ATTACHMENT 3

CONSUMERS ENERGY COMPANY
BIG ROCK POINT PLANT
DOCKET 50-155

REVISED DEFUELED EMERGENCY PLAN

Big Rock Point
Defueled Emergency Plan

Table of Contents

Section 1.0	Introduction	Pg 2-3
Section 2.0	Definitions	Pg 4-7
Section 3.0	Summary of Defueled Emergency Plan	Pg 8-9
Section 4.0	Description of Site Area	Pg 10-12
Section 5.0	Emergency Conditions	Pg 13-15
Section 6.0	Emergency Facilities and Equipment	Pg 16-18
Section 7.0	Communications	Pg 19
Section 8.0	Organization	Pg 20-22
Section 9.0	Emergency Response	Pg 23-24
Section 10.0	Radiological Assessment	Pg 25-30
Section 11.0	Emergency Notification and Public Information	Pg 31
Section 12.0	Maintaining Emergency Preparedness	Pg 32-35

Figures and Tables

Figure 4.1	Industrial Area Location	Pg 11
Table 5.1	Emergency Action Levels	Pg 15
Figure 8.1	Augmented Response Organization	Pg 22
Table 10.1	Emergency Exposure Criteria	Pg 28
Table 10.2	Considerations for Emergency Exposure Limits	Pg 29
Table 10.3	Emergency In-Plant Protective Action Criteria	Pg 30
Table 12.1	Emergency Response Training for Off-Site Groups	Pg 33

DEFUELED EMERGENCY PLAN FOR BIG ROCK POINT

1.0 INTRODUCTION

This document describes the Big Rock Point plans for responding to emergencies that may arise at the plant while in a permanently shut down condition. This Plan will supersede the operating plant's emergency plan at and beyond 93 days post-shutdown at zero power with the reactor defueled. At this time, fuel (which presents the largest source term of radioactive material at the plant site) has decayed to a point which precludes any accident consequences requiring protection of the public (reference Big Rock Point Engineering Analysis, EA-BRPDP-CH5-3, Rev 2, "Decommissioning Plan - Time to Raise SFP Temp 65F").

Under defueled conditions, the plant is prohibited from moving fuel back into the reactor vessel. An analysis of the possible design basis events and consequences is presented in Chapter 5 of the Big Rock Point Decommissioning Plan submitted to NRC on February 27, 1995.[1]

This plan acknowledges the reduced likelihood of a radiological emergency in the plant's permanently shut down and defueled condition as well as the reduced accident consequences. The primary purpose of this plan is to outline the actions necessary to safeguard plant personnel and prevent damage to property in the event of an emergency involving any inadvertent releases of radioactive material.

Table 5.1 provides accident classification guidelines and includes criteria for potential fuel pool accidents as well as those involving dry fuel storage at the independent spent fuel storage installation (ISFSI), either during dry cask loading, during transport to the onsite ISFSI or while at the ISFSI. Such a dry fuel accident would have the possibility of occurring only upon implementation of the dry fuel storage option. Likewise, accidents involving fuel in the spent fuel pool have potential for occurring only as long as the spent fuel pool continues to be used for this purpose.

It is intended that this Emergency Plan be all inclusive, and that it not be continuously revised from one phase of decommissioning to another. Rather, the Emergency Implementing Procedures will be modified over time as necessary to reflect current facility status, provided such changes remain within the overall scope of this plan and will not lessen its effectiveness.

---

1. Letter, Robert A. Fenech, Consumers Power Company to Document Control Desk, NRC, February 27, 1995.

The objectives of the Big Rock Point Plant Defueled Emergency Plan, with its Implementing Procedures, are to provide:

- Guidelines to define potential types of emergencies
- Methods for responding to an emergency while the plant is in a permanently shut down and defueled condition
- Descriptions of facilities and equipment used to mitigate accident consequences
- Communications to support emergency response activities
- An organization to manage emergency response activities
- Methods for maintaining emergency preparedness

2.0 DEFINITIONS

Accountability - The process of identifying whether any onsite personnel are missing, and to determine who is on site to assist with emergency response.

Alert - The emergency classification level of an event which indicates an actual or potential substantial degradation in the level of safety to plant personnel or to the safe containment of fuel.

Assembly Areas - Specific locations designated for the assembly and accountability of personnel.

Assessment Actions - Measures taken to define the emergency situation and provide a basis for decisions on specific responses.

Certified Fuel Handler (CFH) - Individual who is trained per the Station's Administrative procedures to respond to events involving fuel stored in the spent fuel pool.

Control Operator - Individual who is responsible for the plant's operation activities when a Shift Supervisor is not on site. This individual is not NRC licensed but will be qualified as a Certified Fuel Handler.

Corrective Actions - Emergency measures taken to mitigate or terminate an emergency situation.

DAC - Derived air concentration.

Defueled Emergency Implementing Procedures - The procedures implemented to direct response to an emergency situation at the plant while in a permanently shutdown and defueled condition.

Drill - A supervised instruction period designed to develop and maintain skills in a particular operation.

EC - Liquid effluent concentration.

Emergency Actions - A collective term encompassing any or all of the assessment, corrective and protective actions taken during the course of an emergency.

Emergency Action Level - Plant-specific system or effluent parameter values characteristic of off-normal conditions which, if exceeded, will initiate emergency classification. See also Unusual Event and Alert classification definitions.

Emergency Response Organization (ERO) - The team of individuals assigned emergency response positions as defined in this plan.

Emergency Support Center - The on-site area which is activated during an emergency for the purpose of providing a location where emergency staff can assemble and logistic support can be coordinated.

Exercise - An event which tests the integrated capability and major portions of the basic elements existing within the emergency plan and emergency organization.

Independent Spent Fuel Storage Installation (ISFSI) - An onsite facility for storage of fuel in dry storage casks.

Industrial Area - The plant area within which provisions are established for responding to postulated emergencies. This area is within a chain link fence which is either locked or otherwise controlled. The Industrial Area is shown in Figure 4-1.

Nonessential Personnel - Any individuals present on the plant site during an emergency who are not required for emergency response activities.

Off-Site - Any area outside the owner controlled area site boundary.

On-Site - Any area inside the site boundary.

Owner-Controlled - The area between the Industrial Area and the site boundary.

Projected Dose - The dose which site personnel may potentially receive from an incident causing abnormally high dose rates or abnormal release of radioactive materials.

Protective Actions - Emergency response measures taken to prevent or minimize radiological exposure or industrial hazards to on-site individuals.

Protective Action Guides (PAG's) - Environmental Protection Agency (EPA) established guidelines for radiological dose rates or dose commitments to individuals in the general population who may be subject to protective actions should a large release of radioactive materials be imminent.

Radiological Assessor - The individual responsible for radiation protection, chemistry and dose assessment activities.

Security Threat Event - Any threat or actual condition that may compromise the effectiveness of security protection at the plant. These events are handled in accordance with the Big Rock Point Security Plan.

Shift Supervisor - Person in charge of plant operations activities. This individual is not NRC licensed but will be a qualified Certified Fuel Handler.

Site Emergency Director (SED) - The individual responsible for all emergency response functions defined by this plan.

Spent Fuel Pool - The area within the reactor building containment structure where spent fuel may be stored.

Technical Coordinator - The individual responsible for accident assessment and repair of plant equipment and systems.

Unusual Event - The emergency classification level that signifies events are in progress or have occurred which indicate a potential degradation of the level of safety at the plant.

3.0 SUMMARY OF DEFUELED EMERGENCY PLAN

This Emergency Plan describes the actions to be taken in response to an emergency condition at the Big Rock Point Plant while in a permanently shut down and defueled condition at and beyond 93 days post-shutdown. The plan addresses the following:

- Emergency classification
- Emergency facilities and equipment
- Communications during emergencies
- Assignments and responsibilities of the Emergency Response Organization
- Emergency response:
  - Corrective Actions
  - Protective Actions
  - Medical Response
  - Restoration of the plant
- Accident assessment
- Notifications
- Maintaining preparedness:
  - Training, drills and exercises
  - Maintenance of the plan and its implementing procedures

Emergencies at the Big Rock Point Plant may be classified as Unusual Event or Alert. If an emergency condition develops, the Shift Supervisor/Control Operator is responsible for classifying the event and assuming the role of the Site Emergency Director until relieved by a designated member of plant management.

The on-shift organization is responsible for performing initial response activities. Notification is made to the NRC, Michigan State Police, key plant personnel, and Consumers Energy.

The on-shift organization may be augmented by additional emergency response personnel at the discretion of the Site Emergency Director. Conditions are assessed and corrective actions are implemented to restore the facility to a stable condition. If necessary, protective actions, including accountability and on-site evacuation of non-essential personnel and other actions such as activation of the Emergency Support Center (ESC), or obtaining support from external (contract or non-plant corporate) entities, will be implemented at the discretion of the Site Emergency Director.

Communications and other equipment are available to support the response effort.

4.0 SITE AREA

4.1 THE SITE

The Big Rock Point Plant is located on the northeast shore of Lake Michigan in Charlevoix County in the northern part of Michigan's Lower Peninsula. The site is approximately 60 miles northeast of Traverse City, Michigan and 225 miles northwest of Detroit. The closest population centers are the cities of Charlevoix, 3.5 miles southwest, and Petoskey, 11 miles east of the plant site. The Big Rock Point Plant is owned by Consumers Energy. The plant's industrial area is approximately seven acres in area and is surrounded by approximately 563 acres of owner controlled area. US Route 31 bounds the owner controlled area to the east and southeast, and provides access to the plant site. Figure 4.1 illustrates the site configuration.

4.2 AREA CHARACTERISTICS AND LAND USE

The area immediately surrounding the site is wooded and gently sloping. There are no significant topographic features near the plant site. A small stream, Susan Creek, exists to the east of the site and drains into Lake Michigan east of the owner-controlled area boundary. There are no residences within one-half mile of the Industrial Area. A plastics manufacturer, employing approximately 130 people, is located just beyond Susan Creek, approximately 0.6 mile from the Big Rock Point Industrial Area.

Temperatures at the plant site are moderated by the lakeshore location, but winds are somewhat higher from the north through southwest lakeward directions than at inland sites. Soils are rocky and highly compacted as a result of geologically recent glaciation. Consequently, farming is not a major activity in the surrounding area.

The Michigan counties in the area of the site are generally rural to suburban. The area is highly tourist-oriented, making seasonal population fluctuations in the vicinity of the site relatively large. Peak seasonal visitation occurs in the summer months (June through August), but additional influx occurs during the winter sports season (November into March).

US Route 31 provides direct highway access to the plant via the site access road which meets the highway one-half mile ESE from the plant location. The access road is a private road which is maintained by, and under the control of Big Rock Point Plant. In emergency situations, the access road may be closed or otherwise controlled at the discretion of the Site Emergency Director.

4.3 INDUSTRIAL AREA

In the permanently shutdown and defueled condition, at or beyond 93 days post-shutdown for which this plan is implemented, potential exposures of the offsite public do not exceed EPA Protective Action Guides.

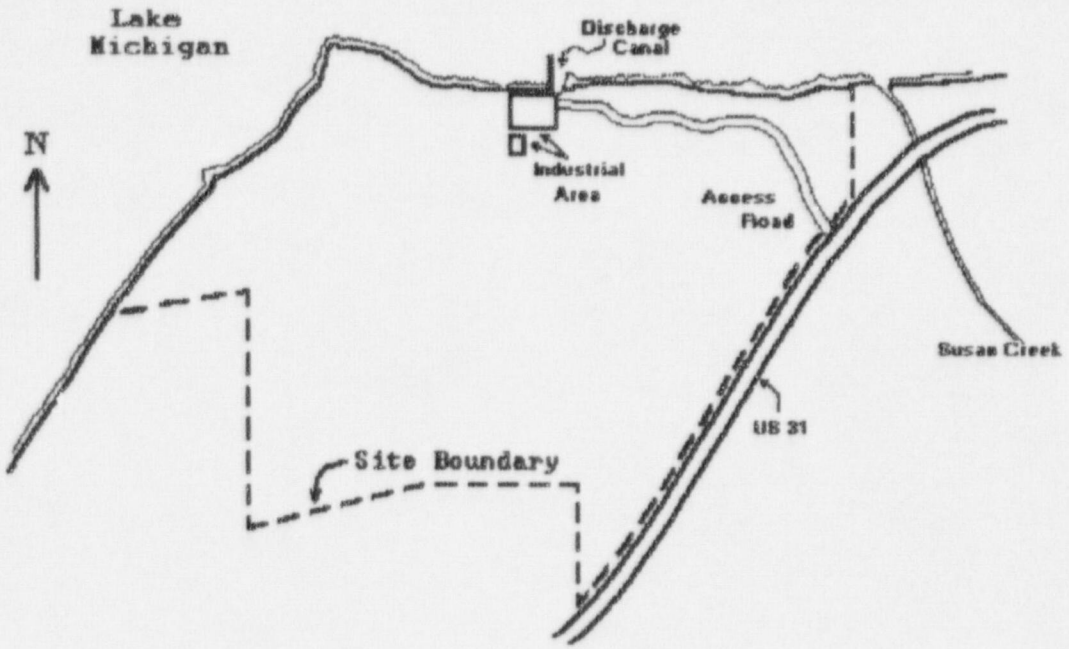
The Industrial Area, see Figure 4.1, is an access controlled area within which radiological exposure due to a radiological emergency could potentially be of concern, but beyond which a design basis accident could not lead to the release of radioactive materials in quantities which would exceed the Environmental Protection Agency (EPA) Protective Action Guides (PAGs). The Radwaste Building is included in the Industrial Area.

Within the Industrial Area, implementation of protective actions for onsite personnel may be necessary, and it is primarily for the protection of these personnel that this Plan is intended.

4.4 OWNER CONTROLLED AREA

The Owner Controlled Area is the area from the Industrial Area to the site boundary.

Figure 4.1 - Industrial Area Location



Industrial Area Location within Owner-Controlled
Property Boundary at Big Rock Point

5.0 EMERGENCY CONDITIONS

This Plan provides for an emergency classification system based on NUREG-0654/FEMA REP 1, Revision 1, Appendix 1, "Emergency Action Level Guidelines for Nuclear Power Plants," NUMARC/NESP-007, Revision 2, "Methodology for Development of Emergency Action Levels," and the radiological consequences from a fuel handling accident.

Emergency conditions at the plant could result in the declaration of an Unusual Event or Alert classification.

5.1 UNUSUAL EVENT CLASSIFICATION

The Unusual Event classification signifies that events are in progress or have occurred which indicate a potential degradation of the level of safety at the plant. Events within this classification generally characterize abnormal plant conditions which alone do not constitute a hazard to plant personnel.

The purpose of an Unusual Event classification is to bring the on-shift staff to a state of readiness and to provide a systematic means of handling information and decision making.

5.2 ALERT CLASSIFICATION

The Alert classification signifies that events are in progress or have occurred which indicate an actual or potential substantial degradation of the level of safety to plant personnel or to the safe containment of fuel. Any release of radioactive material is expected to be below the EPA Protective Action Guideline exposure limits for the public.

The purpose of an Alert is to provide emergency personnel staffing to assist the on-shift emergency organization in radiological or technical assessment and the implementation of corrective actions.

5.3 EMERGENCY ACTION LEVELS

Emergency classification is based on specific information presented in tabular listings of initiating events. The level of severity of an event, or action level, is used to determine which emergency classification is appropriate. The Site Emergency Director is responsible for ensuring the evaluation of the Emergency Action Levels and declaring an emergency if the classification criteria are met.

A list of initiating conditions and the classification levels associated with possible incidents at the Big Rock Point Plant are shown in Table 5-1.

Upon declaration of one of the two emergency classifications, the Site Emergency Director is directed to a Defueled Emergency Plan Implementing Procedure (DEPIP) which details the steps to be taken for that particular emergency classification.

TABLE 5.1 Emergency Action Levels

No	Initiator	Unusual Event	Alert
1	Radioactive Releases or Abnormal Radiation Levels	• Unplanned, uncontrolled effluent release to the environment greater than 20 DAC or 20 EC. • Damage to irradiated fuel with the release of radioactivity to the Containment. • The unintentional manipulation of irradiated components resulting in HIGH or VERY HIGH radiation levels per 10CFR20.1003.	Radiation levels indicate a severe degradation in the control of radioactive materials.
2	Spent Fuel Pool Events	• Uncontrolled drop in Spent Fuel Pool water level. • Loss of any system necessary to safely store fuel. • Damage to irradiated fuel with release of radioactivity to Containment.	Tech Spec temperature limits for the spent fuel pool are likely to be exceeded.
3	Dry Fuel Storage Event	• Accident in loading, transport to ISFSI or at ISFSI with potential for internal fuel damage, but with no release to the environment.	Loss of fission products to the environment
4	Security Compromise	• Communications with security has confirmed the seriousness or credibility of a security threat event.	Severe security threat event.
5	Environ-mental	• Events experienced or projected with potential for affecting fuel integrity or on-site personnel.	Severe environmental hazards to spent fuel or workers.
6	General Events	• Plant conditions that warrant increased awareness on the part of plant staff.	Conditions exist which in the judgement of the SED warrant declaration of an Alert.

6.0 EMERGENCY FACILITIES AND EQUIPMENT

This section describes emergency response facilities, equipment and services which are utilized to ensure a prompt and effective response to an emergency. Communications systems available within the facilities are outlined in Section 7.0 of this Plan.

6.1 EMERGENCY RESPONSE FACILITY

6.1.1 Emergency Support Center

The Emergency Support Center (ESC) is the location from which the emergency is managed. The Site Emergency Director directs all phases of the emergency response, including the notification of plant emergency response personnel, State of Michigan, the NRC, and the performance of corrective actions to mitigate the effects of the emergency. The ESC will serve as the plant communications center as well as assist Operations personnel in handling administrative items, provide technical evaluations and secure logistical support.

The ESC may be activated at the discretion of the Site Emergency Director. The ESC is deactivated by the Site Emergency Director when plant conditions have stabilized to the point that continuous emergency support is no longer required.

6.1.2 Assembly Areas

The plant first floor office area is the location where nonessential personnel, contractors and visitors will relocate and assemble in the event accountability is necessary. Personnel outside the industrial area will assemble in East Office Building Room 113 and the adjacent hallway.

6.1.3 Decontamination Facility

The plant maintains personnel showers for decontamination and survey instrumentation for personnel frisking.

6.1.4 First Aid and Medical

First Aid kits, stretchers and fire blankets are located by the containment personnel lock and in the maintenance building (confined spaces cabinet) and at the entrance to the security offices at the plant main gate. Additional first aid kits are present at the radiological control point, ESC and at each assembly area.

Agreements are in place with local hospitals to provide offsite emergency medical treatment and with local agencies to provides ambulance services. Letters of agreement are provided in the Defueled Emergency Plan Implementing Procedures.

6.2 INDUSTRIAL AREA EQUIPMENT

Dedicated emergency equipment includes respiratory devices, anti-contamination garments and radiation monitoring and sampling equipment. This equipment is described in detail and maintained operational in accordance with plant emergency procedures.

6.3 ASSESSMENT SYSTEMS

The assessment and monitoring equipment described in this section ensures that plant personnel may acquire necessary data and monitor trends for recognition of off normal conditions.

6.3.1 Radiological Monitoring Systems

The Area Radiation Monitoring System consists of detectors throughout the plant. The installed system may be supplemented with or replaced by portable units as may be required during the conduct of various decommissioning activities. These instruments may be used to assess accident conditions and to determine an area's habitability under accident conditions.

The effluent process monitoring system provides indication of gross radioactivity levels of all airborne and liquid effluents released from the plant via the liquid and gaseous radwaste systems and the plant ventilation systems.

6.3.2 Meteorological Monitoring

Meteorological data may be obtained from the National Weather Service (NWS) through the automated computer system of Weather Services International (WSI). Access to this system is by telephone or data transfer via the computer in the ESC.

6.3.3 Spent Fuel Pool Monitoring

Fuel pool water level indication is provided. In addition, the pool utilizes a tell-tale liner leak detection system which is checked for leakage on a periodic basis. Radiation levels, which would rise upon partial loss of water shielding, damage to fuel or withdrawal of any highly radioactive component from the pool, are monitored by containment building radiation monitors near the pool.

6.3.4 Fire Detection

Provision for firefighting and control are described in the Big Rock Point Fire Protection Plan.

7.0 COMMUNICATIONS

This section describes the communications systems available for effective command and control during a plant emergency.

7.1 PLANT PAGING SYSTEM

The plant paging system is located throughout the plant and is utilized as a paging and intercom system under normal and accident conditions. In an emergency this system is used (1) as the means of notifying onsite personnel of an emergency; (2) for provision of specific instructions for emergency response and (3) to provide updates of plant status as necessary.

7.2 PLANT TWO-WAY RADIO SYSTEM

The plant two-way radio system using handheld radios allows for communications among support teams involved in onsite emergency response activities. A plant base station allows radio communications beyond the range of the handheld radios.

7.3 TELEPHONES

An Auto-Dial telephone is present in the ESC for notifications to the Michigan State Police or to contact emergency agencies (hospital, ambulance, or fire department). An auto-dial feature also is available on the ESC computer for access to current and forecast weather information. Both intraplant and standard telephone circuits are present at the plant for use in emergencies. In the event of a telephone outage, a base radio is present at Security to contact the State Police. Power failure phones are provided to maintain telephone communication in the event of power loss.

7.4 NRC EMERGENCY NOTIFICATION SYSTEM (ENS)

In the event of an emergency, Big Rock Point will notify the NRC via dedicated phone lines to the NRC Headquarters Operations Center.

8.0 ORGANIZATION

This section of the Plan defines the Big Rock Point emergency response organization (ERO). Assignments and responsibilities of the ERO are addressed.

8.1 NORMAL PLANT ORGANIZATION

The Consumers Energy Senior Vice President, Nuclear, Fossil and Hydro Operations will be the corporate officer responsible for Big Rock Point nuclear safety. This individual may take any measures necessary to ensure acceptable performance in operating, maintaining and preparing the plant for decommissioning so that continued nuclear safety is ensured.

The onsite organization will be lead by the Site General Manager who reports directly to the Senior Vice President, Nuclear, Fossil and Hydro Operations. He is supported by individuals with responsibilities for Engineering, Business and Regulatory Administration, Plant Operations, Scheduling and Project Control, Radiation Protection and Environmental Services, Construction, and Purchasing and Stores. Minimum backshift coverage will consist of one Shift Supervisor/Control Operator, one individual qualified in radiological protection and one member of the Plant Security Force. The onsite Fire Brigade will be maintained in accordance with the Big Rock Point Fire Protection Plan.

8.2 EMERGENCY RESPONSE ORGANIZATION (ERO)

Emergency Response Organization positions are assigned to qualified plant personnel. Qualification of personnel will be in accordance with the training requirements described in Section 12.1.

8.2.1 On-Shift Response Organization

The ERO may be activated during normal or off-normal working hours. At all times, the Shift Supervisor/Control Operator acts as initial Site Emergency Director and performs initial response actions. The Site Emergency Director will augment additional plant staff at his discretion. The ERO with full augmentation is described by Figure 8.1.

The Site Emergency Director is responsible for implementing initial actions to bring the facility to a stable condition and to make initial notifications to NRC, State of Michigan and Consumers Energy Company representatives. The Site Emergency Director is also responsible for notification of key personnel as necessary for augmentation, fire, ambulance or other emergency responders as conditions may require. He also has the authority to coordinate emergency response activities with federal and state agencies.

Security is responsible for maintaining plant security in accordance with the Big Rock Point Security Plan. Security responds to threats to physical security, performs accountability, assists in the evacuation of on-site personnel and other duties as directed by the Site Emergency Director. Plant Security also provides Fire Brigade members and first aid support as incidents may require.

8.2.2 Augmented Response Organization

Additional personnel may be called in at the discretion of the Site Emergency Director to augment on-shift personnel.

The augmented emergency response organization (ERO) is activated in part or in its entirety depending on severity of the situation. This organization consists of the Radiological Assessor, Technical Coordinator, and a Security Officer, each of which are supported by other members of the normal plant staff, under the direction of the Site Emergency Director. Augmented personnel should report to the site within one hour of notification.

The Radiological Assessor is responsible for radiation protection, chemistry and dose assessment activities. The Radiological Assessor also advises the Site Emergency Director regarding on-site protective actions.

The Technical Coordinator is responsible for accident assessment and repair of plant equipment and systems. The Technical Coordinator directs the technical and operational evaluation of the incident and implements corrective actions necessary to recover from the accident conditions.

8.3 LOCAL SUPPORT

Arrangements have been made with local organizations to provide:

1) Ambulance service to transport radiologically contaminated injured personnel.

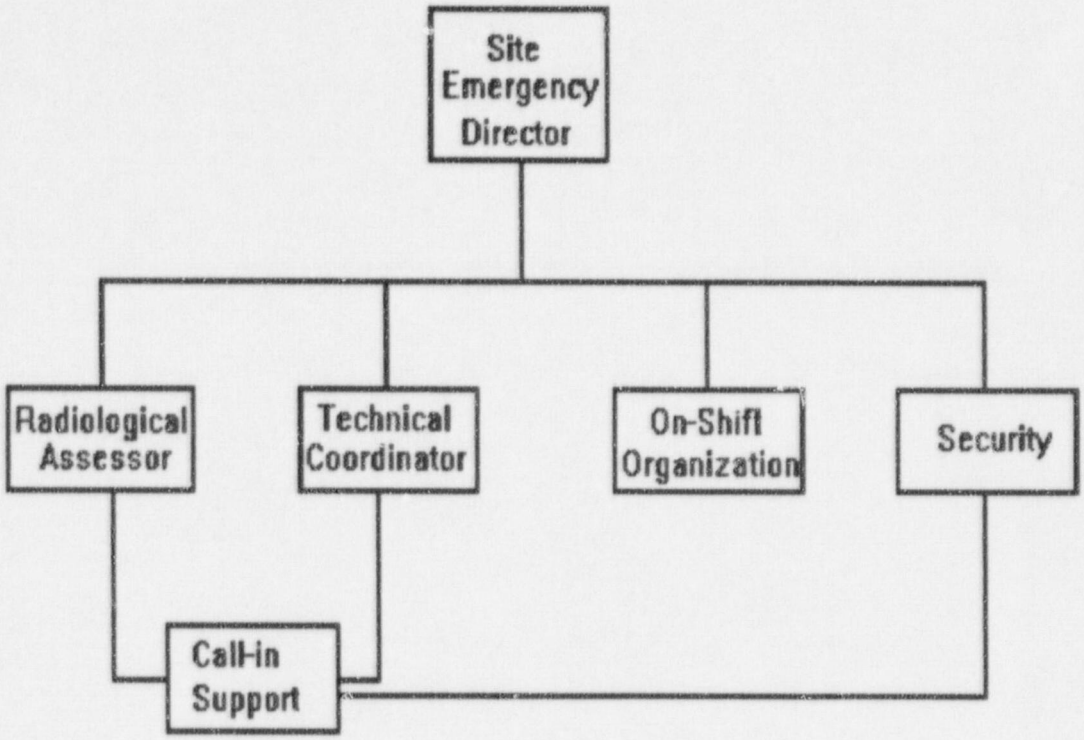
2) Hospital services for radioactively contaminated injured personnel.

3) Fire support services.

Letters of Agreement with appropriate off-site support organizations are listed in the Defueled Emergency Plan Implementing Procedures.

EMERGENCY ORGANIZATION

Figure 8.1 Augmented Response Organization



9.0 EMERGENCY RESPONSE

This section identifies the measures that would be taken for each class of emergency. These measures are described in the Defueled Emergency Plan Implementing Procedures (DEPIPs).

9.1 EMERGENCY CLASSIFICATION

Recognition and classification of the incident is the responsibility of the Shift Supervisor/Control Operator who at that time takes on the duties of Site Emergency Director (SED). Depending on the specific Emergency Action Level (EAL) reached, the SED declares an Unusual Event or Alert. Once the emergency classification is declared, the appropriate implementing procedures are utilized.

9.2 ACTIVATING THE EMERGENCY RESPONSE ORGANIZATION (ERO)

Conditions which may occur to cause declaration of an Unusual Event or Alert are defined in Section 5.0. Upon classification and declaration of an emergency, the Shift Supervisor/Control Operator assumes the position of Site Emergency Director and remains in charge of the ERO until such time as a qualified member of plant management relieves him of that position.

A given incident may not warrant activation of the entire ERO. Additional personnel may be mobilized at the discretion of the Site Emergency Director to augment the on-shift organization and assist in the implementation of corrective actions to mitigate the consequences of the event. Specific response actions for each classification are described in the following subsections.

9.2.1 Unusual Event Response

The following is a general summary of the actions taken in response to an Unusual Event:

1) Shift Supervisor/Control Operator classifies the event and assumes the title and duties of Site Emergency Director (SED) until relieved by another qualified plant staff member.

2) As conditions dictate, fire, ambulance or law enforcement agencies may be requested to respond prior to mandatory notifications.

3) Emergency classification is announced over plant paging system.

4) On-shift personnel respond as directed by the SED.

5) Key plant and corporate management are notified.

6) NRC is notified as soon as possible but within one hour of declaration.

7) State of Michigan is notified as soon as possible but within 30 minutes of declaration.

8) Corrective actions are implemented.

9) Public information is handled by the Public Affairs Director or an individual designated by the SED.

10) The SED will escalate or terminate the event as appropriate.

9.2.2 Alert Response

During an Alert, the actions identified in Section 9.2.1 are performed. Additional actions may be implemented at the discretion of the Site Emergency Director, depending upon characteristics of the incident. Examples of additional actions which could be implemented include:

1) Activation of the Emergency Support Center.

2) Assembly and accountability check of plant personnel, contractors and visitors.

3) Evacuation from the industrial area of nonessential plant personnel, contractors and visitors.

4) Performance of on-site radiological monitoring and assessments.

9.3 EVENT TERMINATION AND RECOVERY/RE-ENTRY

At such time as the plant has been restored to a stable and safe condition, the emergency classification condition may be terminated. The Site Emergency Director will terminate the event and provide notification to appropriate off-site authorities and plant staff personnel. Development and implementation of any on-site recovery/re-entry actions which may be necessary are the responsibility of the SED.

9.4 FIRST AID AND MEDICAL RESPONSE

First aid and medical supplies are available at the Big Rock Point Plant as described in Section 6.1.4. Specific plant personnel are trained in the use of this equipment. In the event of serious personnel injury requiring outside support, the Site Emergency Director is responsible for assuring that ambulance and hospital services are requested.

10.0 RADIOLOGICAL ASSESSMENT

Radiological assessment is initiated for those events which provide real or threatened radiological exposure of plant personnel or release of radioactivity to the environment. The systems and methods for monitoring and assessing the actual or potential consequences of a radiological emergency are described in this section.

10.1 ASSESSMENT INSTRUMENTATION

Accurate radiological assessment of an emergency is the key to appropriate radiological response. Fixed radiological monitoring instruments consist of area and process monitors located in key areas of the plant. Area Radiation Monitors (ARMs) measure the ambient radiation level in each monitored location and are used for personnel radiation protection purposes. The ARMs also serve to alert plant staff to potential hazards from radioactive material within the plant structure. Process Radiation Monitors (PRMs) measure radiation levels in effluent systems, including releases to the environment. The PRMs can detect and quantify unplanned airborne or liquid effluent releases. Meteorological sensors measure the wind speed and direction. Complete weather information, including atmospheric stability class and forecast data for Big Rock Point are available on demand via telephone or by autodial through the ESC computer. Plant instrumentation or their equivalent provided for radiological assessment includes:

- Effluent Monitor
- Liquid Radwaste Monitor
- Fuel Pool Area Monitors
- General Area Radiation Monitors

The above radiological assessment instrumentation will be removed when no longer needed. In addition, some may be replaced with portable instrumentation as appropriate.

10.2 ASSESSMENT METHODS

Radiological release assessments are performed using measured radiological and meteorological data. Dose assessment graphs are initially used by the Site Emergency Director or other trained emergency response personnel to determine the industrial area dose rate.

Additional assessments of potential radiation dose to plant personnel from direct radiation or potential exposure from various other sources will be performed as appropriate. Dose conversion factors from the EPA Manual of Protective Action Guides and Protective Actions for Nuclear Incidents (EPA 400) will be used where such calculations are required.

10.3 RADIOLOGICAL ENVIRONMENTAL MONITORING

Radiological surveys are performed by on-site personnel to confirm the magnitude of a release of radioactive material and/or dose rates due to direct radiation from the plant, as appropriate to the accident circumstances. Radiological monitoring personnel will be dispatched to perform industrial area surveys and other surveys as necessary. Monitoring personnel are briefed and equipped with radiation survey instruments, air sampling equipment, respiratory protection and/or protective clothing, as required.

Radiological monitoring personnel take direct radiation measurements and air samples as directed. Level and type of monitoring will depend on the severity and type of accident. The Radiological Assessor determines the level and type of monitoring required.

Environmental monitoring and sample collections, if determined to be warranted, are carried out under procedures utilized for the plant environmental monitoring program as specified in the Big Rock Point Offsite Dose Calculation Manual (ODCM).

10.4 RADIOLOGICAL EXPOSURE CONTROL

The Radiological Assessor is responsible for in-plant emergency radiological protection activities for plant staff and support personnel. Before arrival of the Radiological Assessor, such functions are the responsibility of the Site Emergency Director. Dose limits for individuals performing emergency functions are presented in Table 10.1. Every attempt will be made to keep personnel exposure As Low As is Reasonably Achievable (ALARA).

Dosimetry will be issued if necessary, depending upon characteristics of the emergency and assignments of personnel. Planned rescue or corrective actions which could cause an individual's dose to exceed 5 rem in a year, within the limits of Table 10.1, will require authorization by the Site Emergency Director. Individuals authorized under these limits will be briefed of the hazards associated with the planned actions prior to undertaking the mission.

10.5 PROTECTIVE MEASURES

10.5.1 Industrial Area Accountability/Evacuation

The Site Emergency Director shall initiate an accountability of all Industrial Area personnel at the Alert classification. Accountability will be initiated by use of the emergency siren, and/or paging system, as appropriate for the incident at hand. All personnel, contractors and visitors will relocate to on-site assembly areas. Accountability for Industrial Area personnel will be accomplished within 60 minutes. Search and rescue efforts will be initiated for any unaccounted for personnel.

Accountability of personnel will be the responsibility of Security. All reports are provided to the Site Emergency Director.

In the event a plant evacuation of selected groups is judged appropriate, the Site Emergency Director will announce appropriate instructions on the paging system. Emergency response personnel remaining on-site or arriving following an evacuation shall report to the Emergency Support Center. Security will prohibit access of other individuals to the Industrial Area unless specifically authorized by the Site Emergency Director.

10.5.2 Decontamination Capabilities

Facilities at the radiological control point will be utilized for personnel contamination monitoring and decontamination. Decontamination will be in accordance with normal plant procedures.

In the event that accident conditions result in the injury of a contaminated individual, decontamination will be performed to the extent that the health of the victim is not jeopardized. Such decontamination normally would be performed while awaiting ambulance arrival. Further decontamination, including wound decontamination, will be provided upon arrival at the hospital.

10.6 PROTECTIVE EQUIPMENT AND SUPPLIES

Plant radiation protection equipment will be utilized as necessary to support the emergency response effort. Equipment such as respirators and protective clothing will be issued per the emergency radiation protection criteria of Table 10.3 and normal plant radiation protection procedures.

TABLE 10.1

GUIDANCE ON DOSE LIMITS FOR WORKERS PERFORMING EMERGENCY SERVICES

Emergency exposures in excess of 5 rem Total Effective Dose Equivalent (TEDE) for the calendar year may be authorized by the Site Emergency Director using the criteria below:

DOSE LIMIT (Rem)	ACTIVITY	CONDITION
5	All	
10	Protecting valuable property	Lower dose not practicable
25	Life saving or protection of large populations	Lower dose not practicable
>25	Lifesaving or protection of large populations	Only on a voluntary basis to persons fully aware of the risks involved

In each of the above cases, doses shall be maintained As Low As is Reasonably Achievable (ALARA). All approvals shall be for pre-planned activities, with approval prior to initiating the effort.

TABLE 10.2

Considerations for Use of Emergency Exposure Limits

- Rescue personnel should be nonpregnant adults or professional rescue personnel.
- Volunteers are aware of potential consequences of exposure at these levels.
- Volunteers agree to accept risk.
- Volunteers understand nature of the task and method of performance.
- Plans incorporate appropriate ALARA actions to minimize dose.
- Expected dose has been weighed against probability of success and risk of inaction.
- Volunteers are proficient in performance of the task and capable of its rapid execution.

TABLE 10.3

Emergency In-Plant Protective Action Criteria

1. If unknown mixture particulate airborne activity concentrations* exceed 3E-8 uCi/ml (10 x DAC for unidentified particulate), use of respirators will be determined based upon expected duration of exposure and characterization of particulate activity, if possible.

2. If unknown mixture particulate concentrations* exceed 3E-7 uCi/ml, use of SCBA respirators in pressure demand mode will be required.

3. If unknown mixture particulate concentrations* exceed 3E-3 uCi/ml for more than two hours (>0.1 ALI in Pressure Demand mode SCBA respirators), evacuation of the affected area will be initiated.

4. If Kr-85 (gaseous airborne activity) exceeds 1E-2 uCi/ml, skin protection in the form of one cloth or paper anti-C, covered by one waterproof plastic anti-C will be required, in addition to SCBA Pressure Demand respiratory protection.

5. Decontamination of evacuating personnel will be performed unless background radiation levels, personnel injuries or other emergency considerations preclude this action.

---

*Note: The above actions for airborne concentrations of unknown particulate activity will be modified upon identification of actual constituents so as to ensure that the dose criteria of Table 10.1 (TEDE) are not exceeded upon summation of internal and external dose.

11.0 EMERGENCY NOTIFICATION AND PUBLIC INFORMATION

This section of the plan identifies the means of performing external and internal notifications during an emergency. These notifications include State of Michigan and NRC contacts, plant and corporate contacts, and information supplied to the general public through public news media.

11.1 EMERGENCY NOTIFICATIONS

11.1.1 On-Site Notifications

The Site Emergency Director will notify plant personnel of the emergency via the plant paging system during normal working hours. Pagers also may be activated.

During off-hours, the Site Emergency Director will announce the emergency condition via the siren or plant paging system (as appropriate for the incident), pagers and/or by telephone, as necessary.

11.1.2 Off-Site Notification

Upon declaration of an Unusual Event or Alert, the Site Emergency Director will notify the NRC by telephone as soon as possible but within one hour and the State of Michigan within 30 minutes of classifying the emergency.

Consumers Energy corporate personnel will be notified by the Site Emergency Director regarding the plant status. Palisades Nuclear Plant may be contacted on an as-needed basis for additional emergency support assistance (eg, engineering, maintenance or technician support).

11.2 PUBLIC INFORMATION

During an emergency event declaration, the Public Affairs Director or an individual assigned by the Site Emergency Director will be responsible for handling public information associated with an emergency at Big Rock Point. News releases will be prepared and issued as required.

12.0 MAINTAINING EMERGENCY PREPAREDNESS

This section of the Site Emergency Plan describes the manner in which the emergency preparedness program is maintained in a state of readiness.

12.1 TRAINING

12.1.1 Training of Plant Personnel

All plant personnel assigned emergency responsibilities will receive annual (± 25%) training in accordance with plant procedures. Training for these individuals may be obtained through drill and exercise participation or other alternative training.

12.1.2 Training of Offsite Support Personnel

Offsite support personnel who may be called upon for emergency support include fire fighting, hospital, ambulance and law enforcement personnel. Medical and fire fighting groups will be invited to participate in annual training in those areas identified within Table 12.1. Local law enforcement will be invited to participate in an annual review session on plant status.

12.2 DRILLS AND EXERCISES

Periodic exercises and drills are conducted to evaluate emergency response capabilities and to develop and maintain key skills. Some drills may be included as a portion of the radiological emergency preparedness exercise.

Drills are supervised instruction periods designed to develop and maintain skills in a particular operation.

Exercises are events which test the integrated capability and major portions of the basic elements existing within the emergency plan and emergency organization.

EMERGENCY RESPONSE TRAINING FOR OFF-SITE GROUPS
TABLE 12.1

CATEGORY	EMERGENCY POSITIONS	TRAINING	FREQUENCY
Fire Fighting	Local fire response personnel	Training will be offered to fire fighting personnel in plant layout and fire hazards, basic radiation protection needed for fire fighting, and fire system orientation	Annually
Law Enforcement	Local law enforcement personnel	Local law enforcement agencies will be offered review sessions on plant status.	Annually
Medical Support	Hospital and Ambulance personnel	Training on the handling of radioactively contaminated victims, communications, and plant/ambulance/hospital interface will be provided. Personnel will be offered the opportunity to participate in medical emergency drills performed by the plant.	Annually As Performed

12.2.1 Drills

a. Communication Drills

Communication drills with the NRC, the Michigan State Police and offsite support agencies will be performed quarterly.

b. Emergency Medical Drills

A medical emergency drill involving a simulated contaminated individual with provisions for participation by the local support services agencies (ie, ambulance and off-site medical treatment facility) will be conducted annually.

c. Radiological Monitoring Drills

A plant radiological monitoring drill to evaluate the response to emergency radiation protection situations will be conducted annually.

12.2.2 Exercises

A radiological emergency preparedness exercise will be conducted biennially. The exercise will include the mobilization of utility personnel to verify the capability to effectively respond to an accident. Performance will be evaluated and critiqued in order to judge the effectiveness of emergency planning elements.

12.3 MAINTENANCE AND INVENTORY OF EMERGENCY EQUIPMENT AND SUPPLIES

A detailed list of emergency equipment and its locations may be found in the Emergency Implementing Procedures. Emergency kits and equipment will be inventoried and maintained on a regular basis, as defined by those procedures. Radiation detection equipment will be calibrated as required.

12.4 REVIEWS AND UPDATES OF PLAN AND PROCEDURES

The Defueled Emergency Plan (DEP) and Defueled Emergency Plan Implementing Procedures, including appended Letters of Agreement, are reviewed every two years.

Necessary changes to the Defueled Emergency Plan or DEP Implementing Procedures will be performed in accordance with approved plant procedures. The documented reviews and records of changes shall be maintained for a minimum of five years.

12.5 EMERGENCY PLAN AUDIT

Audits of this plan and the adequacy of its implementation will be conducted according to CPC-2A. Independent reviews also may be conducted to verify compliance with Consumers Energy's internal policies and procedures, Federal regulations and operating license provisions.

12.6 RESPONSIBILITY

The Big Rock Point Plant Manager is responsible for the Defueled Emergency Plan. The Plant Manager may assign responsibilities for implementing procedures and maintenance, for emergency plan training, for exercise and drill development, or other associated activities, to competent plant staff or contract personnel in accordance with management discretion. Such assignments do not relieve the Plant Manager from responsibility for meeting the requirements of this plan, plant licensing documents or regulatory requirements.