



August 1, 2011

Attention: Document Control Desk  
U. S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

Serial No.: 11-390  
NLOS/TJS: R0  
Docket No.: 50-305  
License No.: DPR-43

**DOMINION ENERGY KEWAUNEE, INC.**  
**KEWAUNEE POWER STATION**  
**REVISION TO KEWAUNEE POWER STATION EMERGENCY PLAN**

Pursuant to 10 CFR 50.54(q), enclosed is the Kewaunee Power Station Emergency Plan (Revision 36). This revision became effective June 30, 2011. Descriptions of the changes associated with the revision are included with the document. The revision does not implement actions that decrease the effectiveness of the Emergency Plan, and the Emergency Plan continues to meet the standards of 10 CFR 50.47(b) and 10 CFR 50, Appendix E.

If you have any questions or require additional information, please contact Mr. Thomas Szymanski at (804) 273-3065.

Sincerely,

A handwritten signature in black ink, appearing to read "L. Hartz", written over a horizontal line.

Leslie N. Hartz  
Vice President - Nuclear Support Services

Enclosure

Commitments made by this letter: None

AX45  
NRR

cc: U. S. Nuclear Regulatory Commission  
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Serial No. 11-390  
KPS EPlan Revision

Enclosure

Kewaunee Power Station  
Emergency Plan (Rev. 36)

Kewaunee Power Station  
Dominion Energy Kewaunee, Inc.  
(DEK)



**Kewaunee Power Station  
Emergency Plan  
Revision 36  
June 30, 2011**

## Revision Summary

Section	Before	After	Reason
1.3	<u>Radioactive Release</u> - Any atmospheric or liquid release of radioactive material to the environment. In context of an event notification, it is bounded by "related to the event being reported."	<u>Radioactive Release</u> - Any radioactive material beyond pre-emergency levels and not attributable to normal plant operations, either detected or suspected of migrating beyond the protected area, while in a declared emergency, shall be communicated to the state and local governments as a radioactive release.	Dominion Emergency Preparedness Peer Group approved on 7/26/10 this fleet definition for a radiological release to be reported to the state and local governments.
1.3	<u>Personnel Monitoring Equipment</u> - Radiation exposure measuring devices designed to be worn or carried by an individual for the purpose of measuring the radiation dose received (i.e., pocket dosimeters, and/or TLDs).	<u>Personnel Monitoring Equipment</u> - Radiation exposure measuring devices designed to be worn or carried by an individual for the purpose of measuring the radiation dose received (i.e., direct reading dosimeters, and/or TLDs).	Direct reading dosimeter is a more correct term and includes both pocket dosimeters and electronic dosimeters.
1.1 and 2.2.1	Nuclear Administrative Directives (NAD)	Administrative Procedures	Dominion Fleet administrative procedures have replaced the NADs.
Figure 2.1	HPN was shown as connected to RPO/RAF only	HPN shown connected to RPO/RAF, TSC, and EOF	HPN Phones are located in each of these facilities.
2.2.3	<ul style="list-style-type: none"> <li>SBC (or current telephone service)</li> </ul>	<ul style="list-style-type: none"> <li>Verizon (or current telephone service)</li> </ul>	Verizon is the current telephone provider for KPS.
2.2.3	<ul style="list-style-type: none"> <li>Wisconsin Public Service Corp.</li> </ul>	None	The agreements with WPS were for use of their buildings and facilities which have been replaced by Dominion facilities.
5.2.2	Support Activities Director	SAD	Acronym is defined in the paragraph on page 5-5.
5.2.3	<ul style="list-style-type: none"> <li>Services as the central point-of-contact for requests for corporate logistical assist.</li> </ul>	<ul style="list-style-type: none"> <li>Serves as the central point-of-contact for requests for corporate logistical assist.</li> </ul>	Correction of typo.
5.3.3	In addition, the NRC is notified of abnormal exposures or release rates from the plant as stipulated in 10 CFR Part 20.403 and 10 CFR Part 20.405.	In addition, the NRC is notified of abnormal exposures or release rates from the plant as stipulated in 10 CFR Part 20.2202 and 10 CFR Part 20.2205.	10CFR20 references were for an earlier revision of the CFR, changed to correct references.
5.3.3	A letter of agreement between the KPS/Dominion and DOE is maintained in support of this Plan.	None.	DOE no longer issues letters of agreement to Nuclear Power Stations.

Section	Before	After	Reason
6.7.1	Personnel monitoring devices will be issued from either the Security Building, the Radiation Protection Office, Radiological Analysis Facility or the Site Boundary Facility.	Personnel monitoring devices will be issued from Security, the Radiation Protection Office, Radiological Analysis Facility or the Site Boundary Facility.	Security may issue dosimetry from the forward checkpoint or other locations if necessary.
7.1	(see Appendix C, pages C-2 and C-6 for locations).	(see Appendix C, pages C-2, C-6 and C-7 for locations).	Page C-7 shows the location of the SRF.
8.3.1	NAD-05.15, "Revision and Control of the Emergency Plan and Emergency Action Levels,"	EP-AA-102, "Revision and Control of the Emergency Plan, Emergency Action Levels (Technical Basis and Matrix) and Reference Manual."	Fleet procedure EP-AA-102 has replaced NAD-05.15.
Various	Cross - Reference	Cross-reference	Minor format correction.
Appendix D Page D-2	G., WPSC Eastern Region, Emergency Plan Files	None	This is an obsolete agreement for the use of a WPS building by the State for power to the mobile lab. The State now uses the Armory for this purpose.
Appendix D Page D-2	Services Agreement between WPSC and Dominion*, Dominion Corp. Supply Chain	None	This is an obsolete agreement for the use of a WPS building in Green Bay for the KPS EOF. New EOF has been built for KPS.
Appendix D Page D-2	F. SBC (Telephone Service Provider)	F. Verizon (Telephone Service Provider)	Verizon is the current service Provider.
Appendix G Page G1	EPIP-ENV-03C, Dose Projection Using RASCAL Software, 6.2.3, 7.3.2(1)	EP-KW-ENV-001, Guideline for using PCMidas	MIDAS is the current primary means of doing dose projections for KPS.
Appendix G Page G3	EPIP-TSC-10, Technical Support for IPEOPs	None	This procedure has been deleted and it did not implement any E-plan requirements.
Appendix G Page G4	EPMP-09.02, Emergency Communications System Verification, 8.2.2.(2)a	EPMP-09.02, Emergency Communications System Verification, 8.2.2.2	The E Plan numbering sequence was changed in Rev 35 of the E Plan.
Appendix G Page G4	None	EPMP-09.06, Review and Maintenance of Emergency Information to the Media and Public, 8.5	This reference is being added to provide more complete information for section 8.5 of the E Plan.

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2.0	Scope and Applicability 2.1 Facility Description 2.2 Emergency Plan Interrelationships <ul style="list-style-type: none"> <li>• Emergency Plan Implementing Procedures and Supporting Plant Procedures</li> <li>• Interfaces with Governmental Agencies</li> <li>• Local Services Support</li> <li>• Contractors and Other Utilities</li> </ul>
3.0	Summary of the Emergency Plan
4.0	Emergency Conditions 4.1 Emergency Classification System <ul style="list-style-type: none"> <li>• Unusual Event (UE)</li> <li>• Alert</li> <li>• Site Area Emergency (SAE)</li> <li>• General Emergency (GE)</li> </ul> 4.2 Spectrum of Postulated Accidents <ul style="list-style-type: none"> <li>• Accident Detection Instrumentation</li> <li>• Classification of Postulated Accidents</li> </ul>
5.0	Organizational Control of Emergencies 5.1 Normal Nuclear Organization <ul style="list-style-type: none"> <li>• Plant Operating Shift Organization</li> </ul>

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	<p><b>5.2 Emergency Response Organization</b></p> <ul style="list-style-type: none"> <li>• Direction and Coordination</li> <li>• Plant Staff Assignments <ul style="list-style-type: none"> <li>▪ Plant Systems Operations</li> <li>▪ Notification/Communication</li> <li>▪ Radiological Accident Assessment</li> <li>▪ Damage Control and Repair</li> <li>▪ In-Plant Protective Actions and Decontamination</li> <li>▪ Fire Fighting</li> <li>▪ Rescue and First Aid</li> <li>▪ Site Access Control and Personnel Accountability</li> </ul> </li> <li>• Corporate Support <ul style="list-style-type: none"> <li>▪ Technical and Administrative</li> <li>▪ Public Information</li> </ul> </li> </ul> <p><b>5.3 Augmentation of the Emergency Response Organization</b></p> <ul style="list-style-type: none"> <li>• Private and Area Support Services</li> <li>• State and Local Government Agencies</li> <li>• Federal Government</li> </ul>
6.0	<p><b>Emergency Measures</b></p> <p><b>6.1 Activation of Emergency Response Organization</b></p> <p><b>6.2 Assessment Actions</b></p> <ul style="list-style-type: none"> <li>• In-Plant Monitoring</li> <li>• Source Term Evaluation</li> <li>• Dose Assessment</li> <li>• Field Monitoring</li> <li>• Severe Accident Management</li> </ul> <p><b>6.3 Corrective Actions</b></p>
	<p><b>6.4 Protective Actions</b></p> <ul style="list-style-type: none"> <li>• Site <ul style="list-style-type: none"> <li>▪ Notification and Response Times</li> <li>▪ Personnel Accountability</li> <li>▪ Site Access Control</li> <li>▪ Evacuation</li> </ul> </li> <li>• Off-Site</li> </ul> <p><b>6.5 Use of Protective Equipment and Supplies</b></p> <ul style="list-style-type: none"> <li>• Individual Respiratory Protection</li> <li>• Protective Clothing</li> <li>• Use of Radioprotective Drugs</li> </ul>



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7.0	<p>Emergency Equipment and Facilities</p> <p>7.1 Emergency Response Facilities</p> <ul style="list-style-type: none"> <li>• Control Room</li> <li>• Technical Support Center</li> <li>• Radiological Analysis Facility and Radiation Protection Office</li> <li>• Operational Support Facility</li> <li>• Emergency Operations Facility</li> <li>• Joint Information Center</li> <li>• Site Boundary Facility</li> <li>• Site Relocation Facility</li> <li>• Innsbrook Corporate Support Center (ICSC)</li> </ul> <p>7.2 Communication Systems</p> <p>7.3 Assessment Facilities and Equipment</p> <ul style="list-style-type: none"> <li>• Site Assessment Facilities and Equipment <ul style="list-style-type: none"> <li>▪ Geophysical Phenomena Monitors</li> <li>▪ Radiation Monitoring System</li> <li>▪ Portable Radiation Monitors</li> <li>▪ Laboratory Facilities</li> <li>▪ High Radiation Sample System</li> <li>▪ Fire Detection and Suppression Equipment</li> </ul> </li> <li>• Off-Site Assessment Facilities and Equipment <ul style="list-style-type: none"> <li>▪ Geophysical Phenomena Monitors</li> <li>▪ Environmental Radiological Monitoring and Sampling</li> <li>▪ Alternate Laboratory Facilities and Equipment</li> </ul> </li> </ul>

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## SECTION 1

### 1.0 INTRODUCTION

The Kewaunee Power Station (KPS) Emergency Plan has been developed to ensure an adequate level of preparedness and an effective response to emergencies at the Kewaunee Power Station. The plan applies to emergency situations at the Kewaunee Power Station, which involve actual or potential concerns for the safety of plant personnel or the general public. The concepts presented in this plan address the regulations stipulated in 10 CFR Part 50.47, "Emergency Plans" and 10CFR Part 50, Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities" and are consistent with the guidelines established in NUREG-0654/FEMA-REP-1, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants." Additional NRC criteria based on lessons learned at Three Mile Island, NUREGs and other emergency planning guidance have been used in preparing this plan.

### 1.1 FUNDAMENTAL OBJECTIVES OF THE EMERGENCY PLAN

The Emergency Plan outlines the activities and responsibilities of the Kewaunee Power Station (KPS)/ Dominion Energy Kewaunee Inc. supported by Dominion corporation and off-site support organizations in the event of an emergency at the Kewaunee Power Station. The primary objectives of the plan are to:

1. Outline the most effective course of action that shall be taken to safeguard the health and safety of the public and plant personnel in the event of an emergency.
2. Establish an emergency response organization with pre-assigned responsibilities in order to rapidly respond to an emergency condition or radiological incident and to limit the consequences of the incident.
3. Identify protective and corrective actions that could be used to mitigate the consequences of an emergency.
4. Establish organizational and individual responsibilities for the control of on-site and off-site response activities including notification and coordination of off-site supporting organizations as required.
5. Establish procedure requirements to identify and classify emergency conditions.
6. Identify the appropriate responses for each emergency classification.
7. Provide guidelines for recommending protective actions for the general public and for implementing any protective actions deemed appropriate to protect plant personnel.
8. Provide a basis for the training of all members of the emergency response organization and the appropriate off-site local emergency response personnel.
9. Describe the emergency facilities and communication systems available and their use by emergency response personnel and organizations.
10. Identify the federal, state and local authorities that are available for emergency assistance and the specific supporting services each will provide.

In addition to the Emergency Plan, detailed Emergency Plan Implementing Procedures (EPIPs) and a Nuclear Emergency Public Information Plan and Procedures (NEPIPs) have been developed and will be used at Kewaunee Power Station. Administrative Procedures and Emergency Plan Maintenance Procedures (EPMPs) have been developed for maintaining the emergency preparedness program and are available through Webtop.

A cross-reference between the Emergency Plan sections and corresponding procedures appears in Appendix G of this Emergency Plan.

## **1.2 RESPONSIBILITIES WITH RESPECT TO MAINTAINING EMERGENCY PREPAREDNESS**

As the licensed operator of a nuclear power reactor under 10CFR Part 50, Dominion Energy Kewaunee Inc. has the primary responsibility for the planning and implementation of emergency measures within the site boundaries of the Kewaunee Power Station. The Kewaunee Power Station Site Vice President has the overall authority and responsibility for radiological emergency response planning, to assure that an adequate level of emergency preparedness is established and maintained at Kewaunee Power Station. The KPS Director of Safety and Licensing, supported by the KPS Emergency Preparedness Manager and Emergency Preparedness Staff, are responsible for assuring that adequate support is provided to the emergency preparedness program.

Dominion Energy Kewaunee Inc. recognizes that advance agreements with federal, state, and local organizations are necessary to obtain additional emergency support services and equipment. The agencies with which the Kewaunee Power Station has agreements are listed in Appendix D of this plan and the letters of agreement are kept on file. Dominion Energy Kewaunee Inc. coordinates its efforts with federal, state, and local organizations in planning emergency response activities and operations.

### 1.3 DEFINITION OF TERMS

This section provides definitions of terms that are used in the Kewaunee Power Station Emergency Plan. Terms capitalized in the text of the definitions indicate that they are defined elsewhere in this section.

Accountability - The act of taking roll call of all personnel assembled in emergency duty locations or designated ASSEMBLY AREAS within the PROTECTED AREA of KPS for the purpose of identifying any missing persons.

Assembly - The act of gathering personnel in designated areas (to facilitate; performance of ACCOUNTABILITY, determining the availability of personnel resources, and conduct of personnel evacuation, if warranted.)

Assembly Area - Designated on-site locations to which non-emergency response organization personnel and visitors report upon sounding of the plant emergency alarm.

Assessment Actions - Those actions taken during or after an INCIDENT to obtain and process information necessary to make decisions to implement specific emergency measures.

Control Room - The Control Room contains the controls, instruments, and communications equipment necessary for operation of the plant under both normal and emergency conditions. It is operated under the direction of the Shift Manager and serves as the primary location where conditions are monitored and CORRECTIVE ACTIONS for the plant are taken to mitigate any abnormal occurrence. It is the location where initial assessment and classification of an INCIDENT takes place and reactor conditions are monitored.

Corrective Actions - Those emergency measures taken to mitigate or terminate an emergency situation at or near the source of the problem in order to prevent an uncontrolled release of radioactive material or to reduce the magnitude of a release (e.g., equipment shutdown, fire fighting, equipment repair, and damage control).

Design Basis Accident - A hypothetical accident assuming a fission product release from the core based upon a major accident at the plant. The hazards that could potentially occur from this postulated accident would not exceed those resulting from any credible accident described in the Updated Safety Analysis Report.

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

Emergency Action Levels (EALs) - A pre-determined, site-specific, observable threshold for a plant Initiating Condition (IC) that places the plant in a given emergency class. An EAL can be an instrument reading, an equipment status indicator, a measurable parameter (onsite or offsite), a discrete, observable event, results of analyses, entry into specific emergency operating procedures, or another phenomenon which, if it occurs, indicates entry into a particular emergency class.

- There are times when an EAL will be a threshold point on a measurable continuous function, such as a primary system coolant leak that has exceeded technical specifications.
- At other times, the EAL and the IC will coincide, both identified by a discrete event that places the plant in a particular emergency class.



Emergency Classification System - One of a minimum set of names or titles, established by the Nuclear Regulatory Commission (NRC), for grouping of normal nuclear power plant conditions according to (1) their relative radiological seriousness, and (2) the time sensitive onsite and offsite radiological emergency preparedness actions necessary to respond to such conditions. The existing radiological emergency classes, in ascending order of seriousness, are called:

- Unusual Event (UE)
- Alert
- Site Area Emergency (SAE)
- General Emergency (GE)

These classifications are further defined in Section 4 of this EMERGENCY PLAN.

KPS Emergency Duty Location - The emergency facilities, which EMERGENCY RESPONSE ORGANIZATION personnel report to in the event of a declared EMERGENCY at KPS.

Emergency Operations Facility (EOF) - The facility is used for evaluating off-site accident conditions and recommending PROTECTIVE ACTIONS for emergency situations that may affect the general public. The operation of this facility is under the direction of the Emergency Response Manager (ERMs). The facility serves as the center for the coordination of emergency activities between the plant and federal, state, and local authorities.

Emergency Plan - This document provides guidance for dealing with both ON-SITE and OFF-SITE consequences of emergency conditions at the Kewaunee Power Station.

Emergency Plan Implementing Procedures (EPIP) - Specific procedures describing actions needed to implement this EMERGENCY PLAN.

Emergency Plan Maintenance Procedures (EPMP) - Specific procedures describing the methods established to maintain and monitor the emergency preparedness program.

Emergency Planning Zone (EPZ) - An area around a nuclear power plant for which emergency planning is conducted (in accordance with NUREG-0654/FEMA-REP-1, Revision 1). 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.

Emergency Response Organization (ERO) - Individuals who have been assigned an emergency response position within the KPS Emergency Preparedness Program.

Hostile Action - An act toward the plant or its personnel that includes the use of violent force to destroy equipment, take hostages, and intimidate to achieve an end. This includes, but not necessary limited to, attack by air, land or water using guns, explosives, projectiles, vehicles, or other devices used to deliver destructive force. Acts of civil disobedience or felonious acts that are not part of a concerted attack on the plant (e.g., violent acts between individuals in the owner controlled area) do not meet this definition.

Hostile Force - One or more individuals who are engaged in a determined assault, overtly or by stealth and deception, equipped with suitable weapons capable of killing, maiming, or causing destruction.

Incident - An unforeseen and/or unintentional event and its consequences that may result in an EMERGENCY.

Innsbrook Corporate Support Center (ICSC) - The ICSC located near Richmond, VA, is activated to provide support during an ALERT or higher event at Kewaunee Power Stations (KPS). When activated, the function of the ICSC includes both logistical and public information support in the event of an emergency at KPS.

Ingestion Exposure Pathway - The EPZ within an approximate 50-mile radius from the plant in which the principal exposure is from the ingestion of contaminated water or foods such as milk, livestock feed, or vegetables. Depending on the magnitude and nature of the radiological emergency, the duration of potential exposure may range from hours to years.

Joint Information Center (JIC) - The facility operates under the direction of the JIC Manager. The JIC serves as a single-point contact for disseminating information from KPS (Dominion), county, state and federal agencies to news media personnel and the general public.

Low Population Zone - An area approximately two miles in radius surrounding the Kewaunee Power Station in which the total residential population and population density are such that appropriate PROTECTIVE ACTIONS can be readily taken in the event of a serious radiological emergency.

Off-Site - The areas beyond the SITE BOUNDARY of the Kewaunee Power Station.

Operational Support Facility (OSF) - Is located in the southeast section of the TECHNICAL SUPPORT CENTER. The facility operates under the direction of the Support Activities Director (SAD) and serves as an assembly, planning, and staging area for operational and maintenance support personnel.

Personnel Monitoring Equipment - Radiation exposure measuring devices designed to be worn or carried by an individual for the purpose of measuring the radiation dose received (i.e., direct reading dosimeters, and/or TLDs).

Plume Exposure Pathway - The EPZ within an approximate 10-mile radius from the plant in which a radioactive cloud (plume) can expose the POPULATION-AT-RISK and/or plant personnel to radiation or contamination. The duration of potential exposure could range from hours to days. The principal exposure sources for this pathway are:

- a. Whole body external exposure to Gamma radiation from the radioactive plume and from deposited material.
- b. Inhalation exposure from the passing radioactive plume.

Population-at-Risk - Those persons, including plant personnel, for whom PROTECTIVE ACTIONS are being or would be taken.

Priority Entry - Means an entry into the plant under unknown conditions to perform a task considered to be vitally important for swiftly mitigating actual or potential radiological consequences. A priority entry allows bypassing normal administrative procedures provided that entrants are briefed on known conditions and are continuously accompanied by a Radiation Technologist qualified to provide the same level of protection normally afforded by a Radiation Work Permit. Administrative documents shall be completed post-entry.

Projected Dose - An estimate of the radiation dose, which affected individuals could potentially receive if PROTECTIVE ACTIONS are not taken.

Protected Area - That area within the perimeter of the Kewaunee Power Station security fence.

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.

Protective Action Guides (PAGs) - Projected radiological dose or dose commitment values to individuals in the general population that are used to institute PROTECTIVE ACTION recommendations.

Radiation Emergency Teams - Teams (In-plant Radiation Emergency Team and Emergency Chemistry Team) that operate under the direction of the Radiological Protection Director (RPD).

Radioactive Release - Any radioactive material beyond pre-emergency levels and not attributable to normal plant operations, either detected or suspected of migrating beyond the protected area, while in a declared emergency, shall be communicated to the state and local governments as a radioactive release.

Radiological Analysis Facility (RAF) - An area adjacent to the TECHNICAL SUPPORT CENTER where sample analyses are normally performed during declared emergencies. It is utilized for monitoring and controlling personnel radiation exposures, controlled area entries, and for directing first aid activities within the plant. It operates under the direction of the Radiological Protection Director (RPD) and is equipped with portable radiation monitoring equipment, Gamma spectroscopy equipment, protective clothing and other miscellaneous radiation protection supplies.

Radiological Control Areas - The areas 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. These areas typically include the Containment Building and a large portion of the Auxiliary Building. Refer to the Health Physics procedures for details on radiation and contamination levels.

Recovery - Off-Site - Those efforts made by federal, state and county agencies to reclaim land and property where its use or function was lost due to contamination from a nuclear plant accident.

Recovery - Plant - Efforts made to return the plant to normal operating following a severe incident. Plant recovery may be entered directly from a declared level of emergency provided plant conditions are stable with no further degradation expected. In some instances, de-escalation or closeout of the emergency may occur rather than plant recovery.

Severe Accident Management (SAM) - A process by which severe core damaging accidents that go beyond design basis can be systematically assessed such that any and all means available to maintain the core and the plant in a controlled stable state may be implemented.

Site - All areas within the SITE BOUNDARY of the Kewaunee Power Station.

Site Boundary - The perimeter of the land owned by Dominion Energy Kewaunee Inc. surrounding the plant. (See Appendix C, page C-3).

Site Boundary Facility (SBF) - A facility located at the western edge of the SITE BOUNDARY that serves as a staging area for the environmental monitoring teams. This facility may be used as an access control point or radiological monitoring and decontamination station.

Site Relocation Facility (SRF) - A facility located approximately 3 miles Northwest of the Plant. When needed, this facility may be used as a near site relocation and staging area for personnel entering or exiting the site.

Source Term - Source Term refers to the magnitude and mix of the radionuclides released from the fuel expressed as fractions of the fission product inventory in the fuel as well as their physical and chemical form, and the timing of their release.

Technical Support Center (TSC) - A plant emergency facility located in a building north of and adjacent to the Auxiliary and Turbine Buildings. The facility has the capability to supply and display technical information for use by technical and designated management personnel in support of plant operations and CONTROL ROOM functions during emergency and plant recovery operations. It operates under the direction of the Emergency Director (ED) and Technical Support Center Director (TSCD).

## SECTION 2

### 2.0 SCOPE AND APPLICABILITY

This section describes the plant facility and its surrounding area. It also summarizes the interrelationship of the plan with other plant procedures and the response of support organizations.

### 2.1 FACILITY DESCRIPTION

The Kewaunee Power Station is a single unit light water cooled reactor owned and operated by Dominion Energy Kewaunee Inc. The plant utilizes a pressurized water reactor Nuclear Steam Supply System furnished by the Westinghouse Electric Corporation. The reactor design core power is 1,772 megawatts thermal and gross plant electrical output is approximately 590 megawatts electrical. An Independent Spent Fuel Storage Installation (ISFSI) is located on the plant site. The physical layout of the plant is illustrated in Appendix C, page C-2.

The plant is located in Kewaunee County, in east central Wisconsin, along the west shore of Lake Michigan (see Appendix C, page C-3). The site covers an area of approximately 908 acres. The topography of the region is gently rolling to flat, with elevations varying from 10 to 100 feet above the level of Lake Michigan. The land surrounding the site slopes gradually east towards Lake Michigan from the higher elevations in the west. At the northern and southern perimeters of the site, bluffs form the boundary between the plant site and Lake Michigan.

Kewaunee County and the adjacent counties of Manitowoc, Brown, and Door surrounding the site are predominantly rural. The dairy industry is the major industry within a 20-mile radius of the plant. Land is used primarily for agriculture. Dairy products and livestock account for over three-quarters of farm production with field crops and vegetables comprising the remainder.

The most densely populated communities in the vicinity of the plant are to the south in Two Rivers and Manitowoc. Smaller population concentrations within 10 miles from the plant include the townships of West Kewaunee (including the City of Kewaunee), Carlton, Mishicot, Franklin, and Montpelier. The nearest population centers with greater than 25,000 people are Manitowoc (17 miles SSW), Green Bay (27 miles WNW), Appleton (43 miles West), and Sheboygan (42 miles SSW). The population distribution by evacuation sectors is illustrated in Appendix C, page C-4.

## **2.2 EMERGENCY PLAN INTERRELATIONSHIPS**

This Emergency Plan is the basis for plant and Corporate Support programs. It describes the required contents of the Emergency Plan Implementing Procedures, other appropriate plant procedures and identifies the Emergency Response Plans of federal, state, local, and private emergency support organizations used to respond to an emergency at the facility. These procedures and plans will be jointly used to mitigate the consequences of an emergency at the Kewaunee Power Station. The following subsections describe the interrelationship of this plan with other supporting plant procedures and the interface with federal, state, local, and private organizations. The interrelationships among Dominion and federal, state, local, and private organizations are shown in FIGURE 2-1. Details of the emergency assistance that will be provided by supporting organizations are presented in Section 5.3 of this Emergency Plan. The Plan satisfies the Emergency Plan requirements for the Kewaunee Power Station ISFSI under provisions of Title 10 of the code of Federal Regulations, Part 72, Subpart B, Section 32, Subsection (c).

### **2.2.1 Emergency Plan Implementing Procedures and Supporting Plant Procedures**

The Kewaunee Power Station Emergency Plan Implementing Procedures (EPIPs) describe detailed actions to be taken by individuals in responding to plant emergency conditions and for directing the implementation of this plan. These procedures specify actions such as emergency classification, notification, activation, and staffing of emergency response facilities, personnel accountability, and other emergency response measures that will be used to ameliorate emergency conditions at the Kewaunee Power Station.

Chemistry and Health Physics procedures provide additional instructions for performing surveys, analyzing samples, operating health physics/radiation protection equipment, and other activities. The Kewaunee Power Station General Access Training Manual further defines administrative controls and procedures for the use of radiological monitoring devices, protective clothing and equipment. This manual also states radiological control limits and precautions.

The Emergency Plan Maintenance Procedures (EPMPs) provide instructions for maintaining specific program elements such as, equipment tests and inventories.

Administrative Procedures govern changes to the Emergency Plan and its implementing procedures.

### **2.2.2 Interfaces with Governmental Agencies**

Coordination and liaison with federal, state, and county governmental agencies having radiological emergency planning responsibilities and functions are necessary for the effective implementation of this plan. This preplanned coordination ensures the proper interfacing of emergency response activities between governmental agencies and the plant. Governmental agencies with emergency response functions include:

- Kewaunee County, Emergency Government
- Manitowoc County, Emergency Management
- Wisconsin Department of Military Affairs, Wisconsin Emergency Management
- Wisconsin Department of Health and Family Services, Division of Public Health, Radiation Protection Section
- Wisconsin State Patrol
- U.S. Department of Energy
- U.S. Nuclear Regulatory Commission, Emergency Operations Center
- U.S. Nuclear Regulatory Commission, Region III

### **2.2.3 Local Services Support**

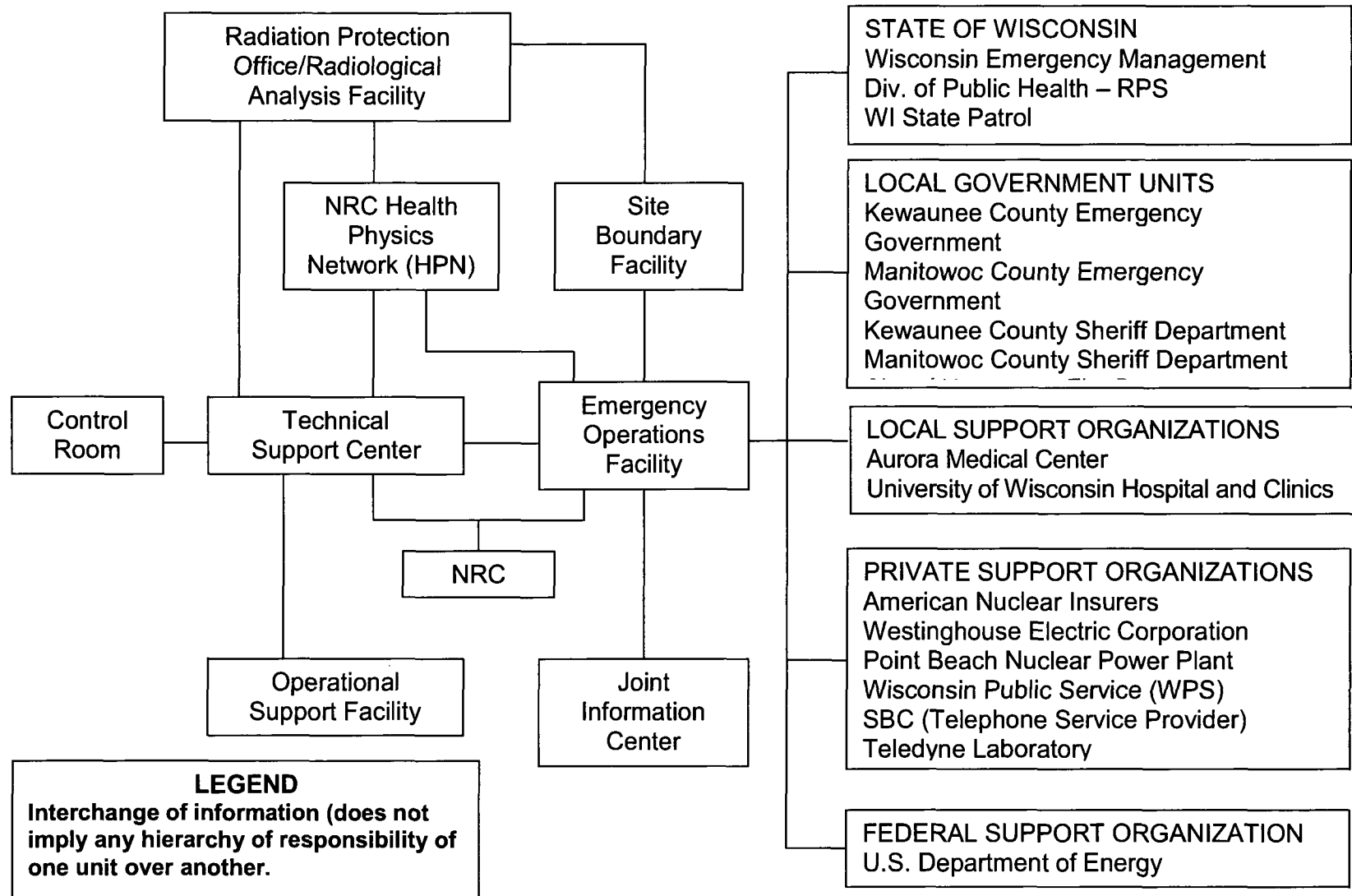
In addition to the federal, state and county agencies listed above, various local agencies and organizations have, by prior arrangement, agreed to respond to requests for assistance at the Kewaunee Power Station. Coordinated planning efforts have ensured effective interfacing of this plan with the emergency response functions of these local support organizations. These local agencies include:

- City of Kewaunee Fire Department
- Kewaunee County Sheriff's Department
- Manitowoc County Sheriff's Department
- Aurora Medical Center
- University of Wisconsin Hospital and Clinics
- Kewaunee Ambulance Service
- Mishicot Area Ambulance Service
- Two Rivers Fire Department Ambulance
- Verizon (or current telephone service)
- Point Beach Nuclear Power Plant

### **2.2.4 Contractors and Other Utilities**

During an emergency, additional assistance may be required from private support groups. These support groups are comprised of personnel from various contractors and utilities. Dominion Energy Kewaunee Inc. has acquired mutual assistance agreements, which are indexed in Appendix D of this Plan.

**FIGURE 2-1**  
**Interrelationship Of Overall Emergency Response Organization**



## SECTION 3

### 3.0 SUMMARY OF THE EMERGENCY PLAN

The Emergency Plan defines the actions and responsibilities of Kewaunee Power Station and Dominion personnel in the event of an emergency and delineates the support required from federal, state, local, and private organizations during certain emergency situations. In general, the Emergency Plan describes the following basic actions:

1. Detection of the emergency
2. Classification of the emergency
3. Activation of the emergency response organizations
4. Assessment of plant status and conditions
5. Initiation of corrective actions
6. Initiation of protective actions
7. Aid to affected persons
8. Plant recovery operations

These basic actions are explained in detail in specific sections of the plan. The contents of these sections are summarized below.

**Section 4** describes emergency classifications, and philosophy of the classification process. The Emergency Action Levels (EALs) detailed in the implementing procedure and corresponding actions noted are based upon design and operating characteristics specific to a pressurized water reactor type plant and upon NRC regulatory guides for nuclear power plants. In addition, this section describes corresponding plant and state/local actions in response to various postulated emergency situations.

**Section 5** describes the functions and responsibilities of the organizations utilized in controlling emergencies. Beginning with the normal plant and Corporate Support organization as a base, this section describes the emergency response organization and the assistance that can be provided by federal, state and local emergency support agencies, and private organizations.

**Section 6** specifies the emergency measures, including activation of the emergency organization, notification of emergency personnel, assessment actions, corrective actions, protective actions, and aid to affected persons which would be used to mitigate the consequences of an incident.

**Section 7** describes the facilities and equipment available to assess emergency conditions and support emergency operations. This section identifies the locations of emergency response facilities and first aid facilities. It describes the communication links between on-site and off-site emergency response facilities and support agencies.



**Section 8** describes individual responsibilities and the methods for maintaining an effective Emergency Plan and adequate level of emergency preparedness. It describes the following elements of program maintenance:

1. Key personnel and department responsibilities
2. Emergency response training
3. Review and update requirements for the plan and its implementing procedures
4. Maintenance of emergency equipment
5. Coordination of a Public Information Program

**Section 9** outlines the plant recovery organization. It summarizes the plans and measures to be implemented during these recovery operations.

## SECTION 4

### 4.0 EMERGENCY CONDITIONS

This section describes emergency classifications, initiating events, accident detection, emergency action levels, and corresponding plant, state, and local actions in response to various postulated emergency situations.

### 4.1 EMERGENCY CLASSIFICATION SYSTEM

The Emergency Plan provides for an Emergency Classification System based on the following:

- NEI 99-01 Revision 4, Methodology for Development of Emergency Action Levels, January 2003
- NRC Bulletin 2005-02, Emergency Preparedness and Response Actions for Security-Based Events, dated 7/18/05
- NEI Industry White Paper - Enhancements to Emergency Preparedness Programs for Hostile Action, Dated 11/15/05
- NRC Regulatory Issue Summary 2006-12, Endorsement of the Nuclear Energy Institute Guidance, "Enhancements to Emergency Preparedness Programs for Hostile Action," dated 7/19/06

The Emergency Classification System covers an entire spectrum of possible radiological and non-radiological emergencies at the Kewaunee Power Station. The Emergency Classification System categorizes accidents and/or emergency situations into one of four emergency classes depending on emergency conditions at the time of the incident. The emergency classes, in order of increasing severity, are Unusual Event, Alert, Site Area Emergency, and General Emergency. Each of these emergency classes requires notification of and/or immediate actions by plant personnel as well as federal, state, and local agencies.

Incidents may be classified in a lower emergency class at first and then escalated to a higher classification if the situation deteriorates. Each of the four emergency classes has characteristic Emergency Action Levels (EALs). These levels consist of specific values of various plant parameters (i.e., instrument indications, system status, etc.) that are used to classify the emergency and to initiate notification and activation of the appropriate members of the emergency response organization. The philosophy taken for classification will always be to immediately declare the highest class for which an Emergency Action Level has been exceeded.

The State of Wisconsin in its "Emergency Operations Plan" has adopted a system based upon this emergency classification system and in accordance with Environmental Protection Agency (EPA) recommended Protective Action Guidelines.

The following subsections define each of the emergency classes, and describes immediate plant actions. Refer to Emergency Action Level Technical Bases for actual parameter values, annunciators, and equipment status used by emergency response personnel to classify emergencies. Additional guidance on emergency classification is provided in the appropriate Emergency Plan Implementing Procedures.

#### **4.1.1 Unusual Event (UE)**

Events are in process or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

- Potential degradation of the level of safety of the plant is indicated primarily by exceeding plant technical specification Limiting Condition of Operation (LCO) allowable action statement time for achieving required mode change.
- Precursors of more serious events may be included because precursors represent a potential degradation in the level of safety of the plant.
- Minor releases of radioactive materials are included. In this emergency class, however, releases do not require monitoring or offsite response (e.g., dose consequences of less than 10 millirem).

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 purposes of declaring an Unusual Event are to:

1. Bring the Emergency Response Organization (ERO) to a state of readiness.
2. Notify the Innsbrook Corporate Support Center (ICSC) via Corporate Security Control Center.
3. Initiate the systematic handling of information and decision making.
4. Augment shift personnel, if needed.

Federal, state, and local government authorities will be notified of any Unusual Event. The Unusual Event status will be maintained until an escalation in emergency class occurs or the event is terminated. Off-site authorities will be informed of the change in the emergency status and the necessary documentation will be completed as specified in the Emergency Plan Implementing Procedures.

#### **4.1.2 Alert**

Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of HOSTILE ACTION. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.

The purposes of declaring an Alert are to:

1. Activate the Emergency Response Organization (ERO).
2. Notify the Innsbrook Corporate Support Center (ICSC) via Corporate Security Control Center.
3. Activate the Emergency Response Facilities.
4. Initiate immediate and follow-up notification(s) including current plant status information to off-site authorities.

Events in this classification will cause substantial modification of plant operations with the activation of the Emergency Response Facilities and the augmentation of the on-shift resources. In addition, due to the nature of the emergency situation (releases of radioactive material may be possible), radiological assessment or monitoring actions shall be initiated.

The Alert status shall be maintained until an escalation or de-escalation in emergency class occurs, the plant establishes recovery operation, or the event is terminated. The plant may enter recovery operation without de-escalating from a declared Alert. Off-site authorities will be informed of the change in the emergency status and the necessary documentation shall be completed as specified in the Emergency Plan Implementing Procedures.

#### **4.1.3 Site Area Emergency (SAE)**

Events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public or HOSTILE ACTION that results in intentional damage or malicious acts, (1) toward site personnel or equipment that could lead to the likely failure of, or (2) that prevent effective access to equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline (PAG) exposure levels beyond the site boundary.

The discriminator (threshold) between Site Area Emergency and General Emergency is whether or not the EPA PAG plume exposure levels are expected to be exceeded outside the site boundary.

The purposes of declaring a Site Area Emergency are to:

1. Activate the Emergency Response Organization.
2. Notify the Innsbrook Corporate Support Center (ICSC) via Corporate Security Control Center.
3. Activate the Emergency Response Facilities.
4. Activate the Radiation Emergency Teams and Environmental Monitoring Teams.
5. Initiate assembly and/or evacuation measures, if necessary.
6. Initiate consultation with off-site authorities and provide them with updates on emergency conditions for release to the news media and the general public.

Unlike the two previously described emergency classes, a Site Area Emergency is likely to involve some release of radioactive material to off-site areas. Although extensive and immediate protective actions may not be required, declaration of a Site Area Emergency shall require initiation of emergency response operations by KPS personnel and off-site support organizations.

If not already accomplished, the Emergency Director shall augment resources and personnel and initiate activation of all emergency response facilities. Radiation Emergency Team(s) and Environmental Monitoring Teams will be deployed to assess radiation levels to be used as input for the evaluation of recommending protective actions to off-site authorities.

The Emergency Response Manager at the Emergency Operations Facility shall provide status updates and protective action recommendations to off-site authorities. These status briefings, if applicable, will be comprised of meteorological information and projected dose estimates based on both actual and projected long-term releases (calculated on foreseeable plant conditions). The JIC is responsible for issuance of news statements to the media and general public.

The Site Area Emergency status will be maintained until an escalation or reduction in emergency class occurs, the plant establishes recovery operation, or the event is terminated.

The plant may enter recovery operation without de-escalating a declared Site Area Emergency. Off-site authorities will be informed of the change in the emergency status and the necessary documentation will be completed as specified in the Emergency Plan Implementing Procedures.

#### **4.1.4 General Emergency (GE)**

Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or HOSTILE ACTIONS that result in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area.

- The bottom line for the General Emergency is whether evacuation or sheltering of the general public is indicated based on EPA PAGs and, therefore, should be interpreted to include radionuclide release regardless of cause.

To better assure timely notification, EALs in this category are primarily expressed in terms of plant function status, with secondary reliance on dose projection. In terms of fission product barriers, loss of two barriers with loss or potential loss of the third barrier constitutes a General Emergency.

The purposes of declaring a General Emergency is to:

1. Activate the Emergency Response Organization.
2. Notify the Innsbrook Corporate Support Center (ICSC) via Corporate Security Control Center.
3. Activate the Emergency Response Facilities.
4. Activate the Radiation Emergency Teams and Environmental Monitoring Teams.
5. Initiate assembly and/or evacuation measures, if necessary.
6. Initiate predetermined protective actions/recommendations for the population at risk and any additional measures that should be taken due to releases or potential releases.
7. Activate the emergency organization to provide continuous accident assessment and monitoring of plant conditions and relay current information concerning emergency conditions to off-site authorities and the general public.

There will be prompt notification to the appropriate state and local off-site authorities of the General Emergency status. Plant resources and personnel will be augmented by the activation of the emergency organization as described in Section 5 of this Emergency Plan. The Environmental Monitoring Teams will be dispatched. The Emergency Response Manager at the Emergency Operations Facility will provide status updates to appropriate off-site authorities. These briefings will include information on the plant status, release of radioactive materials, meteorological conditions, radiological dose projections, and affected Emergency Planning Zone areas. The JIC is responsible for issuance of news statements to the media and general public.

The General Emergency status will be maintained until a reduction in emergency class occurs, the plant establishes recovery operation, or the event is terminated. The plant may enter recovery operation without de-escalating a declared General Emergency. Off-site authorities will be informed of the change in the emergency status and the necessary documentation will be completed as specified in the Emergency Plan Implementing Procedures.

## **4.2 SPECTRUM OF POSTULATED ACCIDENTS**

This section of the Kewaunee Power Station Emergency Plan describes the detection and classification of the postulated accidents investigated in the Kewaunee Power Station Updated Safety Analysis Report (USAR). Methods for detecting and evaluating these events include the use of installed systems, instrumentation, alarms, approved procedures and specialized training. The principal detection methods and classifications for these events are summarized in the following subsections. A complete discussion of these events may be found in Section 14 of the USAR.

### **4.2.1 Accident Detection Instrumentation**

Abnormal conditions and accidents at the Kewaunee Power Station can be detected in a number of ways. The principal accident detection methodology and equipment include: the monitoring of Control Room instrumentation, annunciators, and alarm systems by trained operations personnel; and the actuation/operation of engineered safety features such as the fire detection and protection systems. In addition, routine practices, such as sampling and analyzing process systems, and recording data on significant system parameters are performed. It should be noted that the instrumentation to be used for prompt detection of accidents at the plant is discussed in detail in the Kewaunee Power Station USAR, Emergency Action Level Matrix and Emergency Action Level Technical Bases provides guidance and plant indications to assist plant personnel in classifying the emergency.

The plant systems available to identify excessive radiological conditions include the Process and Effluent Radiation Monitoring Systems and the Area Radiation and Airborne Radioactivity Monitoring Instrumentation. Each of these systems will provide information necessary to initiate the appropriate emergency procedures, as well as continuing accident assessment during an accident. The magnitude of the source term or release potential will be determined based on plant system monitors and appropriate plant sampling procedures. Emergency Plan Implementing Procedures include the methodology for determining the release rate and/or projected doses within the site boundary and off-site areas.

### **4.2.2 Classification of Postulated Accidents**

The events postulated in Section 14 of the USAR may be categorized into one or more of the four emergency classifications. TABLE 4-1 lists each of these design basis events and the emergency classifications that most likely relate to the event according to the Emergency Action Level Matrix and Emergency Action Level Technical Bases.

**TABLE 4-1**  
**CLASSIFICATION OF POSTULATED ACCIDENTS**

These events are based upon the worst case conditions described in Chapter 14 of the USAR for the Kewaunee Power Station. To fully understand the event, the USAR must be consulted.

EVENT	EMERGENCY CLASSIFICATION	USAR SECTION
(1) Uncontrolled RCCA withdrawal from a subcritical condition.	UNUSUAL EVENT	14.1.1
(2) Uncontrolled RCCA withdrawal at power.	*	14.1.2
(3) RCC assembly misalignment.	*	14.1.3
(4) Chemical and Volume Control System malfunction.	*	14.1.4
(5) Start-up of an inactive reactor coolant loop.	*	14.1.5
(6) Excessive heat removal due to Feedwater System malfunctions.	UNUSUAL EVENT	14.1.6
(7) Excessive load increase incident.	*	14.1.7
(8) Loss of reactor coolant flow lock rotor of RC pump.	SITE AREA EMERGENCY	14.1.8.3
(9) Loss of external electrical load.	*	14.1.9
(10) Loss of normal feedwater.	*	14.1.10
(11) Anticipated transient without scram.	ALERT	14.1.11
(12) Loss of AC power to the plant auxiliaries.	UNUSUAL EVENT	14.1.12
(13) Fuel handling accidents major failure of one element's cladding.	SITE AREA EMERGENCY	14.2.1
(14) Accidental release - recycle or waste liquid.	*	14.2.2
(15) Accidental release - waste gas Gas decay tank rupture Volume control tank rupture	SITE AREA EMERGENCY SITE AREA EMERGENCY	14.2.3
(16) Steam generator tube rupture.	SITE AREA EMERGENCY	14.2.4

\* The immediate results of these events taken alone are less than the criteria for notification of an unusual event.

**TABLE 4-1**  
**CLASSIFICATION OF POSTULATED ACCIDENTS**

<b>EVENT</b>	<b>EMERGENCY CLASSIFICATION</b>	<b>USAR SECTION</b>
(17) Rupture of steam pipe upstream of main steam isolation valves.	*	14.2.5
(18) Rupture of a control rod drive mechanism housing (RCC assembly ejection).	SITE AREA EMERGENCY	14.2.6
(19) Loss of reactor coolant from small ruptured pipes or cracks in large pipes, which actuate emergency, core cooling.	SITE AREA EMERGENCY	14.3.2
(20) Major reactor coolant pipe ruptures (loss of coolant accident).	SITE AREA EMERGENCY	14.3.3

\* The immediate results of these events taken alone are less than the criteria for notification of an unusual event.



## SECTION 5

### 5.0 ORGANIZATIONAL CONTROL OF EMERGENCIES

Using the Kewaunee Power Station (KPS) organization as a base, this section of the plan describes the overall emergency organization that would be used during emergency situations at the plant. This section delineates the responsibilities and assignments of plant and Corporate Support personnel and describes their functional areas of emergency response activities. The latter part of this section describes the emergency response functions of federal, state, local and private organizations.

#### 5.1 NORMAL NUCLEAR ORGANIZATION

The Kewaunee Power Station (KPS) Site Vice President is responsible for high level oversight of plant activities and day-to-day interface with off-site organizations. The KPS Directors report to the KPS Site Vice President (see FIGURE 5-1).

The functions of operations, maintenance, communications to the public, engineering, nuclear oversight, assessment, business, training, planning and scheduling, emergency preparedness, radiation protection, chemistry, security, licensing, office support, and information technology are in place to effectively run the Kewaunee Power Station.

The Kewaunee Power Station organization is on-site during regular working hours, Monday through Friday, holidays excluded, with the following exceptions: the plant operating shift organization, which includes Operations, Radiation Protection, and Security personnel, are on duty on a 24-hour basis, the Chemistry needs of the plant are normally fulfilled by using a 16-hour shift schedule, but as a minimum, provides day and evening shifts on Monday through Friday, and day shift only on weekends and holidays (refer to NRC Commitment 83-048, Staffing for Emergency Preparedness, Wisconsin Public Service Corporation letter to the NRC, NRC-82-211, dated December 8, 1982, and NRC letter to Wisconsin Public Service Corporation, dated August 6, 1984). The following subsection describes this plant operating shift organization.

##### 5.1.1 Plant Operating Shift Organization

The plant operating shift staff consists of eight plant staff personnel and an appropriate number of security personnel. The Shift Manager, who holds a Senior Reactor Operator (SRO) license, is in direct charge of all plant operations during his assigned shift and is responsible for the supervision and actions of the operating personnel on the shift. The Shift Manager will be assisted by a Nuclear Unit Supervisor who also holds a SRO license. Additional shift personnel include: two Nuclear Control Operators who hold Reactor Operator (RO) licenses, two Nuclear Auxiliary Operators, a Radiation Technologist, a Shift Technical Advisor (STA), and a Chemistry Technologist (per the shift schedule stated in 5.1 above).

The duties and responsibilities of the operating staff are defined in the Nuclear Administrative Directives. In addition, a Nuclear Security Shift Supervisor with supporting security officers, fill security positions as well as fill the position of Notifier during declared emergencies until a designated ERF Communicator-Control Room reports to the Control Room. Figure 5-2 shows the composition of the plant operating shift organization.

#### 5.2 EMERGENCY RESPONSE ORGANIZATION

In the event of a declared emergency, appropriate groups of the emergency response organization shall be activated. The pre-assignment of Kewaunee Power Station personnel to key functional areas of emergency activities ensures automatic, unambiguous manning and coordination of the emergency response organization and immediate response capabilities during emergency situations.

The emergency response organization can be activated during normal or off-normal working hours. During normal working hours, the emergency response organization will be formed through transition of the normal nuclear organization (see Figures 5-1 and 5-2) into an emergency mode of operation depending on the situation and emergency classification. During off-normal working hours, the emergency response organization shall consist of the plant operating shift staff (see Figure 5-2) augmented by additional members of the plant staff as required.

To augment the plant operating shift staff with additional personnel in an emergency, KPS emergency response personnel are provided with pagers. It has been established that emergency response personnel not on-site at the initiation of an emergency could begin to arrive approximately 15 minutes after notification that an emergency has been declared at the Kewaunee Power Station. Emergency response personnel are pre-assigned and trained to meet the functional staffing requirements stipulated in Table B-1 of NUREG-0654/FEMA-REP-1, Revision 1 (as described in Section 5.1, Chemistry at a minimum, provides day and evening shifts on Monday through Friday, and day shift only on weekends and holidays).

The following subsections describe the pre-assigned emergency responsibilities of KPS/Dominion personnel for events classified as an Unusual Event, Alert, Site Area Emergency, or General Emergency. Figure 5-3 shows the overall emergency organizational structure for the Kewaunee Power Station. Emergency Plan Appendix A provides the emergency titles, the locations, and the primary responsibilities of the key emergency response personnel. The KPS Emergency Telephone Directory, "Kewaunee Emergency Response Organization (ERO) Call List" correlates emergency organization job titles with the qualified individuals who can fill those positions.

#### **5.2.1 Direction and Coordination**

The Emergency Director is responsible for the overall supervision of plant emergency response operations. In the event of an incident, the Shift Manager is initially the Emergency Director until relieved by a designated member of the plant management staff. If for some reason the Shift Manager is incapacitated, the Nuclear Unit Supervisor will assume the position of Emergency Director until relieved.

The Emergency Director has the authority and responsibility to declare an emergency and to immediately and unilaterally initiate any emergency actions that may be required. The Emergency Director is responsible for ensuring that assessment actions are conducted, the emergency is properly classified, corrective actions are taken and appropriate protective actions are carried out for personnel at the site. The Emergency Director is designated as the severe accident management "Decision Maker". In that capacity the Emergency Director will facilitate consensus with the Shift Manager and other Technical Support Center directors before providing final approval for the implementation of accident mitigative actions recommended by the Severe Accident Management Team. The responsibilities of the Emergency Director which may not be delegated include changing the emergency classification; providing protective action recommendations to off-site authorities (until relieved of this responsibility by a designated Emergency Response Manager) and authorizing exposures in excess of 10 CFR Part 20 limits.

Overall coordination of Dominion and off-site emergency activities is the responsibility of the Emergency Response Manager. The Emergency Response Manager is a designated member of the KPS staff. He will direct activities at the Emergency Operations Facility (EOF) and will interact with the Emergency Director concerning emergency response operations. In addition, the Emergency Response Manager is responsible for directing personnel and communications within the EOF; providing follow-up communications with federal, state, and local emergency response agencies (after the initial contact has been made at the direction of the Emergency Director); communicating with Innsbrook Corporate Support Center (ICSC) to assure continuity of resources (technical, administrative, and material); and requesting assistance from needed federal, state, local, and private support agencies.

Recommending protective actions to the state and local authorities responsible for off site emergency measures is the responsibility of the Emergency Director until the arrival of the Emergency Response Manager. The responsibility is then transferred to the Emergency Response Manager in the EOF. The Radiological Protection Director will provide information to the Emergency Director for use in determining if protective actions are required. The Emergency Response Manager will consult with the Emergency Director, the Radiological Protection Director, and the Environmental Protection Director when evaluating the need for recommending protective actions.

When an emergency has been terminated, the appropriate federal, state and local officials will be notified by the Emergency Director or Emergency Response Manager if the EOF has been activated.

#### **5.2.2 Plant Staff Assignments**

The following subsection describes the primary emergency assignments of the plant staff. In order to minimize confusion and to assist in the control of the emergency response, emergency assignments have been established for specific positions to ensure the implementation of specific emergency duties. The functional areas of the emergency organization are summarized below:

##### **Plant Systems Operations**

Upon declaration of an emergency condition, the Shift Manager has the responsibility for taking measures to return the plant to a stable condition as dictated by the Plant's Procedures.

During abnormal or emergency conditions, the Nuclear Unit Supervisor (licensed SRO), the two Nuclear Control Operators (licensed ROs), the two Nuclear Auxiliary Operators on each shift assists in plant operational control by performing immediate operator actions stipulated in approved procedures. They are responsible for verifying that automatic control actions take place and for taking immediate operator action when the safety of the reactor, personnel, or the environment is in jeopardy. This includes initiating a reactor trip when a reactor protection signal set point is exceeded. If Severe Accident Management Guidelines are implemented, the operations staff will be designated the "implementers" of the approved recommendations from the analysis team.

A Shift Technical Advisor (STA) serves as an on-shift technical advisor to the Shift Manager and assists in reviewing plant status conditions. The STA provides additional technical and analytical assistance to the plant operating shift staff in diagnosing abnormal events.

In addition, the Event Operations Director, upon arrival, advises the Shift Manager on Control Room operations and activities. The Event Operations Director maintains communications with the Emergency Director and Technical Support Center staff relative to plant status. The Event Operations Director must hold an active or inactive SRO license (a former SRO Licensee does not qualify for the EOD position). The Event Operations Director may request additional plant operational staff and technical assistance from the Emergency Director or Technical Support Center staff if needed.

#### Notification/Communication

Initial notifications to off-site agencies and KPS/Dominion emergency response organization (ERO) personnel will be directed by the Shift Manager with the assistance of a Notifier or a designated ERF Communicator-Control Room. The Notifier position will be filled by a security force supervisor and will be available during all shifts. The Notifier will provide short-term assistance in performing pre-formatted notifications to off-site agencies and ERO personnel. The ERF Communicator-Control Room position will be filled from a group of designated KPS response personnel. The ERF Communicator-Control Room will relieve the Notifier upon arrival at the Control Room and assist the Shift Manager in additional notifications and communication activities as needed.

Upon activation of other emergency response facilities, the responsibility to perform off-site notifications will be transferred to the Technical Support Center or the Emergency Operations Facility as is appropriate. Ultimately, the responsibility for off-site notifications will rest with the Emergency Response Manager at the Emergency Operations Facility. However, some off-site communications will be continued by the Technical Support Center Director at the Technical Support Center (e.g., the NRC and Westinghouse Electric Corporation).

The communication systems available to the Control Room, Technical Support Center, Emergency Operations Facility and Innsbrook Corporate Support Center are discussed in Section 7.0 of this plan.

#### Radiological Accident Assessment

Upon the occurrence of an incident which involves the release of radioactive material, the Shift Manager with the plant operating shift staff, will perform the initial assessment of the amount of radioactive material released and the potential for further releases based upon readouts from installed plant process and radioactive effluent monitors. A Radiation Technologist (designated an In-Plant Radiation Emergency Team member within the emergency response organization) is assigned to each shift to support the Control Room personnel in performing radiation surveys and obtaining radiological samples.

The Radiological Protection Director will normally be located in the Technical Support Center. However, during the early stages of an event, the Radiological Protection Director may be in either the Radiation Protection Office (RPO) or the Radiological Analysis Facility (RAF). The Radiological Protection Director is responsible for determining the extent and magnitude of the radiological hazards associated with the emergency situation. He directs the analyses of dose projections, preparation of on-site radiological assessments and recommends on-site radiological protection measures, directs the analyses and evaluation of reactor coolant samples to determine core conditions and release potentials, and directs decontamination actions. In order to provide continuous coverage of radiological accident assessment and health physics operations, the Radiological Protection Director may request additional personnel and equipment through the Emergency Director if needed.

The Radiological Protection Director also directs the activities of the In-Plant Radiation Emergency Team(s) which perform in-plant and on-site radiation surveys. In the early stages of an emergency, he also assumes responsibility for direction and control of the Environmental Monitoring Teams, which perform off-site radiological environmental sampling and analyses, surveys and sampling.

When the Environmental Protection Director arrives in the Emergency Operations Facility, he will assume responsibility for direction of the Environmental Monitoring Teams and the analysis and assessment of radiological samples outside the protected area. In addition, he makes off-site dose projections and reports protective action evaluations to the Emergency Response Manager.

#### Damage Control and Repair

The Shift Manager and the plant operating shift staff respond to initial plant maintenance requirements. Functional aspects of on-shift mechanical and electrical support is provided by the operating crew on-shift until mechanical and electrical support can be called in. Additional maintenance and repair support is obtained through the Support Activities Director (SAD). The SAD is responsible for coordinating activities of maintenance and support personnel at the Operational Support Facility (OSF). The SAD directs activities required to repair equipment or systems damaged during the emergency and carry out requests for modifications to systems and components needed to stabilize plant conditions. In addition, the SAD advises the Emergency Director concerning the prioritization of emergency maintenance. The staff reporting to the SAD shall include Maintenance (Mechanical, Electrical and I&C), and off-shift operational personnel. This maintenance staff can be augmented by support personnel from other Dominion facilities or private contractors. The SAD may request additional personnel, equipment and other materials through the Emergency Director, if needed.

#### In-Plant Protective Actions and Decontamination

Radiation protection activities performed by the In-Plant Radiation Emergency Team(s) will be conducted from the Radiation Protection Office (RPO) if general radiation levels permit it. If necessary, radiation protection functions can be transferred to the Radiological Analysis Facility (RAF). This facility serves as the access control point for the controlled area and provides a base for radiation protection support to in-plant personnel (e.g., fire team(s), search-and-rescue personnel, radiation emergency team(s), and damage and repair personnel) and serves as the central monitoring point for contamination control of in-plant emergency response personnel and equipment. The RPO/RAF will be staffed with Radiation Technologists and radiation protection supervisory personnel, as required.

## Fire Fighting

Personnel trained in fire fighting techniques are divided into two response groups, one for immediate response (Fire Brigade) and the other for control, extinguishment and relief (Fire Team). The Fire Protection Process Owner is responsible for the administration and training for firefighting operations. The minimum on-shift complement for a Fire Brigade consists of five members, as defined in the Kewaunee Power Station Fire Plan. For each shift, a Fire Brigade member is designated as a Fire Brigade Leader. The Fire Brigade Leader coordinates the efforts of the Fire Brigade with the Shift Manager until needed relief is supplied by the Fire Team. The Fire Team consists of members of the plant staff specially trained in fire fighting techniques. In addition, the Emergency Director, upon recommendation from the Fire Brigade/Team Leader, will determine if outside fire support is required. When outside fire support is summoned to the plant, the Fire Chief of the outside support agency will receive direction from the Fire Brigade/Team Leader on the location and type of fire and needed assistance from their agency.

## Rescue and First Aid

The Kewaunee Power Station maintains a sufficient number of plant personnel that receive training in first aid and rescue procedures so that qualified individuals are available during each shift. In situations where personnel injury involves radiation or contamination, procedures for handling the treatment of injured/contaminated personnel shall be implemented. During off-normal hours, an on-shift Radiation Technologist shall provide initial radiation protection coverage during the treatment of these individuals until additional assistance can be obtained.

Support for first aid during rescue operations within the site boundary is the responsibility of the Radiological Protection Director. The Radiological Protection Director and the Environmental Protection Director are responsible for obtaining off-site assistance when Dominion vehicles are involved in an accident during an emergency.

## Site Access Control and Personnel Accountability

The functions and responsibilities of the Security Force are identified in the Security Manual for the Kewaunee Power Station. In the event of a non-security emergency, the Security Force under the direction of the Site Protection Director is responsible for personnel accountability, access control, issuing dosimetry to incoming personnel and providing a Notifier for performing initial off-site notifications. The Security force may also provide vehicles and drivers to support emergency activities.

### 5.2.3 Corporate Support

#### 1. Technical and Administrative

##### a. Corporate Support Director

- Provides direction to the Innsbrook Corporate Support Center (ICCS) staff
- Authorizes augmentation of additional corporate resources
- Approves news releases created at Innsbrook Corporate Support Center (ICSC)
- Interfaces with the KPS Emergency Response Manager (ERM) in the EOF

##### b. Corporate Support Coordinator

- Maintains an Events Log
- Notifies Corporate Risk management of the event
- Serves as the central point-of-contact for requests for corporate logistical assist.
- Interfaces with the KPS Administrative Logistics Director (ALD) in the EOF

##### c. Corporate Plant Information Coordinator

- Monitors the KPS ERF Phone Bridge
- Provides the Innsbrook Corporate Support Center (ICSC) with technical perspective
- Interfaces with the KPS Engineering Licensing (ENGLI) in the EOF

##### d. Corporate External Affairs Manager

- Drafts news releases based on input from the KPS ERF Phone Bridge and the KPS JIC Manager.

##### e. Corporate Emergency Plan Specialist

- Provides assistance with facility operations and interpretation of the Kewaunee Emergency Plan

##### f. Corporate Executive Spokesperson

- If it is determined that a Corporate Executive Spokesperson is necessary, the Corporate Executive Spokesperson will assume the responsibility at the KPS JIC.

Technical and administrative support services are available from Innsbrook Corporate Support Center (ICSC) engineering organization. Corporate Support personnel will respond, as necessary, to emergencies at the Kewaunee Power Station.

The Emergency Director will ensure that the Emergency Response Manager is kept informed of emergency situations. The Emergency Response Manager assisted by the Emergency Director will determine the extent and type of support that is needed from ICSC.

## 2. Public Information

The Nuclear Emergency Public Information Plan has been written to address the means of informing the public and the media of the events associated with a declared emergency at the Kewaunee Power Station. During a declared emergency, the JIC Manager implements this plan and coordinates the company's activities to inform various publics. A company Spokesperson will be designated to present plant and company emergency related information to the news media during regularly scheduled news briefings. The Emergency Response Manager and the Emergency Director will support the public information effort by supplying timely and accurate emergency related information to the Plant Spokesperson and the JIC Manager.

The JIC Manager will also ensure information is coordinated with federal, state and local agencies. This effort will be conducted in the Joint Information Center (JIC). The JIC also includes a Media Briefing Center (MBC) where the news media are updated by agency spokespersons.

KPS/Dominion will monitor local and national news media for accuracy and will identify any misinformation being broadcast. KPS/Dominion will then take steps in conjunction with federal, state and local agencies to correct the identified misinformation. Through the use of normal, established inter-company communication processes, Dominion will provide timely information within the company and provide the means by which employees can obtain the latest emergency information. Incoming calls concerning the emergency will be routed to the appropriate off-site agency or KPS/Dominion representative. Copies of the Nuclear Emergency Public Information Plan will be located and maintained in the Joint Information Center.

## 5.3 AUGMENTATION OF THE EMERGENCY RESPONSE ORGANIZATION

This section describes the assistance that may be provided by federal, state, local, and private organizations. Letters of Agreement, as appropriate, are referenced in Appendix D of this Emergency Plan. These letters delineate the scope of services and assistance that would be furnished by these organizations.

### 5.3.1 Private and Area Support Services

During an emergency at the Kewaunee Power Station, it may become necessary to request and utilize assistance from local and private organizations and agencies. Since it is essential that this support be available, the following agreements and understandings have been made:

1. City of Kewaunee Fire Department - A formal contract is maintained with the City of Kewaunee Fire Department to provide backup assistance to the Plant Fire Brigade and Fire Teams. The City of Kewaunee Fire Department is a volunteer department headquartered about 10 miles north of the plant. Depending on concurrent emergencies in their jurisdiction, they could respond with an aerial truck and pumper truck within approximately twenty minutes from the time of initial notification. This support agency would be utilized for plant fires outside the Protected Area and for major fires within the Protected Area.



2. Aurora Medical Center - Arrangements have been made for medical services with the Aurora Medical Center, located approximately fourteen miles south of the Kewaunee Power Station. The agreement includes a commitment by the hospital to accept and treat plant personnel with routine industrial injuries as well as injuries complicated by radioactive contamination or radiation exposure. The Aurora Medical Center maintains the capability and facilities to provide decontamination, first aid, and emergency stabilization medical treatment to injured personnel. These services and facilities are available 24 hours a day.
3. University of Wisconsin Hospital and Clinics - An agreement has been reached with the University of Wisconsin Hospital and Clinics to serve as a referral source in the event of a serious radiation incident at the Kewaunee Power Station. The University of Wisconsin Hospital and Clinics are available 24 hours a day for either consultation or treatment.
4. Kewaunee County Sheriff's Department - An agreement is maintained with the Kewaunee County Sheriff's Department to provide emergency assistance in the following areas:
  - a. Supervision of traffic and crowd control.
  - b. Backup communication facilities if necessary.
  - c. Implementation of Protective Actions for the public.
  - d. Other actions within the responsibility of local law enforcement.

The Kewaunee County Sheriff and Kewaunee County Traffic Chief have squads available with backup assistance from the cities of Algoma, Kewaunee, and Luxemburg. An Auxiliary Deputy Force with approximately 60 members trained in crowd control and response to natural disasters can be contacted by telephone network.

5. Manitowoc County Sheriff's Department - An agreement is maintained with the Manitowoc County Sheriff's Department to provide backup emergency assistance to the Kewaunee County Sheriff's Department when requested. Their assistance coincides with the actions set forth by the Kewaunee County Sheriff's Department.
6. American Nuclear Insurers (ANI) - A contract is maintained by which ANI will assume responsibility for promptly assisting members of the public who may be adversely affected by an incident at the Kewaunee Power Station. This agreement alleviates the immediate financial burden that may be incurred by members of the public due to evacuation and relocation activities associated with an incident at the plant. ANI will have their representatives on the scene, prepared and ready to commence the distribution of emergency funding. The timetable of implementation of emergency response is commensurate with the speed at which the public needs arise.
7. Westinghouse Electric Corporation - In the event of an emergency at the Kewaunee Power Station, the Westinghouse Emergency Operations Center can provide technical support to KPS as requested.
8. Environmental, Inc., (Midwest Laboratory) - An agreement is maintained by which Environmental, Inc. agrees to assist in performing radiological environmental monitoring, sampling, and analysis during emergencies at the Kewaunee Power Station. This assistance includes providing field-team personnel to perform environmental measurements and sampling as well as laboratory analysis support.
9. Radiation Protection Support Services - A support agreement between KPS and a radiation protection support service contractor is maintained to provide additional radiation protection personnel and support services to the Kewaunee Power Station during emergency situations. See Appendix D for the vendor currently providing this service.

10. Institute of Nuclear Power Operations (INPO) - As a member of INPO, KPS/Dominion can request emergency support from various organizations associated with the institute. An emergency resources manual is maintained by INPO that identifies the numbers of personnel that various organizations (e.g., utilities, service companies; A/E's and reactor vendors) could reasonably expect to make available in response to an emergency at the Kewaunee Power Station. In using this manual for emergency support, KPS/Dominion has the option of communicating directly with the organization who is providing the support or of using INPO as an agent to arrange for and coordinate the required support. The individuals to be contacted in the various organizations along with their telephone numbers are listed in the manual.

### 5.3.2 State and Local Government Agencies

The State of Wisconsin, through the Department of Military Affairs, Wisconsin Emergency Management (WEM), has the responsibility for the control of off-site actions during an emergency at the Kewaunee Power Station. The concept of operations with a discussion of the responsibilities and authorities assigned to various State and local government agencies is contained in Annex A of the State of Wisconsin Emergency Operations Plan (see Appendix E). Kewaunee County and Manitowoc County are the local government units within the 10-mile plume exposure pathway EPZ surrounding the Kewaunee Power Station. The Kewaunee County local government has been designated as the lead unit in the event of a declared emergency at the Kewaunee Power Station and will keep Manitowoc County informed of situations that would affect their county.

A brief description of the involvement and responsibilities of the key State and local government agencies is summarized in the following paragraphs. For a complete discussion of authority, assigned responsibilities, activation, capabilities, and communication arrangements, refer to the State of Wisconsin "Emergency Operations Plan."

1. Wisconsin Department of Military Affairs, Wisconsin Emergency Management (WEM)

The Administrator of the WEM has been designated by the Governor of the State of Wisconsin as the State officer having the primary responsibility and authority for radiological emergency response planning. The WEM coordinates the emergency response efforts of other State agencies. The WEM briefs the Governor on the situation and actions taken by the Federal, State, and local agencies and activates the State Emergency Operating Center (EOC) in the Department of Military Affairs Building in Madison, Wisconsin if necessary.

2. Wisconsin Department of Military Affairs

The Governor has the authority 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. The National Guard can provide additional traffic control, communications, food, radiological monitoring and decontamination services. The Army National Guard has helicopters and fixed wing aircraft available for use. These can provide reconnaissance and surveillance, insertion of personnel and equipment, aeromedical evacuation, aerial supply, illumination, communications and command and control.

3. Wisconsin Department of Health and Family Services (DHFS), Division of Public Health-Radiation Protection Section

The Department of Health and Family Services, under the Radiation Protection Act, WIS STATS 140.50 to 140.60, is responsible for preventing exposure to ionizing radiation in amounts which are detrimental to health according to nationally accepted standards. Designated individuals from the Radiation Protection Section of the DHFS are assigned as the State Radiological Coordinator (SRC) of the State Radiological Response Team. The State Radiological Response Team is comprised of designated Radiation Section personnel augmented by personnel from the WEM and other State agencies. They are responsible for the following actions: Conducting an initial survey to determine direct radiation levels and/or the severity and extent of the contaminated area; making food chain dose estimates; and checking evacuees for contamination and exposure.

4. Wisconsin Department of Transportation, Division of Enforcement and Inspection, State Patrol

The Wisconsin State Patrol supports the Division of Highways and local law enforcement agencies by controlling access into the area and by providing security at the site. If necessary, the State Patrol is available to take the State Radiological Response Team to the site and to deliver samples to the State Laboratory of Hygiene for analysis. All the State Patrol field cars have standard civil preparedness radiation monitoring survey meters. In addition, the Department of Transportation has a communication van, which can serve as a Forward Command Post at the site. Each district has a supply of walkie-talkies that are available for state and local emergency communications.

5. Wisconsin Department of Natural Resources, Division of Enforcement

The Conservation Wardens of the Division of Enforcement, Department of Natural Resources, provides support to the local law enforcement agencies. The wardens have mobile radios in their cars on the Wisconsin State Police frequency and are equipped with standard civil preparedness radiation monitoring survey meters. The Department can provide courier service by motor vehicle and plane.

6. Wisconsin Department of Transportation, Division of Highways

The Division of Highways, Department of Transportation, under the direction of the Administrator of WEM, is responsible for implementing the Emergency Highway Traffic Regulation Plan in support of access control operations.

7. Wisconsin Department of Agriculture

The Department of Agriculture gathers samples of milk and crops to determine radionuclide and related stable element concentrations. The Department advises dairies as to the disposition of milk, farmers as to placing their cows on stored feed, and growers on how to restore land to productivity. Arrangements can be made by the Department for the handling of animals exposed to radioactive contamination. The Department can ban the sale of contaminated foods and can make recommendations regarding the use, sale, or disposal of animal feeds that are radioactively contaminated.

8. Manitowoc and Kewaunee County

Under the provisions of the Wisconsin Statute 22.16 and the Manitowoc County Emergency Management and Kewaunee County Emergency Government Ordinances, the County Board Chairman of both counties have the responsibility and authority to coordinate off-site emergency activities in the event of a radiological incident.

Each county has prepared an "Emergency Operations Plan" applicable to emergencies at the Kewaunee Power Station (see Appendix E).

Upon notification of an emergency at Kewaunee Power Station, which requires participation of local or county agencies, each County activates 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 Organizations provide assistance in the following emergency response activities:

- a. Provide notification to county and support agencies and local area residents that an incident has occurred at the Kewaunee Power Station, if necessary.
- b. Provide liaison and communication capabilities with the plant facility and appropriate federal, state and local organizations.
- c. Assist in providing news statements, which contain accurate public information concerning the off-site 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 off-site locations, if such an action should be required.

### 5.3.3 Federal Government

If an incident occurs at the Kewaunee Power Station, notification, reports, or requests for assistance may be made by KPS/Dominion to various federal agencies and organizations. Technical assistance from certain federal agencies in the area of communications, radiological monitoring and sampling, transportation, weather forecasts, and disaster relief may be required. The following agencies may, as the situation warrants, require notification, reports, or provide assistance:

1. U.S. Nuclear Regulatory Commission (NRC)

The NRC, as stipulated in 10 CFR Part 50.72, has requested immediate notification of the NRC Operations Headquarters, Rockville, Maryland, whenever an incident occurs at the Kewaunee Power Station that could affect the local populace. In addition, the NRC is notified of abnormal exposures or release rates from the plant as stipulated in 10 CFR Part 20.2202 and 10 CFR Part 20.2205.

The NRC provides assistance during emergencies by advising other federal, state and local agencies of the radiological consequences. Subsequent reports to the NRC concerning plant status, dose predictions, requests, etc., are provided by KPS/Dominion management personnel.

2. U.S. Department of Energy (DOE)

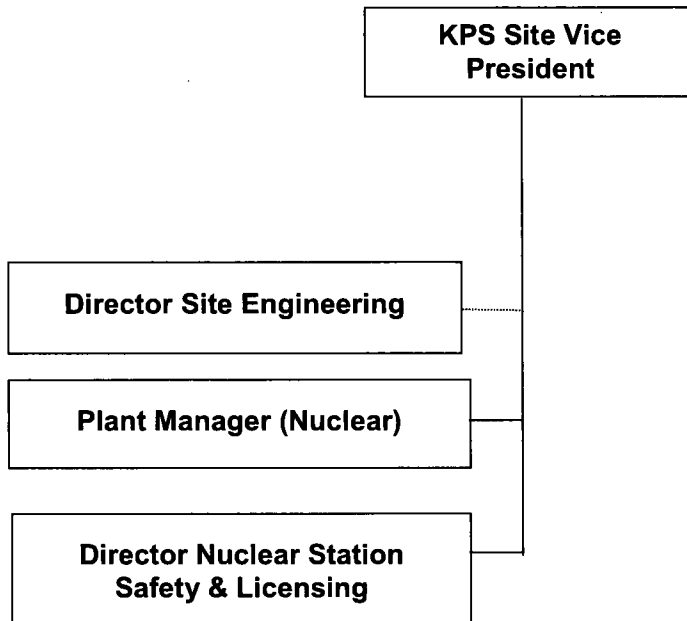
The U.S. Department of Energy's response to nuclear power plant radiological emergencies is carried out in accordance with the Federal Radiological Monitoring and Assessment Plan (FRMAP). The Chicago Operations Regional Office (CORO) of DOE responds to radiological emergencies at the Kewaunee Power Station upon request of the KPS/Dominion or by state and local governmental agencies. The CORO can dispatch a team of specialists to the Kewaunee Power Station area to provide radiological assistance and aid in recommending actions to counteract and control off-site hazards associated with the radiological emergency.

3. U.S. Coast Guard

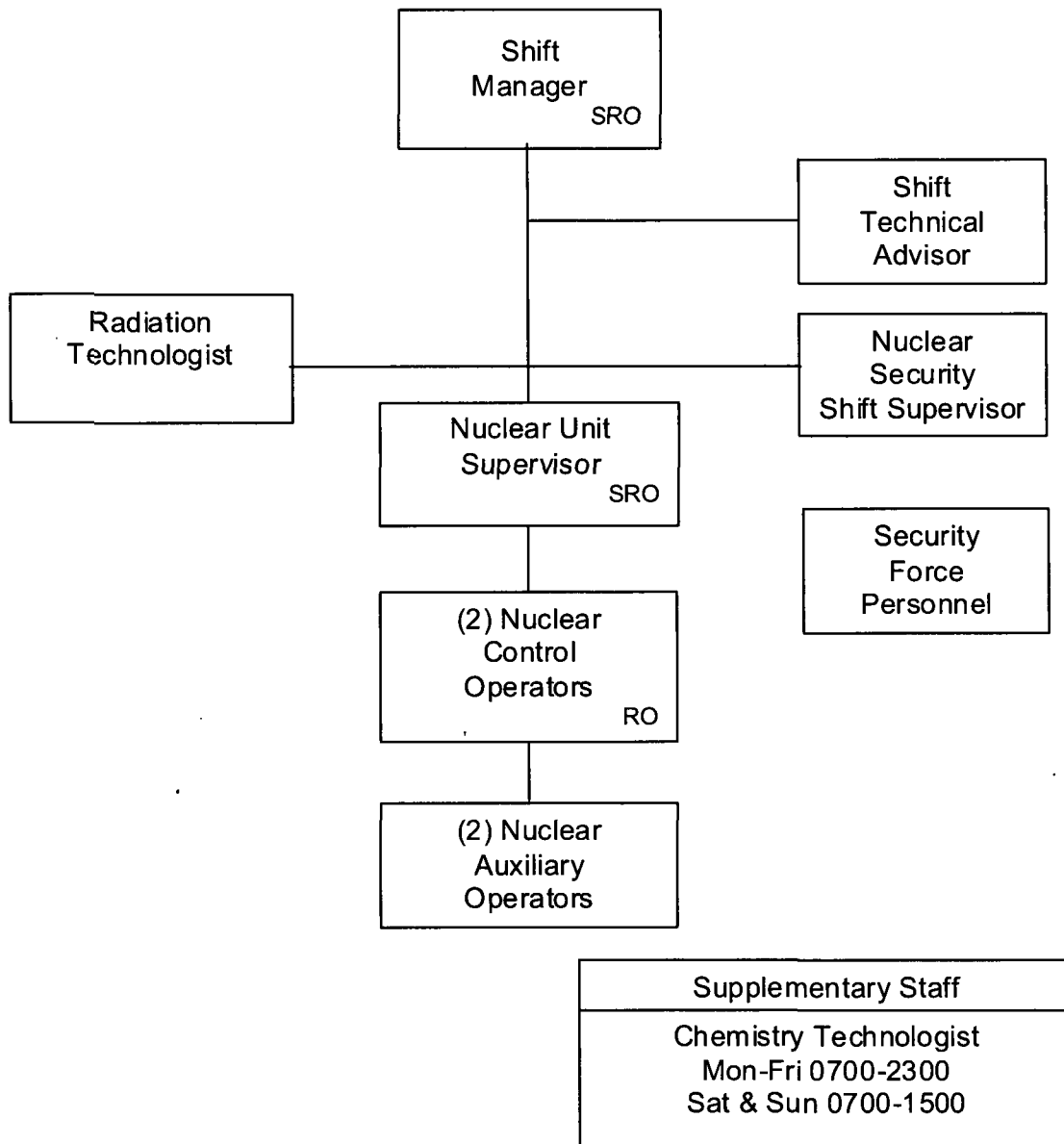
Cognizant state and local emergency governments have a single point of contact with the U.S. Coast Guard which is manned 24 hours a day. The U.S. Coast Guard response will include:

- a. When requested by the cognizant state or local emergency governments, making a marine broadcast and issuing a Notice to Mariners, warning all craft of the danger in the area. Contents of the broadcast will be supplied by the cognizant emergency governments.
- b. Considering requests for additional assistance on a case-by-case basis from the Federal Emergency Management Agency (FEMA) or their designated representative. The decision to commit U.S. Coast Guard resources (i.e., vessels, aircraft and personnel) will be made by the Commander, Ninth Coast Guard District.

**FIGURE 5-1  
KEWAUNEE POWER STATION ORGANIZATION**



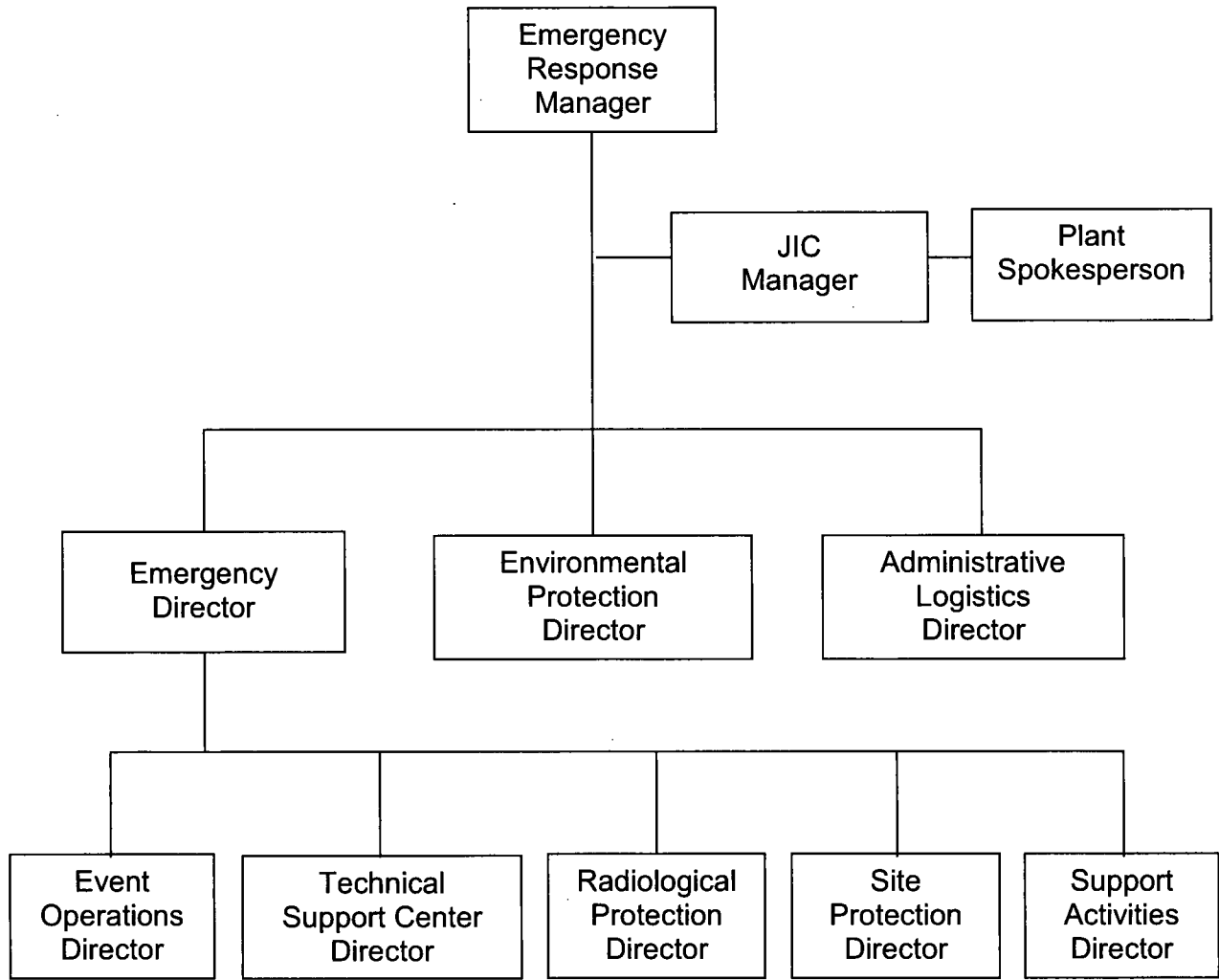
**FIGURE 5-2**  
**ORGANIZATION OF NORMAL OPERATING SHIFT CREW**



SRO – Senior Reactor Operator  
 RO – Reactor Operator



**FIGURE 5-3**  
**EMERGENCY ORGANIZATIONAL STRUCTURE**



## SECTION 6

### 6.0 EMERGENCY MEASURES

This section identifies the measures that shall be taken for each class of emergency. These measures are described in detail in specific KPS Integrated Plant Emergency Operating Procedures (IPEOPs) and Emergency Plan Implementing Procedures (EPIPs).

These emergency measures include:

1. The recognition and declaration of an emergency classification (including verification).
2. Notification of the applicable agencies for each emergency classification (including verification).
3. Mobilization of the appropriate portions of the emergency response organization.
4. Assessment actions.
5. Corrective actions.
6. Protective actions.
7. Aid to affected personnel.

The following subsections describe these emergency measures.

#### 6.1 ACTIVATION OF EMERGENCY RESPONSE ORGANIZATION (ERO)

The various classes of emergencies can occur individually or in some order of progression over a period of time. The emergency response organization shall be activated upon the decision of the Emergency Director. The emergency response organization consists of plant and Corporate Support staff personnel who are readily available during normal working hours and on a call-in basis during other than normal working hours. These emergency response personnel are notified by the use of the plant public address system (Gai-tronics), telephones and pagers. The notification of the ERO personnel is illustrated in FIGURE 6-1. Activation of off-site emergency response organizations will be accomplished according to the severity of the emergency class. Specific Emergency Plan Implementing Procedures provide message formats for notification of off-site agencies as well as message verification procedures (see Section 6.8). The initial notification of supporting groups and agencies is shown in FIGURE 6-2.

## **6.2 ASSESSMENT ACTIONS**

Continuous accident assessment is necessary throughout the duration of an emergency. Each emergency class will involve similar assessment methods, however, each classification necessitates a different magnitude of effort. The following subsections describe the methods, systems and equipment for assessing and monitoring actual or potential consequences resulting from an emergency.

### **6.2.1 In-Plant Monitoring**

The Kewaunee Power Station is equipped with instrumentation for monitoring plant systems parameters and radioactive releases to the environment. Plant systems parameters include primary and secondary system pressures, temperatures, water levels, and flow rates. Radiological parameters include general area radiation levels and gaseous and liquid effluent activities. This instrumentation is capable of initiating the appropriate alarms or actuating control equipment when pre-established limits are reached. When this instrumentation indicates an actual or potential emergency condition, immediate steps will be taken to assess the situation and confirm the indications.

### **6.2.2 Source Term Evaluation**

The appropriate EIPs describe the methods used to determine the extent of gaseous and liquid effluent releases. For gaseous effluent releases, the technique involves obtaining grab samples of the gaseous effluents being discharged from the Auxiliary or Shield Building Vent. The analysis of the samples is performed in the counting room or Radiological Analysis Facility to determine which isotopes are being discharged and concentrations of each. Samples can also be transported to the Point Beach Nuclear Plant (PBNP) Laboratory Facility for analysis.

Additionally, EIPs have been developed to determine concentrations or release rates of radionuclides by observing readouts and stack flow rates from Auxiliary and Shield Building Vent Stack SPING monitors. These monitors measure particulates, iodines, and noble gases.

Liquid effluent releases are determined by taking grab samples at appropriate points in the release path. These release paths may include the Steam Generator Blowdown, Liquid Rad Waste, Containment Fan Coil Cooling Water, Auxiliary Building Service Water and Turbine Building Sump. A Gamma scan is taken on these liquid samples to determine the quantity of isotopes present or being discharged.

Since source term evaluation relies on specific plant indications and instrumentation, and since it can be postulated that any combination of these plant indicators or instruments can be off-scale or inoperable, radiological environmental monitoring can be utilized to determine gaseous and liquid effluent releases. Environmental samples are obtained by environmental monitoring team within the plume exposure pathway. This environmental monitoring data can be used to calculate radiation exposures or determine source terms (see Subsection 6.2.4 for further details).

### **6.2.3 Dose 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 radiological assessment will include estimating whole body and thyroid doses for both site and off-site areas. However, as personnel, facilities, and information become available, more sophisticated analyses will be performed to determine the total integrated dose for the total population in the plume exposure pathway. These analyses will initially be the responsibility of the Radiological Protection Director at the Kewaunee Power Station. Dose assessment responsibilities will be transferred to the Environmental Protection Director upon activation of the Emergency Operations Facility for dose assessment functions. In addition, EIPs have been developed to not only allow for

recognizing Unusual Event, Alert, Site Area Emergency and General Emergency EALs based upon radiation readouts from the Auxiliary Building Vent Monitors (see Emergency Action Level Matrix or Technical Bases), but also to provide for a protective action recommendation to be made based on the declared event and general plant conditions.

Dose projections will be prepared using plant effluent monitor data or grab sample results to project doses from releases of noble gases, iodines and particulates. Environmental radiological measurements and samples shall be used to confirm or adjust initial dose projections. These dose projections are one of the tools used to determine whether protective actions need to be recommended. The EPIPs incorporate a computerized method for determining projected doses. This method is available on the network, stand-alone and laptop computers as appropriate for the Emergency Operations Facility and the Radiological Analysis Facility. Backup power is available in both of these facilities. The atmospheric dispersion factors, dose conversion factors, and isotopic concentrations or release rates are calculated using methods described in NUREG 1228. The atmospheric dispersion factors are calculated according to the stability class, wind speed, and distance from the plant. Dose projections are based on isotopic mixture predictions from the Westinghouse Owners Group response to NUREG 1150 and references TID 14844.

#### **6.2.4 Field Monitoring**

Field monitoring within the plume exposure pathway will be performed by Environmental Monitoring Team(s). Team members are trained to perform field surveys, air sampling and environmental sampling. Each team is provided with air sampling equipment, personnel dosimetry, radiological survey instruments, procedures, portable radios, and transportation. Methods for detecting and measuring radioiodine concentrations of  $1 \times 10^{-7}$   $\mu\text{Ci/cc}$  in air have been established.

The Site Boundary Facility (SBF) will serve as an equipment supply center for field monitoring activities. Teams will be deployed in a manner that will provide a preliminary estimate of plume exposure rates. An EPZ Grid Map referenced by grid coordinates will be utilized (see Appendix C, page C-5). The information collected will be forwarded to the Environmental Protection Director located at the Emergency Operations Facility. Sample analysis will be coordinated through the Radiological Analysis Facility using site facilities or facilities available through the letters of agreement (see Appendix D).

#### **6.2.5 Severe Accident Management**

Analysis of severe accident events will be accomplished in a designated area of the Technical Support Center. A three-person analysis team comprised of a Team Leader, a core hydraulics specialist and an individual with operations knowledge will perform this function. Access to computer based plant-monitoring systems and access to information directly from the Control Room will be available. Pre-established severe accident event analysis guidelines as well as computational aids will be maintained and available in the Control Room and the Technical Support Center. In the early stages of an event, core damage assessment may be performed in the Emergency Operations Facility.

Using guidelines, computational aids, plant data, and other information, the team will formulate and recommend mitigating actions to the Emergency Director. The Emergency Director will facilitate consensus and provide final approval for the implementation of accident mitigative actions recommended by the Severe Accident Management Team.

Following the implementation of mitigating actions the Severe Accident Management Team will monitor the effect of those actions and, if needed, provide modifying or new recommendations.

## 6.3 CORRECTIVE ACTIONS

Corrective actions are taken to prevent or mitigate the serious consequences that could result from an emergency. Normal operating procedures as well as emergency operating procedures and Severe Accident Management Guidelines describe the corrective actions that can be used to place the plant in a safe and stable condition.

Operator training is a vital factor in ensuring that corrective actions are taken in an expeditious manner.

Instrumentation, control system monitors and the Radiation Monitoring System provide indications and readings needed by operators for safe operation of the plant. These systems provide the operator with the information and controls needed to start up, operate at power, shutdown the plant and initiate corrective actions.

When necessary, the following additional mitigating actions can be implemented during an emergency situation:

### Fire Fighting

Strategies have been developed for fire fighting and fire protection in specific critical areas of the plant. Administrative procedures describe the fire protection organization and individual responsibilities. If outside support is needed, the City of Kewaunee Fire Department will be called in to assist in extinguishing the fire.

### Damage Control and Repair

For minor emergencies, plant personnel will normally be able to handle cleanup, repair, and damage control. For major emergencies, the support of other Dominion personnel or specialized outside contractors may be required to assist in damage control, cleanup, and repair operations.

## 6.4 PROTECTIVE ACTIONS

Protective actions are taken during or after an emergency situation to minimize or eliminate any hazards to the health and safety of plant personnel and the general public. Such actions taken at the site are the responsibility KPS/Dominion, while those taken off-site fall under the jurisdiction of the State of Wisconsin and other off-site emergency response organizations. The following subsections describe on-site and off-site protective actions.

### 6.4.1 Site

#### 1. Notification and Response Times

If personnel assembly and accountability are required, all individuals at the site (including employees without emergency assignments, visitors and contractor and construction personnel) shall be notified of an emergency over the public address system and by the sounding of the plant siren. The best estimate for initial notification of all individuals at the site is expected to be within ten to twelve minutes of the occurrence of an emergency situation.

## 2. Personnel Accountability

Personnel accountability is the responsibility of the Site Protection Director. During an emergency situation, which requires plant personnel to report to an assembly area, the Accountability Coordinators are responsible for ensuring that all personnel are accounted for and the results are reported to the Site Protection Director. If personnel are unaccounted for, teams shall be dispatched to locate, and if necessary, rescue the personnel. Personnel accountability can be accomplished within 30 minutes using the existing implementing procedure.

## 3. Site Access Control

Access to site areas is directed and controlled by the Site Protection Director. Individuals entering or leaving the site shall use the normal access/egress routes through the Security Building. If radiological conditions prohibit direct access to the plant through the Security Building, the Site Protection Director and the Radiation Protection Director, will determine and establish another location appropriate for the existing emergency conditions. After initial staffing of the emergency response facilities, authorization for non-emergency response organization personnel or non-plant badged personnel to enter or exit the site may be received from a director of the emergency response organization or the Shift Manager: Access control operations are described in the EIPs.

## 4. Evacuation

Evacuation from the Kewaunee Power Station will depend on the nature of the emergency and the extent of the area affected. The Emergency Director will order the evacuation of plant personnel after careful consideration of the benefits and risks involved. The detailed responsibilities and functions of plant personnel during an evacuation are contained in the appropriate EPIP.

When an evacuation is ordered, personnel shall proceed to designated assembly areas and await further instructions.

A plant evacuation is considered when the conditions that require an evacuation are not confined to a plant building or when general area radiation levels outside the radiological controlled area exceed prescribed limits. In addition, a plant evacuation may be initiated if a hazard continues to increase in severity, spreads, or the Emergency Director deems it necessary that nonessential personnel be evacuated from the plant. Transportation shall be provided by KPS/Dominion or private vehicles. The Emergency Director and the Site Protection Director with the assistance of the Radiological Protection Director shall coordinate evacuation and monitoring activities with off-site officials. The evacuation EIPs take into consideration evacuation routes (primary and alternate routes) and alternatives for inclement weather and radiological conditions.

#### **6.4.2 Off-Site**

Required Protective Actions for off-site areas are discussed in the state and local plans. As stated, the plant will classify the incident and will notify the appropriate 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 the health and safety of the public. These are provided in Table 6-1.

There are various types of actions that can be taken to protect the public. These include:

1. Taking shelter
2. Evacuation
3. Access control
4. Food, milk, water, and livestock distribution control
5. Individual protective actions (e.g., respiratory protection equipment and protective clothing)

The Environmental Protection Agency, Protective Action Guides serve as the basis for recommending protective actions to the public. The type, amount, duration of the release and weather conditions must be considered when recommending protective actions. In particular, when considering the protective action options of sheltering and evacuation, plume travel time, evacuation time estimates, and shielding factors must be taken into account.

Projected doses to the public can be correlated to the dose ranges and accompanying recommended actions in Table 6-1.

The Emergency Response Manager and the Emergency Director have the responsibility to recommend protective actions to off-site authorities (see Section 5.2.1). However, implementation of the protective actions is at the discretion of the off-site authorities.

Protective Action Guidelines used by off-site authorities are described in Chapter E, "Protective Action Guides," found in the Wisconsin Department of Health and Family Services, Radiation Protection Section, "Nuclear Incident Response Plan."

## **6.5 USE OF PROTECTIVE EQUIPMENT AND SUPPLIES**

Protective equipment and supplies shall be utilized to minimize external and internal radiological exposure and contamination to individuals at the site. These supplies include respiratory equipment, protective clothing and radioprotective salt (potassium iodide, KI). Details on the use of protective equipment and supplies are provided in Health Physics procedures and the appropriate Emergency Plan Implementing Procedures.

### **6.5.1 Individual Respiratory Protection**

Respiratory protection devices shall be issued as required to emergency teams entering areas of suspected or known high airborne radioactivity concentrations. Self-contained breathing apparatus shall be used in areas with oxygen deficient atmospheres or unknown conditions. Respiratory equipment is maintained at various assembly areas and emergency response facilities.

### **6.5.2 Protective Clothing**

Protective clothing shall be issued as required to personnel working in areas of suspected or known radioactive contamination. Protective clothing includes items such as coveralls, plastic suits, plastic hoods, rubber gloves and plastic booties. The protective clothing is stored at the Radiation Protection Office, Radiological Analysis Facility, and the Site Boundary Facility.

### **6.5.3 Use of Radioprotective Drugs**

The radioprotective salt, potassium iodide (KI), can be utilized to affect iodine saturation of the thyroid thus preventing the uptake and accumulation of radioactive iodine in the thyroid gland. The criteria for making KI available to KPS emergency response personnel depends on the projected absorbed dose to the thyroid and the severity and magnitude of the incident. Quantities of KI are available at the Technical Support Center, Control Room, and the Site Boundary Facility.

## **6.6 CONTAMINATION CONTROL MEASURES**

Preventive measures shall be taken to minimize direct exposure to or ingestion of radioactive materials. These contamination control measures are described in detail in the Kewaunee Power Station General Access Training Manual and are summarized below in the following subsections.

### **6.6.1 Site**

To avoid personnel contamination or the spread of contamination in the plant, contaminated areas shall be designated and clearly identified. Access to these areas shall be controlled and personnel shall use appropriate protective clothing and care to ensure that they neither contaminate themselves nor spread the contamination. Limits for contamination and required protective clothing guidelines are contained in Health Physics procedures.

Drinking water and food supplies are not allowed in contaminated or potentially contaminated areas. If the potential for contamination exists in areas containing drinking water or food, the area and food/water shall be surveyed. If contamination is discovered, appropriate actions shall be taken based on the level and location of the contamination.

In general, contaminated areas and materials are permitted to return to normal use when these areas meet the contamination limits, which are applied to them under normal operating conditions. However, some areas and equipment may have to be returned to its original function prior to achieving these limits. In such cases, special precautions and measures will be taken to prevent personnel contamination and to limit the spread of contamination. These precautions include protective clothing, painting and covering the item/area.



### **6.6.2 Off-Site**

For areas beyond the Site Boundary, the Wisconsin Department of Military Affairs, Division of Emergency Management with the resources of the Department of Health and Family Services, Radiation Protection Section, is responsible for assessment and evaluation and will determine which Protective Actions should be taken within the Emergency Planning Zones.

The State of Wisconsin Radiological Response Team(s) will identify levels and control access within the affected area. Other state agencies will take actions, as necessary, under the direction of the Administrator of the Division of Emergency Management, to assess and control dairy and agricultural products within the affected area. In addition, the Administrator of the Division of Emergency Management, assisted by the appropriate state agencies, will provide advisory information regarding the use of potentially affected home food and water supplies throughout the Ingestion Exposure Pathway EPZ. These state agencies will also be responsible for ensuring that contamination levels are below the established criteria before normal usage is restored. KPS/Dominion will inform the State of Wisconsin of any identified areas of surface contamination outside the protected area of the plant and within the EPZ.

## **6.7 AID TO AFFECTED PERSONNEL**

Provisions have been made to assist personnel who are injured and/or have received high radiation exposures. Designated personnel have been trained in first aid and radiation emergency team procedures. First aid and decontamination facilities are available at the site. Additional assistance is available from off-site facilities and emergency transportation services. The following subsections describe the means for providing assistance for emergency response personnel at the Kewaunee Power Station.

### **6.7.1 Radiological Exposure Control**

All reasonable measures shall be taken to control the radiation exposure to emergency response personnel providing rescue, first aid, decontamination, emergency transportation, medical treatment services, or corrective or assessment actions within applicable limits specified in 10 CFR Part 20. Conditions and methods for permitting volunteers to receive emergency radiation exposures are described in Health Physics procedures. These procedures and associated training allow volunteers to make rapid decisions based upon a knowledge of potential risks associated with emergency level exposure and the benefits expected from the action.

#### **1. Emergency Exposure Criteria for Personnel**

The Emergency Director has the responsibility upon notification of an existing emergency to authorize plant and emergency response personnel to receive doses in excess of 10CFR Part 20 limits if necessary. This authorization is coordinated with the Radiological Protection Director. Table 6-1 contains the guidelines for emergency exposure criteria, which is consistent with the "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents (EPA-400-R-92-001)."

#### **2. Emergency Exposure Criteria for Airborne Concentration**

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

- a. Whenever practicable, total internal exposure of any individual during an emergency should be limited to 40 DAC-hours.
- b. If emergency operations demand, total internal exposure of any individual shall be limited to 1,200 DAC-hours. This is equivalent to 3 Rem/CEDE internal radiation exposure.

- c. Respiratory protection devices shall be used whenever appropriate to control internal doses (see subsection 6.5 for details on the use of protective equipment and supplies). Potassium Iodide may be used, as deemed appropriate to supplement respiratory protective devices.
  - d. Limits for exposure to Xe-133 and other noble gases are based on the Beta plus Gamma dose limits to the skin.
  - e. An integrated exposure of 10,000 DAC-hours for nuclides with short effective half-lives is CEDE equivalent to a dose of 25 Rem and should be received only with the approval of the Emergency Director and concurrence from the Radiological Protection Director. Similar exposure to nuclides with long effective half-lives (> 1 day) are to be avoided and should be restricted to 1,200 DAC-hours as in "b" above.
  - f. Personnel who have been exposed to more than 4,000 DAC-hours shall be removed from further emergency duty, whole-body counted, and referred to a physician for medical consultation.
3. Exposure Records and Control

In an emergency situation, dosimetry service for all emergency response personnel shall be provided on a 24-hour per day basis. It is the responsibility of the Radiological Protection Director and his designated personnel to establish and maintain the personnel monitoring program. Dosimetry will be issued in accordance with Health Physics procedures. Personnel monitoring devices will be issued from Security, the Radiation Protection Office, Radiological Analysis Facility or the Site Boundary Facility. For documentation purposes, exposure records shall be kept. This information shall be evaluated and utilized to determine emergency assignments and to assure that personnel do not exceed exposure guidelines. The EIPs shall detail the procedural steps for dosimetry issuance, record keeping, and personnel monitoring.

#### **6.7.2 Decontamination**

Decontamination of personnel, supplies, equipment and instruments shall be performed by following established radiation practices and procedures. Decontamination is conducted under the direction of the Radiological Protection Director. The action levels for determining the need for decontamination are specified in the appropriate EIPs. Radioactive waste shall be disposed of in accordance with established plant procedures.

Personnel decontamination will be performed primarily in the Personnel Decontamination Area, located in the Auxiliary Building and the Radiological Analysis Facility. These areas are equipped with a sink, a shower and the required cleaning agents for decontaminating personnel. Relocated site personnel can be decontaminated at the Site Boundary Facility. Decontamination supplies, spare clothing and contamination survey instruments are available at the Site Boundary Facility. In addition, equipment and instruments can be decontaminated in the plant decontamination room in the Auxiliary Building.

#### **6.7.3 Medical Transportation**

Vehicles are maintained at the plant to transport ill or personnel with minor injuries to off-site medical facilities if required. If immediate professional medical help is required, local ambulance services are available to assist in the transport of seriously injured personnel.

#### **6.7.4 Medical Treatment**

Arrangements have been made with the Aurora Medical Center for the medical treatment of plant personnel. Hospital personnel have been instructed and trained in the treatment and care of patients with contamination and radiation overexposure.

Ill or injured personnel transported to the Aurora Medical Center while in a contaminated condition shall be accompanied by a KPS or support person trained in radiological monitoring who will stay in attendance and maintain radiological control. Hospital equipment and supplies utilized in treating a contaminated patient shall be surveyed and decontaminated before being released in accordance with Health Physics procedures.” University of Wisconsin Hospital and Clinics has agreed to serve as a referral source in the event of a serious radiation accident at the Kewaunee Power Station. University of Wisconsin Hospital and Clinic services are available 24 hours a day for either consultation or treatment.

### **6.8 METHODS OF NOTIFICATION**

This section outlines the general methodology for notifying the NRC and state and local emergency response organizations. It also describes the basic means that will be used to notify and provide general instructions to the general public living within the plume exposure pathway Emergency Planning Zone.

#### **6.8.1 Nuclear Regulatory Commission (NRC) Notification**

The NRC is notified in accordance with 10 CFR Part 50.72, “Immediate Notification Requirements for Operating Nuclear Power Reactors” and 10 CFR Part 20.2202, “Notification of Incidents”. These documents include immediate and 24 hour notification requirements.

#### **6.8.2 Notifications of Off-Site Agencies**

Off-Site emergency response organizations shall be notified as appropriate depending on the nature and severity of the incident. The initial notification message to the appropriate state and local organizations shall contain information about the class of the emergency, whether a release is occurring, potentially affected population and areas, and whether protective measures may be necessary. Follow-up communication with off-site agencies shall consist of periodic messages, which contain the following information (if it is known and appropriate):

- a. Location of incident and name and telephone number (or communications channel identification) of caller;
- b. Date and time of incident;
- c. Class of emergency;
- d. Type of actual or projected release (airborne, waterborne, surface spill) and estimated duration and arrival time;
- e. Estimate of quantity of radioactive materials released or being released,
- f. Chemical and physical form of released material, including estimates of the relative quantities and concentrations of noble gases, iodines, and particulates;
- g. Prevailing weather (wind velocity, direction, temperature, atmospheric stability, presence, and form of precipitation);
- h. Actual or projected dose rates at Site boundary and projected integrated dose at Site boundary,
- i. Projected dose rates and integrated dose at about 2, 5, and 10 miles from the plant, including sector(s) (and/or counties) affected;

- j. Estimate of any surface radioactive contamination;
- k. Emergency response actions underway;
- l. Recommended emergency actions, including protective measures;
- m. Request for any needed support by off-site organizations; and
- n. Prognosis for worsening or termination of event based upon plant information.

Emergency Plan Implementing Procedures provide notification message formats, message authentication schemes for each emergency classification and verification of notification arrangements with each agency notified. In addition, the State of Wisconsin and Kewaunee and Manitowoc County emergency response plans have prepared text messages for informing the public of a nuclear power plant incident. These messages include instructions on protective actions and where to get additional emergency information. The follow-up messages from the Kewaunee Power Station to the appropriate state and county agencies will provide the supporting information for the prepared text messages.

### **6.8.3 Notification of General Public**

Initial notification of the public will be accomplished by a combination of fixed sirens, Local Law Enforcement Agency (LLEA) mobile public address system, the Emergency Alerting System (EAS) and marine band radio broadcasts. This system covers essentially all of the Kewaunee Power Station emergency-planning zones, which effects both Manitowoc and Kewaunee Counties.

Because of the overlap of Kewaunee Power Station and Point Beach Nuclear Plant emergency planning zones, the fixed siren portion of the system is shared by both utilities. In total there are twenty-seven (27) fixed siren sites within the combined emergency planning zones.

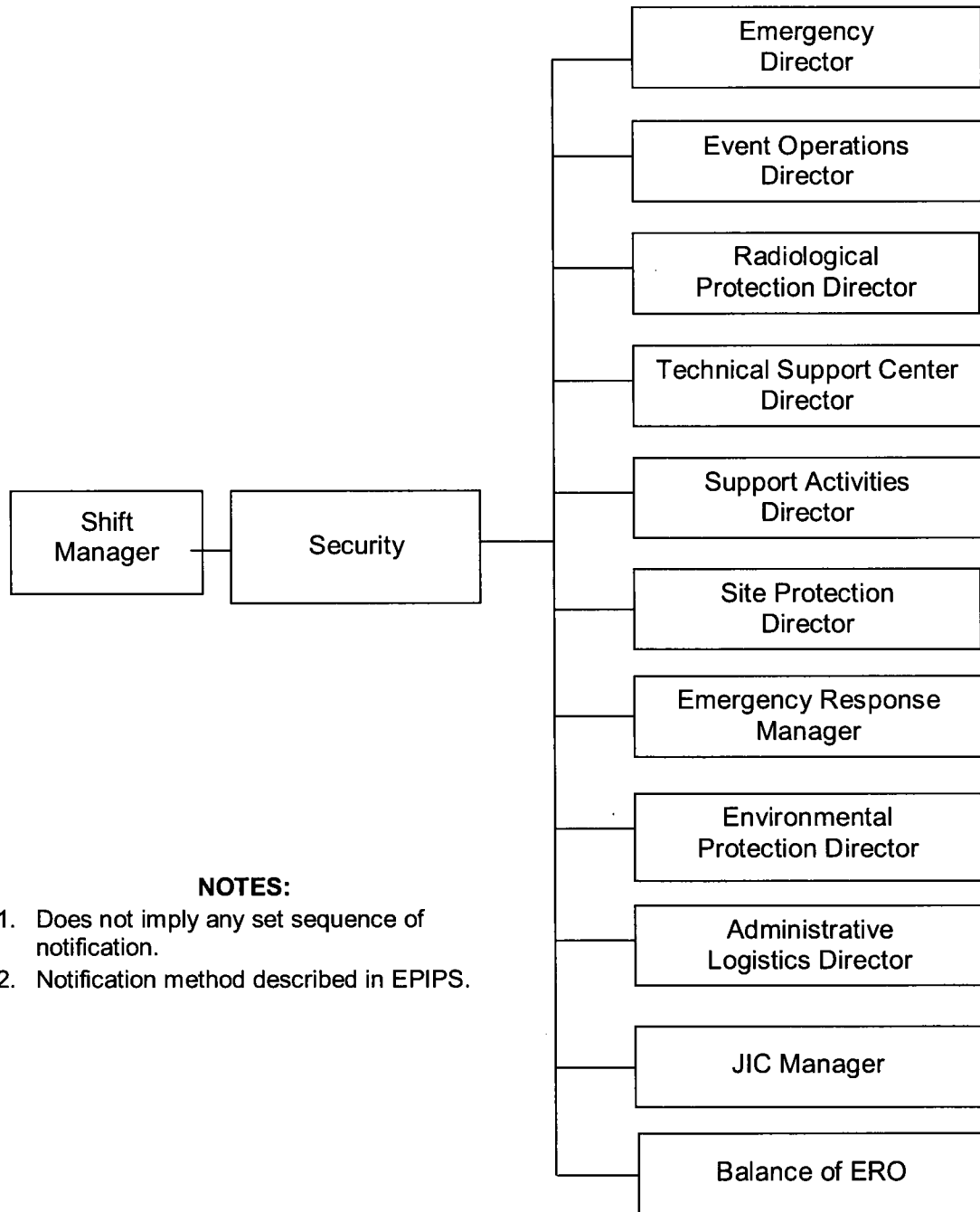
Essentially 100% of the Kewaunee Power Station emergency planning zone is covered by fixed sirens. Areas that are normally covered by fixed sirens that experience a siren temporarily out-of-service or experience a random activation failure will be covered by Local Law Enforcement Agency (LLEA) mobile public address system, which will travel prescribed routes at a slow rate of speed.

The activation of this system is the responsibility of the emergency governments for both Manitowoc and Kewaunee Counties and will be activated whenever an emergency situation at the Kewaunee Power Station requires public protective actions to be implemented.

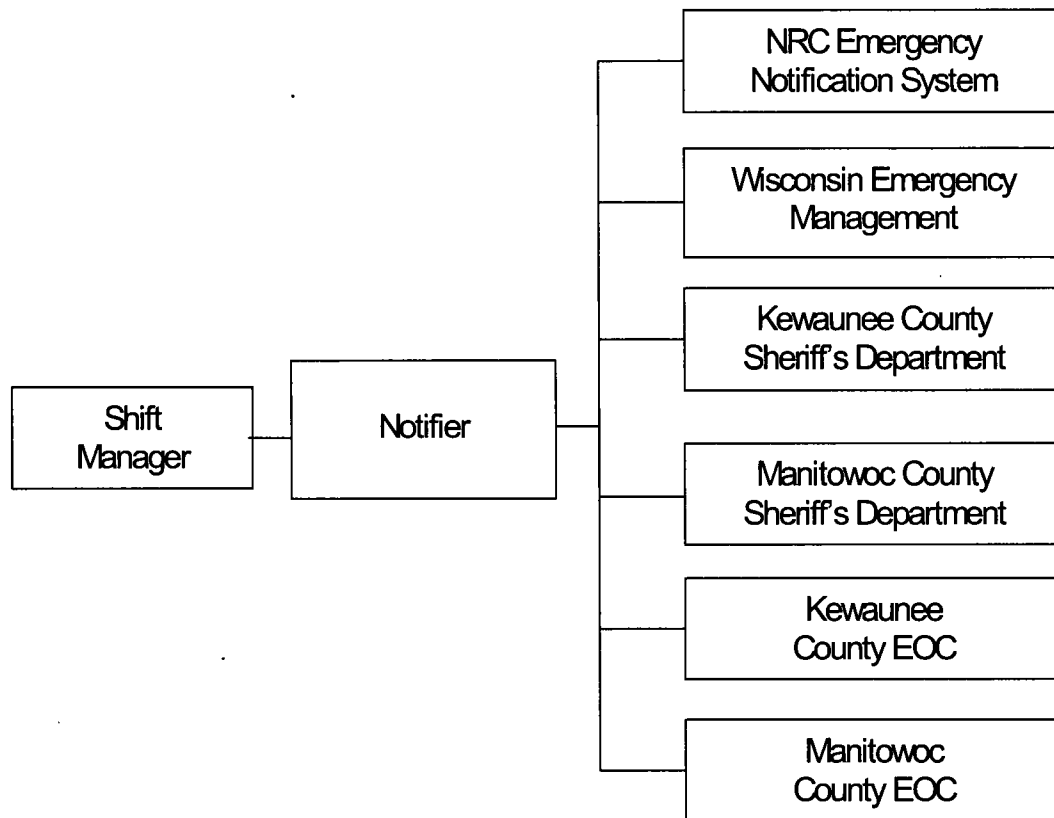
The fixed siren portion of the system is able to be activated by the sheriff's office for both Manitowoc and Kewaunee Counties. The alerting sound produced should remind area residents to tune their radios to an EAS radio station. The sirens will be tested on a periodic basis.

An EAS message, which contains protective action recommendations and emergency information for the general public, will be broadcast. These broadcasts will occur in conjunction with the sounding of the siren.

**FIGURE 6-1**  
**PLANT NOTIFICATION**



**FIGURE 6-2**  
**INITIAL OFF-SITE NOTIFICATION**



**NOTES:**

1. Does not imply any set sequence of notification.
2. Notifier is an on-shift security officer.
3. Notification method described in EPIPS.

**TABLE 6-1**  
**RECOMMENDED PROTECTIVE ACTIONS TO REDUCE WHOLE BODY AND**  
**THYROID DOSE FROM EXPOSURE TO A GASEOUS PLUME**  
**FOR THE GENERAL POPULATION**

PROJECTED DOSE (REM) TO THE POPULATION	RECOMMENDED ACTIONS <sup>(a)</sup>	COMMENTS
TEDE < 1 Rem Thyroid < 5 Rem	No planned protective actions. <sup>(b)</sup> Monitor environmental radiation levels.	Previously recommended protective actions may be reconsidered or terminated.
TEDE > 1 Rem Thyroid > 5 Rem	Recommend evacuation in affected sectors. Monitor environmental radiation levels and adjust sectors recommended for evacuation based on these levels. Control access.	Seeking shelter would be an alternative, if evacuation were not immediately possible.
<b>Projected Dose (Rem) to Emergency Team Workers</b>		
TEDE < 5 Rem All other Organs < 50 Rem TODE	Control exposure of emergency workers to these levels except for those instances listed below. (Appropriate controls for emergency workers, include time limitations, respirators, and stable iodine.)	"All Other Organs", include; Skin Extremities, and Thyroid. Stable Iodine may be made available for use where predicted doses exceed 25 Rem to the thyroid. Although respirators and stable iodine should be used where effective to control dose to emergency team workers, thyroid dose may not be a limiting factor for lifesaving missions.  For Environmental/Monitoring Teams refer to KRDOse "Maximum Doses at selected Distances" output screen. Check bone, lung thyroid doses.
TEDE < 10 Rem All other Organs < 100 Rem TODE	Emergency workers exposure should be controlled below these levels when their mission involves protecting valuable property.	
TEDE < 25 Rem All other Organs < 250 Rem TODE	Emergency workers exposure should be controlled below these levels when their mission involves life saving or protection of large populations.	
TEDE > 25 Rem All other Organs > 250 Rem TODE	Exposures above these levels to emergency workers will be on a voluntary bases only to persons fully aware of the risks involved.	

- (a) These actions are recommended for planning purposes. Protective action decisions at the time of the incident must take existing conditions into consideration. These conditions include containment activity, probability of containment failure, plume transport time, release duration, and any other pertinent conditions.
- (b) At the time of the incident, officials may implement low-impact protective actions consistent with maintaining radiation exposures as low as reasonably achievable.

Note: The source for this table is the Wisconsin Department of Health and Family Services, Radiation Protection Section, "Nuclear Incident Response Plan".

## SECTION 7

### 7.0 EMERGENCY EQUIPMENT AND FACILITIES

This section of the plan identifies and describes the emergency response facilities, the communication systems, the assessment and protective facilities and equipment, the first aid and medical facilities and the damage control equipment that can be utilized during an emergency.

### 7.1 EMERGENCY RESPONSE FACILITIES

Several emergency response facilities have been established to support emergency response operations (see Appendix C, pages C-2, C-6 and C-7 for locations). These emergency response facilities operate as a coordinated group but are physically separated to minimize interference and confusion. Dedicated communication lines between the facilities ensure an uninterrupted flow of data and instructions. The emergency response facilities contain water, sanitary and other provisions for use by emergency personnel. Supplementary services, such as food and additional equipment, are readily obtainable thus ensuring the capability of long term, uninterrupted emergency response operations. Appendix F lists the emergency equipment and materials located in each emergency response facility. A detailed list of Control Room equipment and instrumentation is provided in Section 7 of the Updated Safety Analysis Report (USAR).

#### 7.1.1 Control Room

The Control Room is the primary facility at the Kewaunee Power Station in which plant conditions are monitored and controlled and corrective actions are taken to mitigate any abnormal occurrence. It is operated under the direction of the Shift Manager and is the location where initial assessment, emergency classification and emergency response begins.

The controls and instrumentation necessary to operate the plant under both normal and emergency conditions are located in the Control Room. The Control Room is equipped with plant parameter instrumentation such as area and process radiation monitoring systems and alarm annunciators that give early warning of a potential emergency and provide for a continuing evaluation of the emergency situation. Additional equipment such as portable radiation survey instruments, meteorological readouts and communications equipment are also located in the Control Room. The Control Room has communications capability with all on-site and off-site emergency response facilities via the plant PBX phone system. Should the PBX system fail, other non-PBX system phone lines are installed in the Control Room (dedicated incoming lines). In addition, the Control Room has communications capability with all on-site emergency response facilities via the in-plant public address system, and communications capability with off-site state and local authorities via Dial Select System. The Control Room also has the capability to communicate with the NRC over the Emergency Notification System.

The Control Room is designed to be habitable under emergency conditions. The ventilation system, shielding and structural integrity of the Control Room permit continuous occupancy during postulated design basis accidents described in Section 14 of the USAR.



### **7.1.2 Technical Support Center**

The Technical Support Center (TSC) is located north of and adjacent to the Auxiliary and Turbine Buildings. This location is in close proximity to the Control Room. It is approximately 4,000 ft<sup>2</sup> in area and capable of accommodating more than 25 people. Plant engineering data and safety parameter displays to support Control Room operations are installed in the TSC.

The TSC is activated upon the declaration of an Alert, Site Area Emergency or General Emergency. It operates under the direction of the TSC Director and serves as the coordination point for technical support during emergency response operations. The TSC provides the communications interface between the Control Room, the Radiological Analysis Facility, the Operational Support Facility, the Emergency Operations Facility, and the Site Boundary Facility. Follow-up communications with federal, state and local response organizations will be coordinated in the TSC prior to the activation of the Emergency Operations Facility (EOF). The TSC has communications capabilities with all on-site and off-site emergency response facilities via the plant PBX phone system. Should the PBX system fail, additional non-PBX phone lines are installed in the TSC (dedicated incoming lines). In addition, the TSC also has communications capability with all on-site emergency response facilities via the in-plant public address system. The TSC also has direct (dial-select) communication lines to the Emergency Operations Centers (EOC) for both Kewaunee and Manitowoc Counties; the State of Wisconsin EOC in Madison; the Point Beach Nuclear Plant's TSC and EOF; and the Kewaunee Power Station's EOF. The TSC also has the capability to communicate with the NRC over the Emergency Notification System and Health Physics Network telephones.

Adequate equipment exists in the TSC to provide the TSC staff with the capability to monitor reactor systems status and to evaluate plant system abnormalities. This equipment includes signal display instrumentation, data displays, information storage and retrieval devices. The data displays will provide current indications and time history displays of plant parameters. Terminals have the capability of displaying selected data from the plant process computer.

The TSC staff will provide information on radiological process and effluent monitors to the Radiological Analysis Facility for use in predicting radiological consequences in addition to analyzing plant data and information to make recommendations to the Emergency Director concerning accident mitigation and recovery operations.

The TSC is designed to have the same radiological habitability as the Control Room under accident conditions and has permanent monitoring systems, which indicate radiation dose rates and airborne radioactivity concentrations. The air purification system design includes particulate and charcoal filters to meet post-accident habitability requirements.

### **7.1.3 Radiological Analysis Facility and Radiation Protection Office**

The Radiological Analysis Facility (RAF) operates in conjunction with the Radiation Protection Office (RPO) in coordinating and directing radiation protection activities. The RAF and RPO are activated during an Alert, Site Area Emergency, or General Emergency. These facilities are operated under the direction of the Radiological Protection Director.

The RPO is located in the Auxiliary Building and serves as the normal access control point for the Radiological Controlled Area and as an assembly area for personnel accountability purposes. It is the headquarters for plant radiation protection activities, which include radiological surveys, personnel monitoring, decontamination, reentry, and rescue operations. The RPO is equipped with radiation monitoring and sampling equipment, protective clothing, respiratory protection devices, and other miscellaneous supplies for use during emergency situations. The RPO has the capability to communicate with all on-site and off-site emergency response facilities via the plant PBX phone system and with all on-site emergency response facilities via the in-plant public address system.

The RAF is located adjacent to the TSC. The RAF is the central location for directing plant radiological activities during emergency situations. Survey equipment, maps, and radio counting equipment are available in the RAF for making dose projections and for tracking gaseous and liquid effluents.

The RAF serves as an emergency access point into the Auxiliary Building. Since the RAF is in the same building as the TSC, it will be habitable throughout the duration of an incident. The RAF has communications capability with all on-site and off-site emergency response facilities via the plant PBX phone system, and with all on-site emergency response facilities via the in-plant public address system. In addition, the RAF has the capability to communicate with the NRC over the Health Physics Network System.

### **7.1.4 Operational Support Facility**

The Operational Support Facility (OSF) is located adjacent to the TSC. The OSF is activated during an Alert, Site Area Emergency or General Emergency. It is operated under the direction of the Support Activities Director and is where operational and maintenance support personnel report for emergency assignment or assembly when they are not actively engaged in emergency duties. The OSF serves as a staging area for briefing plant maintenance and non-shift operating personnel. The OSF has communications capability with all on-site and off-site emergency response facilities via the plant PBX phone system. In addition, the OSF has communications capability with all on-site emergency response facilities via the in-plant public address system. Since the OSF is in the same building as the TSC, it will be habitable throughout the duration of an incident.

### **7.1.5 Emergency Operations Facility**

The Emergency Operations Facility (EOF) is located at 3060 Voyager Drive, Green Bay, Wisconsin.

The EOF is activated during an Alert, a Site Area Emergency or a General Emergency. It is operated under the direction of the Emergency Response Manager. The EOF has adequate space to accommodate representatives from various Federal, State and local organizations.

The EOF is the focal point for the coordination of on-site and off-site emergency response activities. Management and technical personnel assigned to the EOF are responsible for protective action recommendations, liaison with off-site governmental organizations and response facilities and overall management of the emergency organization.

The EOF can communicate with all on-site and off-site emergency response facilities via the PBX system. Should the PBX system fail, additional non-PBX phone lines are installed in the EOF. In addition, the EOF has direct (dial-select) communication links to; the Kewaunee and the Manitowoc County Emergency Operations Centers (EOC); the Point Beach Nuclear Plant's TSC and EOF; the State of Wisconsin's EOC in Madison; and Kewaunee Power Station TSC. Branches of the Emergency Notification System and Health Physics Network System are available in the EOF.

### **7.1.6 Joint Information Center**

The Joint Information Center (JIC) is located at 3060 Voyager Drive, Green Bay, Wisconsin. The JIC is activated during an Alert, a Site Area Emergency, a General Emergency or at the direction of the Emergency Response Manager/Emergency Director. The JIC Manager supervises Dominion activities at the JIC and assists the Plant Spokesperson. The JIC can formulate and coordinate the development of news statements for the news media concerning the emergency. This facility provides periodic updates of the emergency situation and coordinates the general public information activities of Dominion and the appropriate Federal, state and local agencies to ensure that only authorized news statements are released. The general public shall be provided with a telephone number to call for the latest information regarding plant conditions. A Plant Spokesperson shall be located at the JIC to receive information from the EOF concerning plant status. The Plant Spokesperson shall coordinate the information with the JIC Manager.

### **7.1.7 Site Boundary Facility**

Upon the declaration of an Alert, Site Area Emergency, or General Emergency, the Site Boundary Facility (SBF), located near the site boundary, west of State Highway 42, shall be activated to serve as a staging area for off-site environmental monitoring. Environmental monitoring and sample results shall be relayed to the Environmental Protection Director at the EOF. As radiological conditions require, and at the direction of the Emergency Director, the SBF may be used as the coordinating center for access control if the Security Building is not available. Radiological monitoring of personnel and equipment entering and leaving the site can be performed at the SBF. It will be staffed with Environmental Monitoring Team or Security Force members appropriate with emergency conditions.

The SBF has telephone communications via the plant PBX system, and radio communications to the RAF and EOF. It is equipped with emergency radiation monitoring, counting and sampling equipment, protective clothing, and other supplies for use during an emergency.

### 7.1.8 Site Relocation Facility

The Site Relocation Facility (SRF) is located in the Carlton Township Hall, 1.6 miles North of KPS on Highway 42 and approximately 2 miles West on County Road G. The SRF will provide as necessary a staging area for personnel arriving to or departing from the site during a declared emergency. The SRF will be activated when it becomes necessary to evacuate non-essential personnel from the site to that facility or when necessary to stage responding ERO personnel at a near site location. The SRF has telephone and Fax communications to the other Emergency Response Facilities.

### 7.1.9 Innsbrook Corporate Support Center (ICSC)

The ICSC located in Richmond, VA, may be, but is not required, to be activated to provide support during an ALERT or higher event at Kewaunee Power Station. When activated, the function of the ICSC includes both logistical and public information support in the event of an emergency at Kewaunee. The ICSC will communicate with the KPS ERFs via telephone and ERF phone bridge.

## 7.2 COMMUNICATION SYSTEMS

A comprehensive communication system with back-up capabilities has been designed to provide reliable communication links between various emergency response facilities and with off-site support organizations. The system consists of the plant PBX telephone system, the plant public address system, commercial telephone lines, a two-digit ring-down (dial select) telephone network, a pager system and radio communications. The details of the site and off-site emergency communication networks are illustrated in FIGURES 7-1 and 7-2. A brief description of the communication systems is summarized below:

1. The stored program PBX telephone system at the Kewaunee Power Station is the primary and most reliable communications system used to transmit information and data between all the emergency response facilities. The overall reliability of the PBX system is established due to the following system design characteristics.
  - a. The system is powered from an uninterruptible power supply.
  - b. The system has an internal battery pack to supply power if the primary source is lost.
  - c. The systems computer will automatically re-load the base program if the computer memory is for some reason lost. If there is a complete and total loss of the system there will still be at least seven (7) independent trunk lines available from an outside source.
2. The Plant public address system operates independent of the telephone system. The system has five paging channels and includes handset stations and loud speakers. The public address system has options for making general announcements or holding conversations via any of the five channels. Diesel generators serve as an emergency power source for the public address system.
3. Plant response personnel have been issued pagers. Pagers are activated through a computer based callout system. The callout system contacts plant and Corporate Support responders via pagers, cell phones, and/or home phones. The system has redundant equipment to prevent single point failure.
4. The Dial-Select Telephone System is the primary means for providing initial subsequent notification of Declared Emergencies. This system provides a communication link with the Point Beach Nuclear Plant's Control Room, TSC, EOF and Alt-EOF; the Kewaunee and Manitowoc Counties' EOCs and Sheriff's Dispatch Centers; the State of Wisconsin EOC in Madison, the State Highway Patrol Dispatch Center, and the Kewaunee Power Station's Control Room, TSC and EOF.

5. Direct phone lines have been installed to provide rapid, uninterrupted communication with the NRC. The Radiological Analysis Facility, the Technical Support Center and the Emergency Operations Facility have direct lines to the NRC Health Physics Network. The Control Room, the Technical Support Center, and the Emergency Operations Facility have dedicated lines into the NRC Emergency Notification System.
6. A handheld radio is located in the Control Room, with portable console stations in the RAF and the EOF. The radios and PCS phones will be used to communicate with the Radiation Emergency Teams and Environmental Monitoring Teams. A transmit/receive capability exists, on an independent frequency, 24 hours a day from the KPS to the Kewaunee County Sheriff's Department.
7. Dedicated commercial telephone lines are established to facilitate state and local authorities in contacting KPS representatives. The first line allows direct access to the Control Room, Technical Support Center, or Emergency Operations Facility as appropriate for state and local emergency government data verification calls. A second line is available to receive two calls at one time (holding feature). The third line allows direct access to the Radiological Analysis Facility or Emergency Operations Facility, as appropriate, for the State Radiological Coordinator to obtain plant, meteorological and radiological information.

### **7.3 ASSESSMENT FACILITIES AND EQUIPMENT**

This section describes the monitoring instruments and laboratory facilities used to initiate emergency measures and provide continuing assessment of conditions throughout the course of an emergency.

#### **7.3.1 Site Assessment Facilities and Equipment**

##### **Geophysical Phenomena Monitors**

The KPS Meteorological measurement system has been designed to address the criteria provided in NUREG 0654, Appendix 2, "Meteorological Criteria for Emergency Preparedness at Operating Nuclear Power Plants," as described in the responses for item III.A.2.2 of NUREG 0737.

Geophysical phenomena monitors are grouped into meteorological, seismic and hydrological categories. The meteorological equipment at the site consists of three sets of wind-speed and direction transmitters, signal translators, and recorders. In addition, the temperature measurement consists of two recorders and three resistance temperature detectors (RTDs). Two RTDs on the primary tower, one at the ten (10) and sixty (60) meter levels are used to monitor ambient temperature and calculate differential temperature. Recorded ambient temperature comes from the ten (10) meter RTD. A third RTD at the ten (10) meter level on the backup tower is available for monitoring ambient temperature. Signals generated from the tower instruments are transmitted to both equipment enclosures at the base of each tower and the Technical Support Center. Recorders are run continuously in the tower enclosures and are available when needed in the Technical Support Center. Meteorological data will also be fed from the Technical Support Center to both the Control Room and the Emergency Operations Facility via the plant process computer system. These parameters are utilized in making site boundary and off-site dose projections in accordance with Emergency Plan Implementing Procedures. The meteorological measurement system has been designed to address the criteria provided in NUREG-0654, Appendix 2, "Meteorological Criteria for Emergency Preparedness at Operating Nuclear Power Plants."

The seismic instrumentation at the plant is designed in accordance with the requirements of Safety Guide No. 12, "Instrumentation for Earthquakes" published March 10, 1971. The seismic monitor is used to promptly determine the seismic response of plant features important to safety and to compare that response to the seismic response used in the plant's design basis.

The seismic monitoring system consists of three field mounted triaxial accelerometers mounted in the containment basement, containment operating floor and the 657 elevation of the auxiliary building. The three accelerometers provide input to a monitor and alarm panel in the control room relay room if seismic activity exceeds a preset limit. The panels in the relay room provide indication that allows the operator to determine the magnitude of the seismic event.

The hydrologic recording instrumentation consists of a forebay level indicator located in the Control Room. In addition to this, level gauge markings are painted on one of the forebay walls for direct observation. The instrumentation measures percent forebay level on a continual basis. Methods have been established enabling forebay level to be correlated to Lake Michigan level.

#### Radiation Monitoring System

The Radiation Monitoring System provides continuous radiological surveillance of plant systems and work areas. The system performs the following basic functions:

- a. Warns operating personnel of radiological health hazards, which have developed.
- b. Gives early warning of certain plant malfunctions, which might lead, to a radiological health hazard or plant damage.
- c. Prevents or minimizes the effects of inadvertent releases of radioactivity to the environment by consequence-limiting automatic responses.
- d. Provides routine monitoring of controlled off-site plant releases.

The Radiation Monitoring System is divided into two sub-systems. The Process Radiation Monitoring System monitors various liquid and air streams for indication of radiation levels within those streams. The Area Radiation Monitoring System monitors radiation levels in many areas of the plant.

Each channel of the system consists primarily of a radiation detector, an amplifier with associated power supplies, indicators and computer-meter outputs. The Radiation Monitoring System channels have a corresponding read-out in the Control Room, RAF, Computer Points, and local read-outs to allow continual observation by plant personnel.

Additionally, a post-accident radiation monitoring system has been installed at the plant. The system consists of SPING, Area, and Beta Air Monitors. The SPING monitors sample the Auxiliary and Containment Building Vent Stacks and measure radioactive particulate, iodine, noble gas concentrations, and area radiation levels. The Area and Beta Air Monitors are strategically located throughout the plant. Read-outs from these monitors are available at Data Acquisition Modules (DAM), on the plant process computer and at central control consoles located in the Radiation Protection Office (RPO) and Radiological Analysis Facility (RAF).

## Portable Radiation Monitors

Portable radiation monitoring instruments and sampling equipment normally utilized and maintained by the Radiation Protection group are available for emergency use. This portable equipment includes low and high range ion chambers, GM-Tube survey meters, neutron survey meters, alpha survey meters, and air samplers.

## Laboratory Facilities

Facilities for analyzing radioactive samples are equipped with an alpha scintillation system, a liquid scintillation system for low energy Beta emitters, gas flow proportional counters and GeLi Gamma spectroscopy system with automatic spectrum analysis. If the 642' level count room facility should become uninhabitable, samples can be analyzed in the Radiological Analysis Facility count room, 586' elevation, adjacent to the Technical Support Center. If the volume of incoming samples becomes too large for the in-plant countrooms to accommodate, alternate laboratory facilities are available (see Subsection 7.3.2(3)).

## High Radiation Sample System

The high radiation sample system provides a radiologically safe environment for sampling various process streams and the Containment atmosphere. Both chemical and radiological analyses can be performed to aid in evaluating an accident situation.

## Fire Detection and Suppression Equipment

The fire protection system has been designed to detect and extinguish potential fires, which might occur at the plant. The system is designed in accordance with the standards of the National Fire Protection Association (NFPA) and is based generally on the recommendations of the Nuclear Energy Property Insurance Association (NEPIA).

Fire detectors have been installed throughout the plant with alarms and indicators located in the Control Room.

The specific types of detectors used vary with the area covered and include ionization detectors, vendor-supplied equipment contacts, manual pull stations, flame detectors, flow switches, temperature detectors, and rate-of-rise detectors.

The fire protection system also includes a water spray system, a carbon dioxide system, fire extinguishers, standpipe and water-fog hose stations, fire pumps and fire hydrants. A more detailed description of the fire protection system is presented in Section 9.6.1 of the USAR.

## 7.3.2 Off-Site Assessment Facilities and Equipment

### 1. Geophysical Phenomena Monitors

In addition to the data available from the plant meteorological tower, backup meteorological data is available from the Green Bay National Weather Service Station in Green Bay and the Point Beach Nuclear Plant in Two Creeks. These facilities are equipped with instrumentation to monitor wind speed and wind direction.

The Department of Geological Sciences at the University of Wisconsin - Milwaukee operates a standard seismograph station equipped with three component digital broadband seismometer sampling at both 40 samples per second for regional activity and 1 sample per second for regional activity and 1 sample per second for distant activity. The digital seismograph records continuously to a computer hard drive and has quarterly backups. There is also a long-period east-west component analog seismograph running typically only during the week. The information recorded by these instruments is available as a back-up source to the plant's seismic event recording system.

2. Environmental Radiological Monitoring and Sampling

During the declared emergency, direct radiation readings, air samples and environmental samples will be taken as directed by the Environmental Protection Director. The Environmental Protection Director will base sampling point decisions on prevailing meteorological conditions and will direct the field teams with reference to the EPZ Grid Map. The environmental monitoring may include water, soil, vegetation and air sampling. Ambient radiation levels will be determined by portable high sensitivity radiation detection instruments. The Kewaunee Power Station maintains a routine Environmental Monitoring and Surveillance program using environmentally sound thermoluminescence dosimeters. After any radiological hazard has passed and after the declared emergency has been terminated, this system would be used to calculate a total population whole body dose for all areas within the EPZ.

3. Alternate Laboratory Facilities and Equipment

The Point Beach Nuclear Plant laboratory facility will provide backup assistance in the radiological and chemical analysis of air, water, and other needed samples during an emergency at the Kewaunee Power Station if requested.

If additional laboratory facilities and equipment are needed, KPS/Dominion can request assistance from the Chicago Operations and Regional Office (CORO) of the Department of Energy (DOE).

## **7.4 PROTECTIVE FACILITIES AND EQUIPMENT**

The Control Room, the Technical Support Center, Operational Support Facility and the Radiological Analysis Facility (located adjacent to the TSC) serve as the plant protective facilities. They are designed to be habitable under accident conditions. Emergency lighting, auxiliary power, air filtration and ventilation systems, and shielding walls enable continuous occupancy during postulated design basis accidents as described in Section 14 of the USAR. These facilities are also equipped with portable radiation instruments, respiratory equipment, portable lighting and a variety of communication systems.

## **7.5 FIRST AID AND MEDICAL FACILITIES**

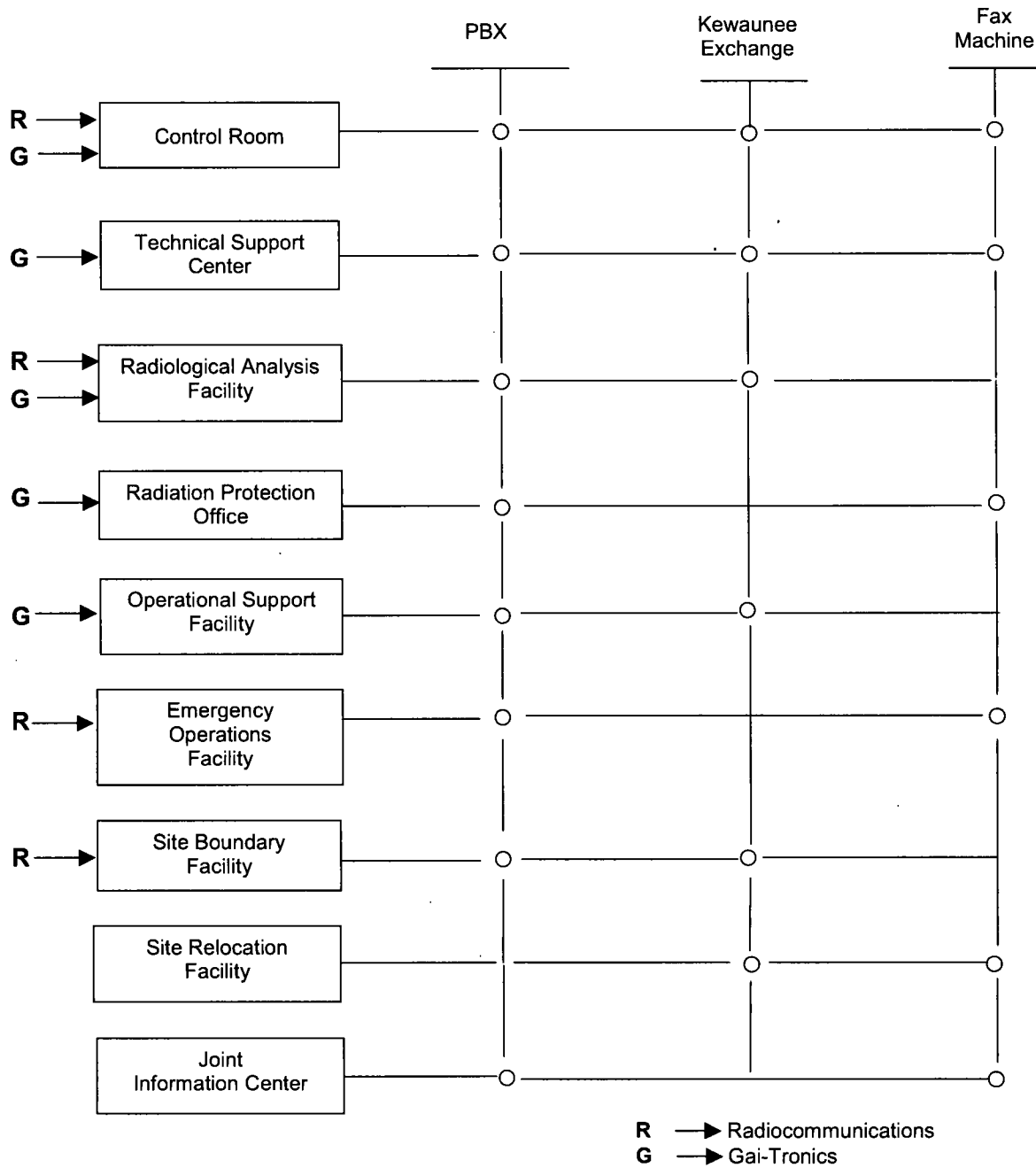
The Kewaunee Power Station maintains first aid equipment for all personnel working at the site. Medical supplies needed to provide emergency first aid treatment are provided on the site. Stretchers are available for transporting non-mobile, injured personnel. First Aid kits are available at various plant locations and in company owned vehicles.

## **7.6 DAMAGE CONTROL EQUIPMENT**

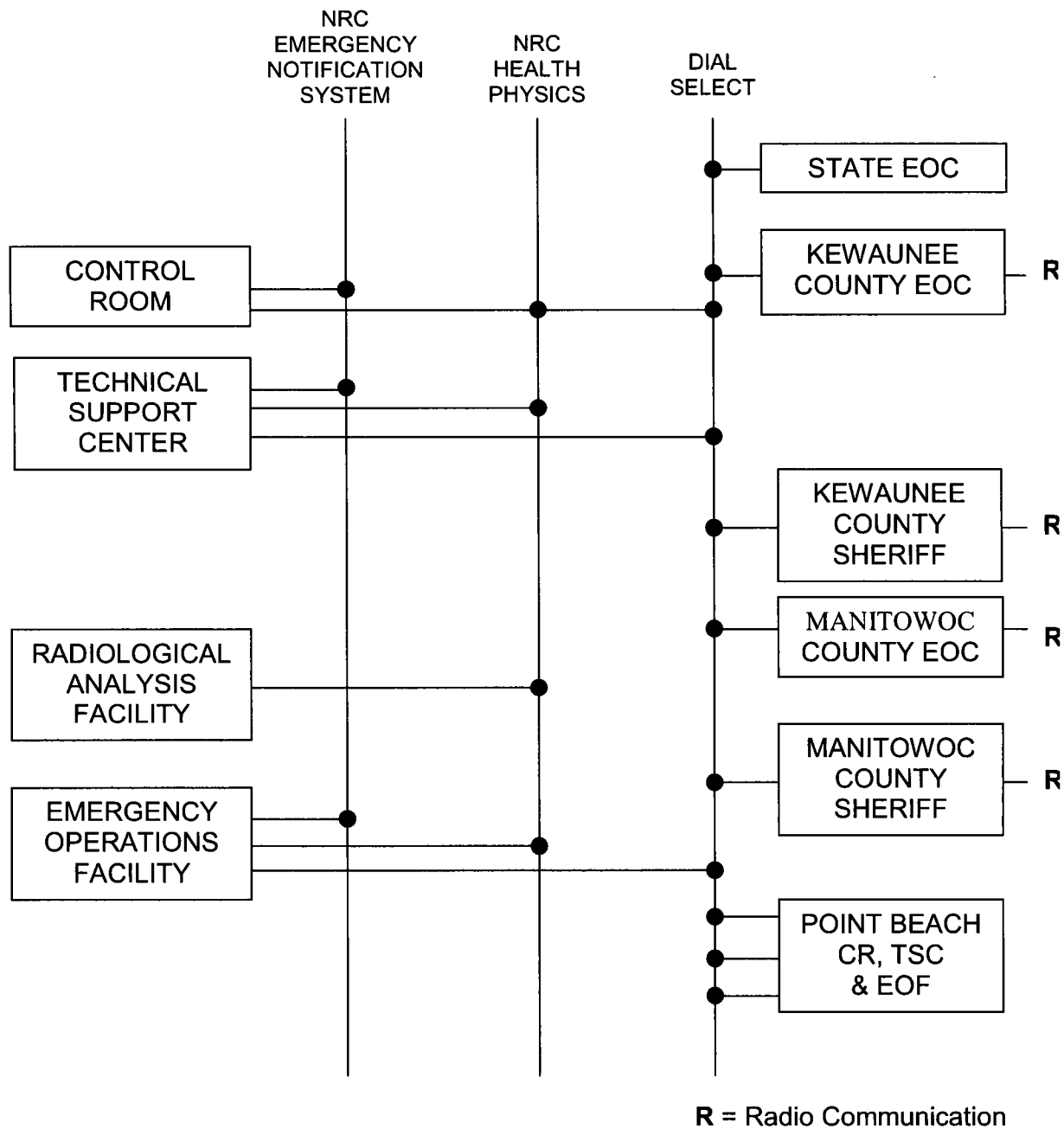
The Kewaunee Power Station is extensively equipped to maintain and repair mechanical, structural, electrical and control instrumentation and equipment found in the plant. In addition to the equipment and materials required for normal maintenance other equipment such as steam suits and self-contained breathing apparatus is available to handle extraordinary maintenance jobs that might develop. If necessary, additional equipment may be requested from other Dominion facilities or private contractors.



**FIGURE 7-1**  
**SITE COMMUNICATIONS NETWORK**



**FIGURE 7-2**  
**OFF-SITE COMMUNICATIONS NETWORK**



## SECTION 8

### 8.0 MAINTAINING EMERGENCY PREPAREDNESS

It is important that a state of emergency preparedness be maintained at all times at the Kewaunee Power Station. To ensure a state of readiness, the Kewaunee Power Station emergency preparedness program was designed to provide each of the following objectives:

1. Formal designation of management personnel responsible for the emergency preparedness program.
2. Establishment of an Emergency Preparedness Training Program.
3. Planning and conducting periodic drills and exercises.
4. Annual review and updating of the Emergency Plan and the Emergency Plan Implementing Procedures (EPIPs).
5. Routine calibration, maintenance and inventory of emergency equipment and supplies.
6. Establishment of a Public Information Program.

This section of the Emergency Plan summarizes the emergency preparedness program that has been established for the Kewaunee Power Station.

### 8.1 EMERGENCY PREPAREDNESS RESPONSIBILITIES

**The Kewaunee Power Station (KPS) Emergency Preparedness Manager** is responsible for emergency response planning. This responsibility includes ensuring that the overall emergency preparedness program is maintained and implemented as described in this Plan. The KPS Emergency Preparedness Manager is responsible for the following tasks:

1. Coordinate the development and implementation of the emergency preparedness program.
2. Review of proposed changes to the Emergency Plan to ensure they are in accordance with the provisions of 10 CFR50.54 (q).
3. Maintain knowledge of state and local emergency plans and interfaces with KPS Plan.
4. Ensure that all drill and exercise commitments stated in the plan are met.
5. Schedule, coordinate, and monitor emergency preparedness training programs, drills and exercises for KPS response personnel and off-site supporting agencies.
6. Coordinate and monitor material readiness of all emergency response facilities, and procedures to ensure adequate preparedness in accordance with this plan.
7. Coordinate adequate personnel coverage for specific emergency duties to assure optimal manpower coverage.
8. Obtain and maintain agreements of understanding between KPS and federal, state, local, and private organizations so that an adequate level of emergency backup support is available.
9. Assure that the Emergency Plan and its Emergency Plan Implementing Procedures are reviewed and updated annually.
10. Provide a summary of all Emergency Plan revisions and an effectiveness evaluation following the annual review.
11. Monitor the development of all EPIPs and ensure all EPIPs receive an adequate technical review. Review all EPIP revisions to prevent the compromise of other EPIPs or the Emergency Plan.
12. Assure that the Nuclear Emergency Public Information Plan is maintained and that the annual mailing of public information is accomplished.

13. Assure that post-drill and exercise critiques are performed in accordance with established procedures.
14. Develop and distribute action plans to address drill and exercise deficiencies.
15. Compile off-site agency/utility interface problems from QA audits and technical reviews and forwards them to state and county emergency government officials.
16. Provide training support for both on-site and off-site emergency response organization members.
17. Review and update the Emergency Preparedness Training Program to incorporate program changes based on deficiencies noted during drills and exercises as well as Emergency Plan and EPIP revisions.

**The Manager Nuclear Licensing** reports to the Director Nuclear Station Safety and Licensing and is responsible for the following tasks:

1. Maintaining current knowledge of changes in federal regulations and other guidance that impact emergency planning activities.
2. Submit Emergency Plan and related controlled document revisions to the NRC.

**The Directors, Managers and Supervisors** reporting directly or indirectly to the KPS Site Vice President are responsible for the following tasks:

1. Develop and update the EPIPs and EPMPs assigned to them.
2. Ensuring the appropriate subject matter experts are provided to review and assist as needed in Emergency Plan Training.
3. Assist the KPS Emergency Preparedness Manager with the following aspects of emergency preparedness:
  - a. Assist in coordinating and providing emergency preparedness training on EPIPs.
  - b. Assignment of personnel to emergency response organization positions.
  - c. Response facility floor plans, status boards and logistics.
  - d. Response facility material and equipment inventories.

**Facility Safety Review Committee (FSRC)** is responsible for reviewing proposed revisions to the Emergency Plan, Emergency Action Level Technical Bases and Matrix, and Emergency Preparedness procedures designated as FSRC review. Individual procedures specify if a FSRC review is or is not required. FSRC review is determined by the FSRC Charter.

**Nuclear Oversight** shall conduct an independent performance based audit of the Emergency Preparedness Program, which includes the Emergency Plan. This audit shall be conducted in accordance with the Operational Quality Assurance Program, at least every 12 months in accordance with 10 CFR 50.54(t); and shall include an assessment of the adequacy of interface with state and local governments, drills, exercises, personnel capabilities, and procedures.

The lead auditor conducting this audit shall have no direct responsibility for the implementation of the emergency preparedness program. However, managers and process leaders responsible for or knowledgeable of specific aspects of the Emergency Preparedness Program may request a technical review of specific areas of the program.

The results of the audit shall be formally documented in an audit report and retained for the life of the plant. This audit report shall be distributed to the appropriate Dominion Management.

State and local governments shall be notified of inadequacies involving KPS/government interface. Nuclear Oversight shall forward KPS/government interface issues to the KPS Site Vice President.

In addition to the annual Emergency Plan Audit, Nuclear Oversight should conduct surveillances of drills, exercises and other aspects of the E-Plan training program.

## **8.2 EMERGENCY RESPONSE PERSONNEL TRAINING**

All aspects of emergency preparedness training administration are specified in the Emergency Preparedness Training Program. This program identifies the level and the depth to which individuals are to be trained. In addition to this program, appropriate personnel will be trained in the areas of radiation protection, respiratory protection, and multi-media first aid or its equivalent as part of the Kewaunee Power Station's Nuclear Employee Training Program.

Plant Emergency Preparedness Group staff should receive training on emergency preparedness topics annually if appropriate programs are available in the industry.

### **8.2.1 Emergency Preparedness Training Program**

The emergency preparedness training is a combination of Nuclear Employee Training and training identified in the Emergency Preparedness Training Program. Together the training needs of not only KPS employees who have assigned ERO duties, but also the training needs of non-ERO KPS employees, visitors, vendors, and off-site agencies who may be on-site at the time of an incident or who may respond to the Kewaunee Power Station in support of the Emergency Plan. The training requirements of individuals assigned emergency response duties are defined in the Emergency Preparedness Training Program. Individuals shall meet all the applicable training requirements prior to being assigned to an emergency position.

Nuclear Employee Training shall be given to all personnel who are badged for unescorted access to the Kewaunee Power Station. Information pertaining to their safety and the safety of visitors under escort during a declared emergency shall be provided.

This general training shall include the following Emergency Preparedness topics:

1. Basic Emergency Plan and EPIP information
2. The meaning of plant alarms and the emergency classification system
3. Use of plant communication systems
4. Personnel accountability and evacuation procedures

Nuclear Employee Training shall be given annually for all individuals who remain in badged unescorted status.

The training requirements of individuals assigned emergency response duties are defined in the Emergency Preparedness Training Program. Individuals shall meet all the applicable training requirements prior to being assigned to an emergency response position. The training program identifies three training modules. They are: Initial Training, Continuing/Requalification Training, and Specialized Training.

Initial Training is intended for the new Emergency Response Organization members, those transferring to new ERO positions and those who were once members but who have been out of the organization for an extended period of time. This module shall provide a general understanding of the overall Emergency Preparedness Program, job skills specific to the position they shall be filling and training focused on the facility in which their position reports.

Continuing Training is intended as annual refresher training for Emergency Response Organization members who have completed initial training. This module shall focus on changes to the plan, procedures, equipment and regulations. Industry lessons learned as well as review of response skills and knowledge basics shall be covered.

Specialized Training is intended to meet the training needs of individuals who have an active role in supporting the Kewaunee Power Station, Emergency Preparedness Program. This training shall include, but not limited to, drill and exercise controller training, and specific training for off-site agencies.

Training provided to off-site agencies shall be structured to meet the needs of that agency or organization with respect to the nature of their support. Topics such as event notification, basic radiation protection and interface activities between the off-site organization and KPS shall be made available.

The Point Beach Nuclear Power Plant and the Kewaunee Power Station share the services of the same off-site organizations and agencies. A memorandum of understanding has been established between the two plants to keep each other informed of emergency preparedness training being presented, thus allowing the two utilities to alternate presentations that are similar to both and therefore minimize redundant training to the off-site agencies.

### **8.2.2 Drills and Exercises**

Federally prescribed exercises are conducted at the station in order to test the adequacy of timing and content of implementing procedures and methods; to test emergency equipment and communication networks; and to ensure that emergency personnel are familiar with their duties. These exercises will be evaluated by ERO participants, assigned evaluators and possibly Federal Evaluators. The ability of KPS personnel to self evaluate weaknesses and identify areas for improvement is key to the successful conduct of exercises.

Drills are conducted for the purpose of testing, developing, and maintaining the proficiency of emergency responders.

Periodic drills and exercises shall be conducted at the Kewaunee Power Station. The primary objectives of the drills and exercises are the following:

1. Test and verify the knowledge of emergency response personnel with respect to their implementation of the Emergency Plan and EPIPs.
2. Ensure that the participants are familiar with their duties and responsibilities.
3. Verify the adequacy of emergency planning methods and procedural steps.
4. Check the availability and operability of emergency equipment, including communications equipment.
5. Verify that previously identified problems associated with the Emergency Plan or EPIPs have been corrected.

The scenarios used for these drills and exercises will include, but not be limited to, the following:

1. The basic objective(s) of each drill or exercise.
2. The date(s), time period, place(s), and participating organizations.
3. A time schedule of real and simulated initiating events.
4. A narrative summary describing the conduct of the drill or exercise to include such items as simulated casualties, off-site fire assistance, rescue of personnel, use of protective clothing, deployment of radiological monitoring teams, and public information activities.

In conjunction with any scenario developed, arrangements shall be made for qualified observers to evaluate the drill or exercise. Critiques shall be scheduled at the conclusion of each exercise to evaluate the performance of the organizations involved in the exercise.

KPS/Dominion will invite observers from federal, state, and local governments, when requested, to observe scheduled drills or exercises.

1. Exercises

The Kewaunee Power Station shall conduct an emergency response exercise every two years to demonstrate the effectiveness of the Emergency Plan. During the interval between exercises a Facility-Wide Drill shall be conducted that encompasses the principal functions of emergency response. Exercise scenarios shall be developed such that all aspects of the Emergency Plan are exercised within a six-year cycle. An off-hours exercise will be scheduled to start between 6:00 pm and 4:00 am once every six years. An exercise with full participation of the state government shall be conducted at least once every six years. The local emergency governments within the Kewaunee Power Station EPZ shall participate in one full-scale exercise per year. Since the EPZ of both the Kewaunee Power Station and the Point Beach Nuclear Plant affect the same local governments, these local emergency governments shall alternate full participation each year between the Kewaunee and the Point Beach exercises.

Contingent upon NRC and FEMA endorsement, terrorist-based events will be conducted once during the 6-year cycle starting in 2010 (reference Response to NRC Bulletin 2005-02 Emergency Preparedness and Response Actions for Security-Based Events, Serial Number 05-452 dated August 16, 2005).

2. Drills

A drill is a supervised instruction period for training, developing, and maintaining skills for a particular emergency response operation. Scheduled drills shall be held involving plant and Corporate Support personnel as well as appropriate off-site emergency response agencies. Examples of drills that shall be conducted and their frequency include:

- Communication Drills - Communications with state and local governments within the plume exposure pathway EPZ shall be tested monthly. Communications with federal and state emergency response organizations within the ingestion pathway EPZ shall be tested quarterly. Communications between the Kewaunee Power Station, state and local emergency operations centers, and field assessment teams shall be tested annually. These communication drills will include the aspect of understanding the content of messages.
- Fire Drills - This Emergency Plan commitment has been transferred to the Kewaunee Power Station Fire Protection Program. Implementation will be in accordance with Fire Protection Procedure FPP 8-3, "Fire Plan Qualification, Training, and Drills".
- Medical Emergency Drills - A medical emergency drill involving a simulated contaminated individual and containing provisions for participation by the Aurora Medical Center shall be conducted at least once a year. The off-site portions of the drill may be performed as part of the required annual exercise or as an independent drill.

Both the Kewaunee Power Station and Point Beach Nuclear Plant share the facilities provided by the Aurora Medical Center. To minimize redundant training for the hospital staff, the two plants will alternate development and conduct of the drill each year. The KPS Emergency Preparedness staffs shall remain cognizant of drill development and results of the drill during their off year.

- Radiological Monitoring Drills - Environs and radiological monitoring drills (onsite and offsite) are conducted annually. These drills include collection and analysis of all sample media (such as, water, vegetation, soil, and air), and provisions for communications and record keeping.

The drills shall also include the identification of and gross radiation measurement of simulated radiologically contaminated areas located within the Emergency Planning Zone. Provisions for communications and record keeping shall be included in this drill.

- Health Physics Drills – Health Physics Drills involving a response to, and analysis of, simulated airborne and liquid samples and direct radiation measurements within the plant are conducted semi-annually.
- Site Accountability and Evacuation Drills - A site evacuation drill shall be conducted annually so that all personnel are aware of the proper routes and assembly areas. The accountability procedure shall be checked as part of the evacuation drill.
- Pager Response Drill - An unannounced pager response drill shall be conducted quarterly.
- Augmentation Drills - Augmentation drills serve to demonstrate the capability of the process to augment the on-shift staff with a TSC, OSF and EOF in a short period after declaration of an emergency. At least once per drill cycle (every 6 years), an off-hours unannounced activation of the ERO Notification System with actual response to the emergency facilities is conducted by the plant.
- Terrorism Based Drills - A demonstration of the emergency response to a terrorist based event. An integrated terrorist-based drill shall be conducted between 2007 and 2009 (reference Response to NRC Bulletin 2005-02 Emergency Preparedness and Response Actions for Security-Based Events, Serial Number 05-452 dated August 16, 2005)

### **8.3 REVIEW AND UPDATING OF THE EMERGENCY PLAN AND EMERGENCY PLAN IMPLEMENTING PROCEDURES**

#### **8.3.1 Emergency Plan, Emergency Action Level Technical Bases and Matrix, and Emergency Plan Implementing Procedures Review**

The Kewaunee Power Station Emergency Plan, Emergency Action Level Technical Bases and Matrix, and the Emergency Plan Implementing Procedures (EPIP) are reviewed and updated annually, in accordance with procedure EP-AA-102, "Revision and Control of Emergency Plan, Emergency Action Levels (Technical Basis and Matrix), and Reference Manual," and EPMP-05.02, "Preparation and Control of Emergency Plan Implementing Procedures (EPIPs)", respectively. The review shall encompass the need for changes based upon the following aspects:

1. Written critiques and evaluations of drills and exercises.
2. Changes in key plant and Corporate Support personnel involved in the emergency response organization.
3. Changes in the organizational structure.
4. Changes in the functions and capabilities of supporting agencies.
5. Changes in Federal or State regulations.
6. Modifications to the plant facility, site, or operating status which would affect emergency planning.
7. Recommendations or agreement changes received from other organizations, such as federal, state and local agencies, or other private support groups.
8. Evaluation of the adequacy of interfaces with State and Local Governments in preparations for and response to an emergency at KPS.



Any needed changes shall be incorporated in the Emergency Plan, Emergency Action Level Technical Bases and Matrix, and appropriate EIPs. Emergency telephone numbers shall be updated at least quarterly.

All proposed changes will be reviewed prior to issue to ensure that the change would not compromise the effectiveness of any other EIP or degrade the effectiveness of the Emergency Plan.

#### **8.3.2 Review and Updating Written Agreements**

The letters of agreement with the various support agencies shall be reviewed with the support agency every two years. Any necessary changes shall be made and the agreements renewed. Kewaunee Power Station reserves the right to enter agreements or contracts which are perpetual and free from biennial renewal, or of a period other than biennial if mutually agreed upon by the co-signers of the agreement letter or contract. However, a letter designated as perpetual agreements shall be reviewed by the KPS at a minimum biennially and the agreements subsequently updated if necessary.

### **8.4 MAINTENANCE AND INVENTORY OF EMERGENCY EQUIPMENT AND SUPPLIES**

Appendix F, "Emergency Equipment, Supplies and Reference Materials," lists each of the emergency response facilities and the required equipment, supplies and reference materials that are to be maintained in each facility. The appendix also references the appropriate procedures used to conduct facility inventories.

Procedure EPMP-10.01, "Emergency Equipment Inventory," establishes the inventory frequency, the responsibility for performing the inventories, and stipulates where final documentation will be maintained.

Procedure EPMP-09.02, "Emergency Communication System Verification," establishes the monthly and quarterly communication system tests required.

Portable radiation monitoring equipment included in these inventories is checked and calibrated in accordance with approved procedures. Reserve instruments/equipment are used to replace those, which are removed from the emergency inventory for extended calibration or repair. Equipment, supplies, and parts having finite shelf lives shall be checked and replaced as necessary. Any deficiencies found shall either be corrected immediately or documented for prompt corrective action by the responsible supervisor.

### **8.5 PUBLIC INFORMATION PROGRAM**

#### **8.5.1 General Public Education**

Kewaunee Power Station shall work with the Emergency Management Agencies of the State of Wisconsin, Kewaunee County, and Manitowoc County to provide for annual update and dissemination of information to the public regarding how they will be notified and what their actions should be during an emergency. This information may include, but is not limited to:

- a. Educational information on radiation.
- b. Contacts for additional information.
- c. Respiratory protection.
- d. Sheltering.
- e. Evacuation routes and relocation centers.
- f. Special needs of the handicapped.

The means for disseminating this information may be accomplished by one or more of the following:

- a. Posting information in public places.
- b. Distributing publications through mass mailing.

The Public Information Program is designed to reach the permanent and transient adult population within the plume exposure pathway EPZ.

#### **8.5.2 News Media Information and Familiarization**

Kewaunee Power Station shall annually provide information to acquaint local area news media with the Kewaunee Power Station Emergency Plan. The State of Wisconsin in conjunction with Kewaunee and Manitowoc Counties also provide the local media with information on points and methods of contact. These programs shall provide information on contact points for the release of public information, operation and function of the Joint Information Center and educational material concerning radiation.

## SECTION 9

### 9.0 PLANT RECOVERY

#### 9.1 PLANT RECOVERY ORGANIZATION

The plant recovery organization will be based on both the normal Kewaunee Power Station (KPS) and Dominion Corporate organizations and would function in a similar manner to an outage for refueling with the KPS Site Vice President being responsible for directing all site activities.

In addition a Recovery Manager would be designated by and report to the KPS Site Vice President prior to initiation of plant recovery operations. The Recovery Manager would be a KPS/Dominion supervisor and would be responsible for overall direction of the plant recovery operation and interface with government agencies and private support groups. If deemed necessary, an Environmental Liaison would also be designated by the KPS Site Vice President. The Environmental Liaison would be a KPS/Dominion supervisor who would report to the Recovery Manager and be responsible for coordinating environmental monitoring efforts for KPS/Dominion. The Environmental Liaison shall interface with government agencies performing environmental monitoring and assisting these agencies to determine re-entry plans for evacuated populations when requested.

In general the manpower needs would be a blend of plant and corporate staffs with the support of appropriate vendor and consultant personnel as needed. All KPS and Dominion Corporate staffs will be made available for the plant recovery operation effort. Written assistance agreements are already in place with architect engineer and NSSS vendor organizations to provide needed support.

#### 9.2 PLANT RECOVERY OPERATIONS

Dominion is responsible for plant recovery measures to restore the Kewaunee Power Station to a normal operating condition or permanent safe shutdown. The responsibility for off-site recovery rests with state and local authorities. The notification of on-site personnel and off-site response organizations that the plant recovery operation is to commence will be performed in accordance with Emergency Plan Implementing Procedures.

The extent and nature of the corrective and protective measures and the extent of plant recovery operations will depend on the emergency conditions at hand and the status of plant areas and equipment. The general goals for plant recovery operation are:

1. An orderly evaluation of the cause and effect of the emergency and the implementing of solutions to prevent the immediate recurrence of the incident.
2. A planned approach for returning the plant to a normal operational status by obtaining the appropriate manpower, materials, and equipment needed to accomplish that end.
3. A planned approach to work with off-site authorities to identify and resolve situations that may impact the general public and their health and welfare.
4. An evaluation of the radiation exposure records for all Dominion emergency response personnel involved in the incident.
5. A planned approach to ensure that radiation exposures and contamination control are in keeping with the ALARA program described within RP-AA-300, "ALARA Program."
6. To ensure that all nuclear safety related procedures written to effect the recovery operation are submitted to the Facility Safety Review Committee (FSRC) for review and approval prior to their implementation.

During all declared emergencies, a point will be reached at which the plant will be placed in a stable condition. Also, factors, which could pose a threat to the health and safety of the general public, will be identified and controlled. With the understanding that this condition could be attained even though specific Emergency Action Levels are still exceeded, the Emergency Director in conjunction with the Emergency Response Manager will determine that there is no longer a need to keep the emergency organization in effect and to begin plant recovery operations. Although de-escalation to a lower emergency level may be performed, it is not necessary to de-escalate prior to initiating plant recovery operations. However, classification and recovery EIPs should be carefully reviewed before plant recovery is initiated.

Plant recovery activities shall be in accordance with the plant technical specifications and other license documents. During plant recovery operations, the radiation exposure limits of 10 CFR 20 shall apply. Compliance with these specifications and regulations shall be the responsibility of the KPS Site Vice President.

If, during plant recovery operations, an emergency situation again occurs, KPS emergency response organization would be activated in accordance with this plan and its EIPs. Plant recovery efforts will be suspended until the emergency condition is resolved. The Emergency Director and the Emergency Response Manager will re-evaluate plant conditions and public impact prior to resuming plant recovery operations.

### **9.3 PLANT RECOVERY TERMINATION**

The plant recovery operation will be terminated by the KPS Site Vice President in conjunction with the Plant Manager and the Recovery Manager when the plant has been returned to a normal operational condition and all requirements stated in EPIP-AD-15, "Recovery Planning and Termination," have been addressed and documented.

## **APPENDICES**

### **APPENDIX A**

#### **Emergency Organizational Structure Functions and Responsibilities**

Emergency Response Manager .....	A-2
JIC Manager .....	A-3
Administrative/Logistics Director .....	A-4
Environmental Protection Director .....	A-5
Emergency Director .....	A-6
Event Operations Director .....	A-7
Technical Support Center Director .....	A-8
Support Activities Director .....	A-9
Site Protection Director .....	A-10
Radiological Protection Director .....	A-11
Plant Spokesperson .....	A-12

## **EMERGENCY RESPONSE MANAGER**

Location: Emergency Operations Facility

Coordinates: Overall KPS and Dominion response to the emergency event.

Primary Responsibilities:

1. Directs the overall emergency response activities of plant and corporate personnel.
  2. Assures the continuity of resources for long-term operation of the emergency response organization.
  3. Directs the emergency activities at the Emergency Operations Facility (EOF). Maintains communications from the EOF with the Control Room, OSF, SBF, TSC, RAF, and JIC.
  4. Maintains communications with the off-site authorities designated in the Emergency Plan. Relates to off-site authorities the appropriate information needed for implementation of their emergency plans.
  5. Directs the Environmental Protection Director in acquiring off-site radiological environmental samples and in performing dose projections to be used for off-site radiological assessment.
  6. \* Makes recommendations to the state regarding the initiation of protective actions for the public.
  7. Requests assistance from federal, state, local, and private agencies.
  8. Ensure any services needed from the architect/engineer constructor or Nuclear Steam System Suppliers.
  9. Resolves questions concerning plant-licensing requirements with NRC representatives.
  10. Reviews news statements prior to being released to the media. Approves news releases if ICSC is not activated.
- \* Responsibility may not be delegated.

## **JIC MANAGER**

Reports to: Emergency Response Manager

Location: Joint Information Center

Coordinates: Public Information Personnel

Primary Responsibilities:

1. Serves as the liaison to the news media during an emergency. Reviews news statements and announcements. Presides at formal news briefings.
2. Directs the activities at the Joint Information Center. Relays information to other employees at the center and supervises all communication operations at the center.
3. Coordinates the dissemination of information with the public information officers from federal, state and local agencies and private companies involved with the emergency to ensure an accurate and timely flow of information and rumor control.

## **ADMINISTRATIVE/LOGISTICS DIRECTOR**

Reports to: Emergency Response Manager

Location: Emergency Operations Facility

Coordinates: Administration and Logistics

Primary Responsibilities:

1. Serves as the purchasing agent responsible for contract negotiation/administration and material control.
2. Arranges for engineering support from Westinghouse Electric Corporation, INPO or other resources.
3. Meets the manpower request needs in both the technical and craft disciplines. Ensures that clerical support is available and provides labor relations assistance as required.
4. Provides general office support services such as typing, reproduction, and the acquisition of office supplies and office furniture. Arranges for special services such as photography and facility/area maps.
5. Handles motel, airline and trailer arrangements. Conducts registration and general personnel orientation.
6. Arranges for telephone service and provides other communications equipment such as mobile units, cell phones and pagers if required.
7. Administers expense accounts.
8. Provides the necessary transportation for emergency response personnel.
9. Provides for food deliveries, field kitchen operations and sanitary facilities and trash disposal.



## ENVIRONMENTAL PROTECTION DIRECTOR

Reports to: Emergency Response Manager

Location: Emergency Operations Facility

Supervises: Environmental Monitoring Teams

Primary Responsibilities:

1. Supervises the environmental monitoring teams and directs the teams in the acquisition of environmental samples and radiation readings for the purpose of plume tracking and dose assessment.
2. Is responsible for off-site dose projections and protective action evaluations.
3. Ensures that the appropriate protective actions are taken for the environmental monitoring teams.
4. Obtain off-site medical assistance if environmental vehicles are involved in an accident.

## EMERGENCY DIRECTOR

Reports to: Emergency Response Manager

Location: Technical Support Center/Control Room

Supervises: Event Operations, Technical Support Center, Support Activities, Security and Radiological Protection Directors

Primary Responsibilities:

1. Supervises and directs plant emergency response operations.
  2. \*Approves changes in the emergency classification based on plant, equipment and radiological conditions.
  3. \*Makes protective action recommendations to state and local authorities during the initial phases of an emergency until relieved by the Emergency Response Manager.
  4. Assures that information relayed to the Emergency Response Manager for release to the news media and the public is technically accurate.
  5. Directs the implementation of any corrective actions needed to return the plant to a stable condition.
  6. Directs the necessary protective actions to safeguard plant personnel.
  7. Ensures continuous accident assessment throughout the duration of the emergency.
  8. \*Reviews and approves all exposures in excess of 10 CFR Part 20 limits.
  9. Is designated Severe Accident Management "Decision Maker." In that capacity the Emergency Director will facilitate consensus with the Shift Manager and other Technical Support Center directors before providing final approval for the implementation of accident mitigative actions recommended by the Severe Accident Management Team.
  10. Reviews and approves News Statements prior to release to the media (prior to the Emergency Response Manager assuming this responsibility and only if ICSC is not activated).
- \* Responsibility may not be delegated.

## EVENT OPERATIONS DIRECTOR

Reports to: Emergency Director

Location: Control Room

Supervises: Control Room Personnel, Fire Brigade/Fire Team and Operations Personnel

Primary Responsibilities:

1. Monitors plant systems and operation.
2. Advises the Shift Manager on implementation of any corrective actions needed to return the plant to a stable condition.
3. Provides the Emergency Director with operational and plant radiological assessment evaluations.
4. Provides plant-monitoring data to the Radiological Protection Director for use in performing on-site and off-site dose projections.
5. Monitors fire fighting operations.
6. Provides communications from the Control Room to the Technical Support Center (TSC) or to other emergency centers if required.
7. Requests additional technical assistance from the TSC staff or Emergency Director if necessary.

## TECHNICAL SUPPORT CENTER DIRECTOR

Reports to: Emergency Director

Location: Technical Support Center

Supervises: Technical Support Center Staff

Primary Responsibilities:

1. Directs the activities of the Technical Support Center staff, which includes systems engineering, core physics, and quality control operations.
2. Provides plant technical support and logistics planning.
3. Supervises the acquisition/documentation of plant data and the control of technical records.
4. Directs communications from the TSC to the Control Room and other emergency centers.
5. Advises the Shift Manager and the Emergency Director in plant accident assessment.

## **SUPPORT ACTIVITIES DIRECTOR**

Reports to:       Emergency Director

Location:        Operational Support Facility

Supervises:       Maintenance/Instrument and Control Personnel

Primary Responsibilities:

1.     Supervises maintenance activities.
2.     Directs maintenance personnel in the repair and modification of existing equipment and the installation of new equipment.
3.     Obtains damage control equipment needed for maintenance operations.
4.     Directs instrument and control personnel in modifying existing equipment and repairing defective equipment.
5.     Directs all search and rescue operations.

## **SITE PROTECTION DIRECTOR**

Reports to:       Emergency Director

Location:        Technical Support Center

Supervises:      Plant Security Personnel

Primary Responsibilities:

1.     Supervises personnel accountability.
2.     Supervises access control operations to ensure that accountability is maintained at Emergency Response Facilities.
3.     Provides for the issuance of personnel dosimetry.
4.     Supports the Support Activities Director during search and rescue operations.
5.     Provide direction to the Site Security Force.

## **RADIOLOGICAL PROTECTION DIRECTOR**

Reports to: Emergency Director

Location: Radiological Analysis Facility/Radiation Protection Office

Supervises: Radiation Emergency Teams

Primary Responsibilities:

1. Directs the Radiation Emergency Teams in monitoring, controlling and evaluating plant chemical and radiological conditions.
2. Implements emergency in-plant and site radiological survey monitoring procedures.
3. Evaluates on-site and off-site doses based on radiation monitoring and sampling performed by Radiation Emergency Teams, and Environmental Monitoring Teams.
4. Provides for personnel monitoring by issuing appropriate dosimetry.
5. Performs on-site and off-site dose projections needed to determine appropriate protective action recommendations (prior to EOF activation).
6. Directs Radiation Emergency Teams in conducting decontamination activities.
7. Directs Radiation Emergency Teams in processing and controlling radioactive waste.
8. Supervises on-site first aid activities and obtains off-site medical assistance when needed.
9. Supports the Support Activities Director during search and rescue operations in the controlled areas of the plant.

## PLANT SPOKESPERSON

Reports to: JIC Manager

Location: Joint Information Center

Primary Responsibilities:

1. Receive and interpret plant status updates.
2. Formulation and review of news statements.
3. Conduct news briefings on Dominion issues and respond to media inquiries.



## **APPENDIX B**

### **Monitor Indication For Emergency Class Determination**

#### **INDEX**

NOTE: This appendix has been deleted and the information has been incorporated into the criteria and associated levels of the Emergency Classification presented in the Emergency Action Level Matrix and Technical Bases.

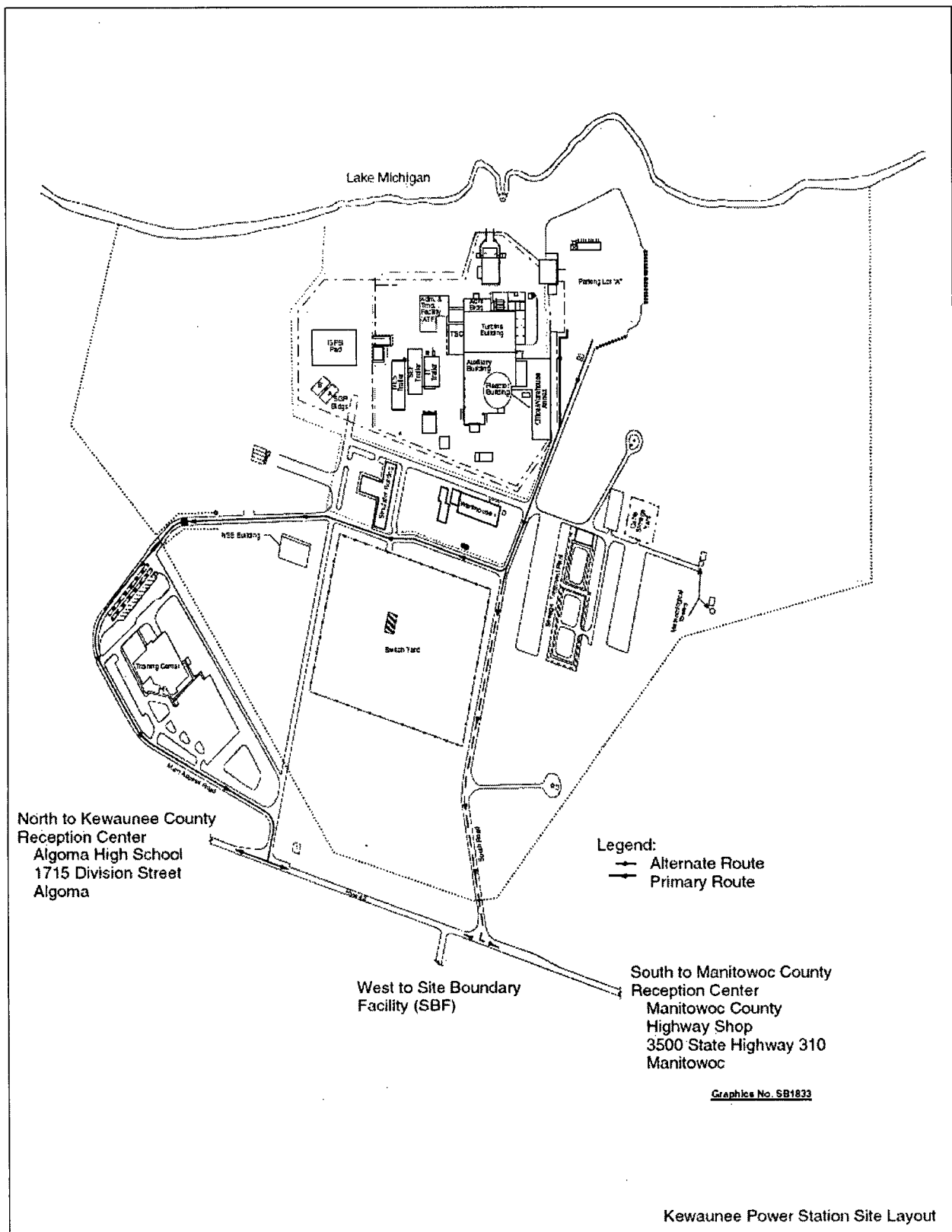
## APPENDIX C

### Maps

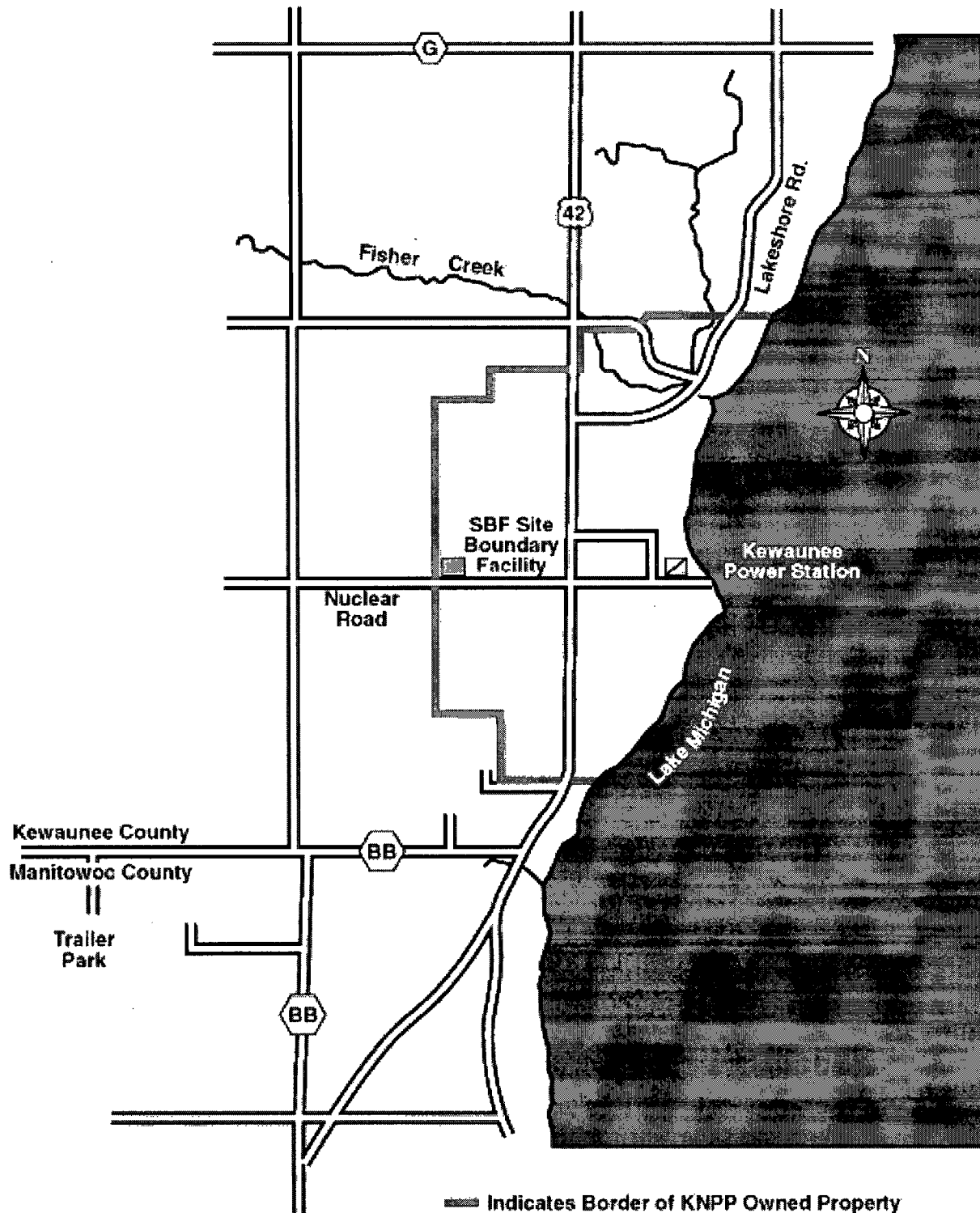
## INDEX

Title	Figure Number	Page
KPS Site Map and Evacuation Routes - including emergency response facilities	EP-FIG-026	C-2
Kewaunee Power Station Site Map - including site boundary	EP-FIG-031	C-3
Population Distribution by Geographical Sub-Areas	EP-FIG-014	C-4
Environmental Monitoring EPZ Grid Map	N/A	C-5
Location of Emergency Operations Facility (EOF), Joint Information Center (JIC), and Media Briefing Center (MBC) Map	N/A	C-6
Location of Site Relocation Facility	N/A	C-7

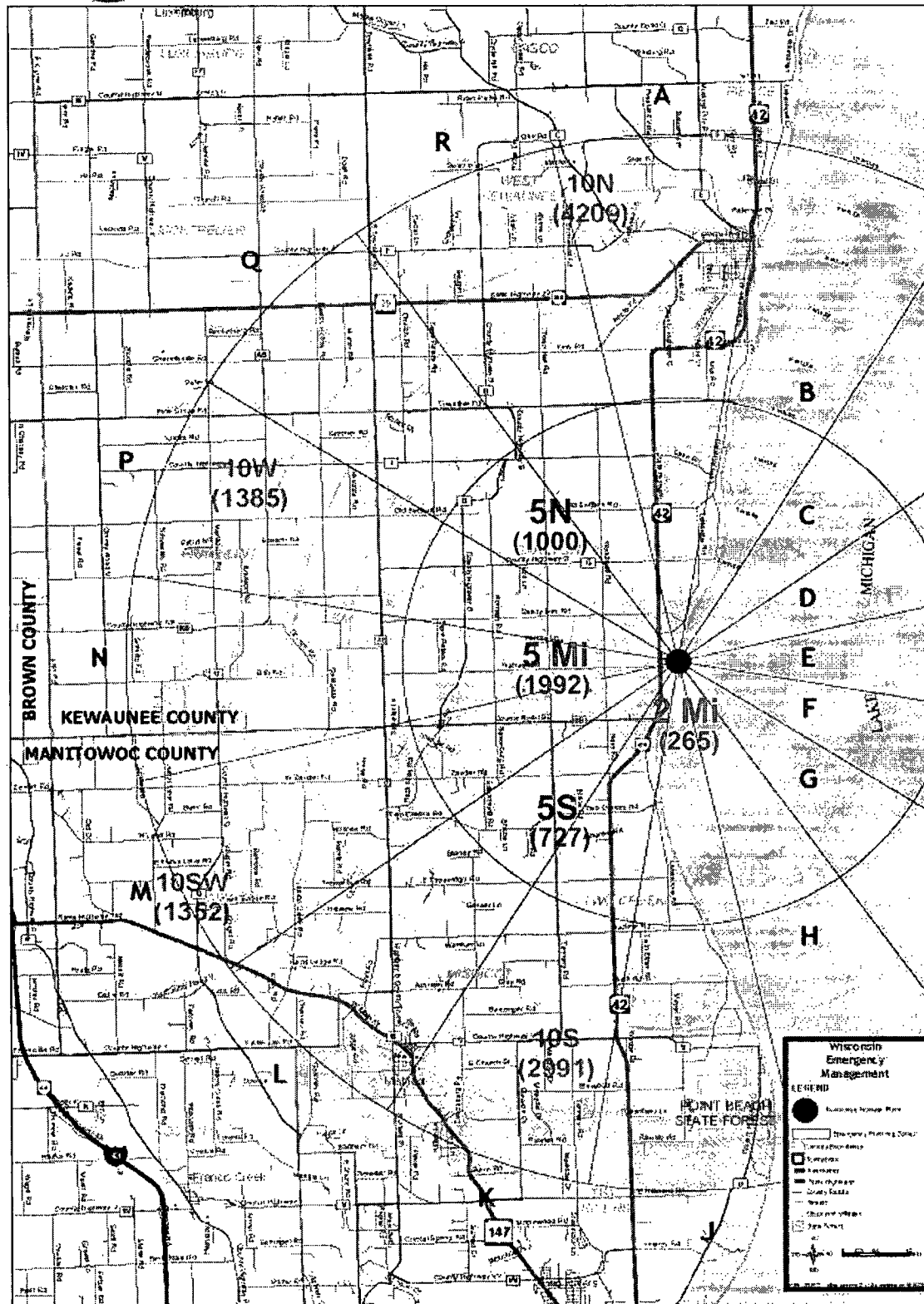
# KPS SITE MAP & EVACUATION ROUTES



## Kewaunee Power Station Site Boundary



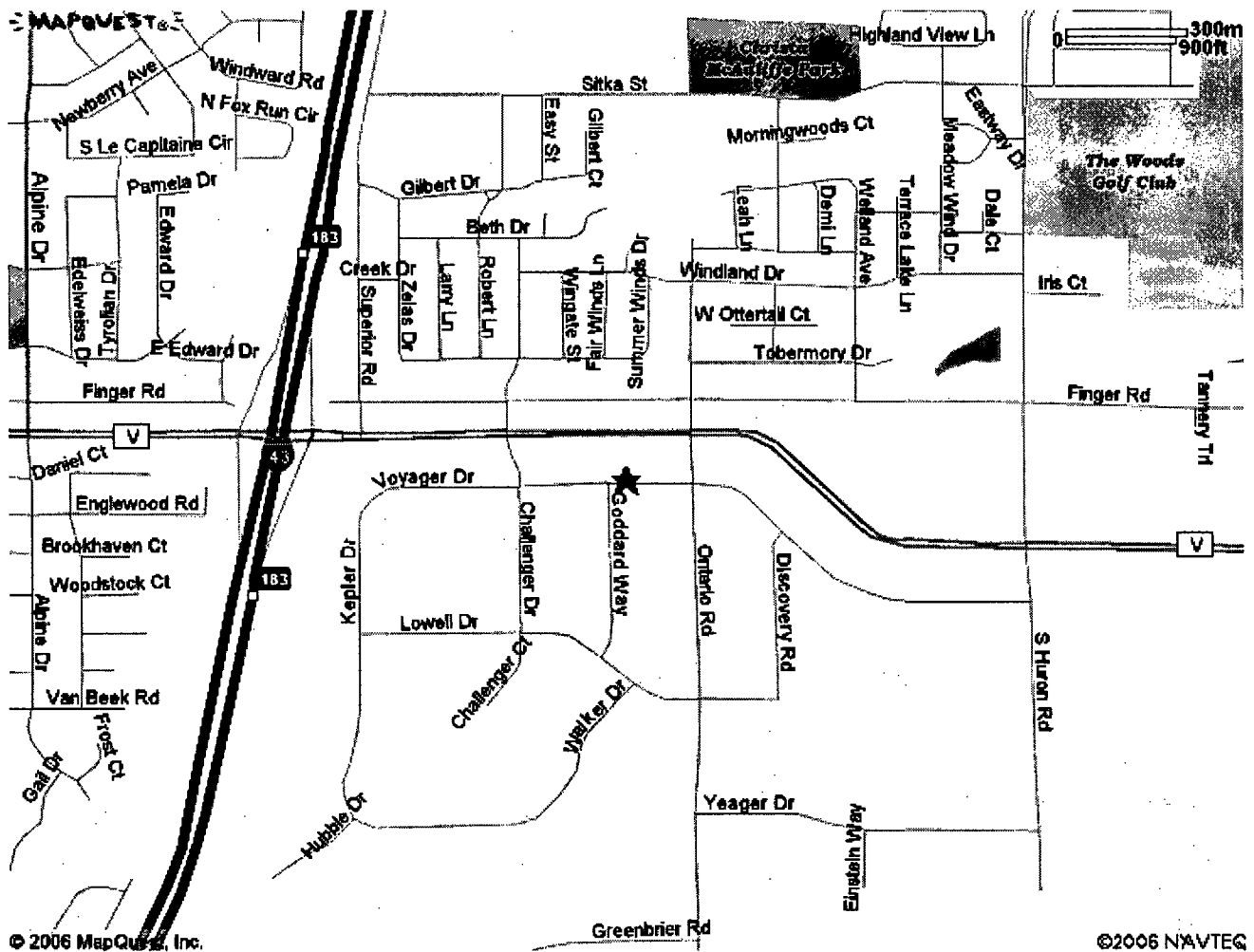
# POPULATION DISTRIBUTION BY GEOGRAPHICAL SUB-AREAS (with sectors)



**ENVIRONMENTAL MONITORING EPZ GRID MAP**  
(copies located in the facilities listed below)

1. Technical Support Center
2. Emergency Operations Facility
3. Site Boundary Facility
4. Radiation Protection Office/Radiological Analysis Facility

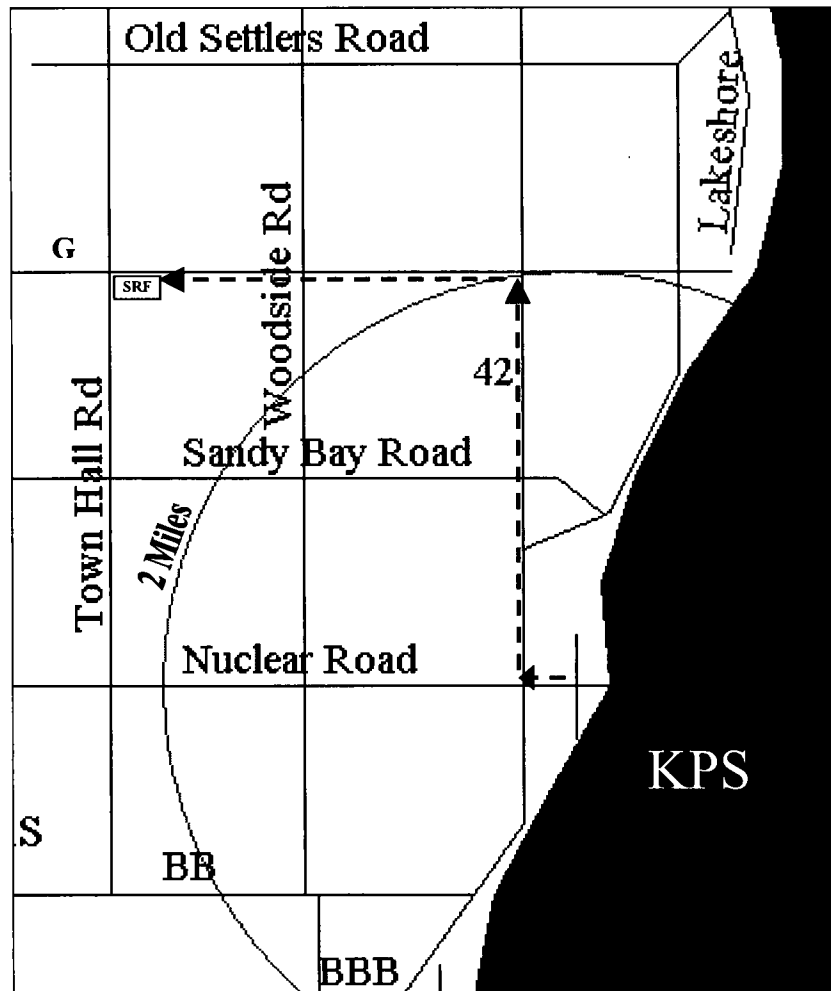
# **LOCATION OF EMERGENCY OPERATIONS FACILITY (EOF), JOINT INFORMATION CENTER (JIC), AND MEDIA BRIEFING CENTER (MBC) MAP**



From I-43 in Green Bay:

1. Take exit number 183 towards MASON ST (County Highway V)
2. Turn RIGHT onto E MASON STREET.
3. Turn RIGHT onto CHALLENGER DRIVE.
4. Turn LEFT onto VOYAGER DRIVE.
5. EOF/JIC/MBC is at 3060 Voyager Drive

The Site Relocation Facility (SRF) is located in the Carlton Township Hall. The optimum route to the SRF is to take Highway 42 approximately 1.6 miles north of KPS and turn left or West on County Road G for approximately 2 miles. The SRF is located on the southeast corner of the intersection of County G and Town Hall road.





## APPENDIX D

### Index of Letters of Agreement

TITLE	LOCATION
<b>I. FEDERAL</b>	
A. U.S. Nuclear Regulatory Commission	NRC Incident Response Plan, NUREG-0728
B. U.S. Department of Energy	Response in accordance with National Response Plan. Nuclear/Radiological Incident Annex
<b>II. STATE</b>	
A. Department of Military Affairs – Division of Emergency Management	Emergency Plan Files
1. The following agencies will respond as directed by the Department of Military Affairs: a. Department of Agriculture b. Department of Health and Family Services, Division of Health c. Department of Administration d. Department of Natural Resources, Division of Enforcement e. Department of Transportation, Division of Highways f. Department of Transportation, Division of Enforcement and Inspection, State Patrol	
B. University of Wisconsin – Hospital and Clinics	Emergency Plan Files
C. University of Wisconsin – Milwaukee	Emergency Plan Files
<b>III. COUNTY</b>	
A. Kewaunee County Emergency Government	Emergency Plan Files
B. Kewaunee County Sheriff's Department	Emergency Plan Files
C. Manitowoc County Emergency Management	Emergency Plan Files
D. Manitowoc County Sheriff's Department	Emergency Plan Files

TITLE	LOCATION
<b>IV. CITY/TOWN</b>	
A. Ambulance Service	
1. Kewaunee Ambulance Service	Emergency Plan Files
2. Mishicot Area Ambulance Service	Emergency Plan Files
3. Two Rivers Fire Department Ambulance	Emergency Plan Files
B. Fire Service	
1. City of Kewaunee Fire Department (24 month contract)	Emergency Plan Files
C. Facilities	
Carlton Township Hall	Emergency Plan Files
<b>V. PRIVATE ORGANIZATIONS</b>	
A. Institute of Nuclear Power Operations	Emergency Plan Files
B. Bartlett Nuclear, Inc.	Emergency Plan Files
C. Environmental, Inc. (Midwest Laboratory)	Emergency Plan Files
D. Aurora Medical Center (Two Rivers Community Hospital)	Emergency Plan Files
E. *Westinghouse Electric Corporation	Emergency Plan Files
F. Verizon (Telephone Service Provider)	Emergency Plan Files

\* Perpetual letter established

**APPENDIX E**  
**Radiological Emergency Response Plans**

1. STATE OF WISCONSIN EMERGENCY OPERATIONS PLAN (EOP)
2. KEWAUNEE COUNTY EMERGENCY OPERATIONS PLAN (EOP)
3. MANITOWOC COUNTY EMERGENCY OPERATIONS PLAN (EOP)

(Copies are located in the Technical Support Center, Emergency Operations Facility, and the Emergency Preparedness Department Files)

**APPENDIX F**  
**Emergency Equipment, Supplies and Reference Materials**  
**INDEX**

TECHNICAL SUPPORT CENTER .....	F-2
CONTROL ROOM .....	F-3
HEALTH PHYSICS .....	F-4
OPERATIONAL SUPPORT FACILITY .....	F-5
EMERGENCY OPERATIONS FACILITY .....	F-6
SITE BOUNDARY FACILITY .....	F-7
SITE RELOCATION FACILITY .....	F-8
SECURITY BUILDING .....	F-9

**See EPMP-10.01 for Inventory Requirements.**

## TECHNICAL SUPPORT CENTER

### ITEM

Emergency Plan

Emergency Plan Implementing Procedures

State of Wisconsin EOP

Kewaunee County EOP

Manitowoc County EOP

Updated Safety Analysis Report

Technical Specifications

KPS Integrated Plant Emergency Operating Procedures (IPEOPs)

Operating Procedures

Plant Drawings on Emergency Drive Computer Terminal

10-Mile EPZ, Sector/Grid Map

Potassium Iodide

X/Q Meteorological Overlays

Beta Air Monitor

Portable Air Sampler/Filters (Available in adjacent RAF)

Portable Radiation Monitor (Available in adjacent RAF)

Computer Terminal with Access to Plant Process Computer

Technical Requirements Manual

**See EPMP-10.01 for Inventory Procedure.**

## CONTROL ROOM

### ITEM

Emergency Plan

Emergency Plan Implementing Procedures

Potassium Iodide

Portable Radiation Monitor

10-Mile EPZ, Sector/Grid Map

**See RT-SAE-83 for Inventory Procedure.**

## HEALTH PHYSICS

### ITEM

#### Radiation Protection Office

Emergency Plan

Emergency Plan Implementing Procedures

High Band Portable Radios and Chargers

#### Radiological Analysis Facility

Emergency Plan

Emergency Plan Implementing Procedures

Radio Remote Console

High Band Portable Radios

10-Mile EPZ Sector/Grid Map

X/Q Meteorological Overlays

Self-contained Breathing Units

**See EPMP-10.01 for Inventory Procedure.**

## **OPERATIONAL SUPPORT FACILITY**

### **ITEM**

Emergency Plan Implementing Procedures

Portable Radiation Monitor (Available in adjacent RAF)

**See EPMP-10.01 for Inventory Procedure.**



## EMERGENCY OPERATIONS FACILITY

### ITEM

Emergency Plan

Emergency Plan Implementing Procedures

Technical Specifications

Updated Safety Analysis Report

KPS Integrated Plant Emergency Operating Procedures (IPEOPs)

Plant Drawings on Emergency Drive Computer Terminal

State of Wisconsin EOP

Kewaunee County EOP

Manitowoc County EOP

50-mile EPZ Ingestion Pathway Map

10-mile EPZ Sector/Grid Map

**See EPMP-10.01 for Inventory Procedure.**

## **SITE BOUNDARY FACILITY**

### **ITEM**

Emergency Plan

Emergency Plan Implementing Procedures

Protective Clothing

Dosimetry Equipment

Portable Radiation Monitor

Environmental Monitoring Team Kits

Communication Equipment

**See EPMP-10.01 for Inventory Procedure.**

## **SITE RELOCATION FACILITY**

### **ITEM**

Emergency Plan

Emergency Plan Implementing Procedures

Communication Equipment

**See EPMP-10.01 for Inventory Procedure.**

## **SECURITY BUILDING**

### **ITEM**

Emergency Plan

Emergency Plan Implementing Procedures

**See Security Procedure, SIP 30.02**

## APPENDIX G

### List of EIPs and Cross-references to the Emergency Plan

Emergency Plan Implementing Procedures		Emergency Plan Section
<b><u>Administrative Procedures</u></b>		
EPIP-AD-01	Personnel Response to the Plant Emergency	6.4.1
EPIP-AD-02	Emergency Class Determination	4.1, 4.2
EPIP-AD-05	Emergency Response Organization Shift Relief Guideline	
EPIP-AD-07	Emergency Notifications	4.1.1, 4.1.2, 4.1.3, 4.1.4, 5.2.2.2, 6.1, 6.8
EPIP-AD-11	Emergency Radiation Controls	6.5.1, 6.5.2, 6.7
EPIP-AD-15	Recovery Planning and Termination	9.0
EPIP-AD-18	Potassium Iodide Distribution	6.5.3
EPIP-AD-19	Determining Protective Action Guidelines	6.4.2
EPIP-AD-20	Response to a Security Threat	6.1
<b><u>Control Room Procedures</u></b>		
EPIP-CR-01	Control Room Emergency Response	4.1.1, 4.1.2, 4.1.3, 4.1.4, 5.1, 5.2, 6.1, 6.4, 7.1.1
<b><u>Environmental Procedures</u></b>		
EPIP-ENV-02	Environmental Monitoring Team Activation	4.1.2, 5.2.2, 6.2.4, 7.1.7, 7.3.2.2
EP-KW-ENV-001	Guideline for using PCMidas	6.2.3, 7.3.2(2)
EPIP-ENV-04A	Portable Survey Instrument Use	6.2.4, 7.3.2.(2)
EPIP-ENV-04B	Air Sampling and Analysis	6.2.4, 7.3.2.(2)
EPIP-ENV-04C	Ground Deposition Sampling and Analysis	6.2.4, 7.3.2.(2)

**Emergency Plan Implementing Procedures****Emergency Plan Section**

EPIP-ENV-04D      Plume Tracking for Environmental  
Monitoring Teams

6.2.4, 7.3.2.(2)

**Emergency Operations Facility Procedures**

EPIP-EOF-04      Emergency Operations Facility Organization  
and Responsibilities

**Operational Support Facility Procedures**

EPIP-OSF-02      Operational Support Facility Operations

4.1.2, 4.1.3, 4.1.4, 5.2.2, |  
7.1.4

EPIP-OSF-03      Work Orders During an Emergency

5.2.2.4, 6.3

EPIP-OSF-04      Search and Rescue

6.4.1

**Radiation Emergency Team Procedures**

EPIP-RET-02      In-Plant Radiation Emergency Team

4.1, 5.2.2, 6.2.1, 6.6.1,  
7.1.3

EPIP-RET-02B      Gaseous Effluent Release Path, Radioactivity,  
and Release Rate Determination

6.2.2, 6.2.3

EPIP-RET-02D      Emergency Radiation Entry Controls and  
Implementation

6.6.1, 6.7.1, 6.7.2

EPIP-RET-03      Chemistry Emergency Team

5.2.2, 6.2.2

EPIP-RET-03A      Liquid Effluent Release Paths

6.2.2

EPIP-RET-03C      Post Accident Operation of the High  
Radiation Sample Room

7.3.1

EPIP-RET-03D      Containment Air Sampling Analysis Using  
CASP

7.3.1

EPIP-RET-05      Site Boundary Dose Rates During Controlled  
Plant Cooldown

6.2.3, 7.3.2

**Emergency Plan Implementing Procedures****Emergency Plan Section****Security Procedures**

EPIP-SEC-02	Security Force Response to Emergencies	5.2.2
EPIP-SEC-03	Personnel Assembly and Accountability	5.2.2, 6.4.1
EPIP-SEC-04	Security Force Actions for Dosimetry Issue	5.2.2, 6.7.1
EPIP-SEC-05	Personnel Evacuation	6.4.1

**Technical Support Center Procedures**

EPIP-TSC-01	Technical Support Center Organization and Responsibilities	4.1, 5.2, 6.2, 6.4, 7.1.2, Appendix A
EPIP-TSC-04	Emergency Modifications	6.3
EPIP-TSC-07	RV Head Venting Time Calculation	7.3.1
EPIP-TSC-08A	Calculations for Steam Release from Steam Generators	7.3.1
EPIP-TSC-09A	Core Damage Assessment	7.3.1

**Appendices**

A.	Communications	7.2
B.	Forms	5.2, 6.1, 6.2, 7.1, 7.2, 8.3

<b>Nuclear Emergency Public Information Plan and Implementing Procedures</b>	<b>Emergency Plan Section</b>
--	-------------------------------

NEPIPF-01.01-01	Joint Information Center (JIC) Manager Checklist	5.2.3.2
NEPIPF-01.01-03	Plant Spokesperson Checklist	5.2.3.2

<b>Emergency Plan Maintenance Procedures</b>	<b>Emergency Plan Section</b>
--	-------------------------------

EPMP-01.01	ERO Qualification and Assignment Tracking	8.2.1
EPMP-01.05	Emergency Preparedness Group Organization	8.1
EPMP-01.08	Emergency Preparedness Staff Training and Qualification Program	8.2
EPMP-02.02	Emergency Preparedness Routing Commitments	8.3.2
EPMP-02.06	ERO Augmentation Drills	8.2.2
EP-AA-102	Revision and Control of Emergency Plan, Emergency Action Levels (Technical Basis and Matrix), and Reference Manual	8.3
EPMP-05.02	Procedure Review	8.3
EPMP-05.03	Telephone Number Quarterly Review	8.3.1
EP-AA-400	Drill and Exercise Program	8.2.2
EPMP-09.02	Emergency Communications System Verification	8.2.2.2
EPMP-09.03	Alert and Notification Siren System Testing and Maintenance	6.8.3
EPMP-09.06	Review and Maintenance of Emergency Information to the Media and Public	8.5
EPMP-10.01	Emergency Equipment Inventory	7.0, 8.4, Appendix F



## **APPENDIX H**

### **Evacuation Time Estimates**

#### **I. General**

The evacuation time estimates for the Kewaunee Power Station were prepared based on current Nuclear Regulatory Commission Guidance. These estimates were prepared with assistance from the Kewaunee Sheriff's Department, the Manitowoc County Sheriff and their respective Emergency Management Directors.

The enclosed tables and maps include the estimated population involved, major evacuation routes and estimated times for evacuation.

The "Evacuation Time Estimate Study for the Kewaunee Power Station Emergency Planning Zone", prepared by TOMCOD Inc., (ETE) contains details values and on methodologies used in calculating values. The ETE is considered an addendum to this Emergency Plan maintained under a separate cover. The ETE is updated approximately every 10 years as census data is updated.

#### **II. Responsibilities**

The Governor, under a State of Emergency, would be responsible for issuing the evacuation order through Wisconsin Emergency Management. If circumstances warrant, due to rapid and substantial degradation of the level of safety at the plant, immediate evacuation may be requested by plant authorities to the County Sheriff, who may issue an evacuation order. It would be the responsibility of the County Executive and the County Emergency Management Office to coordinate all facets of the evacuation, utilizing all county, state and federal agencies, as necessary.

The Kewaunee and Manitowoc County Emergency Management Directors will coordinate evacuation efforts such that the most effective evacuation plan is implemented using the combined resources of the two counties.

#### **III. Concept of Operations**

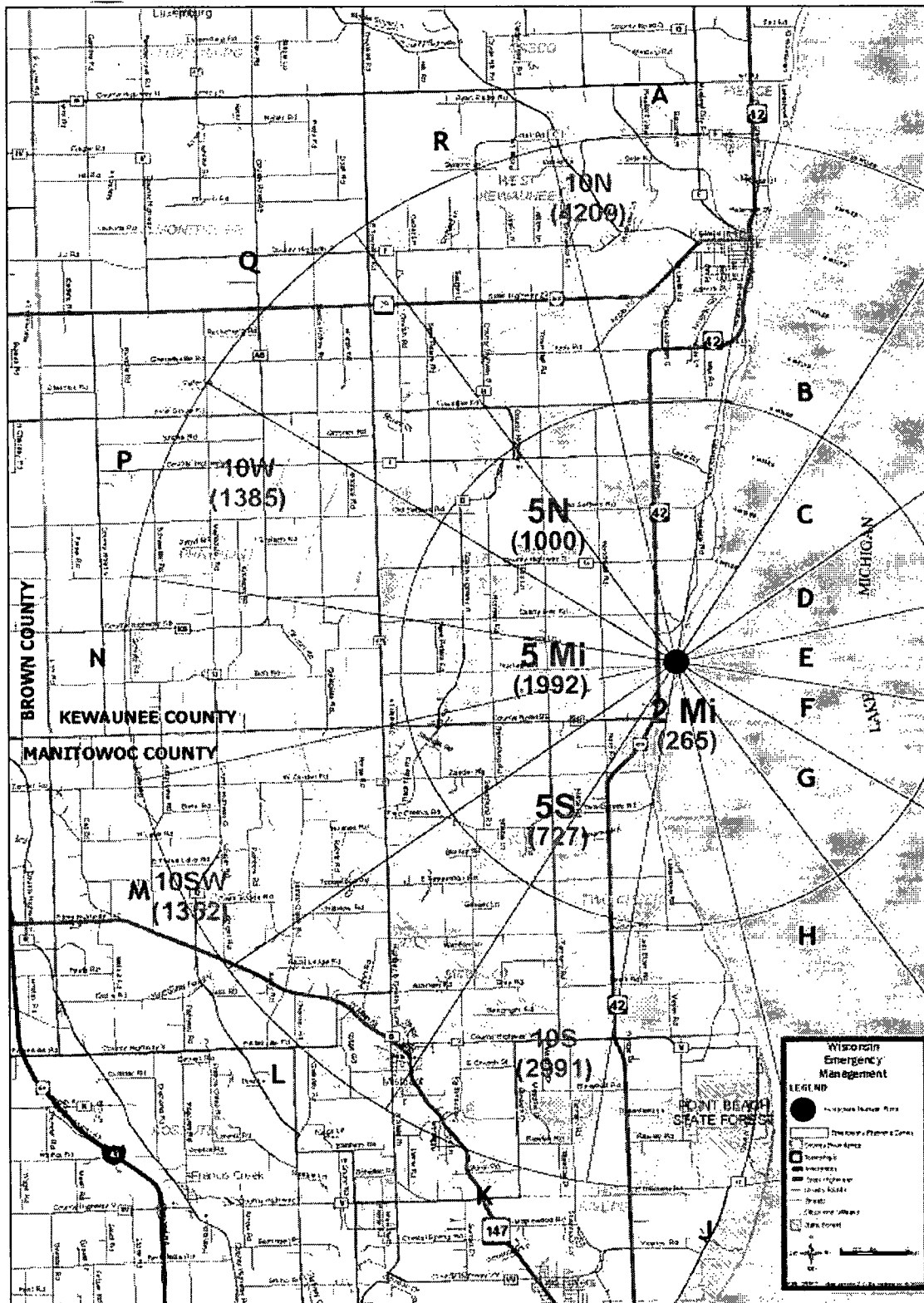
For specific details on how the evacuation operation would be carried out, please refer to the respective county Emergency Operations Plan, under "Evacuation."

#### **IV. References**

Population distribution data was obtained from the following resources:

1. Evacuation Time Estimate Study (ETE) for the Kewaunee Power Station Emergency Planning Zone, Rev 0, prepared by TOMCOD, Inc,

### Sub-areas with Population Distribution



# EVACUATION TABLE KPS/EPZ

Table based on combination of evacuation subareas

	Evacuation Time Estimates for Given Scenario (in minutes)							
Subarea	1	2	3	4	5	6	7	8
2 Mile	50	60	60	70	60	60	50	60
5 Mile	70	80	70	80	70	80	70	80
5 Mile, and 10N	100	110	100	110	130	140	120	130
5 Mile, 10N & 10W	120	130	130	140	160	180	110	130
5 Mile, 10N, 10W & 10SW	130	130	130	150	160	180	130	150
5 Mile, 10W & 10SW	90	110	90	100	120	130	110	120
5 Mile, 10W, 10SW & 10S	140	140	130	150	160	160	140	150
5 Mile, 10SW & 10S	140	140	130	150	150	170	130	150
5 Mile, & 10S	90	110	90	100	130	140	120	130
Entire 10 Mile EPZ	160	170	150	150	180	190	150	170

## Scenarios:

1. Summer, Weekend, Midday, Fair Weather
2. Summer, Weekend, Midday, Poor Weather
3. Summer, Weekend, Evening, Fair Weather
4. Summer, Weekend, Evening, Poor Weather
5. Summer, Weekday, Midday, Fair Weather
6. Summer, Weekday, Midday, Poor Weather
7. Summer, Weekday, Evening, Fair Weather
8. Summer, Weekday, Evening, Poor Weather

# EVACUATION TABLE KPS/EPZ

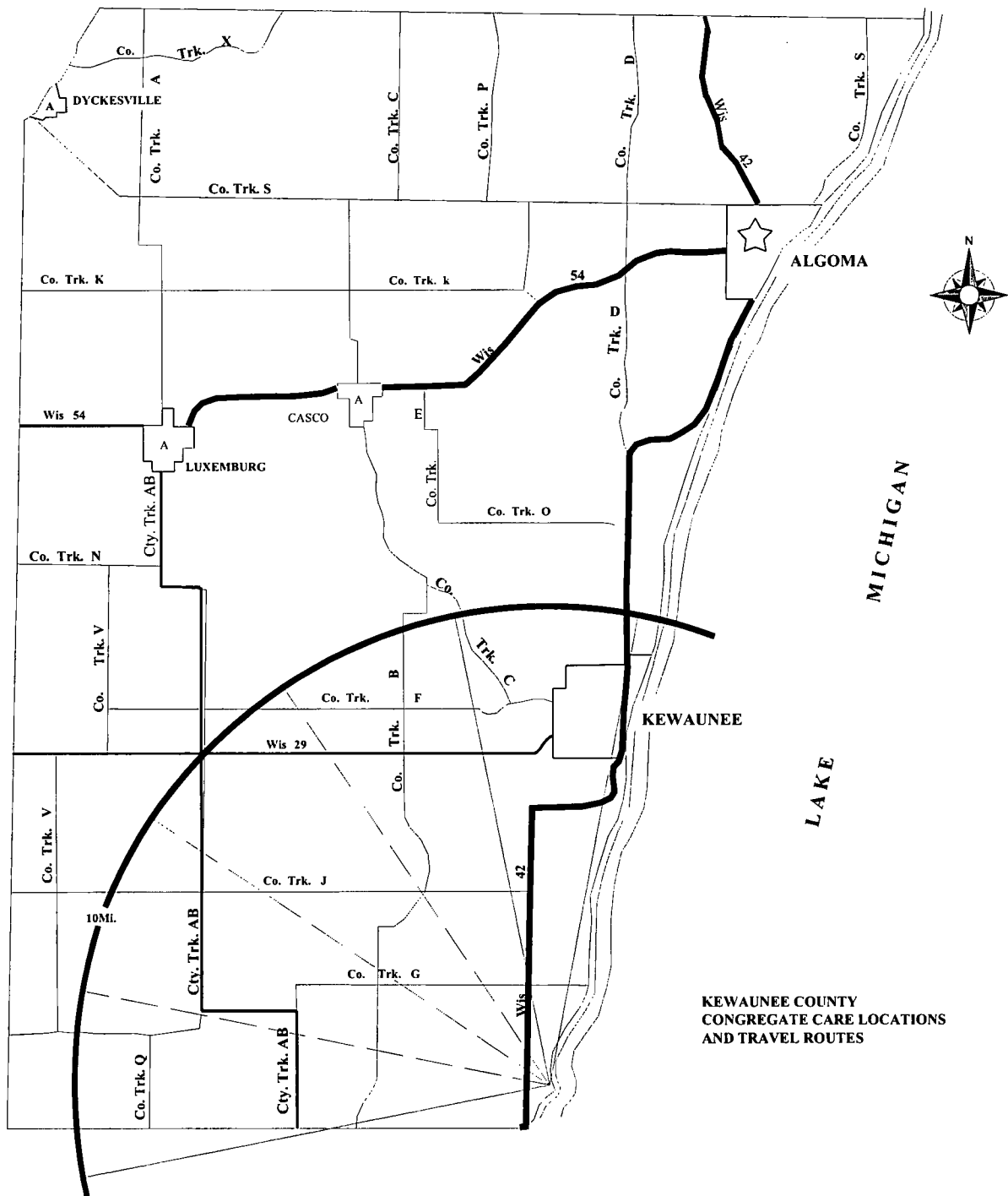
Table based on combination of evacuation subareas

	Evacuation Time Estimates for Given Scenario (in minutes)							
Subarea	9	10	11	12	13	14	15	16
2 Mile	60	70	60	80	70	80	70	80
5 Mile	70	80	70	90	70	100	70	90
5 Mile, and 10N	90	110	100	110	130	140	120	150
5 Mile, 10N & 10W	100	130	110	130	140	150	120	160
5 Mile, 10N, 10W & 10SW	140	140	130	150	160	180	140	180
5 Mile, 10W & 10SW	90	110	100	110	120	150	110	130
5 Mile, 10W, 10SW & 10S	140	140	130	150	160	160	140	170
5 Mile, 10SW & 10S	140	140	130	150	150	170	130	170
5 Mile, & 10S	90	110	90	100	130	140	130	150
Entire 10 Mile EPZ	170	190	180	200	220	280	190	270

**Scenarios:**

- 9. Winter, Weekend, Midday, Fair Weather
- 10. Winter, Weekend, Midday, Poor Weather
- 11. Winter, Weekend, Evening, Fair Weather
- 12. Winter, Weekend, Evening, Poor Weather
- 13. Winter, Weekday, Midday, Fair Weather
- 14. Winter, Weekday, Midday, Poor Weather
- 15. Winter, Weekday, Evening, Fair Weather
- 16. Winter, Weekday, Evening, Poor Weather

# KEWAUNEE COUNTY EVACUATION MAP



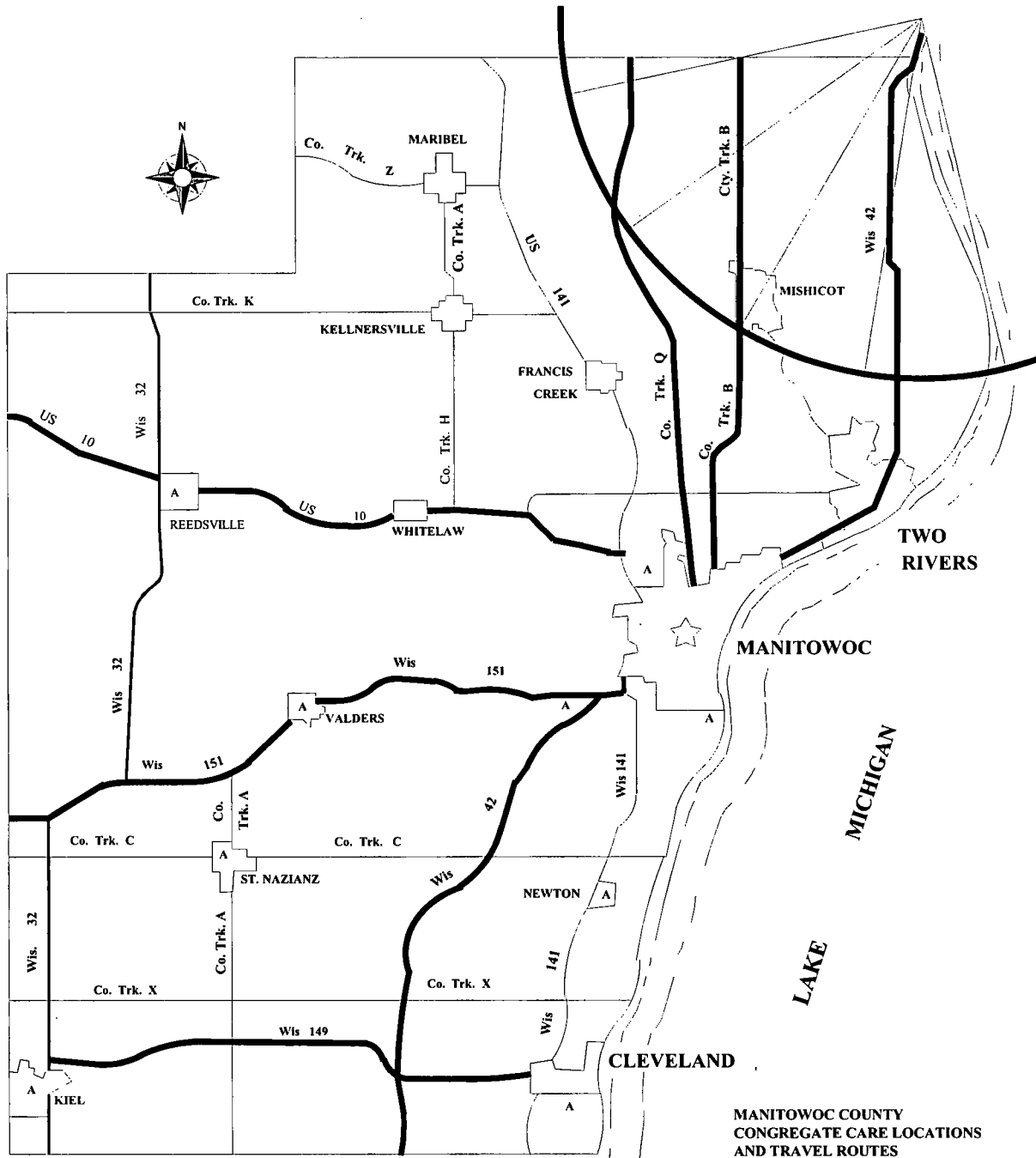
THIS IS A SIMPLIFIED MAP OF KEWAUNEE COUNTY SHOWING THE TRAVEL ROUTES WITHIN AND AWAY FROM THE 10 MILE "RISK" AREA SURROUNDING KEWAUNEE NUCLEAR POWER PLANT. COUNTY AND STATE HIGHWAYS MAY BE USED TO TRAVEL FROM THE "RISK" AREA TO CONGREGATE CARE FACILITIES IN ALGOMA, CASCO, LUXEMBURG AND DYCKESVILLE. THE PUBLIC AND NON-PUBLIC SCHOOLS OF KEWAUNEE COUNTY WILL BE UTILIZED AS CONGREGATE CARE FACILITIES. THEY HAVE ADEQUATE EMERGENCY LIVING CAPABILITY TO ACCOMMODATE ALL OF THE "RISK" AREA.

FOR DETAILS SEE KEWAUNEE COUNTY EMERGENCY OPERATIONS PLAN.

# MANITOWOC COUNTY EVACUATION MAP

EP-FIG-033.vsd

Rev. 09/30/02



THIS IS A SIMPLIFIED MAP OF MANITOWOC COUNTY SHOWING TRAVEL ROUTES WITHIN AND AWAY FROM THE 10 MILE "RISK" AREA SURROUNDING KEWAUNEE NUCLEAR POWER 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 OF MANITOWOC COUNTY WILL BE UTILIZED AS CONGREGATE CARE FACILITIES. THEY HAVE ADEQUATE EMERGENCY LIVING CAPABILITY TO ACCOMMODATE ALL OF THE "RISK" AREA. FOR DETAILS SEE MANITOWOC COUNTY EMERGENCY OPERATIONS PLAN.

## APPENDIX I

### Cross-Reference Between NUREG 0654 and the Emergency Plan

The following is a cross-reference between NUREG 0654/FEMA-REP-1, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants" published in November 1980 and this Emergency Plan. In many cases, the material related to a specific criteria element may appear in more than one section of the plan. Careful attention to this cross-reference and the index will facilitate the reading of this plan.

<b><u>NUREG 0654 CRITERIA ELEMENT</u></b>	<b><u>EMERGENCY PLAN SECTION</u></b>
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A.1c	Figure 2-1
A.1d	5.2.1
A.1e	5.1, 5.1.1
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A.4	5.2, Appendix A-4
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B.3	5.2.1,
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B.6	5.2.3, 5.3.1, 5.3.2, Figure 2-1
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B.8	5.3.1
B.9	5.3.1, 6.7.3, 6.7.4, Appendix D
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C.4	2.2.2, 2.2.3, 2.2.4, 5.3.1, 5.3.2, 5.3.3, Appendix D
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H.5c	7.3.1
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6.4.1 (4)  
6.4.1 (4)  
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