Enclosure to AEP-NRC-2018-52

DONALD C. COOK NUCLEAR PLANT

EMERGENCY PLAN
Revision 39

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EMERGENCY PLAN

REVISION 39

UNITS 1 & 2
DOCKET NOS. 50-315 & 50-316
LICENSE NOS. DPR-58 & DPR-74

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INTRODUCTION

A. Purpose

The purpose of the Cook Nuclear Plant Emergency Plan is to fulfill the requirements as set forth in 10 CFR 50, Appendix E, and the planning objectives set forth in NUREG-0654/FEMA-REP-1 Revision 1.

B. Objective

The Cook Nuclear Plant Emergency Plan has the fundamental objective of protecting the health and safety of the general public, persons temporarily visiting or assigned to the reactor facility, and employees of the plant.

C. Scope

The specific details for the implementation of this emergency plan are incorporated in the Cook Nuclear Plant Emergency Plan Procedures pursuant to the requirements specified in "Purpose", above. The Cook Nuclear Plant Emergency Plan applies to both of the nuclear units and the on-site Independent Spent Fuel Storage Installation (ISFSI). The Emergency Plan procedures include or reference procedures developed for plant operating, radiological, security, and administrative functions as necessary to ensure that all requirements are adequately defined. Appendix A to this Plan contains a list of Plant Emergency Plan Procedures. This plan is primarily concerned with an accidental release of radioactive material, but it is also concerned with major non-nuclear accidents which could prove hazardous to the safe operation of the plant. This includes supplementing our procedures for responding to hazardous material spills to meet Michigan Hazardous Waste Operations and Emergency Response (HAZWOPER) and hazardous waste regulations.

D. Organization of the Emergency Plan

The information describing the D.C. Cook Nuclear Power Plant Emergency Plan follows the numerology of NUREG-0654/FEMA-REP-1, Revision 1.

The organization of NUREG-0654/FEMA-REP-1, Revision 1 sequences evaluation criteria by subject. Some criteria apply to licensee only, and some apply to offsite organizations only. The result is that there would be gaps in the Emergency Plan numbering if the licensee only criteria were listed. When this occurs the NUREG numbering is maintained by listing the criteria number and labeling it as Not Applicable.

Some criteria in the Emergency Plan are not addressed. Again, to maintain the NUREG numbering the criteria is listed but is labeled as Not Addressed.

E. Definitions

1. Berrien County Emergency Operations Center (BCEOC) This facility provides an area to coordinate efforts of local agencies and organizations involved in the emergency response. It is a center established and controlled by the Berrien County Sheriff's Department and is located in St. Joseph, Michigan.

2. Civil Disturbance One or more persons violently protesting plant operations or activities at the site.

3. Confinement Boundary The barrier(s) between areas containing radioactive substances and the environment.

4. Control Rooms Control and monitoring functions for Units 1 and 2 are provided for in separate Control Rooms. Each Control Room has a controlled access entrance located off the turbine building main operating floor at Elevation 633'. Personnel assigned to the Control Room during the emergency will be as indicated in Figure 4 (until the Technical Support Center is activated).

   Should conditions require the presence, in the Control Room, of personnel other than those listed in Figure 4, approval must be obtained from the Shift Manager or his alternate.

5. Cook Nuclear Plant Procedures Documents defining the details necessary to specify manipulation of controls and equipment to place the facility in a safe condition and to prescribe other appropriate protective measures to be taken by employees of the licensee.

6. Emergency Action Levels Radiation dose rates; specific levels of airborne, waterborne, or surface-deposited concentrations of radioactive materials; or specific instrument indications (including their rates of change) that may be used as thresholds for designating the appropriate class of emergency.

7. Emergency News Center (ENC) The Emergency News Center is located in the Nuclear Generation Group Headquarters Building located approximately 14 miles southeast of the Plant in Buchanan, Michigan. This facility will provide for dissemination of emergency information to the news media prior to activation of the Joint Information Center.

8. Emergency Operations Facility (EOF) This facility is in the Nuclear Generation Group Headquarters Building located approximately 14 miles southeast of the Plant in Buchanan, Michigan. This facility is activated at the declaration of an Alert, or higher, emergency classification. The EOF houses the support personnel whose primary responsibilities are to assist in offsite dose assessment and protective action recommendations, communication with offsite agencies, exposure control, technical support of plant operations and other related activities. Representatives from various support agencies and groups may use this facility as a working space to prepare short and long term plans and procedures to mitigate the incident.

9. Emergency Plan Implementing Procedures (EPIP's) The specific procedures that provide instructions, identify responsibilities, and implement the emergency plan. A list of Emergency Plan Procedures is contained in Appendix A.

10. HAZMAT Team The hazardous material spill response team (HAZMAT Team) is a group of plant personnel designated to respond to emergencies involving hazardous materials. They are trained as required by Michigan Hazardous Waste Operations and Emergency Response (HAZWOPER) rules and respond to emergencies using spill pre-plan procedures. The Shift Manager, or a qualified Incident Commander, will act as the Incident Commander in charge of the plant spill response. A designated HAZMAT Team Safety Officer will have responsibility for the on-scene safety of response personnel.

11. Hostile Action An act toward a Nuclear Power Plant (NPP) or its personnel that includes the use of violent force to destroy equipment, takes hostages, and/or intimidate the licensee to achieve an end. This includes attack by air, land, or water using guns, explosives, projectiles, vehicles, or other devices used to deliver destructive force. Other acts that satisfy the overall intent may be included. HOSTILE ACTION should not be construed to include acts of civil disobedience, or felonious acts that are not part of a concerted attack on the NPP or ISFSI. Non-terrorism-based EALs should be used to address such activities, (e.g., violent acts between individuals in the owner controlled area.)

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

13. Independent Spent Fuel Storage Installation (ISFSI) A complex that is designed and constructed for the interim storage of spent nuclear fuel and other radioactive materials associated with spent fuel storage.

14. Joint Information Center (JIC) This facility is operated by AEP personnel for the purpose of disseminating information to the news media, conducting press briefing and as an area where the representatives from various emergency response organizations can meet, review, and release material to the press. The JIC uses the same facilities as the Emergency News Center (ENC).

15. NRC Licensed Personnel Those plant personnel holding current operator's or senior operator's licenses from the United States Nuclear Regulatory Commission as defined in 10 CFR Part 55.

16. Off-Site means outside the area which is under the control of Cook Nuclear Plant.

17. Off-Site Survey Teams These are teams of personnel assigned to monitor radiological parameters anywhere outside of the plant protected area or the ISFSI protected area. At least one member of the team shall be trained in radiation protection.

18. On-Site defined as the owner controlled area inclusive of the protected area and all property outside the plant protected and ISFSI protected areas but under the control of Cook Nuclear Plant.

19. Operations Support Center (OSC) This area is located in the basement/shelter area of the plant's lakeside office building. The OSC is the area that will house the operations support personnel for assignment to respond to Control Room and Technical Support Center requests. Communication links are established as needed with the Control Rooms, Technical Support Center and the Emergency Operations Facility.

20. Protected Area The area encompassed by physical barriers to control access to the plant and to the ISFSI.

21. Protective Action Guides (PAG) The projected dose to an individual from an unplanned release of radioactive material at which a specific protective action to reduce or avoid that dose is recommended. Protective actions would be warranted provided the reduction in individual dose expected to be achieved by carrying out the protective action is not offset by excessive risks to individual safety in taking the protective action. The PAG does not include the dose that has unavoidably occurred prior to the initiation of a protective action.

22. State Emergency Operations Center (SEOC) This facility provides a central location from which the emergency functions of state government may be carried out in response to emergency conditions. The primary State EOC is located at 7150 Harris Drive, Dimondale, MI 48821.

23. State Field Team Center (FTC) This facility provides the operational working area for State representatives assigned to coordinate the dispatch of field teams to monitor for radioactive contamination. The facility will be directed by a Field Team Center Coordinator assigned by the Michigan Department of State Police/Emergency Management and Homeland Security Division. A representative of the Department of Environmental Quality/Drinking Water and Radiological Protection Division will be assigned to this facility as the Radiological Monitoring Team Leader. The location for the FTC is the Michigan Department of Transportation's Coloma garage at the intersection of Red Arrow Highway and I-196.

24. Technical Support Center (TSC) This facility is located adjacent to the Control Rooms at Elevation 644'. This center is physically separated from both Control Rooms. This facility has communication links to each Control Room, to the Emergency Operations Facility, Emergency News Center/Joint Information Center, Operations Support Center and offsite emergency operations centers established by State/County authorities. This area contains access to instrumentation and necessary reference material for plant management and support personnel.

    The primary function of the TSC is to provide an area in close proximity to the Control Room from which plant operators can receive technical support and assistance from personnel who have the experience and expertise in nuclear plant operations, maintenance, safety and design. Their function is to mitigate the cause(s) of a nuclear incident and act as a data gathering center for plant parameters.

    Access to the TSC will typically be limited immediately to those individuals listed in Figure 5, and as the situation demands, those individuals required by the SED or alternate.

PLANNING STANDARD A

ORGANIZATION CONTROL

A. ORGANIZATIONAL CONTROL

A.1. Organizational Control

In order for any emergency plan to be effective it is necessary to ensure that every organization that provides support services has prepared in advance an emergency plan and/or procedures. These plans and/or procedures should define the individual responsibilities for coordinating and directing support effort and the level of response each organization is prepared to make to meet its defined response capability on a continuous basis.

Assistance from private organizations having nuclear industry affiliations can also be expected and are identified in Section C.4.

A.1.a. Response Organizations

Descriptions of the primary response organizations and their operational roles are outlined in Section B. The "state" column of Figure 1 shows the Primary Response Agencies and Support Response Agencies that comprise the State of Michigan's nuclear accident response organization. The Primary Response Agencies and their duties are performed at the State Emergency Operations Center (SEOC). The Support Response Agencies are the resources available to the SEOC for implementing actions in response to an emergency.

A.1.b. Concept of Operations

In the event of an emergency situation, the Shift Manager (or Senior NRC licensed individual) will call upon any additional members of the plant organization as needed. These additional individuals form, along with the on-duty operating shift, the plant Emergency Response Organization. The initiation of any aspects of this emergency plan allows for the use of the total plant organization, at the discretion of the Shift Manager.

The major assignments of the on-duty operating shift and the supplemental personnel in the Emergency Plan Organization are delineated in Table 1.

The extent to which the Emergency Response Organization is staffed will be dependent upon the emergency classification and the discretion of the Site Emergency Director (SED). For an Unusual Event, only the Control Room will be staffed. For an Alert, Site Area Emergency, and General Emergency the TSC, OSC, ENC/JIC, and EOF will be activated and staffed.

Senior plant management and technical personnel representing the licensee and the NRC are located in the TSC. TSC personnel will provide support to the Control Room operating personnel in the management of abnormal conditions and in accident mitigation. During recovery operations the TSC provides plant systems support for the management personnel located in the EOF. The TSC functions as the primary information source to the EOF and to the NRC on plant status.

The Operations Support Center (OSC) is an onsite assembly area separate from the Control Room and the TSC where licensee operations support personnel report in an emergency. This is an assembly area for personnel to report for instructions from the OSC Manager. Communications are provided to the Control Room, TSC, and EOF on bridge lines. Teams are dispatched from the OSC to provide for Damage Control, Rescue, and Surveys.

The EOF will provide current information on conditions potentially affecting the public to the NRC, state and county emergency response agencies. Radiological assessment, determination of recommended public protective actions and coordination of offsite response will be transferred to the EOF once the EOF is activated. EOF personnel coordinate the offsite radiological monitoring during nuclear emergencies and recovery operations. The EOF will function as the post-accident recovery management center for both onsite and offsite activities.

The CNP Emergency Public Information Organization is structured to provide a correct and consistent flow of information to the public and the news media throughout an emergency at CNP. During the initial phases of any emergency, all public information relating to the emergency will be released via the Emergency News Center. The ENC becomes the JIC when the State of Michigan declares the JIC activated.

A.1.c. Organization Interrelationships

The relationships between Cook Nuclear Plant normal operating and Emergency Response Organizations are presented in numbered Figures 1 through 8. The figures are referenced throughout this Emergency Plan, and especially in Planning Section B, the Onsite Emergency Organization.

A.1.d. Persons in Charge

The Emergency Director (ED) is responsible for control and coordination of all Cook Nuclear Plant emergency and recovery operations.

A.1.e. 24 Hour Response

The CNP Emergency Response Organization (ERO) is capable of continuous 24-hour operations for a protracted period.

A.2. Not applicable

A.3. Agreements

The CNP Emergency Plan provides for agreements with various offsite support organizations that are part of the overall response organization within the Plume Exposure Pathway Emergency Planning Zone. These agreements are listed in Appendix B to this plan.

In addition to the offsite support agencies listed in Appendix B, it is assumed that assistance will be provided, as necessary, by those State, County and Federal agencies that are mandated by their charter, public law or regulations to protect the public health and safety, i.e., the NRC and FEMA. It is not expected that letters of agreement are required with these agencies.

A.4. Continuous Protracted Operations

The CNP Emergency Response Organization (ERO) is capable of continuous 24-hour operations for a protracted period.

FIGURE 1
MICHIGAN NUCLEAR ACCIDENT RESPONSE ORGANIZATION

FEDERAL

Federal Emergency Management Agency
Nuclear Regulatory Commission
Department of Energy

Federal Coordination
Resource Support
Technical Advice

PLANT OWNER/OPERATOR

Site Emergency Response Organization
Notification
Onsite Control

LOCAL

Public Works
Fire
Social Services
Health
Berrien County Sheriffs Department

Warning
Evacuation
Sheltering
Blockading
Public Information
Re-entry

STATE

PRIMARY RESPONSE AGENCIES

State Police

Direction, Control & Coordination
Evacuation Authority
Warning/Notification
Security
Damage Assessment
Public Information
In-place Shelter
Local Plans
Terrorist Activities
Federal Liaison
Military Weapon Accident

Environmental Quality

Monitoring & Sampling
Technical Advice
Decontamination Advice
Occupational Health
Medical & Health Support
Accident & Dose Assessment
Radiological Exposure Control
Protective Actions
Ground Water
Municipal Water Supplies

SUPPORT RESPONSE AGENCIES

Agriculture

Food Contamination
Food Supply
Sampling

Corrections

Temporary Housing
Transportation Assist.
Feeding and Clothing Support

Community Health

Crisis Counseling
Temporary Housing

Natural Resources

Environmental Impact
Fish/Game Contamination
Sampling
Warning Support
Meteorological Analysis
Surface Water

Transportation

Transportation – Railroads – Air Traffic
Traffic Regulations
Blockade

Licensing and Reg Affairs

Public Utilities Liaison
Energy Disruption

Education

Housing
Mass Transportation

Military Affairs

Transportation
Security
Aerial & Ground Monitoring Support

Human Services

Housing/Registration
Feeding and Clothing Assistance Centers
Volunteer Agency Support

PLANNING STANDARD B

EMERGENCY RESPONSE ORGANIZATION

B. EMERGENCY RESPONSE ORGANIZATION

The purpose of this section is to describe the CNP organization during normal operations and during emergencies. Figure 2 shows the management structure for the Nuclear Generation Group (NGG). The Senior Vice President is the primary interface with local and state officials in matters concerning emergency preparedness.

B.1 Normal On-Site Operating Organization

The normal on-site operating organization chart for the CNP is shown in Figure 3.

B.1.a. Vice Presidents

The Chief Nuclear Officer (CNO) is responsible for implementing all activities at the CNP in accordance with all applicable laws, regulations, AEP and NGG policies while meeting the business needs of AEPNGG.

The Site Vice President (SVP) has the full authority and responsibility for operating, maintaining, and modifying the plant within established parameters and procedures. These responsibilities include ensuring effective implementation of the radiation protection program, directing the production, safety, work control and outage activities and Site Protective Services, and organizational/administrative activities at the plant. Additionally, the SVP is responsible for oversight of the Security Plan, Emergency Plan, and is responsible for integration of the emergency response and security functions.

B.1.b. Plant Manager

The Plant Manager is accountable to the Site Vice President for the operations, maintenance, radiation protection, chemistry and environmental functional areas of plant production. The primary responsibility for the Plant Manager is the safe operation of the nuclear facility in accordance with applicable corporate policies, laws, regulations, licenses, and technical requirements, to ensure that public health and safety, including that of employees, is protected from undue nuclear and industrial safety risks.

B.1.c. Maintenance Manager

The Maintenance Manager reports to the Plant Manager and is accountable for managing and directing the activities related to the maintenance of all site equipment, structures, grounds and yards, and fire protection program. Managers that report to the Maintenance Manager provide the tools and support services necessary to optimize the safe, environmentally sound, cost effective efforts of the plant production organizations.

B.1.d. Emergency Preparedness Manager

The Emergency Preparedness Manager ensures that the on-site and off-site emergency preparedness programs can protect the health and safety of the general public and site personnel while minimizing damage to the property and the environment in the event of an emergency. The Emergency Preparedness Manager is accountable to the Site Vice President.

B.1.e. Nuclear Regulatory Compliance and Licensing Director

The Nuclear Regulatory Compliance and Licensing Director is accountable to the Site Vice President and is responsible for developing and directing the access authorization and fitness for duty programs.

B.1.f. Security Manager

The Security Manager is accountable to the Site Vice President and is responsible for developing and directing the nuclear security program.

B.1.g. Training Manager

The Training Manager reports to the Site Vice President and is accountable for the maintenance of INPO accreditation for eligible training programs, as well as non-accredited programs. This includes managing the development and presentation of training materials; maintenance of training materials, inclusive of the plant simulator and training aids; maintenance of training records and methods for assessing training effectiveness.

B.1.h. Operations Manager

The Operations Manager reports to the Plant Manager and is accountable for operating the nuclear generating units in a safe, environmentally sound, cost effective, reliable and efficient manner in accordance with applicable corporate policies, laws, regulations, licenses, and technical requirements. The primary responsibility of the Operations Manager is the safe operation of the generation units to ensure that the public health and safety, including those of employees, is protected from undue industrial and nuclear safety risks.

B.1.i. Chemistry Manager

The Chemistry Manager reports to the Plant Manager and is accountable for all activities related to plant system chemistry sampling, analysis, and control operations at CNP by optimizing fission product barrier effectiveness, maximize the life of plant equipment, and protect the health and safety of the public.

B.1.j. Radiation Protection Manager

The Radiation Protection Manager, who is accountable to the Plant Manager, serves as the regulatory Radiation Protection Manager. The Radiation Protection Manager is responsible for the implementation and maintenance of the radiation protection programs. As such, the function of the Radiation Protection Manager is to establish and maintain the highest level of radiological safety attainable for the protection of plant employees, the public, and the environment.

B.1.k. On-Shift Operations Personnel

The major assignments of the on-duty operating shift and the supplemental personnel in the Emergency Plan Organization are delineated in Table 1, CNP Staffing for Radiological Emergencies. Figure 4 is the chart for the On-shift Response Organization.

The Shift Manager, acting as the SED, has overall responsibility for directing and implementing emergency and abnormal procedures to bring the unit to a safe condition. The Shift Manager retains the Emergency Direction and Control functions until relieved by a qualified Site Emergency Director (SED) or Emergency Director (ED). This position is the Table 1 on-shift column Shift Manager position for the Emergency Direction and Control functional area and plant operations functional area.

One of the two Unit Supervisors on shift aids and assists the Shift Manager. This position is the Table 1, CNP Staffing for Radiological Emergencies, on–shift plant operations functional area Unit Supervisor.

The Work Control SRO reports to the Control Room in the event of an emergency to assist the Operations shift. The Work Control SRO provides staffing of the Table 1, CNP Staffing for Radiological Emergencies, On-shift plant operations functional area Assistant Shift Manager/WCC-SRO.

One of the Reactor Operators provides staffing of the Table 1, CNP Staffing for Radiological Emergencies, Radiological Accident Assessment and Support functional area On-Shift Offsite Dose Assessment until relieved of that responsibility by the EOF.

Two of the Auxiliary Equipment Operators (AEOs) provide staffing of the Table 1, CNP Staffing for Radiological Emergencies; Notification/Communication functional area until relieved of that responsibility by the EOF. An additional AEO performs the plant system engineering, repair and corrective actions functional area repair and corrective actions Rad Waste Operator as part of the normal AEO duties.

The on-duty Shift Technical Advisor (STA) reports to the Control Room in the event of an emergency. The STA function is monitoring the Critical Safety Function Status Trees and recommending necessary procedure transitions. The Core/Thermal Hydraulic conditions are monitored by the Critical Safety Function Status Trees. The STA provides staffing of the Table 1, CNP Staffing for Radiological Emergencies, Plant System Engineering, Repair and Corrective Actions functional area On-Shift Core/Thermal Hydraulics and STA Technical Support. The STA reports to the SM and acts in an advisory capacity. Other STAs called in will report to the TSC, as needed.

B.1.l. <u>On Shift non-Operations (Supplemental) Personnel</u>

The major assignments of the on-duty operating shift and the supplemental personnel in the Emergency Plan Organization are delineated in Table 1, CNP Staffing for Radiological Emergencies. Figure 4 is the chart for the On-shift Response Organization.

Three RP Technicians (RPT) are assigned to each shift to provide the Table 1, CNP Staffing for Radiological Emergencies, Radiological Accident Assessment and Support functional area On-Shift Offsite, Onsite, and In-plant surveys. They also provide Protective Actions functional area On-Shift Radiation Protection coverage. The on-shift RP Technician staffing is augmented with an on-shift Chemistry Technician and ten (10) RP Technicians called in for 60 minute supplemental staffing.

Two Chemistry Technicians are assigned to each shift to provide the Table 1, CNP Staffing for Radiological Emergencies, Radiological Accident Assessment and Support functional area On-Shift Chemistry positions making expertise immediately available to address chemistry issues. The on-shift Chemistry staffing is augmented with one (1) Chemistry technician called in for 60 minute supplemental staffing.

The Mechanic, Electrician, and I & C Technician assignment ensures the plant system engineering repair and corrective actions functional area On-Shift Repair and Corrective Actions maintenance disciplines expertise are immediately available to address maintenance issues. The on-shift Maintenance staffing is augmented with one Mechanic and Electrician called in for 60 minute supplemental staffing.

The Fire Brigade provides the staffing for the On-Shift Fire Protection Functional Area and the Rescue and First Aid functional area. The brigade shift staffing is maintained as specified in the Technical Requirements Manual. Staffing for sixty minute response is provided by supporting local fire departments.

The Security force provides the staffing for the On-Shift and 60 minute Access Control and Accountability Functional Area. Security staffing is maintained as specified in the Security Plan.

B.2. On-Shift Emergency Coordination

The Shift Manager, acting as the SED, has overall responsibility for directing and implementing emergency and abnormal procedures to bring the unit to a safe condition.

B.3. Emergency Coordination Line of Succession

The authority for initiation of the Emergency Plan is delegated to the senior supervisor of the on-duty operating shift (e.g., the Shift Manager).

Upon the classification of an emergency event, the Shift Manager (SM) assumes the position of Site Emergency Director (SED). The Shift Manager retains the Emergency Direction and Control functions until relieved by a qualified Site Emergency Director (SED) or Emergency Director (ED).

Upon arrival at the appropriate emergency response facility, the SED and/or ED reviews the emergency situation with the Shift Manager, assumes the responsibilities for overall management of plant and emergency response functions, and assures that proper actions are being taken to mitigate the event. The SED or ED ensures that the proper State/County authorities, NRC and AEP officials are notified.

The SED will function as acting Emergency Director until such responsibilities are assumed at the EOF.

Upon activation of the EOF the Emergency Director reviews the emergency situation with the SED and assumes responsibility for control and co-ordination of all emergency and recovery operations from the SED.

B.4. Non-delegable Emergency Coordinator Duties

During the initial phase of a nuclear incident prior to activation of the EOF, the SED has the non-delegable responsibility to make Protective Action Recommendations (PARs) to State/County authorities responsible for offsite emergency measures.

Upon activation of the EOF the Emergency Director assumes the non-delegable responsibility for making Protective Action Recommendations (PARs) to State/County authorities responsible for offsite emergency measures.

B.5 Emergency Response Organization

The CNP Emergency Response Organization is presented in Figures 4 through 8.

Every effort is made to match professional skills with those needed in the ERO positions listed on Figures 4 through 8. However, there may be some instances where, in actual assignments, the professional skill description may not match those listed with their respective position. In such cases, the individual in question has been determined to effectively fulfill the requirements of the position through training and qualification for the ERO staff position or because of similar current, or past professional experiences or duties.

All positions are assigned common administrative responsibilities such as event response and maintaining adequate documentation of the event tasks. Individual tasks for each ERO position are as follows:

B.5.a. Technical Support Center (TSC)

The TSC Emergency Response Organization is presented in Figure 5.

B.5.a.1. Site Emergency Director (SED)

The SED is assigned the following responsibilities:

- Coordinate response activities with offsite response agencies
- Coordinate ERO/facility shift turnover
- Assume/maintain command and control
- Transfer command and control
- Manage all onsite emergency response activities
- Request and coordinate emergency activities with law enforcement agencies
- Coordinate information and activities with offsite agency personnel in the facility
- Develop requests for external assistance (technical, craft, admin, etc.)
- Approve material, personnel and logistics expenditures necessary for response to the event
- Classify and declare emergencies
- Approve and direct offsite emergency notifications to state and local authorities
- Direct notifications and ENS communications with the NRC
- Ensure flow of information within and between the emergency response facilities
- Perform or direct emergency PA announcements
- Direct preparations and brief personnel prior to facility activation
- Direct relocation of site emergency response facilities
- Establish plant/station response priorities
- Determine and direct the actions for mitigation strategies and contingency plans
- Coordinate between CR, OSC and TSC to set OSC Team task priorities
- Direct site assembly, accountability and search & rescue activities
- Direct local and site evacuation
- Coordinate site evacuation
- Approve use of KI
- Approve Protective Action Recommendations to offsite authorities
- Approve emergency exposures
- Terminate the emergency event
- Develop recovery plans

- Authorize and direct extreme measures (FLEX, EDMG, SAMG, §50.54(x) or suspend security controls)
- Conduct facility briefs and updates

In addition to these immediate duties noted above, the SED also has the authority to make policy decisions and expend funds necessary to cope with the event.

B.5.a.2. TSC Manager

The TSC Manager is assigned the following responsibilities;

- Coordinate ERO/facility shift turnover
- Manage facility emergency response activities
- Manage assigned group emergency response activities
- Coordinate information and activities with offsite agency personnel in the facility
- Coordinate integration of the NRC site team
- Develop requests for external assistance (technical, craft, admin, etc.)
- Assist with emergency classification
- Ensure flow of information within and between the emergency response facilities
- Perform or direct emergency PA announcements
- Direct preparations and brief personnel prior to facility activation
- Ensure minimum staff is available and prepared to activate the facility
- Activate the facility
- Determine current/projected staff needs
- Support coordination of site emergency facility relocation
- Establish plant/station response priorities
- Coordinate between CR, OSC and TSC to set OSC Team task priorities
- Establish and maintain facility accountability
- Coordinate site evacuation
- Develop recovery plans
- Conduct facility briefs and updates

B.5.a.3. ENS Communicator

The ENS Communicator is assigned the following responsibility;

- Provide event data and plant information to the NRC via the ENS

B.5.a.4. TSC Communicator

The TSC Communicator is assigned the following responsibilities;

- Communicate on assigned communication line and provide key information to facility staff
- Provide operations or radiological data to ERO members (loss of PPC/PSS)
- Maintain status and information boards

B.5.a.5. CR Communicator (located in the CR)

The CR Communicator is assigned the following responsibilities;

- Communicate on assigned communication line and provide key information to facility staff
- Provide operations or radiological data to ERO members (loss of PPC/PSS)

B.5.a.6. Plant Evaluation Team

The Plant Evaluation Team (PET) is made up of individuals from;

- Engineering – Nuclear Fuels Group
- Engineering – Electrical or Instrumentation and Control
- Engineering - Mechanical
- Operations or Operations Training

The PET are assigned the following responsibilities:

	PET – Operations	PET – Reactor	PET – Electrical	PET – Mechanical
Monitor status of the Emergency Operations Procedures	X			
Assist with emergency classification	X			
Support completion of the Emergency Notification Form to state and local authorities	X			
Provide event data and plant information to the NRC via the ENS	X			
Provide operations or radiological data to ERO members (loss of PPC/PSS)	X			
Communicate with ICP to provide information and coordination	X			
Provide support for development of mitigation strategies and contingency plans	X	X	X	X
Provide support for accident detection, assessment and response priorities	X	X	X	X
Provide analysis of core damage and fission product release potential	X	X		
Coordinate between CR, OSC and TSC to set OSC Team task priorities	X			
Evaluate conditions and provide recommendations for PARs	X			
Analyze and develop extreme measures actions (FLEX, EDMG, SAMG, §50.54(x))	X	X	X	X

B.5.a.7. Maintenance Coordinator

The Maintenance Coordinator is assigned the following responsibilities;

- Ensure flow of information within and between the emergency response facilities
- Provide support for development of mitigation strategies and contingency plans
- Coordinate between CR, OSC and TSC to set OSC Team task priorities
- Participate with OSC Team dispatch and control

B.5.a.8. Radiological Assessment Coordinator (RAC)

The RAC is assigned the following responsibilities:

- Manage assigned group emergency response activities
- Assist with emergency classification
- Provide operations or radiological data to ERO members (loss of PPC/PSS)
- Communicate with ICP to provide information and coordination
- Determine current/projected staff needs
- Support coordination of site emergency facility relocation
- Provide support for development of mitigation strategies and contingency plans

- Provide support for accident detection, assessment and response priorities
- Monitor, evaluate and communicate conditions involving any release of radioactivity
- Record/review radiological sampling and survey data
- Provide support and logistics for site assembly activities
- Provide support and logistics for site evacuation activities
- Evaluate the need for and ensure proper use of KI
- Evaluate conditions and provide recommendations for PARs
- Ensure approved emergency exposure controls are issued
- Ensure radiological conditions are known for occupied areas
- Track emergency worker exposure and evaluate the need for dose extensions
- Coordinate the monitoring of site evacuees
- Direct personnel monitoring and decontamination activities
- Ensure habitability is established and maintained for occupied onsite areas
- Establish contamination controls for occupied areas

B.5.a.9. Security Coordinator

The Security Coordinator is assigned the following responsibilities:

- Manage assigned group emergency response activities
- Request and coordinate emergency activities with law enforcement agencies
- Assist with emergency classification
- Communicate with ICP to provide information and coordination
- Provide support for development of mitigation strategies and contingency plans
- Establish and maintain accountability for security personnel
- Provide support and logistics for site assembly activities
- Participate in search and rescue activities
- Coordinate site evacuation
- Direct site access controls activities
- Provide support and logistics for site evacuation activities
- Ensure radiological conditions are known for occupied areas
- Coordinate ERO response to a security event

B.5.a.10 ICP Liaison

The ICP Liaison is staffed during a security or other type event where the offsite agencies establish an incident command post near the station. Additional personnel from Security, Radiation Protection, Fire Brigade, and/or Operations may be dispatched to assist.

The ICP Liaison is assigned the following responsibility;

- Communicate with ICP to provide information and coordination

B.5.a.11. Administrative Coordinator

The Administrative Coordinator is assigned the following responsibilities:

- Complete facility 24 hour staffing list
- Coordinate facility 24 hour staffing lists for the site
- Manage assigned group emergency response activities
- Provide admin/logistics needs for facility operation

B.5.a.12. Administrative Specialist

The Administrative Specialist is assigned the following responsibilities:

- Provide admin/logistics needs for facility operation
- Distribute forms, reports, etc. as needed

B.5.a.13 Computer Analyst

The Computer Analyst is assigned the following responsibility;

- Ensure availability of facility information/communication/display systems

B.5.b. Operations Support Center (OSC)

The OSC Emergency Response Organization is presented in Figure 6.

B.5.b.1. Operations Support Center Manager

The Operations Support Center Manager is assigned the following responsibilities;

- Complete facility 24 hour staffing list
- Coordinate ERO/facility shift turnover
- Manage facility emergency response activities
- Manage assigned group emergency response activities
- Coordinate integration of the NRC site team
- Develop requests for external assistance (technical, craft, admin, etc.)
- Ensure flow of information within and between the emergency response facilities
- Direct preparations and brief personnel prior to facility activation
- Ensure minimum staff is available and prepared to activate the facility
- Activate the facility
- Determine current/projected staff needs
- Support coordination of site emergency facility relocation
- Coordinate between CR, OSC and TSC to set OSC Team task priorities
- Participate with OSC Team dispatch and control
- Establish and maintain facility accountability
- Provide support and logistics for site evacuation activities
- Coordinate the monitoring of site evacuees
- Direct personnel monitoring and decontamination activities
- Develop recovery plans
- Conduct facility briefs and updates

B.5.b.2. OSC Communicator

The OSC Communicator is assigned the following responsibilities;

- Communicate on assigned communication line and provide key information to facility staff
- Provide operations or radiological data to ERO members (loss of PPC/PSS)
- Maintain status and information boards
- Distribute forms, reports, etc. as needed

B.5.b.3. Team Coordinator

The Team Coordinator is assigned the following responsibilities;

- Maintain status and information boards
- Coordinate between CR, OSC and TSC to set OSC Team task priorities
- Participate with OSC Team dispatch and control

B.5.b.4. RP Supervisor

The RP Supervisor is assigned the following responsibilities;

- Manage assigned group emergency response activities
- Determine current/projected staff needs
- Brief and dispatch the onsite/offsite radiation monitoring teams
- Record/review radiological sampling and survey data
- Participate with OSC Team dispatch and control
- Provide radiation protection coverage for emergency teams
- Evaluate the need for and ensure proper use of KI
- Ensure use of Personnel Protective Equipment (protective clothing, respirators, etc.)
- Ensure approved emergency exposure controls are issued
- Ensure radiological conditions are known for occupied areas
- Track emergency worker exposure and evaluate the need for dose extensions
- Coordinate the monitoring of site evacuees
- Direct personnel monitoring and decontamination activities
- Ensure habitability is established and maintained for occupied onsite areas
- Establish contamination controls for occupied areas

B.5.b.5. Mechanical Supervisor

The Mechanical Supervisor is assigned the following responsibilities;

- Manage assigned group emergency response activities
- Determine current/projected staff needs
- Participate with OSC Team dispatch and control
- Ensure use of Personnel Protective Equipment (protective clothing, respirators, etc.)

B.5.b.6. Electrical/I&C Supervisor

The Electrical/I&C Supervisor is assigned the following responsibilities;

- Manage assigned group emergency response activities
- Determine current/projected staff needs
- Participate with OSC Team dispatch and control
- Ensure use of Personnel Protective Equipment (protective clothing, respirators, etc.)

B.5.b.7. Chemistry Supervisor

The Chemistry Supervisor is assigned the following responsibilities;

- Manage assigned group emergency response activities
- Determine current/projected staff needs
- Record/review chemical sampling and analysis
- Participate with OSC Team dispatch and control

- Ensure use of Personnel Protective Equipment (protective clothing, respirators, etc.)

B.5.b.8. Damage Control Team

The Damage Control Team reports directly to the OSC Manager and is responsible for the repair and restoration of damaged plant systems, equipment, or components.

Members of the Damage Control Team will be selected based on the type of damage that must be dealt with at the time.

B.5.b.9. Rescue Team

Rescue Teams are used for rescue of injured and trapped personnel.

Rescue Teams shall be made up of at least two people, one person qualified in radiation protection and at least one other person.

B.5.b.10. In-Plant/On-Site Survey Team

In-Plant/On-Site Survey Teams are used for radiological survey during reentry of site facilities as well as support of other emergency teams which must gain access for decontamination, repair, and other activities that support event mitigation or recovery operations.

B.5.c. Emergency Operations Facility (EOF)

The EOF Emergency Response Organization is presented in Figure 7.

B.5.c.1. Emergency Director

The Emergency Director is assigned the following responsibilities:

- Coordinate response activities with offsite response agencies
- Coordinate ERO/facility shift turnover
- Assume/maintain command and control
- Transfer command and control
- Request and coordinate emergency activities with law enforcement agencies
- Coordinate information and activities with offsite agency personnel in the facility
- Coordinate information with government officials/agencies and EOCs
- Prioritize and authorize requests for external assistance (technical, craft, admin, etc.)
- Approve material, personnel and logistics expenditures necessary for response to the event
- Request Federal support and resources
- Classify and declare emergencies
- Approve and direct offsite emergency notifications to state and local authorities
- Direct notifications and ENS communications with the NRC
- Ensure flow of information within and between the emergency response facilities
- Maintain communications with AEP corporate and coordinate activities
- Review news releases
- Direct preparations and brief personnel prior to facility activation
- Support coordination of site emergency facility relocation
- Approve Protective Action Recommendations to offsite authorities
- Terminate the emergency event
- Develop recovery plans

- Authorize and direct extreme measures (FLEX, EDMG, SAMG, §50.54(x) or suspend security controls)
- Conduct facility briefs and updates

B.5.c.2. EOF Manager

The EOF Manager is assigned the following responsibilities:

- Coordinate response activities with offsite response agencies (EM, ICP, Field Mon, etc.)
- Coordinate ERO/facility shift turnover
- Manage facility emergency response activities
- Manage assigned group emergency response activities
- Coordinate information and activities with offsite agency personnel in the facility
- Coordinate integration of the NRC site team
- Develop requests for external assistance (technical, craft, admin, etc.)
- Assist with emergency classification
- Ensure flow of information within and between the emergency response facilities
- Direct preparations and brief personnel prior to facility activation
- Ensure minimum staff is available and prepared to activate the facility
- Activate the facility
- Determine current/projected staff needs
- Develop recovery plans
- Conduct facility briefs and updates

B.5.c.3. Operations Advisor

The Operations Advisor is assigned the following responsibilities:

- Monitor status of the Emergency Operations Procedures
- Assist with emergency classification
- Support completion of the Emergency Notification Form to state and local authorities
- Provide support for development of mitigation strategies and contingency plans
- Evaluate conditions and provide recommendations for PARs
- Analyze and develop extreme measures actions (FLEX, EDMG, SAMG, §50.54(x))

B.5.c.4. State Communicator

The State & County Communicators are assigned the following responsibility:

- Perform offsite emergency notifications to state and local authorities
- Distribute forms, reports, etc. as needed

B.5.c.5. County Communicator

The State & County Communicators are assigned the following responsibility:

- Perform offsite emergency notifications to state and local authorities

B.5.c.6. HPN Communicator

The HPN Communicators are assigned the following responsibility:

- Provide event data and plant information to the NRC via the HPN

B.5.c.7. EOF Communicator

The EOF Communicator is assigned the following responsibilities:

- Communicate on assigned communication line and provide key information to facility staff
- Provide operations or radiological data to ERO members (loss of PPC/PSS)
- Maintain status and information boards

B.5.c.8. Public Information Communicator

The Public Information is assigned the following responsibilities:

- Provide emergency response information to the ENC
- Provide technical assistance for the development of news releases and statements

B.5.c.9. Offsite Liaison Coordinator

Offsite Liaison Coordinator is assigned the following responsibilities:

- Manage assigned group emergency response activities
- Support State/County EOC Liaisons
- Coordinate information with government officials/agencies and EOCs

B.5.c.10. Offsite Liaison

The Offsite Liaison is assigned the following responsibilities:

- Coordinate information with government officials/agencies and EOCs
- Report status of state and county emergency response activities to EOF

B.5.c.11. Industry & Reg Affairs Liaison

The Industry & Reg Affairs Liaison is assigned the following responsibilities:

- Coordinate information and activities with offsite agency personnel in the facility
- Coordinate integration of the NRC site team
- Coordinate external assistance (industry, commercial, contractor)
- Provide event notification/information to industry groups (INPO, ANI, etc.)
- Provide guidance for licensed-based decisions

B.5.c.12. Environmental Assessment Coordinator

The EOF the Environmental Assessment Coordinator is assigned the following responsibilities:

- Coordinate response activities with offsite response agencies (EM, ICP, Field Mon, etc.)
- Manage assigned group emergency response activities
- Assist with emergency classification
- Support completion of the Emergency Notification Form to state and local authorities
- Determine current/projected staff needs
- Monitor, evaluate and communicate conditions involving any release of radioactivity
- Review and analyze dose assessment results
- Direct/perform dose assessment
- Record/review radiological sampling and survey data
- Evaluate the need for and ensure proper use of KI
- Evaluate conditions and provide recommendations for PARs
- Ensure approved emergency exposure controls are issued

- Track emergency worker exposure and evaluate the need for dose extensions
- Coordinate the monitoring of site evacuees
- Direct personnel monitoring and decontamination activities
- Direct post-accident environmental sampling and exposure activities

B.5.c.13. Dose Assessor

The Dose Assessors are assigned the following responsibilities:

- Support completion of the Emergency Notification Form to state and local authorities
- Monitor, evaluate and communicate conditions involving any release of radioactivity
- Review and analyze dose assessment results
- Direct/perform dose assessment
- Record/review radiological sampling and survey data

B.5.c.14. Field Monitoring Team Communicator

The Field Monitoring Team Communicator is assigned the following responsibilities:

- Communicate on assigned communication line and provide key information to facility staff
- Brief and dispatch the onsite/offsite radiation monitoring teams
- Record/review radiological sampling and survey data
- Track emergency worker exposure and evaluate the need for dose extensions

B.5.c.15. Field Monitoring Team Member

The Field Monitoring Team Members are assigned the following responsibilities:

- Perform radiological sampling and surveys
- Record/review radiological sampling and survey data

Offsite Radiation Monitoring is performed by survey teams assembled in the OSC. Upon leaving the OSC the Offsite Survey Team(s) report to the Environmental Assessment Coordinator in the EOF via the Field Monitoring Team Communicator to receive briefing and instructions.

The off-site Survey Team Driver is normally filled by non-RPT personnel. Qualified RP Technicians fill the position for persons performing the survey.

B.5.c.16. Logistics Coordinator

The Logistics Coordinator is assigned the following responsibilities:

- Manage assigned group emergency response activities
- Coordinate external assistance (industry, commercial, contractor)
- Arrange logistics support for event response
- Support coordination of site emergency facility relocation
- Serve as primary point of contact for SAFER and FLEX support

B.5.c.17. IT Specialist

The IT Specialist is assigned the following responsibility:

- Ensure availability of facility information/communication/display systems

B.5.c.18. Administrative Coordinator

The Administrative Coordinator is assigned the following responsibilities:

- Complete facility 24 hour staffing list
- Manage assigned group emergency response activities
- Provide admin/logistics needs for facility operation

B.5.c.19. Administrative Specialist

The Administrative Specialist is assigned the following responsibilities:

- Provide admin/logistics needs for facility operation
- Distribute forms, reports, etc. as needed

B.5.d. Emergency News Center/Joint Information Center (ENC/JIC)

The ENC, located at the Nuclear Generation Group Headquarters Building, approximately 14 miles southeast of CNP in Buchanan, Michigan, will be staffed by individuals from the Energy Information Center, CNP, and Corporate Communications – Generation. The ENC will be under the direction of the Emergency News Center Manager. Throughout the operation of the ENC, the Emergency News Center Manager maintains constant communication with AEP Corporate Communications – Generation. See Figure 8 for an organization chart illustrating staffing and information flow for the ENC/JIC. Figure 5 illustrates ENC/JIC functional relationship to the remainder of the Emergency Response Organization.

When the Governor of the State of Michigan declares a "State of Disaster or Emergency" the ENC becomes the Joint Information Center at the governor's declaration. See Figure 8 for an organization chart illustrating staffing and information flow for the ENC/JIC.

B.5.d.1. Utility Spokesperson

The Utility Spokesperson is the "single utility spokesperson" when dealing with the news media.

The Utility Spokesperson is assigned the following responsibilities:

- Coordinate information and activities with offsite agency personnel in the facility
- Approve/review news releases
- Direct the development of news releases
- Ensure press releases are prepared and issued prior to JIC activation
- Perform media briefings and interviews
- Address rumors in media briefings
- Develop recovery plans

B.5.d.2. Technical Communicator

The Technical Communicator is assigned the following responsibilities:

- Communicate on assigned communication line and provide key information to facility staff
- Provide operations or radiological data to ERO members (loss of PPC/PSS)
- Provide emergency response information to the ENC
- Provide technical assistance for the development of news releases and statements
- Assist the Spokesperson in gathering technical information for media briefings and interviews

B.5.d.3. Emergency News Center Manager

The Emergency News Center Manager is assigned the following responsibilities:

- Complete facility 24 hour staffing list
- Coordinate ERO/facility shift turnover
- Manage facility emergency response activities
- Manage assigned group emergency response activities
- Coordinate information and activities with offsite agency personnel in the facility
- Develop requests for external assistance (technical, craft, admin, etc.)
- Ensure flow of information within and between the emergency response facilities
- Maintain communications with AEP corporate and coordinate activities
- Direct the development of news releases
- Ensure press releases are prepared and issued prior to JIC activation
- Coordinate the conduct of media briefings
- Direct preparations and brief personnel prior to facility activation
- Ensure minimum staff is available and prepared to activate the facility
- Activate the facility
- Determine current/projected staff needs
- Conduct facility briefs and updates

B.5.d.4. Media Area Coordinator

The Media Area Coordinator is assigned the following responsibilities:

- Manage assigned group emergency response activities
- Maintain status and information boards
- Coordinate the conduct of media briefings
- Coordinate accommodation of news media personnel
- Provide media with prepared media information and media briefing start times
- Provide admin/logistics needs for facility operation
- Distribute forms, reports, etc. as needed

B.5.d.5. Audio/Visual Specialist

The Audio/Visual Specialist is assigned the following responsibilities:

- Support the setup of electronics and communications equipment
- Ensure availability of facility information/communication/display systems

B.5.d.6. Receptionist

The Receptionist is assigned the following responsibilities:

- Coordinate ENC security and media badging
- Register personnel at the assigned location
- Provide admin/logistics needs for facility operation

B.5.d.7. Briefing Statement Writer

The Briefing Statement Writer is assigned the following responsibilities:

- Develop technical news releases
- Coordinate distribution of news releases

B.5.d.8. Rumor Control/Media Monitoring Coordinator

The Rumor Control/Media Monitoring Coordinator is assigned the following responsibilities:

- Manage assigned group emergency response activities
- Monitor media outlets for event related information
- Perform rumor control activities
- Set up the facility
- Determine current/projected staff needs

B.5.d.9. Rumor Control/Media Monitoring Specialist

The Rumor Control/Media Monitoring Specialist is assigned the following responsibilities:

- Monitor media outlets for event related information
- Perform rumor control activities

B.5.d.10. Support Office Coordinator

The Support Office Coordinator is assigned the following responsibilities:

- Provide admin/logistics needs for facility operation
- Manage assigned group emergency response activities
- Determine current/projected staff needs

B.5.d.11. Support Office Admin Specialist

The Support Office Admin Specialist is assigned the following responsibility:

- Complete facility 24 hour staffing list
- Provide admin/logistics needs for facility operation

B.6. Overall Organization and Communication

The communication links between various emergency centers established as a result of implementing the Emergency Plan are delineated by Functional Organization Charts in Figures 9 and 10.

Initial notification flow sequence is shown in Figure 9.

Figure 10 shows the relationship between various emergency centers and organizations after the incident has occurred and all channels of communication have been established.

B.7. Plant Staff Augmentation

B.7.a. Logistics Support

Emergency Director directs the development of recovery plans and procedures.

The Administrative Coordinator serves as a support resource for the ED in the areas of planning, scheduling and expediting of recovery operations. The Administrative Coordinator is assigned to the EOF and reports to the EOF Manager.

B.7.b. Reentry/Recovery Technical Support

The Plant Evaluation Team (PET), operating out of the TSC develops corrective action recommendations. When the corrective action plans are decided upon, the TSC Manager coordinates the design and construction activities of the utility, NSSS supplier, and other outside vendors to support the corrective actions for recovery.

B.7.c. Management Level Interface with Government

During an event the Emergency Director is responsible for control and coordination of all emergency and recovery operations including communications with offsite organizations, and interface with governmental authorities.

B.7.d. Releases to Media

The Emergency News Center Manager coordinates all information at the ENC/JIC with counterparts from the county, state, federal agencies, and others involved with the emergency.

The Utility Spokesperson is the "single utility spokesperson" when dealing with the news media.

B.8. Offsite Agencies and Organizations

Appendix B, Agreements with Off-Site Support Agencies, identifies the primary response agencies that can be relied upon in an emergency to provide assistance. In addition various nuclear industry organizations can be called upon to provide technical assistance as needed. Procedures have been developed and are in place that assures the ability to notify and request assistance from those agencies identified in Appendix B. These procedures also provide the ability to notify and request assistance from other nuclear industry organizations. These include, but are not limited to:

1. NSSS Supplier.
2. Consultants on radiological and radwaste requirements.
3. Nuclear Fuel Supplier.

B.8.a. Notification of American Nuclear Insurers

The American Nuclear Insurers notification criteria for nuclear emergencies has been brought into alignment with the emergency classification (EAL) system described in Section D and also identifies methods for follow-up communications.

American Nuclear Insurers requires notification in the event of an Alert, Site Area Emergency or General Emergency.

A representative of the NGG shall notify American Nuclear Insurers via the American Nuclear Insurers emergency notification number.

American Nuclear Insurers requires that periodic updates be supplied of releases of radioactive material from the plant, plant status and impending protective action for members of the public. These updates are the responsibility of the Industry Support Communicator in the EOF.

Appendix I, Notification of American Nuclear Insurers, and Figure 13 show the ANI notification procedure.

B.9. Offsite Groups

Although many offsite groups may be used in the event of an emergency, there are three offsite groups that have agreed to serve in the capacities outlined in this plan should an incident occur. These groups are the Berrien County Sheriff's Department, the State of Michigan, and the Federal Government. The responsibilities and authorities of the County, State and Federal Governments and their interrelationship with this emergency plan are outlined in the following paragraphs. Written agreements with various offsite agencies that are part of the overall response organization within the Plume Exposure Pathway Emergency Planning Zone are listed in Appendix B of this plan.

B.9.a. Berrien County Sheriff's Department

The Berrien County Sheriff's Department, which is the lead agency in implementing the Berrien County Radiological Emergency Plan, has established an Emergency Operating Center (BCEOC) in accordance with the Berrien County Emergency Plan. This center is located in Benton Harbor, Michigan about 14 miles from the plant. It is equipped with the appropriate communications equipment to coordinate all the local offsite protective actions.

The Berrien County Sheriff has the responsibility and authority for coordination of all local resources in the event of a hostile threat or a radiological emergency, including establishing an Incident Command Post when applicable.

The Sheriff's Department also has a marine division within its organization for the control of water traffic should it be necessary. Although the Sheriff's Department is primarily responsible for coping with an emergency using its own resources, the County Sheriff will call upon state resources to supplement the local resources when the local resources are clearly insufficient to cope with the emergency.

Once the Governor of Michigan has declared a State of Disaster under Act 390, the Berrien County Sheriff's Department will implement the Governor's Orders and will perform the following:

1. Contact other local agencies as needed for assistance.
2. Control offsite vehicular traffic.
3. Initiate the warning system and issue clear instructions of what protective action is required for the populace.
4. Take other appropriate action, if so advised by the Michigan State Department of Environmental Quality (DEQ) or upon notification by the SED or ED that conditions requiring immediate offsite protective action have been reached. (For further details see the Berrien County Plan – Warning Annex.)

B.9.b. State of Michigan

The State of Michigan has developed the Michigan Emergency Management Plan. In the event that offsite protective action is required due to a hostile threat or a radiological emergency at CNP, this Michigan Emergency Management Plan can also be placed into effect to assist the Berrien County Sheriff's Department. A brief outline follows of the plan's provisions for nuclear facility emergencies.

Under the Michigan Emergency Management Plan, the Department of State Police will provide guidance for the development of state and local nuclear incident emergency plans for dealing with peacetime radiological incidents. These are defined as situations in which normal control over radioactive materials is accidentally lost, with resulting hazard to the health and safety of the general public.

The State Director of Emergency Management and Homeland Security is responsible for planning and coordinating the Disaster Relief Forces and their activities for the state. The Nuclear Power Plant Project Coordinator, Emergency Management and Homeland Security Division, State Police is designated as the Emergency Planning Coordinator for the State's radiological emergency response planning portion of the plan.

The State Police, Emergency Management and Homeland Security Division, at the direction of the Governor, will coordinate all organizations in the State for nuclear incident activities, maintaining liaison with all levels of government.

The primary State Emergency Operations Center (SEOC), acting in support of the BCEOC, will perform all state governmental functions. This SEOC is located at 7150 Harris Drive, Dimondale, MI 48821.

Alternate sites to the primary State EOC will be located in one of the State Police District Headquarters as indicated in the Michigan Emergency Management Plan.

The basic responsibilities and duties of the State Government agencies that provide support during a nuclear incident are outlined below.

B.9.b.1. The Primary State Response Agencies and a summary of their responsibilities are:

B.9.b.1.a. <u>The Department of Michigan State Police (MSP)</u>

- Receives notification of nuclear incidents from the utility and alerts state agencies and warns affected local governments (adjacent states and adjacent counties are also alerted);
- Operates the State Emergency Operations Center, and the field team centers;
- Provides overall direction and control of all activated state and local disaster relief forces;
- Provides notification to local jurisdictions based on technical advice by the DEQ to evacuate and/or shelter in-place.
- Assists local jurisdictions to establish security around restricted area;
- Collects and compiles damage assessment information;
- Prepares and coordinates emergency public information releases and advises the news media;
- Assists local jurisdictions with any transportation accidents;
- Establishes procedures to handle terrorist activities at nuclear power plants; and
- Provides liaison to various federal organizations and agencies.

B.9.b.1.b. The Department of Environmental Quality (DEQ)

- Monitors the environment, personnel, and equipment in support of emergency operations;
- Evaluates the public health and medical aspects of radiological effects;
- Recommends measures and establishes limits to mitigate radiological effects on public health;
- Recommends measures to control the spread of radioactivity;
- Establishes radiological safety criteria for recovery, re-occupancy, and rehabilitation of affected areas;
- Provides technical advice and assistance for offsite decontamination activities and support.
- Sample surface water.
- Conduct other monitoring as requested.
- Monitor areas for contamination of the environment and recommend suitable countermeasures to reduce the impact of contamination of the environment.
- Provide meteorological support and technical advice for use in analyzing or projecting radiological release hazards.

B.9.b.2. The State Support Response Agencies and a summary of their responsibilities are:

B.9.b.2.a. Department of Agriculture

- Responsible for sampling agriculture areas for food contamination and recommending appropriate counter measures in conjunction with the Department of Public Health.
- Responsible for taking appropriate actions to prohibit contaminated foods from entering the market.

B.9.b.2.b. Licensing and Regulatory Affairs

- Provide liaison to the public utility companies.
- Provide recommendations for handling energy disruptions resulting from a shutdown due to a nuclear incident.
- Provide advice and guidance to affected persons regarding insurance claims and adjustments.

B.9.b.2.c. Department of Corrections

- Provide for mass care, feeding, clothing and sheltering.
- Provide mass transportation assistance for affected persons and disaster relief workers.

B.9.b.2.d. Department of Education

- Provide support for mass care, feeding and housing.
- Provide mass transportation assistance.

B.9.b.2.e. Department of Community Health

- Provide crisis counseling and intervention center assistance to affected persons.
- Provides coordination of medical and emergency medical services to affected areas.

B.9.b.2.f. Department of Military Affairs

- Provide transportation and manpower support for evacuation counter measures.
- Provide security support to local law enforcement operations, including control of access to restricted or evacuated areas within the Emergency Planning Zone (EPZ).

B.9.b.2.g. Department of Natural Resources

- Monitor areas accessible by fish and game.
- Take action to prevent or minimize contamination of fish and game.
- Take samples of fish and game, which may have been exposed or contaminated.
- Assist local authorities to warn and evacuate occupants of state parks, beaches, and other recreational areas if necessary.

B.9.b.2.h. Human Services

- Assist with sheltering and housing evacuated population;
- Provide feeding and clothing if required to persons affected.
- Establish assistance centers for affected individuals and families to receive advice and assistance.
- Coordinate assistance made available by volunteer relief agencies and the American Red Cross.

B.9.b.2.i. Department of Transportation

- Provide for mass transportation assistance to local jurisdictions if required.
- Provide advice and assistance support regarding barricades and security measures around an evacuated or restricted area.
- Provide advice on traffic regulation and control for the evacuation of designated areas.
- Provide assistance for the rescue of entrapped workers and persons.

The Michigan Department of State Police is notified of an emergency condition in the manner described in Section E by the SED or designee. The State Police will set up a command post at the SEOC at 7150 Harris Drive, Dimondale, MI 48821. The State Police will also set up a Field Team Center (FTC) to coordinate the dispatch of field teams to monitor for radiological contamination. The FTC will be established at the Michigan Department of Transportation Coloma Service Garage on Red Arrow Highway at I-196. The State Police will coordinate their efforts with the BCEOC and with the EOF, as needed. After notification has been given, the Michigan Department of State Police will assist Berrien County and perform the actions listed in Section B.9.b.

B.9.c. Federal Government

The Federal Government has established the Nuclear/Radiological Incident Annex under the National Response Plan to coordinate Federal radiological assistance. The Nuclear/Radiological Incident Annex establishes:

- A means of requesting and providing Federal radiological assistance from existing Federal resources, and
- An operational framework for coordinating the radiological monitoring and assessment activities of Federal agencies during radiological emergencies occurring within the United States and its territories.

The Nuclear Regulatory Commission (NRC) as the Coordinating Agency is responsible for coordinating the response of all other federal agencies in accordance with the National Response Plan.

The Department of Energy (DOE) Chicago Operations Office, located at Argonne National Laboratory, has radiation monitoring capability available. It will, as requested by NGG Management or any of the indicated offsite groups (Sheriff, State Police or DEQ), assist in the offsite emergency program.

The Chicago Operations Office will, upon request by NGG Management or any of the indicated offsite groups, participate in the monitoring of the offsite areas affected and in the analysis of field data and will recommend measures to be taken offsite for protecting the public. It will also advise the ED of the recommendations.

The DOE Operations Office will, to the extent they are available during the protection and recovery stage, continue to advise the Emergency Management and Homeland Security Division of the Michigan Department of State Police and provide monitoring and analytical capability as requested.

B.9.d. Fire Department

CNP maintains an onsite fire fighting brigade; this capability is expected to be sufficient for all fires onsite. In the event offsite assistance is desired or needed, local fire departments may be called upon. The Fire Protection Shift Supervisor is responsible for fire fighting activity onsite as well as notifying offsite departments when assistance is needed.

The primary fire departments that will respond to a fire emergency at CNP are:

- Lake Township Fire Department
- Bridgman Fire Department

Letters of agreement to provide firefighting assistance to CNP can be found in Appendix B of this Plan.

B.9.e. HAZMAT Team

CNP maintains an onsite hazardous material spill response team that is capable of responding to most emergency spill events. If there is insufficient manpower or material available, assistance from the Berrien County HAZMAT Team will be requested. A letter of agreement offering their services can be found in Appendix K of this plan.

AEP has also contracted with environmental firms to provide emergency spill response assistance. These contractors are listed in the Spill Prevention Control and Countermeasures (SPCC) Plan and Pollution Incident Prevention (PIP) Plan, copies of which are located in the Shift Manager's office.

Figure 2

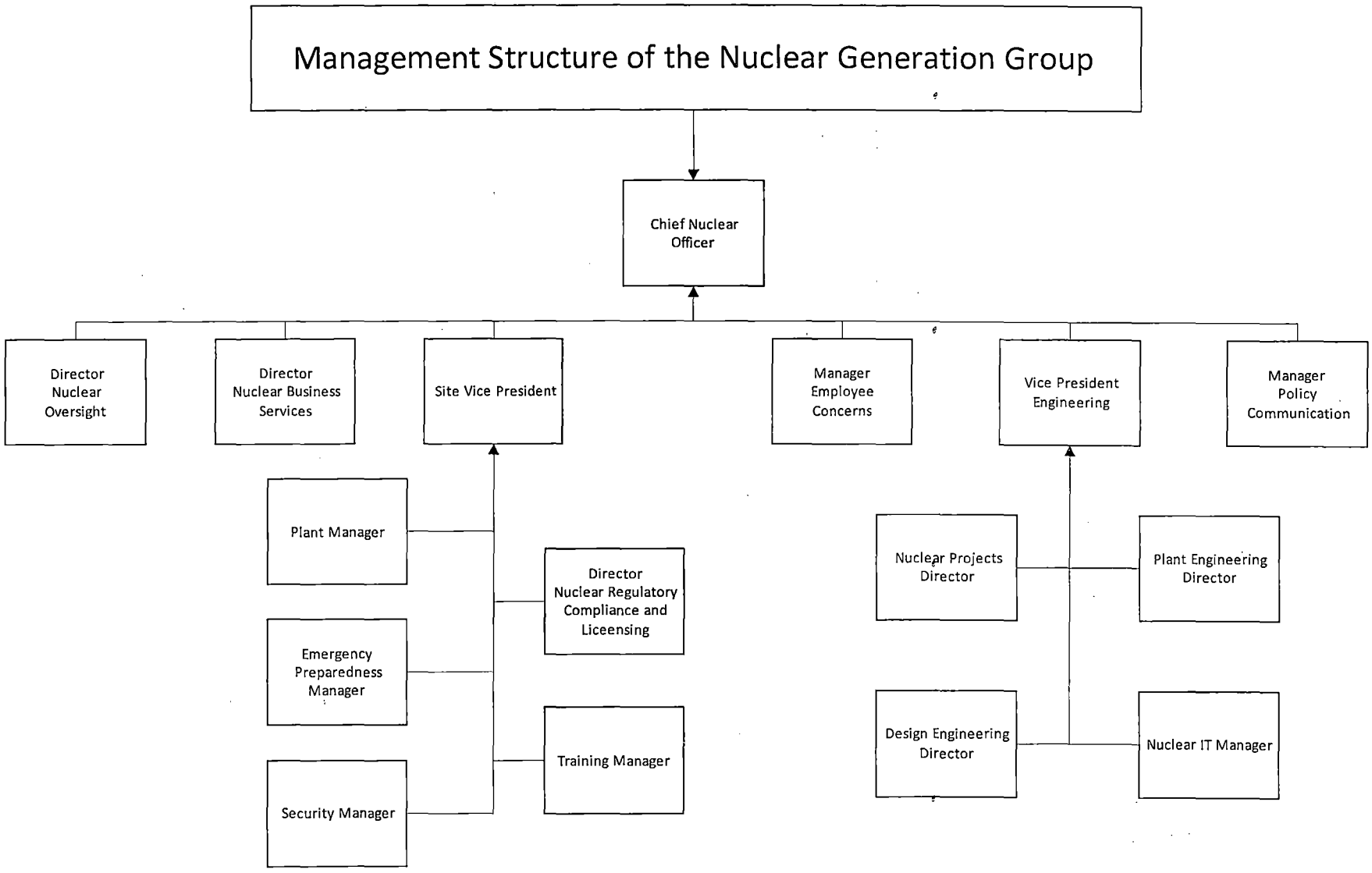

Management Structure of the Nuclear Generation Group
Chief Nuclear Officer
Director Nuclear Oversight
Director Nuclear Business Services
Site Vice President
Manager Employee Concerns
Vice President Engineering
Manager Policy Communication
Plant Manager
Director Nuclear Regulatory Compliance and Liceensing
Emergency Preparedness Manager
Training Manager
Security Manager
Nuclear Projects Director
Plant Engineering Director
Design Engineering Director
Nuclear IT Manager

Figure 3

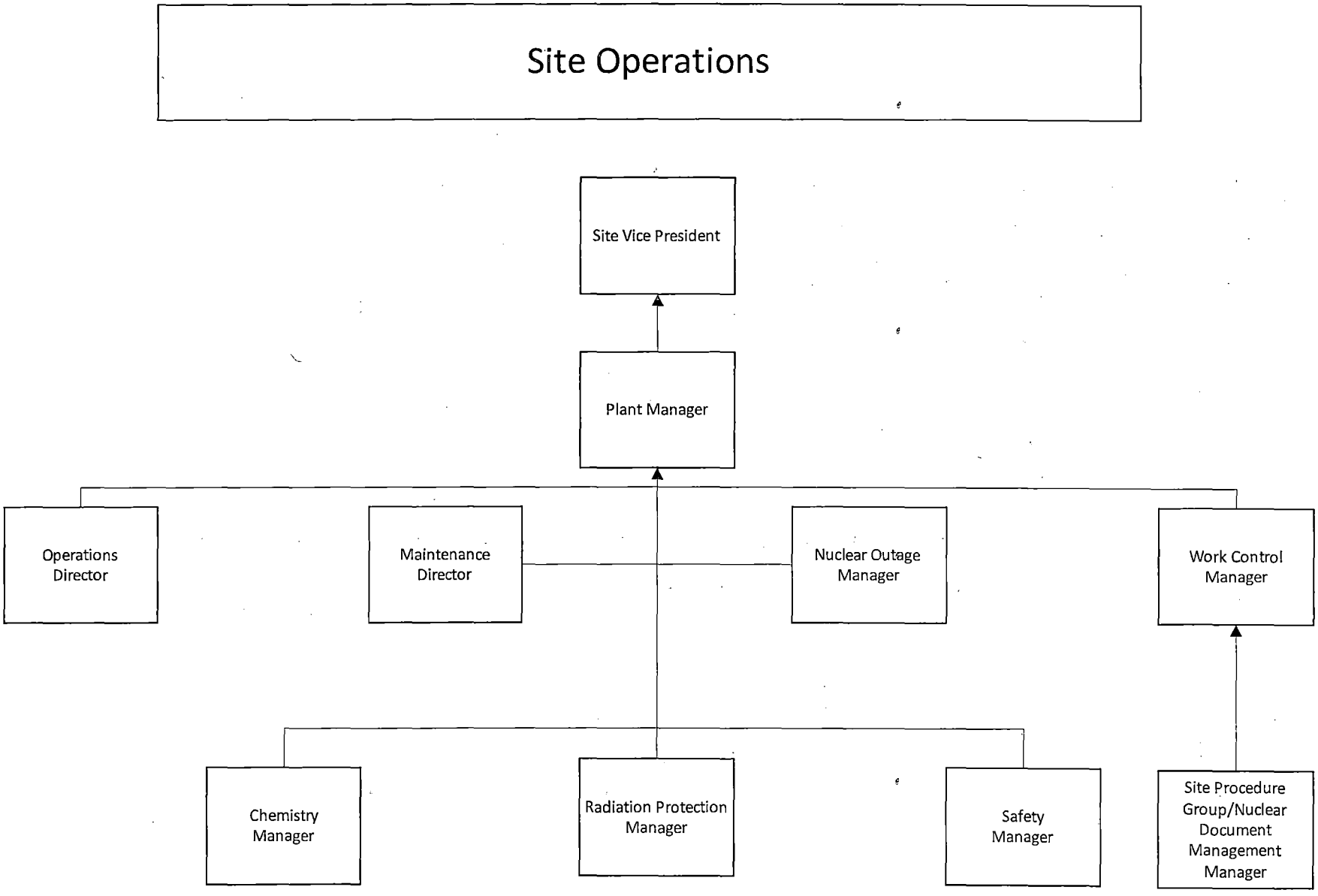

Site Operations
Site Vice President
Plant Manager
Operations Director
Maintenance Director
Nuclear Outage Manager
Work Control Manager
Chemistry Manager
Radiation Protection Manager
Safety Manager
Site Procedure Group/Nuclear Document Management Manager

Figure 4

On Shift Response Organization

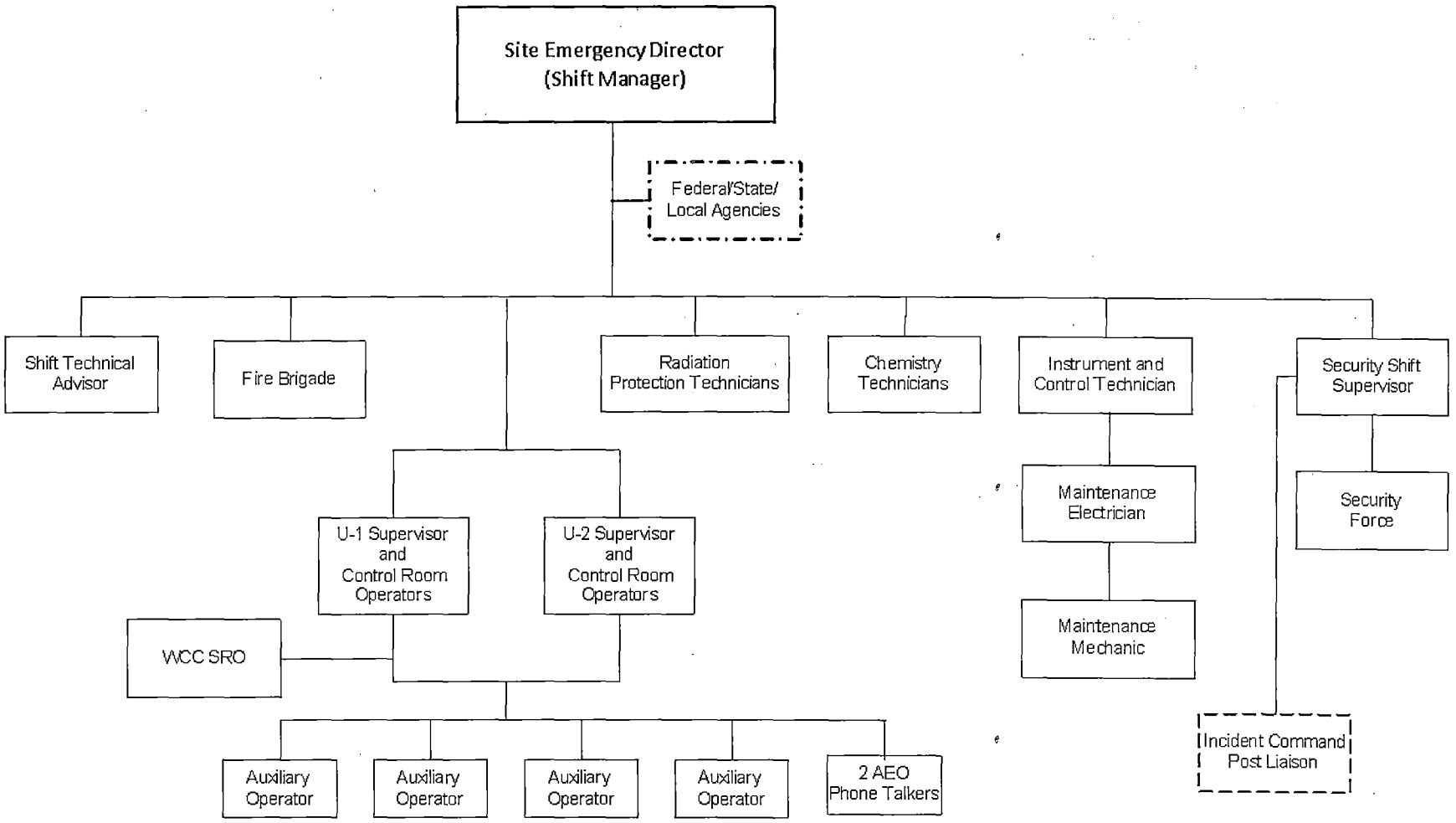


Figure 5 – TSC Organization

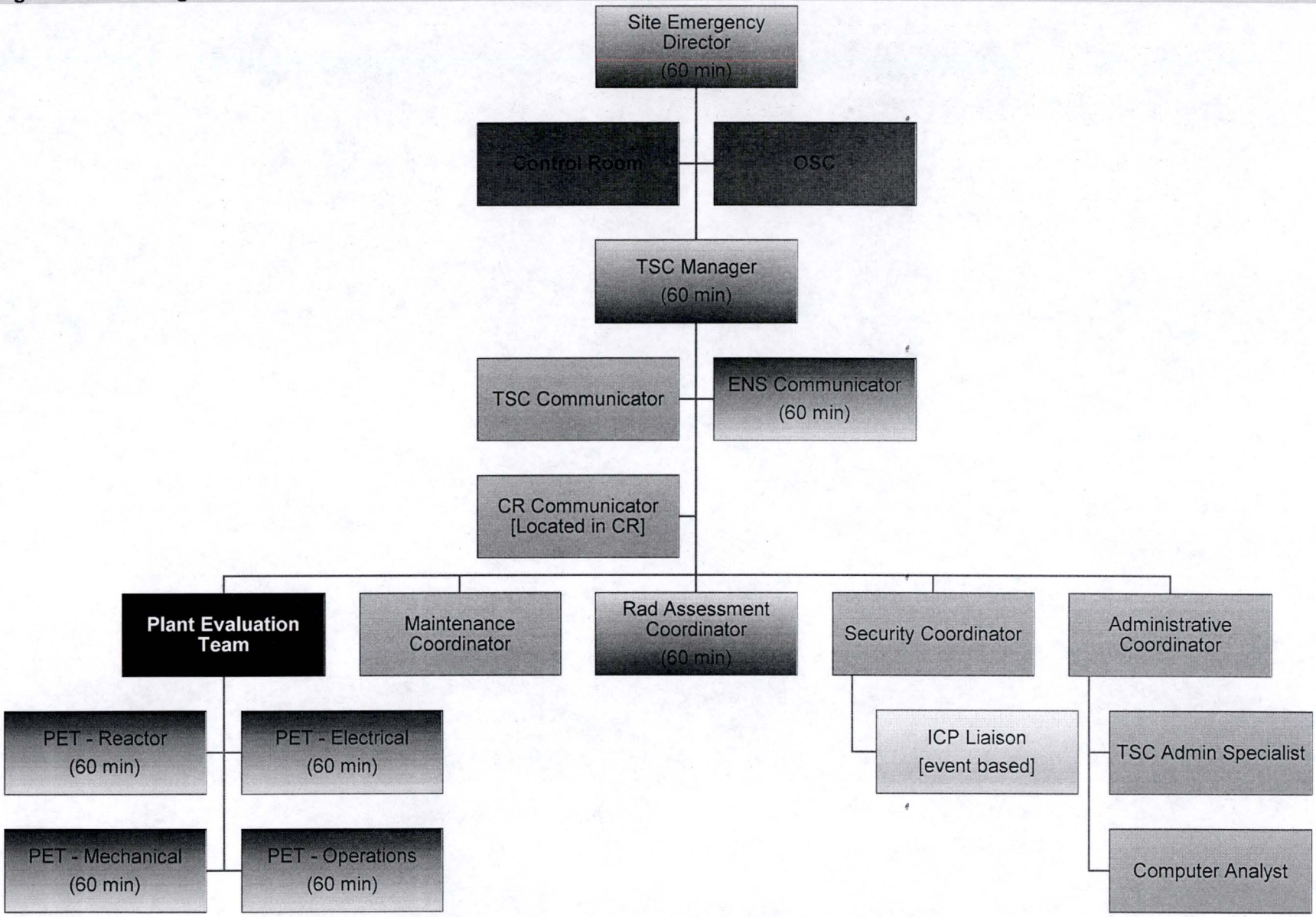


Figure 6 – OSC Organization

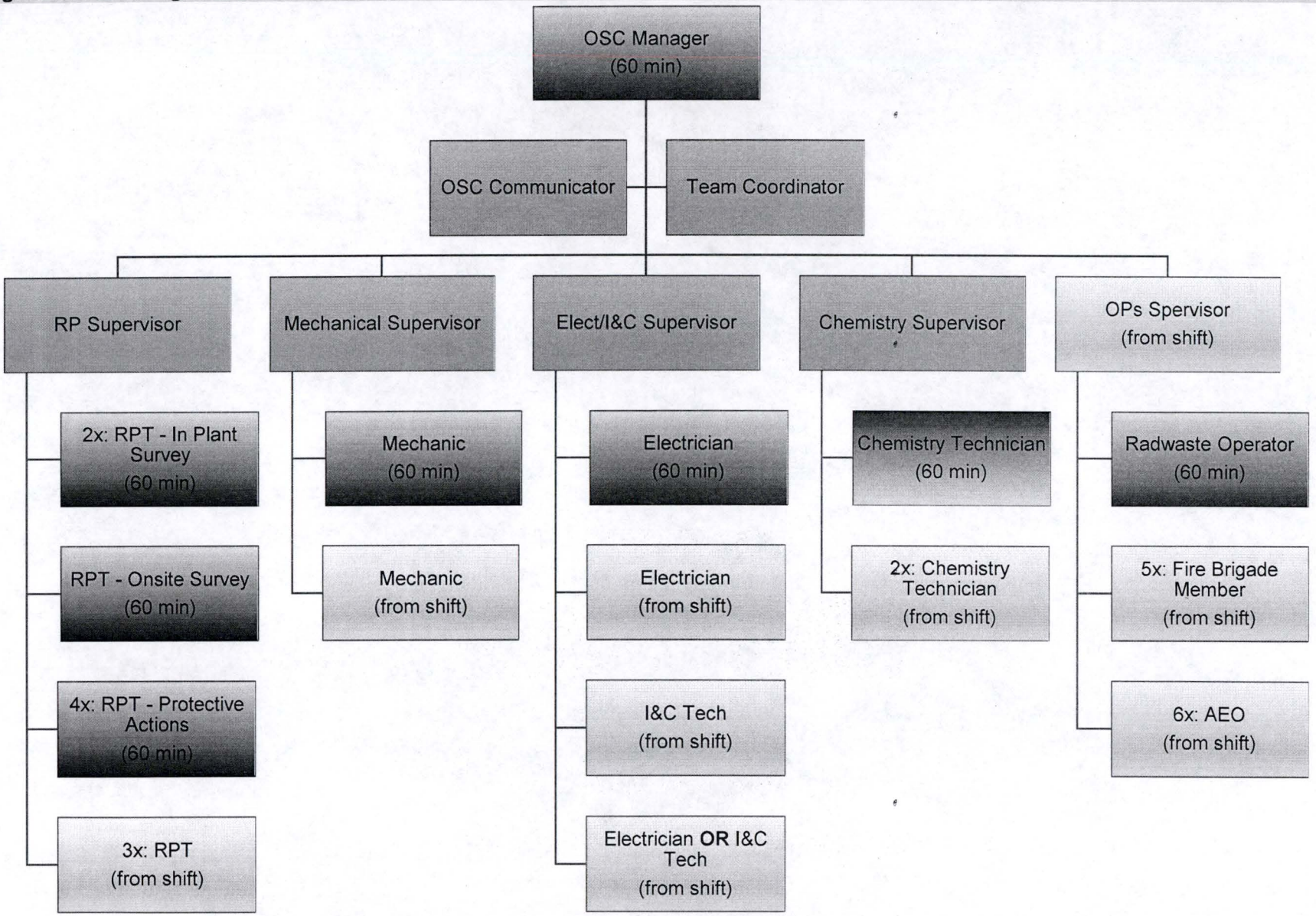


Figure 7 – EOF Organization

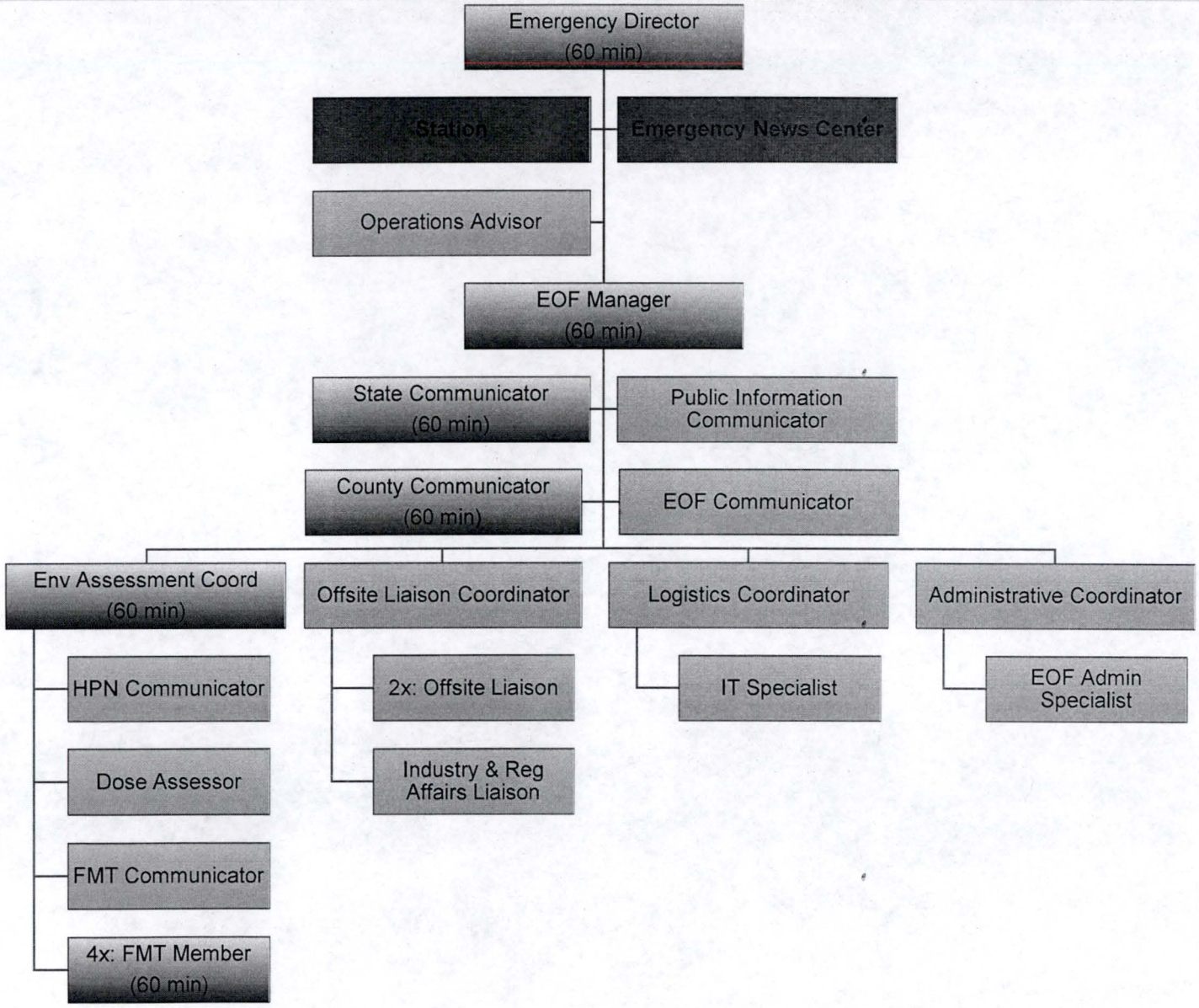


Figure 8 – CNP ENC/JIC Organization

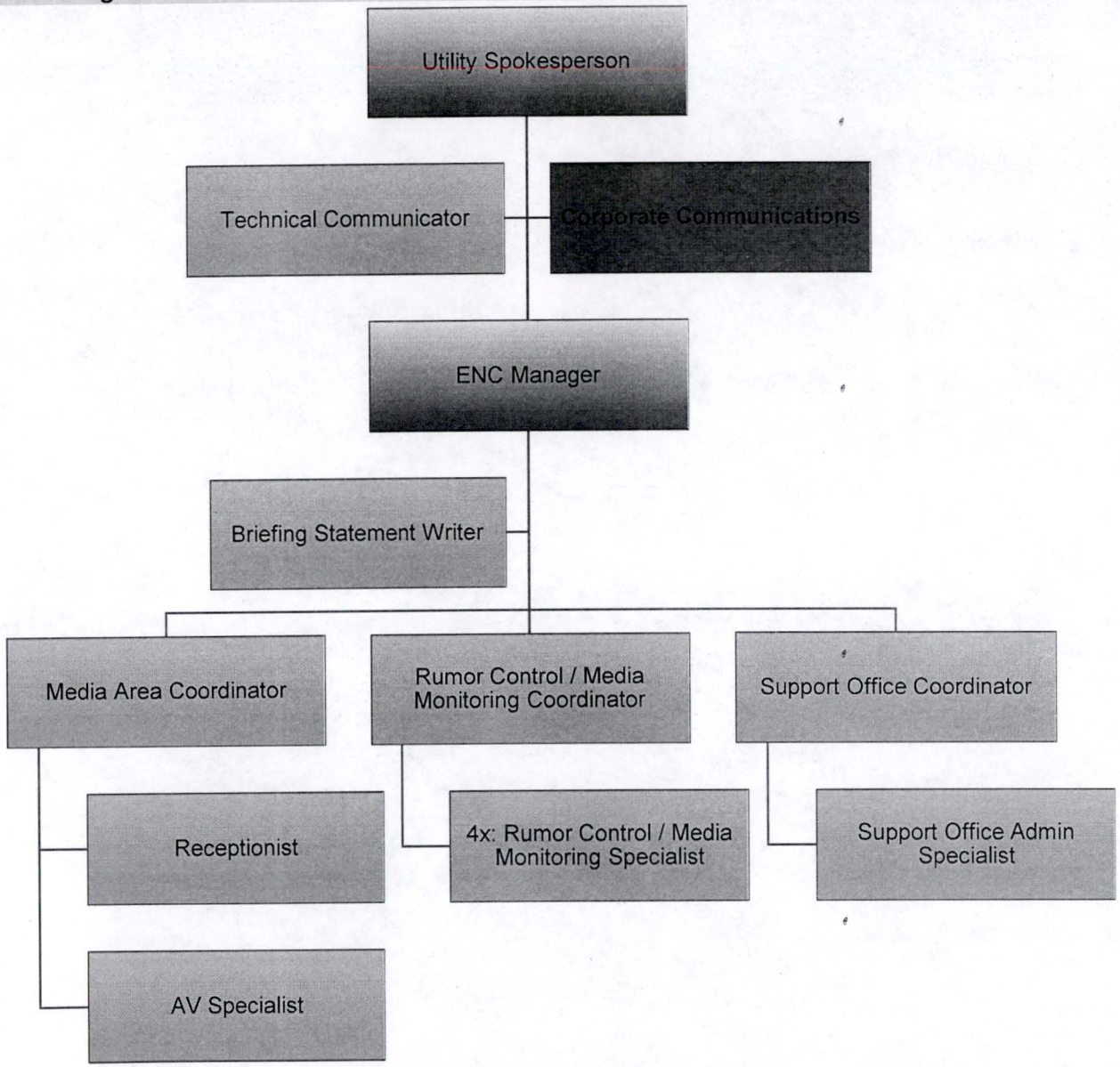


Table 1
CNP Staffing for Nuclear Power Plant Emergencies

Functional Area	Major Tasks	ERO Position Title	On Shift	60 Min	Full Staff	HAB
1. Plant Ops and Assessment of Operational Aspects	Response and Accident Mitigation	Shift Manager (CR)	1			
		Assistant Shift Manager/WCC-SRO (CR)	1			
		Unit Supervisor (CR)	2			
		Control Room Operator (CR)	4			
		Auxiliary Equipment Operator (CR)	4			
2. Direction and Control	Command and Control	Shift Manager (CR)	1[(a)]			
		Site Emergency Director (TSC)		1		
	Facility and Group Control	TSC Manager (TSC)		1		
		OSC Manager (OSC)		1		
		EOF Manager (EOF)		1		
		ENC Manager (ENC)			1[(d)]	
3. Notification & Comm.	Emergency Communications	Licensee – Reactor Operator (CR)	1[(a)]			
		Local/State – Qualified Operator (CR)	1			
		Federal – Qualified Operator (CR)	1			
		State & County Communicator (EOF)		2		
		ENS Communicator (TSC)		1		
		HPN Communicator (EOF)			1	
	Plant Status & Technical Activities	CR Communicator (CR)			1	
		TSC Communicator (TSC)			1	
		OSC Communicator (OSC)			1	
		EOF Communicator (EOF)			1	
		Public Info Communicator (EOF)			1	
	Governmental	Offsite Liaison Coordinator (EOF)			1	
		Offsite Liaison (EOF)			2	
		ICP Liaison (TSC)				1[(b)]
		Industry & Reg Affairs Liaison (EOF)			1	
4. Radiological Assessment and Support of Operational Accident Assessment	EOF Director	Emergency Director (EOF)		1		
	Dose Assessment	Reactor Operator (CR)	1[(a)]			
		Dose Assessor (EOF)			1	
	Offsite Surveys	RP Technician (OSC)	1			
		FMT Communicator (EOF)			1	
		FMT Member (EOF)		4		
	Onsite Surveys	RP Technician (OSC)	1			
		RP Technician (OSC)		1		
	In-plant Surveys	RP Technician (OSC)	1			
		RP Technician (OSC)		2		
	RP Supervisory	Rad Assessment Coordinator (TSC)		1		
		Environmental Assmt Coordinator (EOF)		1		
		RP Supervisor (OSC)			1	
	Chemistry / Radiochemistry	Chemistry Technician (OSC)	2			
		Chemistry Technician (OSC)		1		
	Chemistry Supervisory	Chemistry Supervisor (OSC)			1	

Functional Area	Major Tasks	ERO Position Title	On Shift	60 Min	Full Staff	HAB
5. Plant System Engineering, Repair, and Corrective Actions	Technical Support / Accident Analysis	Shift Technical Advisor (CR)	1			
		Core Damage: PET – Reactor (TSC)	1[(a)]	1		
		Thermal Hydraulics: PET – Ops (TSC)	1[(a)]	1		
		Electrical: PET – Electrical/I&C (TSC)		1		
		Mechanical: PET – Mechanical (TSC)		1		
		Operations Advisor (EOF)		1		
	Repair and Corrective Actions	Mechanic (OSC)	1			
		Electrician (OSC)	1			
		I&C Technician (OSC)	1			
		Electrician OR I&C Technician (OSC)	1			
		Maintenance Coordinator (TSC)			1	
		Team Coordinator (OSC)			1	
		Mechanical Supervisor (OSC)			1	
		Mechanic (OSC)		1		
		Radwaste Operator (OSC)		1		
		Elect/I&C Supervisor (OSC)			1	
		Electrician (OSC)		1		
6. In-Plant PAs	Radiation Protection	RP Technician (OSC)	2[(a)]			
		RP Technician (OSC)		4		
7. Fire Protection		Fire Brigade (OSC)	5	Local Support		
8. Rescue / 1st Aid		Fire Brigade (OSC)	2[(a)]	Local Support		
9. Access Control	Security & Accountability	Shift Security Supervisor (Plant)	1			
		Security Personnel (Plant)	(c)			
		Security Coordinator (TSC)			1	
10. Resource Allocation and Admin	Administration	Administrative Coordinator (TSC)			1	
		TSC Administrative Specialist (TSC)			1	
		Administrative Coordinator (EOF)			1	
		EOF Administrative Specialist (EOF)			1	
		Media Area Coordinator (ENC)			1	
		Receptionist (ENC)			1	
	Facility Operations	Computer Analyst (TSC)			1	
		Logistics Coordinator (EOF)			1	
		IT Specialist (EOF)			1	
		AV Specialist (ENC)			1	
		Support Office Coordinator (ENC)			1	
		Support Office Admin Specialist (ENC)			1	
11. Public Information	Public Information	Utility Spokesperson (ENC)			1[(d)]	
		Technical Communicator (ENC)			1	
		Briefing Statement Writer (ENC)			1	
		Rumor Control/Media Mon Coord (ENC)			1	
		Rumor Control/Media Mon Spec (ENC)			4	
		Totals:	**30**	**29**	**41**	**1**

The augmentation times presented in this table are goals developed from the guidance of Table B-1 in NUREG-0654, FEMA-REP-1, Rev. 1 "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants."

a. May be provided by shift or other personnel assigned from other functions. Not included in the total.

b. The ICP Liaison is a situational position. For all HAB events a 2nd TSC Security Coordinator assumes the position of ICP Liaison and responds to the ICP.

c. Per Security Plan

d. Utility Spokesperson and Emergency News Center Manager are minimum staffing positions required for facility activation, but they do not have a required response time.

PLANNING STANDARD C

EMERGENCY RESPONSE SUPPORT AND RESOURCES

C. EMERGENCY RESPONSE SUPPORT AND RESOURCES

C.1. Federal Radiological Assistance

C.1.a. Requesting Federal Assistance

The Emergency Director (ED) or the Site Emergency Director (SED) has the authority to request federal radiological assistance.

A request for federal radiological assistance should be made through the Department of Energy's (DOE) Chicago Operations Office located at 9800 S. Cass Avenue, Argonne, Illinois 60439. The Chicago Operations Office is designated to provide the primary assistance following a radiological incident in the Radiological Assessment Program (RAP) Region 5.

When a request for RAP assistance is made, the following information should be provided:

1. Nature of the incident.
2. Name, title, location and telephone number of person requesting assistance.
3. Time of the incident.
4. Location of the incident.
5. Accessibility of location.
6. Whether a fire is involved.
7. Relative seriousness of incident.
8. Weather conditions.
9. Personnel involved (injuries, contamination, etc.).
10. Local/state/federal agencies that have been notified.
11. Whether the news media is aware of the incident; whether false or exaggerated reports are known to have circulated.

C.1.b. Federal Resources

The immediate objective of the DOE's Chicago Operations Office is to dispatch a team of specialists to the incident site where the team will:

1. Evaluate the hazard.
2. Take or recommend action to counteract and control any acute hazard offsite from the licensee's site.
3. Establish communication with State and local authorities and the press.

If the Chicago Operations Office determines a need for additional assistance beyond its own capabilities, it may initiate the Nuclear/Radiological Incident Annex.

The Nuclear/Radiological Incident Annex has been established by the federal government to coordinate federal radiological assistance. The Nuclear/Radiological Incident Annex establishes:

- A means of requesting and providing Federal radiological assistance from existing federal resources, and

- An operational framework for coordinating the radiological monitoring and assessment activities of Federal agencies during radiological emergencies occurring within the United States and its territories.

Through the Nuclear/Radiological Incident Annex the DOE's Chicago Operations Office has the capability to call upon resources located throughout the United States and will provide this assistance where necessary or when requested. Some of the immediate resources that can be provided are (but not limited to):

1. Provide team(s) of RAP personnel to assist in offsite monitoring.
2. Provide portable direct reading radiological measuring instruments.
3. Provide counting equipment.
4. Provide aerial surveillance and measurement.
5. Provide analytical capability to augment the licensee and state's capability.
6. Provide resources as may be available at the Argonne National Laboratory.
7. Provide health physics assistance.
8. Provide environmental control assistance.
9. Provide remote handling equipment on an as needed basis.

Additional information pertaining to federal radiological assistance can be found in Appendix E, Description of Federal Radiological Assistance, to this plan. Appendix E is divided into three sections. Section I is a brief introduction to the federal radiological assistance. Section II describes typical capabilities and expected mobilization and travel times for some of the Region 5 radiological assistance resources available within Region 5 of the DOE's radiological assistance program. Section III describes additional DOE capabilities that can be activated dependent on the assistance needed and how it is activated.

C.1.c. Federal Response Support Resources

Appendix E contains information on the local resources required to support the RAP.

C.2. Liaisons

C.2.a. Liaisons to CNP

Not applicable

C.2.b. Liaisons from CNP

Sections B.5.a.10 and B.5.c.10. detail the liaisons provided to the Berrien County EOC, Incident Command Post and the Michigan SEOC.

C.3. Radiological Laboratories

Section H.6.c Offsite Laboratory Facilities discusses offsite laboratory availability.

C.4. Offsite Agencies and Organizations

Appendix B identifies the primary response agencies that can be relied upon in an emergency to provide assistance. In addition various nuclear industry organizations can be called upon to provide technical assistance as needed. Procedures have been developed and are in place that assures the ability to notify and request assistance from those agencies identified in Appendix B. These procedures also provide the ability to notify and request assistance from other nuclear industry organizations. These include, but are not limited to:

1. NSSS Supplier.

2. Consultants on radiological and radwaste requirements.

3. Nuclear Fuel Supplier.

C.4.a. American Nuclear Insurers

The American Nuclear Insurers notification criteria for nuclear emergencies has been brought into alignment with the emergency classification (EAL) system described in Section D and also identifies methods for follow-up communications.

American Nuclear Insurers requires notification in the event of an Alert, Site Area Emergency or General Emergency.

A representative of the NGG shall notify American Nuclear Insurers via the American Nuclear Insurers emergency notification number.

American Nuclear Insurers requires that periodic updates be supplied of releases of radioactive material from the plant, plant status and impending protective action for members of the public. These updates are the responsibility of the Industry Support Communicator in the EOF.

Appendix I and Figure 13 show the ANI notification procedure.

C.4.b. Nuclear Transportation Accidents

A Voluntary Assistance Agreement has been entered into between electric utilities involved in the transportation of source material, special nuclear material and by-product material received, possessed, used or transferred. This agreement sets forth the understanding and agreement with respect to the mutual undertaking to each other in the situation where an emergency occurs by reason of a nuclear materials transportation accident and assistance is provided by one utility to another. A copy of this agreement can be found in Appendix B.

C.4.c. Nuclear Power Plant Accidents

A voluntary assistance agreement has been entered into between electric utilities involved in the operation of nuclear power plants. This agreement sets forth the understanding and agreement with respect to their mutual undertaking to each other in a situation where an emergency occurs at a nuclear power plant and assistance is provided by one utility to another. A copy of this agreement can be found in Appendix B, and contact information is contained in the Emergency Plan Procedures.

PLANNING STANDARD D

EMERGENCY CLASSIFICATION SYSTEM

D. EMERGENCY CLASSIFICATION SYSTEM

In general, Initiating Conditions (ICs) describe conditions that require implementation of emergency actions. Emergency Action Levels (EALs) are, where possible, pre-designated, non-subjective thresholds for entry into a particular Emergency Classification Level (ECL). The action to be taken by the operating shift depends on the severity of the incident, its effects and type.

The SED or ED will exercise subjective judgment to ensure all incidents are classified at the highest appropriate ECL based on the following criteria:

- Conditions warrant a declaration of an Unusual Event when 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.

- Conditions warrant a declaration of an Alert when 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.

- Conditions warrant a declaration of a Site Area Emergency when events are in process or have occurred which involve an 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 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 exposure levels beyond the site boundary.

- Conditions warrant a declaration of a General Emergency when 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 Action that results in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels beyond the site boundary.

The ICs/EALs were created following the methodology of NUMARC/NESP-007, Rev. 2. The ICs/EALs will classify an event or condition into one of four Emergency Classification Levels (ECLs) if an emergency classification is appropriate.

D.1. Emergency Action Levels

Emergency Action Levels are pre-determined, site specific, observable thresholds for plant Initiating Conditions that place 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 procedure; or another phenomenon which, if it occurs, indicates entry into a particular emergency class.

The severity of the emergency classification may change over time with the emergency being upgraded from one classification level to another. Incidents will typically be classified in a lower emergency classification at first and then escalated to a higher classification if the situation deteriorates. Each of the four emergency classification levels has characteristic Emergency Action Levels for various parameters.

Table 2 is the Fission Product Barriers matrix for modes 1 through 4 used to determine EALs. Table 3 describes the EAL Initiating Conditions for the various Emergency Condition Categories (ECCs) for Modes 1 through 4. Table 4 describes the Initiating Conditions for Modes 5 and 6 and defueled condition (shutdown).

D.2. Initiating Conditions

Initiating Condition – One of a predetermined subset of nuclear power plant conditions where either the potential exists for a radiological emergency or such an emergency has occurred.

Some of the initiating conditions and events are directly identifiable by their existence, such as operation of a safety system or a fire, while others require observation of process or radiation monitoring instrumentation.

Station procedures contain the specific instrumentation, equipment status, and non-process conditions and events that are used to establish the emergency classification.

Table 2 is the Fission Product Barriers matrix for modes 1 through 4 used to determine EALs. Table 3 describes the EAL Initiating Conditions for the various Emergency Condition Categories (ECCs) for Modes 1 through 4. Table 4 describes the Initiating Conditions for Modes 5 and 6 and defueled condition (shutdown).

D.2.1 Emergency Declaration Timeliness

Station procedures contain instructions to declare an emergency within 15 minutes after the availability of indications to plant operators that an emergency action level has been exceeded and shall promptly declare the emergency condition as soon as possible following identification of the appropriate emergency classification level.

Table 2
FISSION PRODUCT BARRIER MATRIX – Mode 1-4

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
Loss of TWO Fission Product Barriers AND Potential Loss of Third Barrier.	Any TWO of the Following: 1. Loss or Potential Loss of Fuel Clad. 2. Loss or Potential Loss of RCS. 3. Loss of Containment Barrier.	Loss or Potential Loss of Either Fuel Clad or RCS Barrier.	Loss or Potential Loss of Containment Barrier.

1. FUEL CLAD BARRIER	LOSS (L)	POTENTIAL LOSS (P)
.1 Core Cooling CSFST	Core Cooling CSFST – RED	Core Exit Thermocouples > 757° **OR** RVLIS Level < 46% (Narrow Range) **OR** Heat Sink CSFST – RED
.2 Containment Radiation	> 200 R/hr.	None
.3 Primary Coolant Activity	>300 uCi/cc I-131 dose equivalent **OR** Core Damage > 5.0% clad failure	None
.4 SED Judgment	Any condition in the opinion of the SED that indicates loss of the Fuel Clad barrier. Σ	Any condition in the opinion of the SED that indicates potential loss of the Fuel Clad barrier. Σ

2. RCS BARRIER	LOSS (L)	POTENTIAL LOSS (P)
.1 RCS Leak Rate (unisolable)	> available makeup capacity as indicated by complete loss of RCS subcooling.	> capacity of one centrifugal charging pump in normal charging line up.
.2 Steam Generator Leakage	Entry into OHP 4023.E-3, SGTR **AND** A Non-isolable secondary line break or a prolonged release (>30 minutes) of contaminated secondary coolant resulting in a radioactive release to the environment from the affected SG. [1]	Ruptured SG with leak > capacity of one charging pump in normal charging line up.
.3 Containment Radiation	> 10 R/hr	None
.4 RCS Integrity CSFST	None	RCS Integrity CSFST - RED
.5 Heat Sink CSFST	None	Heat Sink CSFST - RED
.6 SED Judgment	Any condition in the opinion of the SED that indicates loss of the RCS barrier. Σ	Any condition in the opinion of the SED that indicates potential loss of the RCS barrier. Σ

[1] Does not include a release through the condenser air ejectors, or the gland steam condenser vents for the purpose of declaration of a **SITE AREA EMERGENCY.**

Σ EAL's in these tables are NOT complete. Refer to referenced basis page (PMP-2080-EPP-101, Attachment 3) for complete description.

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
Loss of TWO Fission Product Barriers AND Potential Loss of Third Barrier.	Any TWO of the Following: 4. Loss or Potential Loss of Fuel Clad. 5. Loss or Potential Loss of RCS. 6. Loss of Containment Barrier.	Loss or Potential Loss of Either Fuel Clad or RCS Barrier.	Loss or Potential Loss of Containment Barrier.

3. CONTAINMENT BARRIER	LOSS (L)	POTENTIAL LOSS (P)
.1 Containment Radiation	None	> 1000 R/hr. **OR** Core damage > 20% clad failure.
.2 Containment Integrity	Unisolable breach of containment. **OR** Rapid unexplained containment pressure or sump level drop following pressure rise caused by a LOCA. **OR** Containment pressure/sump level NOT performing as expected for conditions. **OR** Entry into ECA-1.2, LOCA Outside Containment.	None
.3 SG Secondary Side Release	Primary to secondary leak rate > Tech. Spec. limit. **AND** Release of secondary coolant from the associated steam generator to the environment is occurring.[1]	None
.4 Containment CSFST	None	Containment CSFST – RED
.5 Containment Hydrogen	None	>4.0% **OR** Containment Hydrogen >0.5% AND any Hydrogen Control equipment inoperable.
.6 Containment Pressure Control	None	BOTH CTS trains OR BOTH containment air recirc fans inoperable OR fail to auto start on their containment pressure setpoint OR containment pressure >12psig.
.7 Core Exit Thermocouples	None	Core Cooling CSFST – RED **AND** Restoration procedures not effective within 15 minutes.
.8 SED Judgment	Any condition in the opinion of the SED that indicates loss of the Containment barrier. ∑	Any condition in the opinion of the SED that indicates potential loss of the Containment barrier. ∑

[1] Does not include a release through the condenser air ejectors, or the gland steam condenser vents for the purpose of declaration of a **SITE AREA EMERGENCY.**

Table 3
INITATING CONDITIONS – Mode 1 - 4

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
SED JUDGMENT			
H-1 SED Judgment Conditions indicate actual or imminent substantial core damage with potential loss of containment or the potential exists for an uncontrolled radioactive release that may exceed EPA limits at the site boundary.	**H-1 SED Judgment** Conditions indicate likely or actual major failures of plant functions needed to protect the public.	**H-1 SED Judgment** Conditions indicate that plant safety systems may be degraded and additional personnel are needed for additional monitoring.	**H-1 SED Judgment** Conditions indicate a potential degradation of the level of safety of the plant.
HAZARDS AND OTHER CONDITIONS			
H-2 Security HOSTILE ACTION resulting in Loss of Physical Control of the Facility. 1. A HOSTILE ACTION has occurred such that plant personnel are unable to operate equipment required to maintain safety functions listed below: • Reactivity Control (ability to shut down the reactor and keep it shutdown) • RCS Inventory (ability to cool the core) • Secondary Heat Removal (ability to maintain heat sink) **OR** 2. A HOSTILE ACTION has caused failure of spent fuel cooling systems and IMMINENT fuel damage is likely. Σ	**H-2 Security** HOSTILE ACTION within the PROTECTED AREA 1. A HOSTILE ACTION is occurring or has occurred within the PROTECTED AREA as reported by the Security Shift Supervisor. Σ	**H-2 Security** HOSTILE ACTION within the OWNER CONTROLLED AREA or airborne attack threat. 1. A HOSTILE ACTION is occurring or has occurred within the OWNER CONTROLLED AREA as reported by the Security Shift Supervisor. **OR** 2. A validated notification from the NRC of a LARGE AIRCRAFT attack threat within **30 minutes** of the site. Σ	**H-2 Security** Confirmed Security Condition which indicates a potential degradation in the level of safety of the plant. 1. SECURITY CONDITION that does not involve a HOSTILE ACTION as reported by Security Shift Supervision. **OR** 2. A credible site-specific security threat notification. **OR** 3. A validated notification from NRC providing information of an aircraft threat. Σ
	H-3 CR Evacuation Control Room evacuated AND control not established in 15 minutes. Σ	**H-3 CR Evacuation** Control Room evacuation initiated.	
		H-4 Fire Fire OR explosion affecting plant operations. Σ	**H-4 Fire** Fire in Protected Area NOT extinguished within 15 minutes of detection.
		H-5 Toxic Gas Toxic OR flammable gas release that threatens lives OR affects ability to achieve and maintain Mode 5. Σ	**H-5 Toxic Gas** Toxic OR flammable gas release affecting plant operation. Σ
			H-8 ISFSI Damage to a loaded cask CONFINEMENT BOUNDARY.

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
NATURAL/DESTRUCTIVE PHENOMENA			
		N-1 Seismic Seismic event indicated by: 1. Seismic instrument activated **OR** 2. Ground motion detected by Control Room crew ***AND*** 1. Visible major damage in vital area. **OR** 2. Plant Trip. Σ	**N-1 Seismic** Seismic event indicated by: 1. Seismic instrument activated **OR** 2. Ground motion detected by Control Room crew Σ
		N-2 Tornado/wind 1. Tornado strike in Vital Area **OR** 2. >90 mph wind for >15 minutes.	**N-2 Tornado/wind** 1. Tornado strike within Protected Area.
		N-3 Structural Visible damage to a structure containing systems required to achieve and maintain Mode 5.	
		N-4 Vehicle Collision Vehicle collision affecting Vital Area.	**N-4 Vehicle Collision** Vehicle collision affecting systems or structures within the Protected Area.
		N-5 MT Failure Main turbine generated missile penetrates Vital Area.	**N-5 MT Failure** Main turbine rotating component failure causes visible damage or damages generator seals.
		N-6 Flooding Flooding in Vital Area affects safety related equipment.	
			N-7 Explosion Unanticipated explosion within Protected Area causes visible damage to permanent structures or equipment.

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
ABNORMAL RADIATION LEVELS/EFFLUENTS			
R-1 Effluent release Site boundary dose > 1 REM TEDE or 5 REM CDE to thyroid based on: 1. Survey results **OR** 2. Dose assessment **OR** 3. Effluent monitor readings >15 minutes Σ	**R-1 Effluent release** Site boundary dose > 100 mrem TEDE or 500 mrem CDE to thyroid based on: 1. Survey results **OR** 2. Dose assessment **OR** 3. Effluent monitor readings >15 minutes. Σ	**R-1 Effluent release** Unplanned Rad release >200X ODCM limits for >15 minutes based on: 1. Effluent Rad monitor 200X high alarm setpoint. **OR** 2. Release Rad monitor 200X high alarm setpoint. **OR** 3. Gas or liquid sample results 200X ODCM release limit. Σ	**R-1 Effluent release** Unplanned Rad release >2X ODCM limits for > 60 minutes based on: 1. Effluent Rad monitor 2X high alarm setpoint. **OR** 2. Release Rad monitor 2X high alarm setpoint. **OR** 3. Gas or liquid sample results 2X ODCM release limit. Σ
		R-2 Plant Rad level Rad levels that impede plant operations based on: 1. >15 mR/hr in Control Rm(s) /CAS **OR** 2. >100 mR/hr at remote S/D areas. Σ	**R-2 Plant Rad level** Unexpected reading on Area Monitor 1000X the 24 hr average.
		R-3 Loss of level Major damage to irradiated fuel or loss of level that has or will uncover fuel outside of the reactor vessel based on; 1. Visual observation of levels. **OR** 2. Rad monitor alarms **OR** 3. Level < 632'4" SFP or Transfer Canal. Σ	**R-3 Loss of level** Uncontrolled lowering in refueling cavity, SFP or Transfer Canal indicated by: 1. Inability to maintain > 643'4" in SFP or Transfer Canal with irradiated fuel present **OR** 2. Inability to maintain > 643'4" in the refueling cavity with irradiated fuel in containment.

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
SYSTEM MALFUNCTIONS			
S-1 RPS failure 1. Auto and manual Reactor Trip fails from Control Room AND Subcriticality and Core Cooling CSFSTs are RED **OR** 2. Subcriticality and Heat Sink CSFSTs are RED.	**S-1 RPS failure** Auto and manual Reactor Trip fails from Control Room.	**S-1 RPS failure** Auto Reactor Trip fails AND manual trip successful from Control Room.	
S-2 Loss of AC 1. Prolonged loss of all AC (A and D -T buses) AND Core Cooling CSFST – ORANGE. **OR** 2. Loss of all AC (A and D – T buses) expected to last for > 4 hrs.	**S-2 Loss of AC** Loss of all AC (A and D – T buses) for >15 minutes.	**S-2 Loss of AC** AC power supply to T buses reduced to a single source for > 15 minutes. Σ	**S-2 Loss of AC** Loss of ALL OFF-SITE power (Auxiliary, Reserve and 69kv Transformers) to the T Buses for > 15 minutes. Σ
	S-3Loss of DC power Loss of ALL vital DC buses AB AND CD for > 15 minutes (bus volts ≤ 220v)		
	S-5Loss of Hot SD sys. Loss of ability to achieve or maintain hot shutdown based on entry into: 1. OHP 4023.FR-H.1, Response to Loss of Secondary Heat Sink **OR** 2. OHP 4023.FR-C.1, Response to Inadequate Core Cooling.		

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
SYSTEM MALFUNCTIONS			
	S-6 Loss of Alarms Loss of ability to monitor alarms during a transient indicated by: 1. Loss of Safety System annunciator panel(s) for > 15 minutes. **AND** 2. A known loss of Attachment 2 Critical Parameters indications for > 15 minutes. **AND** 3. Compensatory indications NOT available (PPC, SPDS). **AND** 4. A significant transient is in progress. Σ	**S-6 Loss of Alarms** 1. Loss of either: a. Safety system annunciator panels in a unit for > 15 minutes **OR** b. A known loss of Attachment 2 Critical Parameters indications for > 15 minutes **AND** 2. Additional monitoring is required. **AND** 3. Annunciator/Indicator loss does not result from PLANNED action. **AND** 4. Either a. A significant transient is in progress, **OR** b. Compensatory Indications NOT available Σ	**S-6 Loss of Alarms** 1. Loss of either: a. Safety system annunciator panels in a unit for > 15 minutes **OR** b. A known loss of Attachment 2 Critical Parameters indications for > 15 minutes **AND** 2. Additional monitoring is required. **AND** 3. Annunciator/Indicator loss does not result from PLANNED action. **AND** 4. Compensatory Indications are available. Σ
			S-7 Degraded Clad 1. RCS activity > 1.0 μCi/gram I-131 dose equivalent for > 48 hrs. **OR** 2. RCS activity > 215.1 μCi/gram Xe-133 dose equivalent.
			S-8 RCS Leakage 1. RCS leakage exceeds 10 gpm pressure boundary leakage, SG tube leakage or unidentified leakage **OR** 2. > 25 gpm identified leakage.
			S-9 Tech Spec Unit not in required mode within LCO time limits.
			S-10 Loss of Comm. Unplanned loss of all on or off-site communications Σ

Table 4
INITIATING CONDITIONS – Mode 5 & 6 and Defueled

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
SED JUDGMENT			
H-1 SED Judgment Conditions indicate actual or imminent substantial core damage with potential loss of containment or the potential exists for an uncontrolled radioactive release that may exceed EPA limits at the site boundary.	**H-1 SED Judgment** Conditions indicate likely or actual major failures of plant functions needed to protect the public.	**H-1 SED Judgment** Conditions indicate that plant safety systems may be degraded and additional personnel are needed for additional monitoring.	**H-1 SED Judgment** Conditions indicate a potential degradation of the level of safety of the plant.
HAZARDS AND OTHER CONDITIONS			
H-2 Security HOSTILE ACTION resulting in Loss of Physical Control of the Facility. 1. A HOSTILE ACTION has occurred such that plant personnel are unable to operate equipment required to maintain safety functions listed below: • Reactivity Control (ability to shut down the reactor and keep it shutdown) • RCS Inventory (ability to cool the core) • Secondary Heat Removal (ability to maintain heat sink) **OR** 2. A HOSTILE ACTION has caused failure of spent fuel cooling systems and IMMINENT fuel damage is likely. Σ	**H-2 Security** HOSTILE ACTION within the PROTECTED AREA 1. A HOSTILE ACTION is occurring or has occurred within the PROTECTED AREA as reported by the Security Shift Supervisor. Σ	**H-2 Security** HOSTILE ACTION within the OWNER CONTROLLED AREA or airborne attack threat. 1. A HOSTILE ACTION is occurring or has occurred within the OWNER CONTROLLED AREA as reported by the Security Shift Supervisor. **OR** 2. A validated notification from the NRC of a LARGE AIRCRAFT attack threat within **30 minutes** of the site. Σ	**H-2 Security** Confirmed Security Condition which indicates a potential degradation in the level of safety of the plant. 1. SECURITY CONDITION that does not involve a HOSTILE ACTION as reported by Security Shift Supervision. **OR** 2. A credible site-specific security threat notification. **OR** 3. A validated notification from NRC providing information of an aircraft threat. Σ
	H-3 CR Evacuation Control Room evacuated AND control not established in 15 minutes. Σ	**H-3 CR Evacuation** Control Room evacuation initiated.	
		H-4 Fire Fire OR explosion affecting plant operations. Σ	**H-4 Fire** Fire in Protected Area NOT extinguished within 15 minutes of detection.
		H-5 Toxic Gas Toxic OR flammable gas release that threatens lives OR affects ability to achieve and maintain Mode 5. Σ	**H-5 Toxic Gas** Toxic OR flammable gas release affecting plant operation. Σ
			H-8 ISFSI Damage to a loaded cask CONFINEMENT BOUNDARY.

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
NATURAL/DESTRUCTIVE PHENOMENA			
		N-1 Seismic Seismic event indicated by: 1. Seismic instrument activated **OR** 2. Ground motion detected by Control Room crew ***AND*** 1. Visible major damage in vital area. **OR** 2. Plant Trip. Σ	**N-1 Seismic** Seismic event indicated by: 1. Seismic instrument activated **OR** 2. Ground motion detected by Control Room crew Σ
		N-2 Tornado/wind 1. Tornado strike in Vital Area **OR** 2. >90 mph wind for >15 minutes.	**N-2 Tornado/wind** 1. Tornado strike within Protected Area.
		N-3 Structural Visible damage to a structure containing systems required to achieve and maintain Mode 5.	
		N-4 Vehicle Collision Vehicle collision affecting Vital Area.	**N-4 Vehicle Collision** Vehicle collision affecting systems or structures within the Protected Area.
		N-5 MT Failure Main turbine generated missile penetrates Vital Area.	**N-5 MT Failure** Main turbine rotating component failure causes visible damage or damages generator seals.
		N-6 Flooding Flooding in Vital Area affects safety related equipment.	
			N-7 Explosion Unanticipated explosion within Protected Area causes visible damage to permanent structures or equipment.

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
ABNORMAL RADIATION LEVELS/EFFLUENTS			
R-1 Effluent release Site boundary dose > 1 REM TEDE or 5 REM CDE to thyroid based on: 1. Survey results **OR** 2. Dose assessment **OR** 3. Effluent monitor readings >15 minutes Σ	**R-1 Effluent release** Site boundary dose > 100 mrem TEDE or 500 mrem CDE to thyroid based on: 1. Survey results **OR** 2. Dose assessment **OR** 3. Effluent monitor readings >15 minutes. Σ	**R-1 Effluent release** Unplanned Rad release >200X ODCM limits for >15 minutes based on: 1. Effluent Rad monitor 200X high alarm setpoint. **OR** 2. Release Rad monitor 200X high alarm setpoint. **OR** 3. Gas or liquid sample results 200X ODCM release limit. Σ	**R-1 Effluent release** Unplanned Rad release >2X ODCM limits for > 60 minutes based on: 1. Effluent Rad monitor 2X high alarm setpoint. **OR** 2. Release Rad monitor 2X high alarm setpoint. **OR** 3. Gas or liquid sample results 2X ODCM release limit. Σ
		R-2 Plant Rad level Rad levels that impede plant operations based on: 1. >15 mR/hr in Control Rm(s) /CAS **OR** 2. >100 mR/hr at remote S/D areas. Σ	**R-2 Plant Rad level** Unexpected reading on Area Monitor 1000X the 24 hr average.
		R-3 Loss of level Major damage to irradiated fuel or loss of level that has or will uncover fuel outside of the reactor vessel based on: 1. Visual observation of levels. **OR** 2. Rad monitor alarms **OR** 3. Level < 632'4" SFP or Transfer Canal. Σ	**R-3 Loss of level** Uncontrolled lowering in refueling cavity, SFP or Transfer Canal indicated by: 1. Inability to maintain > 643'4" in SFP or Transfer Canal with irradiated fuel present **OR** 2. Inability to maintain > 643'4" in the refueling cavity with irradiated fuel in containment.

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
COLD SHUTDOWN/REFUELING SYSTEM MALFUNCTIONS			
		C-3 Loss of AC Loss of ALL AC power to A and D T-buses for > 15 minutes. Mode 5,6 and defueled	**C-3 Loss of AC** Loss of ALL OFF-SITE power (Auxiliary, Reserve and 69kv transformers) to the T buses for > 15 minutes. Mode 5,6
	C-4 Loss of Water Level in the Reactor Vessel that has or will Uncover Fuel in the Reactor Vessel 1. Loss of shutdown cooling as evidenced by entry into OHP 4022.017.001, "Loss of RHR Cooling" **AND** 2. Core uncovery as indicated by: a. RVLIS NR <46% - 0 RCPs **OR** b. Reactor Vessel Water Level <614 feet. Mode 5,6	**C-4 Inability to Maintain a Unit in Cold Shutdown** 1. Loss of shutdown cooling as evidenced by entry into OHP 4022.017.001, "Loss of RHR Cooling" **AND** 2. Temperature rise that either: a. Exceeds T/S cold shutdown limit of 200°F **OR** b. Results in an UNCONTROLLED RCS temperature rise approaching the cold shutdown T/S limit of 200°F Mode 5,6	
			C-5 Degraded Clad 1. RCS activity > 1.0 µCi/gram I-131 dose equivalent for > 48 hrs. **OR** 2. RCS activity > 215.1 µCi/gram Xe-133 dose equivalent. Mode 5,6
			C-6 Loss of Comm. Unplanned loss of all on or off-site communications. Mode 5,6
			C-7 Loss of DC power Unplanned loss of ALL vital DC buses AB AND CD for >15 minutes (bus volts ≤220v) Modes 5,6

PLANNING STANDARD E

NOTIFICATION METHODS AND PROCEDURES

E. NOTIFICATION OF EMERGENCY RESPONSE PERSONNEL AND ORGANIZATIONS

E.1. Notification of Offsite Response Organizations

During an emergency condition, control of offsite actions rests with the appropriate government authorities with technical assistance provided by various members of the plant staff. This technical assistance is provided through the use of the plant's communication system.

A current list of all key support agencies with their telephone numbers is maintained in the Shift Manager's office so that they may be notified of any emergency condition. This call list is incorporated into the plant Emergency Plan Procedures and is checked quarterly to verify that all phone numbers on the list are correct. It is the responsibility of the SM, acting as the SED early in an event, the SED, or the ED, once the EOF is operational, to ensure that these offsite response organizations are notified. Notification shall include the message authentication in order to permit further action by the Sheriff's Department.

Notification is given to the Berrien County Sheriff's Department and to the Michigan State Police Operations Office in Lansing, Michigan within 15 minutes following the recognition and verification of an Unusual Event, Alert, Site Area Emergency, or General Emergency condition. Any incident that requires initiation of the Nuclear Emergency Alarm requires notification of the NRC and notification of the appropriate offsite groups.

Upon notification with authentication, the Berrien County Emergency Operations Plan will be implemented.

The Berrien County Sheriff's Department has established a county Emergency Operating Center (EOC) in Benton Harbor, Michigan, which will be the focal point for immediate offsite county agency actions when notified of an emergency condition. The Berrien County Sheriff is the Berrien County Administrator of the Office of Emergency Management/Homeland Security and is responsible for coordinating all local resources when notified of an emergency condition. An offsite liaison is sent to the Berrien County EOC at the emergency classification of Alert or higher classification. The liaison assists in the interpretation of incoming plant reports, and acts as the liaison between the Plant and the Berrien County Sheriff's Department.

The organization of the Department of State Police is such that initial notification is made to the Michigan Intelligence Operations Center (MIOC) in Lansing, Michigan. The Michigan State Police will then set up an EOC at 7150 Harris Drive; Dimondale, MI 48821. An offsite liaison will also be sent to the State EOC upon activation by the State Police to perform a function similar to that of the person at the Berrien County EOC. Plant status updates will be provided to the State and County using separate lines. All communications, where practical, to the State and County will be via the offsite liaison at their respective EOCs.

Immediately following the initial notification of the Berrien County Sheriff's Department and the Michigan State Police, the SM/SED/ED shall also notify the Nuclear Regulatory Commission's Operations Center, and the appropriate senior AEPNGG management.

The decision to evacuate offsite individuals or to take other protective action rests with the appropriate civil authorities. The SED or ED is responsible for notifying the appropriate State/County authorities that the conditions for offsite protective actions have been reached.

Figure 8 shows the initial notification process for nuclear incidents. A current list of all appropriate company officials and county, state and federal authorities with their telephone numbers is maintained as part of the plant ERO Phone Directory. A listing of offsite support groups is attached as Appendix B.

E.1.a Notification of Nuclear Transportation Accidents

Incidents involving nuclear material that result from transportation accidents offsite as specified in Section C.4.b and within the service territory of AEP shall be reported to the applicable state government. The appropriate information required in Sections E.3 and E.4 and other pertinent information shall be provided as necessary. If the Plant has been requested to respond to a transportation accident involving nuclear material by another utility under the Voluntary Assistance Agreement, the Plant shall inform the state and Berrien County government of the request, nature and location of the accident, expected response and recommended precautions to be taken by the responsible offsite authorities. The response team shall keep the on-scene government representatives and the Plant informed on the status of the accident.

E.2 ERO Alert, Notification and Mobilization

E.2.a Onsite (Plant Staff)

If an emergency condition should arise that would affect individuals on or offsite, this emergency plan will be initiated. There are two plant emergency alarms: A Fire Alarm and a Nuclear Emergency Alarm. Each audible signal is unique and easily distinguishable so that no confusion as to its purpose will develop.

If the incident or condition is a fire, the Fire Alarm is sounded.

The Nuclear Emergency Alarm is a horn designed to produce a distinct sound different from any other alarms in the plant. It may be activated manually from either the Unit 1 Control Room or Unit 2 Control Room. The senior supervisor of the on-duty shift (e.g., the Shift Manager) has the authority to activate the Nuclear Emergency Alarm. In the absence of the Shift Manager, the senior NRC licensed operator assigned in the Control Room has the authority to activate the Nuclear Emergency Alarm. An announcement over the Plant Public Address System (PA) identifying the incident will be made including a brief description of the incident, and the appropriate alarm for the determined condition will be sounded throughout the plant and at the switchyard. In addition, in certain areas where the PA system and/or the Nuclear Emergency Alarm are not audible, strobe lights are installed to provide a visual warning signal.

In the case of some Security events, the Nuclear Emergency Alarm would not be sounded. Persons responding to the NEA could become targets of opportunity. Instructions to onsite personnel would be made using the Plant PA system.

Immediate sounding of the Nuclear Emergency Alarm is required for incidents which, in the judgment of the Shift Manager, result in:

- release of radioactivity that could cause conditions for excessive exposure to plant personnel, or
- plant conditions that could cause conditions for excessive exposure to plant personnel, or
- a Site Area Emergency, or General Emergency, except where harm to personnel is possible (e.g. Security event driving the SAE or GE).

The sounding of the Nuclear Emergency Alarm dictates an immediate evacuation of all plant personnel and plant visitors to the onsite assembly areas identified in Section J.1. with the exceptions that:

1. The operators on duty for each unit report to their respective Control Room.

2. Personnel designated as part of the plant Emergency Response Organization report to their assigned facilities. (i.e. TSC, OSC, EOF, ENC/JIC)

3. Individuals in outlying areas of the plant are informed by Site Protective Services of the emergency classification in effect and the action to be taken.

4. Security personnel will remain on post unless otherwise directed.

5. Initiation of the procedures for evacuation of all employees and visitors within the Cook Energy Information Center.

Immediately after initiation of the Nuclear Emergency Alarm, the emergency call list is initiated, if not already initiated, and measures are taken by the Shift Manager and Shift Technical Advisor to evaluate conditions on the site.

The decision to take onsite protective actions, beyond sounding of the Nuclear Emergency Alarm is the responsibility of the SED. Any Emergency Plan incident other than routine tests that requires initiation of the Nuclear Emergency Alarm requires notification of the NRC by the SED or ED and notification of appropriate offsite groups as determined by the SED or ED.

E.2.b Offsite (Plant Staff)

An Emergency Plan Procedure for notification of plant personnel and an ERO Phone Directory have been developed to provide the information that is necessary to summon plant personnel during emergency conditions to staff the Emergency Response Facilities. This procedure may be implemented anytime the SED determines that it is necessary to augment on duty emergency personnel with off-duty plant personnel.

A current list of all key personnel with their telephone numbers is maintained in the Shift Manager's office so that they may be notified. This call list is incorporated into the ERO Phone Directory and is checked quarterly to verify that all phone numbers on the list are correct. When the Nuclear Emergency Alarm is sounded, notification of the Site Vice President (or Alternate), and Operations Director is the responsibility of the Shift Manager or designee. Calls made by on-shift personnel initiate the ERO call out to staff the Emergency Response Facilities. If the automated ERO Notification System (ERONS) fails, a backup manual call out procedure is initiated.

Personnel that are called out, or are on call, report to their assigned Emergency Response Facility immediately upon receiving notification to respond at an Alert or higher emergency classification.

In the event of security related event the notification alerts the emergency response personnel, who normally report to on-site facilities, to report to an alternate location such as the Buchanan Office Building.

Once the Nuclear Emergency Alarm has sounded, only authorized personnel are permitted to enter the Owner Controlled Area. This access control is a function of the Plant Security Force which may be further augmented by the Berrien County Sheriff and/or the Michigan State Police.

E.3. Content of Initial Emergency Messages

Initial emergency messages sent from the Plant to appropriate offsite response organizations shall contain the information listed below, as it becomes available.

1. Class of Emergency.
2. Date and time of classification.
3. Indicate if a release is occurring or has occurred.
4. Wind direction and wind speed.
5. Protective Measures recommended (if known) based on magnitude or severity of an actual release and current meteorological conditions, or the condition of the core/containment.
6. Potentially affected population areas.
7. Plant name
8. Verification to confirm authenticity of call.

E.4 Content of Follow-up Emergency Messages

Follow-up messages sent from the Plant to appropriate offsite response organizations should contain the following information, as it becomes available:

1. Location of incident, name and telephone number (or communication channel identification) of caller.
2. Type and description of release (airborne, waterborne, surface spill) and estimated duration/impact times (actual or projected).
3. An estimate of the quantity of radioactive material released or being released and the release point.
4. Physical form of released material, including estimates of the relative quantities of noble gases, iodines and particulates.
5. Meteorological conditions (wind speed, direction, atmospheric stability, or precipitation, if any).
6. Projected dose rate at site boundary, integrated dose from time of message to projected end of release at site boundary.
7. Projected dose rate and integrated dose for 2, 5 and 10 miles.
8. Prognosis for worsening or terminating the event based on plant information.

E.5 Not Applicable

E.6. Public Notification

The Berrien County Sheriff is responsible for overall supervision of the warning function for offsite actions.

The Berrien County Emergency Operations Plan-Nuclear Power Plant Incident Procedures contain the time estimated for adverse and favorable conditions for various sectors in the 10 mile EPZ for 2 mile, 5 mile, and 10 mile radii. The time estimates include the times required for:

- Notification
- Public Preparation
- Movement
- Total Evacuation
- Confirmation
- Evacuation & Confirmation
- Special Considerations to include or consider in each sector

The Berrien County Plan includes provisions for:

1. Alerting local radio, television stations and, local news media to be prepared to transmit Emergency Public Information. This initial notification will be accomplished via a radio receiver/transmitter that will record the emergency information transmitted by the Sheriff's Department to designated locations simultaneously. Additional information will be provided as described in Section G.

2. Coordination with other law enforcement and fire services to extend public notification of the appropriate Emergency Plan areas utilizing public address systems on emergency vehicles.

3. Warning of the Warren Dunes park (recreation) area populace of the emergency and action to be taken.

4. Activation and use of the emergency warning system consisting of sirens located throughout the 10 mile EPZ. Activation of this system is controlled solely by the Berrien County Sheriff and is based upon recommendations made by the appropriate authority.

The D. C. Cook Plant Emergency Preparedness Department has overall responsibility for testing, maintenance, and repair of the Alert and Notification System (ANS) Sirens.

The ANS is the primary method for alerting and notifying the population within the plume exposure EPZ. Backup ANS for the EPZ is achieved through Route Alerting which is contained within the Alert and Notification System (ANS) Design Report and the State of Michigan and Berrien County Radiological Emergency Response Plans. Refer to Appendix B for FEMA letter describing the provisions for ANS.

A description of the warning system is in the emergency preparedness brochure/calendar provided in Appendix D, Emergency Preparedness Brochure.

E.7. Public Information Messages

The State of Michigan and Berrien County have developed and incorporated in their respective emergency plans sample messages for release of information to the public.

These messages will utilize supporting information obtained directly from the Plant or from the plant liaison persons located at the Berrien County EOC, State EOC and at the JIC (when activated).

Using the information gathered from various sources, the message(s) will contain pertinent information to the public for the declared emergency classification. The message(s) describe the warning, sheltering, evacuation and other protective measures deemed necessary by the appropriate County and/or State officials.

Additionally, Berrien County has prepared sample Public Information Bulletins to provide pertinent information on protective actions that may be taken in the event of a nuclear incident. These bulletins are shown in the Berrien County Emergency Plan.

Figure 9

Nuclear Incident Initial Notification Process

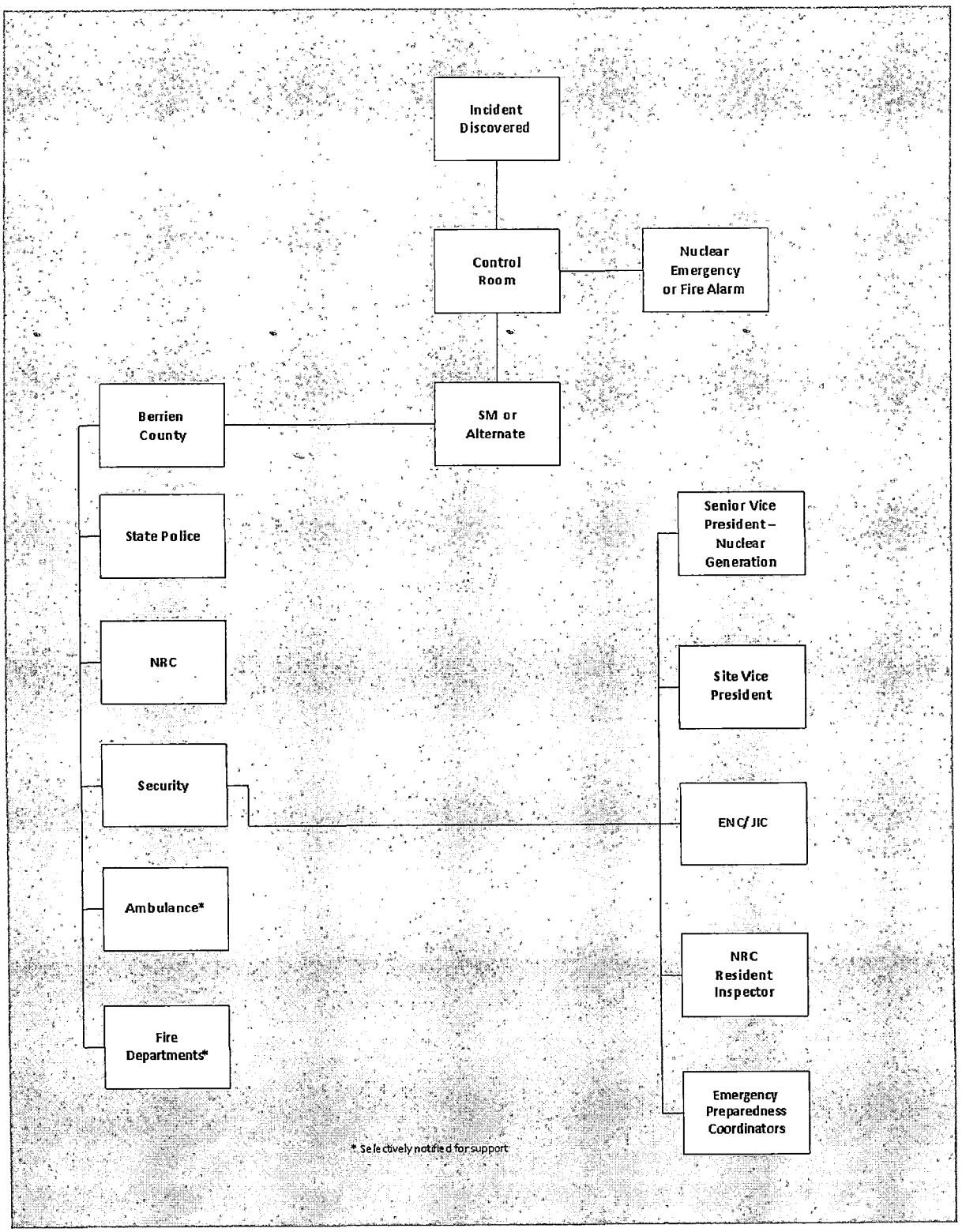
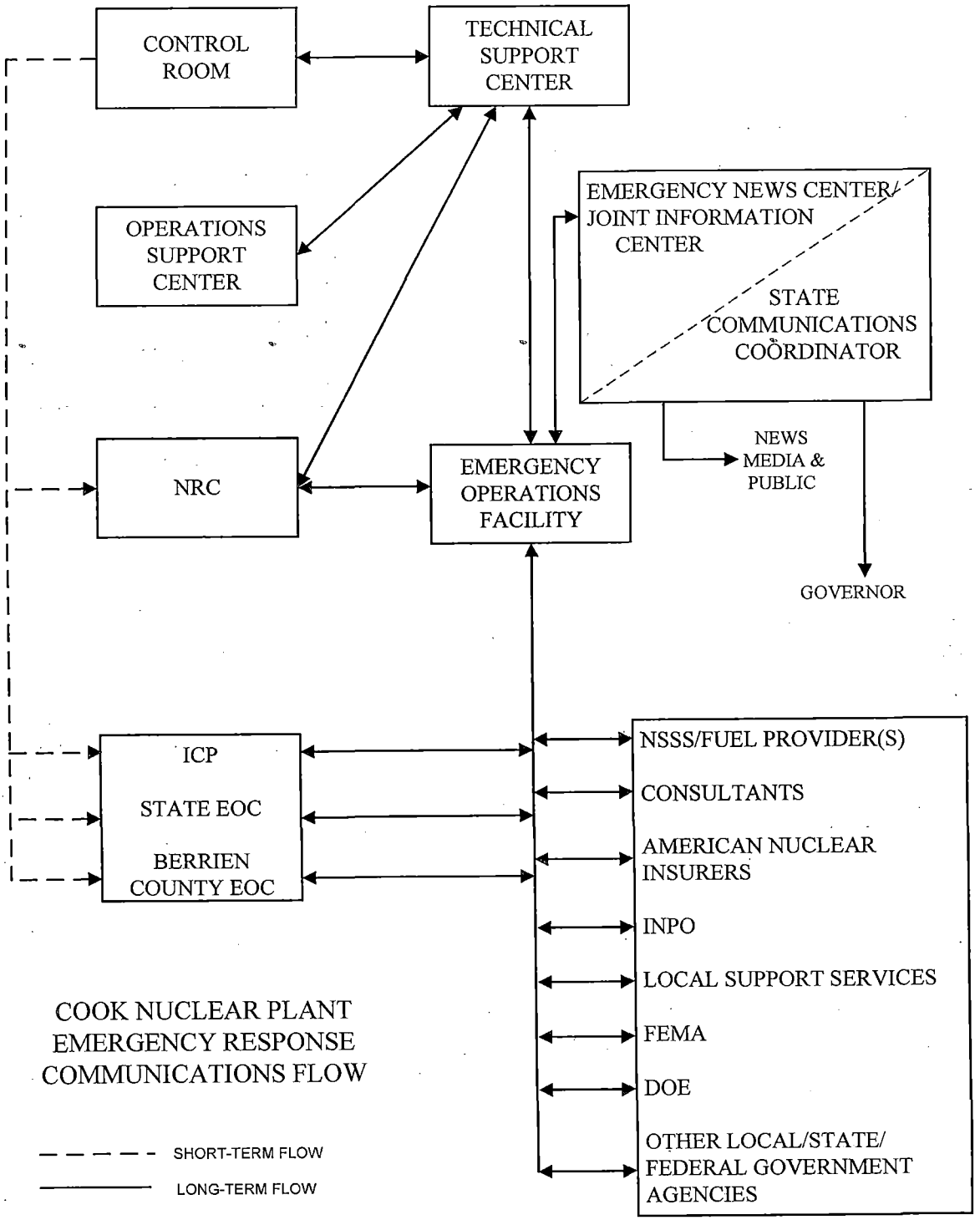


Figure 10

CNP Emergency Response Communications Flow



PLANNING STANDARD F

EMERGENCY COMMUNICATIONS

F. EMERGENCY COMMUNICATIONS

F.1. Licensee, Local, State, and NRC Emergency Communications

Implementation procedures for the use of communication networks to notify all parts of the emergency organization are outlined in the CNP Emergency Plan Procedures that are available in each of the emergency response facilities. The communications network consists of communications systems that are available on a 24 hours per day basis to communicate with AEP personnel, State, County, and the NRC during emergency conditions.

F.1.a. State and Local Communications

The Berrien County Sheriff's Department and the Michigan State Police dispatch are continuously staffed so capability exists for 24-hour radio and telephone communication with the Plant. The telephone and radio links to the Berrien County Sheriff's Department dispatchers also accesses the county emergency response organizations. The 911 system is an alternate method to access the county emergency response organizations.

The primary means of notification to the Sheriff's Department is by telephone. As an alternate, notification of an emergency to the Sheriff's Department in Berrien County is made with a transmitter and receiver combination device from the Unit 1 Control Room. This device is operated with a frequency and a license maintained by the State of Michigan. Controls for the device are also available on the Plant Security consoles. This establishes a communication link between the Control Room and the Sheriff's Department in Berrien County.

The primary means of notification to the State Police Operations Center in Lansing is by telephone. A back-up radio system is maintained between CNP and the Michigan Department of State Police in Niles, Michigan. In this system, a radio transceiver maintained at the CNP is set at a frequency used by the State Police. These radios are equipped such that the State Police are assured that any transmissions to them originated at the Cook Plant.

Communications between CNP and the local fire departments are by means of telephone calls. The fire departments would respond immediately upon notification of an emergency at CNP.

Radio

Radio communication capability is provided to contact the Berrien County Sheriff's Department and the Michigan Department of State Police Post 53 (in Niles) from the Unit 1 Control Room, Central Alarm Station (CAS), and the Secondary Alarm Station (SAS) in the event of failure of telephone company circuits. Suitable normal and back-up power supplies are also provided.

Bridgman Local Telephone Service

Local commercial telephone service provides circuits between Bridgman and the CNP.

F.1.b. Communications with Contiguous Governments in the EPZ's

Notifying the State of Indiana and the Michigan counties within a 50 mile radius of CNP of the incident classification, protective actions recommended, etc. is the responsibility of the Berrien County Sheriff's Department and the Michigan Department of State Police. Berrien County and Michigan is the only county and state within a 10 mile radius of CNP.

F.1.c. Communications with Federal Emergency Response Organizations

The "Communications" section of Appendix E, Description of Federal Radiological Assistance, outlines communication with the DOE Radiological Assistance Plan responders.

F.1.d Offsite Communications

The communications system at CNP provides the versatility required in the event of a nuclear incident. The system operation utilizes private telephone lines, dedicated microwave links (OPX), 2-way radio, the normal in-plant communication system (PABX), and the capability to reach outside extensions through various system company switchboards. The emergency response centers will have the following communications capability:

	PABX/ Microwave	OPX	Private Lines	Fire/Emer. Radio	Offsite Radios	ENS	HPN
Control Room	X		X[2]	X	X	X	
TSC (SS)	X		X	X	X	X	X
OSC	X			X	X		
EOF	X[1]	X	X		X	X	X
Plant Mgr's Office	X						
ENC/JIC		X	X				

[1] The EOF utilizes the Buchanan Office Building PABX and has access to a local commercial provider and AEP microwave capability.

[2] Two telephone lines in each Control Room automatically bypass the plant PABX if it fails.

Communications between CNP and the Offsite Survey Team(s) are made by portable radios. These radios are maintained in the dedicated survey vehicles, emergency facilities, and are assigned for use to plant operating departments.

AEP Microwave/Fiber Optics System

This system allows direct communication to major media stations and AEP offices. It provides fast and reliable support for the plant in the event of an emergency. The CNP switchboard has "tie trunks" to Buchanan, Michigan and Fort Wayne, Indiana. Direct, dedicated microwave channels are established 24 hours per day between Cook Plant, and both Fort Wayne, Indiana and Buchanan, Michigan.

The microwave facilities at CNP are powered by their own battery that is constantly serviced by a trickle charger, powered from an AC station auxiliary. In the event of a failure in this AC line, an emergency generator automatically takes over the supply of power to the charger. The battery alone is capable of operating the microwave facilities for approximately 8 hours.

F.1.e. Alerting and Activating Emergency Response Organization and Personnel

Plant Public Address System

The Plant Public Address (PA) System is powered by the Critical Control Room Power Supply and is automatically switched to a backup supply from the diesel generator in the event that the normal power supply is lost.

The Plant PA System provides paging to all major buildings of the plant including the office and service building. This system includes a five-party channel system for two-way communications.

It should be noted that this system cannot be used to notify offsite persons of an incident. Other systems are available for this use.

Plant Private Automatic Branch Exchange Plant Telephone System

The Private Automatic Branch Exchange Plant Telephone System (PABX) is powered by its own battery on a trickle charger. PABX System installations are located in areas most frequently occupied by plant personnel, including the plant's emergency response organization.

Security Radio

A portable radio system is installed for security communications. This system uses dual transmitters to provide a dual frequency capability. Radio coverage includes all general areas onsite. If necessary, this system can be used as a back-up means of communication onsite in the event of an emergency.

Fire and Emergency Radio

A portable radio system is installed for fire and emergency communications. This system is powered from a non-emergency bus and provided with backup battery power. The fire and emergency radio coverage includes all general areas onsite, excluding containment. This system is also utilized for medical emergencies, field team communications, etc.

F.1.f Emergency Communications with the NRC

Communications with the NRC Headquarters is by dedicated telephone lines from the Control Rooms, TSC, and EOF. The Federal Telecommunications System (FTS) is used to communicate with NRC Headquarters, in White Flint, Maryland. Communications with Region III headquarters, located in Lisle, Illinois, is by commercial telephone lines and the FTS.

Health Physics Network (HPN)

A FTS telephone line has been installed between the Plant and the NRC, which is primarily intended for use during an emergency and will function as the Health Physics Network (HPN) dedicated line. A total of three extensions are located at AEP facilities in:

- NRC Resident Inspector's Office
- TSC
- EOF

This line will be utilized to provide specific information to the NRC regarding significant radiological events at the Plant. Information transmitted to the NRC, excluding that originating from the Resident Inspector's Office, must be approved by the appropriate emergency response management personnel prior to its transmittal.

The HPN telephones will be staffed by the licensee.

Emergency Notification System (ENS)

The Emergency Notification System (ENS) is intended for use as the primary means for the Plant to report emergencies and other significant events to the NRC. This FTS line will serve as a dedicated line to provide operational data to the NRC during a declared emergency.

A total of five extensions are located at AEP facilities in:

- TSC
- Control Rooms
- NRC Resident Inspector's Office
- EOF

Communications over the ENS telephone will be initiated by Control Room personnel if a nuclear emergency occurs at CNP. Licensee personnel will staff the ENS telephones at the EOF when the EOF is activated.

Emergency Response Data System (ERDS)

The Emergency Response Data System (ERDS) is a direct electronic data link between CNP computer systems and the NRC Operations Center. Types of data transmitted include information on the plant's primary and secondary coolant systems, safety injection system, and radiation monitoring systems. Data is updated at approximately 5-second intervals.

F.2 Medical Support Communications

Communications between CNP and the offsite medical facilities are made by telephone calls and are authenticated for contaminated patients only.

F.3 Communications Systems Testing

Communication links between the NRC Operations Centers and the CNP TSC and EOF via the Emergency Notification System (red phone) are tested monthly for operability. In addition, the Control Room communication link with the NRC Operations Centers is tested for operability on a daily basis.

Communication links between the Plant and Berrien County Sheriff's Department, and the Michigan Department of State Police have been established and are tested monthly at a minimum.

Communications with Offsite Survey Teams will be tested at least annually to ensure an understanding of the content of the messages in the drills.

The majority of the communications systems are tested on a daily basis through normal use. The radio communications to the Berrien County Sheriff's Department and Michigan Department of State Police are tested daily. An annual drill is conducted with the offsite emergency response personnel including those of State and County agencies if these authorities desire to participate. As a minimum, each annual drill (exercise) tests the communication links and notification procedures with State and County agencies to ensure the proper flow of information in the event of a nuclear incident.

PLANNING STANDARD G

PUBLIC EDUCATION AND INFORMATION

G. PUBLIC EDUCATION AND INFORMATION

The utility industry's experience has consistently shown that offsite public reaction is more favorable when information originates with the utility, and that notification of appropriate county, state and federal agencies is made prior to any public announcement to ensure that the information presented is fully understood by all parties and does not conflict with news reports and information transmitted to any agencies by other sources. Press briefings will be arranged in conjunction with appropriate agency officials to permit a consistent and timely exchange of information.

The ENC/JIC personnel manage information release on the incident by:

- Gathering information on the incident, preparing, and approving information releases to the media.
- Providing a single location for use by the media for obtaining information about the incident.
- Monitoring the broadcast media for discrepancies between approved media releases and broadcast information.
- Answering questions posed by callers to the Public Inquiry telephone lines.

The ENC/JIC facility shall be activated for any Alert, Site Area Emergency, or General Emergency. The goal is to have ENC/JIC staffed approximately 90 minutes after declaration of an Alert, Site Area Emergency, or General Emergency.

G.1. Public Information

American Electric Power (AEP) annually distributes emergency educational information to the public within the Emergency Planning Zone (EPZ) in conjunction with Berrien County and the Michigan Department of State Police – Emergency Management and Homeland Security Division. Such information includes the warning methodology used in notification of the public, educational information on radiation, personnel or agencies to contact for additional information, and sheltering and evacuation procedures used in the event of a nuclear incident. Appendix D is an example of the emergency educational information material that is distributed annually.

G.2 Distribution of Public Information

The above emergency educational information was distributed to the public initially and is updated annually. This information is sent to all Berrien County residences and businesses, as well as Niles and other locations served by municipal power. This mailing includes those living and working both inside and near the 10 mile EPZ. New electric service customers are sent a copy of the emergency educational information and are added to the annual mailing.

The brochure is also distributed to Warren Dunes State Park, local motels, hotels, nursing homes, marinas, and apartment complexes. Selected camping and recreational areas that are part of the 10 mile EPZ most frequently used by large segments of the transient population will also be provided with similar information. The Cook Energy Information Center Manager is responsible for the annual distribution of emergency educational information to the public within the 10 mile EPZ.

G.3. Emergency News Center/Joint Information Center (ENC/JIC)

The Emergency News Center/Joint Information Center (ENC/JIC) provides a single location for issuing information on incidents and Company response about incidents to the news media.

The Emergency News Center/Joint Information Center (ENC/JIC) is located in the Nuclear Generation Group Headquarters Building located approximately 14 miles southeast of the plant site in Buchanan, Michigan. The ENC/JIC shares the first floor of the building with the EOF.

Media access is allowed to an auditorium area, media work area, and lobby area of the building through a guarded main entranceway. Access to all other areas and entrances to the building are locked, barricaded, or guarded to prevent media intrusion into the EOF, corporate offices, or the ERO staffed portion of the ENC/JIC.

The auditorium provides the location for briefings by the utility Spokesperson and representatives of any other agencies responding to the incident. Space and electrical power are provided for media cameras to be set up for broadcasting briefings. An area adjacent to but separate from the auditorium is set up as a media work area with desks, chairs, and phones for media use, as well as distribution of press kits and copies of releases.

A Support Staff area is set up adjacent to, but separate from the auditorium and areas accessible to the media, for communicators, statement writers and others working to support ENC/JIC operation. Fax machines, telephone lines and computers are set up to support obtaining current information and preparing press statements.

G.4. ENC/JIC Spokespersons and Public Inquiry

G.4.a. Spokesperson Information

Later in the event as off-site agencies activate, the ENC/JIC becomes the single location for coordinated response to the news media by the spokespersons of the Company, local and state government, the NRC, and any other agencies responding to the incident. The ENC/JIC does not become a Joint Information Center until after the declaration of a Site Area Emergency and when a representative from the state is present and declares the JIC activated.

G.4.b Spokesperson Information Exchange

The ENC/JIC is staffed to provide for media release preparation and presentation, media monitoring, and public inquiry. The ENC/JIC staff also provides for support of off-site agency responders to the facility as well as support for the media representatives that use the facility.

G.4.c. Public Inquiry

A Media Monitoring and Public Inquiry area is set up with radios, televisions, and telephones. Media Monitors watch releases televised by the local media and listen to radio reports for any inaccurate information. Public Inquiry Communicators record and respond to any questions called in to the Public Inquiry extensions.

G.5 Annual Media Briefing

Information is sent annually to the local news media to explain the emergency preparedness plans of the State, County, and utility. This is sent just prior to the annual Cook Emergency Plan exercise and invites the media to participate in the exercise. The role of the media in providing emergency information to the public is also explained.

PLANNING STANDARD H

EMERGENCY FACILITIES AND EQUIPMENT

H. EMERGENCY FACILITIES AND EQUIPMENT

Plant personnel who are needed and are not onsite will be notified of the existing plant condition and will be directed to report to one of the following locations:

1 TSC

2 EOF

3 OSC

4 Or an alternate location in the event of unsafe plant conditions.

H.1. Technical Support Center

H.1.a. TSC Functions

The onsite Technical Support Center (TSC) provides plant management and technical support to plant operations personnel during emergency conditions from a location outside the Control Room.

During the short-term emergency conditions, the TSC is capable of serving the following purposes until all required response centers both on and offsite have been activated.

- Providing technical support to operations personnel as requested.
- Directing the activities of site personnel.
- Evaluating offsite agency requests and recommendations to ensure compatibility with emergency response objectives.

The TSC shall be activated for any Alert, Site Area Emergency or General Emergency.

The TSC, combined with the Control Room, can perform the functions of the EOF until the EOF is activated.

Sufficient data to determine the plant steady state and dynamic behavior prior to and throughout the course of an accident is available for analysis in the TSC. TSC personnel shall have ready access to plant records and procedures to support detailed technical analysis and evaluation of plant conditions.

The TSC facilities may be used by plant personnel for normal daily operations as well as for training and emergency drills provided that these activities do not interfere with the immediate activation of the TSC or the continuing TSC operations in the event of an accident.

The primary NRC role in the TSC will be supportive, advisory, and observational.

H.1.b. TSC Location

The TSC is located adjacent to the Control Room to readily allow face-to-face interaction between Control Room personnel and the senior plant management working in the TSC. (See Figures 10 and 11)

An alternate location for the TSC is the Buchanan Office Building in the event of unsafe conditions at the plant.

H.1.c. TSC Staffing

The TSC is staffed to provide technical support to the Control Room operating staff during accidents. The number and type of personnel assigned to the TSC and their time of arrival in the TSC may vary according to the emergency class. The TSC staff assignments are contained in Section B. The SED, or in the absence of the SED, the TSC Manager shall coordinate activities in the TSC and interface with the Control Room and the EOF.

H.1.d. TSC Design

The CNP TSC is located in the Turbine Building adjacent to the two Control Rooms. This location readily allows for face-to-face interaction between the Control Room personnel and TSC personnel. Because of the proximity of the TSC to the Control Room, it will normally take less than 2 minutes to travel from one facility to the other. The lower level of the TSC (elevation 634') is comprised primarily of the Shift Manager's Office and the TSC computer room. The upper level (elevation 643') houses the Plant Evaluation Team area which contains the computer consoles, communications area, and a separate office with sufficient working space for five NRC representatives. The staffing and use of the TSC has been tested in emergency exercises with the result that there is sufficient space for plant emergency personnel to perform their assigned functions.

The TSC has been constructed to provide the same degree of radiological habitability as the Control Room under accident conditions. Concrete shielding has been provided to significantly reduce the effects of containment building radiation shine during an accident. Radiation monitoring is provided to indicate radiation dose rates as well as airborne radioactivity levels.

The CNP TSC has been designed to:

1. Provide technical support to plant operations personnel during emergency conditions.
2. Relieve the reactor operators of peripheral duties not directly related to reactor system manipulation.
3. Prevent congestion in the Control Room.
4. If necessary, perform EOF functions for an Alert, Site Area Emergency or General Emergency until the EOF is fully functional.

The following communication systems have been provided in the TSC:

- Offsite emergency radio to communicate with the Offsite Survey Teams as well as with in-plant teams, and EOF.
- Dedicated line on the NRC Health Physics Network (HPN) and two dedicated lines on the NRC Emergency Notification System (ENS).
- Plant intercom/PA System.
- Dedicated communication circuit to the Control Room, OSC and EOF.
- Fax capability.

- 2 private lines off the CNP PBX are dedicated for NRC use with outside capability.
- Additional telephones to be used as needed.

The TSC will not contain, but will have ready access to plant records, drawings and other documentation as required. The concept of operation of the AEP Emergency Response Organization is described in Section A.1.b.

H.1.e. TSC Data Availability

Personal Computers and printers are available in the TSC that allow access to the plant LAN, stand-alone programs, and access to Plant Process Computer information.

H.1.e.1. Plant Process Computer (PPC)

The CNP Plant Process Computer (PPC) System has been developed and designed using the guidelines of NUREG-0696 and NUREG-0737, Supplement 1 to provide the plant operating and technical support personnel with the pertinent plant information to facilitate the emergency response to an accident in a timely manner and to assess the status of the critical safety functions. This system can also be used during normal plant operations for other functions such as plant performance analysis and personnel training.

The PPC network is a data gathering, analysis, and display system that interfaces with multiple computer systems. This system consists of two similar computerized data acquisition, processing and display systems, one for each unit. The Unit 1 and Unit 2 PPCs acquire, validate, and convert analog, digital, pulse, and sequence of events inputs from process instruments into engineering units. In addition, data is acquired from the RMS, MIDAS, and from various recorders located throughout the plant. The Unit 1, Unit 2, and Simulator PPCs and the Plant System Server (PSS) computers are part of a computer network. The PPC network is used to send emergency response data to the NRC via ERDS. The Safety Parameter Display System (SPDS) is also a function that is performed by the PPC network.

The PPC system information is accessed with personal computers that access the PPC through the Plant System Server (PSS) system and the information so obtained is usually referred to as PPC data. PCs that have access to the PPC in this fashion are available in the Control Rooms, TSC, OSC, ENC/JIC, and the EOF.

H.1.e.2. Emergency Response Data System

Emergency Response Data System (ERDS) is a direct electronic data link between CNP PPC system and the NRC Operations Center. Types of data transmitted include information on the plant primary and secondary coolant systems, safety injection system, and radiation monitoring systems.

H.1.e.3. Dose Assessment Program (DAP)

A Dose Assessment Program (DAP) is available in the TSC, EOF, and the Control Room. DAP is discussed in section I.4.

H.1.e.4. MIDAS

Access to meteorological information via the Meteorological Information and Dispersion Assessment (MIDAS) System display is available on any of the computers in the Control Rooms, OSC, TSC, and EOF that have access to the PPC. The meteorological information is used for offsite dose assessment purposes.

H.1.e.5. Radiation Monitoring System

RMS data is available on any of the computers located in the Control Room, OSC, TSC, ENC/JIC and EOF facilities that have access to the PPC.

H.2. Emergency Operations Facility

H.2.a. EOF Functions

The EOF provides coordination and evaluation of licensee activities during an emergency. The EOF shall be activated during an Alert, Site Area Emergency and General Emergency.

Once fully activated and staffed, the function of the EOF shall provide for:

- Management of overall licensee emergency response,
- Coordination of radiological and environmental assessment,
- Determination of recommended public protective actions,
- Coordination of emergency response activities with federal, state, and local agencies, and
- Recovery functions.

To accomplish these functions, personnel shall be provided in the EOF for communications with offsite agencies and the evaluation of pertinent radiological, meteorological, and plant system data.

Once the Emergency Response Organization (ERO) has been established in the EOF, the TSC Manager will work with the Logistics Coordinator to coordinate communications with the engineering support personnel as needed to respond to the emergency.

The EOF personnel shall coordinate the emergency response activities with those of county, state and federal emergency response organizations, including the NRC and FEMA.

H.2.b. EOF Location

The EOF is located on the first floor in the NGG Headquarters building in Buchanan, Michigan, which is approximately 14 miles from CNP. The EOF shares the first floor of the building with the ENC/JIC, but the media is segregated from all but a lobby area and auditorium where briefings occur and do not have access to the EOF or the EOF staff. (See Figure 11)

H.2.c. EOF Staffing

The EOF shall be staffed to provide overall management of the plant resources and evaluation and coordination of plant activities during and after an accident. The EOF staff will include personnel to perform radiological evaluations, interface with offsite, and manage offsite resources. The EOF staff assignments are contained in Section B. The ED shall be in charge of all activities in the EOF.

H.2.d. EOF Design

The EOF is located in the NGG Headquarters building in Buchanan, Michigan, which is approximately 14 miles from CNP. It occupies approximately 6400 square feet of the first floor of the building, approximately 2500 square feet of which is reserved for use by NRC personnel.

The EOF contains an operations room which includes the crisis management team, communicators, the NRC office, the dose assessors and the data display terminals. The communications are to the:

- ENC/JIC
- State and local representatives in their respective Emergency Operation Centers
- NRC Emergency Operations Center (ENS and HPN telephones have been installed)
- TSC and Control Room
- Licensee Offsite Survey Teams

The EOF Manager will be in charge of all the Emergency Operations Facility communicators and status displays.

The following communication systems have been provided in the EOF:

- Offsite emergency radio to communicate with the Offsite Survey Teams, TSC, and OSC.
- Dedicated line on the NRC Health Physics Network (HPN) and on the NRC Emergency Notification System (ENS).
- Dedicated communication circuit to the Control Room, TSC, and OSC.
- Fax capability.
- 3 private lines dedicated for NRC use with outside capability.
- Additional telephones to be used as needed.

The design of the EOF structure and organization ensures its ability to perform the following functions:

- Management of overall licensee emergency response.
- Coordination of radiological and environmental assessment.

- Determination of recommended public protective actions.
- Coordination of emergency response activities with federal, state and local agencies.

The EOF was designed for occupancy by approximately 70 persons. The approximate occupancy, by function, is as follows:

ERO Managers and Coordinators	6
NRC Personnel	23
FEMA, State and County Personnel	3
Communicators	6
Clerical and Extra Staff	5
Assessment Staff	2
	45

Ample parking spaces exist outside the EOF in the NGG Headquarters Building parking lot for the number of vehicles that can be expected during an emergency as well as space for mobile vans that will be brought in by offsite support agencies. In addition, space exists near the building that can be used for landing a helicopter should the need arise.

H.2.e. EOF Data Availability

The same computer capability (PC, PPC, LAN, DAP, etc.) described for the TSC in H.1.e. is available in the EOF.

H.3. Operations Support Center (OSC)

H.3.a OSC Functions

The Operations Support Center (OSC) is an onsite assembly area separate from the Control Room and the TSC where licensee operations support personnel report in an emergency.

The OSC:

- Provides a location where plant logistic support can be coordinated during an emergency, and
- Restricts Control Room access to those support personnel specifically requested by the shift manager.

The OSC shall be activated for any Alert, Site Area Emergency, or General Emergency.

This is an assembly area for personnel to report for instructions from the OSC Manager. Communications are provided to the Control Room, TSC, and EOF on bridge lines. Communications are provided to Damage Control, Rescue, and Survey Teams with portable radios.

H.3.b. OSC Location

The OSC is located in the basement of the Lakeside Office Building on the plant site. The classrooms, storage rooms, and offices on the north end of the basement comprise the area where the staff assigned to the OSC stage and perform their function. The remainder of the office building complex is used for assembly of the remainder of the plant staff when accountability is performed. (See Figures 10 and 11)

The OSC will normally be located in the basement area of the Lakeside Office Building; however, this area is not intended to be "fixed" and may be re-located to other areas of the plant that will permit the orderly progression of work to restore the plant/unit to operational status. Any area that is used as an OSC shall be approved by the SED after the RP Department surveys the area and it is found to be radiologically acceptable.

An alternate location for the OSC is the Buchanan Office Building in the event of unsafe conditions at the plant

H.3.c, OSC Staffing

The OSC staff assignments are contained in Section B. The OSC Manager shall be in charge of all activities in the OSC.

H.3.d. OSC Design

The OSC is located in the basement of the plant's lakeside office building. Classroom space is available for assembling, briefing, and de-briefing response teams, as well as storage space for emergency response equipment such as anti-contamination clothing and survey equipment.

There shall be direct communications between the OSC and the Control Room and between the OSC and the TSC so that the personnel reporting to the OSC can be assigned to duties in support of emergency operations.

Means for analyzing air samples and environmental samples are located in the OSC. Offsite Survey Teams can return samples to the OSC for analysis. If the OSC is unavailable or inaccessible samples can be counted at Palisades Nuclear Plant (about 25 miles from CNP) or other of the contingency Offsite Laboratory Facilities.

The following communication systems have been provided in the OSC:

- Offsite emergency radio to communicate with the Offsite Survey Teams, TSC, and EOF.
- Dedicated communication circuits to the Control Room, TSC, and EOF.
- Fax capability.
- Additional telephones to be used as needed.

H.3.e. OSC Data Availability

The same computer capability (PC, PPC, LAN, etc.) described for the TSC, with the exception of DAP, is available in the OSC. In addition the OSC has access capability to the Radiation Protection Dose Tracking and Control System.

H.4. AEP Emergency Organization Staffing and Activation

The concept employed by AEP is to support the plant operating staff in an emergency by activating all of the Emergency Response Facilities when the operating shift determines that additional resources are necessary to respond to an event.

At the plant, the TSC would be activated upon an Alert, or higher emergency classification and would perform its functions to support Control Room operation within the goal of 60 minutes. These functions are to provide plant management and technical support to operations personnel; relieve the Control Room personnel of peripheral duties not directly related to plant operation; prevent congestion in the Control Room, and perform EOF functions until the EOF is activated.

The EOF will be activated for any Alert, Site Area Emergency or General Emergency and for any lesser classification as determined by the SED. The goal is to activate the EOF within 60 minutes of an Alert, or higher emergency classification. Pre-designated members of the NGG staff will report to the EOF to provide management and operations support.

When ERO members arrive at the EOF, the EOF functions are transferred from the TSC or the Control Room to the EOF. These functions are: management of overall licensee emergency response, coordination of radiological and environmental assessment, including determination of protective action recommendations for the public (when the Emergency Director position is activated), and coordination of emergency response activities with federal, state and local agencies. During this time, the EOF is in communication with the TSC.

The ENC/JIC facility will be activated at the Alert level, and becomes the JIC at a Site Area Emergency and when declared as the JIC by the State of Michigan. The goal is to activate the ENC/JIC within 90 minutes of an Alert, or higher emergency classification. The EOF will be in communication with the ENC/JIC as well as with the state and county emergency operations center. Press releases will be coordinated with the NRC, state, local and AEP ERO.

Long Term Recovery. At the plant, the TSC is providing support to the Control Room and plant operations staff. The ED is responsible for the entire recovery operation and is located in the EOF. The EOF staff obtains its information on the plant status from the PPC terminals located in the EOF. The dose assessment and communication with the licensee's Offsite Survey Teams and all other communications with offsite parties continues to be performed at the EOF. The Engineering, Design and Site Services Manager is responsible for obtaining supplementary assistance, if needed, from the other NGG personnel.

H.5. Emergency Detection

CNP has nuclear and process instrumentation to detect abnormal situations. This instrumentation will provide warning to the operators so that action can be taken to avoid or mitigate the consequences of plant incidents. Detection capability is provided in the following areas:

1. Instrumentation for detecting seismic activity on the plant site and meteorological towers for monitoring and recording weather data.

2. A system for monitoring of radiation levels in selected areas of the plant, radioactivity of process streams in the plant, and liquid and gaseous discharges from the plant.

3. Instrumentation to measure tank levels in various plant systems and the pressures, temperatures, and flows of process streams.

4. Instrumentation for detecting fires in the plant and security events.

Specifically the instrumentation available to assist in determining the severity of a nuclear incident inside the containment is listed in Table 5, "Critical NUREG-0737 Parameters".

Events that do not have a potential for radiological releases but which may have a public interest are detected through the plant's monitoring instrumentation, the plant computer system, audio-visual, alarm/trip indications, fire protection system, and seismic monitoring system.

H.5.a. Seismic Monitoring

The seismic monitoring system consists of two forms of monitoring instrumentation, the strong motion triaxial accelerometers and the peak recording accelerometers.

The strong motion triaxial system is composed of seismic triggers, control panel, recorder, panels, accelerometers, and power supply. These components provide a means of recording the time history of a seismic event. The power supply to the system, excluding the playback instrument, is designed to provide power from a battery backup source should the AC input supply be lost.

The seismic monitoring system includes a digital computer with an uninterruptable power supply. The system has real-time analysis capability. The accelerometers for these two systems have been placed in various locations throughout the plant in such positions as to minimize inadvertent system activations.

H.5.b Radiation Monitoring System

The instrumentation for determining the extent and magnitude of accidental releases of radioactive materials offsite includes the Radiation Monitoring System and meteorological instrumentation. Information from each of these sources is available in the Unit 1 and Unit 2 Control Rooms, as well as any PC with access to the Plant System Server (PSS). The RMS and Meteorological System data is available to the EOF, TSC, ENC/JIC and OSC from the PPC through the Plant System Server.

Alarms are provided for high radiation, RMS malfunctions and, where applicable, loss of sample flow on the local indication and control panel, and at the main Control Room display console via the RMS communications system.

A release can be determined from either in-plant RMS, or portable radiation instrumentation dispatched from the plant when it is possible that there has been an accidental gas release which could not be monitored by the plant RMS. Information from readings of this portable instrumentation may then be used to determine the extent of the release.

For accidents where there has been no significant release to the environs, but readings on Control Room instruments indicate a release within the containment, samples can be taken to determine the level of radioactivity therein. Tables relating the radiation levels in the containment for various accident conditions as a function of time and power history are used for comparison with actual data as an aid in determining the possible type of and severity of the accident and are contained in the Emergency Plan Procedures.

The major source of liquid effluent from the plant is through the circulating water discharge. Identified potential sources of radioactive releases to the circulating water system are monitored by the process monitors of the Radiation Monitoring System.

For long-term events which may have some impact on the environment, additional REMP sampling stations may be provided as necessary.

The Radiation Monitoring System instrumentation is divided into analog and digital systems.

Additional information on the monitor functions and range can be found in the UFSAR, Offsite Dose Calculation Manual, "OP Drawings", and Technical Specifications Bases sections.

H.5.b.1. Analog System

1. The Process Radiation Monitoring Systems monitor various fluid streams for indication of radiation levels. The radiation levels are indicated by meter, recorded by a multipoint recorder, and high radiation level alarms are annunciated in the Control Room.

2. The Area Radiation Monitoring System monitors radiation levels in various areas of the plant. The radiation level is indicated locally and in the Control Room where it is recorded. A predetermined increase in the radiation level detected by this system is alarmed both locally and in the Control Room.

H.5.b.2. Digital System

1. The Process Radiation Monitoring Systems monitor various fluid streams for indication of radiation levels. This data is processed by a local microprocessor. Display of the data is available upon operator request via terminals in the Control Rooms. A common high radiation alarm is annunciated and the initiating device(s) identity is printed or logged at the control terminals.

   The Eberline digital RMS consists of a series of radiation detectors, monitor controllers or local processors, and control terminals together with appropriate ancillary components including display devices. The local processor gathers data, performs routine calculations, retains channel parameter information, and a history file for all detectors served by that processor. It also determines operation and alarm status and communicates with the central control terminals. A digital display provides status and alarm outputs and a display of selected channel data.

   Alarms are provided for high radiation, RMS malfunctions and, where applicable, loss of sample flow on the local indication and control panel, and at the main Control Room display console via the RMS communications system.

   Each reactor unit at CNP has an RMS control terminal. The two central control terminals are functionally identical. One control terminal performs the functions of polling each local processor for operational status and data, logging any changes in status and associated data, logging history files, annunciating status conditions, communication error messages and, upon keyboard request, performing calculations on data in the history files. One control terminal performs system operating functions while the other is in standby ready to take over system functions. In the event of control terminal failure or outage, the standby system controller is capable of controlling RMS in both units to provide updated data. The control terminal is the operator interface with the rest of the system.

2. Area Radiation Monitors monitor radiation levels in most rooms and passageways of the Auxiliary Building and each containment. This data is processed by the local microprocessor and transmitted to the redundant control terminals.

A complete listing of the RMS monitors, their identification number, type of monitor, location, and range is available via computer or in the Reference Section of facility binders containing the Emergency Plan Implementing Procedures issued for use.

H.5.b.3. Release Assessment

Dose Assessment software is available in each Control Room, the TSC, and the EOF that calculates:

1. The site boundary dose as a function of time, meteorological conditions and release rate,

2. The dose rate as a function of distance from the plant for site boundary and beyond, and meteorological conditions.

The above DAP software is only applicable to gaseous releases which are directly measurable from plant effluent and containment area monitors, or Offsite Survey Team measurements of plume dose rate.

In addition to the instrumentation which is immediately used by the plant personnel in detecting a radiation release from the plant, a Radiological Environmental Monitoring Program is available from which samples can be taken and analyzed.

The Radiological Environmental Monitoring Program (REMP) monitors the environment surrounding the plant. The stations from which sampling of airborne particulate, airborne I-131, lake water, well water, external radiation, etc. are located in the Plant's surrounding environs and are identified in appropriate plant procedures.

With the existing instrumentation available to plant personnel, the evaluation of the release and the estimation of the resultant radiation levels at distances from the site boundary can be made without the need to use the Radiological Environmental Monitoring Program sample stations.

For long-term events which may have some impact on the environment, additional REMP sampling stations may be established.

H.5.c. Process Monitoring

Plant operating parameters including pressures, temperatures, volumes, and flowrates for systems, as well as RMS and meteorology are available throughout the ERO facilities on PCs that access the PPC information through the Plant System Server (PSS).

H.5.d Fire Protection

The fire protection detection system is comprised of two general types of detectors. They are thermal detectors and products of combustion detectors. The thermal detectors are designed to detect thermal energy output (i.e., heat from a fire). The products of combustion detectors are designed to detect particles, smoke, or infrared radiation.

The fire detection systems provide an alarm and/or actuate fire suppression systems. Alarm functions generally include:

- Annunciation in the Control Rooms,

- Audible overall plant fire horns for those suppression systems which are actuated by detection systems,

- Audible and/or visual alarms for gaseous suppression systems actuated by detection systems.

H.5.d.1. Types of thermal detectors in use at the plant are as follow:

Thermistor

A thermistor is a continuous line heat detector. When an over heat condition occurs anywhere along the thermistor, the resistance drops which is sensed by the control panel. The control panel activates an alarm and/or automatic fire suppression systems.

Fusible Entity Detector/Actuators

Fusible Entity Detectors are used to activate sprinkler systems by melting at predetermined temperatures allowing water to be released from the sprinkler heads. The types of plant sprinkler systems employing this type of detector/actuators are:

- Wet Pipe Sprinkler System

  The piping is always full of water under pressure, so that, if exposed to fire, the sprinkler head is activated and water will instantly flow from the open head onto the fire, and at the same time provides an alarm of such activation and water flow.

- Preaction Sprinkler System

  These systems are used in areas subject to freezing temperatures or where there is a possibility of water damage from accidental operation or a break in the piping system. In these systems, there are two piping systems one for air (pilot) and one for water. Sprinklers (pilot heads) with a lower temperature rating are installed in the air (pilot) piping system as compared to those installed in the water piping system. The air pressure in the pilot piping keeps a control valve closed. When the pilot heads operate from a fire, the air in the pilot piping is vented and the control valve opens allowing water to fill the water piping. At this point, the system operates the same as a wet pipe sprinkler system.

H.5.d.2. Types of products of combustion detectors in use at the plant are as follow:

Ionization Type

Responds to an abnormally high concentration of invisible particles of combustion products that are ionized by a radioactive source located in the detector chamber.

Photoelectric Type

Responds to visible smoke in the detector chamber which causes a light source in the detector to be refracted and reflected into a photoelectric cell.

Infrared Flame Detector

Responds directly to the presence of the infrared radiation emanating from flames, which flicker between the frequencies of 5 to 30 C.P.S.

H.6 Offsite Monitoring and Analysis Equipment

H.6.a. Geophysical (Meteorological, hydrologic, seismic)

A contract is maintained with a commercial weather service for meteorological forecast services, and for an alternate source of meteorological data if the plant site meteorological system is unavailable. As a back-up for the contract service the NOAA Weather Service Forecast broadcasts are accessed through a plant phone extension, as well as being available from weather radios.

Phone numbers for the National Earthquake Information Center are maintained PMP-2080-EPP-101, "Emergency Classification". The center can be contacted for confirmation of, or information on seismic events.

H.6.b. Radiological Monitoring

Emergency Plan Procedures establish the means of assuring that adequate emergency equipment is stocked at designated points for use in emergencies dealing with radiological hazards. The emergency equipment includes, but is not limited to:

- Air samplers with assorted cartridges
- Ion chambers
- Geiger counters
- Respirators
- Personal dosimetry

Plant procedures identify the requirement for emergency equipment to be inventoried and checked at specified times to ensure that the supplies and equipment are properly maintained and available for use. Emergency equipment is kept at some offsite locations see Appendix C, Emergency Kits and Equipment Locations, for locations.

Appendix B contains agreements with offsite support agencies including agreements with other utilities for assistance during emergencies at nuclear power stations.

Appendix E contains information about assistance and resources, including instrumentation, available through the DOE Radiological Assistance Plan.

H.6.c Offsite Laboratory Facilities

In the event that it becomes necessary to use offsite laboratories for analysis of samples the following facilities may be contacted and the analysis performed depending on the type of samples (See Appendix H, Radiological Response Support Service Capabilities):

- Teledyne Isotopes Inc.
- Argonne Laboratory (DOE)
- There is also a Reciprocal Laboratory Use Agreement with Palisades Nuclear Plant (see Appendix B).

H.7. Radiological Environmental Monitoring

The CNP uses a pressurized water reactor with a radwaste holdup and treatment system that has been designed to keep radioactive releases to as low as practical levels. However, small quantities of noble gases and other radionuclides that are released to the environment are expected to be minuscule and insignificant as a source of potential exposure to flora and fauna in the area. However, direct radiation exposure to the public and radionuclide accumulations in various components of food chains to man is carefully monitored through the REMP. Further information on the REMP can be found in the Offsite Dose Calculation Manual (ODCM).

H.8 Meteorological System

The system's meteorological towers are located inside the thermal internal boundary layer and have the ability to measure unmodified onshore airflow to detect the presence of a lake breeze.

The meteorological system consists of monitoring information located on three towers. The primary and backup towers are located about 1-mile inland from the plant site to provide a representative determination of the meteorological conditions for emergency planning purposes. The primary tower has instruments at the 10 and 60-meter elevations. Each elevation has a measurement of wind speed and direction. Temperature is measured at both elevations and is used to determine a delta temperature (delta T). This delta T is used in dose assessment to determine atmospheric stability. A precipitation gauge is located near the primary tower site.

The backup tower has wind speed and wind direction instrumentation located at the 10-meter elevation. Separate communication lines are provided for the main and backup towers.

The shoreline tower also has wind speed and wind direction instrumentation at the 10-meter elevation. Temperature detectors are located at the 2-meter and 10 meter elevations of the tower. The shoreline tower is located just northwest of the plant on the shore of Lake Michigan.

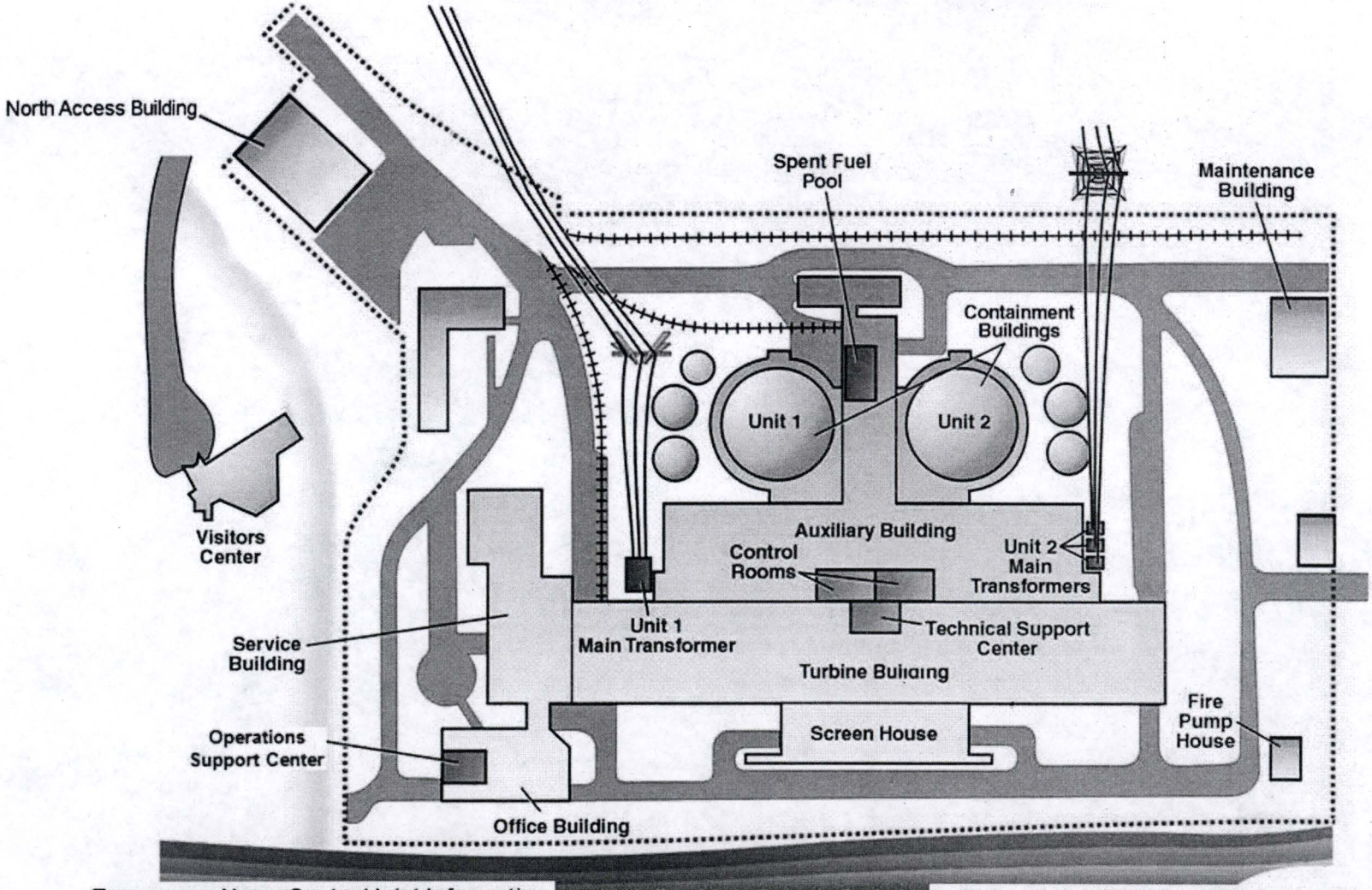
The three towers are controlled by a central computer located at CNP site. The towers are polled every 15 minutes for meteorological data. The data are stored in the central computer. Meteorological data are available from any PC with access to the PPC data.

Daily checks of the digital data are performed to ensure reliability. Erroneous data are flagged on these displays and triggers the issuance of a Work Order (WO). The WO system is used to notify the appropriate department of the problem and provides notification of the resolution to the problem. An adequate spare parts inventory is maintained at the primary tower site. Calibration of the system is performed semi-annually and is documented by the plant Instrumentation and Control Section.

Meteorological information can be obtained directly from the primary tower site using a keypad if communications with the central computer are lost. Backup meteorological information can also be obtained from a consulting firm. Forecasting information is available from the consulting firm as well as a plant extension that continuously plays NOAA weather information, and Weather Service radio.

Figure 11

LOCATIONS OF EMERGENCY RESPONSE CENTERS



Emergency News Center/Joint Information Center in the Nuclear Generation Group Headquarters Building in Buchanan

Emergency Operations Facility in the Nuclear Generation Group Headquarters Building in Buchanan

FIGURE 12

CNP EMERGENCY RESPONSE CENTER LOCATIONS

Control Room	Entry at Elev. 633' Turbine Building
Technical Support Center (TSC)	Above SM's Office Complex Adjacent to Units 1 and 2 Control Rooms
Operations Support Center (OSC)	Plant Offices – Basement Shelter Elev. 587'
Emergency Operations Facility (EOF)	In Nuclear Generation Group Headquarters Buchanan – Approximately 14 miles Southeast of CNP
Emergency News Center/Joint Information Center (ENC/JIC)	In Nuclear Generation Group Headquarters Buchanan – Approximately 14 miles Southeast of CNP

TABLE 5

CRITICAL NUREG 0737 PARAMETERS

PARAMETER	INSTRUMENTATION
Neutron Flux (Gammametrics)	NRI-21, NRI-23
Reactor Coolant Pressure (Wide Range)	NPS-110, NPS-111, MR-13
Reactor Coolant Outlet Temperature T_{hot} (Wide Range)	NTR-110, 120, 130 140
Reactor Coolant Inlet Temperature T_{cold} (Wide Range)	NTR-210, 220, 230 240
Incore Thermocouples (Core Exit Thermocouples)	T/C 1-65
Reactor Coolant System Subcooling Margin Monitor	QR-110-3
Reactor Coolant Inventory System (Reactor Vessel Level Indication)	NLI-110, 111, 120, 121, 130, 131
Pressurizer Water Level	NLP-151, 152, 153
Charging Pump Flow	IFI-51, 52, 53, 54
Charging Pump Breaker Status	1E, 1W, 2E, 2W Control Room Position Indicating Lights for Breakers
Safety Injection Pump Breaker Status	1N, 1S, 2N, 2S Control Room Position Indicating Lights for Breakers
Safety Injection Flow	IFI-260, 266
Refueling Water Storage Tank Water Level	ILS-950, 951
Containment Water Level	NLI-320, 321, 330, 331, 340, 341
Containment Recirculation Sump Water Level	NLI-300, NLI-301
Containment Pressure (Wide Range)	PPA-310, 312
Containment Pressure (Narrow Range)	PPP-300, 301, 302, 303
Containment Hydrogen Monitoring	ESR-1 thru 9, PAS-H2-A-CR1, PAS-H2-B-CR1
Containment Isolation Valve Position Monitoring	Control Room Position Indicating Lights
Containment Area Radiation Monitors (High Range)	Unit 1 VRA-1310, 1410, Unit 2 VRA-2310,2410
Steam Line Pressure	MPP-210, 211, 212, 220, 221, 222, 230, 231, 232, 240, 241, 242
Steam Generator Water Level (Wide Range)	BLI-110, 120, 130, 140
Steam Generator Water Level (Narrow Range)	BLP-110, 111, 112, 120, 121, 122, 130, 131, 132, 140, 141, 142
Auxiliary Feedwater Flow Rate	FFI-210, 220, 230, 240
CCW Flow to ESF System, CCW Pump Breaker Status	PP-10E, PP-10W
Reactivity Control, Control Rod Position	CA1-8(U1), CB1-4(U1), CA1-4(U2), CB1-8(U2), CC1-8, CD1-9, SA1-8, SB1-8, SC1-4, SD1-4
Condensate Storage Tank Level	CLI-113, CLI-114

PLANNING STANDARD I

ACCIDENT ASSESSMENT

I. ACCIDENT ASSESSMENT

The purpose of this section is to describe the systems, equipment, and methods for monitoring and assessing offsite consequences of actual or potential radiological emergencies.

I.1. Release Identification and Event Classification

The Emergency Plan Procedures contain the information used to establish the emergency classification category based on plant system and effluent parameter values. Those initiating conditions are identified in NUMARC/NESP-007. Section D contains the plant specific EALs and initiating conditions in the Emergency Classification System tables.

I.2. Radiation Monitoring System

The RMS monitors area radiation levels in most rooms and passageways of the Auxiliary Building and each containment. Effluent and process flows are monitored for radioactive material. The monitors and channels of most interest for monitoring and evaluating events for radiological impact are:

Containment Radio Gas monitors	2 per unit
Condenser Air Ejector Radio Gas monitors	1 per unit
Unit Vent Radio Gas Monitors	1 per unit
Gland Steam Leak Off Monitors	1 per unit
Steam Generator Power Operated Relief Valve (PORV) Monitors	4 per unit
Containment High Range Area Radiation Monitors	2 per unit

Process Monitors

Component Cooling Loops A and B
Liquid Waste Disposal
Steam Generator Blowdown Sampling
Essential Service Water
Waste Gas Decay Tanks
Waste Liquid Off-Gas
Steam Generator Blowdown Treatment

A complete listing of the RMS monitors, their identification number, type of monitor, location, and range is available via computer or in the Reference Section of facility binders containing the Emergency Plan Implementing Procedures issued for use. Section H.5.b contains the description of the RMS system.

I.3. Release Source Term and Magnitude Determination

I.3.a. Release Source Term

Calculations correcting containment dose rates as a function of time and reactor power history are contained in the plant core damage assessment procedure. Tables use the corrected containment dose rate results to provide estimates of core damage.

Estimates of core damage are used to select the source term used in the Dose Assessment Program for assessing releases.

The Dose Assessment Program for assessing releases of radioactive material can use the source term for a release after core damage, a release of a waste gas decay tank (WGDT), a release from the spent fuel pit (SFP) or a release from the Independent Spent Fuel Storage Installation (ISFSI) to estimate dose rates.

I.3.b. Release Magnitude

Effluent monitor radiation readings and effluent pathway flow rates are used to calculate the magnitude of releases.

When it is possible that there has been an accidental gas release which could not be monitored by the plant RMS survey teams dispatched from the plant perform surveys offsite with portable radiation instrumentation. Information from readings of this portable instrumentation may be used to determine the extent of the release.

I.4 Dose Assessment Evaluation

A dose assessment program to quickly relate measured release rates and containment dose rates to dose and dose rates at the site boundary and beyond are maintained in the Control Rooms, TSC, and the EOF. The determination of the meteorological stability class to perform offsite dose calculations is described in the Plant Emergency Plan Procedures. Once the meteorological stability class is determined, the offsite radiation dose and dose rates at the site boundary can be estimated using the information obtained from the plant radiation monitoring instruments and/or measured offsite radiation dose rates and the dose assessment program.

A dose assessment computer program, DAP, provides a method of calculating conservative estimates of dose and dose rates at the offsite area most probably affected by a gaseous release to assist in emergency classification and Protective Action Recommendations (PAR). The Dose Assessment Program allows evaluation of several types of release scenarios with the flexibility for meteorological and radiological inputs to perform alternate evaluations to best characterize an event and the resulting protective measures. The program also allows calculations based on offsite survey results for cross comparison purposes, or a means for evaluating unmonitored releases.

In order to calculate a dose/dose rate, the program requires data on:

- the radiological effluent.
- containment area monitor dose rates, or
- offsite dose rate measurement results.

This information can be obtained from the plant's RMS or from Offsite Survey Teams.

Other features included in the program are as follows:

- Variable Trajectory Plume Segment Model
- Radioactive decay after reactor shutdown
- Decay and daughter in-growth during transit
- Ground level release
- Finite cloud correction
- Option to input offsite field survey data.
- NuReg – 1228 Event Tree Modeling for Source Term
- Multi Accident Assessment Capability

The program is run on personal computers.

The DAP program will be used as the primary means of performing a dose assessment.

Dose Assessment Program (DAP) is a PC computer program that calculates conservative estimates of Total Effective Dose Equivalent (TEDE) and Thyroid Committed Dose Equivalent (CDE) dose rates and total projected dose, based on a radiological release, at the plant boundary and at 2, 5, and 10 mile distances. The program also uses the information to determine the Emergency Classification Level (ECL) associated with the release.

I.5 Meteorological Assessment

The system's meteorological towers are located inside the thermal internal boundary layer and have the ability to measure unmodified onshore airflow to detect the presence of a lake breeze. Meteorological data are available from any PPC capable computer. Section H.8 contains a description of the Meteorological System.

Meteorological data from the onsite meteorological tower is input into the dose assessment program. The data is used to calculate the atmospheric diffusion factor, X/Q, to determine atmospheric dispersion of radioactive material as part of the Dose Assessment Program for calculating off site doses and dose rates. Weather forecast information is also used to project changes in plume dispersion and location, which can cause changes to Protective Action Recommendations.

I.6. Not Addressed.

I.7 Radiological Field Monitoring

As part of the response to any Alert, Site Area Emergency or General Emergency, one or more offsite survey teams are formed, as per plant procedures, and dispatched for sampling under radio contact. The off-site survey team driver position is normally filled by non-RPT personnel. Qualified RP Technicians fill the position for persons performing the survey. If adequate RP and other personnel are not available onsite, personnel to staff offsite survey team(s) would be summoned per Emergency Plan procedures.

I.8. Liquid and Gaseous Release Assessment

A minimum of two vehicles dedicated to Emergency Plan offsite surveys is available 24 hours a day. Additionally, keys for all normally available plant vehicles are available in the OSC in the Office Building Basement. Offsite survey team(s) deployed from onsite would have such vehicles available for use.

Each of the two dedicated offsite survey vehicles, the office building basement, and the EOF have air sampling equipment, dose rate, and count rate instrumentation in addition to radio equipment for communication with the plant.

Previous experience indicates that deployment of personnel from onsite to offsite areas takes approximately 30 minutes from the time of notification.

I.9. Off-site Radioiodine Monitoring

Measurements of radio-iodine yielding sensitivity to the range of 10^{-8} µCi/cc can be obtained by returning the sample to the regular counting facility or to the counting area independent of the regular counting facility located in the basement area of the Office Building.

I.10. Not Addressed.

PLANNING STANDARD J

PROTECTIVE RESPONSE

J. PROTECTIVE RESPONSE

J.1. Owner Controlled Area Warning and Advisement

Since the PA system within the plant is extensive, an announcement of the nature of the emergency can be made to most personnel immediately.

Upon sounding of the Nuclear Emergency Alarm personnel in the outlying areas of the plant site are notified using the methods described in section E.2.a of this plan.

J.1.a. Non ERO Employees

Plant employees without ERO duties and personnel temporarily assigned to the plant for training or other purposes, are required to know the location and routes to the assembly areas and be familiar with the emergency alarm procedure. Personnel already onsite immediately proceed to their appropriate assembly area upon sounding of the Nuclear Emergency Alarm.

J.1.b. Visitors

Groups on tour are escorted to an assembly area by their tour guide, should the Nuclear Emergency Alarm be sounded. Personnel already onsite immediately proceed to their appropriate assembly area upon sounding of the Nuclear Emergency Alarm.

J.1.c. Contractors and Construction

Contractors, supervisors, and/or foremen (i.e., outside labor) are provided with instructions, prior to beginning work as to the emergency alarm procedure and as to their responsibility for assembling the people under their supervision in the area designated by the SED or designated alternate. Personnel already onsite immediately proceed to their appropriate assembly area upon sounding of the Nuclear Emergency Alarm.

J.1.d Others

The decision to commence evacuation of the Cook Energy Information Center is made by the SED on the basis of the evaluation of the condition of the plant and the extent of the emergency.

The Manager of the Cook Energy Information Center or designee is responsible for the accountability of all Energy Information Center employees and all visitors of the Center should the Nuclear Emergency Alarm be sounded.

When State Police and National Guard are assigned to the plant their disposition will be determined by the nature of the emergency. If the plant is under attack the MSP and National Guard are considered essential personnel and become Emergency Workers for the event. If the emergency does not involve attack of the plant the MSP and National Guard are considered non-essential personnel and evacuated from site upon evacuation of non-essential personnel.

J.2. Evacuation Routes

If the SED deems evacuation of personnel from the plant site necessary, the evacuation route to be taken is determined by the nature of the incident. Personnel evacuate the plant and site as directed by the SED. Evacuation of individuals shall not commence until it is determined that personnel exposure for such evacuation is within the limits of 10 CFR Part 20, or if this is not practical due to the nature of the emergency, the most expeditious and non-hazardous evacuation route shall be used.

The SED designates the evacuation route. One of the below designated routes is utilized (see Figure 12)

1. North East along main access road to the Red Arrow Highway.

2. North along Lake Michigan beach area to Rosemary Road.

3. South along Lake Michigan beach area to Livingston Road.

4. North East (for Energy Information Center only) to the Red Arrow Highway.

The Security Coordinator (or alternate) is responsible for the accountability of evacuated personnel from the plant site and reports any missing persons to the SED.

J.3. Evacuee Monitoring

If evacuation is initiated a personnel monitoring station is established for those evacuated by a person trained in radiation protection. The Radiation Protection Plan specifies the acceptable limits for contamination to the body and clothing for exiting the plant. Suitable equipment intended for such personnel monitoring stations will be stored in both the OSC and the Training Center.

Other equipment is available from the Radiation Protection Access Control (RPAC), if access to that area is feasible.

J.4 Evacuee Decontamination

If any of the evacuated personnel are contaminated, the OSC Manager will institute the necessary steps for movement of these personnel to decontamination facilities and initiate surveys of the surrounding areas.

J.5 Personnel Accountability

Control of all personnel entering, leaving and at various locations throughout the plant is a function of the plant security force. The accountability of all personnel in the protected area of the plant is maintained via the security computer system. The security computer records provide the primary means of assuring the accountability of all persons of the site. Use of this computer will enable the accountability to be performed rapidly with a stated goal of achieving completion of personnel accountability within 30 minutes.

During some postulated events, assembly and accountability may pose a greater danger to plant personnel than directing a rapid egress of personnel from the Protected Area, or directing personnel to remain at their work areas. SM/SED discretion, with input from the Security Coordinator (or Security if facilities are not yet activated) should be used when deciding to perform accountability and/or evacuation under these conditions.

Once the Nuclear Emergency Alarm has been sounded all personnel onsite shall report to their pre-assigned assembly areas. The SED will notify personnel via the PA system of any changes in the areas to be used due to the release or expected release of radiological effluents from the plant.

Personnel reporting to their assembly area onsite will be accounted for using the plant security access list and security computer. This list provides an up-to-date listing of all personnel onsite by area location. The results of the accountability process will be transmitted to the individual in charge of personnel accountability.

If personnel are unaccounted for, the security computer will be queried to determine the individuals last known location. The individual(s) will be paged on the PA system, the individual's supervisor will be notified and if required, the SED will initiate search and rescue operations.

J.6 Protective Measures for Those Remaining, or Reporting to the Site

Personnel remaining onsite after the sounding of the Nuclear Emergency Alarm will be required to assemble in an area that is free from ionizing radiation and contamination, or presents the minimum exposure to personnel engaged in emergency operations. Surveys of the assembly area(s) will be conducted to ensure continued habitability.

Personnel remaining onsite who are engaged in emergency operations where there is an actual or potential radiological hazard, shall upon the direction of the RP Director, wear the required protective clothing and respiratory protection. The RP Department shall perform the required surveys and establish the type and quantity of clothing, and other protective measures required.

The Plant Security Force will control access to the Owner Controlled Area at the I-94 Gatehouse as directed by the SED.

Personnel arriving at the plant to assist in the emergency will be allowed access to the plant via minimal exposure routes as identified by the Plant RP Department and approved by the SED. The RP Department will establish a Controlled Area Access Point for personnel arriving at (and departing from) the plant from offsite if the access route exceeds the criteria for "Clean Areas" as identified in the Radiation Protection Plan. The amount of exposure personnel receive in reporting to the plant will be included in the individual's dose records.

Additionally, other precautions, such as decontamination, will be taken as necessary prior to entering the plant and reporting to the assigned assembly area. Equipment decontamination and controls are described in detail in the Radiation Protection Plan.

J.6.a. Respiratory Protection

The Radiation Protection Plan and Radiation Protection Procedures identify the instructions and requirements pertaining to respiratory protection requirements and respiratory protection equipment usage.

J.6.b. Protective Clothing

The Radiation Protection Plan and Radiation Protection Procedures identify the instructions and requirements pertaining to protective clothing requirements and protective clothing usage.

J.6.c. Radio-protective Drugs

The procedures and precautions for the issuance and use of thyroid prophylaxis, e.g., individual thyroid protection, by emergency workers will be based on existing conditions. The provisions for stockpiling, inventory, storage and use are included in Emergency Plan Procedures. However, since the medical aftereffects of the agent cannot be determined, wholesale (wide) distribution cannot be incorporated as a responsible protective measure for personnel onsite.

J.7 Off-site Protective Actions

For incidents that fall under the ECLs as defined herein, the SED or ED will notify the Michigan State Police, the Berrien County Sheriff's Department, the NRC, and the AEP Emergency Response Organization described in this plan that such an incident has occurred.

It is the responsibility of the Governor of Michigan, or authorized representative, to issue Protective Action Orders (PAOs) such as sheltering, evacuation, administration of thyroid blocking agents, etc. These decisions are based upon the protective action guides in Annex S of the Michigan Emergency Management Plan (MEMP). Since copies of the MEMP are maintained and readily available at the various Emergency Response Facilities, the protective action guides and their bases will not be reproduced here.

For incidents involving actual or imminent releases of radioactive material to the atmosphere the Control Room or EOF protective action recommendation procedures, as appropriate, will be used as the basis for recommendations for protective actions to the public. These procedures are based on the current issue of the "Manual for Protective Action Guides and Protection Action for Nuclear Incidents" (EPA 400-R-92-001). The EPA Guide provides Protective Action Guides (PAGs) for whole body external gamma radiation and for inhalation of radioactive material in an airborne plume.

The most effective actions to be recommended to the public are evacuation, sheltering, and access control. Evacuation potentially provides the greatest margin of protection. On the other hand, because sheltering may be implemented in less time than evacuation, it may be the protective action of choice if rapid evacuation is impeded for any reason. Also, since sheltering is less disruptive than evacuation, it may be the protective action of choice when the dose reduction factor associated with shelter is adequate to reduce the projected dose to less than PAG levels. Access control is an effective action to avoid exposure of personnel who might otherwise enter areas of high exposure unnecessarily.

Emergency Plan Procedures have been established to provide the mechanism and criteria for recommending protective actions to state and local government.

Additionally the protective action guides for emergency workers and those engaged in lifesaving activities exposed to airborne radioactive materials are listed in Section K.1., Emergency Exposure, and in the Plant Radiation Protection Plan.

J.8. Evacuation Times

Evacuation time estimates and informational county maps are contained in the Berrien County Emergency Operations Plan submitted to the Nuclear Regulatory Commission (NRC).

Evacuation time estimates are performed within 365 days after the availability of the most recent decennial census data. Yearly reviews of the Evacuation time estimates are performed to estimate the Emergency Planning Zone permanent resident population changes.

J.9. Not Applicable

J.10 Plume Exposure Pathway Protective Measures Implementation

J.10.a. Route and Facility Location Maps

Maps for the 10 and 50 mile EPZ, developed by the Michigan State Police are provided for use at the following locations:

- Control Rooms
- TSC
- OSC
- EOF
- ENC/JIC
- Berrien County EOC
- Cook Energy Information Center

These maps show information such as sector designations, emergency center locations topographical information, and when used in conjunction with Berrien County plan indicates preferred evacuation routes.

J.10.b. Population Distribution Maps

Evacuation time estimates and informational county maps are contained in the Berrien County Emergency Operations Plan submitted to the Nuclear Regulatory Commission (NRC).

J.10.c. Population Notification

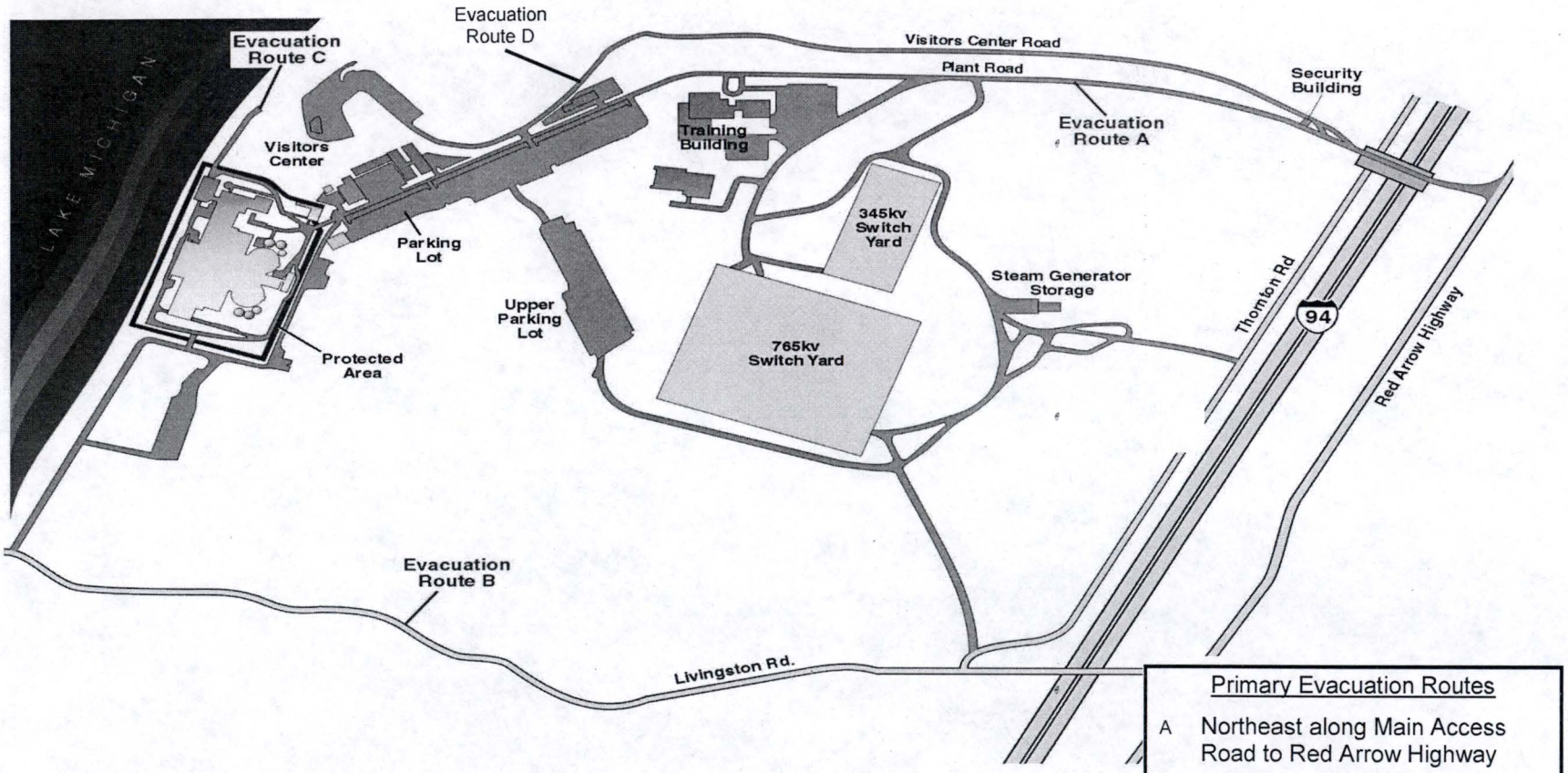
The Berrien County Plan includes provisions for alerting local radio and television stations and, local news media to be prepared to transmit Emergency Public Information. Section E.6 addresses Public Notification

J.10.d. Protective Action Basis

The Dose Assessment Program and off-site survey team results, as well as plant system and equipment status, are the basis for Protective Action Recommendations. DAP and off-site surveys are addressed in sections I.4 and I.5.

Figure 13

Cook Nuclear Plant Primary Evacuation Routes



Primary Evacuation Routes

A	Northeast along Main Access Road to Red Arrow Highway
B	South along Lake Michigan Beach area to Livingston Road
C	North Along Lake Michigan Beach area to Rosemary Road
D	(For Energy Information Center) Northeast on Visitor Center Road to Red Arrow Highway

PLANNING STANDARD K

RADIOLOGICAL EXPOSURE CONTROL

K. RADIOLOGICAL EXPOSURE CONTROL

The CNP Radiation Protection Plan (PMI-6010) specifies the base criteria for the implementation of the Radiation Protection (RP) program and the methods to be used to control the exposure to radiation and radioactive materials. The standards listed in PMI-6010 and the programs to be followed consist of:

1. RP Training and Qualifications
2. ALARA Program
3. Radiation Work Permits
4. Dosimetry Program
5. Area Postings
6. Contamination Control
7. Internal Exposure Control
8. Radioactive Material Control Program
9. Survey Program
10. Instrumentation Program
11. Radiological Environmental Monitoring Program
12. Offsite Dose Calculation Manual
13. Review and Surveillance Program

Related sub-tier RP procedures have been developed to provide a detailed and comprehensive method of performing the daily and emergency assignments. The procedures cover the following areas:

1. Exposure Monitoring and Control
2. Respiratory Protection
3. Contamination Control
4. Radiological Controls
5. Instrumentation
6. Instrumentation Calibration
7. Radioactive Effluent Control
8. Abnormal Condition Response
9. RMS Instrumentation

10. RMS Instrumentation Calibration

11. RMS Alarm Response

K.1. Emergency Exposure

It is possible that emergency situations may arise which transcend the normal requirements for limiting dose.

Dose to penetrating radiation during emergency response or response to accidents may be up to 10 rem Total Effective Dose Equivalent (TEDE), 100 rem Committed Dose Equivalent (CDE) to the thyroid for non-life-saving actions.

Life saving doses may be up to 25 rem TEDE or 250 rem CDE to the thyroid. However, in all situations, every reasonable effort shall be made to minimize dose.

In no case shall this type of dose be permitted unless rescue personnel are wearing monitoring devices capable of monitoring these doses.

Situations may also rarely occur in which a dose in excess of 25 rem, for emergency exposure, would be unavoidable in order to carry out a lifesaving operation, to avoid extensive exposure of large populations, to perform assessment actions, provide first aid or other medical treatment services, to perform personnel decontamination or provide ambulance services for personnel onsite. (Onsite medical support is described in Planning Standard L, L.2) However, persons undertaking any emergency operation in which the dose will exceed 25 rem to the whole body should do so only on a voluntary basis and with full awareness of the risks involved, including the numerical levels of dose at which acute effects of radiation will be incurred and numerical estimates of the risk of delayed effects.

K.2. Emergency Exposure Authorization and Control

Doses in excess of 10 CFR 20 limits may be authorized by the SED in order to prevent serious property damage, serious bodily injury, or for life saving measures.

The assessment and recording of radiation exposures will be the assigned duty and responsibility of the person so designated by the RP Director. The SED shall be made aware of any changes in cumulative exposures which would affect emergency team assignments.

The exposure of personnel who were in the immediate area of a radiation incident must be determined before they are assigned to any emergency or recovery team. Self-reading dosimeters, electronic dosimeters, area monitor records, or thermoluminescent dosimeters will be used to establish accumulated exposure for each individual.

K.3. Emergency Personnel Dosimetry

K.3.a Dose Determination

Radiation Exposure Records for exposed personnel will be maintained by the plant and will be available for review by the State of Michigan Department of Environmental Quality (DEQ).

K.3.b. Dosimetry Use and Dose Records

RMT-2080-OSC-001 identifies criteria and methods for reading, recording and maintaining dose records.

K.4. State and Local Emergency Exposure Authorization

Not Applicable.

K.5. Decontamination

K.5.a. Decontamination Criteria

RMT-2080-OSC-001 identifies the criteria for decontamination of personnel, personnel wounds, and equipment.

Survey data and records of data taken by the licensee resulting from a nuclear incident at the licensee's plant will be made available to the State for review upon written request to plant management by the Michigan DEQ or other designated State agency.

K.5.b. Decontamination Methods

RMT-2080-OSC-001 identify the means and methods for decontamination of personnel, personnel wounds, and equipment.

There are two separate decontamination facilities which may be used during an emergency. The main facility is located in the Radiation Protection Access Control (RPAC) on the 609' elevation east of the auxiliary building. The other facility is located in the Auxiliary Building access at the Turbine Radiation Protection Access Control (TRPAC) on the 609' elevation of the Unit 1Turbine Building.

The decontamination facility associated with the RPAC consists of a decontamination area and a personnel shower. Additional space available in the area may also be used. Personnel protective clothing and equipment are also available in the RPAC.

Both decontamination facilities have adequate water supplies for both showers and wash basins. All floor and sink drains in the adjoining areas drain either into the laundry and hot shower drain tank or other contaminated liquid tanks for complete control of potentially contaminated wastes.

Information on equipment and inventory of supplies as well as detailed written procedures and standing orders, are found in the Administrative Procedures and the Emergency Plan Procedures; as well as the RP Plan and the RP Procedures. A list of Emergency Kit Locations is shown in Appendix C. Inventory procedures are specified in the RP procedure indicated in the plant procedure column in Appendix A.

K.6. Contamination Control

K.6.a. Area Access Control

RMT-2080-OSC-001 and RMT-2080-TSC-001 identifies the means and methods for area access for control of contamination.

K.6.b. Water and Food Contamination Control

Not addressed.

K.6.c. Returning Items and Areas to Normal Use

RMT-2080- EPI-109 identify the means and methods for decontaminating and returning areas and items to normal use.

The public will be restricted from areas within the Owner Controlled Area normally open to the public (i.e., Energy Information Center) which have been contaminated with radioactive material in excess of the limits defined in Table 6, Maximum Allowable Contamination Limits for On-Site Facilities Used by the Public. Prior to the release of these areas for public use, the plant will notify the DEQ and provide the required data for review at least 24 hours in advance of release of these areas to the public.

K.7. Decontamination of Relocated Onsite Personnel

Personnel evacuated from onsite will be decontaminated as required by the plant RP procedures and Emergency Plan Procedures. If necessary and where possible, suitable protective clothing will be used during the evacuation.

Table 6

MAXIMUM ALLOWABLE CONTAMINATION LIMITS FOR ON-SITE

FACILITIES USED BY THE PUBLIC*

Beta-Gamma

	Counts per Minute (cpm)[1]
Skin, Personal Clothing, and Items Directly Associated With the Human Body	< 2 X Background[2]
Material or Facilities Not Directly Associated With the Human Body	< 2 X Background[2]

[1]Measured with GM and side window probe with beta shield opened or with thin window pancake probe.

[2]Use background readings in cpm as measured pursuant to footnote 1. Gamma background must be 0.2 mR/hr, or less, as measured with a GM and a side window probe with the beta shield closed.

* Ref. Michigan Emergency Management Plan

PLANNING STANDARD L

MEDICAL AND PUBLIC HEALTH SUPPORT

L. MEDICAL AND PUBLIC HEALTH SUPPORT

L.1. Offsite Medical Support

Lakeland Regional Medical Center, Saint Joseph, in St. Joseph, Michigan has an emergency room which is open 24 hours a day year round and arrangements have been made with them for the care of contaminated persons. There is a physician constantly on duty at the hospital. Lakeland Regional Medical Center, St. Joseph is the primary site for the handling of contaminated patients from CNP. The hospital is approximately 9.5 miles from the plant site.

In addition, Niles Community Hospital, Niles located in Niles, Michigan, about 19 miles from the plant site, has facilities and staff for the handling of contaminated patients from CNP. This facility is the back-up site for Lakeland Regional Medical Center, St. Joseph.

The Radiation Emergency Area (REA) at Lakeland Regional Medical Center, St. Joseph, lends itself well to controlling the access of non-essential personnel. The REA at both St. Joseph and Niles is located in a section of the hospital remote from any other treatment facilities. A contaminated or potentially contaminated patient is wrapped and placed on a clean gurney when taken from the ambulance before being taken into the facility to avoid the spread of contamination.

The REA facility in both hospitals consists of a room designed for easy decontamination, should this be required. Adequate water is supplied for any necessary personnel or equipment decontamination. The facilities include a fiberglass table with a special drain to allow control of liquids for later removal from the hospital. If the injury does not require special handling because of contamination levels or high radiation levels, the facilities of the emergency room and other parts of the hospital are available.

In addition to that equipment normally found in hospital emergency facilities for routine non-nuclear emergencies, other specialized equipment includes such items as plastic and absorbent paper for contamination control, protective clothing, equipment for the control of liquid and solid wastes and their removal from the hospital to the plant for treatment and/or disposal, and assorted signs, barriers, and supplies. Also available at the hospital are such items as survey instruments, dosimeters, samplers, and associated equipment.

There are no limitations with regard to duration of admissions of casualties or contaminated patients. Special rooms have been arranged so the patients can be kept as long as necessary before being transferred to a different facility or until released.

Onsite decontamination of the injured person, as well as the design of the REA with respect to the rest of the hospital, negates any limitations on the availability of the offsite medical facilities with respect to contamination levels. The only limitation due to direct radiation levels from a contaminated injured person is to the people directly concerned with treatment of the contaminated injured person because the REA is located in a part of the building remote from the patients and staff in most conditions. The limitation on the exposure of the physician or hospital staff remains a medical judgment made by the physician for individual cases. This judgment will be made using data obtained from portable radiation monitoring equipment.

Detailed procedures have been developed for activation of the hospital assistance plan. A comprehensive training program has been conducted for the hospital staff and employees who would be involved as a part of the offsite medical support. This program includes training in the principles of radiation protection, basic radiation protection procedures, applicable parts of the emergency plan and emergency procedures, and an exercise simulating radiological and physical injury. This training program shall be periodically reviewed and repeated at least once each year.

Plant personnel will monitor all persons leaving the treatment room after removal of protective clothing. The treatment room, all equipment used in the room and during patient treatment is surveyed by plant personnel for contamination. Any contaminated equipment or areas will be decontaminated by plant personnel to the Plant RP Protection Plan "Clean Area" specifications. All radioactive waste is sealed and transported to the plant for disposal in accordance with current DOT and State regulations.

Subsequent therapy for individuals who have been exposed or contaminated is provided in the kind and extent which is required under the direction of the hospital physician. Additionally, consultation service is available from the Department of Energy's Radiation Emergency Assistance Center/Training Site on radiation related injuries.

L.2. Onsite Medical Support

In the event of serious injury, medical treatment must always take precedence over decontamination of the individual. First Aid training is provided within several plant departments, providing emergency medical expertise within the plant. All plant personnel are trained in the proper response to a medical emergency. No physicians or nurses are located on-site.

The CNP has the necessary facilities and supplies at the site for decontamination and monitoring of personnel as well as the facilities and necessary medical supplies for appropriate emergency first aid treatment.

L.3. State Medical Support Listing

Not Applicable.

L.4. Victim Transport

Medic-1 Ambulance Service is located approximately 4 miles from the plant and provides the primary emergency medical services for the Plant. As a back up a plant emergency vehicle is available.

PLANNING STANDARD M

RECOVERY AND RE-ENTY PLANNING AND POST ACCIDENT OPERATIONS

M. RECOVERY AND RE-ENTRY PLANNING AND POST ACCIDENT OPERATIONS

M.1. Reentry and Recovery

The exact nature and details of a specific emergency determine the procedures that are used for the resumption of normal plant activities. The procedures formulated to regain the services of plant systems lost through such an incident follow the practices of good engineering judgment.

After the Emergency Plan has been activated, the plant personnel initiate a survey of plant damage and contamination. The plant systems or components involved in the incident are evaluated by any number of the following methods:

1. Radiation Surveys
2. Process instrumentation
3. Visual inspections (where possible)
4. Reactor Protection System Instrumentation
5. Reactor Control System Instrumentation
6. Out of core and in core nuclear instrumentation
7. Engineering safety features instrumentation
8. Radiation monitoring system
9. Post Accident Sampling Capability (where possible)

Re-Entry

Survey or personnel monitoring teams are sent out to gather information prior to re-entry and report such findings to the individuals designated in the Emergency Plan Procedures in the TSC and/or the EOF.

The Radiation Protection Director (RPD) is responsible for protecting plant personnel re-entering the plant. The RPD is responsible for ensuring that radiation doses are under Federal limits for a radiation worker involved in plant re-entry before resuming normal plant operation.

Survey teams will measure radiation levels on and around the site and re-entry will be made when radiation hazards are reduced to permissible levels. The SED will approve re-entry procedures based on existing and potential conditions of the plant.

Recovery Operations

Where control of the incident has been attained and there is no further danger to personnel, the emergency phase shall be at an end. Restoration and recovery operations shall continue, but not under the same criteria as the emergency operation. During restoration and recovery operations, activity levels and personnel exposures will be based on 10 CFR 20 limits.

The recovery procedures that must be developed following a radiological incident will vary, but in general they will include the following activities:

1. Damage evaluation
2. Decontamination measures
3. Repair procedures
4. Disposal procedures
5. Ensure adequate offsite response readiness
6. Test and start-up procedures

M.2. Recovery Organization

The Recovery Organization is addressed in the Emergency Plan Procedures. See Appendix A for cross-reference.

M.3. Recovery Initiation Notification

Normal communications channels will be utilized to notify State, County and other response organizations of the start of recovery operations and any changes occurring within the plans, procedures and response organization. Recovery operations affecting or interfacing with offsite responsibilities will be reviewed and approved by the appropriate response manager.

M.4. Estimating Population Total Exposure

Not addressed.

PLANNING STANDARD N

EXERCISES AND DRILLS

N. EXERCISES AND DRILLS

N.1. Exercises

N.1.a. Exercise Content

Each exercise will be conducted in accordance with a unique scenario developed for that exercise. Each exercise tests portions of emergency preparedness plans within the AEP system, State and County. The plant will also participate in joint exercises initiated and coordinated by the NRC and FEMA to test the effectiveness of the emergency plan(s) at all levels.

The ultimate criteria against which the results of exercises are to be measured will be effective implementation of the plant's and participating response organization emergency response plans to a simulated event, and the manner in which all agencies, public and private, interface their plans to assure that the public health and safety is protected.

N.1.b. Exercise Scheduling

An annual emergency exercise is conducted at CNP to test various basic elements of the emergency preparedness program. Biennially, this exercise is conducted with participation of offsite emergency personnel, including those of State and County agencies.

Off-hours shift augmentation drills ensure that the goals of Table 1, CNP Staffing for Radiological Emergencies, are being met. These drills are to be conducted semi-annually. One of these drills per calendar year will include the contacted personnel reporting to their assigned emergency facilities and activating the facility. Credit can be taken for normal shift personnel above that indicated for "On-shift" to meet the augmentation goals.

Scenarios will be varied from year to year such that all major elements of the Emergency Plan, Emergency Plan Procedures and Emergency Response Organizations are tested within an 8 year period (see Appendix J, Eight Year Plan Matrix, for 8 year plan).

N.2. Drills

N.2.a. Communication Drills

Communications is a part of each drill and exercise. Links are established between the off-site agencies and the Cook ERO, or plant personnel playing the part of the off-site agencies communicate with the ERO communicators.

Communication links between the plant emergency facilities are established as a part of each drill or exercise. Anytime Offsite Survey Teams are dispatched for drill or exercises communication and control with the teams is established.

N.2.b. Fire Drills

Quarterly fire drills are conducted to ensure participation biannually by site fire brigade members. An annual fire drill is held that includes participation of an offsite fire department.

N.2.c. Medical Emergency Drills

An exercise simulating radiological and physical injury shall be conducted with the offsite medical personnel annually.

N.2.d. Radiological Monitoring Drills

Drills involving response to, and analysis of, simulated airborne, liquid, and environmental (vegetation, snow, soil, etc.) samples and direct radiation measurements in the environment shall be conducted semi-annually.

N.2.e. Health Physics Drills

N.2.e.1. Environmental Monitoring

Drills involving response to, and analysis of, simulated airborne, liquid, and environmental (vegetation, snow, soil, etc.) samples and direct radiation measurements in the environment shall be conducted semi-annually.

N.2.e.2. Plant Liquid Monitoring

PASS removed by Operating License change #261 and 244 for U1 and 2 respectively delete requirements for Post Accident Sampling System.

N.2.f. Other drills

N.2.f.1. Hostile Action Based Drills

Drills involving response to the use of violent force to destroy equipment, take hostages, and/or intimidate the licensee to achieve an end. This includes attack by air, land, or water using guns, explosives, projectiles, vehicles, or other devices used to deliver destructive force. (NRC Commitment 8373.)

N.2.f.2. Fast Breaking Drills

Drills involving an initial classification of, or rapid escalation to, a Site Area Emergency or General Emergency.

N.2.f.3. No radiological release or minimal release.

Drills involving declaration of a Site Area Emergency but not a General Emergency that involve no radiological release or an unplanned minimal radiological release.

N.3. Drill and Exercise Execution

Each scenario shall be jointly developed by appropriate response agencies participating in the exercise and shall include:

N.3.a. Basic objective(s) of the exercise

N.3.b. Date, time and place and participating response agencies, and the extent to which participating agencies will respond.

N.3.c. Simulated events, which may include offsite radiological releases.

N.3.d. Time Line of real and simulated events.

N.3.e. Narrative summary describing the conduct of the exercise.

N.3.f. Arrangements for official observers, and advance materials to official observers.

N.4. Official Observation and Critique

After the drill or exercise, a critique shall be conducted involving participants, controllers and observers. The critique should be held as soon as practicable after completion of the drill or exercise.

N.5. Results Evaluation and Corrective Actions

A formal evaluation of exercises, with lessons learned, shall be prepared and submitted through the Corrective Action Program. The Emergency Preparedness Manager (or alternate) shall review and assign action items to upgrade those areas where deficiencies were noted. These action items will be assigned, tracked and closed using the plant corrective action program.

PLANNING STANDARD O

RADIOLOGICAL EMERGENCY RESPONSE TRAINING

O. RADIOLOGICAL EMERGENCY RESPONSE TRAINING

O.1 Organization Training

Cook Nuclear Plant provides training to agencies or organizations that provide onsite assistance to the plant. Types of organizations provided this training are as follows:

- Local Law Enforcement
- Ambulance Service
- Fire Departments
- Hospitals

Training should be offered annually. Should any of these agencies request additional training, either in scope or schedule, every possible action should be taken to facilitate the request.

The training of Berrien County and State of Michigan emergency response personnel is the responsibility of the Michigan State Police Emergency Management and Homeland Security Division. The Cook Nuclear Plant is committed to assist in the endeavor upon request.

O.2. Onsite ERO Training

The plant training program is the responsibility of the Training Manager.

A general employee training program provides initial orientation training and annual (every 12 months) retraining to CNP employees in the general emergency plan response. They are familiarized with the sounding of the Nuclear Emergency Alarm, assembly areas and routes to take to these assembly areas. This training also includes general aspects of the Emergency Plan.

ERO position specific training and qualification is administered through TPD-600-EPT Emergency Preparedness Training Program Description. Position specific Job Familiarization Guides are used for on-the-job training and qualification of the ERO responders.

O.3. First Aid Team Training

Personnel who respond to medical emergencies at the Cook Nuclear Plant receive either first-aid training or are qualified as Medical Emergency Response Team members (MERT).

O.4 ERO Training and Qualification

To the maximum extent practicable, emergency plan training and qualification should be incorporated into functional training and qualification programs.

Specialized initial training and retraining programs will be provided as outlined below for the following categories of emergency personnel.

O.4.a. Directors and Key Personnel

Initial specialized training in emergency plan and procedures implementation is provided to the directors and coordinators of the response organizations including emergency plan drill participation and annual reviews of the same. Training for execution of the emergency plan is provided by completion of senior licensed operator training, or equivalent training that applies to emergency plan execution.

O.4.b. Personnel Responsible for Accident Assessment

Initial specialized training in emergency plant operations, emergency plan and procedures implementation is provided including an annual review of the same. Further training includes participation in emergency plan drills.

O.4.c. Radiological Monitoring Teams

Radiation Protection personnel receive Emergency Plan training as part of their Initial RP Technician training. Continuing Training and drill participation requirements addressed in TPD-600-EPT, Emergency Preparedness Training Program Description.

O.4.d. Security & Fire Brigade

Fire Brigade staff receive Initial and annual retraining in fire fighting techniques and first aid.

The Plant Security Force is considered the Emergency Security Team. All actions required during emergencies are included in security officer training.

O.4.e. Onsite Repair & Damage Control

The Damage Control Team is responsible for the repair and restoration of damaged plant systems, equipment, or components. Training, exercises and drills involving the Damage Control Team will be conducted in a manner consistent with established Emergency Plan Procedures.

O.4.f. First Aid & Rescue Teams

The first-aid training program is administered by the Training Department.

The MERT program is administered by an accredited offsite institution.

O.4.g. Local Service Personnel (Offsite Fire Department Personnel and Local Sheriff)

The local Fire Departments receive familiarization in specific plant access and control procedures and participate annually in plant fire drills.

Sheriff's department receives annual Emergency Alert System (EAS) training and participates in the annual plant emergency exercise.

O.4.h. Medical Support Personnel

An exercise simulating radiological and physical injury shall be conducted with the offsite medical personnel annually.

O.4.i. Licensee Headquarters Support

Not addressed.

O.4.j. Personnel Transmitting Emergency Information and Instructions

ERO Communicators receive ERO initial training and position specific Job Familiarization Guides for their specific communication duties.

O.5. Initial and Annual Retraining

Initial training and qualification, as well as continuing training requirements addressed in TPD-600-EPT, Emergency Preparedness Training Program Description.

Initial training and job familiarization completed prior to assignment to the ERO.

Continuing training consists of the following (as minimum):

- Drill participation at least once every two years.
- ERO Facility training.
- Annual ERO Classroom training or a requalification challenge exam.

PLANNING STANDARD P

RESPONSIBILITY FOR PLANNING EFFORT

P. RESPONSIBILITY FOR PLANNING EFFORT

P.1 Emergency Planner Training

Emergency Preparedness Coordinator position specific training and qualification is administered through TPD-600-EPC Emergency Preparedness Coordinator Training Program Description. Position specific training and qualification card are used for training and qualification of Emergency Preparedness Coordinators.

P.2 Emergency Plan Administration Responsibility

The Chief Nuclear Officer shall have overall authority and responsibility for radiological emergency response planning. In this effort he has the authority to delegate responsibility in the planning effort to enhance the overall readiness and ensure that the plan is updated as necessary. Normally plan updating and review will be the responsibility of the Site Vice President. The training of individuals in the CNP Emergency Response Organization (ERO) in the Emergency Plan shall be the responsibility of the Training Manager.

P.3 Emergency Planning Coordinator Designation

Not addressed.

P.4. Periodic Reviews Updates and Audits

The responsibilities of the individuals, groups, agencies, the Emergency Plan, and implementation procedures to be followed during an emergency condition are reviewed at a minimum, on an annual basis and updated as required. All written agreements with offsite support groups are reviewed and updated if necessary, on a two year basis. This review will take into account changes identified by drills and exercises. The plant maintains up-to-date approved emergency response plans from the state and county. Changes to these offsite plans are reviewed to maintain an effective interface with the Cook Emergency Plan.

The Plant Operations Review Committee is responsible for the review of changes to the Emergency Plan. The Plant Operations Review Committee is also responsible for the review of changes, other than editorial corrections, to the Emergency Plan Implementing Procedures. The Senior Vice President - Nuclear Generation Group, or designee, shall approve changes to the Emergency Plan. All reviews shall be documented. The Senior Vice President-Nuclear Generation Group shall be sent copies of the changes. NRC approval shall be obtained as appropriate.

P.5. Emergency Plan Change Communication

Approved Emergency Plan revisions and/or applicable procedural changes will be promptly forwarded to appropriate offsite emergency support organizations.

A list of changes to the Emergency Plan shall be submitted with each plan revision. Changes to the Plant's Emergency Plan Procedures shall be made in accordance with plant practice for revising procedures.

P.6 Emergency Response Organization Support Plans

Plan	Source
Emergency Operations Plan	Berrien County Sheriff's Office
Michigan Emergency Management Plan	State of Michigan
Regional Plan Handbook – RAP	Department of Energy Region V
INPO Emergency Response Manual	Institute of Nuclear Power Operations
National Response Plan, Nuclear/Radiological Incident Annex	Department of Homeland Security with NRC as Coordinating Agency

P.7. Implementing Procedures

Detailed procedures for implementing and providing additional information on the Emergency Plan are available in the Emergency Plan Procedures. The written procedures indicated in Appendix A cover the following but are not limited to:

1. Authority and responsibility for completing specific tasks.
2. Action levels requiring implementation of protective measures outlined.
3. Medical treatment procedures and handling of contaminated individuals.
4. Necessary equipment for medical treatment, radiation detection, and rescue operations.
5. Identification of emergency communications equipment.
6. Emergency center description and operation.
7. Restoration procedures from emergency to normal conditions.
8. Communications

P.8 Table of Contents & Cross-reference

Table of Contents and Appendix A fulfill this requirement.

P.9. Independent Emergency Program Review

Audits of the Emergency Plan and implementing procedures are performed as delineated in 10 CFR 50.54(t)(1). These audits shall be performed by the Plant Performance Assurance Department and may include items relating to training, readiness testing, equipment, State/local plant interfaces, medical arrangements, etc.

Audit findings shall be reported, evaluated and recommendations completed as described in the Audit Program Policy. The results of the audit, along with the recommendations for improvements shall be documented and reported to plant management and retained for a period of five years. Reviews involving the adequacy of interface with State/local agencies shall be available to the appropriate agency.

P.10. ERO Telephone Number Updates

Appendix J fulfils this requirement.

APPENDIX A

1. INDEX OF EMERGENCY PLAN IMPLEMENTING DOCUMENTS

2. CROSS REFERENCE CEP AND EMERGENCY PLAN IMPLEMENTING DOCUMENTS

DONALD C. COOK NUCLEAR PLANT

EMERGENCY PLAN IMPLEMENTING DOCUMENTS

IDENTIFICATION NUMBER	TITLE
RMA-2080-EPA-008	EMERGENCY PLAN MANAGEMENT
PMP-2080-EPP-100	EMERGENCY RESPONSE
PMP-2080-EPP-101	EMERGENCY CLASSIFICATION
PMP-2080-EPP-108	INITIAL DOSE ASSESSMENT
RMT-2080-EPI-109	TERMINATION AND RECOVERY
PMP 2080-EPP-200	INITIATING CHANGES TO THE EMERGENCY PLAN OR EMERGENCY PLAN IMPLEMENTING PROCEDURES
PMP-2081-EPP-105	CORE DAMAGE ASSESSMENT
RMT-2080-EPP-500	DRILL & EXERCISE SCHEDULING, DEVELOPMENT, CONDUCT &EVALUATION
RMT-2080-EOF-001	ACTIVATION AND OPERATION OF THE EOF
RMT-2080-JIC-001	ACTIVATION AND OPERATION OF THE ENC/JIC
RMT-2080-OSC-001	ACTIVATION AND OPERATION OF THE OSC
RMT-2080-TSC-001	ACTIVATION AND OPERATION OF THE TSC
SPP-2060-SFI-216	PLANT RESPONSE TO A VALIDATED SECURITY THREAT
EPP-2080-ERO-001	EMERGENCY RESPONSE RESOURCE READINESS
RMT-2080-PPA-001	EMERGENCY PREPAREDNESS PERIODIC PROGRAM ACTIVITIES
TPD-600-EPC	EMERGENCY PREPAREDNESS COORDINATOR TRAINING PROGRAM DESCRIPTION
TPD-600-EPT	EMERGENCY PREPAREDNESS TRAINING PROGRAM DESCRIPTION
DECONTAMINATION AND TREATMENT OF THE RADIOACTIVELY CONTAMINATED PATIENT(S) AT LAKELAND REGIONAL MEDICAL CENTER	
ERO ON-SHIFT STAFFING ANALYSIS REPORT	

NUREG-0654 – EMERGENCY PLAN – PROCEDURE

CROSS REFERENCE

At Cook Nuclear Plant, NUREG-0654 is applied as guidance in plan and procedure development with consideration to plant organization, administrative policies and operating procedures.

NUREG-0654 (Sect II Planning Standards and Evaluation Criteria)	EMERGENCY PLAN SECTION	PLANT PROCEDURE
A.1.a	A.1.a B.8 B.9	Not applicable
A.1.b	A.1.b	Not applicable
A.1.c	A.1.c Figure 1 Figure 2 Figure 3 Figure 4 Figure 5 Figure 6 Figure 7 Figure 8 Figure 9 Figure 10	Not applicable
A.1.d	A.1.d	PMP-2080-EPP-100 RMT-2080-EOF-001
A.1.e	A.1.e Table 1	RMT-2080-EOF-001
A.2.	Not applicable	Not applicable
A.3	A.3 Appendix B	RMA-2080-EPA-008
A.4	A.4	RMT-2080-EOF-001 RMT-2080-OSC-001 RMT-2080-TSC-001
B.1	B.1 Figure 3 Figure 4	Not applicable
B.2	B.2 B.1.j. B.5.a.1 B.5.c.1	PMP-2080-EPP-100
B.3	B.3	PMP-2080-EPP-100 RMT-2080-TSC-001 RMT-2080-EOF-001
B.4	B.4	PMP-2080-EPP-100 RMT-2080-EOF-001

NUREG-0654 (Sect II Planning Standards and Evaluation Criteria)	EMERGENCY PLAN SECTION	PLANT PROCEDURE
B.5	B,5 Table 1 Figure 5 Figure 6 Figure 7 Figure 8	RMT-2080-OSC-001 RMT-2080-TSC-001 RMT-2080-EOF-001 RMT-2080-JIC-001 ERO On-Shift Staffing Analysis Report
B.6	B.6 Figure 8	Not applicable
B.7	B.5 Table 1	ERO On-Shift Staffing Analysis Report
B.7.a	B.7.a B.5.c.9	RMT-2080-EOF-001
B.7.b	B.7.b B.5.c.8	RMT-2080-TSC-001
B.7.c	B.7.c B.5.c.1	RMT-2080-EOF-001
B.7.d	B.7.d B.5.d.1	RMT-2080-JIC-001
B.8	B.8 C.4 Appendix B	Not applicable
B.9	B.9 L.1 Appendix B	Not applicable
C.1.a	C.1.a	Not applicable
C.1.b	C.1.b Appendix E	Not applicable
C.1.c	Appendix E	Not applicable
C.2.a	Not applicable	Not applicable
C.2.b	B.5.e.1	RMT-2080-EOF-001
C.3	H.6.c Appendix B Appendix H	RMT-2080-EOF-001
C.4	C.4 B.8 Appendix B Appendix H	RMT-2080-EOF-001
D.1	D.1 Table 2 Table 3 Table 4	PMP-2080-EPP-101
D.2	D.2 Table 2 Table 3 Table 4	PMP-2080-EPP-101
D.3	Not applicable	Not applicable
D.4	Not applicable	Not applicable

NUREG-0654 (Sect II Planning Standards and Evaluation Criteria)	EMERGENCY PLAN SECTION	PLANT PROCEDURE
E.1	E.1	PMP-2080-EPP-100
E.2	E.2	PMP-2080-EPP-100 SPP-2060-SFI-216
E.3	E.3	PMP-2080-EPP-100
E.4	E.4	PMP-2080-EPP-100 RMT-2080-EOF-001
E.5	Not applicable	Not applicable
E.6	E.6 Appendix D	Not applicable
E.7	E.7	PMP-2080-EPP-100 RMT-2080-EOF-001
F.1.a	F.1.a	PMP-2080-EPP-100
F.1.b	F.1.b	RMT-2080-EOF-001
F.1.c	F.1.c. Appendix E	RMT-2080-EOF-001
F.1.d	F.1.d	RMT-2080-EOF-001
F.1.e	F.1.e	PMP 2080-EPP-100
F.1.f	F.1.f	RMT-2080-EOF-001
F.2	F.2	Not applicable
F.3	F.3	EPP-2080-ERO-001
G.1	G.1 Appendix D	Not applicable
G.2	G.2	Not applicable
G.3.a	G.3.	RMT-2080-JIC-001
G.3.b	Not addressed	Not applicable
G.4.a	G.4.a	RMT-2080-JIC-001
G.4.b	G.4.b.	RMT-2080-JIC-001
G.4.c	G.4.c.	RMT-2080-JIC-001
G.5	G.5.	Not applicable
H.1	H.1 (TSC) H.3 (OSC)	RMT-2080-TSC-001 RMT-2080-OSC-001
H.2	H.2	RMT-2080-EOF-001
H.3	Not applicable (SEOC/CEOC)	Not applicable
H.4	H.4.	PMP-2080-EPP-100
H.5	H.5	RMT-2080-TSC-001
H.5.a	H.5.a	RMT-2080-EOF-001 RMT-2080-OSC-001
H.5.b	H.5.b	RMT-2080-TSC-001
H.5.c	H.5.c	RMT-2080-TSC-001
H.5.d	H.5.d	Not applicable
H.6	H.6	RMT-2080-EOF-001
H.6.a	H.6.a	RMT-2080-EOF-001
H.6.b	H.6.b	RMT-2080-EOF-001 EPP-2080-ERO-001
H.6.c	H.6.c	RMT-2080-EOF-001
H.7	H.7	EPP-2080-ERO-001

NUREG-0654 (Sect II Planning Standards and Evaluation Criteria)	EMERGENCY PLAN SECTION	PLANT PROCEDURE
H.8	H.8.	RMT-2080-EOF-001
H.9	H.3	RMT-2080-OSC-001
H.10	Appendix J	EPP-2080-ERO-001
H.11	Appendix C	EPP-2080-ERO-001
H.12	H.3.d.	RMT-2080-EOF-001
I.1	I.1. Table 2 Table 3 Table 4	PMP-2080-EPP-101
I.2	I.2	RMT-2080-EOF-001
I.3.a	I.3.a.	RMT-2080-EOF-001
I.3.b	I.3.b.	RMT-2080-EOF-001
I.4	I.4	RMT-2080-EOF-001
I.5	I.5	RMT-2080-EOF-001
I.6	Not addressed	Not applicable
I.7	I.7	RMT-2080-EOF-001
I.8	I.8	RMT-2080-EOF-001
I.9	I.9	RMT-2080-EOF-001
I.10	Not addressed	RMT-2080-EOF-001
I.11	Not applicable	RMT-2080-EOF-001
J.1.a	J.1.a	RMT-2080-TSC-001
J.1.b.	J.1.b.	RMT-2080-TSC-001
J.1.c.	J.1.c.	RMT-2080-TSC-001
J.1.d.	J.1.d.	RMT-2080-TSC-001
J.2	J.2 Figure 14	RMT-2080-TSC-001
J.3	J.3	RMT-2080-TSC-001
J.4	J.4	RMT-2080-TSC-001
J.5	J.5	RMT-2080-TSC-001
J.6.a	J.6.a.	RMT-2080-EOF-001
J.6.b	J.6.b.	RMT-2080-EOF-001
J.6.c	J.6.c.	RMT-2080-EOF-001
J.7	J.7	RMT-2080-EOF-001
J.8.	J.8, Berrien County Emergency Operations Plan	PMP-2080-EPP-100 RMT-2080-EOF-001
J.9.	Not Applicable	Not Applicable
J.10.a.	J.10.a.	Not applicable
J.10.b	J.10.b.	Not Applicable
J.10.c.	J.10.c. E.6.	Not Applicable
J.10.m.	J.10.d. I.4. I.5.	PMP-2080-EPP-100 RMT-2080-EOF-001
K.1 a - g	K.1	RMT-2080-OSC-001
K.2	K.2	RMT-2080-TSC-001 RMT-2080-OSC-001

NUREG-0654 (Sect II Planning Standards and Evaluation Criteria)	EMERGENCY PLAN SECTION	PLANT PROCEDURE
K.3.a	K.3.a.	RMT-2080-TSC-001 RMT-2080-OSC-001
K.3.b	K.3.b.	RMT-2080-OSC-001
K.4	Not Applicable	Not Applicable
K.5.a	K.5.a.	RMT-2080-OSC-001
K.5.b	K.5.b	RMT-2080-OSC-001
K.6.a.	K.6.a.	RMT-2080-TSC-001 RMT-2080-OSC-001
K.6.b.	Not Addressed	
K.6.c.	K.6.c.	RMT-2080- EPI-109
K.7	K.7	RMT-2080-OSC-001
L.1	L.1.	Lakeland Hospital Contaminated Injured Person Protocol
L.2	L.2.	Not applicable
L.3.	Not Applicable	Not applicable
L.4	L.4	Not applicable
M.1	M.1	RMT-2080-OSC-001
M.2	M.2	RMT-2080- EPI-109
M.3	M.3	RMT-2080- EPI-109
M.4	Not addressed	Not applicable
N.1.a	N.1.a	RMT-2080-EPP-500 RMT-2080-PPA-001
N.1.b.	N.1.b. Appendix J	RMT-2080-EPP-500 RMT-2080-PPA-001
N.2.a	N.2.a.	RMT-2080-EPP-500 RMT-2080-PPA-001
N.2.b	Tech. Spec.	RMT-2080-EPP-500 RMT-2080-PPA-001
N.2.c	N.2.c. Appendix J	RMT-2080-EPP-500 RMT-2080-PPA-001
N.2.d	N.2.d.	RMT-2080-EPP-500
N.2.e	N.2.e	RMT-2080-EPP-500
N.3	N.3	RMT-2080-EPP-500
N.4	N.4	RMT-2080-EPP-500
N.5	N.5	RMT-2080-EPP-500
O.1	O.1	TPD-600-EPT
O.1.a.	O.1	TPD-600-EPT
O.1.b.	Not applicable	Not applicable
O.2	O.2	TPD-600-EPT
O.3	O.3	RMT-2080-PPA-001
O.4.a	O.4.a.	TPD-600-EPT
O.4.b	O.4.b.	TPD-600-EPT
O.4.c.	O.4.c.	TPD-600-EPT
O.4.d.	O.4.d.	Not addressed
O.4.e.	O.4.e.	TPD-600-EPT
O.4.f.	O.4.f.	Not addressed

NUREG-0654 (Sect II Planning Standards and Evaluation Criteria)	EMERGENCY PLAN SECTION	PLANT PROCEDURE
O.4.g.	O.4.g.	Not addressed
O.4.h.	O.4.h.	Not addressed
O.4.i.	Not addressed	Not addressed
O.4.j.	O.4.j.	TPD-600-EPT
O.5	O.5.	TPD-600-EPT
P.1	P.1	TPD-600-EPC
P.2	P.2	PMI-2080
P.3	Not addressed	PMI-2080
P.4	P.4.	PMI-2080
P.5	P.5	RMA-2080-EPA-008
P.6	P.6	Not applicable
P.7	Appendix A	Not applicable
P.8	Table of Contents Appendix A	Not applicable
P.9	P.9	Not applicable
P.10	Appendix J	RMT-2080-PPA-001

APPENDIX B

AGREEMENTS WITH OFF-SITE SUPPORT AGENCIES

APPENDIX B

Agreements with Off-Site Support Agencies

1.	Sheriff Department, Berrien County, Michigan	1 page	January 5, 2018
2.	Lakeland Health	1 page	January 18, 2018
3.	Lake Township Fire Department	1 page	January 5, 2018
4.	City of Bridgman Fire Department	1 page	January 16, 2018
5.	Medic 1 Community Emergency Service	2 pages	December 20, 2017
6.	Reciprocal Laboratory Use Agreement	2 pages	August 28, 2017
7.	Mutual Assistance Agreement Between Detroit Edison Company, Entergy Nuclear Palisades and Indiana Michigan Power Co.	6 pages	September 25, 2017
8.	Institute of Nuclear Power Operations Emergency Resources	1 page	November 2, 2017
9.	FEMA Alert and Notification (ANS) Design Report letter	1 page	September 11, 2017

Sheriff Department, Berrien County, Michigan 1 page

BERRIEN COUNTY EMERGENCY MANAGEMENT
DIVISION OF BERRIEN COUNTY SHERIFF'S OFFICE
2100 E. Empire Avenue, Benton Harbor, Michigan 49022
Telephone (269) 983-7141 • Fax: (269) 983-5726

JON HINKELMAN
CHAIRMAN
BOARD OF COMMISSIONERS

L. PAUL BAILEY
SHERIFF

CAPT. ROCKEY ADAMS
COORDINATOR

1/5/2018

Mr. Ronald J. Sieber
Cook Nuclear Plant
One Cook Place
Bridgman, MI 49106

Dear Mr. Sieber:

We wish to reaffirm the willingness of the Berrien County Sheriff's Department to respond upon request to any emergency which could occur at the D.C. Cook facility. Berrien County Emergency Management/Office of Homeland Security has the obligation to respond upon notification that an emergency exists. Berrien County will implement their Nuclear Accident Procedures (Appendix 1) of the Emergency Operations Plan and take appropriate actions as outlined therein.

In addition, the Sheriff's Department has basic patrol and investigative services and currently has a fourteen member Hazardous Materials Response Team who are trained to Technician Level. Four of the fourteen Haz-Mat team members are cross-trained as bomb technicians, and of whom have successfully completed the FBI Hazardous Device School at Redstone Arsenal in Redstone, Alabama. Our Tactical Unit consists of 20 personnel who conduct training monthly.

The Berrien County Sheriff's Department will be available to you upon request, in any area within the jurisdiction of this agency.

Sincerely,

L. Paul Bailey
Sheriff/Director, Emergency Management

Lakeland Health

January 18, 2018

Mr. Joel Gebbie
Sr. Vice President & Chief Nuclear Officer
Cook Nuclear Plant
One Cook Place
Bridgman, MI 49106

Dear Mr. Gebbie:

This letter is to confirm that Lakeland Health remains able to provide care for the injured radioactively-contaminated patients at the St. Joseph and Niles Emergency Department sites. This would include Donald C. Cook personnel exposed on-site and members of the public exposed off-site who may require services.

Mutually agreed upon annual training and drills will be conducted to assure staff competency in caring for this patient population, with evaluation by FEMA when required. A policy and procedure manual is available at each site and updated regularly to incorporate changes in patient management. An identified Radiation Emergency Area (REA) is available at each site that allows for stabilization, treatment, and management of the radioactive component of the emergency. I understand that the training for hospital personnel, equipment, and stocking of the disaster cart will continue to be provided by Donald C. Cook Nuclear Plant.

This agreement shall remain in effect from the date of signing until either party, upon ninety (90) days prior written notice to the other party, terminates the agreement.

Please contact Kathy Effa, Manager of Emergency Services, at 269.983.8670 for any assistance that you require.

Sincerely,

Loren B. Hamel, MD
President & CEO
Lakeland Health

LBH: sd

Legal Review Completed
MAP 1/18/18

1234 Napier Avenue, St. Joseph, MI 49085 • (269) 983-8300 • www.lakelandhealth.org

Lake Township Fire Department

1 page

LAKE TOWNSHIP FIRE AND RESCUE

P.O. BOX 818 3169 SHAWNEE ROAD BRIDGMAN, MICHIGAN 49106
269-465-6351

Emergency Preparedness Agreement Between Lake Charter Township Fire Department and Donald C. Cook Nuclear Plant

Upon receipt of a request for assistance from the Cook Nuclear Plant, Lake Charter Township Fire Department agrees to respond by sending personnel and an NFPA 1901 compliant Pumper Fire Apparatus with the required minimum equipment to the Cook nuclear Plant Site.

The Cook Nuclear Plant agrees to lead Lake Charter Township Fire Department responders from the Security Control Center to the scene and agrees to provide escorts for Lake Charter Township Fire Fighting vehicles and personnel while in the Protected Area, or other owner controlled areas.

The Cook Nuclear Plant and Lake Charter Township Fire Department agree that for all fires in the Plant Protected Areas, the Plant Fire Brigade Leader will be responsible for fire extinguishment with the assistance of Lake Charter Township Fire Department personnel and advice and counsel of the Lake Charter Township Fire Chief or his designee.

For fires outside the Plant Protected Area, the Lake Charter Township Fire Chief shall be responsible for fire extinguishment with the advice and counsel of the Plant Fire Brigade Leader or designee if they are present.

The Cook Nuclear Plant agrees to provide and Lake Charter Township Fire Department agrees to participate in annual site specific training and drills conducted at the Cook Nuclear Plant site.

This agreement shall remain in effect from the date of signing unless the agreement is terminated.

Any party upon ninety (90) days prior written notice to the other party may terminate this agreement.

As an indication of your agreement to the above statements concerning our mutual responsibilities, please sign below.

Sincerely,

Site Vice President
Cook Nuclear Plant

Accepted and agreed to this

5 day of January, 2018

John Gast
Supervisor
Lake Charter Township

Harold Heyn
Fire Chief
Lake Charter Township Fire Department

BRIDGMAN

FIRE RESCUE

P.O. BOX 366 4234 VINE STREET BRIDGMAN MICHIGAN 49106
(269) 465-3803 (269) 465-5144 FAX (269) 465-4269
EMERGENCY 911

Emergency Preparedness Agreement between Bridgman City Fire Department and Donald C. Cook Nuclear Plant.

Upon receipt of a request for assistance from the Cook Nuclear Plant, Bridgman City Fire Department agrees to respond by sending personnel, apparatus, and equipment to the Cook Nuclear Plant site.

The Cook Nuclear Plant agrees to lead Bridgman City Fire Department responders from the Security Control Center to the scene and agrees to provide escorts for Bridgman City Fire Department Apparatus and personnel while in the protected area, or other owner controlled areas.

The Cook Nuclear Plant and Bridgman City Fire Department agree that for all fires in the Plant Protected Areas, the Plant Fire Brigade Leader will be responsible for the fire extinguishment with the assistance of Bridgman City Fire Department personnel and the advice and counsel of the Bridgman City Fire Chief or his designee.

For fires outside the Plant Protected Area, the Lake Charter Township Fire Chief shall be responsible for fire extinguishment with the assistance of Bridgman City Fire Department personnel and advice of the Bridgman City Fire Chief or designee and counsel of the Plant Fire Brigade Leader or designee if they are present.

The Cook Nuclear Plant agrees to provide and Bridgman City Fire Department agrees to participate in annual site specific training and drills conducted at the Cook Nuclear Plant site.

This agreement shall remain in effect from the date of signing unless the agreement is terminated.

Any party upon ninety (90) days prior written notice to the other party may terminate this agreement.

As an indication of your agreement to the above statements concerning our mutual responsibilities, please sign below.

Sincerely,

Accepted and agreed to this

16th Day of January, 2018

Shane Lies
Site Vice President
Cook Nuclear Plant

Joel Buist
Fire Chief
Bridgman City Fire Department

Medic 1 Community Emergency Service 2 pages

MEDIC 1

AMBULANCE

ACCREDITED

Emergency Planning Agreement Between Medic 1 Ambulance and Donald C. Cook Nuclear Plant

The purpose of this letter is to establish an agreement between Indiana and Michigan Electric Company's Donald C. Cook Nuclear Plant and Medic 1 Ambulance. In the event of an emergency at the Cook Nuclear Plant involving an injury, Medic 1 Ambulance agrees to provide medical care whether the victim has been injured as the result of an accident involving radioactive contamination, hazardous waste, or a regular work accident.

Upon receipt of a request for an EMS vehicle from the Cook Nuclear Plant Control Room, Medic 1 Ambulance agrees to respond by sending personnel, apparatus, and equipment to the Plant site.

Cook Nuclear Plant agrees to provide an escort for EMS vehicles and personnel while in the protected area.

Cook Nuclear Plant agrees to provide the necessary health physics support to Medic 1 Ambulance staff during the treatment of victims who are injured in an accident involving radioactive contamination.

In the event of an injury involving a hazardous waste, specific chemical information will be provided to Medic 1 Ambulance staff.

The communication link between Medic 1 Ambulance and Cook Nuclear Plant will be provided via telephone communication through the Berrien County dispatch radio.

Cook Nuclear Plant agrees to provide training for emergency room and EMS personnel in order to prepare them for handling of radiologically contaminated victims. Such training will consist of, but not be limited to, a discussion of types of radiation, types of contamination, methods of decontamination, and methods of controlling the spread of contamination.

Cook Nuclear Plant agrees to conduct and Medic 1 Ambulance agrees to participate in joint drills that include plant personnel, EMS personnel, and emergency room personnel. These drills will meet Joint Commission on Accredited Hospitals (JCAH) requirements.

Cook Nuclear Plant agrees to decontaminate all Medic 1 Ambulance equipment and facilities including EMS vehicles that have become contaminated as a result of treatment of a victim in a timely fashion and to dispose of the associated waste.

Cook Nuclear Plant agrees to provide emergency kits for the emergency room and the ambulance.

Medic 1 Ambulance agrees that medical care provided under this agreement includes any assistance rendered through existing mutual aid agreements entered into by Medic 1 Ambulance.

Any party, upon ninety (90) days prior notice to the other party, may terminate this agreement.

As indication of your agreement to the above statement concerning our mutual responsibility, please sign below.

Joel Gebbie
Site Vice President
Cook Nuclear Plant

Dated: 12/20/17

Jack Fisher, Jr.
Executive Director
Medic 1 Ambulance

Dated: December 19, 2017

P.O. Box 1563 / Benton Harbor, MI 49023 / Phone (269) 925-2141

Reciprocal Laboratory Use Agreement

2 pages

RECIPROCAL LABORATORY USE AGREEMENT

WITNESSETH

THAT

WHEREAS, INDIANA MICHIGAN POWER, (hereinafter called IMP) and ENTERGY NUCLEAR PALISADES, L.L.C., (hereinafter called "ENTERGY") have chemical and radiochemical analytical laboratories at their Donald C Cook Nuclear Plant and Palisades Nuclear Plant, respectively, which laboratory facilities are suitable for performing chemical analyses following a nuclear-related accident (NRA), and

WHEREAS, IMP and Entergy each desire to provide the temporary use of their respective existing laboratory facilities and personnel to perform chemical analyses for the other in the event the other has lost use of its laboratory facilities due to a NRA,

NOW, THEREFORE, the parties hereto do hereby mutually agree as follows:

1. In the event either party hereto is unable to use its laboratory facilities due to a NRA, the other party agrees to temporarily use its existing laboratory facilities and personnel, to the extent practical, to analyze without charge, samples delivered to it by the party which suffered the NRA. Each party agrees, in connection with such sampling, handling and analyses, to comply with the requirements of NUREG-0578 and NUREG-0737 and such other requirements as may be specified by the Nuclear Regulatory Commission in regard to past-accident sample analysis.

2. Each party agrees, in performing analyses for the other, to provide a high standard of professional service, provided, however, that neither party shall have any obligation or liability for damages, including, but not limited to, consequential damages, arising out of or in connection with the others use of, or reliance on, the results of such analyses.

3. This agreement shall be effective on the date hereof and shall continue until terminated as hereinafter set forth. Either party hereto may terminate this agreement at any time hereafter upon sixty (60) days written notice of termination to the other party.

INDIANA MICHIGAN POWER

BY: Quinton A. Lies 8/28/17
Q. Shane Lies Date
Site Vice President - Cook Nuclear Plant

ENTERGY NUCLEAR PALISADES, L.L.C.

BY: C Arnone 8-11-17
Charles F. Arnone Date
Site Vice President - Palisades

Mutual Assistance Agreement Between Detroit Edison Company, Entergy Nuclear Palisades and Indiana Michigan Power Co. 6 pages

MUTUAL ASSISTANCE AGREEMENT

BETWEEN

DTE ENERGY ELECTRIC COMPANY,

ENTERGY NUCLEAR PALISADES, L.L.C.

AND

INDIANA MICHIGAN POWER

0.1 Entergy Nuclear Palisades, L.L.C., DTE Energy Electric Company and Indiana Michigan Power,

WITNESSETH

0.2 WHEREAS, Entergy Nuclear Palisades, (LLC), DTE Energy Electric Company and Indiana Michigan Power own electric facilities, including nuclear generation stations and are engaged in the generation of electric power in Michigan; and

0.3 WHEREAS, the parties desire to help assure the availability of adequately trained and experienced emergency personnel in the event of an emergency situation at any of their nuclear generating stations;

0.4 NOW, THEREFORE, in consideration of the promises and mutual covenants herein set forth, the parties agree as follows:

ARTICLE I
DEFINITIONS

1.1 "Alert" shall be defined as a situation in which events are in process or have occurred which involves an actual or potential substantial degradation of the level of safety of the plant.

1.2 "Emergency" shall be defined consistent with the definition of □site area emergency as set forth in NUREG 0654 as a situation in which events are in process or have occurred which involve actual or likely major failures of plant functions needed for protection of the public.

1.3 "Requesting party" shall be defined as any party to this Agreement who, upon the occurrence of an emergency at one of its nuclear generating stations, seeks emergency assistance, pursuant to this Agreement, from one or more of the parties hereto.

1.4 "Responding party" or responding parties shall be defined as any party or parties to this Agreement who are presented with a request for emergency assistance pursuant to this Agreement.

ARTICLE II
REQUESTS FOR EMERGENCY ASSISTANCE

2.1 In the event of an Alert at one of its nuclear generating stations, any party to this Agreement may notify any or all of the other parties that an Alert exists and that their emergency assistance may be required.

2.2 In the event of an emergency at one of its nuclear generating stations, any party to the Agreement may request emergency assistance from any or all of the other parties.

2.3 Requests for emergency assistance shall be made between and among the following party personnel:

Entergy Nuclear Palisades, L.L.C.	Site Vice President – Palisades Nuclear Plant
DTE Energy Electric Company	Site Vice President – Fermi Nuclear Plant
Indiana Michigan Power	Site Vice President - Cook Nuclear Plant

ARTICLE III
EXCUSED FAILURE TO RESPOND

3.1 Failure to respond to a request for emergency assistance pursuant to this Agreement shall be excused if, in order to respond, the requested party or parties would be forced in its or their sole judgment or judgments to:

3.1.1 Violate its duties relating to the care and staffing at its own nuclear generating stations; or

3.1.2 Jeopardize the public health or safety at a location other than the location of the requesting party emergency.

ARTICLE IV
SCOPE OF ASSISTANCE

4.1 If requested under this Agreement, the responding party or parties will provide trained and experienced personnel to perform off-site radiation protection activities to the requesting party. All equipment intended for use by the responding personnel, except personal dosimeters and certification documents (such as certifications of Health Physics training, instrument training and dose exposure records), shall be the responsibility of the requesting party to provide. The responding party or parties may use their own equipment if agreeable to the requesting party. However, use by the responding party or parties of their own equipment shall in no way alter the duties and obligations imposed upon the parties by this Agreement.

4.2 Emergency assistance provided by the responding party or parties shall continue until their personnel are dismissed by the requesting party, or are recalled by the responding party to support operations at its own facilities.

4.3 Responding party or parties' personnel exposure shall be limited to off-site radiation, and such exposure shall not exceed federal requirements as set forth in 10CFR20.

4.4 Wages, hours and other terms and conditions of employment applicable to loaned personnel shall be those of the party providing such personnel.

4.5 Personnel provided by responding party or parties shall, at all time during the period in which emergency assistance is being provided, continue to be employees of the responding party or parties. The responding party, and not the requesting party, shall be liable to loaned personnel for any wages, salaries, cost and expenses associated with the provision of emergency assistance.

ARTICLE V
REIMBURSEMENT FOR EMERGENCY ASSISTANCE RENDERED

5.1 The requesting party shall reimburse each responding party for all costs and expenses incurred by each responding party in providing emergency assistance hereunder. Such costs and expenses shall include:

5.1.1 Salaries and wages paid to loaned personnel (including supervisors) for paid time spent in the requesting party service area, and paid time for travel to and from such service area;

5.1.2 A percentage of the total of such wages and salaries, as determined by the responding party, reflecting expenses incurred for:

5.1.2.1 Compliance with Worker Compensation laws;

5.1.2.2 Payroll taxes;

5.1.2.3 Hospitalization, surgical and medical coverage;

5.1.2.4 Pensions and life insurance;

5.1.2.5 Vacation, holiday and sick pay;

5.1.2.6 Travel accident insurance;

5.1.3 Transportation to and from the requesting party service area, including the cost of travel accident insurance purchased expressly for coverage during such transportation;

5.1.4 Food and lodging;

5.1.5 Personal expenses specifically agreed to between the requesting and responding parties;

5.1.6 Charges, at the rates internally used by the responding party, for the use of transportation equipment and other equipment requested; and

5.1.7 Any further costs specifically agreed to between the requesting and responding parties.

5.2 All time sheets and work records pertaining to loaned personnel shall be maintained by the responding party.

5.3 All charges shall be paid by the requesting party to each responding party within ten (10) days after receipt of an invoice, itemized to the satisfaction of the requesting party.

ARTICLE VI
INDEMNIFICATION

6.1 The requesting party shall indemnify and hold harmless each responding party from and against any and all liability for loss, damage, cost or expense which the responding party shall incur by reason of bodily injury, including death, to any person or persons, or by reason of damage to or destruction of any property, including the loss of use thereof, arising out of or in any manner connected with the giving of emergency assistance to the requesting party.

6.2 In the event of bodily injury, including death, to any employee of the responding party, or in the event of damage to or destruction of any property of the responding party, the requesting party shall indemnify the responding party for such loss in the following manner:

6.2.1 If such loss is covered by an insurance policy purchased by the responding party from a third party carrier, the requesting party shall make reimbursement to the extent such losses increase the responding party insurance costs;

6.2.2 If such loss is not covered by an insurance policy purchased by the responding party or exceeds such coverage, the requesting party shall make reimbursement to the extent of the claims or benefits actually paid or the losses sustained by the responding party.

ARTICLE VII
MODIFICATION

7.1 At any time after the date of this Agreement any party, by giving not less than thirty days written notice to the other parties, may from time to time call for reconsideration of the terms and conditions of this Agreement. If such reconsideration is called for, the authorized representatives of the parties shall meet as promptly as convenient and discuss any of the terms and conditions of the Agreement. No party shall be under any obligation to agree to any modification or supplement not satisfactory to it. Any agreement modifying or supplementing such terms and conditions shall be in writing, signed by all parties, and shall specify the date such modification or supplement shall become effective.

ARTICLE VIII
PLAN EXERCISING

8.1 The parties agree to provide, at their own expense, personnel to observe or assist in demonstrating the effectiveness of a nuclear generating station emergency plan as may be required by that nuclear generating station NRC approved emergency plan.

ARTICLE IX
TERM OF AGREEMENT

9.1 This Agreement shall continue indefinitely from the date of signing unless and until terminated as provided for in Section 9.2 below.

9.2 Any party, upon sixty (60) days prior written notice to all other parties, may terminate this Agreement.

IN WITNESS WHEREOF, the parties hereto cause this Agreement to be executed by their duly authorized officers on duplicate original pages attached hereto and made a part hereof.

ENTERGY NUCLEAR PALISADES, L.L.C.

8-11-17
Charles F. Arnone Date
Site Vice President - Palisades

DTE ENERGY ELECTRIC COMPANY

9-25-17
Keith Polson Date
Site Vice President - Fermi

INDIANA MICHIGAN POWER

8/28/17
Q. Shane Lies Date
Site Vice President - D. C. Cook Nuclear Plant

Institute of Nuclear Power Operations Emergency Resources 1 page

INPO®

Institute of
Nuclear Power
Operations

Suite 100
700 Galleria Parkway, SE
Atlanta, GA 30339-5943
770-644-8000
FAX 770-644-8549

November 2, 2017

Dear Ladies and Gentlemen:

This letter certifies that the Nuclear Power Plant Emergency Response Assistance Agreement dated November 8, 2013 remains in effect. INPO will assist you as described in the agreement and in revision 1 of the United States Industry Event Response Framework.

A copy of the agreement and the counterpart signatures can be found on the INPO integrated response member website. This agreement will remain in effect until amended or terminated in accordance with the guidance described in paragraphs 14 and 15 of the agreement.

Should you have any questions, please call me at (770) 644-8882 or email at williamsdr@inpo.org

Sincerely,

Dane R. Williams
Manager,
Emergency Managament

DRW:oa

FEMA ANS Design Report Letter 1 page

U.S. Department of Homeland Security
Region V
536 South Clark Street, Floor 7
Chicago, Illinois 60605
FEMA

September 11, 2017

Tonya Nobach
Manager, Radiological Emergency Preparedness Unit
Michigan State Police
Emergency Management & Homeland Security Division
P.O. Box 30634
Lansing, Michigan 48910-5883

Dear Ms. Nobach:

On July 12, 2017 DHS/FEMA Region V received from the State of Michigan, a proposed Alert and Notification System (ANS) Design Basis Report Revision 1 - dated May 19, 2017, by AEP that would amend the DC Cook Nuclear Power Plant's existing ANS Design Basis Report, approved on December 10, 2012.

After completing the review, DHS/FEMA Region V concurs with the proposed changes and approves the amendments to the existing ANS Design Basis Report that are noted in the revision summary of the report.

If you should have any questions, please call me at 312-408-5389 or contact Dwaine Warren at 312-408-5342.

Sincerely,

Sean O'Leary, Chair
Regional Assistance Committee

APPENDIX C

EMERGENCY KITS AND EQUIPMENT LOCATION

Emergency Kits and Equipment Location

KIT	LOCATION
Radiation Protection Emergency Kit	Operations Support Center (OSC) Emergency Operations Facility (EOF) Survey Vehicles (1 in each of the 2 dedicated Survey Vehicles)
First Aid – Decon Equipment	Radiation Protection Access Control (RPAC)
Anti-C Equipment for Ambulance In-Plant/On-Site Driver to Hospital	Security Control Center Vehicle Search Portal
Emergency Anti-C Equipment	Technical Support Center (TSC) Operations Support Center Area Training Center Emergency Operations Facility (EOF) Both Control Rooms Control Room Emergency Cabinet Survey Vehicle
Hospital Emergency Cabinet	Lakeland Regional Medical Center, St. Joseph Niles Community Hospital, Niles
Shift Supervisor Office Radiation Protection Emergency Locker	633' Turbine Deck at TSC stairs
SCBAs	17 – Auxiliary Building 10 – RPAC 10 – Basement Assembly Area (OSC) 10 – 633' Turbine Deck by TSC 2 – Each Control Room 10 – 609' Turbine Bldg. (for Turbine Building use only)
Stretcher Lockers	10 – Locations in Plant

APPENDIX D

EMERGENCY PREPAREDNESS BROCHURE

Applicable Portions from the Annual Emergency Information Calendar for Berrien County

WHAT TO DO IF YOU HEAR EMERGENCY WARNING SIRENS

In Berrien County, we use early-warning sirens and cell phone texts to alert you of a serious emergency. Such emergencies include a nuclear accident, chemical spill, severe weather or other possible dangerous condition in our county.

- **If the emergency warning siren sounds for three to five minutes, tune to any television station or radio station listed in this section, or check your cell phone or other wireless communication device for emergency messages.** Berrien County uses a national alert and warning system to send emergency messages to you.
  - Emergency Alert System (EAS) messages are sent through TV and radio stations. All of the TV and radio stations listed here are part of the local Emergency Alert System (EAS). Some of the stations may experience a delay in getting emergency information out due to computerized programming or limited broadcast scheduling. Check all of the listed stations until you find one that is broadcasting emergency information.
  - Cell phones and other wireless devices receive Wireless Emergency Alerts (WEA). If your wireless carrier participates in the WEA system you will receive emergency alerts automatically. WEA messages are not charged to your wireless data plan.
- **If you hear an emergency siren that lasts for less than a minute or a siren that repeats in less-than-a-minute intervals, it is probably calling a volunteer fire department.** To be sure, tune to any radio or television station listed here or check your cell phone for emergency messages.
- **If you notice that an emergency siren is damaged or not working, call 269-926-2638 immediately.** The Berrien County Emergency Management Office maintains the sirens. For your protection, report non-working sirens right away.

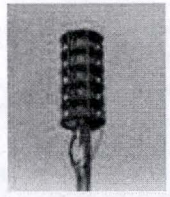
Vacationers and Visitors

If you hear emergency sirens while vacationing or visiting in the area, seek shelter indoors or in your vehicle. Tune to one of the television or radio stations (listed at right). Follow all directions given by park officials, sheriff and police officers. **During a weather emergency, do not stay in your vehicle. It is not safe!**

Boaters and Campers

If you hear emergency sirens while boating, do not wait for further warning. Tune to the marine channel 16 (156.8 MHz) or to an area radio station listed to the right for emergency information. Marine patrol boats will also warn boaters on Lake Michigan if there is a serious emergency. You will be told the location of safe waterways and docking areas.

If you hear emergency sirens while camping, hiking, swimming or visiting in area parks, follow all emergency instructions from park officials. At Warren Dunes and Grand Mere state parks, officials will use the public address system or mobile alert units to let you know what you should do. At other local parks, immediately tune to an area radio station listed at right and follow instructions.



THE SIRENS ARE TESTED ON THE FIRST SATURDAY OF THE MONTH AT 1 P.M.
All monthly tests, except for April, consist of a short siren sound lasting less than a minute. On the first Saturday of April, we test all emergency warning sirens for three minutes at 1 p.m. as part of our comprehensive safety plan. At other times, you may hear sound-level tests also lasting less than a minute.

Tune to one of these radio or TV stations for emergency information

Radio			
AM	FM		
WNIL - 1290 WSJM - 1400	WAUS - 90.7 WSJM - 94.9 WAOR - 95.7	WEFM - 95.9 WYTZ - 97.5 WCXT - 98.3	WQLQ - 99.9 WCSY - 103.7 WIRX - 107.1

Television		
WNDU - NBC 16 WNDU - NBC 16.1 WNDU - 16.2	WSBT - CBS 22 WSBT - CBS 22.1 WSBT - FOX 22.2	WBND - ABC 57 WBND - ABC 57.1

- All call letters are accurate at the time of printing. All stations are on the air 24 hours. Check your cable or satellite provider for your channel lineup.

FOLLOW ALL BROADCAST INSTRUCTIONS PROMPTLY.
The radio or television newsperson will tell you what actions you should take, if any.

WHAT TO DO IF YOU ARE TOLD TO SEEK SHELTER OR STAY INDOORS

For most emergencies, it is safer to stay indoors. The wind will blow any toxic or poisonous fumes and gases away in a short time. During a severe weather emergency, buildings offer the best protection, especially basements. While indoors, do the following:

- **Keep calm.** Panic is your worst enemy in any emergency.
- **Close all windows and doors, and bring pets inside.**
- **Turn off all air-intake systems** such as fans and air conditioners. Turn down furnace thermostat. Close fireplace dampers.
- **If your building has a basement, take a radio and go there.**
- **Do not go outside** to see what is happening until you are told it is safe to go out or are told to evacuate. If you must go outdoors briefly to warn someone during a nuclear emergency, cover your nose and mouth with a piece of cloth such as a towel or scarf.
- **Do not use the telephone or Internet** unless it is absolutely necessary. It's important to keep telephone lines open for emergency use.
- **Stay out of your car or vehicle in a weather emergency.** Seek shelter in the basement of a nearby building or in a ditch until the weather emergency passes.

IMPORTANT: Do not pick up children from schools or day care centers. School staff and child caregivers will keep children in school until it is safe to go out again.

FUNCTIONAL NEEDS: If you need special help in an emergency, fill out the card to the right and mail it right away.

In an emergency, a person with a functional need may include anyone with vision or hearing impairments, physical or mental disabilities, or someone who has no means of transportation. If you might need help in an emergency, please fill out the Functional Needs card on the next page and mail it in today. **It is important to note that you should update and mail in your Functional Needs card each year.** The Berrien County Health Department will keep your functional needs information on file for one year. Your information will be kept confidential. Please fill out a new card and mail it in as soon as you receive your new calendar, if needed.

If you know someone with functional needs who lives within the 10-mile Emergency Planning Zone (see page 16), please volunteer to help them in an emergency. If this is not practical or possible, please discuss and/or assist them in filling out this emergency card.

2018 FUNCTIONAL NEEDS CARD

Cut along the dashed line.

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO. 10 BRIDGMAN MI

POSTAGE WILL BE PAID BY ADDRESSEE

DIVISION OF BERRIEN COUNTY SHERIFF'S OFFICE
BERRIEN COUNTY EMERGENCY MANAGEMENT
2100 E EMPIRE AVE
BENTON HARBOR MI 49022-9895

Fold here

If you have functional needs, fill out the other side of this card. Cut this card out, fold and seal it, then put it into the mail.

WHAT TO DO IF YOU ARE TOLD TO EVACUATE

Cook Nuclear Public Inquiry Line: 866-362-3105

- **Listen to the radio or television (see page 15) for instructions.** They will give you evacuation routes and directions to open reception centers.
- **Go directly to a reception center and register.** Follow the broadcasted evacuation route instructions to the nearest open reception center. Please register when you arrive so family and friends will know where you are. After you have registered you may go to stay with friends or family who live outside the danger area. Or, if you prefer, you will be assigned to a safe, nearby gathering place.
- **Stay calm.** You and others with you should have time to get ready to leave safely.
- **Take only essential items.** Pack as if you were going on a trip for only a few days. Use the list below as a guide.
- **Do not take firearms, alcoholic beverages or illegal drugs.**
- **If you have functional needs and have sent in a postcard,** you will receive necessary assistance. If you need help, listen to a local TV or radio station (see page 15) for the telephone number you can call.
- **Have a plan for your pets.** Currently, reception centers will only accept pets if they are service animals. Make arrangements to stay with relatives, friends or at a pet-friendly hotel outside of the area. Bring an emergency pet kit (see the checklist below). For more information, go to *ready.gov/caring-animals*, *PetTravel.com* and *PetsWelcome.com*.
- **Turn off small appliances, lights and water faucets.** However, leave your refrigerator and freezer on.
- **Turn off all air-intake systems** such as fans and air conditioning. Turn down furnace thermostat. Close fireplace dampers.
- **Close and lock all windows and doors.** The evacuated area will be secured and you will not be allowed to return until it is safe.
- **Check on neighbors.** Make sure they know how to evacuate and that they have transportation.

IMPORTANT: Do not pick up your children from schools or child care centers. If necessary, they will be taken to shelters outside the danger zone. Listen for directions on TV or radio stations (see page 15) about where and when they can be picked up. Do not worry if you or family members are in a hospital or other special-care facility, as they also have emergency procedures.

2018 FUNCTIONAL NEEDS INFORMATION

If you have functional needs, please fill in this card, fold, seal it with tape and mail today!
You must send in a card each year to keep our files up-to-date.

NAME: _____

STREET ADDRESS: _____

CITY: _____ ZIP: _____

PHONE: ( )

If there are special directions to your home, please contact Berrien County Emergency Management at 269-983-7111, Ext. 4915.

IF YOU ARE A PART-TIME RESIDENT, PLEASE CIRCLE THE MONTHS YOU STAY IN BERRIEN COUNTY:

JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

YOUR FUNCTIONAL NEED (CIRCLE ALL THAT APPLY):

VISION-IMPAIRED HEARING/SPEECH-IMPAIRED WHEELCHAIR WALKER/CANE BEDRIDDEN
VENTILATOR OXYGEN OTHER: _____

TRANSPORTATION INFORMATION:

Could a family member or friend give you transportation if you were asked to evacuate in an emergency?
YES _____ NO _____

PET INFORMATION:

Do you have pets at home that would require attention if you were asked to evacuate in an emergency?
If so, indicate the number of:

CATS: _____ DOGS: _____ SERVICE DOGS: _____

OTHER (DESCRIBE): _____

EMERGENCY CONTACTS:

PRIMARY: _____ RELATIONSHIP: _____ PHONE: _____

ALTERNATE: _____ RELATIONSHIP: _____ PHONE: _____

Cut along the dashed line.

What to Bring With You

- ☐ **Basics:** this calendar, cash, portable radio, flashlight, extra batteries, keys, tool kit, credit/debit cards, checkbook, wallet, purse
- ☐ **Bedding:** blankets, pillows, sleeping bags
- ☐ **Toiletries:** soap, towels, toothpaste, toothbrushes, razors, sanitary supplies
- ☐ **Special items:** special-diet foods, baby formula and bottles, diapers, favorite toys or games
- ☐ **Health supplies:** medicines, glasses, dentures, hearing aids, first aid kit, prescription information
- ☐ **Identification:** driver's license, credit cards, important papers
- ☐ **Pet supplies:** food, water, medicines, leashes, tags

ONCE YOU ARE IN YOUR VEHICLE

- **Drive carefully.** There is no need to speed. Follow directions of all sheriff, police and traffic officers.
- **Close all windows and vents.** Shut off heating and air conditioning.
- **Listen to the radio (see page 15).** Follow emergency instructions broadcast on your car or portable radio. You will be told when it is safe to return.

Reception Center Locations

The locations of the four reception centers are listed below. Listen to an area radio or TV station (see page 15) to learn which reception centers are open.

BRANDYWINE HIGH SCHOOL
1700 Bell Road, Niles (South of Niles & East of M-51)

COLOMA HIGH SCHOOL
300 W. St. Joseph Street, Coloma (Red Arrow Highway)

NEW BUFFALO HIGH SCHOOL
1112 E. Clay Street, New Buffalo (South of US-12)

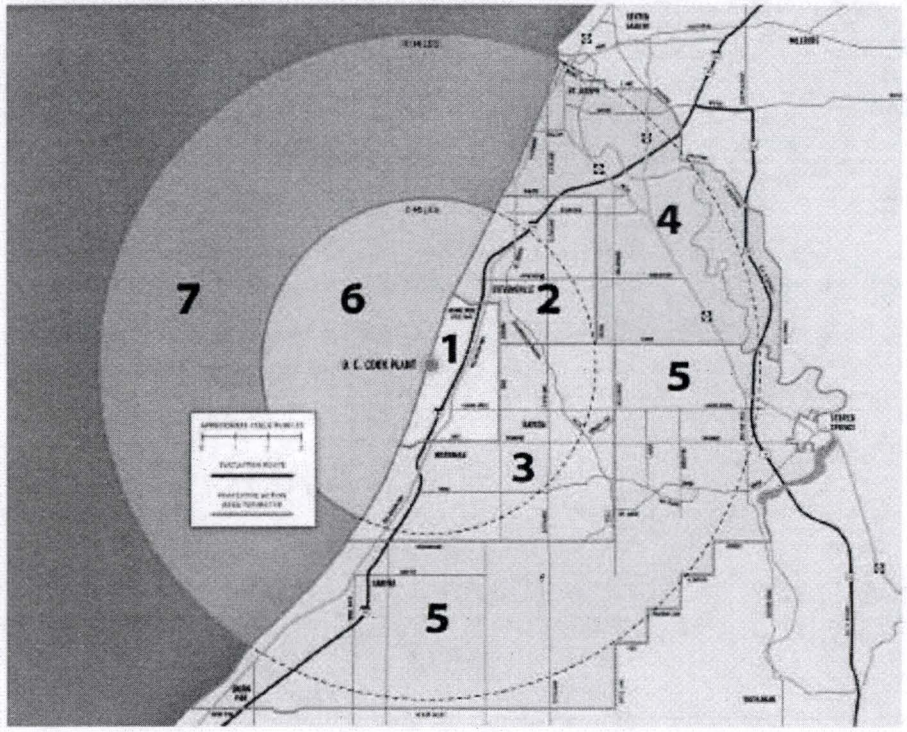
WATERVLIET HIGH SCHOOL
450 E. St. Joseph Street, Watervliet (Red Arrow Highway)

Cook Nuclear Plant Emergency Planning Zone

The circled area in the map is a 10-mile radius surrounding Cook Nuclear Plant in Bridgman known as the Emergency Planning Zone (EPZ). The early-warning siren system for Berrien County is within the EPZ. When necessary, area TV and radio stations (see page 15) will alert people living inside the EPZ when there is an emergency.

Inside the EPZ are the Protective Action Areas for the Cook Nuclear Plant. During an emergency, these areas will be identified by the numbers shown in the map. For example, the TV or radio station may say, "Protective Action Area 1 must evacuate," or, "Protective Action Area 2 must take shelter." Know which Protective Action Area you live, work or are boating in so you can respond promptly to instructions.

During an emergency, listen to area TV or radio stations and follow the official evacuation instructions to the reception center you are to use.



IMPORTANT NUCLEAR EMERGENCY TERMS AND RADIATION FACTS

Nuclear Emergency Terms

In the unlikely event that there is an emergency at the Cook Nuclear Plant, four terms will be used to describe each situation. Those four terms are explained below. They are listed in order of least serious (1) to most serious (4).

Because of the many safeguards and highly skilled people operating the Cook Nuclear Plant, it is very unlikely that a serious event will ever occur there. Chances of you having to seek shelter or evacuate because of a nuclear emergency are very remote. In most cases, evacuation is ordered as a safety measure before any danger can come to you or your family. Federal law, however, requires that the public be told what to do in case of a significant release of radioactive material from the Cook Nuclear Plant. Please keep this Emergency Information Calendar handy and become familiar with its contents.

Sometimes you will hear news about a drill or an exercise involving the Cook Nuclear Plant. That is because federal, state, county and plant officials are required by law to participate regularly in drills and exercises so they are prepared in case of an emergency.

Remember, you will hear early-warning sirens if shelter or evacuation is necessary. See page 15.

If the sirens sound, listen to an area TV or radio station for emergency information (see list on page 15) and follow instructions.

1. UNUSUAL EVENT: a minor problem at the Cook Nuclear Plant that varies from normal or routine operations. No release of radioactive material is expected. Cook Plant officials will notify federal, state and county officials. You will not have to do anything.

2. ALERT: an abnormal plant condition that could result in a small release of radioactive material inside the plant. This is still considered a minor event. Cook Plant officials will notify federal, state and county officials to stand by. It is not likely that you will have to do anything.

3. SITE AREA EMERGENCY: a more serious situation that could result in a release of radioactive material around the plant site. All federal, state and county officials will be ready to help if needed. Protective measures may be required to ensure the safety of the public in a limited area near the plant site boundary. If so, the sirens may sound. Tune in immediately to an area TV or radio station (see page 15) to learn whether you will need to seek shelter or evacuate.

4. GENERAL EMERGENCY: the most serious situation possible at the Cook Nuclear Plant. It could result in the release of a large amount of radioactive material outside the plant boundary. All federal, state and county officials will provide help as needed. Protective measures may be required to ensure the safety of the public as far as 10 miles from the plant. The sirens will sound and you will be told by area TV and radio stations (see page 15) if shelter or evacuation is necessary.

TWO OTHER KEY TERMS: RADIATION AND CONTAMINATION

- **Radiation** refers to the particles and waves given off by radioactive material. It is a form of energy that occurs naturally and artificially. We are exposed to it every day. However, radiation could be harmful to your health and safety if the levels are high enough and the exposure lasts long enough.
- **Contamination** is when radioactive material is where it is not supposed to be. Food, water or air is considered contaminated if it contains more or different types of radioactive material than would be normally present. Our bodies, for example, contain very small amounts of the radioactive elements potassium-40, carbon-14 and tritium. We are not considered to be contaminated because these elements exist within us naturally. However, the presence of strontium-90 (a possible by-product of a nuclear power plant emergency) in food, air or water can indicate contamination.

Facts About Radiation

RADIATION IS A NATURAL FACT OF LIFE

Radiation is a form of energy like light or sunshine. There is radiation all around us. We are exposed to small amounts of radioactive materials every moment of our lives.

HOW WE MEASURE RADIATION

You cannot see, taste, hear or smell ionizing radiation. But we can measure it with special instruments. We use a unit called a millirem (mRem) to measure ionizing radiation.

On average, a person living in the U.S. receives about 620 mRem per year from all radiation sources. A person living within 10 miles of the Cook Nuclear Plant receives about 485 mRem because we live at a low elevation that is not near any radioactive rock formations. About 310 mRem of the total we receive comes from man-made sources, primarily medical testing. Only a tiny fraction of one percent of the man-made radiation would come from the Cook Plant.

NATURAL BACKGROUND RADIATION IS IN THE AIR WE BREATHE

The sun covers our planet with cosmic radiation. Some rocks and minerals give off small amounts of radiation. One source you may be familiar with is radon gas. Many building materials contain radiation. In fact, radioactive particles are in the air we breathe, the food we eat and the water we drink. Even our bodies are slightly radioactive. These sources of radiation are called natural background radiation.

Natural background radiation sources (measured in mRem per year)		
Air: 200	Cosmic rays: 30	Earth & rocks: 46
Food & water: 40	Building materials: 7	

WE MAKE AND USE RADIOACTIVE SOURCES EVERY DAY

Besides naturally occurring radiation, there is also artificial (man-made) radiation. Radioactive materials are used in medical and dental X-rays. They are used to help diagnose and treat diseases such as cancer. Science and industry use radioactive materials for research and to do such things as X-ray welds. Other sources of radioactive materials are color TVs, smoke detectors, some luminous-dial watches and clocks. Very small amounts of radiation come from generating electricity with nuclear power.

Artificial radiation sources (measured in mRem per year)	
Chest X-ray: 10	Coast-to-coast airline flight: 2.5
Viewing color TV 1 hour/day: 1	Living by the Cook Plant: < 1

Types of Radiation

Radiation includes such things as light, heat and radio waves. However, when we speak of radiation we usually mean "ionizing" radiation. This radiation can produce high-energy, charged particles called "ions" in the materials it strikes.

THE MAIN TYPES OF IONIZING RADIATION ARE:

- Alpha particles, which can be stopped by a sheet of paper.
- Beta particles, which can be stopped by a thin sheet of metal.
- Gamma rays, which can be stopped almost completely by three feet of concrete.
- Neutron particles, which can be stopped by water, concrete and metal.

Effects of Radiation

Just as too much exposure to the sun can cause painful sunburn, too much exposure to certain levels and types of radiation can have harmful effects. You would, however, have to be exposed to radiation doses over 20,000 mRem within a day to produce effects measurable by a trained doctor. Very large doses of 50,000 to 100,000 mRem are required before you would feel any ill effects.

The amount of exposure from radiation depends on:

- Length of time you are exposed.
- How far you are from the source of radiation.
- Which part of your body is exposed.
- How much material you inhale or take into your body.

Your health or physical condition can affect your reaction to radiation exposure. For example, you should be aware that **unborn babies and very young children are more likely to be harmed by radiation exposure.**

The less radiation you are exposed to, the less chance you have of receiving any harmful effects. That is why it is so important to have an emergency plan in place near a nuclear power plant. We need to treat radiation with both caution and common sense.

Cook Nuclear Plant workers regularly check radiation levels both inside and outside the plant. In the unlikely event of a serious nuclear accident at the plant, state and federal health experts would be called in to take radiation readings beyond the plant site boundary. These readings would determine what steps, if any, you, your family and co-workers would need to take to protect yourselves.

State of Michigan Potassium Iodide Distribution

Radioactive iodine (radioiodine) is one of the products that could be released in the unlikely event of a serious nuclear power plant accident. Potassium iodide (KI) is a non-radioactive form of iodine that may be taken to reduce the amount of radioactive iodine absorbed by the body's thyroid gland. KI offers protection only to the thyroid gland and its use would be to supplement evacuation and in-place sheltering. Evacuation and in-place sheltering are the primary means of protection in a radiological emergency.

State and county officials will use the Emergency Alert System (EAS) to notify the public of the need to evacuate, to seek shelter in place, or to take KI. KI is available to persons within 10 miles of Cook Nuclear Plant through the Michigan Department of Health and Human Services (MDHHS). **Detailed instructions on the MDHHS distribution of KI can be found on page 19 of this calendar or www.michigan.gov/KI.** It is necessary to pick up your KI prior to an emergency situation at the plant. Complete your voucher and pick up your KI at a participating pharmacy at your earliest convenience. **You will NOT be able to get KI from the pharmacy during a nuclear plant emergency.**

People who are allergic to iodine should not use KI. In the event of an allergic reaction, contact a doctor.

NOTICE TO FARMERS, FOOD PROCESSORS AND DISTRIBUTORS

HOW YOU WILL BE NOTIFIED IN A NUCLEAR EMERGENCY

The State of Michigan will evaluate the seriousness of a nuclear accident. It will order actions to protect the public and the food supply.

- **If you live within 10 miles of the Cook Nuclear Plant**, your first warning may be the sounding of emergency sirens. If you hear a siren for three to five minutes, tune to a radio or TV station listed on page 15 for emergency information.
- **If you live farther than 10 miles from the plant**, you will be notified by area radio and TV stations (see page 15). The news report will let you know if you need to take protective action, or a Cooperative Extension Service official will contact you. Please follow the emergency instructions right away.
- **If you have questions about a real or potential emergency**, please contact the Michigan Department of Agriculture and Rural Development at 800-292-3939. After hours, call 517-373-0440.

WHAT TO DO IF YOU ARE TOLD TO SEEK SHELTER

During a nuclear emergency, it is very important to limit your outdoor activities as much as possible. Please stay indoors and follow the instructions provided in radio and TV messages (see page 15).

WHAT TO DO IF YOU ARE ORDERED TO EVACUATE YOUR FARM

If you live within 10 miles of the Cook Nuclear Plant, you may be told to evacuate. You may be permitted, with directions from the state, to reenter the evacuated area temporarily to tend to the needs of your farm. You will receive instructions on what routes to use, safety precautions and decontamination procedures.

Your Cooperative Extension Service agent can provide animal health and feeding guidelines.

HOW CAN A NUCLEAR EMERGENCY CONTAMINATE FOOD?

During a nuclear emergency, dust-sized, radioactive materials can fall onto fruits, vegetables or grains. This food could enter the food supply and be eaten by the public. For example: Cows could eat grass covered with radioactive iodine-131. Traces of the iodine could be passed through to the milk and then to people who drink it. Iodine-131 has the potential to concentrate in the human thyroid gland where it could cause thyroid cancer.

PROTECTING THE FOOD SUPPLY DURING A NUCLEAR EMERGENCY

Following a nuclear emergency, the public could be exposed to radioactive material in several ways. At first, particles and gases released into the air could be ingested or inhaled directly. Additional exposure could result from eating or drinking food or milk contaminated by traces of radioactive material. Farmers, food processors and distributors will be required to take steps to protect the food supply. Every step will be taken to minimize or avoid contamination. Please read this page and the next to learn how to protect the food supply in the event of a nuclear emergency.

SAMPLES WILL BE COLLECTED TO DETERMINE PROTECTIVE ACTION

In the event of an accidental release of radioactive material, State of Michigan emergency workers will determine what protective steps you will need to take. Emergency workers will collect samples of air, water and soil to see whether there is radioactive contamination, where it is located and the amount. Samples of milk, forage, crops and processed foods also may be taken. Field data and other factors will be used by the state to determine the best course of action to protect the public and the food supply.

Samples may be taken from as far away as 50 miles from the plant site. State of Michigan emergency workers will give farmers, food processors and distributors outside of the 10-mile radius of the Cook Nuclear Plant specific instructions on how to collect and test samples.

SAMPLES ARE BEING TAKEN NOW TO GIVE US A BASELINE

Radioactive materials occur naturally in the environment. So Indiana Michigan Power and State of Michigan emergency workers continually take samples of the air, water, milk, vegetation and animal life near the Cook Nuclear Plant. This gives them a "natural" baseline for comparison in the event of a nuclear emergency.

HOW TO PROTECT YOUR WATER SUPPLY IN A NUCLEAR EMERGENCY

Store as much water as you can for your livestock. Cover open wells, tanks and other storage containers. Close off the intakes from contaminated ponds, streams or cisterns. In general, water from wells and water heaters should be safe to use.

Radioactive contaminants deposited on the ground usually will travel very slowly into the soil. If contaminants fall onto the surface of lakes and rivers, the radioactive materials may get into the ground water supplies. It takes just a few hours for streams and lakes to carry the contaminants many miles.

HOW TO PROTECT YOUR LIVESTOCK OR POULTRY IN A NUCLEAR EMERGENCY

The first priority is to protect dairy animals because radioactive materials can quickly enter the food chain through milk and other dairy products. If sheltering is required, shelter your dairy animals first.

Shelter livestock in covered barns or sheds unless the weather is extremely hot or other factors make sheltering impossible. Provide your animals with stored feed such as hay, silage and bagged grain. Whenever possible, draw water for your animals from a well. Avoid using water from ponds, rivers and creeks. This will help to minimize the amount of radioactive material ingested by your animals.

Poultry are more resistant to radioactive contamination than other farm animals. Keep them in your enclosed facility and continue to give them stored feed and well water. If your poultry are normally kept outdoors, bring them inside if possible. Eggshells provide natural protection from contamination. Generally, eggs will be safe to eat after the shells are washed to remove surface contamination.

IMPORTANT: Do not destroy any animals, crops, milk or feed supplies unless directed by authorities to do so.

DO NOT DESTROY YOUR ANIMALS

Destroy your animals only if you get orders from state or federal authorities. Do not slaughter any animals except for immediate food needs. Generally, animals that are exposed to radioactive contaminants and radioactive rainwater will survive. Many will be marketable and safe for humans to eat. However, do not allow animals to graze in open fields unless the State of Michigan, your Cooperative Extension Service agent or another government official gives you permission.

WHAT TO DO IF FEED IS RADIOACTIVELY CONTAMINATED

Only in extreme emergencies may you feed your livestock contaminated grain or hay. If you must use the contaminated feed, you may be able to reduce the level of contamination. For example, if the feed is stored outside, the contamination may be greater at or near the surface of the feed pile. You may be able to reduce the contamination level significantly by removing the top portion.

Do not dispose of contaminated feed or hay unless spoilage has made it inedible. Generally, contaminated products may be salvageable after adequate time passes and they are properly processed. Please keep contaminated feed supplies separate from other feed so the contamination does not spread. Your Cooperative Extension Service agent can provide you with specific information.

WHO PAYS FOR LOST OR DESTROYED FARM PRODUCTS?

Farmers, food processors and distributors could face serious financial losses following a nuclear emergency. Under federal law, you will be reimbursed for any of these losses. The Price-Anderson Act, enacted by Congress in 1957, requires the operators of nuclear power plants and certain other nuclear facilities to purchase nuclear liability insurance policies for the protection of the public. As a result, no-fault insurance pools are in place to pay claims promptly without lengthy court hearings. Claimants need only prove that the injury or property damage resulted from the nuclear emergency. Commercial insurance policies exclude coverage for nuclear emergencies because the Price-Anderson Act makes coverage unnecessary.

WHAT TO DO WITH FOOD AND PRODUCTS CONTAMINATED IN A NUCLEAR EMERGENCY

Crops in the field

Let your standing crops grow to maturity. The level of radiation exposure they will receive should not affect their growth. Most contaminants will be washed off in the rain. Or, over time, the crops will return to safe levels as they grow. If special harvesting procedures are required, your Cooperative Extension Service agent will give you instructions.

Roots and tubers

Potatoes, carrots and plants that mature under the ground generally are safe to eat. Make sure to thoroughly wash and peel these products to remove soil particles and contaminants.

Fruits and vegetables in the field

Unprotected plants may have particles of radioactive contamination on their surfaces. Before eating them, wash thoroughly. Then brush, scrub or peel the outer layers. Some leafy vegetables may be eaten after you remove the outer layers.

If your crops do not need to be harvested immediately, leave them in the field or on the trees. They should be able to be harvested once your area is declared safe again.

You may lose some ripe fruits and vegetables to spoilage. Contamination levels in your area may be too high for field workers to harvest your crop in a timely manner. You will be reimbursed for crop losses.

Honey and apiary products

Following a nuclear emergency, State of Michigan emergency workers will need to take samples and analyze honey and beehives in the Protective Action Areas. Contact your Cooperative Extension Service agent for guidance.

NOTICE TO FARMERS, FOOD PROCESSORS AND DISTRIBUTORS *CONTINUED*

IMPORTANT: Do not destroy any animals, crops, milk or feed supplies unless directed by authorities to do so.

Farm products

If radioactive particles or material are present in large amounts, you may be advised not to use, eat or sell garden produce or animal products until samples are taken and analyzed. State of Michigan emergency workers will conduct the sample tests and analysis. Please follow their orders to protect the public's and your safety.

Milk

Milk contaminated at low levels of iodine-131 may be converted to powdered milk or cheese. Then it will be stored until the iodine's radioactivity diminishes to safe levels. It may also be used in animal feed.

Wildlife and plants

After a nuclear emergency, wild game such as deer, rabbit, squirrel, pheasant and partridge may eat food and water contaminated with radioactive particles. State of Michigan emergency workers may advise you not to eat wild game until it has been sampled and assessed to be safe. Wild edible plants, such as native herbs, mushrooms, dandelion greens, spearmint, peppermint or wintergreen may have particles of contamination on their surfaces, too. Before eating, be sure to wash, brush, scrub or peel to minimize contamination.

HOW SOON WILL THE RADIOACTIVITY REACH SAFE LEVELS?

The speed that radioactivity diminishes depends on several things. Inert gases released from a nuclear power plant lose their radioactivity within minutes. Wind or heavy rain tend to remove radioactive material from plants very quickly. In some cases, however, a hard rain after a nuclear emergency may splash contaminated soil onto plant surfaces. This will increase the amount of radioactive material on low-standing plants.

WHAT STEPS CAN BE TAKEN TO RESTORE CONTAMINATED SOILS?

There are several steps that can be taken to restore soils contaminated in a nuclear emergency. One is not to use the soil for a period of time. In a worst-case situation, heavily contaminated soil may need to be removed and sent to an approved radioactive waste disposal facility. Such drastic action may not be possible for large fields, but may be used for small plots or areas such as walkways near buildings where people come in close contact with it.

In less severe situations, fiber crops may be planted instead of fruits and vegetables. Deep plowing may be used to keep the radioactive contaminants below the root zone until the radioactivity decays to safe levels over time. Liming may also be used to limit the absorption of specific radioactive elements by crops.

Farmers will receive guidance from the United States Department of Agriculture's Natural Resources Conservation Service on how to restore valuable soils to productive use.

WHAT SHOULD FOOD PROCESSORS AND DISTRIBUTORS DO IN A NUCLEAR EMERGENCY?

After a nuclear emergency, government officials may restrict the movement of contaminated food products or withhold them from the marketplace. These products should not be released until they are considered safe for consumption or a decision is made to dispose of them. State of Michigan emergency workers will instruct you on how to safely handle and dispose of contaminated food products.

The environmental damage caused by a nuclear reaction may be short-lived. Steps can be taken to make a full recovery.

For more information, contact:

MSU-BERRIEN COUNTY COOPERATIVE EXTENSION SERVICE
269-944-4126
1737 Hillandale Road
Benton Harbor, MI 49022
http://msue.anr.msu.edu/county/info/Berrien

If you have questions about a real or potential emergency, you may also contact the Michigan Department of Agriculture and Rural Development:

MICHIGAN DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT
800-292-3939
www.michigan.gov/mdard

MDHHS
Michigan Department of Health & Human Services

Potassium Iodide (KI) Facts

Potassium iodide (KI) is available at no cost to people who live or work within 10 miles of the Cook Nuclear Plant. In the unlikely event of a serious accident at the Cook Plant, taking KI will help protect your thyroid from injuries caused by exposure to radioactive iodine.

To get your KI tablets, please read the information in this calendar, complete the voucher and take it to one of the participating pharmacies listed below. Please get your tablets now so you are ready if you are ever asked to take them. You will NOT be able to get KI from the pharmacy during a nuclear plant emergency.

If you already have KI tablets from this program, check the expiration date on the box. If it has expired, go to one of the pharmacies listed on the next page to replace your KI with a new supply.

What is KI?

KI (the chemical name for the drug "potassium iodide") is a non-prescription iodine pill. Iodine is an element that is found in nature and is also an important part of your diet. Because iodine is so important for your health, it is added to table salt. However, the iodine in the KI pill is much stronger than the iodine in table salt. Table salt cannot be used as a replacement for KI.

The Michigan Department of Health and Human Services (MDHHS) runs the KI program. For more information, contact:

Phone: 517-335-8350
(8 a.m. to 5 p.m.)
Email: mdhhs-ki@michigan.gov
Online: www.michigan.gov/KI

How does KI work?

In the unlikely event of a serious accident at a nuclear power plant, radioactive iodine could be released into the air. Like regular iodine, radioactive iodine can be stored in your thyroid gland. This can cause thyroid cancer or other thyroid problems over time. Children are most at risk of thyroid injury from exposure to radioactive iodine. KI protects your thyroid by filling it up with a safe form of iodine so that it can't take in radioactive iodine.

It is important for you to know that KI *does not* protect your whole body from radioactive material. KI protects only your thyroid gland.

How can I get KI?

Take the voucher to one of the participating pharmacies listed there. The pharmacy will provide you with the amount of KI that you need. Place the KI in a safe, dry location and keep it in its foil packet. You should keep it on hand as part of your emergency supply kit. Be sure to get your KI now. You will not be able to get it from the pharmacy during a nuclear power plant emergency.

When should I take KI?

Take KI only if a "General Emergency" has been declared at the Cook Nuclear Plant. If the emergency sirens sound for three minutes or more, tune to your local radio or television station. Follow the instructions given by emergency officials. You may be instructed to shelter-in-place or evacuate. You should only take KI if the radio or TV announcements say that the power plant has declared a "General Emergency," the most serious type of plant emergency.

If you are told to evacuate and don't have your KI readily available, don't waste time searching for it. Evacuating or sheltering-in-place is the best way to protect you from harm due to radiation.

Use the information in this chart to take the correct amount for one dose.

AGE	WEIGHT	DOSE
18+ years	Any weight	Two (2) 65 mg tablets *(includes pregnant or breastfeeding women)*
12-18 years	150 lbs. or more	Two (2) 65 mg tablets
12-18 years	Less than 150 lbs.	One (1) 65 mg tablet
3-12 years	Any weight	One (1) 65 mg tablet
1 month-3 years	Any weight	Half (1/2) 65 mg tablet, crushed into a liquid. *(Instructions for crushing and mixing will be provided by the pharmacy.)*
Birth-1 month	Any weight	Quarter (1/4) 65 mg tablet crushed into a liquid. *(Instructions for crushing and mixing will be provided by the pharmacy.)*

How much KI should I take?

One dose protects the thyroid for 24 hours. You should be safely evacuated within the 24-hour time period. See the chart above for dose guidelines.

What side effects could I have from taking KI?

Side effects are unlikely when KI is used at the recommended dose and for a short time. Minor side effects can include an upset stomach, skin rash or a metallic taste. An allergic reaction can have more serious symptoms like fever, joint pain, swelling of the face or body or trouble breathing. Severe shortness of breath requires **immediate medical attention!**

Who should NOT take KI?

You should not take KI if:

- You are allergic to iodine. A shellfish allergy may not mean that you are allergic to iodine. Talk to your physician or allergist if you have a shellfish allergy.
- You have dermatitis herpetiformis (DH) or hypocomplementemic urticarial vasculitis syndrome (HUVS), very rare skin conditions.

Check with your doctor if you already have thyroid disease or are unsure whether or not to take KI.

How does this program apply to businesses?

Businesses can obtain KI for their employees, clients or patients. Businesses with more than 400 employees/clients/patients should call or email the Michigan Department of Health and Human Services (MDHHS) to arrange for delivery of KI. If a business chooses to participate in the program, it is responsible for having a dispensing plan that complies with these instructions. If your business chooses not to participate, you can provide a copy of this voucher to your employees so that they can obtain their personal supply of KI.

Read this information before signing the KI voucher.

Signing the voucher means that you agree to and understand the following:

I UNDERSTAND THAT:

- KI is an over-the-counter, non-prescription drug.
- KI is to be taken only when a General Emergency has been declared at the Cook Nuclear Plant.
- KI is NOT a substitute for evacuation or sheltering-in-place. I will follow the instructions of emergency officials.
- KI only protects the thyroid gland from radioactive iodine. It does not protect the rest of the body. In a nuclear power plant emergency, there could be health risks from other forms of radiation.
- Although taking KI is usually safe, it can cause problems in people who have thyroid disease or are allergic to iodine. People who have dermatitis herpetiformis or hypocomplementemic urticarial vasculitis (HUVS), two very rare skin diseases, should not take KI without first talking to their doctor.

I AGREE THAT:

- I will follow all instructions on how to use potassium iodide (KI).
- I will hold the pharmacy harmless from all liability, claims, suits or actions related to the use, delivery, labeling and packaging of KI.

Additional agreements for businesses

- I own or represent the business/institution named on the voucher.
- This business/institution will provide information on dosing and medical contraindications to all employees/clients prior to distributing KI. (NOTE: You will find this information in each box of KI and on the MDHHS website at www.michigan.gov/KI.)

To qualify to receive KI tablets for your household or business, you must:

- Live or work within 10 miles of the Cook Nuclear Plant.
- Be 18 years or older.
- Present a government-issued photo ID.

Participating Pharmacies

YOU MAY PICK UP YOUR KI TABLETS AT THE FOLLOWING PHARMACIES:

- Meijer Pharmacy 1920 Pipestone Rd., Benton Harbor, MI
- Meijer Pharmacy 5019 Red Arrow Hwy., Stevensville, MI
- Meijer Pharmacy 5150 S. Franklin St., Michigan City, IN
- Meijer Pharmacy 1223 Phoenix St., South Haven, MI

Cut along the dashed line.

2017-2018 Potassium Iodide (KI) Voucher

By signing this form, I agree that I have read the KI information provided and that I am obtaining KI for people who live or work within 10 miles of the Cook Nuclear Plant.

PLEASE COMPLETE SECTION 1 OR 2

1. REQUESTING KI FOR HOUSEHOLD USE

NAME:

STREET ADDRESS:

CITY: ZIP:

COUNTY: PHONE: ( )

NUMBER OF PEOPLE LIVING AT THIS ADDRESS:

AGES OF PEOPLE LIVING AT THIS ADDRESS:

2. REQUESTING KI FOR BUSINESS USE

NAME OF BUSINESS:

CONTACT NAME:

STREET ADDRESS:

CITY: ZIP:

COUNTY: PHONE: ( )

NUMBER OF EMPLOYEES/PATIENTS/RESIDENTS/CLIENTS AT THIS ADDRESS:

SIGNATURE: **DATE:**

PHARMACY USE ONLY		
# OF BOXES DISPENSED:	LOT #:	DATE DISPENSED:
PHARMACY NAME:		PHARMACY #:
CITY:		

Cut along the dashed line.

PREPARING FOR AN EMERGENCY EVENT

Emergency situations often catch people off guard. A good way to stay safe in an emergency is to know what to do ahead of time. Here are five steps you can take now to make sure you, your family and your co-workers are prepared to handle any emergency.

1. **After you read this Emergency Information Calendar, please share it with your family or co-workers.** Then display it where you can find it quickly when you need it.
2. **Keep the following items together in a safe, easy-to-get-to place:**

- ☐ Emergency cash
- ☐ Important papers
- ☐ First aid kit
- ☐ Extra keys
- ☐ Prescription medicines
- ☐ Checkbook
- ☐ Debit cards
- ☐ Portable radio
- ☐ Extra batteries
- ☐ Flashlight
- ☐ Pet supplies
- ☐ Credit cards
- ☐ Personal identification
- ☐ Potassium iodide (KI) if obtained in advance

3. **Make a list of personal instructions** that you, your family or co-workers will need to follow in an emergency. Keep a list of supplies you may need with the instructions. Include on your supply list the items in step 2 above and the evacuation supplies listed on page 16.
4. **Keep your vehicle in good running order.** Fill your gas tank whenever it gets below half. If you do not have a car or do not have someone to drive you in an emergency, fill out the Functional Needs card on pages 15 and 16. **Mail the card right away.** You do not need a stamp.
5. **If you know people who have functional needs, make sure they mail in a Functional Needs card.** This may include anyone with vision or hearing impairments, physical or mental disabilities, or someone who has no means of transportation. Please help them fill out the Functional Needs card and return it right away (see pages 15 and 16). We have members on our emergency team to help people with functional needs get to safety. Also, if you know someone who is blind or cannot read well, please read this Emergency Information Calendar to him or her. Then display it where family or friends can find it fast.

For additional emergency preparedness tips and suggestions, download Berrien County's free "Emergency Preparedness Guide." Go to www.bcsheriff.org and click on the link in the right column.

IMPORTANT PHONE NUMBERS AND EMERGENCY INFORMATION

List all the phone numbers and emergency information you or a member of your household or business may need in a personal emergency. Please include names and numbers for your:

Doctor:	**Sheriff:**
Hospital:	**School:**
Ambulance:	**Child caregiver:**
Dentist:	**Neighbor:**
Police:	**Pharmacist:**
Fire:	**Work:**

NAME OF PERSON OR SERVICE	TELEPHONE NUMBER
Berrien County Emergency Services	**911**
Cook Nuclear Public Inquiry Line	**866-362-3105**

Use the space below to also list any special health or medical information that an emergency team member may need to know about you, your family members or co-workers.

SPECIAL HEALTH NEEDS OR EMERGENCY INFORMATION:

APPENDIX E

DESCRIPTION OF FEDERAL RADIOLOGICAL ASSISTANCE

FEDERAL RADIOLOGICAL ASSISTANCE DESCRIPTION

I. Introduction

This document summarizes the DOE radiological assistance capabilities that can be provided to the Donald C. Cook Nuclear Plant (CNP).

Section II describes typical capabilities and expected mobilization and travel times for some of the Region 5 of the DOE's radiological assistance program.

Section III describes additional DOE capabilities that can be activated dependent on the assistance needed and how it is activated.

Based on its extensive capabilities, the Chicago Operations Office (CH) will augment the resources of CNP. CH typical capabilities and mobilization and travel times are based on discussions with the CH Regional Coordinating Office representative on the Region 5 Radiological Assistance Plan (Reference 1).

The mobilization time, which is defined as the time required to load equipment and initiate travel, is usually about one hour. Travel times in this attachment are specific to CNP and pertain to arrival at some appropriate location near the station. These are best estimate mobilization and travel based on a normal situation.

II. Region 5 Typical Capabilities and Mobilization and Travel Times

The DOE radiological assistance resources are drawn from the major DOE contractor laboratories and facilities. The personnel involved with these response have routine radiological-related duties on a daily basis at leading nuclear facilities thereby ensuring not only continuing experience and training, but also providing the conditions for keeping equipment operable and calibrated.

The Radiological Assistance Plan (RAP) provides assistance only. Although this is a federal government agency with highly developed expertise, this agency will not assume the responsibility of the Utility or State for protection of the health and welfare of Michigan citizens and plant personnel. CNP would request DOE-RAP assistance only if it was determined that the plant radiological resources needed augmentation. If requested, a RAP representative from the CH will report to the plant/EOF and the CNP ERO in accident assessment and radiological exposure control function. CH can provide support to CNP to accomplish the following goals:

- Alpha, beta, gamma radiation surveys
- Radiation monitoring of air, food, water, milk, and personnel
- Gamma spectrometry and radionuclide identification of air, food, water, milk, soil and vegetation
- Airborne radioiodine sampling and analysis of concentrations as low as 5E-07 µCi/cc
- Radiological control advice
- Laboratory analysis
- Mobile laboratories
- Communications

Mobile laboratories from RAP contain high and low-range alpha, beta, and gamma radiation survey equipment as well as alpha-gamma spectrometry analysis equipment. Estimated times of arrival for the CH resources within the region will vary depending on where the resources are drawn from. The number of personnel and equipment dispatched will also vary depending on the accident conditions and the requests presented by the Utility and/or State.

Table F-1 lists the DOE manpower located at Argonne National Laboratory (ANL) that could be provided in response to an incident. The table also provides an estimate for time of arrival to CNP area assuming a half hour to a 1.5 hour assemble or mobilization time. It should be noted that ANL team is a major team and therefore has a larger spectrum of monitoring equipment and number of personnel to respond to an accident. The available resources include a mobile laboratory equipped with a multichannel analyzer. The other teams listed in the table would complement this ANL resource capability.

All of the above resources can be activated with one phone call to CH. That phone number is given in Appendix H. If the call comes in to the off-hours duty officer, arrangements will be made for 3-way communication or re contact with a radiological expert. The phone call may be made from the Technical Support Center by the Radiological Assessment Coordinator (RAC). The RAC would be able to describe the suspected radiological consequences of the accident and the resources and assistance which might be required of DOE RAP.

III. Additional DOE RAP Capabilities

Specialized and unique resources exist for various other DOE activities. These resources can be activated and mobilized when needed. Included in this capability are resources available throughout all the other DOE radiological assistance regions as well as the resources of the Nuclear Emergency Search Team (NEST), Aerial Measuring System (AMS), and the Atmospheric Release Advisory Capability (ARAC).

Response Equipment

The DOE response network is organized to include the deployment of those personnel and equipment that are immediately required. If the situation is of major proportion, equipment in the following categories may be needed and available.

Airborne Systems

Helicopters and fixed-wing aircraft are equipped with gamma and neutron detection equipment. Gamma spectral data is recorded with position information derived from measurements of several exposure rates and principal isotope identification on the ground. This is plotted as isopleths on maps or aerial photographs for immediate use by the responsible authorities.

Aerial photography is performed with large format cameras. A twelve channel Daedalus Scanner is available for very sensitive thermal mapping, assessment applications or similar diagnostic.

Standard Health Physics Instruments

Packages of standard health physics instruments are available with current calibrations. Team scientists select the appropriate instruments for the predominant isotopes. A TLD reader and 250 TLD's are included. A variety of alarming dosimeters are carried by personnel working close to the incident site. Also, included are air samplers, portable counting equipment, battery powered analyzers, and source handling equipment. Anti-contamination clothing and breathing apparatus are also available.

Communications

An extensive communications system is deployed with the special team. A memorandum of understanding between DOE at AT&T assures rapid telephone response for the communications system connection. The switching hardware for a twelve line telephone system and radios for HF and VHF transmissions are installed in an airline cargo pod. In addition, the system contains a portable microwave system to provide video, data, audio, telephone, and control communication between a field command post and an incident site which may be up to 50 miles apart. Telephone with HF backup is the primary longer distance communication system. On-scene communication is assured with VHF radio, repeaters and pagers. Included in the communication array are all the basic support elements to establish a field command post.

This includes typewriters, telecopiers, copy machines, status boards, etc. All of the equipment and systems described above are packaged for deployment within two hours of a request. Existing airlift agreements between DOE and the Military Airlift Command assure rapid response. Most of the equipment can also be flown on commercial wide-body aircraft and trucked the final distance to a site if time so dictates.

Backup Support

There are many specialized systems located throughout DOE National Laboratories which could be made available for specialized needs or extreme emergency situations. The members of the special DOE field team and the DOE Headquarters Emergency Action Coordinating Team are prepared to locate special equipment, arrange transportation and logistically support the equipment on site if risk to the public and national priorities so require.

ARAC

The ARAC system located at LLL, is a system for computer based atmospheric modeling system which is real-time linked to the National Weather Service and the USAF Global Weather System. To insure accurate modeling for small areas around a fixed site meteorological data from the site is required. In addition, topographic data is added for the site environs. Many calculational models are available to the field team. Source terms may be discrete (explosion), continuous plume, or patterns if particulates are present. Software is available to make dose assessments and to accumulate these if the release is continuing over a period of time. ARAC can also predict plume patterns which may be extremely valuable for evacuation planning, locations where air monitoring should be emphasized, or planning releases which are under limited control. Finally, aerial teams can continuously compare and update ARAC data with actual in-plume measurements to assist in improving source term estimates. Communication with ARAC is via telecopier. Because of its relatively long deployment time of approximately 48 hours, ARAC could only be sued as a backup to offsite dose projection calculations done by the utility state and local agencies.

The request for the above resources is made to CH who will request their activation by calling the DOE Headquarters at the Emergency Operation Center in Germantown, Maryland.

If CH decides resources other than those within DOE RAP, are needed, CH would activate the appropriate Federal agencies within the Interagency Radiological Assistance Program by calling the appropriate agency, or agencies, directly.

Additional Monitoring Teams

- Ames, Iowa
- Miamisburg, Ohio
- Cincinnati, Ohio

Monitoring teams from the above locations are available for assistance. Deployment time is eight (8) hours or longer.

Resource Information Required by RAP

A.	**Command Centers**	
	State of Michigan	• State of Michigan EOC 7150 Harris Drive Dimondale, MI 48821 517-284-3862
		• Field Team Center Michigan Department of Transportation Coloma Garage Red Arrow Highway Benton Harbor, MI 269-840-2811
	Berrien County	• BC EOC 2100 East Empire Ave. Benton Harbor, MI 269-934-9023
	Donald C. Cook Nuclear Plant	• EOF
B.	**Nearest Airport**	
	Primary – Benton Harbor	Southwest Michigan Regional Airport
	Telephone:	269-927-3194
	Frequency:	Standard FAA frequency
	Services:	Fixed Base Operator; AVGAS and Jet A fuel available; Major engine and repair capability
	Tower Hours of Operation:	Tower closed; South Bend controls
	Alternate – South Bend	Michiana Regional Airport
	Telephone:	574-233-2185
	Frequency:	Standard FAA frequency
	Services:	Refueling: 2 fixed based operators; AVGAS and Jet A fuel available; Major engine and avionics repair capability
	Tower Hours of Operation:	7:00 am to midnight
C.	**Lodging**	
	Holiday Inn Express – Benton Harbor	269-927-4599
	Ramada Inn – Benton Harbor	269-927-1172
	Courtyard by Marriott – Benton Harbor	269-925-3000
D.	**Transportation**	
	Avis	269-926-2151
E.	**Police Escorts**	
	If required	Coordinate requirement with County and/or State Police

F.	**Police Vehicles for Communication Augmentation**	
	Coordinate specific requirements and request with Berrien County and/or State Police as available.	
	State Police Frequency	800 MHz
	County Sheriff	800 MHz

G.	**Travel Routes (From Chicago Operations Office)**
	Take I-294 South for 23.0 miles
	At I-80 Toll Exit 160B, continue (east) on I-294 [I-80] for 0.6 mile
	Continue (East) on I-80/I-94 for 52 miles
	At I-94 Exit 4, turn Right (East) onto US-12 for 18.2 miles toward Niles
	At Red Bud Trail turn Left (North) onto Red Bud Trail for about 2 miles to Elizabeth Street.
	At Buchanan, turn Left (West) onto Elizabeth Street for ¼ mile to 500 Circle Drive

H.	**Medical Facility Location**	
	Lakeland Regional Medical Center St. Joseph, MI	1234 Napier Avenue Saint Joseph, MI 269-983-8300
	Niles Community Hospital Niles, MI	3100 N. St. Joseph Niles, MI 269-683-5510

I.	**Maps of Sampling Points**	Provide as required.

REFERENCES

1. Radiological Assistant Plan – Region 5, August 25, 1978, U.S. Department of Energy, Chicago Operations Office, Argonne, Illinois.

DOE Radiological Assistance

Laboratories at ANL

Mobilization**

Laboratory	Location	Number of Radiologically trained persons for first response	And travel time to the CNP Area Hours
Argonne National Lab	Argonne, Illinois		
a. Response by private charter aircraft		5-6*	3
b. Mobile Laboratory		5-6**	4

* This number includes one or two DOE personnel to coordinate the Federal radiological monitoring effort with the Utility and/or State.

** This includes 30-90 minutes mobilization time based on motor vehicle/land transportation under ideal weather and traffic conditions.

APPENDIX F

BERRIEN COUNTY ROAD MAP

Berrien County Geographical Information System (GIS)

Follow web browser link:

https://www.berriencounty.org/406/Municipality-Maps

APPENDIX G

POPULATION DISTRIBUTION

2010 POPULATION DISTRIBUTION

Sector	Direction	0-10 Miles
A	N	0
B	NNE	12,425
C	NE	26,677
D	ENE	5,852
E	E	7,674
F	ESE	4,728
G	SE	1,485
H	SSE	2,418
J	S	3,340
K	SSW	2,993
L	SW	266
M	WSW	0
N	W	0
P	WNW	0
Q	NW	0
R	NNW	0
Total		**67,858**

APPENDIX H

RADIOLOGICAL RESPONSE SUPPORT SERVICES CAPABILITIES

ARGONNE LABORATORY (DOE)

The following is a description of resources available from the Department of Energy (DOE) per the regional implementation of DOE Radiological Assistance Program (RAP). This description of available resources is taken from the DOE Region V Radiological Assistance Plan, Section III, dated January 1984. This description of available resources is consistent with the DOE Letter of Agreement found in Appendix B to the Donald C. Cook Plan.

DOE Region V radiological assistance resources are drawn from the major DOE contractor laboratories and facilities located in the geographical region. The personnel involved with these responses have routine radiological related duties on a daily basis at leading nuclear facilities, thereby, ensuring not only continuing experience and training, but also providing the conditions for keeping state-of-the-art equipment operable and calibrated. It should be noted that Argonne National Laboratories is a major resource and, therefore, has a larger spectrum of monitoring equipment and personnel for emergency response than the other laboratories in the region.

DOE provides assistance only. Although this is a Federal agency with highly developed expertise, this agency will not assume the responsibility of the utility, the State, or local resource group for protection of the health and welfare of the local population and nuclear station personnel. A request for DOE assistance would be made only if it was concluded that utility and State radiological resources needed augmentation. If requested, a RAP representative from DOE Chicago Operations Office (CH) will report to the utility's emergency operations facility (EOF) and/or the State EOC and assist the emergency organization in the accident assessment and radiological exposure control functions. CH can provide support to accomplish the following goals:

- Alpha, beta, and gamma radiation surveys;
- Radiation monitoring of air, food, water, milk, and personnel;
- Gamma spectrometry and radionuclide identification of air, food, water, milk, soil, and vegetation samples;
- Airborne radioiodine sampling and analysis of concentrations as low as 1E-08 microcuries per cubic centimeter;
- Radiological control advice;
- Laboratory analysis;
- Mobile laboratories; and
- Communications

Mobile laboratories from CH contain high and low range alpha, beta, and gamma radiation survey equipment as well as sodium iodine scintillation spectrometry analysis equipment.

Estimated times of arrival for the CH resources within the region will vary depending on where the resources are drawn from. The number of personnel and equipment dispatched will also vary depending on the accident conditions and the nature of the request.

The request for any of the DOE resources listed in this section can be activated by a single incoming telephone call. Once the CH Duty Officer receives the request for assistance, he will make the necessary calls to activate the specific resources requested. That incoming number is (630) 252-4800 (24 hrs.).

APPENDIX I

NOTIFICATION OF AMERICAN NUCLEAR INSURERS

NUCLEAR EMERGENCIES

ANI/MAELU EMERGENCY ASSISTANCE (GENERAL)

The provisions of the Price-Anderson Law facilitate ANI and MAELU (the pools) providing prompt assistance to members of the public who may be adversely affected in the event a nuclear incident were to occur at an ANI/MAELU/NRC indemnified facility. This arrangement is intended to alleviate the immediate financial burden which may be incurred by members of the public due, for example, to evacuation and relocation activities initiated as a consequence of a nuclear occurrence.

In providing emergency assistance to members of the public, the pools will promptly dispatch their representatives to commence the distribution of emergency assistance funds.

ANI/MAELU EMERGENCY ASSISTANCE (CLAIMS HANDLING PROCEDURES)

The pools' emergency assistance arrangements contemplate the mobilization and dispatch of emergency claims teams to directly dispense emergency assistance funds to affected members of the public.

Following notification of a nuclear incident potentially involving bodily injury, evacuation of offsite personnel or damage to offsite property, the ANI staff will alert claims personnel of member companies. The information provided to us by the insured will be utilized to recommend appropriate emergency response actions. If the magnitude of the incident requires immediate financial assistance to members of the general population, pool representatives will be directed to establish an emergency assistance office at a convenient location. It is contemplated that establishment of such an office would be coordinated with the insured and local or state government authorities.

Applicants for emergency assistance will be required to fill out a simple form giving their name, address, and names of additional persons to be assisted. The application contains two basic provisions:

1. That the disbursement of emergency assistance funds does not constitute an admission of liability on the part of the insured; and

2. That the acceptance of emergency funds does not constitute a release on the part of the applicant.

The procedures outlined above are specifically directed towards immediate payment to members of the public for out-of pocket transportation, living and other reasonable expenses incurred shortly after a nuclear incident. Subsequent to such immediate relief being provided, the pools will service bodily injury and property damage claims which may be presented. Should the incident be declared an "extraordinary nuclear occurrence" by the NRC, virtually all legal defenses are waived by the insured and the pools which makes adjusting the claims much simpler.

CRITERIA FOR EMERGENCY NOTIFICATION

Under what circumstances should the pools be notified in order to activate the type of emergency assistance response described above?

Condition 5, "Notice of Occurrence, Claim or Suit", of the Nuclear Energy Liability Policy (facility form) delineates the notification commitment of the insured to the insurer; however, the provisions of Condition 5 do not specifically describe the type of immediate financial assistance discussed above. Almost by definition, emergency financial assistance must be provided in a timely fashion. Timely assistance of course, implies timely notification:

> "The pools should be notified in the event of a nuclear emergency requiring notification of State or Federal governmental agencies, or if the insured believes that offsite persons may be affected and financial assistance of a nature discussed (under Emergency Assistance above) may be required. In these instances we would expect notification as soon as possible after the initiation of the emergency."

Recent efforts by the Nuclear Regulatory Commission have led to the standardization of the system used by power reactor licensees to categorize emergencies as published in NUREG 0654 (Rev. 1), "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans..." Other types of nuclear facilities are using similar terms to describe emergency conditions which could develop at their sites. To be consistent with industry classification systems, the insured's emergency plans and/or emergency plan implementing procedures should be written to require notification of the pools in the event of an ALERT, SITE AREA EMERGENCY, or GENERAL EMERGENCY as soon as possible. Even if it appears to be remote that offsite persons will be affected, the pool should be notified in order that response plans can be initiated to the point of alerting teams of adjusters to stand by. Response activity can be discontinued if it proves less severe and does not require pool response.

Naturally, all nuclear occurrences of an emergency or non-emergency nature which may fall under the nuclear liability policy should be reported formally in writing as specified in Condition 5 of the facility form policy.

EMERGENCY NOTIFICATION AND FOLLOW-UP PROCEDURES

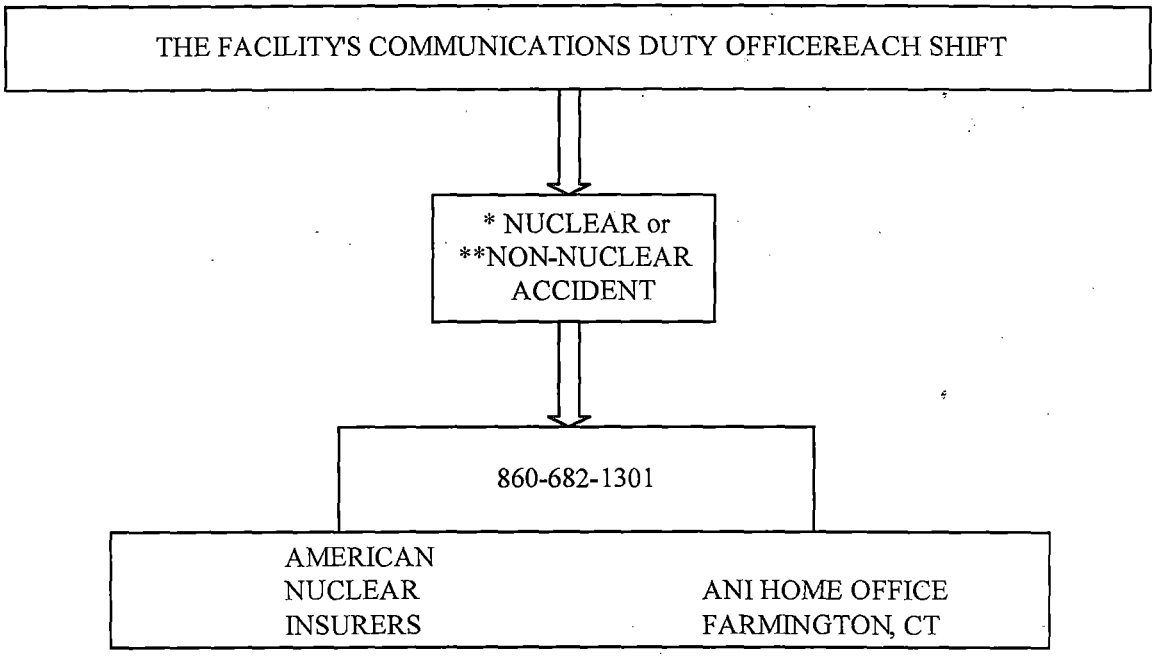
In the event of an emergency, it is important to establish clear lines of communication between your facility and ANI in order to exchange all required information during a developing emergency situation.

ANI maintains 24 hour coverage of our emergency notification number. This number is 860-682-1301. During normal office hours (8:00 am – 4:00 p.m.) this number will be answered by our receptionist who will transfer an incoming emergency call to an appropriate individual in the office. Outside of normal office hours this phone line is covered by an automated phone answering service. The answering service can be used to leave a message, including the affiliation and phone number of the caller. A designated ANI staff will in turn call back the facility to obtain appropriate information regarding the nuclear accident.

The TMI incident, as well as other incidents, clearly demonstrated the need for follow-up communication since the information transmitted in the initial notification may be incomplete. As discussed above, an important purpose of emergency notification to the pools is to allow them to gauge financial assistance to member of the public as they did during the TMI incident. Additionally, members companies with assets at risk require accurate and timely information from the ANI staff when nuclear incidents occur, whether or not such incidents ultimately lead to the actuation of emergency financial assistance by the pools. In order to carry out these mandated responsibilities, it is essential that ANI receive up-to-date information from reliable technical sources regarding radioactive releases from the site, plant status, and impending protective action for members of the public.

FIGURE 14

ACCIDENT NOTIFICATION PROCEDURES FOR ANI INSURERS



NOTIFICATION NOTES

--- 24 HOUR TELEPHONE COVERAGE PROVIDED FOR IMMEDIATE NOTIFICATION AND OTHER SERIOUS ACCIDENTS
--- IN ADDITION TO NOTIFICATION TO ANI, PROMPTLY NOTIFY YOUR COMPANY'S INSURANCE DEPARTMENT

* NUCLEAR

--- NOTIFY ANI AS SOON AS POSSIBLE AFTER DECLARATION OF A NUCLEAR ALERT, SITE AREA EMERGENCY, OR GENERAL EMERGENCY
--- REFER TO ANI INFORMATION BULLETIN 81 (81) FOR DESCRIPTION OF EMERGENCY CLAIMS ASSISTANCE AND ACCIDENT REPORTING INFORMATION REQUIREMENTS

** NON-NUCLEAR

--- REFER TO ANI INFORMATION BULLETIN 81 (81). NOTIFY ANI IMMEDIATELY IN THE EVENT OF A SERIOUS ACCIDENT INVOLVING FIRE, LIGHTNING, EXPLOSION, OPERATION OF FIXED FIRE PROTECTION EQUIPMENT, WINDSTORM, VEHICULAR DAMAGE TO PLANT, DROPPING OF EQUIPMENT, EMERGENCY OR UNPLANNED IMPAIRMENT TO FIRE PROTECTION EQUIPMENT, ETC., AND SERIOUS ACCIDENTS THAT INVOLVE ELECTRICAL AND MECHANICAL EQUIPMENT AND PRESSURE SYSTEMS COMPONENTS
--- REPORT ALL PROPERTY ACCIDENTS REGARDLESS OF DEDUCTIBLE. TRIVIAL ACCIDENTS NEED ONLY BE REPORTED TO YOUR COMPANY'S INSURANCE DEPARTMENT FOR PROMPT WRITTEN NOTIFICATION OF ANI VIA AGENT/BROKER

Page 1 of 1
Revision 30
Appendix I

APPENDIX J

EIGHT YEAR PLAN MATRIX

EIGHT YEAR PLAN FOR EMERGENCY PREPAREDNESS ACTIVITIES

Eight Year Items		2018	2019	2020	2021	2022	2023	2024	2025
1.	Exercise with full State and County participation involving the ingestion exposure pathway.		X						
2.	Exercise with State and County participation		X		X (HAB)		X		X
3.	Exercise with full State and County participation		X						
4.	Biennial Evaluated Exercise		X		X (HAB)		X		X
5.	Annual Exercise (Satisfied by Biennial Evaluated Exercise)	X		X		X		X	

Notes: The plan presented above ensures compliance with both the NRC and FEMA periodic exercise requirements

Annual Items

1.	Annual Exercise (Performance date dependent on outside agency schedule)	
	1a.	Train controllers/evaluators
	1b.	Conduct the exercise
2.	Annual Media Mailing	
3.	Review Emergency Action Levels with State and County authorities	
4.	Verify dates of letter of agreement in the Emergency Plan	
5.	Review documentation to ensure Emergency Response Organization personnel have received required training in the past year.	
6.	Test of communications between Cook Plant, State and County EOCs and Field Assessment Teams.	
7.	Review of Emergency Preparedness Program pursuant to 10 CFR 50.54(t) (PA Audit)	
8.	Letter to State and County making interface evaluation portion of 50.54(t) review available	
9.	Distribution of Emergency Preparedness Public Information Brochure	
10.	Fire drill with off-site support participation (conducted per Fire Protection Program Manual (FPPM))	
11.	Training for plant, hospital, and ambulance personnel on the handling and treatment of contaminated/injured personnel	
12.	Medical emergency drill involving a contaminated individual (Performance date dependent on outside agency schedule)	
13.	Radiological Monitoring Drill (both on-site and off-site). Drill to include collection and analysis of water, vegetation, soil and air samples. Coordinated with the annual exercise.	
14.	Test of the Public Notification System	

The scheduling for the performance of annual items is dependent on the outside agency schedule.

EIGHT YEAR PLAN FOR EMERGENCY PREPAREDNESS ACTIVITIES

Semi-Annual Items

1.	Semi-annual backshift augmentation drill*
2.	Semi-annual Radiological Monitoring and Health Physics Drills involving the response to and analysis of simulated airborne and liquid samples and direct radiation measurements in the environment.*

Quarterly Items**

1.	Verification of plant personnel Notification Telephone Numbers
2.	Verification of Initial Notification Telephone Numbers
3.	Fire Emergency Drill
4.	Operability checks, per Radiation Protection Procedures
5.	Inventories

Monthly Items

1.	State and County EC (within EPZ) communication tests
2.	NRC Headquarters and Regional office communications test (CR, TSC, EOF)

*The semi-annual items are conducted during any month January through June and any month during July through December.

** The quarterly items are conducted during any month within the quarter.

APPENDIX K

AGREEMENTS WITH OFFSITE AGENCIES FOR HAZARDOUS MATERIALS SPILLS

APPENDIX K

Agreements With Offsite Agencies For Hazardous Materials Spills

1.	Berrien County Emergency Management	1 page	January 5, 2018
2.	Lakeland Regional Health System	1 page	January 18, 2018

Berrien County Emergency Management

BERRIEN COUNTY EMERGENCY MANAGEMENT
DIVISION OF BERRIEN COUNTY SHERIFF'S OFFICE
2100 E. Empire Avenue, Benton Harbor, Michigan 49022
Telephone (269) 983-7141 • Fax: (269) 983-5726

JON HINKELMAN
CHAIRMAN
BOARD OF COMMISSIONERS

L. PAUL BAILEY
SHERIFF

CAPT. ROCKEY ADAMS
COORDINATOR

1/5/2018

Mr. Ronald J. Sieber
Cook Nuclear Plant
One Cook Place
Bridgman, MI 49106

Dear Mr. Sieber:

We wish to reaffirm the willingness of the Berrien County Sheriff's Department to respond upon request to any emergency which could occur at the D.C. Cook facility. Berrien County Emergency Management/Office of Homeland Security has the obligation to respond upon notification that an emergency exists. Berrien County will implement their Nuclear Accident Procedures (Appendix 1) of the Emergency Operations Plan and take appropriate actions as outlined therein.

In addition, the Sheriff's Department has basic patrol and investigative services and currently has a fourteen member Hazardous Materials Response Team who are trained to Technician Level. Four of the fourteen Haz-Mat team members are cross-trained as bomb technicians, and of whom have successfully completed the FBI Hazardous Device School at Redstone Arsenal in Redstone, Alabama. Our Tactical Unit consists of 20 personnel who conduct training monthly.

The Berrien County Sheriff's Department will be available to you upon request, in any area within the jurisdiction of this agency.

Sincerely,

L. Paul Bailey
Sheriff/Director, Emergency Management

Lakeland Regional Health System

Lakeland Health

January 18, 2018

Mr. Joel Gebbie
Sr. Vice President & Chief Nuclear Officer
Cook Nuclear Plant
One Cook Place
Bridgman, MI 49106

Dear Mr. Gebbie:

This letter is to confirm that Lakeland Health remains able to provide care for the injured radioactively-contaminated patients at the St. Joseph and Niles Emergency Department sites. This would include Donald C. Cook personnel exposed on-site and members of the public exposed off-site who may require services.

Mutually agreed upon annual training and drills will be conducted to assure staff competency in caring for this patient population, with evaluation by FEMA when required. A policy and procedure manual is available at each site and updated regularly to incorporate changes in patient management. An identified Radiation Emergency Area (REA) is available at each site that allows for stabilization, treatment, and management of the radioactive component of the emergency. I understand that the training for hospital personnel, equipment, and stocking of the disaster cart will continue to be provided by Donald C. Cook Nuclear Plant.

This agreement shall remain in effect from the date of signing until either party, upon ninety (90) days prior written notice to the other party, terminates the agreement.

Please contact Kathy Effa, Manager of Emergency Services, at 269.983.8670 for any assistance that you require.

Sincerely,

Loren B. Hamel, MD
President & CEO
Lakeland Health

LBH: sd

Legal Review Completed
MAP 1/18/18

1234 Napier Avenue, St. Joseph, MI 49085 • (269) 983-8300 • www.lakelandhealth.org

REVISION SUMMARY

Procedure No.: CEP Rev. No.: 039
Title: D.C. COOK NUCLEAR PLANT EMERGENCY PLAN

Alteration	Justification
The Cook Emergency Plan is wholly controlled under 10 CFR 50.54(q) and plant procedure RMA-2080-EPA-008, Emergency Plan Management, therefore a 50.59 review is not required. 10 CFR 50.54(q) review was performed and is referenced in the workflow for this revision. The conclusion was that the changes in this revision do continue to comply with the requirements of §50.47(b) and §50 Appendix E **and** the changes do not constitute a reduction in effectiveness. Therefore, this Cook Emergency Plan Implementing Procedure can be implemented without prior approval.	
Change 1: Front Matter -Page 1 of the CEP is the Table of Contents to match the standard format of Cook's procedures and plans. -This moved the revision summary to the end of the document. -The 10CFR50.54(q) is not part of the front matter. It is now only by reference on the coversheet.	These changes are EDITORIAL in nature and recommended by Cook Emergency Preparedness (EP) Supervisor to enhance readability by third parties. These changes have not impacted content. There is no requirement to include 50.54(q) within the CEP. Related 50.54(q) evaluations of this revision #17-50 and 18-02 are available upon request and retained by Nuclear Document Management. No margin marks used.
Change 2 [Page 1-7]: Table of Contents -Corrected formatting issues with the positions of page numbering throughout. -Replaced Figure 5 '*CNP ERO at an Alert Classification*' with '*TSC Organization'*. -Added 'Figure 6 '*OSC Organization*'. -Renamed Figure 7 from '*Organization of the Emergency Directors Staff at the EOF* to '*EOF Organization*'. -Due to adding Figure 6, shifted remaining Figure numbers one number higher.	All changes to the Table of Contents are EDITORIAL in nature. These editorial changes were either to fix formatting issues from the previous E-Plan revision or required based on succeeding changes in the body of the CEP. No margin marks used.
Change 3 [Page 12]: Definitions -Updated SEOC address in SEOC definition. -Changed title of SEC to SED in TSC definition.	No change to the content of the definitions was made. Therefore these changes are ADMINISTRATIVE due to an updated State address and title for the SED per Change 12.
Change 4 [Page 14]: A.1.b, Concept of Ops -Changed title of SEC to SED. -Removed *'(via EOF)'* at the end of the fourth paragraph after '*NRC*'. -Removed '*on the Board Writers and Managers bridges*' in favor of simply stating '*bridge lines*'.	ADMINISTRATIVE changes to align SED title with Change 12 and ensure clarification that the TSC performs NRC notification per Change 12. Third sub-change is ADMINISTRATIVE in that names of specific phone bridge lines are an unnecessary level of specificity and do not change intent of the CEP.

Alteration	Justification
Change 5 [Page 15]: A.1.c, Organization Interrelationships -Updated numbering of '*Figures 1 through 10*' to '*Figures 1 through 8*'.	EDITORIAL change necessary to figure numbering due to adding Figure 6 per Change 27.
Change 6 [Page 18-19]: B.1.a, Vice Presidents -Updated title of 'Vice President-Nuclear Generation Group' to 'CNO'; Updated P.2 on pg 138 as well. -Updated title of 'Senior Vice President' to Site Vice President; Updated P.2 on pg 138 as well. -DELETED 'The Vice President–Site Support Services is responsible for personnel training and qualification'. This responsibility already aligns with the Training Manager. B.1.d, Director Nuclear Site Services was DELETED -Then ADDED these responsibilities to B.1.a for the SVP. B.1.d&e, EP and Security Manager - Changed accountability of these positions to the SVP. B.1.e, Nuclear Regulatory Compliance and Licensing Director - Added new title between EP and Security Manager. Moved Access and FFD responsibilities from Security Manager to this position. **Page 42 and 43:** Updated Figure 2 and 3 due to these organizational changes.	ADMINISTRATIVE change due to reorganization where the Director of Nuclear Site Services position was removed from the Cook organization. All originally reporting to this Director now directly report to the Site Vice President. ADMINISTRATIVE changes to Figure 2 and 3 for non-emergency chain of command to reflect changes in organizational structure. This is a routine update to keep these figures reflective of the current plant (non-emergency) organization.
Change 7 [Page 20]: B.1.k, On-Shift Operations Personnel - Changed title of SEC to SED.	ADMINISTRATIVE change due to a related acronym/title change in Change 12.
Change 8 [Page 21]: B.2, On-Shift Emergency Coordination - Changed title of SEC to SED.	ADMINISTRATIVE change due to a related acronym/title change in Change 12.
Change 9 [Page 21]: B.3, Emergency Coordination Line of Succession - Changed title of SEC to SED in four places.	ADMINISTRATIVE change due to a related acronym/title change in Change 12.
Change 10 [Page 21]: B.4, Non-delegable Emergency Coordinator Duties - Changed title of SEC to SED.	ADMINISTRATIVE change due to a related acronym/title change in Change 12.

Alteration	Justification
Change 11 [Page 22]: B.5, Emergency Response Organization -Updated numbering of '*Figures 4 through 7*' to '*Figures 4 through 8*' in two places. -Added third paragraph stating '*All positions are assigned common administrative responsibilities such as event response and maintaining adequate documentation of the event tasks. Individual tasks for each ERO position are as follows:*'	EDITORIAL change necessary to figure numbering due to adding Figure 6 per Change 27. Second sub-change is ADMINISTRATIVE in that it provides clarification: Administrative/office tasking [not required to be included by regulatory guidance] was not included in the descriptions of positions/tasks in the sections that follow.
Change 12 [Page 22-26]: B.5.a.1 through 13, TSC Organization Positions -Revised all position titles (aligned with Figure 5) and provided a new complete list of responsibilities.	**MAJOR** change to the TSC organization. These changes were the result of an overhaul to the ERO designed to improve overall efficiency and effectiveness. These changes were approved by PORC via 50.54(q) #17-50 on 1/12/2018.
Change 13 [Page 26]: B.5.b, OSC -Updated numbering of '*Figure 5*' to '*Figure 6*'	EDITORIAL change necessary to figure numbering due to adding Figure 6 per Change 27.
Change 14 [Page 26-28]: B.5.b.1 through 7, OSC Organization Positions -Revised all position titles (aligned with Figure 6) and provided a new complete list of responsibilities.	**MAJOR** change to the OSC organization. These changes were the result of an overhaul to the ERO designed to improve overall efficiency and effectiveness. These changes were approved by PORC via 50.54(q) #17-50 on 1/12/2018.
Change 15 [Page 28]: B.5.c, EOF -Updated numbering of '*Figure 5 and Figure 6*' to '*Figure 7*'.	EDITORIAL change necessary to figure numbering due to adding Figure 6 per Change 27.
Change 16 [Page 28-32]: B.5.c.1 through 19, EOF Organization Positions -Revised all position titles (aligned with Figure 7) and provided a new complete list of responsibilities.	**MAJOR** change to the EOF organization. These changes were the result of an overhaul to the ERO designed to improve overall efficiency and effectiveness. These changes were approved by PORC via 50.54(q) #17-50 on 1/12/2018.
Change 17 [Page 32]: B.5.d, ENC/JIC -Updated numbering of '*Figure 7*' to '*Figure 8*'	EDITORIAL change necessary to figure numbering due to adding Figure 6 per Change 27.
Change 18 [Page 32-34]: B.5.d.1 through 11 -Revised all position titles (aligned with Figure 8) and provided a new complete list of responsibilities.	**MAJOR** change to the ENC/JIC organization. These changes were the result of an overhaul to the ERO designed to improve overall efficiency and effectiveness. These changes were approved by PORC via 50.54(q) #17-50 on 1/12/2018.
Change 19 [Page 34]: B.5.e, Liaisons -DELETED this section and placed Liaison in with section B.5.a.10 (TSC ICP Liaison) and sections B.5.c.9 and 10 (EOF Offsite Liaison and Liaison Coordinator).	ADMINISTRATIVE change by relocating Liaisons to the respective ERO facility they ultimately report to during an emergency. No margin mark used.
Change 20 [Page 34]: B.6, Overall Organization and Communication -Updated Figure numbering for Figures 9 and 10.	EDITORIAL change necessary to figure numbering due to adding Figure 6 per Change 27.

Alteration	Justification
Change 21 [Page 34]: B.7.a, Logistics Support -Updated title only from 'Scheduling and Planning Manager' to 'Administrative Coordinator'.	ADMINISTRATIVE change to title resulting from Change 16.
Change 22 [Page 35]: B.7.b, Reentry/Recover Tech Support -Updated reporting chain for TSC Plant Evaluation Team from '*EOF EDS Manager*' to '*TSC Manager*'.	ADMINISTRATIVE change to title resulting from Change 12.
Change 23 [Page 35]: B.7.d, Releases to Media -Updated position coordinating this task from '*Media Center Manager*' to '*ENC Manager*'.	ADMINISTRATIVE change to title resulting from Change 18.
Change 24 [Page 36]: B.9.a.4, Berrien County Sheriffs Department -Changed title of SEC to SED.	ADMINISTRATIVE change to title resulting from Change 12.
Change 25 [Page 37]: B.9.b, State of Michigan -Updated address of State Emergency Operations Facility (EOC).	ADMINISTRATIVE change due to a change in State EOC address.
Change 26 [Page 40]: B.9.b.2.i, Department of Transportation -Changed title of SEC to SED. -Updated address of State Emergency Operations Facility.	ADMINISTRATIVE change to title resulting from Change 12. ADMINISTRATIVE change due to a change in State EOC address.
Change 27 [Page 45-48]: Figures 5 through 9, Organization Charts for TSC, OSC, EOF and ENC/JIC -Redesigned the four organization charts for Cook's four Emergency Response Facilities.	ADMINISTRATIVE change to align the positions design from Changes 12, 14, 16 and 18 with a complete organization chart representing each facility. This resulted in the addition of a Figure 6. No margin marks used.
Change 28 [Page 49-50]: Table 1, CNP Staffing for Nuclear Power Plant Emergencies -Completely updated with new titles, as needed, based on responsibilities found in Section B.5, Emergency Response Organization -Added '*Full Staffing*' component. -Added footnotes *b (ICP Liaison info), c ('per Security Plan')* and *d (ENC/JIC clarifications)*.	**MAJOR** change to Table 1 (NUREG-0654 Table B-1). -The on-shift staffing was not impacted. -Augmenting ERO was changed to align the positions design from Changes 12, 14, 16 and 18. -The full staffing component was added to give a complete picture to the reader for how minimum staffing is supplemented by full staffing to support the various required functions. -Footnotes were added as clarifications from Changes 12, 14, 16 and 18. This Table 1 was provided as part of 50.54(q) #17-50 and approved by PORC on 1/12/2018. No margin marks used.

Alteration	Justification
Change 29 [Page 52]: C.1.a, Requesting Federal Assistance -Changed title of SEC to SED.	ADMINISTRATIVE change to title resulting from Change 12.
Change 30 [Page 54]: C.2.b, Liaisons from CNP -Updated section numbering only.	EDITORIAL change to section numbering due to other changes. No change to details in this section were made.
Change 31 [Page 57]: D, Emergency Classification System -Changed title of SEC to SED.	ADMINISTRATIVE change to title resulting from Change 12.
Change 32 [Page 59]: Table 2, Fission Product Barrier Matrix -Changed title of SEC to SED in 1.4, 2.6 and 3.8 EAL's.	ADMINISTRATIVE change to title resulting from Change 12. No margin marks used.
Change 33 [Page 61]: Table 3, Initiating Conditions Mode 1-4 -Changed title of SEC to SED in H-1 EAL.	ADMINISTRATIVE change to title resulting from Change 12. No margin marks used.
Change 34 [Page 66]: Table 4, Initiating Conditions Mode 5-6 and Defueled -Changed title of SEC to SED in H-1 EAL.	ADMINISTRATIVE change to title resulting from Change 12. No margin marks used.
Change 35 [Page 71]: E.1 Notification of Offsite Response Organizations -Changed title of SEC to SED in three paragraphs.	ADMINISTRATIVE change to title resulting from Change 12.
Change 36 [Page 73]: E.2.a and b, Onsite and Offsite Staff -Changed title of SEC to SED.	ADMINISTRATIVE change to title resulting from Change 12.
Change 37 [Page 77-78]: Figures 10 and 11 -Updated figure numbering only.	EDITORIAL change necessary to figure numbering due to adding Figure 6 per Change 27. No margin marks used.
Change 38 [Page 90]: H.1.c, TSC Staffing -Changed title of SEC to SED.	ADMINISTRATIVE change to title resulting from Change 12.
Change 39 [Page 92]: H.2.a, EOF Functions -Changed titles from '*EOF EDS Manager to communicate with Engineering Personnel*' to '*TSC Manager will work with Logistics Coordinator to communicate with Engineering Personnel*'.	ADMINISTRATIVE changes to titles resulting from Changes 12 and 16. ADMINISTRATIVE change to who completes this task per Change 12 and 16.
Change 40 [Page 93-94]: H.2.d, EOF Design -Changed title from '*Communications Director*' to '*EOF Manager*' for who is in charge of communicators and displays. -Updated EOF occupancy charting based on new ERO design.	ADMINISTRATIVE change to title resulting from Change 16. ADMINISTRATIVE change to occupancy chart resulting from Change 16.
Change 41 [Page 94]: H.3.a, OSC Functions -Removed specific phone bridge names in favor of generically referring to them as 'bridge lines'.	ADMINISTRATIVE in that names of specific phone bridge lines are an unnecessary level of specificity and do not change intent of the CEP.
Change 42 [Page 95]: H.3.b, OSC Location -Changed title of SEC to SED.	ADMINISTRATIVE change to title resulting from Change 12.

Alteration	Justification
Change 43 [Page 96]: H.4, AEP ERO Staffing and Activation -Changed title of SEC to SED.	ADMINISTRATIVE change to title resulting from Change 12.
Change 44 [Page 103]: Figure 11, Locations of Emergency Response Centers -Updated figure numbering. -Updated map due to change in location of North Access Building.	EDITORIAL change necessary to figure numbering due to adding Figure 6 per Change 27. ADMINSTRATIVE change to map to update a newly implemented Security North Access Building at the perimeter of the Protected Area. No margin marks used.
Change 45 [Page 104]: Figure 12, CNP Emergency Response Center Locations -Updated figure numbering.	EDITORIAL change necessary to figure numbering due to adding Figure 6 per Change 27. No margin marks used.
Change 46 [Page 111-114]: J, Protective Response -Changed title of SEC to SED in eleven locations.	ADMINISTRATIVE change to title resulting from Change 12.
Change 47 [Page 116]: Figure 13, CNP Primary Evacuation Routes -Updated figure numbering only.	EDITORIAL change necessary to figure numbering due to adding Figure 6 per Change 27. No margin marks used.
Change 48 [Page 119]: K.2, Emergency Exposure Authorization and Control -Changed title of SEC to SED in two locations.	ADMINISTRATIVE change to title resulting from Change 12.
Change 49 [Page 127]: M.1, Reentry -Changed title of SEC to SED.	ADMINISTRATIVE change to title resulting from Change 12.
Change 50 [Page 141 & 146]: Appendix 'A' NUREG-0654 to E-Plan Cross Reference -Removed RMT-2080-EOF-002 and replaced with RMT-2080-EPI-109 for K.6.c, M.2 and M.3. -Updated Lakeland Hospital procedure title.	ADMINISTRATIVE: EOF-002 is being deactivated in favor of using EPI-109 for the same function. Hospital procedure title updated necessary per AR 2018-2018-4.
Change 51 [Page 149-165]: Appendix 'B' Agreements with Offsite Support Agencies -Updated all letters of agreement. No changes to agreement content were made.	Required ADMINISTRATIVE routine updates [per Cook procedure PMP-2080-EPP-200 Step 3.2 and GT 2017-8321-1].
Change 52 [Page 169-180]: Appendix 'D' Emergency Preparedness Brochure -Removed reference to the physical Annual Calendar in favor of adding all of the applicable portions from the calendar that meet this Planning Standard requirement.	ADMINISTRATIVE change recommended by EP Supervisor. This change is to include only the credited brochure information in the CEP vice an entire copy of the Annual Cook Calendar with every controlled copy of the CEP. No margin marks used.

Alteration	Justification
Change 53 [Page 186]: Appendix 'E' Description of Federal Assistance -Updated State EOC Address.	ADMINISTRATIVE change due to an update to a State address.
Change 54 [Page 190]: Appendix 'F' Berrien County Road Map -Removed reference to a physical map within the E-Plan in favor of directing reader to the Berrien County electronic GIS.	ADMINISTRATIVE change in removing a physical map from the CEP and replacing with the Berrien County GIS webpage. Recommended per EP Supervisor to ensure the reader has most accurate Berrien County mapping information. This was also recommended by Berrien County Emergency Management. Regulation does not require a physical map to be located in Licensee Emergency Plans.
Change 55 [Page 200]: Appendix 'J' Eight Year Plan Matrix -Updated 'Eight Year Items' by one year from '2017 to 2024' to '2018 to 2025'.	ADMINISTRATIVE change necessary to ensure the most up-to-date 8-year range is available for planning purposes. No margin marks used.
Change 56 [Page 203-205]: Appendix 'K' Agreements with Offsite Agencies for Hazardous Materials Spills -Updated all letters of agreement. No changes to agreement content were made.	Required ADMINISTRATIVE routine updates [per Cook procedure PMP-2080-EPP-200 Step 3.2 and GT 2017-8321-1].
Change 57 [Page 112]: J.2, Evacuation Routes -Added the fourth evacuation route found on Figure 13 [Page 116]. -Aligned verbiage of all four evacuation routes to that in the NRC Safety Evaluated Cook Emergency Plan (Revision 3).	ADMINISTRATIVE in that this change mostly consisted of aligning verbiage to the license basis emergency plan. -In practice, Cook has always had four possible evacuation routes. -No change to any of the four evacuation routes has been made. -No change to Figure 13 was necessary.