Enclosure 1

(29 Pages)

Kewaunee Power Station (KPS) Independent Spent Fuel Storage Installation (ISFSI) Only Emergency Plan (IOEP), Revision 0KS

KEWAUNEESOLUTIONS

ISFSI-ONLY EMERGENCY PLAN (IOEP)

Plan No.: KW-PLAN-000-IOEP

Revision No. OKS

The subject procedure has been reviewed by the manager responsible for its content. This review has found that this procedure meets the criteria, found in AD-KW-101, to be implemented as written with no change to the body of the document or its attachments. References to company names, position titles, and administrative program identifiers have not been changed. Cross references to current company names, position titles, and administrative program identifiers are found in AD-KW-102, Procedure Use and Adherence. The revision number is the only change that has been made to this document.

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Effective Date: June 28, 2022

(assigned by Document Control or Responsible Manager)



<u>Title:</u>	ISFSI-Only Emergency Plan (IOEP)			
<u>R</u>	evision Number 0KS	Effective Date 6/29/2017		
Revision S	Summary:			
ISFSI-Only that may ar	ISFSI-Only Emergency Plan (IOEP) describes the station's plan for responding to emergencies that may arise at the Kewaunee Power Station ISFSI.			

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1.0 INTRODUCTION

The Kewaunee Power Station's (KPS) Independent Spent Fuel Storage Installation (ISFSI) Only Emergency Plan (IOEP) describes the plan for responding to emergencies that may arise at the station's ISFSI. In this condition, no reactor operations can take place and all irradiated fuel is removed from the Spent Fuel Pool (SFP). This IOEP adequately addresses the risks associated with KPS's current conditions.

As provided in the ISFSI storage system UFSARs, the analyses of the potential radiological impacts of postulated off-normal, natural phenomenon, and accident events in an ISFSI-Only condition indicates that any releases beyond the Site Boundary would result in a dose to the public below the radiation limits established in 10 CFR 72.106(b). Exposure levels, which warrant pre-planned response measures, are generally limited to the ISFSI pad and nearby vicinity, and for this reason; radiological emergency planning is focused on this area.

1.1 PURPOSE

The purpose of the IOEP is to assure an adequate level of preparedness to cope with the spectrum of emergencies that could be postulated to occur. This plan integrates the necessary elements to provide effective emergency response considering cooperation and coordination of organizations expected to respond to emergencies.

1.2 SCOPE

The IOEP is developed to respond to potential radiological emergencies at the KPS ISFSI. Because there are no postulated off-normal, natural phenomenon, or accident events that would result in offsite dose consequences large enough to require offsite emergency planning, the overall scope of this plan delineates the actions necessary to safeguard onsite personnel. The concepts presented in this plan address the applicable regulations stipulated in 10 CFR 50.47, "Emergency Plans," and 10 CFR 50 Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities". The plan is consistent with the applicable guidelines established in NUREG-0654/FEMA-REP-1, Revision 1, "Criteria for Preparedness in Support of Nuclear Power Plants."

Exemptions from selected portions of 10 CFR 50.47 and 10 CFR 50 Appendix E for Kewaunee Power Station were granted by the Nuclear Regulatory Commission (NRC) on October 27, 2014 (ADAMS Accession Number: ML14261A223).

The IOEP, revision 0, was approved per NRC Safety Evaluation in License Amendment 218 dated March 2, 2017.

2.0 **DISCUSSION**

2.1 OVERVIEW OF ISFSI-ONLY EMERGENCY PLAN (IOEP)

In the event of an emergency at the KPS ISFSI, actions are required to identify and assess the nature of the emergency and to respond in a manner that protects the health and safety of the public and onsite personnel.

This plan is activated by the ISFSI Shift Supervisor (ISS) upon identification of an emergency situation based upon the Emergency Action Level (EAL) criteria. The ISS assumes the position of the Emergency Director (ED). The emergency measures described in the subsequent sections and implementing procedures are implemented in accordance with the classification and nature of the emergency at the direction of the ED.

This emergency plan describes the organization and responsibilities for implementing emergency measures. It describes interfaces with Offsite Agencies (Federal, State and local) which may be notified in the event of an emergency, and may provide assistance. Fire, ambulance, and law enforcement services are provided by local public entities. Medical services are provided by Aurora Medical Center in Two Rivers, Wisconsin.

Because there are no postulated events that would result in offsite dose consequences large enough to require offsite emergency planning, emergencies are divided into two classifications: Unusual Event (UE) and Alert.

KPS is responsible for planning and implementing emergency measures within the Site Boundary. This emergency plan is provided to meet this responsibility. To carry out specific emergency measures discussed in this plan, detailed implementing procedures are established and maintained.

In addition to the description of activities and steps that can be implemented during a potential emergency, this emergency plan also provides a general description of the steps taken to recover from an emergency situation. It also describes the training, drills/exercises, planning, and coordination appropriate to maintain an adequate level of emergency preparedness.

2.2 FACILITY DESCRIPTION

KPS has permanently ceased power operations and all irradiated fuel has been removed from the SFP and placed into dry storage within an ISFSI. On May 14, 2013, the station certified permanent removal of fuel from the reactor vessel in accordance with 10 CFR 50.82(a)(1)(i) and (ii). The 10 CFR 50 license for KPS no longer authorizes operation of the reactor, and emplacement or retention of fuel into the reactor vessel, as specified in 10 CFR 50.82(a)(2).

The KPS ISFSI is located in the town of Carlton, Kewaunee County, along the west shore of Lake Michigan in east central Wisconsin. The topography of the region is gently rolling to flat, with elevations varying from 10 to 100 feet above the level of Lake Michigan. The land surrounding the site slopes gradually east towards Lake Michigan from the higher elevations in the west. At the northern and southern perimeters of the site, bluffs form the boundary between the plant site and Lake Michigan.

3.0 DEFINITIONS and ACRONYMS

This section provides definitions that are used in this document. Terms capitalized in the text of the definitions indicate that they are defined elsewhere in this section.

<u>Alert</u> - Events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the ISFSI or a security event that involves probable life threatening risk to station personnel or damage to ISFSI equipment because of HOSTILE ACTION. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.

<u>Annual</u> - Frequency of occurrence is met if performed within 1.25 times a 12 month interval as measured from the previous performance. This definition does not apply to the term "annual" when it relates to the conduct of the Emergency Preparedness Exercise and off-year Drill. The Exercise and off-year Drill are performed within the calendar year.

<u>Accountability</u> – Discretionary protective action taken for all persons onsite (within the ISFSI PROTECTED AREA) that involves the gathering of personnel into pre-designated areas and subsequent verification that the location of all personnel is known.

<u>Assessment Actions</u> - Those actions taken during or after an incident to obtain and process information necessary to make decisions to implement specific emergency measures.

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

<u>Design Basis Accident (DBA)</u> - Credible accident events as analyzed in the ISFSI Updated Final Safety Analysis Report (UFSAR).

<u>Emergency Action Level (EAL)</u> - A pre-determined, site-specific, observable threshold for an INITIATING CONDITION (IC) that when met or exceeded places the station in a given emergency classification level.

<u>Emergency Plan Implementing Procedures (EPIP)</u> - Specific procedures describing actions needed to implement the IOEP.

<u>Emergency Plan Maintenance Procedures</u> - Specific procedures describing the methods established to maintain and monitor the IOEP.

<u>Emergency Response Facility (ERF)</u> - The facility containing the communication equipment necessary for emergency conditions. It is operated under the direction of the ED and serves as the primary location for Classification of the incident, Notification of incident to offsite agencies, ASSESSMENT ACTIONS, and CORRECTIVE ACTION direction.

<u>Emergency Response Organization (ERO)</u> - Individuals who have been assigned an emergency response position within the IOEP.

<u>Environmental Protection Agency (EPA)</u> - An agency of the U.S. federal government which was created for the purpose of protecting human health and the environment by writing and enforcing regulations based on laws passed by Congress.

<u>Hostile Action</u> - An act toward the KPS ISFSI or its personnel that includes 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. 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 KPS ISFSI. Non-terrorism-based EALs should be used to address such activities (i.e., this may include violent acts between individuals within the SITE BOUNDARY).

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

<u>Independent Spent Fuel Storage Installation (ISFSI)</u> – A complex designed and constructed for the interim storage of spent nuclear fuel, solid reactor-related Greater Than Class C (GTCC) waste, and other radioactive materials associated with spent fuel and reactor-related GTCC waste storage (10 CFR 72.3).</u>

<u>Initiating Condition (IC)</u> – An event or condition that aligns with the definition of one of the two emergency classification levels by virtue of the potential or actual effects or consequences.

<u>Monthly</u> – Frequency of occurrence is met if performed within 1.25 times a 31 day interval as measured from the previous performance.

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

<u>Protected Area (PA)</u> – The area encompassed by physical barriers and to which access is controlled.

<u>Protective Actions</u> - Those measures taken in anticipation of or after an inadvertent release of radioactive material for the purpose of preventing or minimizing radiological exposures to onsite personnel.

<u>Quarterly</u> – Frequency of occurrence is met if performed within 1.25 times a 92 day interval as measured from the previous performance.

<u>Radioactive Release</u> - Any radioactive material beyond pre-emergency levels and not attributable to normal operations, either detected or suspected of migrating beyond the PA, while in a classified emergency.

<u>Radiological Control Area (RCA)</u> - An area in which radioactive material is present and the potential exists for the spread of radioactive contamination. The area is posted for the purpose of protecting individuals against undue risks from exposure to radiation and radioactive materials.

<u>Security Condition</u> - Any Security Event as listed in the approved security contingency plan that constitutes a threat/compromise to site security, threat/risk to site personnel, or a potential degradation to the level of safety. A Security Condition does not involve a Hostile Action.

<u>Site Boundary</u> – The perimeter of the land owned by Dominion Energy Kewaunee Inc. The ISFSI Controlled Area, as defined in 10 CFR 72.3, is bounded within the Site Boundary.

<u>Unusual Event (UE)</u> - Events are in progress or have occurred which indicate a potential degradation of the level of safety of the ISFSI 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 occurs.

4.0 **REFERENCES**

- 10 CFR 50.47, "Emergency Plans"
- 10 CFR 50, Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities"
- NUREG-0654/FEMA-REP-1, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants" (November 1980)
- NUREG-1140, Final Report published January 1988, "A Regulatory Analysis on Emergency Preparedness for Fuel Cycle and Other Radioactive Material Licensees"
- Facility Technical Specifications
- Emergency Preparedness Procedures
- NEI 99-01, Revision 6, "Development of Emergency Action Levels for Non-Passive Reactors"
- EPA's "Protective Action Guide and Planning Guidance for Radiological Incidents," Draft for Interim Use and Public Comment dated March 2013
- Kewaunee Power Station Exemption from Certain Emergency Planning Requirements and Related Safety Evaluation dated October 27, 2014 (ADAMS Accession Number: ML14261A223)
- NUREG-0586, Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities
- NRC IN 90-08, KR-85 Hazards from Decayed Fuel
- 10 CFR 72.13, Applicability
- 10 CFR 72.32, Emergency plans
- 10 CFR 72.44, License conditions
- 10 CFR 72.106, Controlled area of an ISFSI or MRS
- ISFSI Storage System Certificates of Compliance, Updated Final Safety Analysis Reports and Technical Specifications
- 10 CFR 72.212 Evaluation Reports for KPS ISFSI Storage Systems

5.0 ASSIGNMENT OF RESPONSIBILITY

Primary responsibilities for emergency response have been assigned, the emergency responsibilities of the various supporting organizations have been specifically established, and each principal response organization has staff to respond and to augment its initial response on a continuous basis.

5.1 Emergency Response and Responsibilities

The ISFSI Shift Supervisor (ISS) is at KPS 24 hours a day and is the senior management position during off-hours. This position is responsible for monitoring conditions and managing the activities at the KPS ISFSI.

When an off-normal, natural phenomenon, or accident event becomes apparent, the ISS shall assess the condition and assume the position of Emergency Director (ED). The functions associated within the ED's scope of responsibilities are specified on Table 6-1.

The Emergency Director does not have concurrent duties which conflict with the above responsibilities.

The on-shift staff positions are available 24 hours per day. The on-shift staff can perform all required IOEP actions. At the direction of the ED, additional personnel will be activated and augment the on-shift staff.

A Resource Manager assists in assessing the event and obtaining needed resources.

5.2 Offsite Response Organizations (ORO)

The ED coordinates the OROs' response (fire, ambulance and local law enforcement agency (LLEA)), access and radiological controls with the onsite activities. The OROs listed below are capable of 24 hour emergency response.

State and local government agency response will be in accordance with each agency's plans and procedures, and commensurate with the hazard posed by the emergency. Letters of Agreement are in place for those local agencies that will respond.

City of Kewaunee Fire Department

Arrangements have been made with the City of Kewaunee Fire Department to provide the primary response as requested. The City of Kewaunee Fire Department is located about 10 miles from the KPS ISFSI, which allows for a timely response from the initial notification.

City of Kewaunee Ambulance

Arrangements have been made with the City of Kewaunee Ambulance for ambulance services. The agreement includes a commitment for medical transportation of contaminated injured workers.

Aurora Medical Center

Arrangements have been made for medical services with Aurora Medical Center, located approximately 14 miles from the KPS ISFSI. The agreement includes a commitment by the hospital to accept and treat personnel with routine industrial injuries as well as injuries complicated by radioactive contamination or radiation exposure. The Aurora Medical Center maintains the capability and facilities to provide radioactive decontamination, first aid, and emergency stabilization medical treatment to injured personnel. These services and facilities are available 24 hours a day.

Kewaunee County Sheriff's Department

An agreement is maintained with the Kewaunee County Sheriff's Department to provide emergency assistance per the Security Plan.

6.0 EMERGENCY RESPONSE ORGANIZATION (ERO)

ERO responsibilities for emergency response are listed in Table 6-1.

6.1 ON-SHIFT POSITIONS

KPS has personnel on-shift at all times that provide the initial response to an offnormal, natural phenomenon, or accident event. Members of the on-shift organization are trained on their responsibilities and duties in the event of a classified emergency and are capable of performing all necessary response actions until the augmenting staff arrives or the event is terminated. The on-shift staffing assignments include the roles and responsibilities for their emergency response functions.

ISFSI Shift Supervisor (ISS)/EMERGENCY DIRECTOR (ED)

The ISS is at KPS 24 hours a day and is the senior management position during off-hours. This position is responsible for monitoring conditions and approving all onsite activities.

When an off-normal, natural phenomenon, or accident event becomes apparent, the ISS shall assess the condition and assume the position of Emergency Director (ED).

The ED assumes overall command and control of the event response. The ED cannot delegate the following responsibilities:

- Classification of event.
- Authorization of radiation exposures in excess of 10 CFR 20 limits.

Other responsibilities assumed by the ED associated with the functions listed in Table 6-1 include:

- Notification of the emergency classification to the NRC, State of Wisconsin, and Kewaunee County
- Management of available station resources
- Initiation of mitigative actions
- Initiation of corrective actions
- Initiation of onsite protective actions
- Decision to call for offsite police, fire or ambulance assistance
- Augmentation of the emergency staff, as deemed necessary
- Coordination of Security activities
- Termination of the emergency condition when appropriate
- Performance of initial radiological assessment
- Maintaining a record of event activities

SECURITY

Security is administered by the ISFSI Physical Security Plan. Security will perform accountability at the direction of the ED.

6.2 AUGMENTED ORGANIZATION

RESOURCE MANAGER

The Resource Manager will be in contact with the ED within 2 hours of classification. The Resource Manager will augment the ED by assisting in assessing the emergency condition (refer to Table 6-1) and coordinating required resources, including public information interface. The Resource Manager does not need to physically report to KPS to perform their responsibilities.

AUGMENTATION PERSONNEL

For a classified event involving radiological consequences (EU1), a minimum of one person trained in radiological monitoring and assessment will report to the station within 4 hours of the emergency declaration.

Additional personnel resources may be directed to report to KPS to provide additional support as needed to assess radiological conditions, support maintenance and repair activities, develop and implement corrective action plans, and assist with recovery actions. The augmentation personnel are available from KPS staff and Dominion facilities, and can be requested from various contractors.

OFFSITE RESPONSE ORGANIZATIONS (ORO)

Additional support is available from OROs, as previously discussed in Section 5.2 of this emergency plan.

6.3 FUNCTIONAL RESPONSIBILITIES

Table 6-1 below lists the functional responsibilities of positions that fulfill emergency staffing capabilities.

FUNCTIONAL AREA	LOCATION	ON-SHIFT STAFF	AUGMENTED OFFSITE RESPONSE
Assessment of Condition	Emergency Response Facility	Emergency Director	Resource Manager
Emergency Direction and Control	Emergency Response Facility	Emergency Director	
Notifications / Communications	Emergency Response Facility	Emergency Director	
Radiological Accident Assessment and Protective Actions	Emergency Response Facility / On Scene	Emergency Director	Resource Manager**
Corrective Actions	Emergency Response Facility / On Scene	Emergency Director	
Fire Fighting	On Scene	Per Fire Protection Program Plan	Offsite Response Organization
Rescue and First Aid Treatment	On Scene	*	Offsite Response Organization
Site Access Control and Accountability	Security Station	Per Security Plan	

 TABLE 6-1

 Emergency Response Organization Staffing and Responsibility

* Provided by on-shift personnel who may be assigned other functions.

** Augmentation responder as described in Section 6.2.

7.0 OFFSITE EMERGENCY RESPONSE SUPPORT AND RESOURCES

Arrangements for requesting and effectively using resources have been made and other organizations capable of augmenting the planned response have been identified. Letters of Agreement are in place for those local agencies (fire, ambulance and LLEA) that will respond to an ISFSI emergency condition. Letters of Agreement for each agency are maintained on file.

The ED coordinates the fire, ambulance and LLEA response as previously discussed in Section 5.2 of this Plan.

The ED is authorized to request Federal assistance as needed. The Nuclear Regulatory Commission (NRC) will act as the lead Federal agency providing coordination and support in response to a nuclear incident.

8.0 EMERGENCY CLASSIFICATION SYSTEM

A standard emergency classification and action level scheme is in use. This section describes emergency classifications, Initiating Conditions, Emergency Action Levels (EAL), and postulated emergency situations.

EMERGENCY CLASSIFICATION SYSTEM

The emergency classification system covers an entire spectrum of possible radiological and non-radiological emergencies at the KPS ISFSI. The emergency classification system categorizes accidents and/or emergency situations into one of two emergency classification levels depending on emergency conditions at the time of the incident. The emergency classification levels applicable at Kewaunee Power Station ISFSI, in order of increasing severity, are Unusual Event and Alert. Each of these emergency classes requires notification to the Resource Manager, State and local government agencies, as well as the NRC.

The emergency classification system is based on NEI 99-01, "Development of Emergency Action Levels for Non–Passive Reactors", revision 6.

Once indications are available that an EAL is met, the event is assessed and classified, and the corresponding emergency classification level is promptly declared as soon as possible. Notification to the State and local government agencies, and the NRC is required within 60 minutes of the event classification.

Incidents may be classified in a lower emergency classification level at first and then escalated to the higher level if the situation deteriorates. The following paragraphs outline the actions at each classification level. Refer to Emergency Action Level Technical Bases for actual parameter values, and status used to classify emergencies.

The Unusual Event status shall be maintained until an escalation in emergency class occurs or the event is terminated. Offsite authorities will be informed of the change in the emergency status and the necessary documentation will be completed as specified in the Emergency Plan Implementing Procedures.

The Alert status shall be maintained until termination of the event or deescalation in emergency class occurs. The facility may enter recovery operations without de-escalating from an Alert. Offsite authorities will be informed of the change in the emergency status and the necessary documentation shall be completed as specified in the Emergency Plan Implementing Procedures.

SPECTRUM OF POSTULATED OFF-NORMAL, NATURAL PHENOMENON, AND ACCIDENT EVENTS

The ISFSI Updated Final Safety Analysis Report describes the Design Basis Accidents (DBAs) applicable to the KPS ISFSI along with the radiological dose calculation results. Additionally, recovery actions from the DBAs are analyzed for duration and estimated dose to workers.

9.0 NOTIFICATION METHODS AND PROCEDURES

Procedures are established for notification to State and local organizations and for notification of KPS emergency personnel; the content of initial and follow-up messages to response organizations has been established.

Notification Process

Nuclear Accident Reporting System (NARS) is the communication process used to notify the State and local government agencies of a classified emergency. The notification contains information that identifies the facility, emergency classification, and EAL. Notification to the State and local government agencies will be made within 60 minutes of event classification, and the process includes a means of message verification. Notification is the responsibility of the ED.

Based upon changing conditions or as requested, follow-up messages will be communicated to the State and local government agencies. The follow-up message will contain the following information as available:

- Identification of facility.
- Identification of caller.
- Date / time of incident.
- Emergency Classification.
- Radiological condition including assessment of any radioactive release.
- Emergency response action.
- Request for any needed support by offsite agencies.
- Prognosis for worsening or termination of event based upon available information.

NRC Emergency Notification System (ENS)

The ENS is a dedicated telephone system used to notify the NRC Operations Center. The NRC will be notified as soon as possible after State and local notifications and within 60 minutes of event classification. In the event of failure of the ENS, any telephone will be used to notify the NRC. Notification to the NRC is the responsibility of the ED.

ERO Activation

The ERO is activated by an onsite announcement and by the ERO callout system directed by the Emergency Director.

Support Organizations

Medical, LLEA, and fire fighting support services are primarily notified for assistance via the public 911 process. Requests for support services are the responsibility of the ED.

10.0 EMERGENCY COMMUNICATIONS

Provisions exist for prompt communications between principal response organizations and emergency response personnel. The communication systems listed in Table 10-1 provide 24-hour onsite and offsite communications capability. Communication systems are tested to verify proper operation at the testing frequency specified in Table 10-1. Communication systems that are listed with a testing frequency of "Frequent Use" indicates that the associated equipment is normally used at a sufficiently high regularity (e.g., multiple times each day), such that separate additional testing is not needed. Functionality is verified through normal (frequent) use of the system.

TABLE 10-1
Communication Systems

Communication System	Testing Frequency
Commercial / PBX telephone system	Frequent Use
Portable radios	Frequent Use
NARS communication equipment/phones	Monthly*
NRC FTS Network (ENS)	Monthly
ERO callout system	Semi-annual*

* Performance of drill requirements specified in Section 18 satisfies the Testing Frequency.

11.0 PUBLIC INFORMATION

Corporate Communications Department personnel will be notified of a classified emergency. Corporate Communications Department will monitor media activity and coordinate with senior management disseminating public information per communication protocols. As necessary, news conference(s) can be conducted on site or other coordinated location. Corporate Communications Department personnel, or senior KPS or corporate management will represent the facility as the spokesperson.

12.0 EMERGENCY FACILITY AND EQUIPMENT

Adequate emergency facilities and equipment to support the emergency response are provided and maintained. This section of the plan identifies and describes the emergency response facility, assessment equipment, the first aid and medical facilities, and protective equipment and supplies that can be utilized during an emergency.

12.1 EMERGENCY RESPONSE FACILITY (ERF)

The emergency command and control functions are managed within the ERF. Within the ERF the ED (or other personnel as directed) can assess conditions; evaluate the magnitude and potential consequences of abnormal conditions; initiate preventative and corrective actions; and perform notifications.

The ERF is staffed in accordance with Section 6.0. The facility provides sufficient space to accommodate anticipated response personnel and provides availability of communication systems as specified on Table 10-1.

Radiological conditions as a result of DBAs specified in the ISFSI storage system UFSARs do not inhibit staffing of the ERF.

12.2 EMERGENCY EQUIPMENT

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

Specific emergency response equipment and reference materials are listed in Appendix A, Emergency Equipment, Supplies and Reference Materials. The items listed in Appendix A are inspected, inventoried, and operationally checked quarterly and after each use. There are sufficient reserves of instruments/equipment to replace those which are removed for calibration or repair. Equipment in these inventories is checked and calibrated in accordance with approved procedures.

Portable Radiation and Contamination Monitoring Instruments

Portable radiation and contamination monitoring instruments normally utilized and maintained by the Radiation Protection group are available for emergency use.

Communication Systems

Communication systems are identified and tested as described in Section 10.

13.0 ACCIDENT ASSESSMENT

Adequate methods and equipment are in use for assessing and monitoring consequences of a radiological emergency condition.

The assessment activities required to evaluate a particular emergency depend on the specific nature and classification of the emergency. The ED is responsible for the initial measurement of ISFSI dose rates after an off-normal, natural phenomena, or accident event. The EALs identify the parameter value to determine the emergency condition. Classification of events is performed by the ED in accordance with the EAL scheme.

If the measured ISFSI dose rates exceed the EAL threshold, the ED then performs a radioactive release assessment in the vicinity of the affected storage module or cask. After completing the assessment, the ED contacts the Resource Manager to assist in interpreting the radioactive release assessment results.

Notification of the radiological release assessment is in accordance with Section 9.0.

14.0 PROTECTIVE ACTIONS

Protective actions for onsite personnel are provided for their health and safety. Implementation guidelines for onsite protective actions are provided in EPIPs.

Additionally, the EPIPs provide for a range of protective actions (e.g. relocation of personnel and personnel take cover) to protect onsite personnel during hostile actions.

Accountability

Accountability should be considered and used as a protective action whenever a site wide risk to health or safety exists and prudence dictates. If personnel accountability is required, at the direction of the ED all individuals at the site (including employees without emergency assignments, visitors and contractor personnel) shall be notified of the emergency.

Accountability of all personnel inside the ISFSI Protected Area should be accomplished within 60 minutes after event classification and maintained thereafter at the discretion of the ED. If personnel are unaccounted for, teams shall be dispatched to locate the personnel.

Non-ERO personnel, supplemental personnel, and visitors located outside of the ISFSI PA but within the Site Boundary will be directed to report to an assembly area or exit the site as appropriate. The ED is responsible for controlling access to the site when the IOEP is activated.

15.0 RADIOLOGICAL EXPOSURE

Means for controlling radiological exposures, in an emergency, are established for emergency workers. The means for controlling radiological exposures shall include exposure guidelines consistent with EPA Emergency Worker and Lifesaving Activity Protective Action Guides.

Radiological Control Areas (RCAs) / Access Control

During a classified emergency, radiological surveys of the ISFSI pad area will be performed to determine the actual extent of the radiological concern. As necessary, the ED will ensure RCAs and access controls are established to prevent personnel from entering the area. Recovery and corrective actions will be planned and executed in a manner that minimizes exposure to personnel.

Exposure Control and Records

Individuals authorized to enter RCAs are required to have in their possession dosimetry capable of measuring a dose received from external sources of ionizing radiation.

Emergency worker dose records are maintained in accordance with Radiation Protection procedures.

All reasonable measures shall be taken to control the radiation exposure to emergency response personnel providing rescue, first aid, decontamination, emergency transportation, medical treatment services, corrective actions or assessment actions within applicable limits specified in 10 CFR 20. The ED is responsible for authorizing emergency response personnel to receive doses in excess of 10 CFR 20 limits, if necessary. Table 15-1 contains the guidelines for emergency exposure criteria, which is consistent with the EPA's, "Protective Action Guide and Planning Guidance for Radiological Incidents," Table 2-2, "Response Worker Guidelines."

Personnel Contamination Control

All personnel are monitored for radioactive contamination prior to leaving the site. Portable contamination monitoring instruments are available to frisk personnel for potential contamination.

Documentation of surveys, contamination, and decontamination activities shall be maintained in accordance with Radiation Protection procedures.

TABLE 15-1		
Response Worker Guidelines		

Guideline	Activity	Condition
5 rem	All occupational exposures	All reasonably achievable actions have been taken to minimize dose.
10 rem ^(a)	Protecting valuable property necessary for public welfare	Exceeding 5 rem unavoidable and all appropriate actions taken to reduce dose. Monitoring available to project or measure dose
25 rem ^(b)	Lifesaving or protection of large populations	Exceeding 5 rem unavoidable and all appropriate actions taken to reduce dose. Monitoring available to project or measure dose

(a) For potential doses >5 rem, medical monitoring programs should be considered.

(b) In the case of a very large incident, may need to consider raising the property and lifesaving response worker guidelines to prevent further loss of life and massive spread of destruction.

16.0 MEDICAL AND HEALTH SUPPORT

Arrangements are made for medical services for injured individuals and/or contaminated injured individuals. KPS maintains on-shift personnel and equipment to provide first aid for personnel working at the site. Medical emergency supplies are located in the ERF.

If immediate professional medical help is required, local ambulance services are available to assist in the transport of seriously injured personnel.

When personnel are transported to the Aurora Medical Center while in a contaminated condition, a person trained in radiological monitoring will be dispatched to monitor and maintain radiological controls.

17.0 RECOVERY

The recovery organization will be based on the normal KPS organization and would function with the senior management position being responsible for site activities.

RECOVERY OPERATIONS

KPS is responsible for recovery measures and restoring the ISFSI to a stable condition. In an emergency event, immediate response actions are directed towards limiting the consequences of the emergency in a manner that will afford maximum protection to onsite personnel. Once the immediate assessment and protective actions have been implemented, the restoration and recovery measures can be implemented.

The extent and nature of the corrective and protective actions and the extent of recovery will depend on the emergency conditions at hand and the status of ISFSI. The general goals for recovery are:

- An orderly evaluation of the cause and effect of the emergency and implementation of solutions to prevent immediate recurrence of the incident.
- A planned approach for returning the ISFSI to a stable condition by obtaining the appropriate manpower, materials, and equipment.
- A planned approach to coordinate with offsite authorities to identify and resolve situations that may impact the general public.
- An evaluation of the radiation exposure records for all onsite emergency response personnel involved in the incident.
- A planned approach to ensure that radiation exposures and contamination controls are consistent with the ALARA program.

During a classified emergency, a point will be reached where the ISFSI will be placed in a stable condition. Since this condition could be attained even though specific EALs may remain exceeded, the ED will determine that there is no longer a need to keep the emergency organization in effect and to begin recovery. Although de-escalation to a lower emergency level may be performed, it is not necessary to de-escalate prior to initiating recovery.

ISFSI recovery activities shall be in accordance with the Technical Specifications and other license documents. During ISFSI recovery, the radiation exposure limits of 10 CFR 20 shall apply.

If, during recovery, an emergency situation again occurs, the emergency plan would be activated per the implementing procedures. Recovery efforts will be suspended until the emergency condition is resolved. The ED will re-evaluate ISFSI conditions prior to resuming recovery.

STATION RECOVERY TERMINATION

The recovery will be terminated by the KPS senior management position after the ISFSI is returned to a stable condition.

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18.0 EXERCISE AND DRILLS

Periodic exercises are conducted to evaluate major portions of emergency response capabilities. Periodic drills are conducted to develop and maintain key skills. Deficiencies as a result of exercises or drills are identified and corrected.

Exercise and Drill

Kewaunee Power Station conducts a biennial Exercise to test the adequacy of timing and content of implementing procedures and methods; to test emergency equipment and communication networks; and to ensure that emergency personnel are familiar with their duties. Kewaunee Power Station will invite the OROs to participate in the Exercise.

For alternating years, a Drill is conducted for the purpose of testing, developing, and maintaining the proficiency of emergency responders.

Exercise and Drill scenarios will include, at a minimum, the following:

- The basic objective(s) of the exercise / drill.
- The date(s), time period, place(s), and participating organizations.
- A time schedule of real and simulated initiating events.
- A narrative summary describing the conduct of the drill to include such items as simulated casualties, offsite fire assistance, rescue of personnel, and use of protective clothing.

Equipment and Proficiency Drills

The following drills are conducted for the purpose of training, developing, and maintaining the proficiency of emergency responders. Equipment and proficiency drills may be performed as part of an exercise, as part of a drill or as an independent drill.

Communication Drills

Communications with State and local governments shall be drilled annually. The communication drill includes the aspect of understanding the content of messages.

Performance of the Communication Drill satisfies the testing requirements specified in Section 10.0.

Radiological Monitoring Drills

Radiological monitoring drills, which are conducted annually, demonstrate the ability to perform radiological survey and assessment.

Medical Emergency Drills

A medical emergency drill involving a simulated contaminated individual and containing provisions for participation by the Aurora Medical Center shall be conducted at least annually. Both the Kewaunee Power Station and Point Beach Nuclear Plant (PBNP) share the facilities provided by the Aurora Medical Center. To minimize redundant training for the hospital staff, KPS and PBNP will alternate development and conduct of the drill each year.

Augmentation Capability Assessment (ACA) Drills

An unannounced off-shift ACA drill shall be conducted semi-annually. These drills shall involve implementation of the ERO callout system procedure and documentation of the estimated response time for each responder. This drill shall serve to demonstrate the capability to augment the ED after an emergency classification.

Performance of the ACA drill satisfies the ERO callout system testing requirements specified in Section 10.0.

Critique and Evaluation

Critiques will evaluate the performance of the organization. The ability of emergency response personnel to self-evaluate weaknesses and identify areas for improvement is the key to successful exercise / drill conduct.

Exercise and drill performance objectives are evaluated against measurable demonstration criteria. As soon as possible following the conclusion of each exercise or drill, a critique, including participants and evaluators, is conducted to evaluate the ability of the ERO to implement the IOEP and associated procedures. Deficiencies as a result of exercises or drills are identified and entered into the corrective action system

A written report is prepared following an exercise or drill involving the evaluation of designated objectives. The report evaluates and documents the ability of the ERO to respond to a simulated emergency situation. The report will also contain reference to corrective action and recommendations resulting from the exercise or drill.

19.0 RADIOLOGICAL EMERGENCY RESPONSE TRAINING

Radiological emergency response training is provided to those who may be called on to assist in an emergency.

19.1 EMERGENCY RESPONSE PERSONNEL TRAINING

Requirements for emergency preparedness training are specified in the Emergency Preparedness Training Program. This program identifies the level and the depth to which individuals are to be trained.

Emergency Preparedness Training Program

The training program for emergency response personnel is based on position specific responsibilities as defined in the IOEP. Emergency response personnel in the following categories receive initial training and annual retraining:

ISFSI Shift Supervisors/Emergency Directors and Resource Managers shall have training conducted such that proficiency is maintained on the topics listed below. These subjects shall be covered as a minimum on an annual basis.

- Emergency Action Level Classification.
- Federal, State and local government notification procedures.
- ERO Activation.
- Dose rate meter operation.
- Radioactive release assessment.
- Emergency exposure control.
- Protective actions for onsite personnel.
- ISFSI DBA

Personnel available during classified emergencies to perform emergency response activities as an extension of their normal duties receive duty-specific training. Additional emergency preparedness training is provided as part of annual access training.

First Aid training for personnel assigned to the on-shift responsibility shall include courses equivalent to Red Cross Multi-Media.

Personnel who are badged for unescorted access receive access training annually. Information pertaining to their safety and the safety of visitors under escort during a classified emergency is included in this training.

Access training shall include the following emergency preparedness topics:

- Basic Emergency Plan and implementing procedure information.
- Emergency classification levels.
- Call out of personnel during an emergency.
- Personnel accountability procedures.

19.2 NON-KEWAUNEE POWER STATION EMERGENCY RESPONSE SUPPORT ORGANIZATIONS

Training is offered annually to non-KPS organizations which may provide specialized services during an emergency (e.g., fire-fighting, medical services, transport of injured, etc.). The training shall be structured to meet the needs of that organization with respect to the nature of their support. Training topics such as event notification, basic radiation protection, and interface activities between the offsite organization and KPS shall be made available.

20.0 MAINTAINING EMERGENCY PREPAREDNESS

Responsibilities for plan development and review and for distribution of emergency plans are established, and planners are properly trained.

20.1 EMERGENCY PREPAREDNESS RESPONSIBILITIES

Kewaunee Power Station Senior Management Position

Has overall authority and responsibility for emergency response planning. This responsibility includes ensuring that the emergency preparedness program is maintained and implemented as described in this Plan and applicable requirements and regulations.

Emergency Preparedness Position

Responsible for the following tasks:

- Maintaining and updating this IOEP and associated procedures.
- Ensuring Drill/Exercise commitments stated in the plan are met.
- Ensuring material readiness of emergency response facilities.
- Overseeing the Emergency Preparedness Training Program.
- Maintaining Emergency Preparedness interfaces with offsite agencies.
- Performing and documenting appropriate evaluations of program and of classified emergency events.

Individuals assigned the duties of maintaining the IOEP maintain an adequate knowledge of regulations, planning techniques, and the latest applications of emergency equipment and supplies. Training for these individuals includes 50.54(q) and 72.44(f) Evaluation Qualification.

Licensing

Responsible for the following tasks:

- Maintaining current knowledge of changes in Federal regulations and other guidance that impact emergency planning activities.
- Submit IOEP and related controlled document revisions to the NRC.

Oversight

Oversight is responsible for performance of independent audit of the emergency preparedness program to meet the requirements of 10 CFR 50.54(t).

20.2 REVIEW AND UPDATING OF THE IOEP

It is important that a state of emergency preparedness be maintained at all times. The IOEP and Emergency Action Level Technical Bases are reviewed annually and updated, as needed. The review shall encompass the need for changes based upon the following aspects:

- Written critiques and evaluations of drills and exercises.
- Changes in the organizational structure.
- Changes in the functions and capabilities of supporting agencies.
- Changes in Federal or State regulations.
- Modifications to the facility which would affect emergency planning.
- Recommendations or agreement changes received from other organizations.

Any needed changes shall be incorporated in the IOEP, Emergency Action Level Technical Bases, and appropriate implementing procedures.

Proposed activities that may impact the IOEP must be evaluated per 10 CFR 50.54(q) and 10 CFR 72.44(f).

Emergency Action Levels (EALs) State and Local Government Agency Review

The EALs shall be made available for review with State and local governmental authorities annually.

Emergency Telephone Directory

Names and telephone numbers of the ERO and supporting offsite agencies shall be reviewed at least quarterly and updated as necessary.

Letters of Agreements

The letters of agreement with the support agencies shall be reviewed with the support agency at least every two years (biennially). Changes shall be made and the agreements renewed, as necessary.

20.3 MAINTENANCE AND INVENTORY OF EMERGENCY EQUIPMENT AND SUPPLIES

Appendix A, "Emergency Equipment, Supplies and Reference Materials," lists each of the emergency response facilities and the required equipment, supplies and reference materials that are to be maintained.

APPENDIX A Emergency Equipment, Supplies and Reference Materials

EMERGENCY RESPONSE FACILITY

Procedures / Reference Material

ISFSI-Only Emergency Plan ISFSI-Only Emergency Action Level Bases Document Emergency Telephone Directory Emergency Plan Implementing Procedures

Equipment

Portable radiation monitoring instrument Portable emergency lighting Medical emergency response bag

ONSITE LOCATIONS

Equipment / Supplies

Portable radiation and contamination monitoring instruments Contamination control supplies Decontamination control supplies Protective clothing Dosimeters Radiological postings and barricades

APPENDIX B

Table B-1 Cross Reference IOEP Section to Planning Standards/Requirements/Criteria and Procedures

IOEP Section	Planning Standard (10 CFR 50.47)**	Planning Requirement (Appendix E.IV)**	NUREG- 0654, Section II Evaluation Criteria	Procedure
5.0	(b)(1)	A.1, 2, 4, 7	A	EP-KW-EIP-001, Emergency Response EP-KW-100, Cyclic and Prompted Emergency Preparedness Tasks
6.0	(b)(2)	A.1, 2, 4; C.1	В	EP-KW-EIP-001, Emergency Response
7.0	(b)(3)	A.6, 7	С	EP-KW-100, Cyclic and Prompted Emergency Preparedness Tasks
8.0	(b)(4)	B.1, 2; C.1, 2	D	EP-KW-EIP-001, Emergency Response
9.0	(b)(5)	A.6, 7; C.1; D.1, 3; E	E	EP-KW-EIP-002, Emergency Notification
10.0	(b)(6)	C.1; D.1, 3; E	F	EP-KW-EMP-009-002,
11.0	(b)(7)	Exempt	G	EP-KW-EIP-001, Emergency Response
12.0	(b)(8)	E; G	Н	EP-KW-100, Cyclic and Prompted Emergency Preparedness Tasks
13.0	(b)(9)	A.4; B.1; C.2; E	I	EP-KW-EIP-001, Emergency Response EP-KW-EIP-005, Emergency Radiation Controls
14.0	(b)(10)	C.1; E	J	EP-KW-EIP-001, Emergency Response EP-KW-EIP-SEC-001, Security Force Response During an Emergency
15.0	(b)(11)	E	к	EP-KW-EIP-005, Emergency Radiation Controls
16.0	(b)(12)	A.6, 7; E	L	EP-KW-EIP-001, Emergency Response
17.0	(b)(13)	Н	М	EP-KW-EIP-001, Emergency Response
18.0	(b)(14)	E9; F	N	EP-KW-100, Cyclic and Prompted Emergency Preparedness Tasks
19.0	(b)(15)	F	0	TR-KW-TPG-2400, Emergency Preparedness Training Program
20.0	(b)(16)	G	Р	EP-KW-100, Cyclic and Prompted Emergency Preparedness Tasks TR-KW-TPG-2400, Emergency Preparedness Training Program

** Refer to the Kewaunee Power Station's exemptions from portions of 10 CFR 50.47 and Appendix E for applicability

Enclosure 2

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(18 Pages)

Kewaunee Power Station (KPS) Independent Spent Fuel Storage Installation (ISFSI) Only Emergency Action Level (EAL) Basis Document, Revision 0KS **KEWAUNEESOLUTIONS**

Title: ISFSI-Only Emergency Action Level Basis

Plan No.: KW-PLAN-000-IO

Revision No. 0KS

The subject procedure has been reviewed by the manager responsible for its content. This review has found that this procedure meets the criteria, found in AD-KW-101, to be implemented as written with no change to the body of the document or its attachments. References to company names, position titles, and administrative program identifiers have not been changed. Cross references to current company names, position titles, and administrative program identifiers are found in AD-KW-102, Procedure Use and Adherence. The revision number is the only change that has been made to this document.

Approval Section				
RESPONSIBLE MANAGER:	SIGNATURE_	Eileen Moore	Digitally signed by Elleen Moore DN; CN-Eleen Moore, E≋emmoore@genergysolutions.com Reason: I am the author of this document Location P Date: 2022-06-07 17:07:02 Foxt PhantomPDF Version: 9.4.1	DATE:

Effective Date: June 28, 2022

(assigned by Document Control or Responsible Manager)



<u>Title:</u>	ISFSI-Only Emergency Action Level Basis Document	
R	evision Number	Effective Date
	0KS	6/29/2017
Revision S	Summary:	
ISFSI-Only classificatio	Emergency Action Level I on scheme for emergencie	Basis Document describes the Kewaunee Power Station's s that may arise after all fuel is moved into the IFSFI.

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Appendix A, Initiating Condition			
Independent Spent Fuel Storage Installation (ISFSI)			
EU1, Damage to a loaded cask CONFINEMENT BOUNDARY.	1		
Hazards and Other Conditions			
PD-HU1, Confirmed SECURITY CONDITION or threat.	2		
PD-HA1, HOSTILE ACTION within the VBS boundary.			
PD-HU3, Other conditions exist which in the judgment of the Emergency Director warrant	4		
declaration of a UE.			
PD-HA3, Other conditions exist which in the judgment of the Emergency Director warrant	5		
declaration of an Alert.			

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Appendix B, Definitions

Appendix C, Acronyms and Abbreviations

Appendix D, Kewaunee Power Station Emergency Action Levels

1. Purpose

This document provides the detailed set of Emergency Action Levels (EALs) applicable to the Kewaunee Power Station (KPS) and the associated Technical Bases using the EAL development methodology found in NEI 99-01 Revision 6.

Personnel responsible for implementation of the Emergency Action Level Matrix may use this document as a technical reference and an aid in EAL implementation. The primary tool for determining the emergency classification level is the Emergency Action Level Matrix. The user of the Emergency Action Level Matrix may (but is not required to) consult the EAL Technical Basis Document in order to obtain additional information concerning the EALs under classification consideration.

2. Discussion

2.1 Independent Spent Fuel Storage Installation (ISFSI)

Selected guidance in NEI 99-01 is applicable to licensees electing to use their 10 CFR § 50 emergency plan to fulfill the requirements of 10 CFR § 72.32 for a stand-alone ISFSI. The emergency classification levels applicable to an ISFSI are consistent with the requirements of 10 CFR § 50 and the guidance in NUREG 0654/FEMA-REP-1. The initiating conditions germane to a 10 CFR § 72.32 emergency plan (as described in NUREG-1567) are subsumed within the classification scheme for a 10 CFR § 50.47 emergency plan.

The analysis of potential onsite and offsite consequences of accidental releases associated with the operation of an ISFSI is contained in NUREG-1140, *A Regulatory Analysis on Emergency Preparedness for Fuel Cycle and Other Radioactive Material Licensees.* NUREG-1140 concluded that the postulated worst-case accident involving an ISFSI has insignificant consequences to public health and safety. This evaluation shows that the maximum offsite dose to a member of the public due to an accidental release of radioactive materials would not exceed 1 rem Effective Dose Equivalent.

Regarding the above information, the expectations for an offsite response to an Alert classified under a 10 CFR § 72.32 emergency plan are generally consistent with those for a Notification of Unusual Event in a 10 CFR § 50.47 emergency plan (e.g., to provide assistance if requested).

3. Key Terminology Used

There are several key terms that appear throughout the NEI 99-01 methodology. These terms are introduced in this section to support understanding of subsequent material. As an aid to the reader, the following table is provided as an overview to illustrate the relationship of the terms to each other.

Emergency Classification Level				
Unusual Event	Alert			
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Initiating Condition	Initiating Condition			
<u> </u>				
Emergency Action Level (1) Notes Basis 	Emergency Action Level (1) Notes Basis			
(1) - When making an emergency classification, the Emergency Director must consider all information having a bearing on the proper assessment of an Initiating Condition. This includes the Emergency Action Level (EAL), Notes, and the informing Basis information.				

3.1 Emergency Classification Level (ECL)

One of a set of names or titles established by the US Nuclear Regulatory Commission (NRC) for grouping off-normal events or conditions according to (1) potential or actual effects or consequences, and (2) resulting onsite and offsite response actions. The emergency classification levels, in ascending order of severity, are:

- Unusual Event
- Alert

3.1.1 Unusual Event

Events are in progress or have occurred which indicate a potential degradation of the level of safety of the ISFSI 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 occurs.

Purpose: The purpose of this classification is to assure that the first step in future response has been carried out, to bring the staff to a state of readiness, and to provide systematic handling of unusual event information and decision-making.

3.1.2 Alert

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

Purpose: The purpose of this classification is to assure that emergency personnel are readily available to respond if the situation becomes more serious or to perform confirmatory radiation monitoring if required, and provide offsite authorities current information on status and parameters.

3.2 Initiating Condition (IC)

An event or condition that aligns with the definition of one of the two emergency classification levels by virtue of the potential or actual effects or consequences.

Discussion: An IC describes an event or condition, the severity or consequences of which meets the definition of an emergency classification level. An IC can be expressed as a measurable parameter (e.g., radiation monitor readings) or an event (e.g., a HOSTILE ACTION).

Appendix 1 of NUREG-0654 does not contain example Emergency Action Levels (EALs) for each ECL, but rather Initiating Conditions (i.e., plant conditions that indicate that a radiological emergency, or events that could lead to a radiological emergency, has occurred). NUREG-0654 states that the Initiating Conditions form the basis for establishment by a licensee of the specific instrumentation readings (as applicable) which, if exceeded, would initiate the emergency classification. Thus, it is the specific instrument readings that would be the EALs.

3.3 Emergency Action Level (EAL)

A pre-determined, site-specific, observable threshold for an Initiating Condition that, when met or exceeded, places the station in a given emergency classification level.

Discussion: EAL statements may utilize a variety of criteria including instrument readings and status indications; observable events; results of calculations and analyses; entry into particular procedures; and the occurrence of natural phenomena.

4. Guidance on Making Emergency Classification

4.1 General Considerations

When making an emergency classification, the Emergency Director must consider all information having a bearing on the proper assessment of an Initiating Condition (IC). This includes the Emergency Action Level (EAL) plus Notes and the informing Basis information.

All emergency classification assessments should be based upon valid indications, reports or conditions. A valid indication, report, or condition, is one that has been verified through appropriate means such that there is no doubt regarding the indicator's operability, the condition's existence, or the report's accuracy. For example, validation could be accomplished through an instrument channel check, response on related or redundant indicators, or direct observation by personnel. The validation of indications should be completed in a manner that supports timely emergency declaration.

A planned work activity that results in an expected event or condition which meets or exceeds an EAL does not warrant an emergency declaration provided that 1) the activity proceeds as planned and 2) the station remains within the limits imposed by the operating license. Such activities include planned work to test, manipulate, repair, maintain or modify a system or component. In these cases, the controls associated with the planning, preparation and execution of the work will ensure that compliance is maintained with all aspects of the operating license provided that the

activity proceeds and concludes as expected. Events or conditions of this type may be subject to the reporting requirements of 10 § CFR 50.72.

The assessment of some EALs is based on the results of analyses that are necessary to ascertain whether a specific EAL threshold has been exceeded; the EAL and/or the associated basis discussion will identify the necessary analysis. In these cases, the declaration period starts with the availability of the analysis results that show the threshold to be exceeded (i.e., this is the time that the EAL information is first available).

While the EALs have been developed to address a full spectrum of possible events and conditions which may warrant emergency classification, a provision for classification based on operator/management experience and judgment is still necessary. The NEI 99-01 scheme provides the Emergency Director with the ability to classify events and conditions based upon judgment using EALs that are consistent with the Emergency Classification Level (ECL) definitions (refer to PD-HU3 and PD-HA3). The Emergency Director will need to determine if the effects or consequences of the event or condition reasonably meet or exceed a particular ECL definition.

4.2 Classification Methodology

To make an emergency classification, the user will compare an event or condition to an EAL(s) and determine if the EAL has been met or exceeded. If an EAL has been met or exceeded, then the IC is considered met and the associated ECL is declared in accordance with procedures.

4.3 Classification of Multiple Events and Conditions

When multiple emergency events or conditions are present, the user will identify all met or exceeded EALs. The highest applicable ECL identified during this review is declared. For example:

• If an Unusual Event EAL and an Alert EAL are met, an Alert should be declared.

There is no "additive" effect from multiple EALs meeting the same ECL. For example:

• If two Alert EALs are met, an Alert should be declared.

Related guidance concerning classification of rapidly escalating events or conditions is provided in Regulatory Issue Summary (RIS) 2007-02, *Clarification of NRC Guidance for Emergency Notifications During Quickly Changing Events*.

4.4 Classification of IMMINENT Conditions

Although EALs provide specific thresholds, the Emergency Director must remain alert to events or conditions that could lead to meeting or exceeding an EAL within a relatively short period of time (i.e., a change in the ECL is IMMINENT). If, in the judgment of the Emergency Director, meeting an EAL is IMMINENT, the emergency classification should be made as if the EAL has been met. While applicable to all emergency classification levels, this approach is particularly important at the higher emergency classification level since it provides additional time for implementation of protective measures.

4.5 Emergency Classification Level Upgrading and Downgrading

An ECL may be downgraded when the event or condition that meets the highest IC and EAL no longer exists, and other site-specific downgrading requirements are met. If downgrading the ECL is deemed appropriate, the new ECL would then be based on a lower applicable IC(s) and EAL(s). The ECL may also simply be terminated.

The following approach to downgrading or terminating an ECL is recommended.

ECL	Action When Condition No Longer Exists
Unusual Event	Terminate the emergency in accordance with procedures.
Alert	Downgrade or terminate the emergency in accordance with procedures.

As noted above, guidance concerning classification of rapidly escalating events or conditions is provided in RIS 2007-02.

4.6 Classification of Short-Lived Events

Event-based ICs and EALs define a variety of specific occurrences that have potential or actual safety significance. By their nature, some of these events may be short-lived and, thus, over before the emergency classification assessment can be completed. If an event occurs that meets or exceeds an EAL, the associated ECL must be declared regardless of its continued presence at the time of declaration (example is a Security event).

4.7 Classification of Transient Conditions

It is recognized that some transient conditions may cause an EAL to be met for a brief period of time (e.g., a few seconds to a few minutes). The following guidance should be applied to the classification of these conditions.

<u>EAL momentarily met during expected station response</u> - In instances where an EAL is briefly met during an expected (normal) response, an emergency declaration is not warranted provided that associated systems and components are operating as expected, and operator actions are performed in accordance with procedures.

EAL momentarily met but the condition is corrected prior to an emergency declaration – If an operator takes prompt manual action to address a condition, and the action is successful in correcting the condition prior to the emergency declaration, then the applicable EAL is not considered met and the associated emergency declaration is not required.

It is important to stress that the emergency classification assessment period is not a "grace period" during which a classification may be delayed to allow the performance of a corrective action that would obviate the need to classify the event; emergency classification assessments must be deliberate and timely, with no undue delays.

4.8 After-the-Fact Discovery of an Emergency Event or Condition

In some cases, an EAL may be met but the emergency classification was not made at the time of the event or condition. This situation can occur when personnel discover that an event or condition existed which met an EAL, but no emergency was declared, and the event or condition no longer

exists at the time of discovery. This may be due to the event or condition not being recognized at the time or an error that was made in the emergency classification process.

In these cases, no emergency declaration is warranted; however, the guidance contained in NUREG-1022 is applicable. Specifically, the event should be reported to the NRC in accordance with 10 CFR § 50.72 within one hour of the discovery of the undeclared event or condition. The licensee should also notify appropriate State and local agencies in accordance with the agreed upon arrangements.

4.9 Retraction of an Emergency Declaration

Guidance on the retraction of an emergency declaration reported to the NRC is discussed in NUREG-1022.

5. References

- 5.1 NEI 99-01 Rev. 6 Final, Development of Emergency Action Levels for Non-Passive Reactors, November 2012
- 5.2 10 CFR § 50, Domestic Licensing of Production and Utilization Facilities
- 5.3 RIS 2007-02, Clarification of NRC Guidance for Emergency Notifications During Quickly Changing Events, February 2, 2007
- 5.4 NUREG-1022, Event Reporting Guidelines: 10CFR50.72 and 50.73
- 5.5 10 CFR § 50.72, Immediate Notification Requirements for Operating Nuclear Power Reactors
- 5.6 10 CFR 50.82, Termination of License
- 5.7 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
- 5.8 10 CFR § 72.32, Emergency Plan
- 5.9 NUREG-1567, Spent Fuel Dry Storage Facilities
- 5.10 10 CFR § 50.47, Emergency Plans
- 5.11 NUREG-1140, A Regulatory Analysis on Emergency Preparedness for Fuel Cycle and Other Radioactive Material Licensees

Independent Spent Fuel Storage Installation

ECL: Unusual Event

Initiating Condition: Damage to a loaded cask CONFINEMENT BOUNDARY.

Emergency Action Levels: EU1.1

EU1.1 Damage to a loaded cask CONFINEMENT BOUNDARY as indicated by a radiation reading greater than two times the ISFSI storage system Technical Specification allowable levels

Basis:

This IC addresses an event that results in damage to the CONFINEMENT BOUNDARY of a storage cask containing spent fuel. It applies to irradiated fuel that is licensed for dry storage beginning at the point that the loaded storage cask is sealed. The issues of concern are the creation of a potential or actual release path to the environment, degradation of one or more fuel assemblies due to environmental factors, and configuration changes which could cause challenges in removing the cask or fuel from storage.

The existence of "damage" is determined by radiological survey. The technical specification multiple of "2 times" is used here to distinguish between non-emergency and emergency conditions. The emphasis for this classification is the degradation in the level of safety of the spent fuel cask and not the magnitude of the associated dose or dose rate. It is recognized that in the case of extreme damage to a loaded cask, the fact that the dose rate limit is exceeded may be determined based on measurement of a dose rate at some distance from the cask.

Security-related events for ISFSIs are covered under ICs PD-HU1 and PD-HA1.

KPS Basis Reference(s):

1. ISFSI Storage System Certificates of Compliance, Final Safety Evaluation Reports and Technical Specifications



Hazards and Other Conditions

PD-HU1

ECL: Unusual Event

Initiating Condition: Confirmed SECURITY CONDITION or threat.

Emergency Action Levels: PD-HU1.1 or PD-HU1.2

- PD-HU1.1 A SECURITY CONDITION that does not involve a HOSTILE ACTION as reported by Security Supervision.
- PD-HU1.2 Notification of a credible security threat directed at the site.

Basis:

This IC addresses events that pose a threat to station personnel or spent fuel, and thus represent a potential degradation in the level of safety. Security events which do not meet one of these EALs are adequately addressed by the requirements of 10 CFR § 73.71 or 10 CFR § 50.72. Security events inside of the VEHICLE BARRIER SYSTEM (VBS) boundary that are assessed as HOSTILE ACTIONS are classifiable under IC PD-HA1.

Timely and accurate communications between Security Supervision and the Emergency Director is essential for proper classification of a security-related event. Classification of these events will initiate appropriate threat-related notifications to station personnel and Offsite Response Organizations.

Security plans and terminology are based on the guidance provided by NEI 03-12, Template for the Security Plan, Training and Qualification Plan, Safeguards Contingency Plan [and Independent Spent Fuel Storage Installation Security Program].

PD-HU1.1 references Security Supervision because these are the individuals trained to confirm that a security event is occurring or has occurred. Training on security event confirmation and classification is controlled due to the nature of Safeguards and 10 CFR § 2.39 information.

PD-HU1.2 addresses the receipt of a credible security threat. The procedure to determine the credibility of a threat is considered security-sensitive information and therefore withheld from the EAL. Credible security threat includes a HOSTILE ACTION within the SITE BOUNDARY outside of the VBS boundary.

Escalation of the emergency classification level would be via IC PD-HA1.

KPS Basis Reference:

1. Security and Safeguards Contingency Plan

Hazards and Other Conditions

PD-HA

ECL: Alert

Initiating Condition: HOSTILE ACTION within the VBS boundary

Emergency Action Levels: PD-HA1.1

PD-HA1.1 A HOSTILE ACTION is occurring or has occurred within the VBS boundary as reported by Security Supervision.

Basis:

This IC addresses the occurrence of a HOSTILE ACTION within the VEHICLE BARRIER SYSTEM (VBS) boundary. This event will require rapid response and assistance due to the possibility of the attack progressing to the ISFSI PROTECTED AREA (PA).

Timely and accurate communications between Security Supervision and the Emergency Director is essential for proper classification of a security-related event.

Security plans and terminology are based on the guidance provided by NEI 03-12, *Template for the Security Plan, Training and Qualification Plan, Safeguards Contingency Plan [and Independent Spent Fuel Storage Installation Security Program]*.

As time and conditions allow, these events require a heightened state of readiness by the staff and implementation of onsite protective measures (e.g., evacuation, dispersal or sheltering). The Alert declaration will also heighten the awareness of Offsite Response Organizations, allowing them to be better prepared should it be necessary to consider further actions.

This IC does not apply to incidents that are accidental events, acts of civil disobedience, or otherwise are not a HOSTILE ACTION perpetrated by a HOSTILE FORCE. Examples include the crash of a small aircraft, shots from hunters, physical disputes between employees, etc. Reporting of these types of events is adequately addressed by other EALs, or the requirements of 10 CFR § 73.71 or 10 CFR § 50.72.

PD-HA1.1 is applicable for any HOSTILE ACTION occurring, or that has occurred, in the VBS boundary. This includes any action directed against the ISFSI that is located within the VBS boundary. A HOSTILE ACTION within the SITE BOUNDARY outside of the VBS boundary is considered a credible security threat and should be evaluated under PD-HU1.

KPS Basis Reference:

1. Security and Safeguards Contingency Plan

Hazards and Other Conditions



ECL: Unusual Event

Initiating Condition: Other conditions exist which in the judgment of the Emergency Director warrant declaration of a UE.

Emergency Action Levels: PD-HU3.1

PD-HU3.1 Other conditions exist which in the judgment of the Emergency Director indicate that events are in progress or have occurred which indicate a potential degradation of the level of safety of the ISFSI 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 occurs.

Basis:

This IC addresses unanticipated conditions not addressed explicitly elsewhere but that warrant declaration of an emergency because conditions exist which are believed by the Emergency Director to fall under the emergency classification level description for a UE.

KPS Basis Reference: None

Hazards and Other Conditions



ECL: Alert

Initiating Condition: Other conditions exist which in the judgment of the Emergency Director warrant declaration of an Alert.

Emergency Action Levels: PD-HA3.1

PD-HA3.1 Other conditions exist which in the judgment of the Emergency Director indicate that events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the ISFSI or a security event that involves probable life threatening risk to site personnel or damage to ISFSI equipment because of HOSTILE ACTION. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.

Basis:

This IC addresses unanticipated conditions not addressed explicitly elsewhere but that warrant declaration of an emergency because conditions exist which are believed by the Emergency Director to fall under the emergency classification level description for an Alert.

KPS Basis Reference: None

Appendix B

Definitions

The following are key terms necessary for overall understanding the NEI 99-01 emergency classification scheme.

<u>Emergency Action Level (EAL)</u> - A pre-determined, site-specific, observable threshold for an Initiating Condition that, when met or exceeded, places the station in a given emergency classification level.

<u>Emergency Classification Level (ECL)</u> - One of a set of names or titles established by the US Nuclear Regulatory Commission (NRC) for grouping off-normal events or conditions according to (1) potential or actual effects or consequences, and (2) resulting onsite and offsite response actions. The applicable emergency classification levels, in ascending order of severity, are:

- Unusual Event
- Alert

<u>Initiating Condition (IC)</u> - An event or condition that aligns with the definition of one of the two emergency classification levels by virtue of the potential or actual effects or consequences.

Selected terms used in Initiating Condition, Emergency Action Level, Notes or Basis section are set in all capital letters (e.g., ALL CAPS). These words are defined terms that have specific meanings as used in this document. The definitions of these terms are provided below.

<u>CONFINEMENT BOUNDARY</u> - The barrier(s) between areas containing radioactive substances and the environment.

<u>HOSTAGE</u> - A person(s) held as leverage against the station to ensure that demands will be met by the station.

<u>HOSTILE ACTION</u> - An act toward the KPS ISFSI or its personnel that includes 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. 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 KPS ISFSI. Non-terrorism-based EALs should be used to address such activities (i.e., this may include violent acts between individuals in the SITE BOUNDARY).

<u>HOSTILE FORCE</u> - One or more individuals who are engaged in a determined assault, overtly or by stealth and deception, equipped with suitable weapons capable of killing, maiming, or causing destruction.

<u>IMMINENT</u> - The trajectory of events or conditions is such that an EAL will be met within a relatively short period of time regardless of mitigation or corrective actions.

<u>INDEPENDENT SPENT FUEL STORAGE INSTALLATION (ISFSI)</u> - A complex designed and constructed for the interim storage of spent nuclear fuel, solid reactor-related Greater Than Class C (GTCC) waste, and other radioactive materials associated with spent fuel and reactor-related GTCC waste storage (10 CFR 72.3).

<u>PROJECTILE</u> - An object directed toward the ISFSI that could cause concern for its continued operability, reliability, or personnel safety.

<u>PROTECTED AREA (PA)</u> - The area encompassed by physical barriers and to which access is controlled.

<u>SECURITY CONDITION</u> - Any Security Event as listed in the approved security contingency plan that constitutes a threat/compromise to site security, threat/risk to site personnel, or a potential degradation to the level of safety. A SECURITY CONDITION does not involve a HOSTILE ACTION.

<u>SITE BOUNDARY</u> – The perimeter of the land owned by Dominion Energy Kewaunee Inc. The ISFSI Controlled Area, as defined in 10 CFR 72.3, is bounded within the Site Boundary.

<u>VEHICLE BARRIER SYSTEM (VBS)</u> – A barrier system that is designed, constructed, installed and maintained to protect the facility against the design basis threat.

Appendix C

Acronyms and Abbreviations

CFR	Code of Federal Regulations
EAL	Emergency Action Level
ECL	Emergency Classification Level
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
GTCC	Greater Than Class C
HSM	Horizontal Storage Module
IC	Initiating Condition
ISFSI	Independent Spent Fuel Storage Installation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
ORO	Offsite Response Organization
PA	Protected Area
UE	Unusual Event
VBS	Vehicle Barrier System
VCC	Vertical Concrete Cask

	Appendix	D	
Sec. Sec.	Kewaunee Power Station Em	ergency Action Levels	
	ALERT	UNUSUAL EVENT	
ISFSI	None	Damage to a loaded cask CONFINEMENT BOUNDARY	
		EU1.1 Damage to a loaded cask CONFINEMENT BOUNDARY as indicated by a radiation reading greater than two times the ISFSI storage system Technical Specification allowable levels	
Hazards	HOSTILE ACTION within the VBS boundary.	Confirmed SECURITY CONDITION or threat.	
	PD-HA1.1 A HOSTILE ACTION is occurring or has occurred within the VBS boundary as reported by Security Supervision.	 PD-HU1.1 A SECURITY CONDITION that does not involve a HOSTILE ACTION as reported by Security Supervision. PD-HU1.2 Notification of a credible security threat directed at the site. 	
	Other conditions exist which in the judgment of the Emergency Director warrant declaration of an Alert.	Other conditions exist which in the judgment of the Emergency Director warrant declaration of a UE.	
	PD-HA3.1 Other conditions exist which in the judgment of the Emergency Director indicate that events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the ISFSI or a security event that involves probable life threatening risk to site personnel or damage to ISFSI equipment because of HOSTILE ACTION. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.	PD-HU3.1 Other conditions exist which in the judgment of the Emergency Director indicate that events are in progress or have occurred which indicate a potential degradation of the level of safety of the ISFSI 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 occurs.	