsite consequences. Radiation monitoring teams will report survey results to validate calculations as time permits.
6.	Environmental Monitoring	For less immediate actions, samples of various environmental media are collected and analyzed by either PBNP personnel or an outside contractor laboratory. Results will be evaluated by WE personnel.
7.	Assessment Reporting	In the case of offsite consequences, the Federal, State and local agencies are immediately notified in accordance with the Emergency Plan. Predetermined criteria are used to recommend various protective actions for the population-at-risk as illustrated in Table 4-2.

Table 6-2

EVACUATION ACTIONS

EVACUATION CLASSIFICATION	Personnel Outside Protected Area	Visitors Inside Protected Area	Contractor Personnel	PLANT PERSONNEL: Assigned Emergency Duties Other Than Control Room Personnel	PLANT PERSONNEL: Not Assigned Emergency Duties
Limited Plant Evacuation	No Action Required	Take Action as Directed	Take Action as Directed	Take Action as Directed	Take Action as Directed
Plant Evacuation	Take Action as Directed	Report to SBCC	Report to SBCC	Report to the TSC as Previously Directed	Report to OSC assembly area El. 18.5' of TSC building

Table 6-3

RECOMMENDED PROTECTIVE ACTIONS

ACCIDENT PHASE	EXPOSURE PATHWAY	EXAMPLES OF ACTIONS TO BE RECOMMENDED
Emergency Phase[1] (0.5 to 24 hours)*	Inhalation of gases, radioiodine, or particulate	Shelter, access control, evacuation, respiratory protection, prophylaxis (thyroid protection)
	Direct whole body exposure	Shelter, access control, evacuation
Intermediate Phase[2] (24 hours to 30 days)*	Ingestion of milk	Take cows off pasture, prevent cows from drinking surface water, discard contaminated milk, or divert to stored products such as cheese.
	Ingestion of fruits and produce	Wash all produce, or impound produce, delay harvest until approved, substitute uncontaminated produce.
	Ingestion of water	Cut off contaminated supplies, substitute from other sources, filter, demineralize.
	Whole body exposure and inhalation	Relocation, decontamination, access control

ACCIDENT PHASE	EXPOSURE PATHWAY	EXAMPLES OF ACTIONS TO BE RECOMMENDED
Long Term Phase[3] (over 30 days)	Ingestion of food and water contaminated from the soil either by resuspension or uptake through roots	Decontamination, condemnation, or destruction of food; deep plowing, condemnation, or alternate use of land
	Whole body exposure from deposition material or inhalation of resuspended material.	Relocation, access control, decontamination fixing of contamination, deep plowing

(1) Emergency phase - Time period of majority of release and subsequent plume exposure.

(2) Intermediate phase - Time period of moderate continuous release with plume exposure and contamination of environment.

(3) Long Term Phase - Recovery period.

*"Typical" post-accident time periods.

Table 6-4

REPRESENTATIVE SHIELDING FACTORS FROM GAMMA CLOUD SOURCE

Structure or Location	Shielding Factor[1]	Representative Range
Outside	1.0	--
Vehicles	1.0	--
Wood-frame house[2] (no basement)	0.9	--
Basement of wood house	0.6	0.1 to 0.7 [3]
Masonry House (no basement)	0.6	0.4 to 0.7[3]
Basement of masonry house	0.4	0.1 to 0.5[3]
Large office or industrial building	0.2	0.1 to 0.3[3, 4]

(1) The ratio of the dose received inside the structure to the dose that would be received outside the structure.

(2) A wood frame house with brick or stone veneer is approximately equivalent to a masonry house for shielding purposes.

(3) This range is mainly due to different wall materials and different geometries.

(4) The shielding factor depends on where the personnel are located within the building (e.g., the basement or an inside room).

*Take from SAND 77-1725 (Unlimited Release)

Table 6-5

SELECTED SHIELDING FACTORS FOR AIRBORNE RADIONUCLIDES

Wood house, no basement	0.9
Wood house, basement	0.6
Brick house, no basement	0.6
Brick house, basement	0.4
Large office or industrial building	0.2
Outside	1.0

*Taken from SAND 77-1725 (Unlimited Release)

Table 6-6

REPRESENTATIVE SHIELDING FACTORS FOR SURFACE DEPOSITED RADIONUCLIDES

Structure or Location	Representative Shielding Factor (1)	Representative Range
1 m above an infinite smooth surface	1.00	--
1 m above ordinary ground	0.70	0.47-0.85
1 m above center of 50' roadways, 50% decontaminated	0.55	0.4-0.6
Cars on 50' road:		
Road fully contaminated	0.5	0.4-0.7
Road 50% decontaminated	0.5	0.4-0.6
Road fully decontaminated	0.25	0.2-0.5
Trains	0.40	0.3-0.5
One and two-story wood-frame house (no basement)	0.4(2)	0.2-0.5
One and two-story block house (no basement)	0.2(2)	0.04-0.40
House basement, one or two walls fully exposed:	0.1(2)	0.03-0.15
One story, less than 2' of basement, walls exposed	0.05(2)	0.03-0.07
Two stories, less than 2' of basement, walls exposed	0.03(2)	0.02-0.05
Three- or four-story structures, 5,000 to 10,000 ft^2 per floor:		
First and second floors	0.05(2)	0.01-0.08
Basement	0.01(2)	0.001-0.07
Multi-story structures >10,000 ft^2 per floor:		
Upper floors	0 [illegible]	0.001-0.02
Basement	[illegible]	0.001-0.015

(1) The ratio of dose received inside the structure to the dose that would be received outside the structure.

(2) Away from doors and windows.

* Taken from SAND 77-1725 (Unlimited Release)

Table 6-7

USE OF PROTECTIVE EQUIPMENT & SUPPLIES

Equipment	Criteria for Issuance*	Storage Location	Means of Distribution
a. Respiratory Equipment:			
1) Full-Face Respirator (Filter)** Protection Factor-50	For areas of airborne particulate activity only (Notes 3 & 4).	(a) Control Room (b) HP Station (c) Emergency Equipment Lockers (d) Onsite OSC (Staging Area) (e) SBCC	(a) Used as needed by operators (b) Issued under the control of Chemistry & Health Physics
2) Continuous Flow Air-Line (Supplied Air, Full-Face Respirator) Protection Factor-2,000	For areas of airborne particulate, iodine, gas activity, or combinations of same (Notes 2 & 4).	(a) Control Room (b) HP Station (c) Emergency Equipment Lockers	(a) Used as needed by operators (b) Issued under the control of Chemistry & Health Physics

* Significance of qualifying notes must be recognized.

** The proper type of air-purifying filters, cartridges, and canisters with the respirator must be chosen for the hazard present in the atmosphere.

Equipment	Criteria for Issuance*	Location	Means of Distribution
3) Self-Contained Breathing Apparatus Protection Factor-10,000	(a) Inhalation hazard during fire fighting (b) For areas of airborne particulate iodine, gas activity, or combination of same (Notes 1, 2 & 4).	(a) Control Room (b) HP Station (c) TSC (d) Emergency Equipment Lockers	(a) Used as needed by operators (b) Issued under the control of Chemistry & Health Physics
b. Protective Clothing (Coveralls, Hoods, Boots, Gloves)	As needed in areas of known contamination	(a) Various areas of the plant (b) SBCC	(a) Used as needed by operators
c. Potassium Iodide for Thyroid-Blocking	Reduce accumulation of radioactive iodine in the thyroid gland, used during a radiation emergency only	(a) Control Room (b) Onsite OSC (c) TSC	Issued as needed under direction of HP personnel

NOTES

(1) This type of respirator may provide greater protection and is preferred emergency device in unknown airborn concentrations.

(2) Limitations on occupancy in gaseous atmospheres will also be governed by external dose limits.

(3) Respirators with mechanical filters provide no protection against gaseous activity or in oxygen deficient atmospheres.

(4) Where airborne tritium is involved, filter type respirators are not suitable for protection. Supplied air apparatus (air line of self-contained) are not recognized as effective for concentrations greater than two times MPC.

Table 6-8

GUIDELINES FOR PROTECTION AGAINST INGESTION OF CONTAMINATION*

1.0 GROUND CONTAMINATION

1.1 Action Levels

1.1.1 Projected whole body dose above the ground level ≧1 Rem.

1.1.2 Ground contamination levels ≧2,000 μCi/m^2 at t = 1 hr post-accident.

1.1.3 Exposure rate ≧12 mR/hr at 1 meter above ground at t = 1 hr post-accident.

1.2 Recommended Protective Actions

1.2.1 Evacuation of affected area.

1.2.2 Restriction of entry to contaminated offsite areas until radiation level has decreased to levels approved by the State.

2.0 FOOD & WATER CONTAMINATION

2.1 Action Levels

	Concentration in Milk or Water					
	(0.5 Rem WB or bone: 1.5 Rem thyroid)	(5 Rem WB or bone: 15 Rem thyroid)	Total Intake via all Food & Water Pathways		Pasture Grass (Fresh Weight)	
Nuclide*	Preventive Level (μCi/l)	Emergency Level (μCi/l)	Preventive (μCi)	Emergency (μCi)	Preventive (μCi/kg)	Emergency (μCi/kg)
I-131 (thyroid)	0.012	0.12	0.09	0.9	0.27	2.7
Cs-137 (WB)	0.34	3.4	7	70	3.5	35
Sr-90 (bone)	0.007	0.08	0.20	2.0	0.7	7
Sr-89 (bone)	0.13	1.3	2.6	26.0	13	130

*References: U. S. Food & Drug Administration, Federal Register, Vol. 43, No. 242, December 15, 1978.

If other nuclides are present, Regulatory Guide 1.109 will be used to calculate the dose to the critical organ(s). Infants are the critical segment of the population.

2.2 Recommended Protective Actions

Preventive

1. Removal of lactating cows from contaminated pasture and substitution of uncontaminated feed.

2. Substitute source of uncontaminated water.

3. Withhold contaminated milk from market to allow radioactive decay.

4. Divert fluid milk to production of dry whole milk, butter, etc.

Emergency

Isolate food and water from its introduction into commerce after considering:

a. Availability of other possible actions;

b. Importance of particular food in nutrition;

c. Time and effort to take action;

d. Availability of other foods.

Table 6-9

ADMINISTRATIVE EXPOSURE LIMITS[5]

Category	Whole Body[3]	Skin[4]	Extremities (Hand, Forearms, Feet & Ankles)
A. Daily Administrative Limits[2]	300 mRem (100 mRem)[1]	600 mRem	1,500 mRem
B. Weekly Administrative Limits[1]	600 mRem	1,200 mRem	3,000 mRem

Notes:

(1) Exposure in excess of the 100 mRem limit requires the approval of the group supervisor.

(2) Exposure in excess of the daily (300 mRem) or weekly administrative limits requires the approval of the Health Physicist or Superitendent - CHP.

(3) Whole Body Exposure is defined as exposure to the whole body, head and trunk, blood forming organs, and lens of the eyes and gonads.

(4) Skin exposure is defined as exposure to the skin of the whole body.

(5) Limits are derived from Health Physics Administrative Control Policies & Procedures Manual.

EMERGENCY FACILITIES & EQUIPMENT

1.0 DISCUSSION

This section of the Emergency Plan identifies, describes, and gives locations of emergency operation centers, support centers, communication systems, and first-aid and medical facilities.

2.0 CENTERS FOR EMERGENCY OPERATIONS

The emergency facilities, as shown in EP 10.1, are a coordinated group, separated physically to minimize interference and confusion, and connected by dedicated communications lines to ensure an uninterrupted flow of data and instructions. Figures 7-1 and 7-2 show the emergency communications network that will allow coordination of all phases of the emergency response operations.

2.1 Emergency Support Center (ESC) (See EP 2.0, Section 1.18)

This facility, under the direction of the Emergency Support Manager assisted by the Site Manager, is the focal point of all emergency response operations and is the primary interface between PBNP and offsite agencies. Comprehensive coordination is achieved by:

2.1.1 Maintaining communication links with the other emergency centers and receiving periodic updates of the progress of the emergency procedures.

2.1.2 Providing primary contact point for State and local emergency response agencies and providing information and coordination during the emergency response operations.

2.1.3 Directing overall emergency response operations of Company personnel both onsite and offsite.

2.1.4 Obtaining technical assistance from Westinghouse Electric Corporation, Bechtel Power Corporation, and other vendors who can contribute to the response effort.

2.1.5 Providing administrative and logistic support for the additional personnel and equipment required.

2.1.6 Developing and initiating plans to handle large amounts of contaminated waste material.

2.1.7 Acting as a liaison with local health care facilities and coordinating the transfer of injured personnel who are radiologically contaminated.

2.1.8 Providing for offsite radiological surveys and organizing transportation, equipment, and personnel. Results will be evaluated by the Health Physics Director and transmitted to the Site Manager by the RadCon/Waste Manager.

The ESC is located on the center and lower floors of the EIC with an alternate location at the TSC. Communications links will be maintained with the TSC, SBCC, ENC, and designated offsite agencies.

2.2 Technical Support Center (TSC) (See EP 2.0, Section 1.43)

This facility is operated by the Technical Support Manager under the supervision of the Site Manager and serves as:

2.2.1 Primary communications link between the control room, ESC, and designated offsite agencies as shown in Figures 7-1 and 7-2.

2.2.2 Coordination point for all onsite activities during emergency response operations.

2.2.3 Plant and computer system monitoring facility to provide real time data to technical advisory personnel for the evaluation of plant conditions and recommendation of response procedures.

2.2.4 Technical reference center with complete files containing appropriate drawings and system descriptions.

2.2.5 Coordination area for onsite health physics radiological monitoring personnel. From this point, they will be directed to assist in radiological surveys, personnel monitoring, decontamination, reentry, and rescue procedures.

2.3 Operations Support Center (OSC) (Staging Area)
(See EP 2.0, Section 1.28)

This facility is provided to minimize congestion in the control room and the TSC by coordinating incoming and outgoing personnel during emergency response operations. The OSC serves as a:

2.3.1 Staging area to brief oncoming control room personnel of the emergency condition of the plant and thus minimize shift turnover time.

2.3.2 Coordination area for nonshift personnel to conduct site fire fighting procedures.

2.3.3 Coordination area for technicians to be dispatched to areas requiring their support.

2.3.4 Coordination area during plant site searches for missing persons or security breaches.

The OSC (staging area) is located on El. 8' of the TSC building. There are direct communications between the OSC and the TSC.

2.4 Control Room (See EP 2.0, Section 1.6)

The control room is the primary operations center during events classified as Unusual Event and prior to the activation of the other emergency centers for more serious accidents. The Shift Supervisor is responsible for initiating and coordinating all EPIP's, including security procedures, from the control room until additional assistance is available. All plant control manipulation is conducted from this area under the Shift Supervisor's cognizance. Access to the control room is limited by administrative control.

2.5 Security Building (Extension Building) (See EP 2.0, Section 1.40)

This facility, located in the extension building, is under the supervision of the Security Supervisor, who coordinates:

2.5.1 Primary access control at the gatehouse to limit both personnel and vehicular traffic to and from the site.

2.5.2 Control point for both personnel accountability and personnel monitoring during plant evacuation procedures.

Site security personnel assist as required with the emergency response operations. They initially report to the Shift Supervisor until the Site Manager arrives. In the event that the security building may not be radiologically habitable, the designated alternate location is the SBCC. The security building has a communications link with the control room which can be shifted to the TSC when the latter is activated.

2.6 Site Boundary Control Center (SBCC) (See EP 2.0, Section 1.41)

The operation of this facility is the responsibility of the Health Physics Director. The SBCC serves as:

2.6.1 A personnel accountability and contamination monitoring center for evacuated visitors and contractor personnel.

2.6.2 A health physics control point for individuals entering or leaving the site.

2.6.3 A central point for offsite field radiological assessment teams. Information obtained will be relayed to the RadCon/Waste Manager at the ESC.

2.6.4 A coordinating center for security and traffic control.

The SBCC is locationed at the south exclusion area boundary access road, approximately one mile southwest of the plant. Communications links are established with the ESC and offsite radiological monitoring teams. The alternate to the SBCC is the Two Creeks Town Hall.

2.7 Emergency News Center (ENC) (See EP 2.0, Section 1.14)

This facility, under the direction of the Emergency News Center Director, is responsible for providing the news media with information concerning the emergency. This facility will provide periodic updates of the emergency situation and coordinate with the public relations offices of the NRC, State, and local agencies to ensure that only one official status report is provided. The ENC can maintain communications links with the ESC and designated offsite news media agencies. The ENC is located at the Two Rivers Community House with an alternate location at the Kewaunee High School. The ENC will be activated at the discretion of the Emergency Support Manager.

3.0 COMMUNICATIONS SYSTEMS

The details of the onsite and offsite emergency communications networks are shown in Figures 7-1 and 7-2. The systems are designed to provide reliable communication links between the various emergency centers and offsite authorities. It consists of a combination of the plant public address system, plant telephone system, multiple telephone lines to outside exchanges, including dedicated telephone lines, utility communications and paging system, and radiocommunications facilities. A brief detailed description is as follows:

3.1 Internal plant two-channel multi-station public address system. Each public address station has the capability of general announcement or party-line conversation via either channel.

3.2 PBX telephone system with at least 100 telephone extensions, including locations at the TSC, onsite OSC, ESC, and SBCC. Switchboards of the PBX system are located in the control room and the plant office area and control of the system can be transferred from the main office to the control room or vice versa by control room personnel. The PBX system has a battery backup power supply with approximately 8 hours of capacity. Three in-plant extensions automatically take over three Mishicot, Wisconsin exchange lines upon loss of all in-plant PBX system switchboard power.

3.3 Telephone lines to outside exchanges include six Mishicot, Wisconsin exchange lines; one Appleton leased line and two Milwaukee leased lines having communications capability through the microwave system; three microwave-based leased lines for computer time sharing which have voice communications capability; one Milwaukee leased land line; one extension to the main WE Milwaukee switchboard; one NRC Operations direct line with extensions in the control room, TSC and SBCC; and one NRC health physics direct line with three extensions. There is a

Mishicot exchange line in the TSC, eight more in the ESC, and one pay phone line outside the gatehouse entrance to PBNP. The ENC has seven Two Rivers exchange lines, one PBNP PBX line and one WE central office Centrix system line. The ENC also has a 100-pair cable installed which is available for use during an emergency.

3.4 An internal sound-powered communications system with headset plug-in connections exists throughout the plant, including the control room.

3.5 Two-way radios are located in the control room and SBCC, and mobile units are provided in certain plant vehicles. There are also two portable units available for use by the DCS which are stored in the plant gatehouse. In addition, DCS's may utilize a personal telephone paging "beeper" while on call. There is also a two-channel network FM system utilizing fixed and portable units for operations and security use.

3.6 Radiocommunications are available to communicate with offsite facilities in the unlikely event that telephone communications should be interrupted. In particular, a transmit/receive capability exists 24 hours a day from the control room on the Manitowoc County Sheriff Department's frequency. This system allows indirect communications with the Two Rivers Community Hospital.

3.7 In addition, a National Warning System (NAWAS) is also available for communications with offsite facilities. This system is a statewide dedicated open-wire telephone warning system which enables PBNP to talk directly to the State Warning Center in Madison, Wisconsin; the Weather Station Offices in Milwaukee, Green Bay, Madison, and LaCrosse; and Manitowoc and Kewaunee County Sheriff's Departments in the event of an emergency. The State of Wisconsin, Division of Emergency Government is responsible for maintaining and testing the National Warning System (NAWAS).

3.8 Radios are available for communications between field assessment teams and the SBCC.

To ensure the continuous capability of providing early notification from the plant to the outside agencies for implementation of protective actions, testing of communications links between the plant and these agencies will be conducted monthly. In addition, as described in EP 8.0 Section 3.2 periodic exercises and drills are conducted to further demonstrate adequate communications capability.

4.0 ASSESSMENT FACILITIES

The monitoring instruments and laboratory facilities needed to initiate emergency measures as well as those to be used for continuing assessment are available both for onsite and offsite use.

4.1 The geophysical, radiological, process, and fire detection onsite equipment and facilities are listed on Table 7-1.

4.2 The geophysical, radiological, and fixed and mobile offsite equipment and facilities are listed on Table 7-2.

4.3 Methods for detecting and measuring radioiodine concentrations of 5×10^{-8} μCi/cc using a single channel analyzer and silver zeolite filters have been established. Kewaunee Nuclear Power Plant has agreed to count iodine samples at the request of PBNP.

5.0 PROTECTIVE FACILITIES & EQUIPMENT

The control room is intended to serve as the onsite protective facility. It is designed to be habitable under accident conditions. Emergency lighting, power, air filtration, ventilation system, and shielding walls which enable operators to remain in the control room to ensure the reactor can be maintained in a safe condition. In addition, the operators will be able to evaluate plant conditions and relay pertinent information and data to the appropriate onsite and offsite emergency centers, personnel and agencies during all emergencies. To ensure that operating shift and other personnel can remain self-sufficient, portable radiation monitors, respiratory equipment, portable lighting, and alternate communications systems are maintained in the control room. During extreme conditions, selected personnel from the TSC will evacuate to the control room.

6.0 FIRST-AID & MEDICAL FACILITIES

A permanent medical facility is provided onsite at PBNP and is located in the security building (extension building) on the second level. It contains the supplies needed for first-aid treatment. Stretcher baskets and first-aid kits are at various locations throughout the plant. The first-aid kits are located on the uncontaminated or "clean" side of the plant. If, for emergency reasons, it is necessary to transfer first-aid supplies to a controlled or contaminated area, the unused supplies will be retained by HP personnel for disposition. The first-aid treatment of injured personnel will be administered by trained personnel. Further medical care may be obtained by transporting the individual to a hospital via emergency vehicle in accordance with the PBNP Hospital Assistance Plan in the EPIP's. The Company Medical Director is responsible for defining the requirements for the first-aid equipment throughout the plant. The PBNP Industrial Safety Coordinator is responsible for maintaining the supply inventory. First-aid supplies are available at the following locations:

6.1 Gatehouse

First-aid kit

6.2 Turbine Building

Stretchers (outside control room, El. 8' Unit 1 truck access), first-aid kit (control room), and burn kit (control room).

6.3 Switchyard

First-aid kit and burn kit

6.4 Units 1 & 2 Facades

Stretcher (El. 66' outside containment personnel hatch)

6.5 Site Boundary Control Center (SBCC)

First-aid kit and burn kit

6.6 "Checkpoint Charlie" (entrance to controlled area)

First-aid kit, burn kit, scoop stretcher, and oxygen breathing unit

7.0 DAMAGE CONTROL EQUIPMENT & SUPPLIES

Damage control equipment consisting of fire hose stations, fire extinguishers, fire hydrants, and portable lanterns are located throughout the plant to be used by the fire brigade teams in the event of a fire. The PBNP Fire Protection Manual describes the specific details of fire protection, fire fighting, damage control including equipment usage and location. In addition, self-contained breathing apparatus are located at strategic locations in the plant to be used as necessary for fire fighting, entry into airborne radioactive areas or entry into toxic gas areas. Other damage and control equipment and supplies will be used to affect repairs depending on the situation at hand (e.g., steam suits and miscellaneous equipment at the plant.)

8.0 METEOROLOGICAL EQUIPMENT

PBNP has a permanent meteorological installation. Meteorological data can be obtained from the recorders in the control room. The recorders continuously record wind speed, wind direction, and $\sigma\theta$ (standard deviation of wind direction). In the event the above instrumentation is inaccessible or inoperative, such information can be obtained from the Kewaunee Nuclear Power Plant, local Coast Guard Station, or National Weather Service.

9.0 PROMPT NOTIFICATION SYSTEM

Details of the PBNP prompt notification system are shown on Figure 7-3. Listing of the equipment can be found on Table 7-3.

The system is designed to provide notification of the public within 10 miles of PBNP. The system as shown includes 11 sirens. State and local response plans describe the use of this siren system and the associated provisions for use of local radio stations and the Emergency Broadcast System for message dissemination.

10.0 MANITOWOC COUNTY EMERGENCY OPERATIONS CENTER

Manitowoc county has a permanent emergency operations center at the county Sheriff's department in Manitowoc, Wisconsin. Kewaunee county has a permanent emergency operations center at the Algoma Police Department building in Algoma, Wisconsin. These centers are used for command and control of county agency response to an emergency.

TABLE 7-1

ONSITE ASSESSMENT EQUIPMENT & FACILITIES

SYSTEM		EQUIPMENT
Geophysical Monitors		
Meteorological	1 wind speed indicator 1 wind direction indicator	Monitor wind speed at El. 150' Monitor wind direction at El. 150'
	1 wind speed indicator 1 wind direction indicator with $\sigma\theta$ calculator	Monitor wind speed at El. 10 meters Monitor wind direction. Monitor standard deviation of wind direction at El. 10 meters
	EIC* (windmill)	Monitors wind speed & direction
Seismic	3 strong motion accelerographs (Unit 1 facade, switchyard & EIC*)	Record ground accelerations
Hydrological	6 lake resistance temperature detectors	Monitor lake temperature 500 yds off shore
	1 surge chamber level indicator	May function as a lake level indicator
	1 forebay level indicator	May function as a lake level indicator

* The EIC is located approximately 100 yds. south of the protected area. The EIC also has 1 wind speed indicator and 1 wind direction indicator located at approximately El. 60'.

Radiological Monitors		
Unit 1 Process Monitors	1R11 containment/containment purge stack	Measures particulate activity
	1R12 containment/containment purge stack	Measures gaseous activity

SYSTEM	EQUIPMENT	FUNCTION
Unit 1 Process Monitors	RMS-II Channel 3 containment purge stack	Measures high range gaseous activity
	1R15 steam air ejector	Measures gaseous activity
	1R16 containment fan cooler liquid	Measures liquid activity
	1R17 component cooling loop liquid	Measures liquid activity
	1R19 steam generator blowdown	Measures liquid activity
Unit 2 Process Monitors	2R11 containment/containment purge stack	Measures particulate activity
	2R12 containment/containment purge stack	Measures gaseous activity
	RMS-11 Channel 4 containment purge stack	Measures high range gaseous activity
	2R15 steam air ejector	Measures gaseous activity
	2R16 containment fan cooler liquid	Measures liquid activity
	2R17 component cooling loop liquid	Measures liquid activity
	2R19 steam generator blowdown	Measures liquid activity
Common Process Monitors	R14 auxiliary building vent stack	Measures gaseous activity
	RMS-II Channel 1 auxiliary building vent stack	Measures high range gaseous activity
	R18 waste condensate overboard	Measures liquid activity
	R20 spent fuel pit heat exchanger	Measures liquid activity
	R21 drumming (spent fuel pit) vent stack	Measures gaseous activity

SYSTEM	EQUIPMENT	FUNCTION
Common Process Monitors	RMS-II Channel 2 drumming (spent fuel pit) vent stack	Measures high range gaseous activity
	GW16 waste distillate overboard	Measures liquid activity
	CR9 combined steam air ejector overboard	Measures gaseous activity
	RMS-II Channel 5 combined steam air ejector overboard	Measures high range gaseous activity
	GW112 gas stripper building vent stack	Measures gaseous activity
	RMS-II Channel 6 gas stripper building vent stack	Measures high range gaseous activity
Units 1 & 2 Area Monitors	R1 control room	Monitors general area radiation levels
	1&2R2 containment El. 66'	Monitors general area radiation levels
	R3 chemistry lab	Monitors general area radiation levels
	1&2R4 charging pump hallway	Monitors general area radiation levels
	R5 spent fuel pit	Monitors general area radiation levels
	1&2R6 primary sample room	Monitors general area radiation levels
	1&2R7 seal table, containment El. 46'	Monitors general area radiation levels
	R8 drumming area	Monitors general area radiation levels
	1&2R22 steam generator blowdown tank	Monitors radiation levels of secondary coolant tank

SYSTEM	EQUIPMENT	FUNCTION
Radiation Monitors & Sampling Equipment	Gamma spectrometers (multichannel analyzers)	Isotopic identification and analysis
	Geiger-Mueller survey instruments (0-1,000 R/hr)	Measures gamma & beta radiation count rate
	Ionization chambers (0-10,000 R/hr)	Measures gamma & beta radiation dose rate
	Contamination survey instruments	Count samples, equipment & personnel for gross alpha, gross beta & gamma activity
		Air sampling equipment concentration
	Neutron survey instruments	Measure neutron radiation dose rate
	TLD/direct reading pocket ion chamber	Measures personnel gamma dose
	Whole body counter	Determines internal radionuclide uptake
Fire Detection	Smoke detectors	Detect products of combustion
	Rate of rise heat detectors	Associated with sprinkler systems, detect quick rise of temperature
Facilities	Chemistry laboratory & HP Station analyses (available 24 hours per day)	Equipped for chemical & radiological
	15 TLD radiation monitoring stations	Measure environmental radiation (available 24 hours per day)

TABLE 7-2

OFFSITE ASSESSMENT EQUIPMENT & FACILITIES

System	Equipment	Function
Geophysical Monitors		
Meteorological U.S. Coast Guard Station, Two Rivers	Wind speed & direction	Monitors wind speed & direction at approximately El. 60'
Manitowoc County Airport	Wind speed & direction	Monitors wind speed & direction at approximately El. 20'
	Surface temperature	Measures temperature
Radiological Monitors		
Environmental Monitoring	(6) Fixed air sampling stations	Collect particulate & iodines
	(16) TLD radiation monitoring stations	Measure environmental radiation
Kewaunee Nuclear Power Plant	Gamma spectrometer	Isotopic identification & analysis
Laboratory Facilities		
Kewaunee Nuclear Power Plant	Chemistry laboratory	Equipped for chemical & radiological analyses (available 24 hours per day)
Vendor	Chemistry & counting laboratory	Equipped for chemical & radiological analyses (available within 24 hours)

TABLE 7-3

KEWAUNEE & MANITOWOC COUNTY
SIREN LOCATIONS

Siren No.	Location	Sound Level
1	613 Juneau Street, Kewaunee	124dBC
2	.8 miles west of STH "42" on Krok Road	130dBC
3	.2 miles east of CTH "B" on Old Settler Road	125dBC
4	.7 miles south of CTH "G" on STH "42"	130dBC
5	1 mile east of CTH "B" on Nuclear Road (Kewaunee County)	125dBC
6	Northeast corner of CTH "B" and CTH "BB"	114dBC
7	Two Creeks Road and STH "42"	130dBC
8	1.1 miles east of STH "163" on Nuclear Road (Manitowoc County)	125dBC
9	.4 miles west of STH "42" on CTH "V"	130dBC
10	.4 miles south of CTH "V" on STH "147"	114dBC
11	1500 - 27 Street, Two Rivers	125dBC

(See Figure 7-3 for siren locations.)

FIGURE 7-1

PBNP EMERGENCY RESPONSE
EXCLUSION AREA COMMUNICATION NETWORK

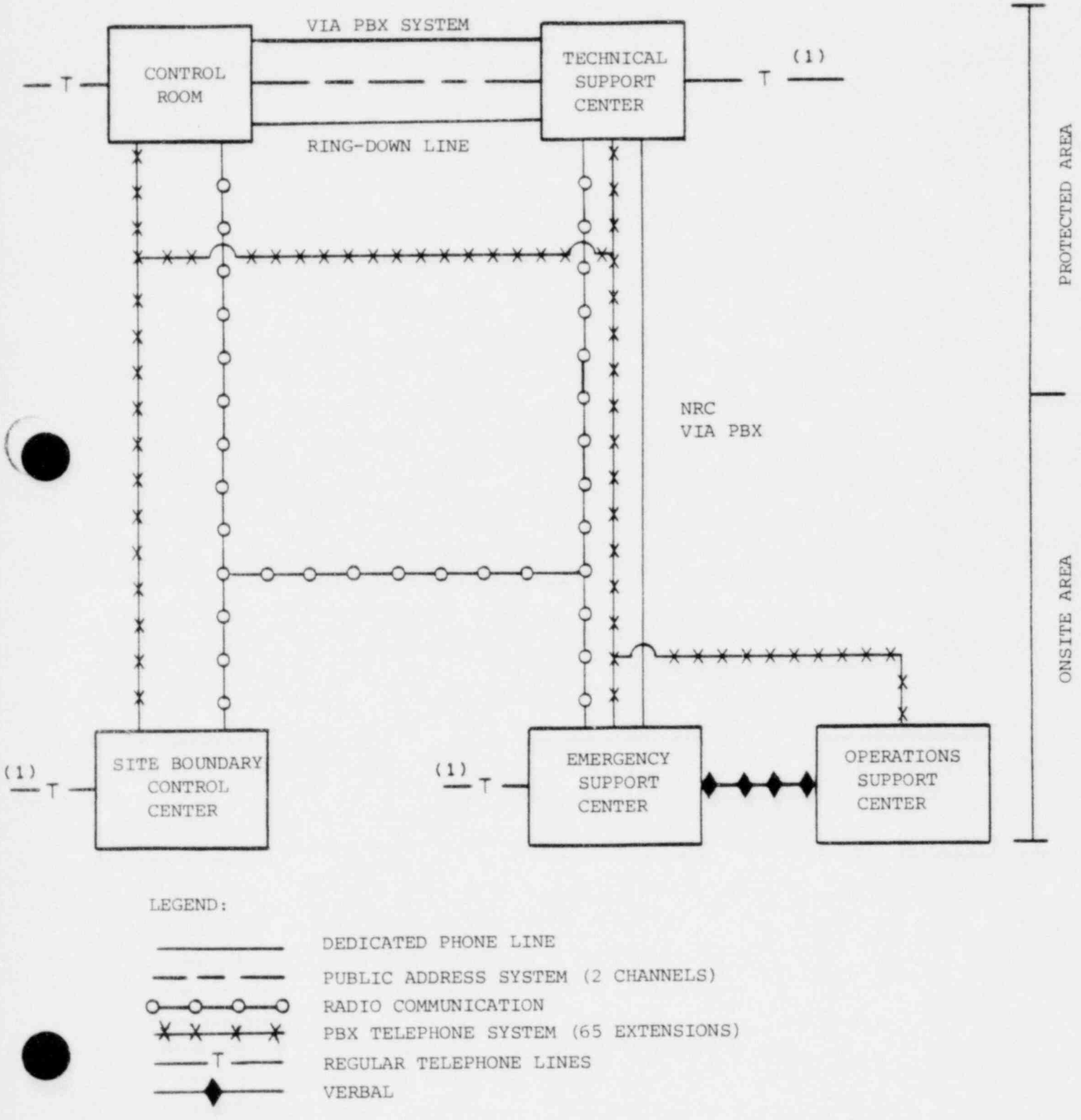


FIGURE 7-2

PBNP EMERGENCY RESPONSE
OFFSITE COMMUNICATION NETWORK

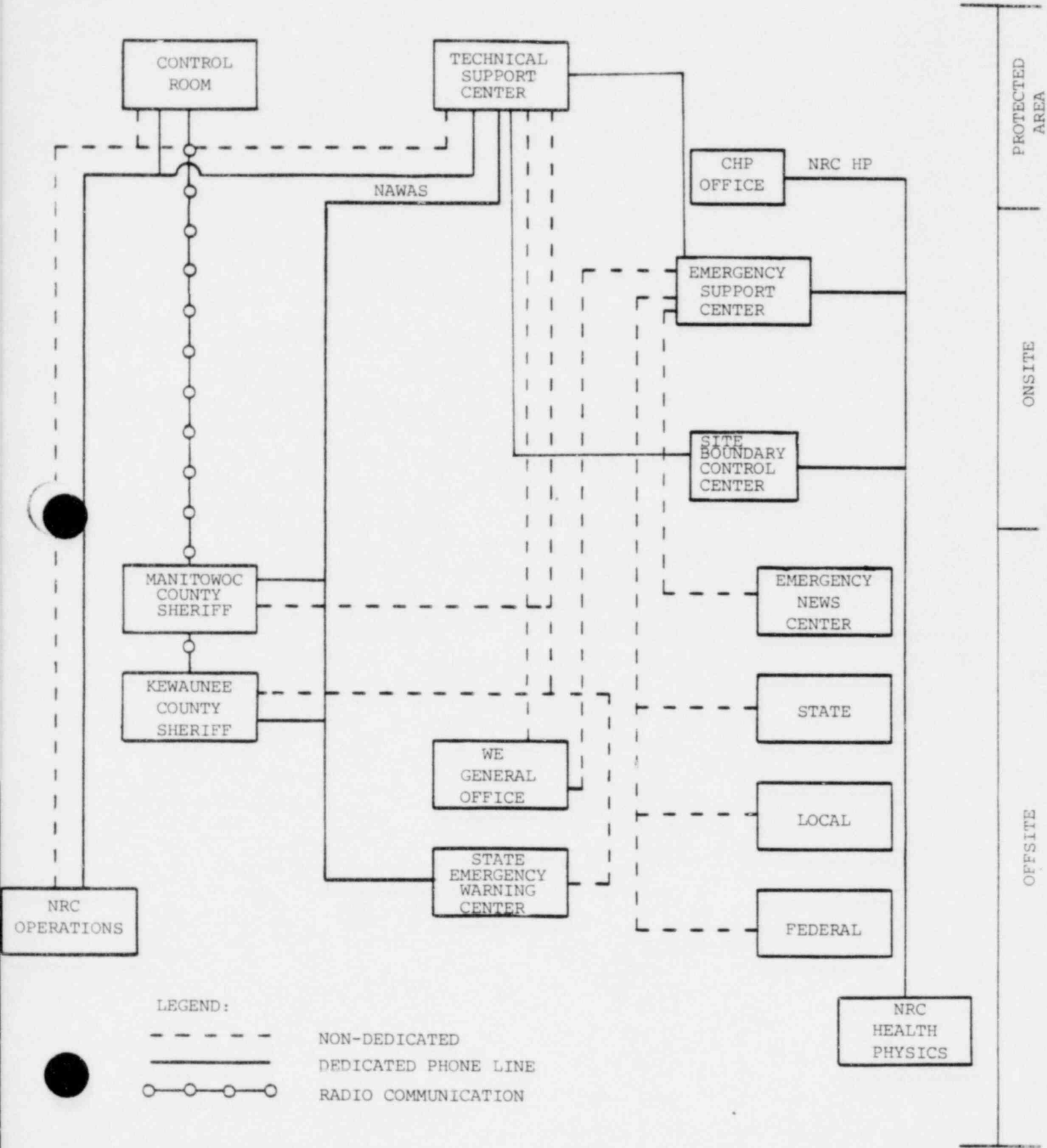
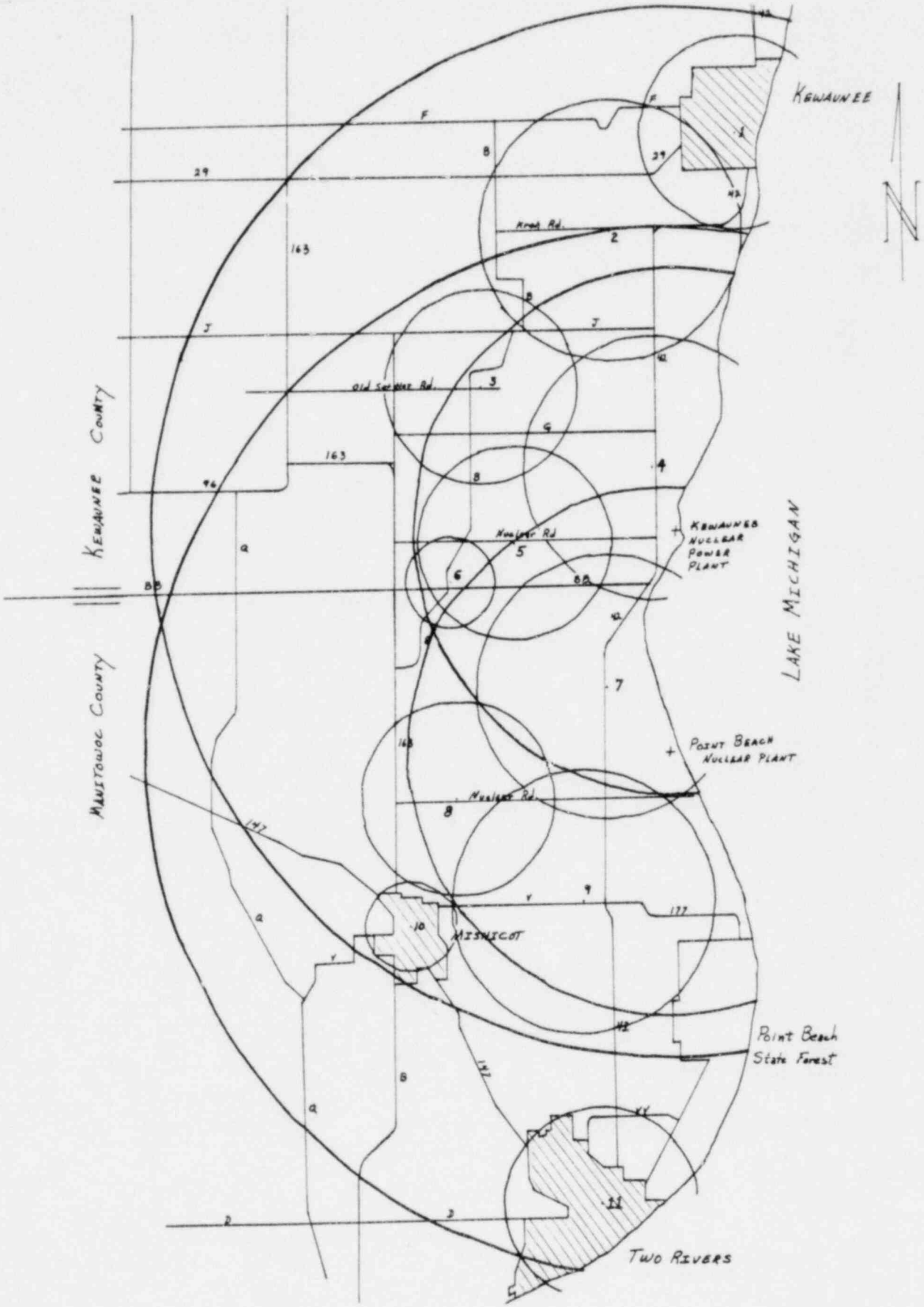


FIGURE 7-3

PBNP SIREN SYSTEM



See Table 7-3 for siren details.

MAINTAINING EMERGENCY PREPAREDNESS

1.0 DISCUSSION

PBNP maintains, as two separate documents, this Emergency Plan and the EPIP's. It is intended that the Emergency Plan be maintained up to date by using established procedures contained in the Operating PBNP Administrative Control Policies & Procedures Manual, Quality Assurance, Volume 1. The EPIP's contain detailed information extracted from the Final Facility Description & Safety Analysis Report (FFDSAR), other pertinent documents, and detailed site emergency procedures. The EPIP's are controlled by standard plant administrative procedures and are distributed and revised accordingly. As a minimum, the Emergency Plan and EPIP's will be reviewed on an annual basis and updated as necessary. Updates will take into account needed changes identified by drills and exercises. Approved changes to the Emergency Plan and EPIP's are forwarded to all organizations and individuals responsible for their implementation. Revised pages are dated and marked to show where changes have been made.

2.0 RESPONSIBILITIES

2.1 Assistant Vice President

The Assistant Vice President, as the designated Emergency Support Manager, has the overall responsibility for radiological emergency response planning, including the development and updating of emergency plans and coordination of these plans with other organizations, corporate policy and plans, the FFDSAR, and the agreements and understanding with Federal, State, and local organizations. The Assistant Vice President may designate personnel to assist him in meeting this responsibility.

2.2 Manager - PBNP

The Manager - PBNP is responsible for the coordination of efforts in planning, training, exercises, drills, and review and updating of the Emergency Plan and EPIP's including agreements and understandings with outside agencies. He will receive appropriate guidance on emergency planning and preparedness from the Assistant Vice President. The Manager - PBNP may designate personnel to assist him in meeting this responsibility.

2.3 PBNP Manager's Supervisory Staff

The PBNP Manager's Supervisory Staff will arrange for audits of the emergency preparedness program every two years. The audit will include the Emergency Plan, the EPIP's, practices, training, exercises, drills, records, and equipment. Management controls will be implemented for evaluation and correction of audit findings. The results of the audit will be documented, reported to the Manager's Supervisory Staff and the Offsite Review Committee, and retained for a period of at least five years.

3.0 ORGANIZATIONAL PREPAREDNESS

3.1 Training

All personnel assigned to PBNP will take part in a formal training program under the direction of the Superintendent - Training and Health Physicist. Each individual will receive, as a minimum, general employee indoctrination and training. In addition, key plant personnel and personnel assigned duties associated with the Emergency Plan will undergo specialized training for their responsibilities. The Superintendent - Training may delegate specialty instructor duty to personnel qualified to perform such training. Each Superintendent is responsible for ensuring that his personnel have received the appropriate training. The Superintendent - Engineering, Quality & Regulatory Services will senure proper training of Engineering, Quality & Regulatory Services and Administrative Services The training program for plant personnel with regard to the Emergency Plan will include the following:

3.1.1 All PBNP employees will be indoctrinated on the Emergency Plan and EPIP's through the general employee training program.

The training provided through this program with regard to emergency planning will be conducted on an annual basis as a minimum with provisions for prompt indoctrination of new employees. The objectives of this training are to:

a. Familiarize personnel with the scope, applicability, and implementation of the Emergency Plan and EPIP's.

b. Teach the general duties and responsibilities assigned to all plant personnel.

c. Keep personnel informed of any changes in the Emergency Plan and EPIP's.

d. Maintain a high degree of preparedness at all levels of the plant organization.

3.1.2 PBNP personnel will receive, as a minimum, the following instructions:

a. Orientation in the general content of the Emergency Plan and EPIP's applicable to the group being trained.

b. Specific items which must be taught to all individuals are as follows:

(1) Location of emergency equipment and supplies;

(2) Name, location, and function of emergency centers;

(3) Plant alarms and personnel response;

(4) Use of communications systems;

(5) Personnel accountability;

(6) Exposure criteria and unique accident exposure problems;

(7) General radiaton protection orientation;

(8) Location and availability of controlled copies of the Emergency Plan and EPIP's.

3.1.3 Personnel assigned to the onsite emergency organization with specific Emergency Plan duties and responsibilities will receive specialized training for their respective assignments as follows:

a. The various emergency managers and coordinators at levels below the Emergency Support Manager will receive training in the coordinating details of the Emergency Plan and its interaction with State and local plans. Special emphasis will be given to the required recommendations for offsite protective actions. This training shall be completed prior to the assignment of an individual as an emergency manager or coordinator and shall be updated annually.

b. The Company general office support personnel will take part in exercise and drills coordinated with PBNP as appropriate. These exercises and drills along with proper annual training will ensure that headquarters personnel are aware of their emergency plan responsibilities and are capable of fulfilling them.

c. The Company will annually provide the opportunity for training for offsite organizations and agencies as specified in respective agreements and understandings. In addition, those offsite organizations and agencies that may provide onsite emergency assistance will be encouraged to become familiar with the general layout of PBNP facilities as it relates to their responsibilities, will meet key personnel and will be invited to attend appropriate Emergency Plan training and orientation courses conducted by or for the Company. Training programs will be provided for specific offsite organizations and agencies as appropriate.

d. The opportunity for annual training for hospital personnel, ambulance/rescue personnel, police, and fire departments will be provided which includes the procedures for notification, basic radiation protection, and their expected roles. Appropriate training will be provided to these groups.

e. The Company will provide on an annual basis some training for the general population in the EPZ (See Section 6.0 for details on Public Information Program).

f. The Company will annually provide the opportunity for interested media personnel to become more familiar with technical background of nuclear power generation in general and PBNP in particular.

3.2 Drills & Exercises

PBNP conducts periodic drills and exercises. A drill in this context is a supervised instruction period aimed at testing, developing, and maintaining skills in a particular operation. It is often a component of an exercise which is an event that tests the integrated capability and a major portion of the basic elements existing within emergency preparedness plans and organizations. Each drill or exercise is conducted to ensure that the participants are familiar with their duties and responsibilities, to verify the adequacy of and methods used in EPIP's and other emergency procedures, to check the availability of emergency supplies and equipment, and to verify the operability of emergency equipment.

The Superintendent - Training and Health Physicist are responsible for planning, scheduling, and coordinating all Emergency Plan drills and exercises. They may, however, assign personnel to assist them with this responsibility. All Emergency Plan drills and exercises are subject to the approval of the Manager - PBNP.

When a major drill or exercise is required, the Superintendent - Training and Health Physicist will:

3.2.1 Develop and prepare a scenario. This scenario shall include but not be limited to the basic objective(s) of the drill or exercise; the date(s), time period, place(s) and participating organizations; the simulated events; a time of real and simulated initiating events; a narrative summary describing the conduct of the drill or exercise and arrangements for qualified observers.

3.2.2 Coordinate efforts with other appropriate emergency organizations and agencies.

3.2.3 Obtain the approval of the Manager - PBNP.

3.2.4 Schedule a date to conduct the drill and assign observers.

3.2.5 Critique the results of the drill or exercise.

3.2.6 Retain critique results for review prior to future drills and guidance in developing Emergency Plan or EPIP's as appropriate.

In addition, the Manager - PBNP will assign personnel to correct any deficiencies.

3.3 Exercises

PBNP conducts an emergency response exercise to demonstrate the effectiveness of the Emergency Plan on a frequency determined jointly with the State. This exercise includes mobilization of State and local personnel and resources adequate to verify the capability to respond to an accident. PBNP will invite qualified observers from Federal, State, and local governments to observe and critique the exercises. A critique is scheduled at the conclusion of the exercise to evaluate the ability of organizations to respond as required in the Emergency Plan. The critique will be conducted as soon as practicable after the exercise. The scenario for the annual exercise will be varied from time to time such that all major elements of the emergency response plans and preparedness organizations are tested within a five-year period. PBNP will make provisions to commence an exercise between 6 pm and midnight and another between midnight and 6 am once every six years.

3.4 Drills

Scheduled drills are held involving appropriate offsite as well as onsite emergency organizations. These drills are conducted by simulating actual emergency conditions. Drills are evaluated by an

assigned monitor. Examples of drills that will be conducted and their frequency include:

3.4.1 Communications Drills

Communications with Federal, State, and local governments within the plume exposure pathway EPZ are tested monthly. Communications with Federal and State emergency response organizations within the ingestion pathway EPZ are tested annually. Communications between PBNP, State, and local emergency operations centers, and field assessment teams are tested annually.

3.4.2 Fire Drills

Fire drills are conducted in accordance with the PBNP Fire Protection Manual. The Fire Protection Supervisor will coordinate all fire drills with offsite agencies as necessary.

3.4.3 Medical Emergency Drills

A medical emergency drill involving a simulated contaminated individual and containing provisions for participation by the Two Rivers Community Hospital are conducted every two years. The offsite portions of this drill may be performed as part of the required annual exercise. Since the Kewaunee Nuclear Power Plant will also be conducting drills with the hospitals on a biannual basis, the hospital will have annual drills.

3.4.4 Radiological Monitoring & Health Physics Drills -

Plant environs, radiological monitoring, and health physics drills, both onsite and offsite are conducted semiannually. These drills evaluate the response to, and analysis of, simulated airborne and direct radiation measurements in the environment.

3.4.5 Chemistry Drills

In-plant liquid sampling exercises shall be done annually.

3.4.6 Site Accountability & Evacuation Drills

A site evacuation drill is conducted so that all personnel are aware of proper routes and assembly areas. The accountability procedure is checked as part of the evacuation drill to ensure that all personnel have either been evacuated or accounted for onsite.

4.0 REVIEW & UPDATING OF THE PLAN & PROCEDURES

The Emergency Plan is reviewed and updated on at least an annual basis. The Manager - PBNP is responsible for coordinating these efforts. The Manager - PBNP is also responsible for coordinating the review and updating of the EPIP's. This includes quarterly updates of emergency telephone lists.

The Offsite Review Committee is responsible for an annual review (Technical Specification 15.6.5.3.8.e.). The Emergency Plan is a major procedure although Technical Specification 15.6.8.1 does not clearly specify it. Appendices to the Emergency Plan are minor procedures which are reviewed and approved appropriately. Distribution of the Emergency Plan will be in accordance with QA Volume 1 procedure PBNP 3.15.5.

5.0 EMERGENCY EQUIPMENT & SUPPLIES

The Health Physicist is responsible for the inventory and inspection of designated emergency equipment and supplies exclusive of fire protection equipment. The Fire Protection Officer is responsible for the fire protection equipment. He may, however, assign personnel to assist him with this responsibility.

Designated emergency equipment and supplies and their location are listed in Appendix "H" of the Emergency Plan. This equipment is inventoried and inspected at least once each calendar quarter and after each use. Portable radiation monitoring equipment included in these inventories is calibrated in accordance with approved procedures. Reserve instruments/equipment will replace those which are removed from emergency kits for calibration or repair. Equipment, supplies, and parts having finite shelf lives will be checked and replaced as necessary. Any deficiencies found will either be cleared immediately or documented for corrective action.

A report, including any deficiencies, is submitted to the Superintendent - Technical Services following each inventory inspection. He assigns personnel responsible for correcting deficiencies.

6.0 PUBLIC INFORMATION PROGRAM

WE will provide on an annual basis some training for the general population within the EPZ. These training programs will include the following:

6.1 Educational material concerning radiation.

6.2 Identification of a contact point for further information.

6.3 Protective actions which can be taken for any radiological emergency. These actions would range from simple sheltering and respiratory protection to the more complex and serious steps such as evacuation.

In addition, public notification and education methods are included in the EPIP's. These procedures include methods of education and notification of the adult and transient population within a 10-mile radius.

RECOVERY

1.0 DISCUSSION

Outlined in EP 5.0 are those preplanned actions to be taken in the event that an emergency situation arises. After execution of these preplanned actions, there will be need for further plant actions. Depending on the nature of the particular situation, recovery procedures shall be developed for restoring operations and property as nearly as possible to a safe status. The less complex operations such as in an Unusual Event or Alert require only brief recovery action procedures. However, for the Site and General Emergencies, correspondingly complex recovery action procedures may be required. Although it is not practicable to plan detailed recovery actions for all conceivable situations, the following general guidelines will assist in determining the specific actions to be taken:

1.1 All recovery actions will be preplanned. This means that each specific action will be thought out in advance and discussed with responsible and knowledgeable personnel. If conditions permit, it is preferred that these be a written log of all actions to be taken and by whom. Affected areas are roped off and posted with warning signs indicating radiation levels and permissible entry times based on survey results. Shielding is employed to the extent practical. Access to such areas is controlled, and exposures to personnel entering such areas is documented.

1.2 Every reasonable effort should be made to limit radiation exposure of personnel involved in the recovery situation to levels as low as reasonably achievable. Exposures should not exceed 10 CFR 20 limits.

1.3 The Site Manager is responsible for evaluating the advisability and timing of authorizing personnel to reenter affected area(s). An RWP will be used to control access during recovery operations. Survey results and all other pertinent information will be collected from logs and other records or indicators in the control room and/or in the ESC. Individuals with direct knowledge of recent conditions in the affected area(s) will also be interviewed.

1.4 When all appropriate actions have been executed, the Site Manager may terminate recovery operations. The decision to terminate the recovery operations may be initiated by recommendations of a plant review committee established for the recovery, which is responsible

for gathering all available evidence on contributory factors and reviewing the recovery operations to ensure that all causal factors have been specifically identified and all abnormal conditions corrected or neutralized. In addition, this review committee will review recommendations from the Site Manager where a release of radioactive material has occurred and consult with those offsite authorities with regulatory or compliance responsibilities.

2.0 RECOVERY ORGANIZATION

In those cases where post-accident conditions indicate that recovery operations will be either complicated or will extend over a relatively long period of time, the plant operations will shift from the emergency response organization to a long-term recovery organization. The recovery organizational structure will be the same as the emergency response organization with additional modifications depending upon the nature of the accident, post-accident conditions (i.e., plant conditions, radiation/contamination levels, etc.) and other factors to be determined at that time. The advantage for adopting this transitional approach is for continuity (i.e., managers and directors know the problem areas), and lack of confusion among plant personnel and Federal, State and local support agencies.

Prior to initiating a long-term recovery organization, specific recovery operational procedures shall be defined. A typical long-term recovery organization description of the general plant staff assignments, basic functions, and primary responsibilities are further described below:

2.1 Assistant Vice President (Emergency Support Manager)

The Assistant Vice President (Emergency Support Manager) is responsible for selecting the senior personnel to fill the key position in the long-term recovery organization and for implementation and coordination of recovery operations (See Appendix "A", Section 2.0).

2.2 Manager - PBNP (Site Manager)

The Manager - PBNP (Site Manager) is responsible for the overall implementation and management of the recovery operations of the plant. This includes overseeing the operations of the various functional groups and ensuring that all activities, proposed courses of action, and contingency plans receive proper analysis and coordination (See Appendix "A", Section 5.0).

2.3 Vice President, Communications (Emergency News Center Director)

The Vice President, Communications (Emergency News Center Director) is responsible for assisting in coordinating the exchange of information with public and governmental agencies (See Appendix "A", Section 4.0).

2.4 Director, Purchasing (Administrative & Logistics Manager)

The Director, Purchasing (Administrative & Logistics Manager) is responsible for providing the necessary administrative/logistics requirements such as communications, manpower, transportation, commissary arrangements, and accommodations (See Appendix "A", Section 3.0).

2.5 Plant Operations Group (Appendix "A", Figure 3)

The Plant Operations group (Appendix "A", Figure 3) consists of the plant staff responsible for performing plant operations and maintenance activities during recovery operations.

2.6 Technical Support Group (Appendix "A", Figure 4)

The Technical Support group (Appendix "A", Figure 4) consists of the plant staff responsible for providing plant operations and engineering support, technical planning and analysis, in-plant HP management, and data reduction and management activities during recovery operations.

2.7 RadCon/Waste Management Group (Appendix "A", Figure 5)

The RadCon/Waste Management group (Appendix "A", Figure 5) consists of the plant staff responsible for safely and effectively managing the quantities of radioactive gases, liquids, and solids during the recovery operations.

2.8 Design, Construction & Planning Support Group (Appendix "A", Figure 6)

The Design, Construction, & Planning Support group (Appendix "A", Figure 6) consists of the plant staff responsible for developing plans and schedules, coordinating and monitoring the status of tasks and reporting the work progress of all other recovery support or management groups during recovery operations. In addition, the group coordinates the activities of the nuclear steam supply systems supplier, the architect engineer, construction forces, and other individuals or consultants.

EMERGENCY RESPONSE ORGANIZATION PERSONNEL FUNCTION & RESPONSIBILITIES

1.0 EMERGENCY DIRECTOR

1.1 Reports To

President, Wisconsin Electric Power Company

1.2 Location

Corporate headquarters.

1.3 Supervises

WE general office emergency response and recovery management.

1.4 Basic Functions

Responsible for the overall management of WE general office emergency response and recovery operations; with the primary objective of providing the necessary management and technical support for the PBNP emergency response and recovery effort.

1.5 Primary Responsibilities

1.5.1 Coordinates WE general office emergency response and recovery operations in support of the plant's emergency and recovery effort.

1.5.2 Provides the supervision for the administrative and technical support of the emergency response and recovery operations.

1.6 Principal Working Relationships

The Emergency Support Manager for the overall direction and coordination of the emergency response and recovery operations to assist PBNP resources.

2.0 EMERGENCY SUPPORT MANAGER

2.1 Reports To

Emergency Director

2.2 Location

Emergency support center.

2.3 Supervises

Operation of the ESC.

2.4 Basic Functions

Coordinates the PBNP Emergency Plan, with respect to both offsite radiological consequence assessment and the interaction with the remainder of Emergency Plan arrangements specific to the plant.

2.5 Primary Responsibilities

2.5.1 Establishes communications with the TSC and obtains information on the diagnosis and prognosis of the accident condition, the estimates of radioactive material releases, and the prevailing meteorological conditions. A communications channel is to remain in use for this information as long as is necessary.

2.5.2 Maintains communications with the offsite authorities designated in the Emergency Plan and relates the accident diagnosis and prognosis information necessary for the offsite authorities to implement their emergency plans.

2.5.3 Assists in organizing and dispatching onsite and offsite radiological monitoring teams as required.

2.5.4 Interprets the offsite radiological data obtained and updates the TSC and offsite authorities with the results, in terms of both real-time measurements and, to the extent possible, projected radiological exposures.

2.5.5 Arranges for any further onsite and offsite radiological evaluations as required.

2.5.6 Arranges for and dispatches any special assistance or service required (e.g., radiological measurement or protection equipment, onsite emergency medical treatment, etc.).

2.5.7 Maintains control over personnel at the ESC and assesses and provides for any considerations necessary for their safety.

2.5.8 Maintains communications with the ENC and coordinates the flow of information between the plant and corporate headquarters.

2.5.9 Receives any responding representatives from offsite emergency agencies and assists in their information and communications needs.

2.5.10 Relates all of these actions to the remainder of the emergency response organization.

3.0 ADMINISTRATIVE & LOGISTICS MANAGER

3.1 Reports To

Emergency Support Manager

3.2 Location

Corporate headquarters.

3.3 Coordinates

Administration and logistics.

3.4 Basic Functions

Provides adminstrative, logistic, communications, and personnel support for the emergency response and recovery operations.

3.5 Primary Responsibilities

3.5.1 Administration

Provides the general office support functions including typing, reproduction, office supplies, and office furniture. Special items like photography services and facility/area maps may also be required.

3.5.2 Accommodations

Handles the arrangements for motel, airline, and trailer. Performs the functions of registration and general personnel orientation.

3.5.3 Communications

Meets the telephone requirements of the overall emergency and recovery organization and provides special radio requirements such as mobile units and radio pagers. An emergency/recovery organization telephone directory will be maintained.

3.5.4 Purchasing

Functions as the emergency and recovery organization purchasing agent with responsibility for contract negotiation/administration and material control.

3.5.5 Finance

Administers the petty cash fund and expense accounts. Provides for handling of payroll matters.

3.5.6 Commissary

Provides for food deliveries, operation of the field kitchen, and for trash disposal.

3.5.7 Human Resources

Meets the manpower request needs of the emergency and recovery organization both in the technical and craft disciplines. Ensures that clerical support is available and provides labor relations assistance as required.

3.5.8 Transportation

Staffs the motor pool facility and provides vehicles for the emergency and recovery organization. Maintains shuttle services between surrounding motels and airports. Supplies special transportation (helicopters, buses), as required.

4.0 EMERGENCY NEWS CENTER DIRECTOR

4.1 Reports To

Emergency Support Manager

4.2 Location

Emergency news center.

4.3 Coordinates

Personnel assigned to Public Affairs & Information.

4.4 Primary Responsibilities

4.4.1 The Emergency News Center Director is the ranking public information representative at the ENC who relays information to other employees at the center, supervises all communications operations at the center, and distributes all news releases and statements. He coordinates information at the ENC with his counterparts from local, State, and Federal agencies and with other companies involved with the emergency, and provides a means of meeting the media's needs.

4.4.2 The Emergency News Center Director is identified as the official company spokesman for the emergency, with the responsibility for arranging interviews, statements quoted in press releases or other announcements, and for presiding at formal press conferences.

4.4.3 The Emergency News Center Director ensures that accurate information is distributed to the nuclear power industry through the Atomic Industrial Forum.

4.5 Principal Working Relationships

4.5.1 The Emergency Support Manager for information on all press statements.

4.5.2 The Site Manager, as available, for up-to-date technical information on the plant and plant operations.

5.0 SITE MANAGER

5.1 Reports To

Emergency Support Manager

5.2 Location

Emergency support center/technical support center.

5.3 Supervises

Plant Operations, Technical Support, and RadCon/Waste Managers.

5.4 Basic Functions

Responsible for implementation and management of overall plant emergency response and recovery operations; with the primary objective of placing the plant in a safe shutdown condition, and then recovering the plant in a manner which minimizes any adverse health and safety effects on the public, employees, and contractors.

5.5 Primary Responsibilities

5.5.1 Responsible for overall management of all in-plant operating procedures and EPIP's in support of the objectives of the emergency response and recovery operations.

5.5.2 Approves changes in the emergency classification assessments based on plant conditions, site meteorology and radiological data.

5.5.3 Appears at press conferences as available in support of the Emergency News Center Director to handle technical questions raised by the press.

5.5.4 Approves the analysis and the development of plans and procedures which are conducted in direct support of plant operations personnel.

5.5.5 Reviews and approves plans and procedures to process and control liquid, gaseous, and solid wastes in a manner consistent with overall emergency response and recovery operations.

5.5.6 Serves as chairman of any plant review committee established for the emergency response and recovery operations.

5.6 Principal Working Relationships

5.6.1 Emergency Support Manager for coordination and direction of implementation of the PBNP Emergency Plan and EPIP's, particularly with respect to offsite radiological consequence assessment as a result of recovery operations.

5.6.2 Emergency News Center Director to provide technical assistance for press conferences.

5.6.3 Design, Construction & Planning Manager for coordination of any design, construction, and planning activities required by emergency response and recovery operations.

6.0 PLANT OPERATIONS MANAGER

6.1 Reports To

Site Manager.

6.2 Location

Technical support center/control room.

6.3 Supervises

Plant Operations Support Staff, Shift Supervisor, Shift Support Coordinator, Maintenance Supervisor, Security Supervisor, and the Training Supervisor.

6.4 Basic Functions

Responsible for implementation of in-plant emergency response and recovery activities with the objective of taking the plant to a safe shutdown condition in a manner which minimizes any adverse health and safety effects on the public, employees and contractors.

6.5 Primary Responsibilities

6.5.1 Responsible for the implementation of all in-plant operating procedures and EPIP's in support of the objectives of the emergency response operation.

6.5.2 Implements emergency classification procedures by assessing plant conditions, site meteorology, and radiological data.

6.5.3 Responsible for all in-plant maintenance activities utilizing normal plant maintenance and support personnel.

6.5.4 Maintains an effecive in-plant security program in support of the emergency response and recovery operations.

6.5.5 Responsible for training of in-plant personnel on the required emergency operating and maintenance plan and procedures in support of the emergency response and recovery operations.

6.5.6 Provides licensed personnel in direct support of plant shift operations personnel.

6.5.7 Implements in-plant plans and schedules to meet the objectives of the emergency response and recovery operations.

6.5.8 Provides information and recommendations to the Site Manager concerning future operations that could affect the plant or the environment.

6.6 Principal Working Relationships

6.6.1 Technical Support Manager concerning review and approval of proposed modifications to procedures, systems, and equipment.

6.6.2 RadCon/Waste Manager concerning plans and procedures to process and control liquid, gaseous, and solid wastes.

7.0 SHIFT SUPERVISOR

7.1 Reports To

Plant Operations Manager

7.2 Location

Control room.

7.3 Supervises

Normal plant operations personnel and the emergency response organization shift support personnel.

7.4 Basic Functions

Responsible for the safe operation of the plant including implementation of normal and emergency procedures and instructions to safely place and maintain the plant in a safe shutdown condition.

7.5 Primary Responsibilities

7.5.1 Directs the activities of the normal plant operations personnel and the emergency response organization shift support personnel.

7.5.2 Operation of the plant in compliance with all normal plant procedures, directives, Technical Specifications, and emergency procedures.

7.5.3 Provides information and recommendations on accident response to the Plant Operations manager.

7.5.4 Responsible for monitoring plant parameters and plant conditions.

7.5.5 Responsible for system valve alignment and equipment operations.

7.5.6 Responsible for interfacing with the emergency response organization in support of the emergency response operations.

7.6 Principal Working Relationships

7.6.1 Maintenance, Instrument & Control, Supt. - Training, and Security Supervisors in support of the emergency response and recovery operations.

7.6.2 Shift Support Coordinator regarding effective utilization of the shift support personnel.

8.0 SHIFT SUPPORT COORDINATOR

8.1 Reports To

Plant Operations Manager

8.2 Location

Operations support center.

8.3 Coordinates

Emergency support personnel assigned to the plant operations group.

8.4 Basic Functions

Coordinates with the Shift Supervisor effective utilization of the emergency support personnel assigned to the plant operations group.

8.5 Primary Responsibilities

8.5.1 Provides support to plant operations in monitoring plant parameters and analyzing plant conditions.

8.5.2 Provides support to plant operations in system valve alignment and equipment operations.

8.5.3 Assists in coordinating the emergency response and recovery organization objectives requiring implementaton by the plant operations group.

8.6 Principal Working Relationships

Shift Supervisor regarding the most effective utilization of support personnel.

9.0 MAINTENANCE SUPERVISOR

9.1 Reports To

Plant Operations Manager

9.2 Location

Operations support center.

9.3 Supervises

Maintenance personnel in support of repair, installation, and modification of maintenance equipment.

9.4 Basic Functions

Responsible for the repair of installed equipment (other than instrument and control equipment), and the installation of modifications to existing equipment in support of the emergency response and recovery operations.

9.5 Primary Responsibilities

9.5.1 Directs maintenance personnel in the repair of defective equipment in support of the emergency response and recovery operations.

9.5.2 Directs the normal maintenance personnel in the installation of modifications to existing equipment in support of the emergency response and recovery operations.

9.5.3 Secures necessary electrical power and mechanical equipment to assist emergency response and recovery operations.

9.6 Prinicipal Working Relationships

Shift Supervisor in the repair of maintenance equipment and regarding the installation of modifications in the maintenance area.

10.0 TRAINING SUPERVISOR

10.1 Reports To

Plant Operations Manager

10.2 Location

Operations support center.

10.3 Supervises

Training personnel responsible for procedures and other training in support of the emergency response and recovery operations.

10.4 Basic Functions

Responsible for coordinating the training requirements of all in-plant personnel associated with the emergency response and recovery operations.

10.5 Primary Responsibilties

10.5.1 Directs the plant training personnel to provide training in direct support of the emergency response and recovery operations.

10.5.2 Provides the necessary training equipment and facilities to effectively support the training needs of the plant.

10.6 Principal Working Relationships

10.6.1 Shift Supervisor regarding the training needs of the shift personnel in support of the emergency response and recovery operations.

10.6.2 I&C Supervisor, Maintenance Supervisor, Chemistry/Health Physics Supervisor, Security Supervisor regarding training needs on out-of-normal procedures in their areas.

11.0 SECURITY SUPERVISOR

11.1 Reports To

Plant Operations Manager

11.2 Location

Technical support center/security building.

11.3 Supervises

Plant security personnel.

11.4 Basic Functions

Directs the normal plant security personnel to provide required in-plant security.

11.5 Primary Responsibilities

11.5.1 Directs the normal in-plant security personnel in maintaining the plant security system in support of the emergency response and recovery operations.

11.5.2 Responsible for coordinating on-site personnel accountability with assistance from plant supervision during emergency situations.

11.5.3 Responsible for personnel evacuation and restricting access to secured areas.

11.6 Principal Working Relationships

11.6.1 All in-plant supervisors regarding emergency response and recovery activities requiring security protection.

11.6.2 All emergency response organization groups regarding security requirements for personnel requiring access to the plant.

11.6.3 Coordinate onsite evacuation routes with Chemistry/Health Physics Supervisor.

11.6.4 Law enforcement agency personnel to maintain control of potential trespassers and to establish appropriate road-blocks.

12.0 TECHNICAL SUPPORT MANAGER

12.1 Reports To

Site Manager

12.2 Location

Technical support center.

12.3 Supervises

Technical Support Group personnel.

12.4 Basic Functions

Responsible for analysis and the development of plans and procedures in direct support of plant operations personnel with the objective of

placing the plant in a safe shutdown condition in a manner which minimizes any adverse health and safety effects on the public, employees and contractors.

He provides a central facility for the collection, retention, retrieval, and transmitting of plant and local environmental parameters.

12.5 Primary Responsibilities

12.5.1 Analyzes instrument and control problems, determines alternates, and designs and coordinates the installation of short-term instrument and control modifications.

12.5.2 Responsible for all chemistry and health physics activities onsite by coordination of onsite sampling programs, dose assessment, dose management, and radiation protection programs.

12.5.3 Analyzes problems, determines alternatives, and developes plans in the area of system operations.

12.5.4 Analyzes conditions and develops guidance for plant shift operations personnel for the protection of the core.

12.5.5 Developes out-of-normal operating and emergency procedures in direct support of plant shift operations personnel.

12.5.6 Provides a central facility for the collection, retention, retrieval, and transmitting of plant and local environmental parameters.

12.5.7 Helps resolve questions concerning plant licensing requirements with NRC representatives.

12.6 Principal Working Relationships

12.6.1 Plant Operations Manager regarding implementation of the Emergency Plan and EPIP's.

12.6.2 RadCon/Waste Manager regarding any plant manipulations that might affect in-plant radiation or waste inventory levels.

13.0 INSTRUMENT & CONTROL SUPERVISOR

13.1 Reports To

Technical Support Manager

13.2 Location

Technical support center.

13.3 Supervises

Plant Instrument & Control personnel.

13.4 Basic Functions

Responsible for analyzing problems, determining alternatives, developing emergency plans and the repairing of installed instrument and control equipment, and for the design and installation of modifications to existing equipment in support of the emergency response and recovery operations.

13.5 Primary Responsibilities

13.5.1 Analyzes instrument and control problems and develops plans for how the plant operations personnel can continue to monitor and control plant parameters.

13.5.2 Designs and coordinates the installation of modifications required to allow continued monitoring and control of plant parameters.

13.5.3 Directs the normal instrument and control personnel in the repair of defective equipment in support of the emergency response and recovery operations.

13.5.4 Directs the normal instrument and control personnel in the installation of modifications to existing equipment in support of the emergency response and recovery operations.

13.6 Principal Working Relationships

13.6.1 Shift Supervisor in the repair of instrument and control equipment.

13.6.2 Systems Analysis & Procedural Support Coordinator regarding required instrument and control procedure development.

14.0 CHEMISTRY/HEALTH PHYSICS SUPERVISOR

14.1 Reports To

Technical Support Manager

14.2 Location

Technical support center.

14.3 Supervises

Plant Chemistry/Health Physics personnel in support of health physics/chemistry/meteorology and procedures during the emergency response and recovery operations.

14.4 Basic Functions

Responsible for directing the Chemistry/Health Physics Staff in accumulating onsite radiation/chemical data, dose assessments and radiation protection programs in support of the emergency response and recovery operations.

14.5 Primary Responsibilities

14.5.1 Directs the normal in-plant Chemistry/Health Physics personnel in monitoring, controlling, and evaluating plant chemical, radiological, and meteorological conditions.

14.5.2 Provides radiation protection and ALARA training, respiratory equipment training, and in-plant whole body counting, and decontamination.

14.5.3 Performs radiation protection activities as required in support of the emergency response and recovery operations.

14.5.4 Responsible for procedures for reentry into potentially highly contaminated areas or areas with high radiation levels.

14.6 Principal Working Relationships

14.6.1 Health Physics Director in matters affecting offsite radiation measurement data, dose assessment and waste management processing.

14.6.2 Maintenance and I&C Supervisors in support of maintenance/instrument and control repair/modifications with radiological implications affecting the normal emergency response and recovery operations.

14.6.3 Security Supervisor in providing radiological monitoring in support of evacuation efforts.

15.0 SYSTEMS ANALYSIS & PROCEDURAL SUPPORT COORDINATOR

15.1 Reports To

Technical Support Manager.

15.2 Location

Technical support center.

15.3 Coordinates

Support personnel analyzing problems and developing plans in the area of systems and equipment operations. Support personnel developing operating and emergency procedures.

15.4 Basic Functions

Analyzes problems and develops plans associated with the operation of plant systems and equipment. Develops out-of-normal operating and emergency procedures for plant operations personnel.

15.5 Primary Responsibilities

15.5.1 Analyzes problems associated with the operations of plant systems and equipment and develops plans to mitigate those problems.

15.5.2 Revises or rewrites existing operating and emergency procedures as required to reflect existing accident conditions.

15.5.3 Converts plant recovery plans into clear, concise, out-of-normal operating and emergency procedures for use by the plant operations group.

15.6 Principal Working Relationships

15.6.1 Shift Support Coordinator regarding systems and equipment problems that need resolution.

15.6.2 Technical Support Manager regarding recommendations on how to contend with systems and equipment problems.

15.6.3 Shift Support Coordinator regarding required out-of-normal operating and emergency procedures.

15.6.4 Core Physics Coordinator regarding required operating procedures to protect the core.

15.6.5 I&C Supervisor regarding procedures on use of modified controls, alternate instruments, and out-of-normal monitoring and control requirements.

16.0 CORE PHYSICS COORDINATOR

16.1 Reports To

Technical Support Manager

16.2 Location

Technical support center.

16.3 Basic Functions

Analyzes core parameters and develops guidance for the plant shift operations personnel on protection of the core.

16.4 Primary Responsibilities

16.4.1 Analyzes core parameters to determine current conditions of the core.

16.4.2 Reviews proposed plant operations with respect to the effect on core conditions.

16.4.3 Develops recommendatins for plant operations that would affect safer core conditions.

16.5 Principal Working Relationships

Technical Support Manager and Site Manager regarding proposed plant operations to affect safer core conditions.

17.0 ADMINISTRATIVE SUPERVISOR

17.1 Reports To

Technical Support Manager

17.2 Location

Technical support center.

17.3 Basic Functions

Supervises clerical personnel assigned to the Technical Support Group and coordinates the Technical Support Group needs for communications, office supplies, personnel, and office equipment with the Administration & Logistics Manager.

17.4 Primary Responsibilities

17.4.1 Provides typing, filing, and office equipment operations to all areas within the Technical Support Group.

17.4.2 Coordinates with the Administration & Logistics Manager the Technical Support Group needs for additional communications, equipment, office supplies, office equipment, etc.

17.5 Principal Working Relationships

17.5.1 Technical Support Manager and all Technical Support Group Staff regarding administrative support needs and staffing needs.

17.5.2 Administration & Logistics Manager regarding filling of the Technical Support Group administrative and staffing needs.

18.0 DATA PROCESSING COORDINATOR

18.1 Reports To

Technical Support Manager

18.2 Location

Technical support center.

18.3 Coordinates

Data processing.

18.4 Basic Functions

Accumulation, retention, retrieval, and retransmittal of information needed by the emergency response organization.

18.5 Primary Responsibilities

18.5.1 Provides for the accumulation, retention, and retrieval of plant information and local environment parameters.

18.5.2 Transmits information needed by the emergency response organization.

18.5.3 Serves as a single location for the acquisition of data resulting in minimum interference with plant operations.

18.6 Principal Working Relationships

Plant Operations Manager regarding acquisition of needed plant information and environmental parameters.

19.0 RADCON/WASTE MANAGER

19.1 Reports To

Site Manager.

19.2 Location

Emergency support center.

19.3 Supervises

Waste Systems and the RadCon/Waste Management Group.

19.4 Basic Functions

Responsible for the development of plans and procedures to process and control liquid, gaseous, and solid wastes in a manner consistent with the emergency response and recovery organization objectives and to minimize any adverse health and safety effects on the public.

19.5 Primary Responsibilities

19.5.1 Develops plans and procedures for sampling and processing liquid, gaseous, and solid wastes.

19.5.2 Develops any required modifications to plant waste systems and conceptual designs of new systems and equipment.

19.5.3 Provides HP support offsite by coordination of offsite sampling programs, dose assessments, dose management, and radiaion protection and ALARA programs.

19.5.4 Provides information and recommendations to the Site Manager concerning future operations that could affect the plant or the environment.

19.6 Principal Working Relationships

19.6.1 Site Manager and Technical Support Manager regarding implementation of plans to obtain samples and process liquid, gaseous, and solid wastes, and to obtain data on plant waste systems status.

19.6.2 Design, Construction & Planning Manager for drawings and construction of systems and equipment and regarding planned and scheduled activities of the RadCon/Waste Management Group.

19.6.3 Technical Support Manager concerning review and approval of proposed modifications to procedures, systems, and equipment.

20.0 HEALTH PHYSICS DIRECTOR

20.1 Reports To

RadCon/Waste Manager (out-of-plant responsibilities) and Chemistry/Health Physics Supervisor (in-plant responsibilities)

20.2 Location

Site boundary control center.

20.3 Supervises

Health physics personnel.

20.4 Basic Functions

Responsible for directing assigned health physics personnel in accumulating offsite radiation measurement data, performing dose assessments, and providing radiation protection assistance as directed to meet the needs of the emergency response and recovery operations.

20.5 Primary Responsibilities

20.5.1 Implementation of offsite radiological survey procedures.

20.5.2 Evaluates offsite doses based on radiation monitoring performed by health physics personnel.

20.5.3 Provides radiation protection training for support personnel.

20.5.4 Provides respirator training, fitting, and whole body counting services.

20.5.5 Develops plans for plant radiation surveys, sampling, shielding, and special tools in support of waste systems processing and design modification activities.

20.5.6 Performs radiation protection activities as requested by the plant Chemistry/Health Physics Supervisor.

20.6 Principal Working Relationships

20.6.1 Chemistry/Health Physics Supervisor regarding radiation protection support, dose evaluation, and dose management.

20.6.2 Radwaste Technical Support Coordinator regarding sampling and radiation measurements needed as well as protective clothing requirements to perform the work.

20.6.3 Waste group technical support personnel for recommendations regarding methods to reduce exposure.

21.0 LICENSING SUPPORT COORDINATOR

21.0 Reports To

RadCon/Waste Manager

21.2 Location

Corporate headquarters.

21.3 Coordinates

ALARA review, plant operations review, and resolution of license requirements with NRC representatives.

21.4 Basic Functions

Resolves questions of FFDSAR and Technical Specification commitments, abnormal operating modes, and other license requirements with NRC representatives.

21.5 Primary Responsibilities

21.5.1 Works with NRC representatives to resolve questions concerning FFDSAR and Technical Specification commitments in light of existing plant conditions.

21.5.2 Works with NRC representatives to resolve license requirements associated with proposed abnormal operating modes or plant modifications.

21.5.3 Provides ALARA review of proposed emergency response organization activities.

21.6 Principal Working Relationships

21.6.1 NRC representatives regarding all license requirement areas.

21.6.2 Technical Support Manager regarding out-of-normal operating modes and modifications to the plant.

21.6.3 Design, Construction & Planning Manager regarding modifications to the plant.

21.6.4 RadCon/Waste Manager regarding ALARA review.

22.0 RADWASTE TECHNICAL SUPPORT COORDINATOR

22.1 Reports To

RadCon/Waste Manager.

22.2 Location

Corporate headquarters.

22.3 Supervises

Radwaste technical support.

22.4 Basic Functions

Responsible for the development of plans and procedures to process and control liquid, gaseous, and solid wastes in support of the emergency response and recovery operations. Other responsibilities include developing decontamination plans in support of plant operations; conceptual design of systems and equipment to accommodate waste processing needs and to reduce plant and offsite dose rates; and for reviewing the plans and procedures and modifications developed by the RadCon/Waste Management Group to evaluate their effectiveness in achieving the objectives of expediting waste processing and reducing plant and offsite dose rates.

22.5 Primary Responsibilities

22.5.1 Maintains an updated status of the liquid storage tank, gas system, and solid waste system inventories.

22.5.2 Develops plans and procedures to process liquid wastes.

22.5.3 Develops plans and procedures for processing gaseous wastes and maintain in-plant charcoal filter exhaust systems.

22.5.4 Develops plans and procedures for solid waste processing.

22.5.5 Assists in development of decontamination plans for affected plant areas.

22.5.6 Develops plans to reduce all liquid, gaseous and solid waste levels to a normal inventory.

22.5.7 Provides recommendations to the plant operating organization on chemistry and radiochemistry problems.

22.6 Principal Working Relationships

22.6.1 Technical Support Manager and the Health Physics Director in regard to technical feasibility of processing plans and their effects on the plant and environment.

22.6.2 Chemistry/Health Physics Supervisor with regard to implementation of plans and procedures for processing wastes and to obtain the status of radwaste volumes.

22.6.3 Health Physics Director regarding in-plant and offsite dose rates and radiation protection and clothing requirements for waste processing; shielding, special tools, and monitoring instrumentation needed in the modification package; and assessment of the effects of waste processing.

22.6.4 Technical Support Manager for technical advice concerning the adequacy and feasibility of the proposed modifications.

22.6.5 Chemistry/Health Physics Supervisor as requested for recommendations concerning plant chemistry and radiochemistry.

23.0 DESIGN, CONSTRUCTION & PLANNING MANAGER

23.1 Reports To

Emergency Support Manager

23.2 Location

Corporate headquarters.

23.3 Supervises

Design, Construction & Planning Group.

23.4 Basic Functions

Coordinates the design, construction, and planning activities of the utility, A/E, NSSS Supplier, construction forces, and outside vendors.

23.5 Primary Responsibilities

23.5.1 Provides the direct contact between the utility and the A/E, NSSS Supplier, and Constructor, on administrative matters.

23.5.2 Determines the need for and provides engineering and technical specialists assigned on a preplanned basis to the Technical Support, Plant Operations, and RadCon/Waste Managers, and the Emergency Support Manager, if required. Ensure that these specialists are present, or their alternates are available. Is prepared to provide additional support as required.

23.5.3 Ensures that any design and construction activities are adequately staffed and equipped to provide timely support.

23.5.4 Directs, coordinates, and approves other engineering, design, and construction activities onsite.

23.5.5 Establishes which engineering, design, and construction activities, if any, shall conform to utility formal specifications or be documented by utility quality assurance procedures.

23.5.6 Assists in the planning, scheduling, and expediting of recovery operations.

23.6 Principal Working Relationships

23.6.1 Site Manager regarding plans for modificatons to systems and equipment in plant.

23.6.2 Technical Support Manager regarding review and approval of proposed modifications to systems and equipment in plant.

23.6.3 RadCon/Waste Manager regarding modifications to systems and equipment and support of activities in the waste management area.

24.0 DIRECTOR, QUALITY CONTROL

24.1 Reports To

Design, Construction & Planning Manager

24.2 Location

Corporate headquarters.

24.3 Supervises

Quality control.

24.5 Basic Functions

Responsible for directing and executing the quality control program for such construction tasks that the Design, Construction & Planning Manager may direct to meet the requirements of emergency response and recovery operations.

24.5 Primary Responsibilities

24.5.1 Ensures that the quality control activity is adequately staffed and equipped to provide timely support.

24.5.2 Directs and coordinates the implementation of the quality control program for approved construction tasks.

25.0 UTILITY ENGINEERING DIRECTOR

25.1 Reports To

Design, Construction & Planning Manager

25.2 Location

Corporate headquarters.

25.3 Supervises

Utility engineering.

25.4 Basic Functions

Responsible for directing and administratively controlling and performing such engineering and design tasks that the Design, Construction & Planning Manager may direct to meet the requirements of the emergency response and recovery operations.

25.5 Primary Responsibilities

25.5.1 Provides the administrative and technical control of any engineers and designers assigned to him.

25.5.2 Ensures that his engineering and design activity is adequately staffed and equipped to provide timely support.

25.5.3 Establishes for the Design, Construction & Planning Manager which engineering, design, and construction activities, if any, shall conform to the utility's formal technical requirements.

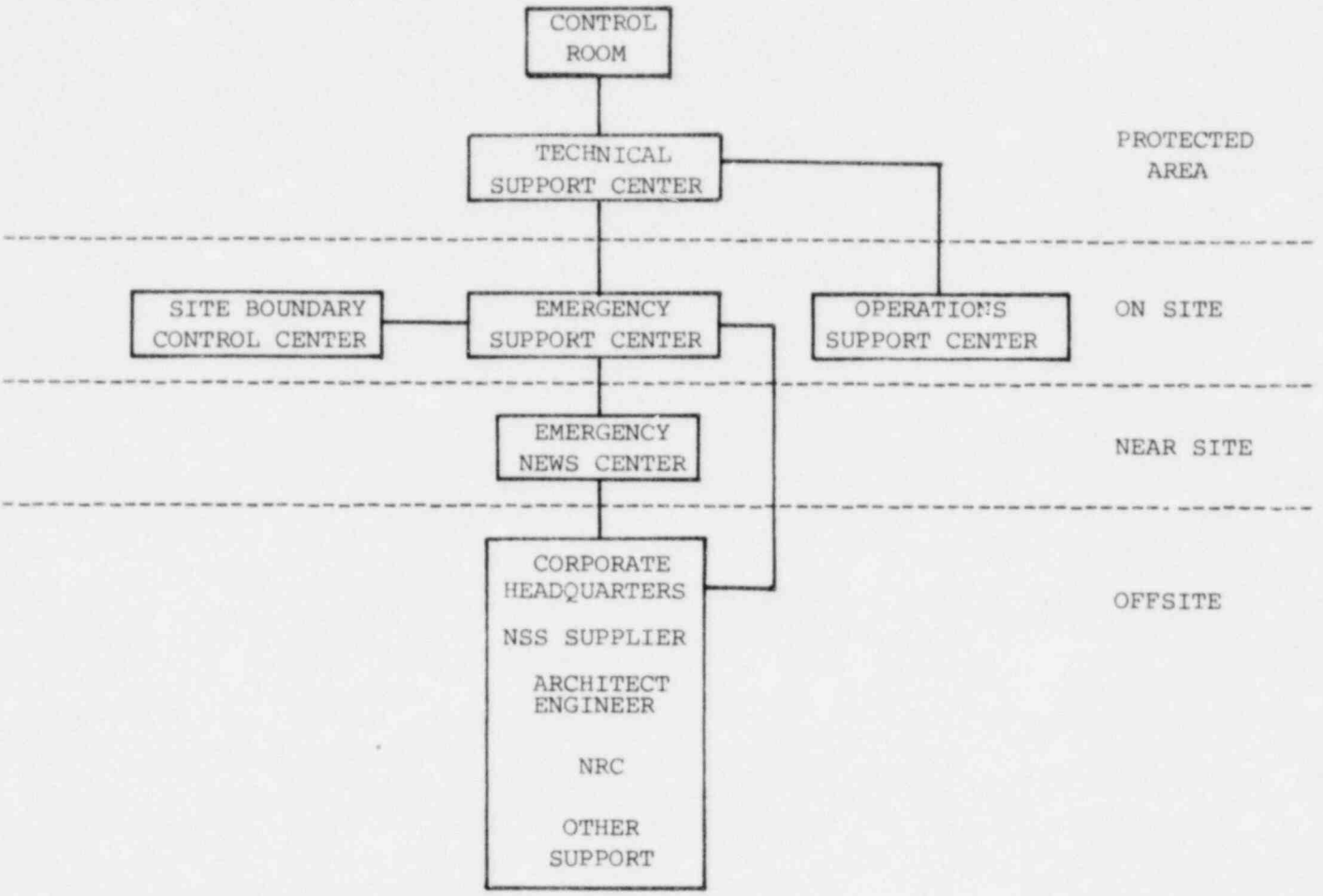


FIGURE 1

EMERGENCY FACILITIES

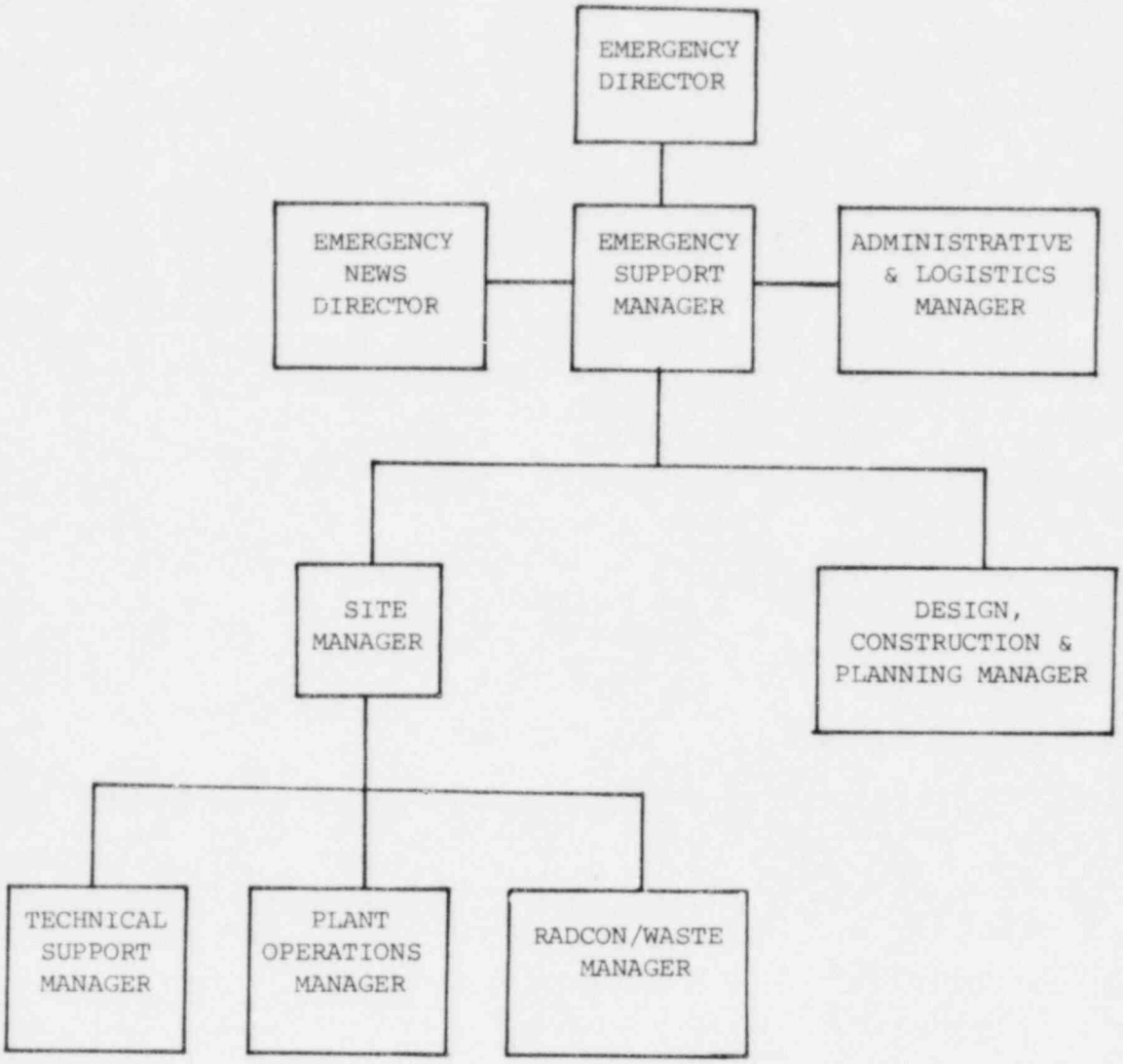


FIGURE 2

EMERGENCY RESPONSE ORGANIZATION

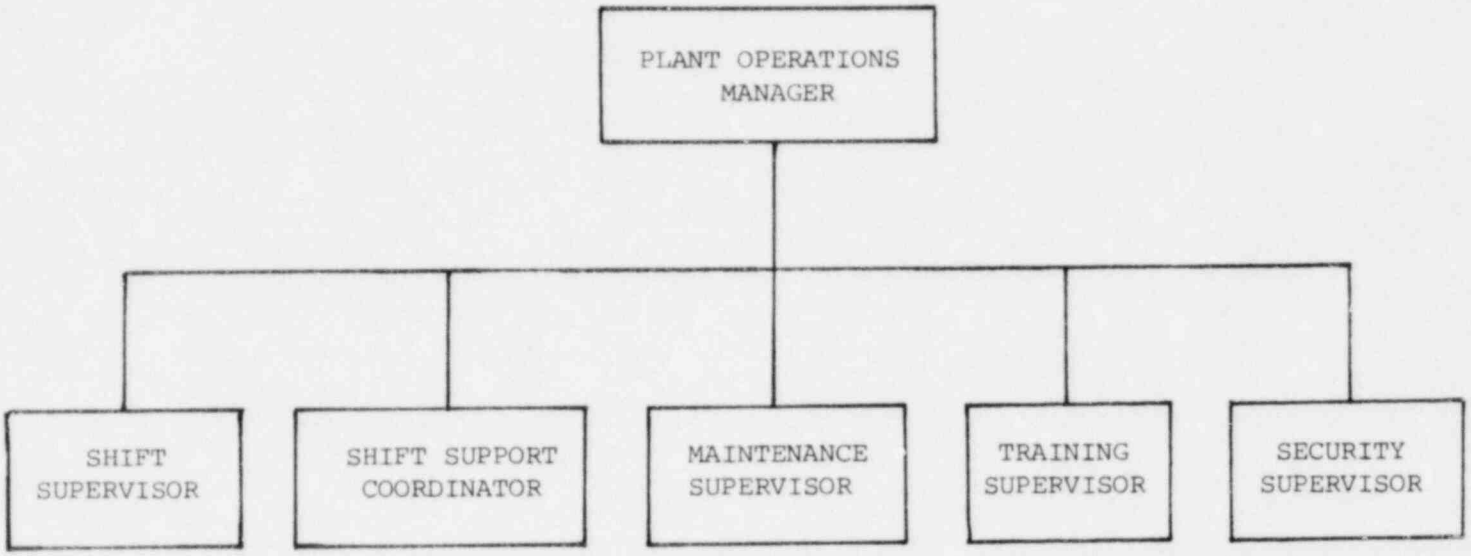


FIGURE 3

PLANT OPERATIONS GROUP

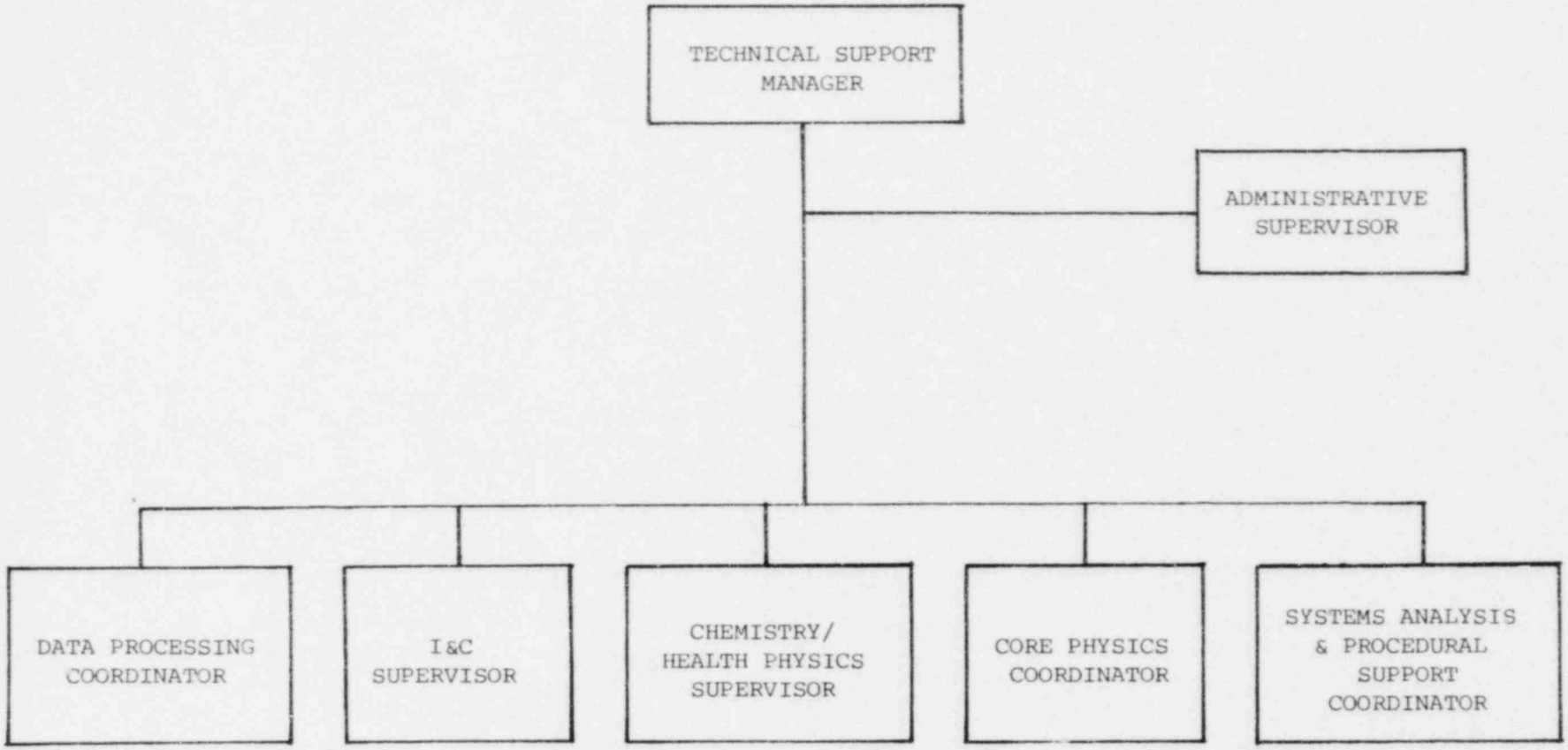


FIGURE 4

TECHNICAL SUPPORT GROUP

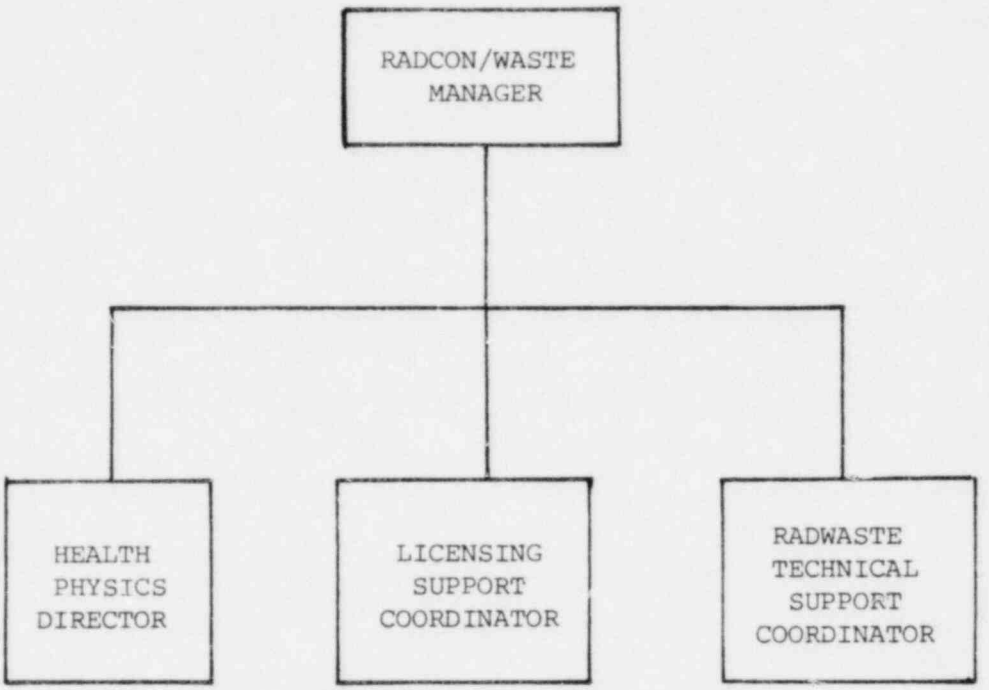


FIGURE 5

RADCON/WASTE MANAGEMENT GROUP

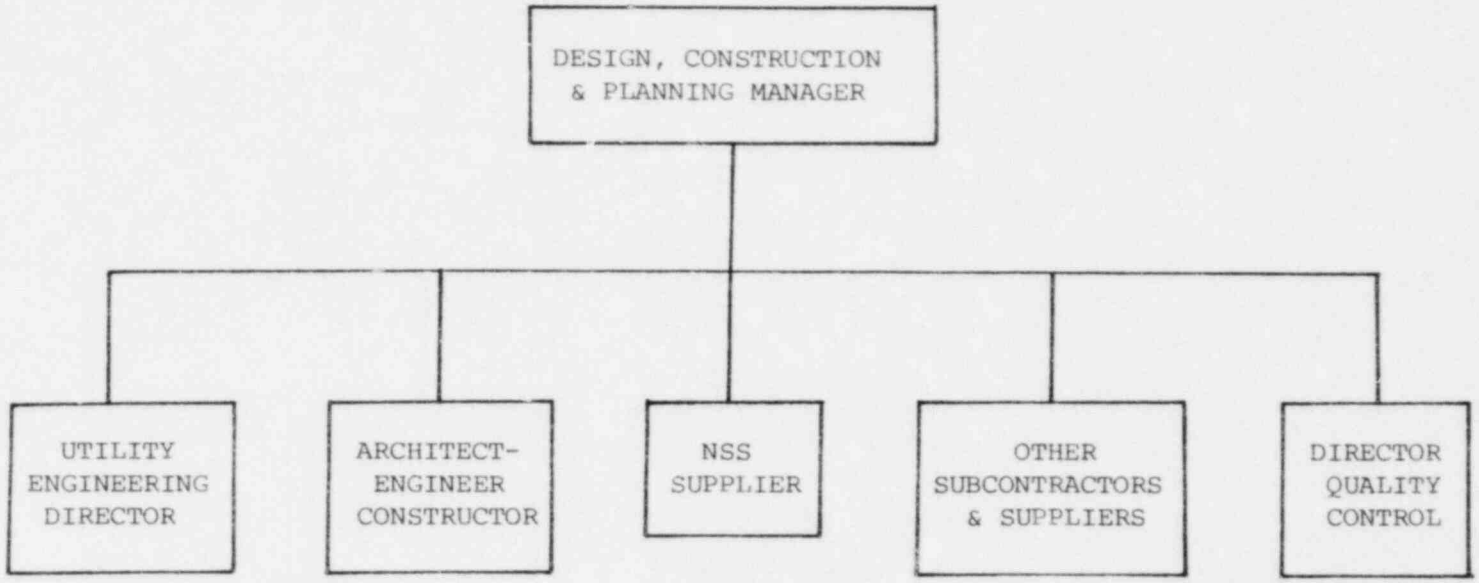


FIGURE 6

DESIGN, CONSTRUCTION & PLANNING SUPPORT GROUP

Appendix C
MINOR
Revision 2
07-30-82

MAPS

1.0 GENERAL

This procedure lists maps to show EPZ areas surrounding PBNP. The maps include travel routes and congregate care locations and facilities. In this procedure, population roses are also included to show the population distribution within the EPZ areas surrounding PBNP.

2.0 MAPS

2.1 Figure 1, "Map of PBNP & Immediate Surrounding Area"

2.2 Figure 2, "Map of General Location Area Surrounding PBNP"

2.3 Figure 3, "Map of Manitowoc County Congregate Center Locations & Travel Routes"

2.4 Figure 4, "Map of Kewaunee County Congregate Care Locations & Travel Routes"

2.5 Figure 5, "Population Rose showing the Population Distribution Within an Area of 0 to 5-Mile Radius"

2.6 Figure 6, "Population Rose showing the Population Distribution Within an Area of 5 to 40-Mile Radius"

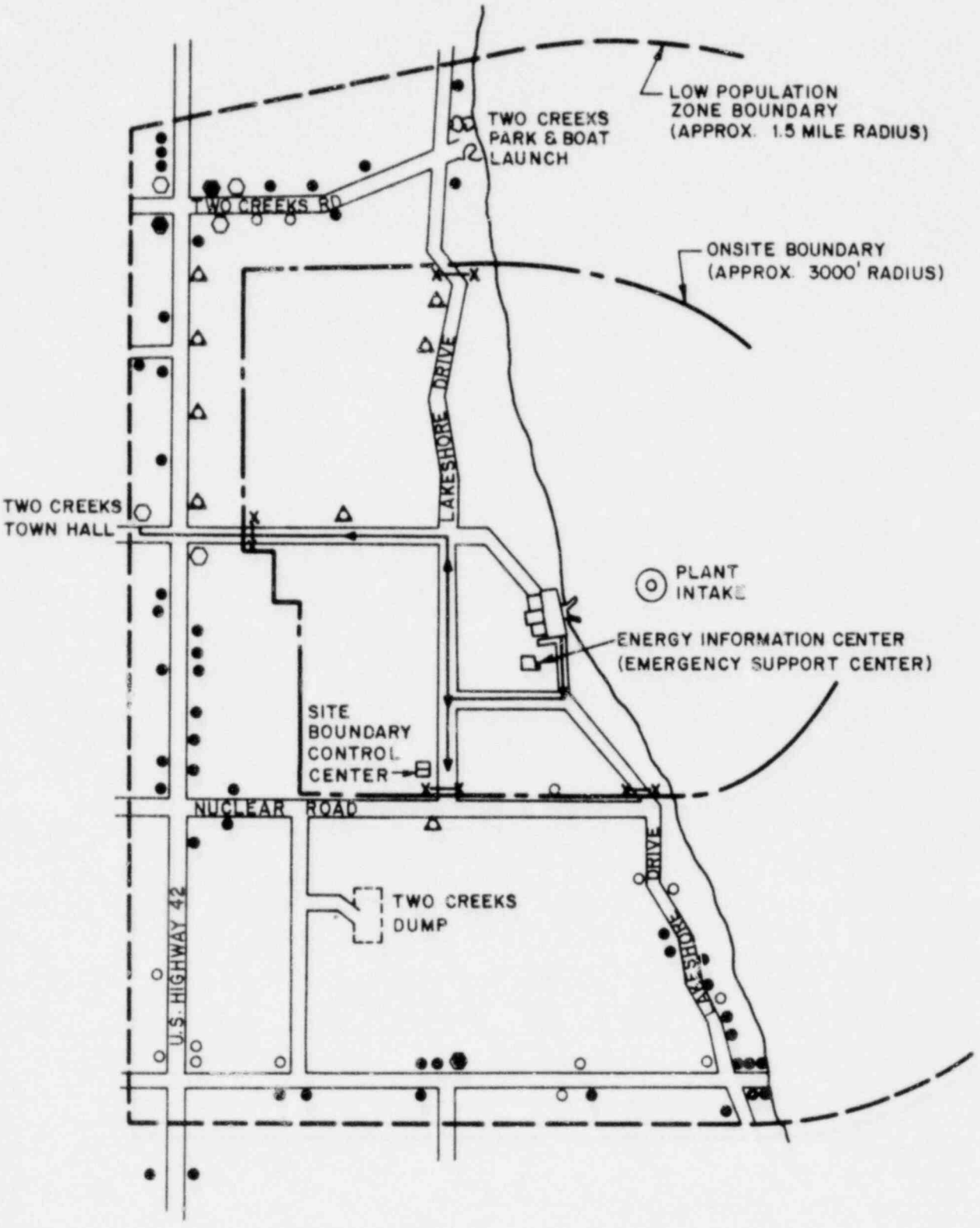


FIGURE 1

MAP OF POINT BEACH NUCLEAR PLANT AND IMMEDIATE SURROUNDING AREA

GENERAL LOCATION MAP

(With Population Centers Of 25000 Or More ⊙)

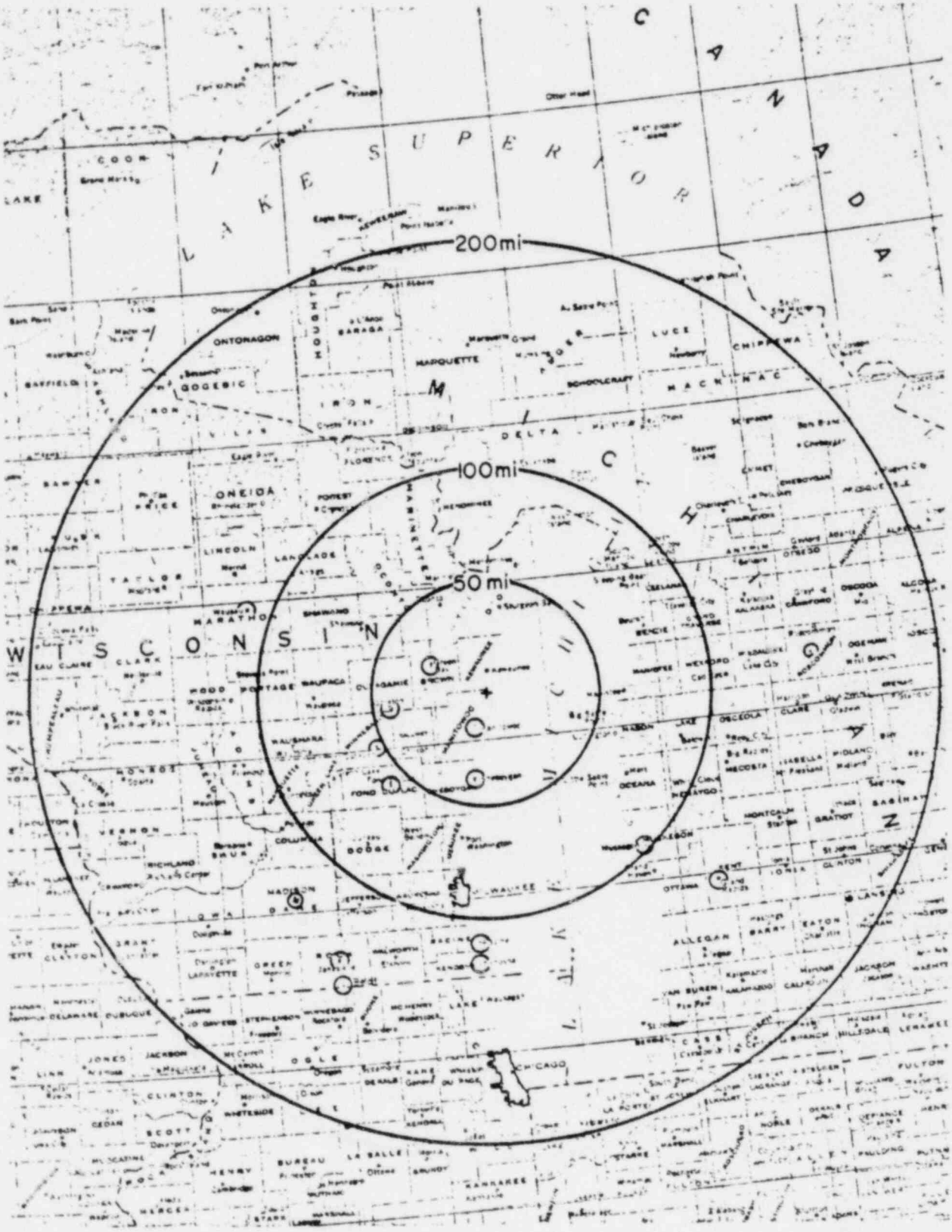
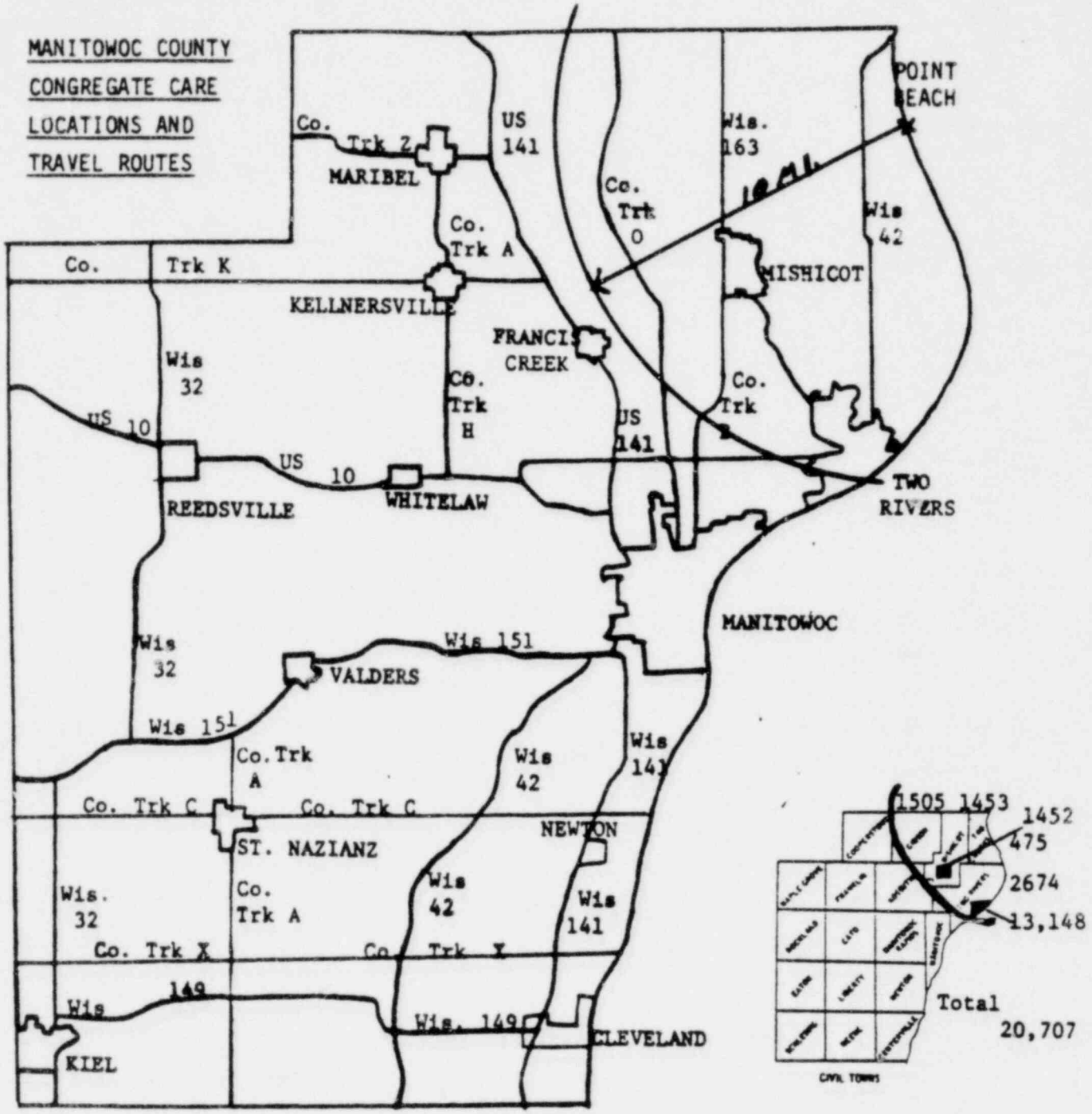


FIGURE 2



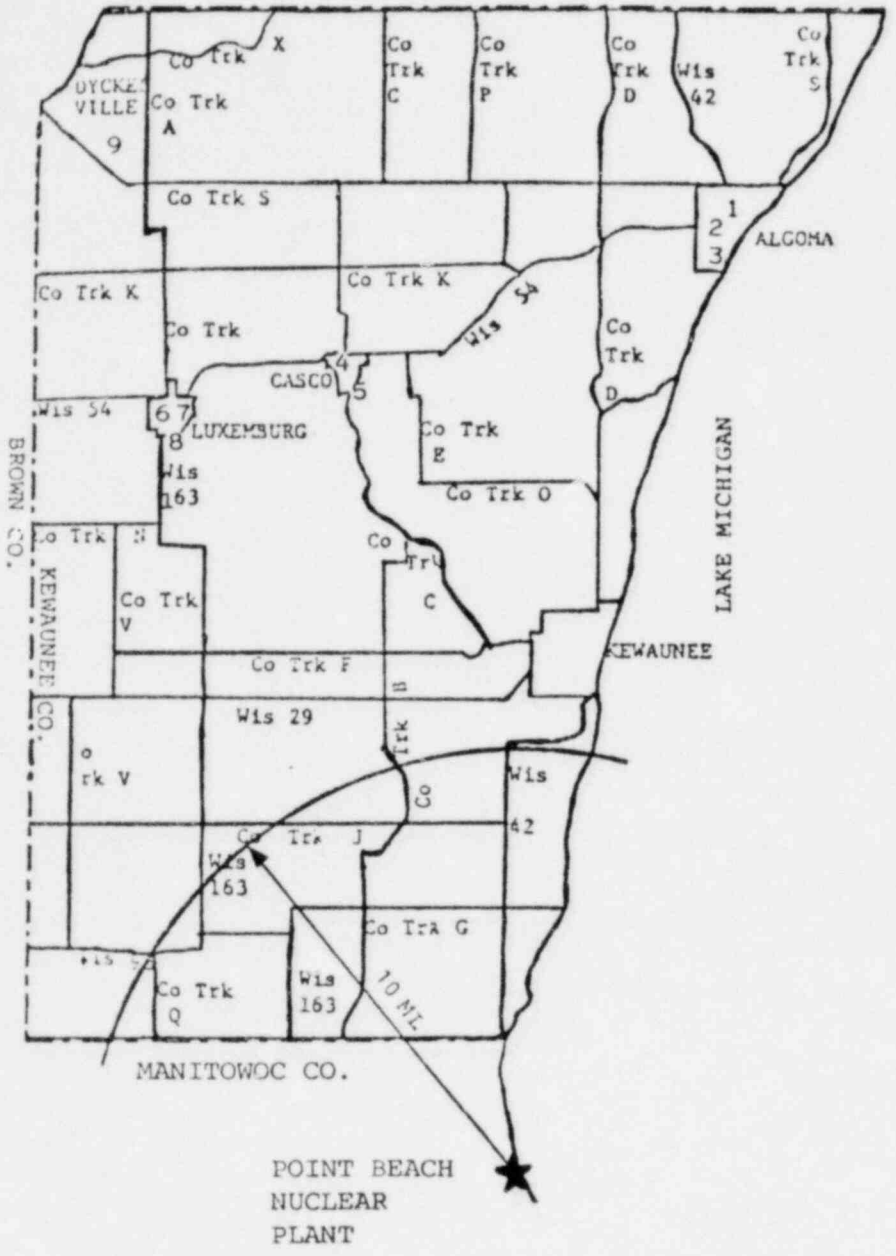
The above is a simplified map of Manitowoc County showing travel routes within and away from the 10 mile "risk" area surrounding the Point Beach Nuclear Plant. County and state highways may be used to travel from the "risk" area to congregate care facilities in Manitowoc County, Reedsville, Valders, St. Nazianz, Kiel, Newton, and Cleveland.

Public and non-public schools as well as other educational institutions will be utilized as congregate care facilities. They have adequate emergency living capability to accommodate all of the risk area population.

The small inset map above indicates population of the areas that may be subject to evacuation.

FIGURE 3

KEWAUNEE COUNTY CONGREGATE CARE LOCATIONS, FACILITIES & TRAVEL ROUTES

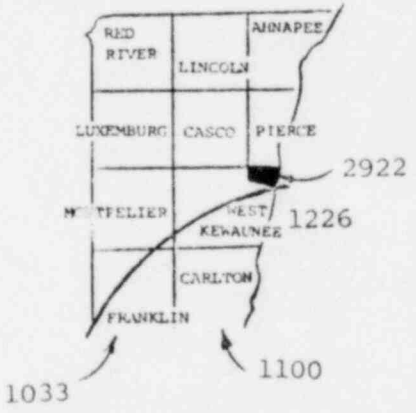


This is a simplified map of Kewaunee County showing the travel routes within and away from the 10 mile "risk" area surrounding Point Beach Nuclear Plant. County and State highways may be used to travel from the "risk" area to congregate care facilities in Algoma, Casco, Luxemburg and Dyckesville. The public and non-public schools of Kewaunee County will be utilized as congregate care facilities. They have adequate emergency living capability to accomodate all of the "risk" area.

The map also designates locations of communities where congregate care is available. They are numbered 1 through 9 and their locations are shown on the map.

The small inset map indicates population of the areas that may be subject to evacuation.

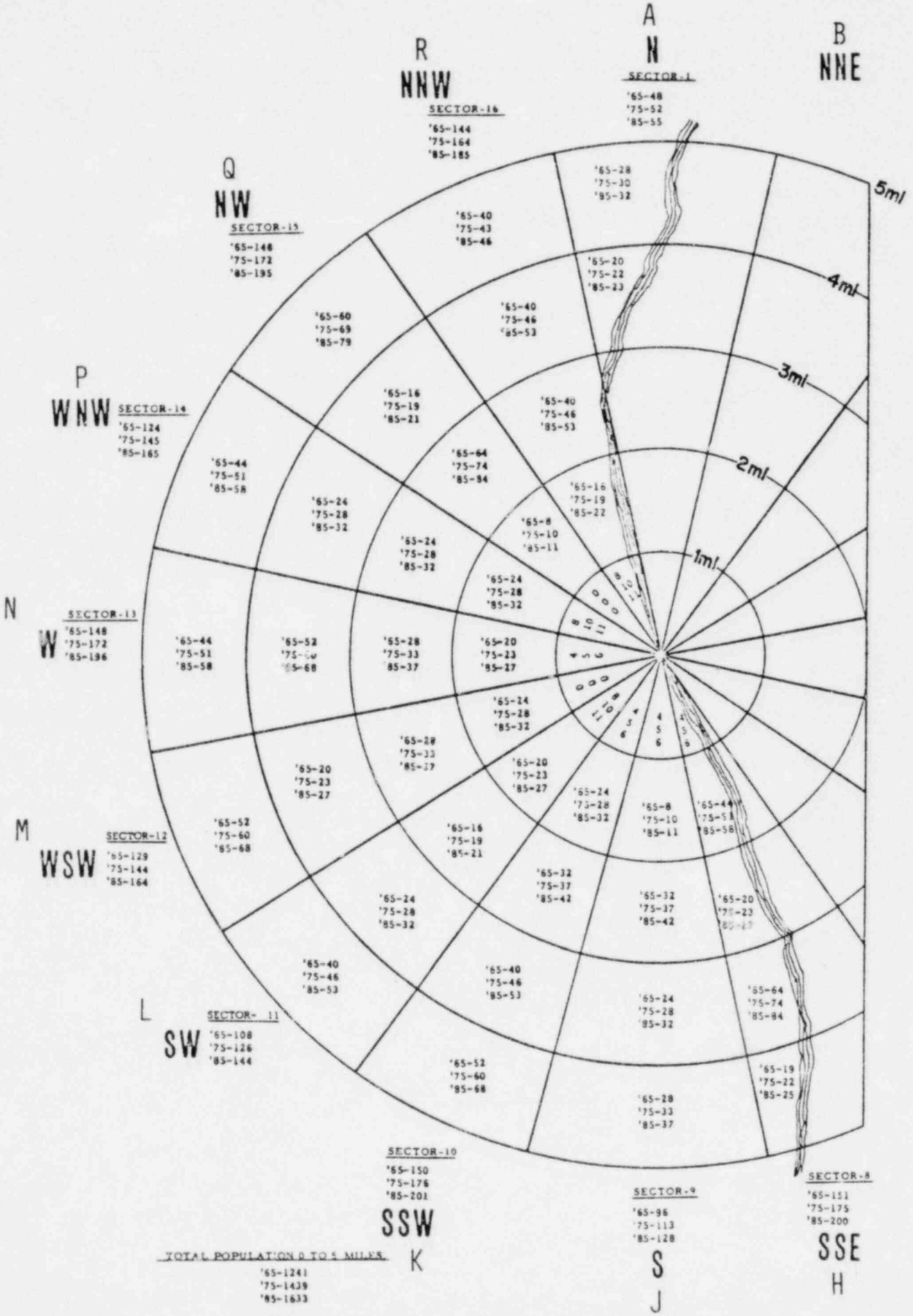
CIVIL TOWNS



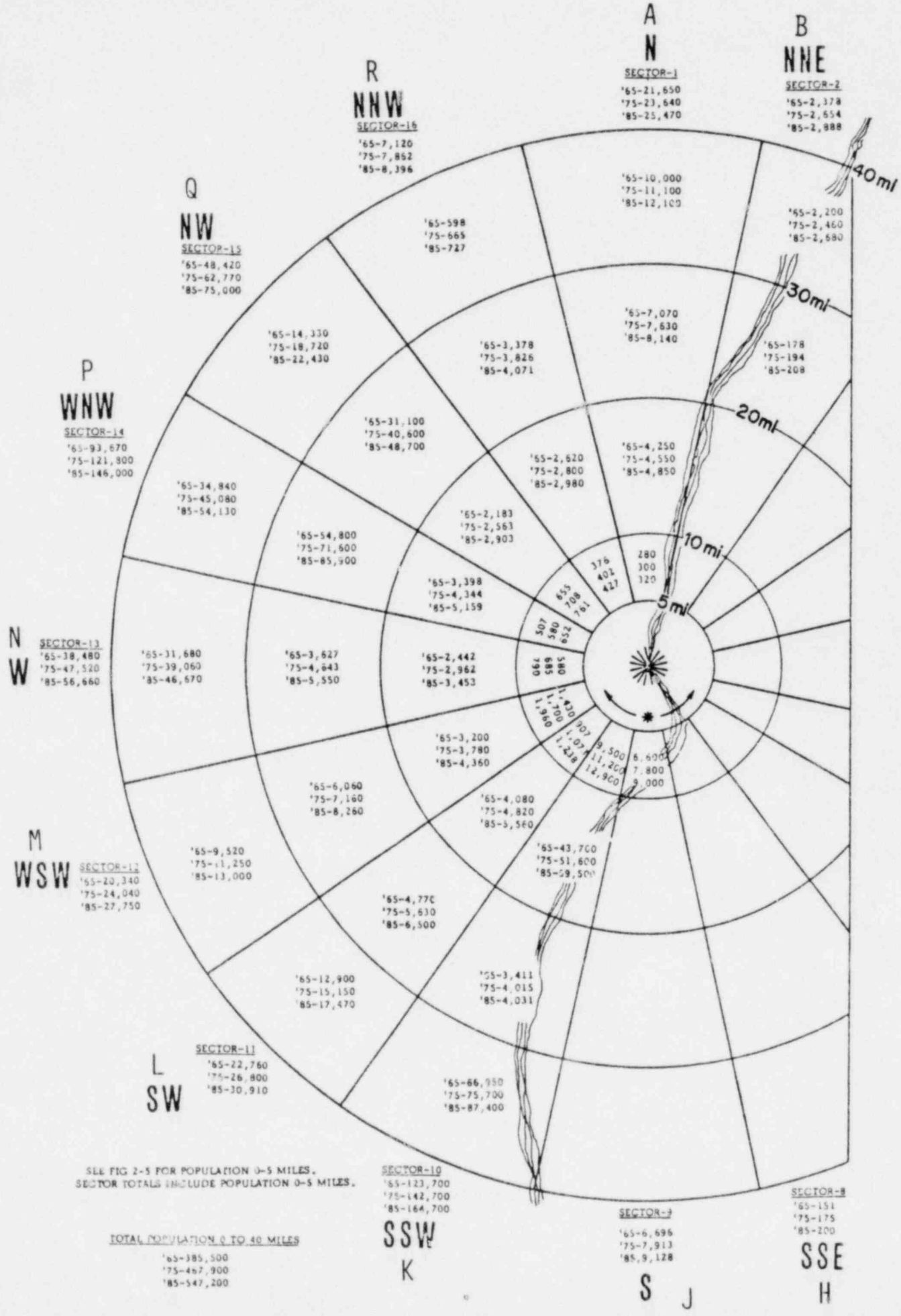
Total allocation of risk population (6,281) to communities is as follows:

1 through 3	-	Algoma	3575
4 and 5	-	Casco	1550
6 through 8	-	Luxemburg	4025
9	-	Dyckesville	325
		Total	9475

Total 6281



POPULATION DISTRIBUTION - 0-5 MILES



LAKE MICHIGAN

SEE FIG 2-5 FOR POPULATION 0-5 MILES.
SECTOR TOTALS INCLUDE POPULATION 0-5 MILES.

TOTAL POPULATION 0 TO 40 MILES

'65-385,500
'75-467,900
'85-547,200

POPULATION DISTRIBUTION, 5-40 MILES

Appendix D
MINOR
Revision 2
07-30-82

LETTERS OF AGREEMENT

1.0 DEPARTMENT OF ENERGY - CHICAGO OPERATIONS & REGIONAL OFFICE

2.0 UNITED STATES COAST GUARD

3.0 STATE OF WISCONSIN, DIVISION OF EMERGENCY GOVERNMENT

4.0 STATE OF WISCONSIN, DEPARTMENT OF HEATLH & SOCIAL SERVICES, RADIATION PROTECTION SECTION

5.0 WISCONSIN STATE PATROL

6.0 MANITOWOC COUNTY SHERRIFF DEPARTMENT

7.0 TWO RIVERS COMMUNITY HOSPITAL

8.0 DOCTORS CLINIC, LTD.

9.0 UNIVERSITY OF WISCONSIN HOSPITAL & CLINICS

10.0 TWO CREEKS VOLUNTEE FIRE DEPARTMENT

11.0 KEWAUNEE NUCLEAR POWER PLANT

12.0 CITY OF TWO RIVERS

13.0 TOWN OF TWO CREEKS

14.0 KEWAUNEE SCHOOL DISTRICT

Department of Energy
Chicago Operations and Regional Office
9800 South Cass Avenue
Argonne, Illinois 60439

AUG 3 1979

Mr. Glenn A. Reed
Manager - Nuclear Operations
Point Beach Nuclear Plant
Wisconsin Electric Power Company
Route 3, Box 48
Two Rivers, Wisconsin 54241

Dear Mr. Reed:

The U. S. Department of Energy (DOE) will respond to requests for radiological assistance from licensees, Federal, State, and local agencies, private organizations, or individuals involved in or cognizant of an incident believed to involve source, byproduct, or special nuclear material as defined by the Atomic Energy Act of 1954, as amended, or other ionizing radiation sources.

Unless DOE or a DOE contractor is responsible for the activity, ionizing radiation source, or radioactive material involved in an incident, DOE radiological assistance will be limited to advice and emergency action essential for the control of the immediate hazards to health and safety. Radiological emergency assistance will be terminated as soon as the emergency situation is under control. Therefore, responsibility for postincident recovery, including further action for the protection of individuals and the public health and safety, should be assumed by the appropriate responsible Federal, State, or local government, or private authority as soon as the emergency conditions are stabilized.

Attached is the original signed copy of the agreement form which you provided us. If we can be of further assistance, please feel free to contact us.

Sincerely,

Robert H. Bauer

Robert H. Bauer
Manager/Regional Representative

Enclosure:
Agreement Form

cc: Director, OES, HQ, w/o encl.
U. S. Nuclear Regulatory Commission, Office of Inspection and Enforcement, Region III, w/o encl.

Mr. Glenn A. Reed
Manager - Nuclear Operations
Point Beach Nuclear Plant
Wisconsin Electric Power Company
Route 3 Box 48
Two Rivers, Wisconsin 54241

Dear Mr. Reed:

By signature below I hereby reaffirm and acknowledge the DOE Radiological Assistance Team's understanding of, and agreement with, actions to be taken upon notification by Wisconsin Electric Power Company of an accident emergency at Point Beach Nuclear Plant. Copies of the Point Beach Nuclear Plant Emergency Plan have been given to me and are kept readily available for use by persons in my organization who will direct the necessary actions.

Telephone contact of the DOE Radiological Assistance Team is as follows:

(Please designate after hours contact, if any)

312-972-4800 (Duty Hours)

312-972-5731 (Off-Duty Hours)

Correspondence concerning this agency's participation and response should be directed to:

Mr. Robert H. Bauer, Manager/Regional Representative

Chicago Operations and Regional Office, U. S. Department of Energy

9800 South Cass Avenue, Argonne, Illinois 60439

Signed: Robert H. Bauer

Date:

DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD

Address reply to:
COMMANDER(mps)
Ninth Coast Guard District
1240 East 9th St.
Cleveland, Ohio 44199
Phone: (216)-522-3918

3441
3 OCT 1979

Point Beach Nuclear Plant
Wisconsin Electric Power Company
Route 3, Box 48
Two Rivers, WI 54241

ATTN: Mr. REED

Dear Mr. Reed:

This is in reply to your letter of 19 July 1979 concerning response by the U. S. Coast Guard during an emergency situation at the Point Beach Nuclear Power Plant, Two Rivers, Wisconsin.

Upon notification of any emergency affecting waterborne activities, Coast Guard Captain of the Port Sturgeon Bay will respond in an appropriate manner consistant with their current operation. In the event of an emergency, the Captain of the Port at Sturgeon Bay may be contacted directly by telephone (414)-743-3366.

Sincerely,

J. A. WILSON
Captain, U. S. Coast Guard
Chief, Marine Safety Division
By direction of the Commander,
Ninth Coast Guard District

Copy: MSO Sturgeon Bay
Group Milwaukee

Mr. Glenn A. Reed
Manager - Nuclear Operations
Point Beach Nuclear Plant
Wisconsin Electric Power Company
Route 3 Box 48
Two Rivers, Wisconsin 54241

Dear Mr. Reed:

By signature below I hereby reaffirm and acknowledge the United States Coast Guards's understanding of, and agreement with, actions to be taken upon notification by Wisconsin Electric Power Company of an accident/emergency at Point Beach Nuclear Plant. Copies of the Point Beach Nuclear Plant Emergency Plan have been given to me and are kept readily available for use by persons in my organization who will direct the necessary actions.

Telephone contact of the United States Coast Guard is as follows:

(Please designate after hours contact, if any)

CALL STATION, TWO RIVERS (414-793-1334)

Correspondence concerning this agency's participation and response should be directed to:

OFFICER IN CHARGE

COAST GUARD STATION

TWO RIVERS, WI. 54241

Signed: [signature] [illegible], USCG, OINC

Date: 23 JULY 1979

Mr. Glenn A. Reed
Manager - Nuclear Operations
Point Beach Nuclear Plant
Wisconsin Electric Power Company
Route 3 Box 48
Two Rivers, Wisconsin 54241

Dear Mr. Reed:

By signature below I hereby reaffirm and acknowledge the Division of Emergency Government understanding of, and agreement with, actions to be taken upon notification by Wisconsin Electric Power Company of an accident/emergency at Point Beach Nuclear Plant. Copies of the Point Beach Nuclear Plant Emergency Plan have been given to me and are kept readily available for use by persons in my organization who will direct the necessary actions.

Telephone contact of the Division of Emergency Government is as follows:

(Please designate after hours contact, if any)

608-266-3232 (24 hours)

Correspondence concerning this agency's participation and response should be directed to:

Michael P. Early, Administrator

Division of Emergency Government

4802 Sheboygan Avenue, Room 99 A, Madison, WI 53702

Signed: Michael Early

Date: 7/26/79

Mr. Glenn A. Reed
Manager - Nuclear Operations
Point Beach Nuclear Plant
Wisconsin Electric Power Company
Route 3 Box 48
Two Rivers, Wisconsin 54241

Dear Mr. Reed:

By signature below I hereby reaffirm and acknowledge the Radiation Protection Section, Wisconsin Department of Health and Social Services' understanding of, and agreement with, actions to be taken upon notification by Wisconsin Electric Power Company of an accident/emergency at Point Beach Nuclear Plant. Copies of the Point Beach Nuclear Plant Emergency Plan have been given to me and are kept readily available for use by persons in my organization who will direct the necessary actions.

Telephone contact of the Radiation Protection Section, Wisconsin Department of Health and Social Services, is as follows:

(Please designate after hours contact, if any)

Lawrence J. McDonnell Office phone: 608-266-7464

(24 hour number: 608-266-3232)
(Division of Emergency Government)

Correspondence concerning this agency's participation and response should be directed to:

Lawrence J. McDonnell, Chief, Section of Radiation Protection

P. O. Box 309

Madison, WI 53701

Signed: Lawrence J McDonnell

Date: August 21, 1979

Mr. Glenn A. Reed
Manager - Nuclear Operations
Point Beach Nuclear Plant
Wisconsin Electric Power Company
Route 3 Box 48
Two Rivers, Wisconsin 54241

Dear Mr. Reed:

By signature below I hereby reaffirm and acknowledge the Wisconsin State Police's understanding of, and agreement with, actions to be taken upon notification by Wisconsin Electric Power Company of an accident/emergency at Point Beach Nuclear Plant. Copies of the Point Beach Nuclear Plant Emergency Plan have been given to me and are kept readily available for use by persons in my organization who will direct the necessary actions.

Telephone contact of the Wisconsin State Patrol is as follows:

(Please designate after hours contact, if any)

(414) 921-0448 or 921-0442

Correspondence concerning this agency's participation and response should be directed to:

Wisconsin State Patrol
Jct. Hwy. 41 & 151, Route 5
P. O. Box 984

Fond du Lac, WI 54935

Signed: [signature]

Date: July 23, 1979

Mr. Glenn A. Reed
Manager - Nuclear Operations
Point Beach Nuclear Plant
Wisconsin Electric Power Company
Route 3 Box 48
Two Rivers, Wisconsin 54241

Dear Mr. Reed:

By signature below I hereby reaffirm and acknowledge the Manitowoc County Sheriff Department's understanding of, and agreement with, actions to be taken upon notification by Wisconsin Electric Power Company of an accident/emergency at Point Beach Nuclear Plant. Copies of the Point Beach Nuclear Plant Emergency Plan have been given to me and are kept readily available for use by persons in my organization who will direct the necessary actions.

Telephone contact of the Manitowoc County Sheriff Department is as follows:

(Please designate after hours contact, if any)

Telephone 684-4441

Correspondence concerning this agency's participation and response should be directed to:

Sheriff Thomas H. Kocourek, Manitowoc County
1025 South 9th Street
Manitowoc, WI 54220

Signed: Thomas H. Kocourek

Date: July 23, 1979

Mr. Glenn A. Reed
Manager - Nuclear Operations
Point Beach Nuclear Plant
Wisconsin Electric Power Company
Route 3 Box 48
Two Rivers, Wisconsin 54241

Dear Mr. Reed:

By signature below I hereby reaffirm and acknowledge the Two Rivers Community Hospital's understanding of, and agreement with, actions to be taken in the event of an accident/emergency at Point Beach Nuclear Plant. Specifically, the following proposals are agreed to:

1. The special emergency room will be maintained in readiness for use in the event that an accident or injury complicated by radiation exposure occurs to one of your employees. It will also be available as an auxiliary first aid room for use by the hospital in the event of a community disaster.

2. The Two Rivers Community Hospital will admit a patient from the special first aid room for further care if recommended by the supervising physician.

3. In the event of a serious radiation accident, the hospital will assist in the transfer of the patient to the University Hospitals in Madison, Wisconsin, for further treatment.

4. A Company Health Physicist will be responsible for decontamination of the room, equipment, etc., following its use. Any item which cannot be decontaminated will be replaced by the Company.

5. Annual instruction of the medical staff to maintain familiarity of the procedures will be provided by the Company.

6. Disposable articles such as hats, masks, gowns, and floor coverings will be provided by the Company.

Copies of the Hospital Assistance Plan have been given to me and are kept readily available for use by persons in my organization who will direct the necessary actions.

Telephone contact for the Two Rivers Community Hospital is as follows:

(Please designate after hours contact, if any)

SWITCHBOARD (414) 793-1178

Correspondence concerning this hospital's participation and response should be directed to:

WILLARD L. SPERRY, PRESIDENT

TWO RIVERS COMMUNITY HOSPITAL, 2500 Garfield St.

Two Rivers, Wi. 54241

Signed: Willard L. Sperry

Date: 7/23/79

DOCTORS CLINIC, LTD.
2219 GARFIELD STREET
TWO RIVERS, WISCONSIN 54241

August 8, 1979

Erwin S. Huston, M.D.
Wisconsin Electric Power Company
231 West Michigan Street
Milwaukee, WI 53201

Dear Dr. Huston:

By signature below, I hereby reaffirm and acknowledge that I, S. Lawrence Kaner, M.D., will provide medical supervision and care for employees of the Point Beach Nuclear Plant who have medical conditions complicated by exposure to radiation. I am competent to care for such patients, having attended the AEC Seminar in "Medical Planning and Care in Radiation Accidents" conducted at Brookhaven National Laboratory, Upton, New York in 1970.

In the event that I am unavailable, my alternate is Stephen L. Weld, M.D. Doctor Weld is also qualified to care for these patients having received similar training in the AEC sponsored seminar at Brookhaven in 1971.

Signed: _____
S. Lawrence Kaner, M.D.

Date: 8/8/79

Signed: _____
Stephen L. Weld, M.D.

Date: 8/08/79

dd

Center for Health Sciences
University of Wisconsin-Madison
University Hospital and Clinics

600 Highland Avenue
Madison, Wisconsin 53792

May 28, 1982

Mr. Glenn A. Reed
Manager - Nuclear Operations
WISCONSIN ELECTRIC POWER COMPANY
Point Beach Nuclear Plant
6610 Nuclear Road
Two Rivers, Wisconsin 54241

Dear Mr. Reed:

I am writing to confirm University of Wisconsin Hospital and Clinics' willingness to continue to serve as a referral resource for the Point Beach Nuclear Plant in case of a radiation accident.

University Hospital has treated patients involved in radiation accidents in the past. The University of Wisconsin-Madison has many programs using radioiosotopes. The expertise and depth in personnel we have on campus with highly trained radiation physicists and at the Hospital in areas such as hematology, immunology, and blood therapy provide the necessary combinnation of resources to deal effectively with severely injured patients. Should a radiation accident occur in your facility, please contact University Hospital and Clinics as follows:

Emergency Room
University of Wisconsin Hospital & Clinics
(608) 262-2398

Frank C. Larson, M.D.
Director, Clinical Laboratories
(608) 263-7507

Robert F. Schilling, M.D.
Chief, Hematology Division
Department of Medicine
(608) 263-4689

Robert R. Radtke, Ph.D.
Health Physicist
University of Wisconsin-Madison
(608) 262-8769

Thank you very much for your continued interest in working with University of Wisconsin Hospital and Clinics.

Sincerely,

Gordon M. Derzon
Superintendent

Mr. Glenn A. Reed
Manager - Nuclear Operations
Point Beach Nuclear Plant
Wisconsin Electric Power Company
Route 3 Box 48
Two Rivers, Wisconsin 54241

Dear Mr. Reed:

By signature below I hereby affirm and acknowledge the Two Creeks Volunteer Fire Department will respond, if called, to provide assistance in the event a major fire occurs at the Point Beach Nuclear Plant.

Telephone contact for the Two Creeks Volunteer Department is as follows:

Dial 684-0133 (emergency fire line)
Clarence Glaser

Correspondence concerning the Two Creeks Volunteer Fire Department's participation and response should be directed to:

Chief Clarence Glaser
Two Creeks Fire Dept.
12926 Lakeshore Rd. Two Rivers Wis 54241

Signed: Chief Clarence Glaser

Date: 8-29-79

Wisconsin Electric POWER COMPANY
231 WEST MICHIGAN, MILWAUKEE, WISCONSIN 53201

NPO FILE COPY

Signed copy attached on Pt 11.7.6
also PT II.7.6

PT II.7.6
also P2...

December 18, 1979

Mr. E. R. Mathews
WISCONSIN PUBLIC SERVICE CORPORATION
Post Office Box 1200
Green Bay, Wisconsin 54305

Dear Gene:

Attached is a proposed agreement between Wisconsin Public Service Corporation and Wisconsin Electric Power Company to provide back-up analytical capabilities in the event of a nuclear accident or other incident that might render the laboratory facilities at Kewaunee or Point Beach inoperable. You will recall that this agreement partially fulfills a part of the short-term lessons learned requirements that are to be completed by January 1, 1980.

If you concur with this agreement, I should appreciate your signing both copies of the attached form and returning one copy to me.

Very truly yours,

Executive Vice President

Sol Burstein

Attachment

Copies to J Goetsch (w/original)
C. W. Fay
D K Porter
G. A. Reed

SAMPLE ANALYSIS AGREEMENT

Wisconsin Electric Power Company, owner and operator of the Point Beach Nuclear Plant, and Wisconsin Public Service Corporation, owner (together with Wisconsin Power and Light Company and Madison Gas and Electric Company) and operator of the Kewaunee Nuclear Plant, hereby agree to provide mutual assistance for sample analysis. It is understood that, in the event of an accident which would disable the laboratory facilities at one of the aforementioned plants, the unaffected plant will make its laboratory facilities available for radiological and chemical analyses of air, water, filter, or other samples obtained from the affected plant. It is further understood that the affected plant will take every reasonable precaution to avoid contaminating or otherwise disabling the facilities of the unaffected plant. It is also agreed that the operator of the affected plant will establish other analytical capabilities as expeditiously as possible after an accident in order to avoid prolonged interference with operations at the unaffected plant.

This agreement can be revoked by mutual agreement by the parties at any time or by written notice of either of the parties 180 days in advance of the cancellation date.

Sol Burstein
Executive Vice President
Wisconsin Electric Power Company

Date Dec. 18, 1979

E. R. Mathews
Vice President - Power Supply
and Engineering
Wisconsin Public Service Corporation

Date Dec. 20, 1979

CITY OF TWO RIVERS

P. O. Box 87, Two Rivers, Wisconsin 54241
414 - 793-1191

s R. Grassman
...ty Manager

Council-Manager
Government
Since 1924

May 21, 1980

Glenn A. Reed, Manager
Nuclear Operations
Point Beach Nuclear Plant
Wisconsin Electric Power Company
Box 47A
Two Rivers, Wisconsin 54241

Dear Mr. Reed:

By signature below, I hereby affirm and acknowledge that the City of Two Rivers will cooperate to the extent possible to make the facilities of the Community House available for use upon notification by Wisconsin Electric Power Company of an accident/ emergency at the Point Beach Nuclear Plant.

Telephone contact of the Two Rivers Community House is as follows:

Howard Perry, Parks and Recreation Director
Office: 414-793-1338
Home :

Correspondence concerning this matter should be directed to:

City Manager
P. O. Box 87
Two Rivers, Wisconsin 54241

Sincerely,

James R. Grassman

James R. Grassman
City Manager

Mr. Glenn A. Reed
Manager - Nuclear Operations
Point Beach Nuclear Plant
Wisconsin Electric Power Company
6610 Nuclear Road
Two Rivers, Wisconsin 54241

Dear Mr. Reed:

By signature below I hereby affirm and acknowledge that the Township of Two Creeks will make available to Wisconsin Electric Power Company the Two Creeks Town Hall for temporary use as a backup emergency support facility to be used by Wisconsin Electric Power Company in the unlikely event of a radiological emergency at the Point Beach Nuclear Plant.

The telephone contacts to initiate use of the Town Hall as an emergency center (24 hour availability) are:

755-2049 - 755-4196

Correspondence concerning this agreement should be directed to:

ALBERT ENGELBRECHT

14809 STATE HY WAY 42 TWO RIVERS WI 54241

Signed: Henry Fehrman

~~Date~~: Dale Schmock Sup. 5-20-1980

Route 3, Box 47A
Two Rivers, Wisconsin 54241
(414) 755-4334

Point Beach *Energy Information Center*

Mr. Glenn A. Reed
Manager-Nuclear Operations
Point Beach Nuclear Plant
Wisconsin Electric Power Co.
6610 Nuclear Rd.
Two Rivers, WI 54241

Dear Mr. Reed:

By signature below, I hereby affirm and acknowledge that the Kewaunee High School can be made available for use upon notification by Wisconsin Electric Power Company of an accident/emergency at the Point Beach Nuclear Plant.

Telephone contact of the Kewaunee High School is as follows:

(Please designate after hours contact, if any)

388-3230 - Supt. 388-2951 - Principal

After Hours -> 388-4462 - Supt. 388-2614 - Principal

Correspondence concerning this agency's participation should be directed to:

R. F. Plantico, Supt. of Schools
911 Third Street
Kewaunee, WI 54216

Signed: R. F. Plantico, Supt.

Date: May 6, 1980

RECEIVED
MAY 8 1980

Appendix E
MINOR
07-30-82

STATE OF WISCONSIN
PEACETIME RADIOLOGICAL
EMERGENCY RESPONSE PLAN (ERP)

(SEE CONTROLLED COPY IN HEALTH PHYSICIST'S OFFICE)

Appendix F
MINOR
07-30-82

MANITOWOC COUNTY NUCLEAR
FACILITY INCIDENT RESPONSE PLAN

(SEE CONTROLLED COPY IN HEALTH PHYSICIST'S OFFICE)

Appendix G
MINOR
07-30-82

KEWAUNEE COUNTY NUCLEAR
FACILITY INCIDENT RESPONSE PLAN

(SEE CONTROLLED COPY IN HEALTH PHYSICIST'S OFFICE)

TYPICAL EQUIPMENT LISTS

1.0 GENERAL

The procedure provides typical lists of equipment and supplies available for both on and offsite locations which may be required for use during an emergency at PBNP.

2.0 TSC & OSC HEALTH PHYSICS-RELATED EQUIPMENT & SUPPLIES

2.1 Air Sampling Equipment	TSC	OSC
Low volume air sampler	1	1
High volume air sampler	1	1
AMS-2 cart mounted air sampler	1	N/A
Particulate filters, low volume, box	1	1
Charcoal filters, low volume, box	4	4
Particulate filters, high volume box	1	1
Charcoal filters, high volume box	1	1
Silver zeolite filters	15	10
Plastic bottles, 1 liter	12	12
50' extension cord	2	2

2.1 Dosimetry Equipment	TSC	OSC
Dosimeters (0-5,000 mR)	20	20
Dosimeters (0-200 R)	6	N/A
Dosimeter charger	1	1
Batteries, Size AA, pkg.	1	1

2.3 Survey & Monitoring Equipment	TSC	OSC
Victoreen Vamp	1	1
Rad Owl II	1	1
Thyac III, side window probe	1	1
Batteries, Size D	12	12
Batteries, Size 9 V	3	3
Smear filters, box	10	10
Smear envelopes, box	1	1

2.4 Signs	TSC	OSC
Three-pocket placards	12	12
"Radiation Area" inserts	12	12
"High Radiation Area" inserts	12	12
"RWP Required" inserts	12	12
"Airborne Area" inserts	12	12
"Contaminated Area" inserts	12	12
"Radioactive Materials" inserts	12	12

2.5 Respiratory Protection Equipment	TSC	OSC
Clear-Vue respirator	6	6
Ultra-Vue respirator	6	6
Filter cartridges, box	1	1
Smoke test kit	1	1
Bio-Pak 60	4	3

2.6 CHP-Forms	TSC	OSC
CHP-02, Iodine Airborne Survey, pad	1	1
CHP-21, Miscellaneous Surveys, pad	1	1
CHP-22, Air Particulate Sample, and	1	1
CHP-31, Radiation Work Permit, pad	2	2
CHP-34, Dosimeter Rezero, pad	1	1
CHP-37, Irregular or Offscale Dosimeter Report, pad	1	1

2.7 EPIP Forms	TSC	OSC
EPIP-01, Emergency Plan Airborne Radiation Survey Form	5	5
EPIP-02, Emergency Plan Survey Record	5	5
EPIP-03, Dose Factor Calculation Sheet	5	5
EPIP-04, Status Report on Plant Systems	20	N/A
EPIP-05, Worksheet for Status Report on RMS for Unit	20	N/A
EPIP-06, Worksheet for Status Report on RMS for Plant	20	N/A
EPIP-07, X/Q Determination	20	N/A
EPIP-08, Estimated Whole Body & Thyroid Projected	20	N/A
EPIP-09, Estimated Whole Body Calculation Worksheet	20	N/A
EPIP-10, Estimated Ground Deposition Calculation	20	N/A
EPIP-11, Summary of Whole Body Thyroid Dose & Ground Deposition	20	N/A
EPIP-17, List of Missing Personnel	20	20
EPIP-18, Assembly Area Roster	20	20
Xe-133 Equivalent Release Rate, Worksheet No. 1	10	N/A

2.8 EPIP Procedures (Extra)	TSC	OSC
EPIP 1.4, Radiological Dose Evaluation	5	N/A
EPIP 1.5, Protective Action Evaluation	5	N/A
EPIP 7.1.1, Chemistry & Health Physics Group Personnel Notification & Initial Response when Chemistry & Health Physics Personnel are Onsite	5	N/A
EPIP 7.2.1, Activation of Health Physics Facilities at Site Boundary Control Center	5	5
EPIP 7.2.2, Activation of Health Physics Facilities at Operations Support Center	N/A	5
EPIP 7.2.3, Activation of Health Physics Facilities at Technical Support Center	5	5

2.9 Miscellaneous	TSC	OSC
Barricade tape, yellow/magenta, roll	5	5
Tuck tape, rolls	2	2
Hot spot tags	50	50
Radiation material hazard tags	50	50
Radioactive material contamination tags	50	50
Yellow/magenta tape, roll	6	6
Yellow/black warning tape, roll	5	5
Plastic bags 3 x 5	50	50
Plastic bags 5 x 7	50	50
Potassium iodine use approval list	1	1

3.0 TSC INSTRUMENTATION

3.1 Parameters to be Displayed on Rack Mounted Two-Pen Recorders

Th and Tc Loop "A" or "B" - Unit 1 (switched)
Th and Tc Loop "A" or "B" - Unit 2 (switched)
Pressurizer wide range pressure - Units 1 and 2
Pressurizer level - Units 1 and 2
Steam generator "A" and "B" pressure - Unit 1
Steam generator "A" and "B" level - Unit 1
Steam generator "A" and "B" pressure - Unit 2
Steam generator "A" and "B" level - Unit 2
Containment narrow range pressure - Units 1 and 2

3.2 Parameters to be Datalogged

3.2.1 Unit 1

Incore thermocouples (8-2 per core quadrant)
Auxiliary feedwater flow (2 channels - pump discharge flow until steam generator flow is installed)

High pressure safety injection flow (2 channels - Train "A" and Train "B")
Containment sump level (one channel)
Containment high range radiation monitor (1 channel)
Containment purge exhaust vent stack high range effluent monitor (1 channel)

3.2.2 Unit 2

Incore thermocouples (8-2 per core quadrant)
Auxiliary feedwater flow (2 channels - pump discharge flow until steam generator flow is installed)
High pressure safety injection flow (2 channels - Train "A" and Train "B")
Containment sump level (1 channel)
Containment high range radiation monitor (1 channel)
Containment purge exhaust vent stack high range effluent monitor (1 monitor)

3.2.3 Common

Auxiliary building vent stack high range effluent monitor
Combined air ejector discharge high range effluent monitor
Drumming area vent stack high range effluent monitor
Gas stripper building vent stack high range effluent monitor

3.2.4 Parameters to be Displayed Only

Time
Wind speed
Wind direction

4.0 SOUTHGATE HEALTH PHYSICS-RELATED EQUIPMENT & SUPPLIES

4.1 Air Sampling Equipment	Recommended Quantity
Low volume air sampler	1
Particulate filters (low volume), box	1
Charcoal filters (low volume), box	1
Extension cord	1

4.2 Radiation Survey & Monitoring Instruments	
Vamp area monitor	1

5.0 SBCC EQUIPMENT & SUPPLIES

5.1 Sampling Equipment & Supplies	
Air sampler, gasoline operated	1
Air sampler, battery operated	2

	Recommended Quantity
Electric high volume air sampler	1
Poly gas sample bottles	12
Charcoal cartridges for air sampler, high volume	48
Charcoal cartridges for air sampler, low volume	50
Silver zeolite cartridges for air sampler, low volume	15
Filters for air samplers	2 pkg. of 100 each
Gasoline and oil for air sampler, gallons	2
Sample tags	50
Plastic bags	50
100' extension cord	2
Planchets	20

5.2 Respiratory Protection Equipment

Full-face respirators	2
Half-face respirators	2
Full-face filter cartridge	12
Half-face filter cartridge	10

5.3 Fire Protection Equipment

Fire extinguisher, dry chemical	1

5.4 Radiation Survey & Monitoring Instrument

Victoreen radgun (.01 mR/hr - 10 kR/hr)	1
Radector III (.1 mR/hr - 1,000 R/hr)	1
Victoreen Model 490 Thyac III	1
PIC-6A survey instrument (1 mR/hr - 1,000 R/hr)	4
RM3C personnel survey frisker	1
Johnson Associates, GSM-5, 0-50K cpm, 0-200 mR/hr	1
MSC-1 sampler holder for GSM-5	1
Check source - CS-137	2
Check source - Sr-90	1
Filters for smeers	2 pkgs. of 100 each
Nuclear Chicago counter scaler	1
Coin envelopes, box	1/2
HP-210 probe	2
SH4 probe holder	1
Earphones for Thyac III survey instrument	3
Side window probe	2
Cord, BNC-BNC connector	2
Cord, amphenol - BNC connector	2

	Recommended Quantity
5.6 Personnel Monitoring Equipment	
Personnel thermoluminescent dosimeters (TLD)	100
Radiological dosimeters, 0-5R	16
Radiological dosimeter charger	2
5.7 First Aid & Decontamination Supplies	
First aid kit	1
Burn kit	1
Emergency drinking water tablets, bottle (50 tablets/ bottle)	5
Water, gallons	30
Decon soap, powder (5 lb.)	1
Decon soap, liquid, quart	1
Hand brush	4
Cotton applicators	1
Potassium permanganate, oz.	4
Sodium bisulfate, pound	1
Kim towels, box	1
Masselinn towels, pkgs.	5
"409" cleaner, bottle	2
"Spic 'n Span", box	2
Masselinn mop	1
Regular sponge map	2
Rag mop	1
Wringer	1
Large mop bucket	1
Kim wipes, box	1
Plastic bucket	2
Cotton swabs, packets	5
Gauze sponges, 2 x 2 (100 per pkg.)	1
Nail brushes	4
5.8 Radiation Hazard Signs & Supplies	
Radiation warning tape	1
Radiation placards	10
Radioactive material and radiation hazard signs	10
Radiation contamination hazard taps	10
Contamination, high radiation, radioactive materia, and radiation area inserts	10
Yellow/magenta ribbon, roll	8
Yellow/magenta rope, roll	1

		Recommended Quantity
5.9	Communication Equipment & Supplies	
	Portable 2-way radio KRQ-717	1
	Telephone, plan PBX-extension with outside line capability	1
	WE telephone book	1
	Two Rivers/Manitowoc telephone book	1
5.10	Traffic Signs & Equipment	
	Traffic cones for barricades	20
	Traffic lights for barricades	8
	Chains and padlocks for barricades	4
	Traffic flashlight	4
	Traffic warning lights, batteries	8
	"Closed Area" placards	6
5.11	Clothing & Toiletry Supplies	
	Coveralls	25
	Rainwear	6
	Rubber boots	10
	Shoe covers, plastic	25
	Overshoes, winter	6
	Gloves, rubber disposable	6
	Gloves, cotton disposable	6
	Mittens, winter	6
	Towels	12
	Washcloths	12
5.12	Stationery & Miscellaneous Supplies	
	Desk, table and chair	1
	Writing paper, pad	1
	Pens and pencils	Assorted
	Tape, masking	2
	Tuck tape, roll	10
	Logbook	1
	Absorbent paper, roll	1
	Paper cups, bag	1
	Plastic bags	50
	Scissors	1
	Pocketknife	1
	Screwdrivers, set	1
	Plastic funnel	4
	Flashlight	1
	Batteries (for flashlight and survey instruments)	50

	Recommended Quantity
Flashlight bulbs	6
Bulbs, incandescent	8
Electric clock	1
Electric heater	5
Wet/dry vacuum cleaner	1
Metal drum (55 gallon)	1
Dzl-lene gasoline stabilizer, quart	1
Leak bricks	12
Safety solvent, can	1
Metal funnels	2
Pencil sharpener	1
Chalk, box	1
Bulletin board	1
Chalkboard	1
Table (regular)	1
Picnic tables	2
Calculator	1

5.13 Emergency Plan Documents

PBNP Emergency Plan	1
Health Physics Administrative Control Policies and Procedures	1
Dose Isopleth/Map Package	1
Personnel roster	10
Potassium iodide use approval list	1
DOE, Region V, Radiological Assistance Handbook	1
State of Wisconsin Peacetime Radiological Response Plan	1

5.14 EPIP Forms

EPIP-01, Emergency Plan Airborne Radiation Survey	5
EPIP-02, Emergency Plan Survey Record	5
EPIP-03, Dose Factor Calculation Sheet	5
EPIP-04, Status Report on Plant Systems & Controls	5
EPIP-05, Worksheet for Status Report on RMS for Unit	5
EPIP-06, Worksheet for Status Report on RMS for Plant	5
EPIP-07, X/Q Determination	5
EPIP-08, Estimated Whole Body & Thyroid Projected	5
EPIP-09, Estimated Whole Body Calculation Worksheet	5
EPIP-10, Estimated Ground Deposition Calculation	5
EPIP-17, List of Missing Personnel	5
EPIP-18, Assembly Area Roster	5
Xe-133 Equivalent Release Rate, Worksheet No. 1	5

	Recommended Quantity
5.15 EPIP Procedures (Extra)	
EPIP 1.4, Radiological Dose Evaluation	5
EPIP 1.5, Protective Action Evaluation	5
EPIP 7.1.1, Chemistry & Health Physics Group Personnel Notification & Initial Response when Chemistry & Health Physics Personnel are On-Site	5
EPIP 7.2.1, Activation of Health Physics Facilities at SBCC	5
EPIP 7.2.2, Activation of Health Physics Facilities at OSC	5
EPIP 7.2.3, Activation of Health Physics Facilities at TSC	5
5.16 CHP Forms	
CHP-02, Iodine Airborne Survey, pad	1
CHP-21, Miscellaneous Surveys, pad	1
CHP-22, Air Particulate Sample, pad	1
CHP-25, Counting Log Sheet, pad	1
CHP-31, Radiation Work Permit, pad	1
CHP-33b, Visitors Monitored per 10 CFR 20, pad	1
CHP-33c, Visitor Personnel Monitoring Record, pad	1
CHP-34, Dosimeter Rezero, pad	1
CHP-35, Dosimeter Summary Sheet, pad	1
CHP-37, Irregular or Offscale Dosimeter Report	1
CHP-38, Lost or Damaged TLD Report, pad	1
CHP-39, Personnel Contamination Report, pad	1
CHP-40, Visitor TLD Badge Issue Report, pad	1
CHP-44, Timekeeping Log - High Radiation Work Location, pad	1
CHP-56, Personnel Bioassay Evaluation, pad	1
CHP-106, Occupational External Radiation Exposure History	1

6.0 FIRST AID ROOM EQUIPMENT & SUPPLIES

6.1 Furniture & Equipment

Sink
Examination table
Examination cabinet
Scale

6.2 First Aid Supplies

Assorted bandages and gauze dressings
Tape
Splints
Scissors, bandage
Forceps, splinter
Burn kit, portable
First aid kit, portable

7.0 TWO RIVERS COMMUNITY HOSPITAL EMERGENCY ROOM EQUIPMENT & SUPPLIES	Recommended Quantity NFAR	Triage Area
7.1 Decontamination Supplies		
Cotton applicators, pkg.	1	1
Decon powder	1	1
Decon soap, quart	1	1
Hand brush	2	2
Potassium permanganate (7 cap. pkg.)	1	1
Sodium bisulfate (7 cap. pkg.)	1	1
7.2 Radiation Survey Equipment & Supplies		
Dosimeter, 0-500 mRem	5	5
Dosimeter, 0-2 Rem	3	2
Radiation warning signs and tags, assorted	10	10
Radiation warning tape, roll	1	1
Filter paper for smear surveys, box of 100 ea.	2	2
Envelopes, box	1/2	1/2
HP-210 probe	1	N/A
7.3 Protective Clothing		
Lab coats	6	6
Surgeon's caps	6	6
Canvas or nylon shoe covers	10	N/A
Gloves, rubber disposable	8	8
Gloves, cotton disposable	8	8
Plastic shoe covers	25	25
7.4 Miscellaneous Supplies		
Marking pens, pkg.	1	1
Absorbent paper, 50' roll	1	N/A
Bags, plastic, assorted sizes	50	50
Bucket, plastic	1	1
Mop, sponge with spare sponge	2	2

Masslinn mop	1	1
Masslinn, bag	1	N/A
Scissors	1	1
Tuck tape, roll	2	2
Masking tape 1", roll	2	2
Masking tape 2", roll	2	2

7.5 Respiratory Protection Equipment

Half-face respirators with particulate filters	4	4
Smoke tubes/squeeze bulb	1	N/A

7.6 Documents & Procedures

Medical Assistance Plan	1	1
Emergency Call List	1	1

7.7 Forms

CHP-21, Survey Forms, pad	1	N/A
CHP-34, Dosimetry Rezero Sheet	5	5
CHP-39, Personnel Contamination Report	5	5
CHP-83, High-Range Dosimeter Issue Sheet	5	5

Appendix I
MINOR
Revision 1
07-30-82

LIST OF EPIP CATEGORIES & CROSSREFERENCES TO THE EMERGENCY PLAN

1.0 CLASSIFICATION & ASSESSMENT

EP 2.0, Sections 2.3 and 2.12
EP 4.0, Section 1.0
EP 5.0, Sections 2.0 and 3.1
EP 6.0, Sections 2.0, 3.0, and Table 6-1

2.0 UNUSUAL EVENT IMPLEMENTING PROCEDURES

EP 4.0, Section 1.1
EP 5.0, Sections 3.1, 3.2, 6.0, 7.0

3.0 ALERT IMPLEMENTING PROCEDURES

EP 4.0, Section 1.2
EP 5.0, Sections 3.1, 3.2, 6.0, 7.0

4.0 SITE EMERGENCY IMPLEMENTING PROCEDURES

EP 4.0, Section 1.3
EP 5.0, Sections 3.1, 3.2, 6.0, 7.0

5.0 GENERAL EMERGENCY IMPLEMENTING PROCEDURES

EP 4.0, Section 1.4
EP 5.0, Sections 3.1, 3.2, 6.0, 7.0

6.0 EVACUATION

EP 6.0, Sections 5.1.1.b, 5.1.1.d, and Table 6-3

7.0 CHP RADIOLOGICAL RESPONSE & PREPAREDNESS

EP 6.0, Sections 3.0, 4.0, 5.1.1.f, 5.2, 6.1, 6.2, 6.5 and Tables 6-1 and 6-7
EP 7.0, Sections 2.0, 4.0
EP 8.0, Section 5.0
Appendix "H"

8.0 PERSONNEL ACCOUNTABILITY

EP 6.0, Section 5.1.1.e

9.0 PLANT SECURITY

EP 5.0, Section 4.2
EP 6.0, Section5.1.1.c
EP 7.0, Section 2.5

10.0 FIREFIGHTING

EP 6.0, Section 4.0

11.0 FIRST AID & MEDICAL CARE

EP 5.0, Section 4.2
EP 6.0, Sections 6.2, 6.3, 6.4
EP 7.0, Section 6.0

12.0 REENTRY

EP 6.0, Sections 4.0, 5.3

13.0 RECOVERY

EP 9.0

14.0 PRESS

EP 4.0, Section 1.0
EP 7.0, Section 2.7

15.0 COMMUNICATIONS

EP 5.0, Section 7.2
EP 7.0, Section 3.0

16.0 TRAINING, DRILLS & EXERCISES

EP 8.0, Sections 2.0, 3.1, 3.2

17.0 EMERGENCY CALL LIST

EP 5.0, Figures 5-9 and 5-10
EP 6.0, Section 2.0

Appendix J
MINOR
Revision 2
07-30-82

EVACUATION TIME ESTIMATES FOR THE AREA SURROUNDING THE POINT BEACH NUCLEAR PLANT

1.0 DETERMINATION OF EVACUATION SECTORS

For evacuation time estimation purposes, the area in the vicinity of PBNP was divided into the sectors and areas shown in Figure 1.

The LPZ area approximates one 180° sector with a 2-mile radius as specified in the reporting format. A second 180°F sector consists of the remainder of the 2-mile radius area over Lake Michigan.

The land area between the LPZ boundary and the 5-mile and 10-mile radius lines was divided into 6-45° sectors in a manner that would avoid the bisection of the City of Two Rivers and the Village of Mishicot. For evacuation time estimation purposes, it was assumed that any two adjacent 45° sector areas could require evacuation simultaneously depending on the variability of wind direction. Potential combinations of 45° sectors and associated evacuation time estimates are listed in Table A. Table A includes two sets of evacuation time estimates: One set is an estimate for normal weather conditions; the other an estimate for adverse weather conditions.

2.0 NORMAL WEATHER ASSUMPTIONS

In order to estimate evacuation times for normal weather conditions, the following assumptions were made:

2.1 The accident occurs during normal weather conditions, e.g., a clear or cloudy day with low or moderate winds, such that traffic flow would be unimpeded by weather conditions.

2.2 All roads and streets in the area are serviceable.

2.3 Residents of the area are involved in their normal everyday activities.

3.0 ADVERSE WEATHER ASSUMPTIONS

In order to estimate evacuation times for adverse weather conditions, the following assumptions were made, based on the normal preparedness for snow conditions in Wisconsin.

3.1 The accident occurs immediately following a heavy snowstorm. An accident during a snowstorm would not require additional time for evacuation; at the same time, it is recognized that radiological impact could be reduced due to radioiodine and particulate washout by snowfall or rainfall.

3.2 Plowing or salting of interstate and State highways and major county roads is in progress to the extent of minimum serviceability.

3.3 Lesser traveled county roads and local town roads and city streets have not been plowed.

3.4 All rural roads are accessible to police and emergency vehicles and private vehicles equipped with snow tires and/or chains.

3.5 The residents of the area normally have their own snow removal equipment and have the capability to exit their own property during emergency situations in a reasonable time.

4.0 EVACUATION PROCEDURE ASSUMPTIONS

The following evacuation procedure assumptions were made in calculating the estimated times:

4.1 All steps required in the PBNP Emergency Plan have been implemented, including the notification of appropriate local and emergency government authorities.

4.2 The Manitowoc County Sherriff's Office and Division of Emergency Government have been mobilized and have established command posts.

4.3 Emergency personnel and vehicles are available and utilized as shown on Table A. The availability of up to 150 emergency and police vehicles and personnel was assumed for an accident requiring evacuation of the LPZ and a 90° sector area encompassing both the City of Two Rivers and the Village of Mishicot. In accordance with the Manitowoc County Evacuation Plan, notifying personnel would be drawn from the Sherriff's Department, the Wisconsin State Patrol, Two Rivers Police Department, State of Wisconsin Emergency Government, Manitowoc County Civil Defense and local firefighting agencies.

4.4 Establishment of traffic control measures to maintain the flow of traffic in the area and facilitate evacuation are assumed. These measures include the routing of rural traffic away from the City of Two Rivers and Village of Mishicot to reduce the potential for congestion problems. In the City of Two Rivers, maintenance of flow over the four bridges available for crossing the East and West Twin Rivers is also assumed.

4.5 The primary means of notifying residents would be by police and emergency vehicles driving in the area with "yelp" sirens on, mobile public address system, and door-to-door personal contact.

4.6 Other means of notification to be used include broadcast media, telephones, and citizen band radio. Warnings to higher and lower eschelons of government include telephone, radio, and wire systems of communication.

4.7 Evacuation takes place as the notification process progresses. A portion of the population will respond to broadcast media notifications and implement evacuation without personal contact notification.

4.8 Most residents respond to instructions to tie a towel, handkerchief, or other form of signal to their door, gate or mailbox to indicate they have left the premises, thereby facilitating confirmation that evacuation has been completed.

4.9 School superintendents are alerted as part of the emergency mobilization process, and the required number of school buses to be used in the process of driving to or from schools are on standby.

4.10 Residents evacuate the area principally by private automobile, with an average of about one vehicle per residence. Average driving speeds are assumed to be 25 miles per hour during normal conditions and 15 miles per hour during adverse weather.

5.0 EVACUATION TIME ESTIMATES FOR THE LOW POPULATION ZONE (LPZ)

5.1 Notification of Residents

There are approximately 66 residences and 8 commercial or public buildings within the offsite precautionary plan LPZ boundary. The estimated resident population of this area is 265 persons. Assuming 15 emergency or police vehicles available and notification time of about 5 minutes per residence, or commercial or public building, approximately 25 minutes would be required to complete the notification process under normal conditions. During adverse weather conditions, approximately 60 minutes would be required to complete the notification process (see Table A).

5.2 Implementation of Evacuation

Evacuation would begin as notification progresses. Evacuation would take place principally by private automobile. With an average of one vehicle per residence and three vehicles per business or other uses, approximately 90 vehicles would be involved; hence, no traffic problems are anticipated. It is estimated that each residence would be evacuated approximately 30 minutes after notification during normal conditions and within 60 minutes under adverse weather conditions. Evacuation of

the offsite precautionary plan area could be completed approximately 50 minutes after commencement of notification during normal conditions. During adverse weather conditions, this evacuation is estimated to require approximately 110 minutes.

5.3 Estimated Total Evacuation Time for LPZ

The estimated total time to evacuate the LPZ is 55 minutes during normal conditions and 120 minutes, or 2 hours, during adverse weather conditions. These estimates allow for the overlap of the types of activities (notification and implementation) involved.

6.0 90° SECTOR AREAS

For estimating the evacuation time for the 90° sector areas, it is assumed that two adjacent 45° sector areas (see Figure 1) would require evacuation simultaneously. The various potential combinations of the six 45° sector areas are listed in Table A. Separate evacuation time estimates are shown for the LPZ to 5 mile radius and the 5 to 10 mile radius area. Evacuation time estimates for the City of Two Rivers and the Village of Mishicot are also presented in parenthetical format for the 90° sectors of the 5 to 10 mile radius area within which they are located. Also shown in Table A are evacuation time estimates for a special area, the Point Beach State Forest, located about 3 miles south-southeast of PBNP.

Evacuation time estimates for the 90° sectors from the LPZ to 5 miles range from 1.0 hours to 1.25 hours during normal weather conditions and 2.0 hours to 2.5 hours during adverse weather conditions. For the 90° sectors from 5 to 10 miles, the estimated range from 1.7 hours to 4.0 hours during normal conditions and 3.3 hours to 8.0 hours during adverse weather conditions.

7.0 SPECIAL FACILITIES

It is estimated that the Point Beach State Forest could be evacuated in 2.5 hours during a peak use period when up to 1,200 persons could be using the forest campgrounds, picnic, beach, hiking trails and other facilities. In adverse weather, only approximately 100 persons are estimated to use the Point Beach State Forest, and they could be evacuated in 1 hour.

The Two Rivers Community House has indicated a preference for sheltering-in-place. Hence, no special evacuation provisions are required for this facility.

8.0 EVACUATION ROUTE SEGMENT CAPACITIES

All road segments that would be used as evacuation routes within the 10-mile radius are 2 or 4 lane roads of 12' width per lane, except for two narrow bridges on minor routes in the Town of Two Rivers. Traffic control lights in the City of Two Rivers will result in some slowing of traffic flow during an evacuation; however, Table B has taken these flow restrictions into account.

All rural highways have capacities of 1,400 vehicles per hour per lane. There are two exceptions on minor routes with expected traffic of less than 100 vehicles per hour. These two segments have narrow bridges with 10' lanes and with the outside of the lane only 2' from side obstructions. The capacity of these bridges is estimated at 1,150 vehicles per hour per lane.

All urban streets assume a segment capacity of 1,200 vehicles per lane per hour. There are no bridges that place restrictions upon the segment capacity. However, some traffic control lights may limit flow during peak use to one-half the per lane per hour flow. All light controlled evacuation routes through Two Rivers have four traffic lanes; therefore, two-lane full flow was assumed.

Table A
Evacuation Times Estimates for the Area Near the Point Beach Nuclear Plant

Sector or Area	Estimated Resident Population	Est. No. of Residences	Est. No. of Vehicles	Pol. & Emg. Vehicles Total Avail	Traffic Ctrl.	Notif.	Notif. Time	Normal Weather Conditions Estimate: Estimated Evacuation Time Impl. Time	Conf. Time	Est. Total Evac. Time	Adverse Weather Conditions Estimate: Estimated Evacuation Time Notif. Time	Impl. Time	Conf. Time	Total Evac. Time
S.P.Z.	265	75	90	27	12	15	25 min	52 min	15 min	55 min/1 hr	60 min	110 min	30 min	120 min/2.0 hrs
90° Sector Areas LPZ-5 mi Radius														
NW to N	250	62	67	30	15	15	25 min	50 min	15 min	55 min/1.0 hr	50 min	110 min	30 min	120 min/2.0 hrs
W to NNW	440	110	120	30	15	15	40 min	65 min	25 min	75 min/1.25 hrs	90 min	140 min	50 min	150 min/2.5 hrs
SW to WNW	430	108	120	30	15	15	40 min	65 min	25 min	75 min/1.25 hrs	90 min	140 min	50 min	150 min/2.5 hrs
S to WSW	425	107	120	30	15	15	40 min	65 min	25 min	75 min/1.25 hrs	90 min	140 min	50 min	150 min/2.5 hrs
SSE to SSW	300	75	80	30	15	15	25 min	50 min	15 min	55 min/1.0 hr	60 min	110 min	30 min	120 min/2.0 hrs
90° Sector Areas 5-10 Mile Radius														
NW to N	1,275	320	350	40	10	30	60 min	85 min	40 min	100 min/1.7 hrs	130 min	180 min	60 min	200 min/3.3 hrs
W to NNW	2,245	565	600	40	10	30	100 min	125 min	60 min	160 min/2.7 hrs	200 min	250 min	100 min	270 min/4.5 hrs
SW to WNW	3,820	1,280	1,350	55	15	40	140 min	165 min	70 min	210 min/3.5 hrs	280 min	330 min	120 min	390 min/6.5 hrs
Rural	(3,320)	(830)	(850)	(40)	(10)	(30)	(140 min)	(165 min)	(70 min)	(210 min)	(210 min)	(330 min)	(120 min)	(390 min)
Misbicot	(1,500)	(450)	(500)	(15)	(5)	(10)	(50 min)	(80 min)	(40 min)	(90 min)	(60 min)	(150 min)	(60 min)	(170 min)

Table A cont'd

Sector or Area	Estimated Resident Population	Est. No. of Residences	Est. No. of Vehicles	Pol. & Emg. Vehicles Total Avail	Traffic Ctrl.	Notif.	Notif. Time	Normal Weather Conditions Estimate: Estimated Evacuation Time Impl. Time	Conf. Time	Est. Total Evac. Time	Adverse Weather Conditions Estimate: Estimated Evacuation Time Notif. Time	Impl. Time	Conf. Time	Total Evac. Time
90° Sector Areas 5-10 mile radius (cont'd)														
S to WSW	18,850	5,210	5,500	95	25	70	160 min	210 min	120 min	240 min/4.0 hrs	300 min	450 min	120 min	480 min/8.0 hrs
Rural	(3,850)	(960)	(1,000)	(40)	(10)	(30)	(160 min)	(185 min)	(80 min)	(240 min)	(300 min)	(370 min)	(120 min)	(420 min)
Mishicot	(1,500)	(450)	(500)	(15)	(5)	(10)	(40 min)	(80 min)	(40 min)	(90 min)	(60 min)	(160 min)	(60 min)	(170 min)
Two Rivers	(13,500)	(3,800)	(4,000)	(40)	(10)	(30)	(100 min)	(210 min)	(120 min)	(240 min)	(150 min)	(450 min)	(120 min)	(480 min)
SSE to SSW	15,350	4,265	4,500	70	20	50	120 min	210 min	120 min	240 min/4.0 hrs	200 min	450 min	120 min	480 min/8.0 hrs
Rural	(1,850)	(465)	(500)	(30)	(10)	(20)	(120 min)	(145 min)	(60 min)	(190 min)	(200 min)	(300 min)	(80 min)	(330 min)
Two Rivers	(13,500)	(3,800)	(4,000)	(40)	(10)	(30)	(100 min)	(210 min)	(120 min)	(240 min)	(150 min)	(450 min)	(120 min)	(480 min)

Special Area

Point Beach State Forest Campgrounds 5-10 miles	Est. Total Persons	Est. No. Campsites	Vehicles											
SSE to SSW	up to 1,200	150	250	9	2	7**	90 min	135 min	60 min	150 min/2.5 hrs	15 min	50 min	10 min	60 min***/1 hr

* Estimated maximum State Forest occupancy

** State Forest Ranger and staff

*** Only about 100 persons and 30 vehicles maximum assumed to be in the State Forest during adverse weather conditions.

TABLE B

ROADWAY CHARACTERISTICS

Segment[4]	No. of Lanes[1]	Type[2]	Capacity[3]	Comments
1	2	C	1,800	
2	2	S	2,900	
3	4	U	3,600	
4	2	C	2,800	
5	2	C	2,800	
6	2	C	2,300	Narrow Bridge
7	2	C	2,800	
8	2	C	2,300	Narrow Bridge
9	2	C	2,800	
10	2	C	2,800	
11	2	C	2,800	
12	2	C	2,800	
13	2	S	2,900	
14	2	S	2,900	
15	2	C	2,800	
16	2	C	2,800	
17	2	C	2,800	
18	2	S	2,800	
19	2	C	2,800	
20	2	C	2,800	
21	2	S	2,800	
22	2	S	2,800	
23	2	S	2,800	
24	2	C	2,800	
25	2	S	2,800	
26	2	S	2,800	
27	2	S	2,900	
28	2	S	2,900	
29	2	C	2,800	
30	2	C	2,800	
31	2	C	2,800	
32	2	C	2,800	

TABLE B cont'd

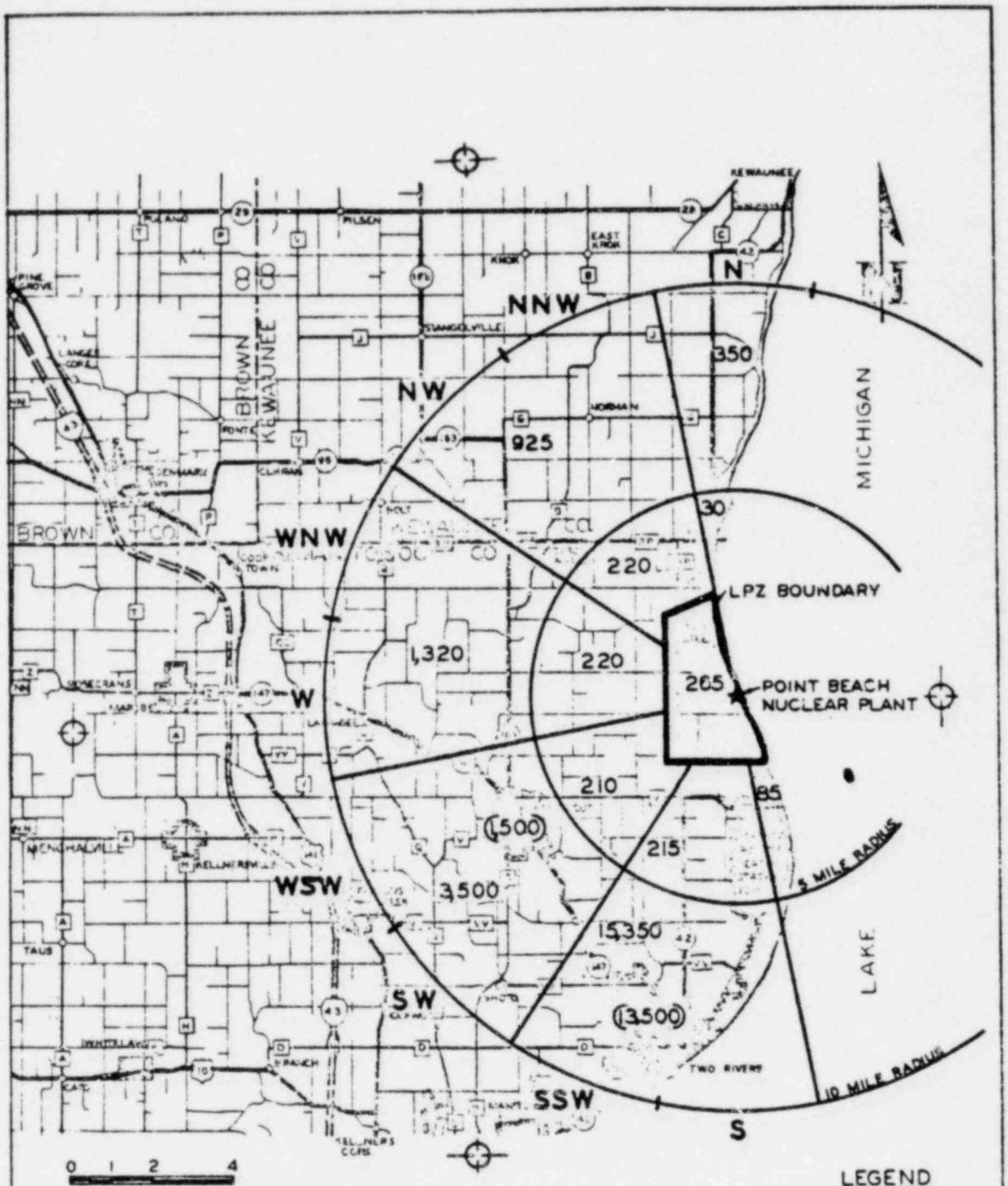
Segment[4]	No. of Lanes[1]	Type[2]	Capacity[3]	Comments
33	2	C	2,800	
34	2	C	2,800	
35	2	C	2,800	
36	2	C	2,800	
37	2	C	2,800	
38	2	S	2,900	
39	2	C	2,800	
40	2	S	2,800	
41	2	S	2,800	
42	2	C	2,800	
43	2	C	2,800	
44	2	S	2,900	
45	2	S	2,900	
46	2	C	2,800	
47	2	C	2,800	
48	2	C	2,800	
49	2	C	2,800	
50	4	U	3,600	Two Bridges
51	4	C	5,000	

[1] - Total number of through lanes in both directions

[2] - S - State highway; 60 mph limiting
C - County highway; 50 mph limiting
U - Urban street

[3] - Capacity assumes flow approaching unstable speeds _ to 35 mph

[4] - See Figure 2 for segment locations



RESIDENT POPULATION IN THE VICINITY
OF
POINT BEACH NUCLEAR PLANT

FIGURE 1

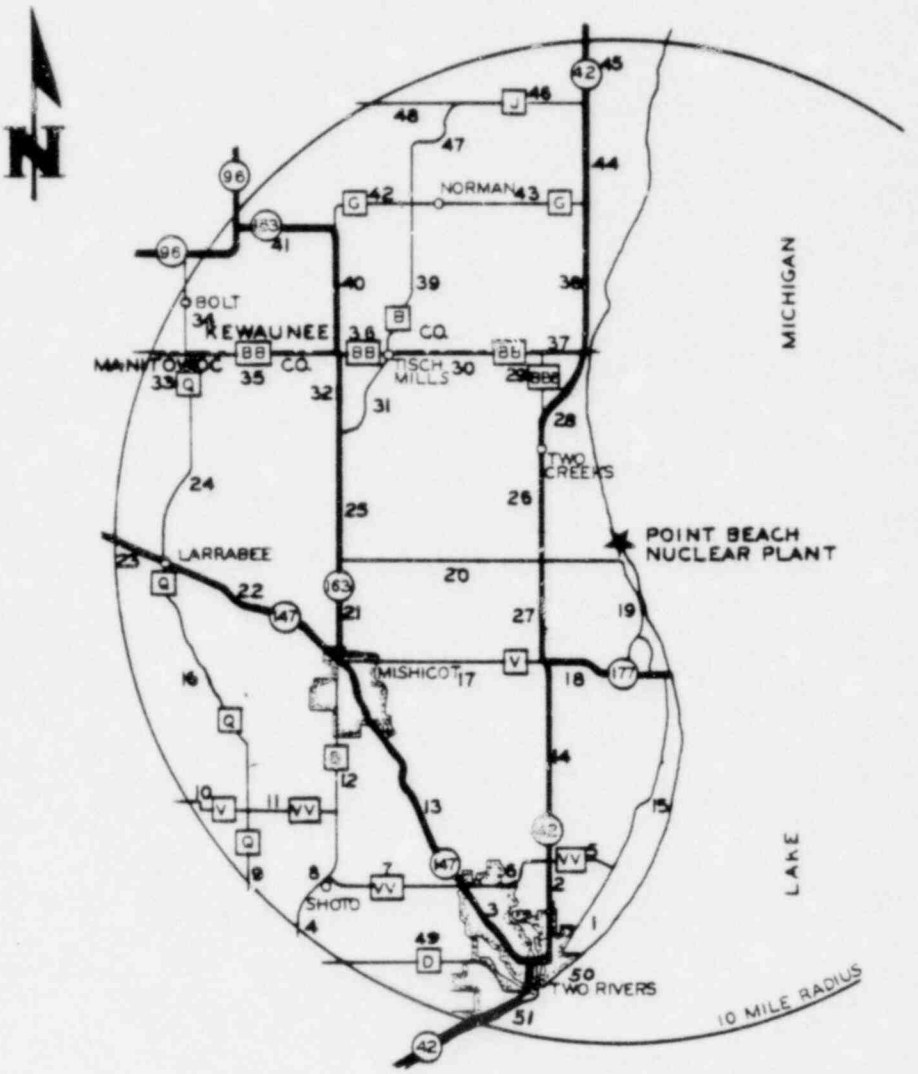


FIGURE 2

MAJOR HIGHWAYS IN THE VICINITY
OF
POINT BEACH NUCLEAR PLANT

POINT BEACH NUCLEAR PLANT EMERGENCY PLAN INDEX

NOTE: EP 6S3.7 = Emergency Plan Section 6.0 Subsection 3.7.

Section

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