



Crystal River Nuclear Plant  
15760 W. Power Line Street  
Crystal River, FL 34428  
Docket 50-302  
Docket 72-1035  
Operating License No. DPR-72

10 CFR 50.4(b)(5)(ii)  
10 CFR 50.54(q)(5)  
10 CFR 50, Appendix E

July 21, 2020  
3F0720-03

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, DC 20555-001

Subject: Crystal River Unit 3 – ISFSI Only Emergency Plan and Implementing Procedure

Dear Sir:

In accordance with 10 CFR 50.4(b)(5)(ii) and 10 CFR 50.54(q)(5), Duke Energy Florida, LLC, is submitting the 10 CFR 50.54(q) Screening Evaluation Form and the 10 CFR 50.54(q) Effectiveness Evaluation Form for revisions to Crystal River Unit 3 (CR-3) ISFSI Only Emergency Plan (IOEP) and implementing procedures.

The IOEP, Revision 2 and implementing procedures were issued on July 6, 2020. The implementing procedures include the IOEP Emergency Action Level Basis Manual, AI-4000 (Conduct of The Emergency Planning Coordinator & Schedule for ISFSI Only Emergency Plan Maintenance), AI-4001 (Conduct of Drills and Exercises Supporting the ISFSI Only Emergency Plan), EM-205 (Personnel Emergency Responsibilities Regarding Discover, Assembly, Evacuation and Accountability within the ISFSI Protected Area), EM-211 (Duties of the ISFSI Security Organization), EM-502 (Conduct of The Emergency Coordinator), EM-504 (Conduct of the Radiation Protection Coordinator), EM-911D (Security Threats for Decommissioning Plant) and HPP-334 (Off-Site Radiation Monitoring and Control). All changes were evaluated, in accordance with 10 CFR 50.54(q)(5), and did not reduce the effectiveness of the Emergency Plan.

Enclosure 1 contains the 10 CFR 50.54(q) Screening Evaluation and Effectiveness Evaluation Forms. Enclosure 2 is a copy of the IOEP, Revision 2 and IOEP Emergency Action Level Basis Manual, Revision 1.

There are no new regulatory commitments contained within this letter.

If you have any questions regarding this submittal, please contact Mr. Mark Van Sicklen, Licensing, Nuclear Regulatory Affairs, at (352) 501-3045.

Sincerely,

Terry Hobbs  
General Manager Decommissioning - SAFSTOR

TDH/mvs

Enclosures: 1. 10 CFR 50.54(q) Screening Evaluation Form and 10 CFR 50.54(q) Effectiveness Evaluation Forms.

2. IOEP, revision 2 and IEOP Emergency Action Level Basis Manual, Revision 1

cc: NMSS Project Manager  
Regional Administrator, Region I

**DUKE ENERGY FLORIDA, LLC**

**CRYSTAL RIVER UNIT 3**

**DOCKET NUMBER 50-302 / 72-1035 /  
LICENSE NUMBER DPR-72**

**ENCLOSURE 1**

**10 CFR 50.54(q) Screening Evaluation Form and 10 CFR 50.54(q)  
Effectiveness Evaluation Form for implementing procedure changes**

### AI-4000 Summary of Changes

Section	Change	Reason
9.5.9.1	Changed frequency from Annually to Quarterly to align with IOEP 12.3 (PRR 2314893)	Correct legacy error (NCR 2314892)

### AI-4001 Summary of Changes

Section	Change	Reason
Encl 2, Gen. Obj. 10	Delete "Owner-" from "Owner-Controlled Area" to align with partial site reduction terms	Partial Site Release.
Encl 2, Gen. Obj. 13 & 22	Delete "CR3 ISFSI" from "CR3 ISFSI Protected Area" to align with partial site reduction terms	Partial Site Release.

### EM-205 Summary of Changes

Section	Change	Reason
Title Page, 1.0, 3.0.1, 3.0.7, 4.0.3, 4.0.8	Deleted "ISFSI" from "ISFSI Protected Area" to align with partial site reduction terms	Partial Site Release.
1.0.3, 4.0.9, 6.0.3	Deleted "CR3 ISFSI" from "CR3 ISFSI Protected Area" to align with partial site reduction terms	Partial Site Release.
3.0.4, 3.0.8, 3.0.10	Delete "Owner" from "Owner Controlled Area" to align with partial site reduction terms	Partial Site Release.
3.0.8	Changed description of Controlled Area to align with partial site reduction terms	Partial Site Release.

### EM-211 Summary of Changes

Section	Change	Reason
2.1.8, 3.0.1, 3.0.8, 3.0.9, 6.0 NOTE, 6.0.1, 9.3.1	Deleted "ISFSI" from "ISFSI Protected Area" to align with partial site reduction terms	Partial Site Release.
3.0.2	Deleted "CR3 ISFSI" from "CR3 ISFSI Protected Area" to align with partial site reduction terms	Partial Site Release.
3.0.5	Delete "Owner" from "Owner Controlled Area" to align with partial site reduction terms	Partial Site Release.

## EM-502 Summary of Changes

Section	Change	Reason
2.1.13	New, added ANI Information Bulletin 11-01 Emergency Notification Procedures reference as basis for ANI notification for Alert.	Editorial
3.0	Renumbered due to addition and deletion.	Partial Site Release.
3.0.2 (new)	Added definition of Controlled Area as a result of Partial Site Release terminology changes.	Partial Site Release.
3.0.6	Deleted Exclusion Area definition as it is no longer used as a result of Partial Site Release terminology changes.	Partial Site Release.
3.0.7	Deleted 'owner' from definition as a result of Partial Site Release terminology changes.	Partial Site Release.
9.1.4	Deleted 'CR-3 ISFSI' from step as a result of Partial Site Release terminology changes.	Partial Site Release.
9.2.4	Deleted 'CR-3 ISFSI' from step as a result of Partial Site Release terminology changes.	Partial Site Release.
Encl 3 p2	Deleted 'Extremity' on ETA form as Dosimetry program update removed reference to Extremity TLDs (PRR 2310416).	Dosimetry program change
Encl 3 p2	Changed 'ESC' to 'ERF' on ETA form to correct facility name (legacy error)	Editorial
Encl 3, p4, step 4	Deleted 'Extremity TLDs...' as Dosimetry program update removed reference to Extremity TLDs (PRR 2310416).	Dosimetry program change
Att 1, line 8.B.	Changed reference from 'Exclusion Area Boundary' to 'Controlled Area boundary' as a result of Partial Site Release terminology changes.	Partial Site Release.
Att 2, 2.0.8	Changed reference from 'Exclusion Area Boundary' to 'Controlled Area boundary' as a result of Partial Site Release terminology changes.	Partial Site Release.

## EM-504 Summary of Changes

Section	Change	Reason
3.0.1	Changed to align terms from Partial Site Release: <ul style="list-style-type: none"><li>Deleted Exclusion Area Boundary definition</li><li>Added Controlled Area definition</li></ul>	Partial Site Release.
6.0.8	Deleted 'Owner' from 'Controlled Area' to align terms from Partial Site Release	Partial Site Release.
10.0	Added Attachment 1, 2, and 3 as records (PRR 2306684)	Editorial
Attachment 1, 2, and 3	Added "QA RECORD" to each Attachment with data (PRR 2306684)	Editorial
Attachment 3 p1	Changed 'Controls' to 'Protection' (Radiation Protection Coordinator) – editorial to correct legacy error.	Editorial

## EM-911D Summary of Changes

Section	Change	Reason
1.0.1	Deleted NOCS number as this is no longer active.	Editorial
1.0.3, 2.1.10	<i>Replaced AD-SY-ALL-0110 with CR3-ISFSI-0110 (editorial)</i>	<i>Editorial</i>
3.0	Renumbered to alphabetize.	Partial Site Release.
3.0.3 (new 3.0.4)	Deleted 'owner' from 'controlled area' to align terms with Partial Site Release. (PRR 2260278)	Partial Site Release.
3.0.5 (new 3.0.6)	Deleted 'ISFSI' from 'Protected Area' to align terms with Partial Site Release. (PRR 2260278)	Partial Site Release.
3.0.6 (new 3.0.1)	Redefined 'CONTROLLED AREA' to align with Partial Site Release. (PRR 2260278)	Partial Site Release.
5.1	<ul style="list-style-type: none"> <li>Deleted 'owner' from 'controlled area' to align terms with Partial Site Release. (PRR 2260278)</li> <li>Deleted 'O' from 'CA' to align terms with Partial Site Release. (PRR 2260278)</li> </ul>	Partial Site Release.
<i>Attachment 2, Step 3</i>	<i>Replaced AI-1830 with CR3-ISFSI-0206 (editorial)</i>	<i>Editorial</i>

## HPP-334 Summary of Changes

Section	Change	Reason
ALL	Editorial changes to enhance procedure use.	Editorial
3.1	Updated definition of Controlled Area	Partial Site Release.
3.13	Updated definition of Restricted Area	Partial Site Release.
6.0	Sub steps 3, 4 and 5: Removed references to Exclusion Area. This term is no longer used and was replaced with Controlled Area	Partial Site Release.
7.0	Replaced wording that recommended use of the Fluke 451P survey meter. Guidance now states to use the same types of instruments that were used to perform the routine surveys.	Consistency in equipment used to compare readings.
9.1.3	Deleted words "and record on Enclosure 5."	Editorial
9.1.8	Deleted "and/or EM0501," this procedure is on Tech Hold.	Editorial
9.1.13	Reworded to allow transmittal of RP survey records per applicable CR3 procedures.	Editorial
9.3.5	Added title "RMT Supervisor or designee" to indicate responsible person.	Editorial
Enclosure 2, pages 1 and 2	Replaced "Exclusion" to "Site" in the title descriptions	Partial Site Release.

## IOEP Summary of Changes

Section	Change	Reason
Cover	<i>Removed Duke Energy Florida, LLC</i>	<i>Editorial</i>
1.2	Added information regarding Rev 1 to the IOEP.	Editorial.
2.1	<ul style="list-style-type: none"> <li>• <i>Changed Duke Energy to the licensee</i></li> <li>• <i>Removed Duke Energy in reference to the Operating License DPR 72</i></li> </ul>	<i>Editorial</i>
3.10	Changed FSAR to DSAR	Editorial.
4.1	Reordered following change to CONTROLLED AREA definition	Partial Site Release.
4.1.1	Deleted 'ISFSI' from PROTECTED AREA to align terms from Partial Site Release	Partial Site Release.
4.1.10	Deleted 'OWNER' from CONTROLLED AREA to align terms from Partial Site Release	Partial Site Release.
4.1.14	<i>Changed Duke Energy to the licensee</i>	<i>Editorial</i>
4.1.14	Changed definition of CONTROLLED AREA to align terms from Partial Site Release.	Partial Site Release.
4.1.21	Deleted to align terms from Partial Site Release: <ul style="list-style-type: none"> <li>• 'OWNER' from CONTROLLED AREA</li> <li>• 'O' from CA</li> </ul>	Partial Site Release.
4.2	Changed FSAR to DSAR	Editorial.
5.1	<i>Changed Duke Energy to the licensee</i>	<i>Editorial</i>
5.3.6	<i>Changed Duke Energy to the licensee</i>	<i>Editorial</i>
6.2	<i>Changed Duke Energy to the licensee</i>	<i>Editorial</i>
6.2.5	<i>Removed Duke Energy when referring to other company facilities</i>	<i>Editorial</i>
8.1	<i>Changed Duke Energy to CR-3</i>	<i>Editorial</i>
9.0	<i>Changed Duke Energy to the licensee</i>	<i>Editorial</i>
11.0	<ul style="list-style-type: none"> <li>• <i>Removed Duke Energy from Corporate Communications title.</i></li> <li>• <i>Revised the statement "The Corporate Communications will be notified at the company's Charlotte headquarters and a near-site response team may be established for the CR-3 ISFSI." To read "The Corporate Communications may establish a near-site response team for the CR-3 ISFSI."</i></li> </ul>	<i>Editorial (removed specifics related to the location of Corporate Communication without changing response requirements)</i>
12.2.1	<i>Changed Duke Energy to CR-3</i>	<i>Editorial</i>
13.0	<i>Changed Duke Energy to the licensee</i>	<i>Editorial</i>
14.1	Deleted 'ISFSI' from PROTECTED AREA to align terms from Partial Site Release	Partial Site Release.
14.2	<ul style="list-style-type: none"> <li>• Deleted 'ISFSI' from PROTECTED AREA to align terms from Partial Site Release</li> <li>• Capitalized PROTECTED AREA</li> </ul>	Partial Site Release.
16.0	<i>Changed Duke Energy to the licensee</i>	<i>Editorial</i>
16.2	<i>Changed Duke Energy to CR-3</i>	<i>Editorial</i>
16.3	<ul style="list-style-type: none"> <li>• <i>Removed Duke Energy when referring to employees.</i></li> <li>• <i>Changed Duke Energy to the licensee</i></li> </ul>	<i>Editorial</i>
17.0	<ul style="list-style-type: none"> <li>• <i>Removed Duke Energy when referring to organization.</i></li> <li>• <i>Changed Duke Energy to the licensee</i></li> </ul>	<i>Editorial</i>
17.2	<i>Changed Duke Energy to CR-3</i>	<i>Editorial</i>
20.4	<i>Changed Duke Energy to the licensee</i>	<i>Editorial</i>

### IOEPEALBM Summary of Changes

Section	Change	Reason
3.0, Att1 p2, Att1 p4	Updated "Owner Controlled Area" definition to CONTROLLED AREA.	Partial Site Release.
3.0	Updated "Owner Controlled Area" definition to CONTROLLED AREA (Deleted "O" from "OCA").	Partial Site Release.
3.0	Updated definition of CONTROLLED AREA and moved definition alphabetically.	Partial Site Release.
Att 1 p 8 & 9, Att 2 p 4	Deleted Amendment Number 14 to COC 1004 from Note and Basis for E-HU1	Editorial. Reference remains CoC 1004 but current revision is maintained in records.



**DUKE ENERGY FLORIDA, LLC**

**CRYSTAL RIVER UNIT 3**

**DOCKET NUMBER 50-302 / 72-1035 /  
LICENSE NUMBER DPR-72**

**ENCLOSURE 2**

**IOEP, revision 2 and  
IEOP Emergency Action Level Basis Manual, Revision 1**



**INDEPENDENT SPENT FUEL STORAGE INSTALLATION (ISFSI)  
ONLY  
EMERGENCY PLAN  
(IOEP)  
Revision 2**

**CRYSTAL RIVER UNIT 3**

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**Emergency Planning Coordinator**

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**Date**

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**ISFSI Site Director**

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**Date**

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## **1.0 INTRODUCTION**

Crystal River Unit 3 Nuclear Plant (CR-3) was safely shutdown on September 26, 2009. On February 20, 2013, by letter 3F0213-07, Duke Energy provided certification to the U.S. Nuclear Regulatory Commission (NRC) required by 10 CFR 50.82(a)(1)(i) and (ii) that CR-3 has permanently ceased operations and that all fuel has been permanently removed from the reactor vessel. Subsequently, all spent fuel has been transferred to the on-site INDEPENDENT SPENT FUEL STORAGE INSTALLATION (ISFSI) facility.

The CR-3 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. This IOEP adequately addresses the risks associated with CR-3'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 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 CR-3 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 Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants" and NEI 99-01, "Development of Emergency Action Levels for Non-Passive Reactors," Rev. 6.

Exemptions from selected portions of 10 CFR 50.47 and 10 CFR 50 Appendix E for CR-3 were granted by the Nuclear Regulatory Commission (NRC) on March 30, 2015 (ADAMS Accession Number: ML15058A906).

The IOEP, Revision 0, was approved per NRC Safety Evaluation dated March 22, 2017.

The IOEP, Revision 1 changes were approved per NRC Safety Evaluation dated May 3, 2019.

## **2.0 DISCUSSION**

### **2.1 OVERVIEW OF ISFSI-ONLY EMERGENCY PLAN (IOEP)**

In the event of an emergency at the CR-3 ISFSI, actions are required to identify and assess the nature of the emergency and to bring it under control in a manner that protects the health and safety of onsite personnel. This Plan describes the organization and responsibilities of the licensee for implementing emergency measures. It describes interfaces with Federal, State of Florida, and Citrus County organizations, which may be notified in the event of an emergency, and may provide assistance. Emergency services are provided by local public and private entities. Fire, rescue and law enforcement services are provided by Citrus County. Ambulance service is provided by Nature Coast Emergency Medical Services. Medical services are provided by Bayfront Health Seven Rivers hospital.

CR-3 is licensed under the requirements of 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities." Consistent with the requirements of 10 CFR Part 50, this Plan is based on the requirements of 10 CFR Part 50, Section 50.47(b) and Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," with approved exemptions. Sections 5.0 thru 20.0 of this Plan address the standards outlined in 10 CFR 50.47(b)(1) through (16). In addition, the Plan is also intended to meet appropriate State of Florida and U.S. NRC regulations in accordance with the Operating License (No. DPR 72). CR-3 is licensed to store spent fuel in the CR-3 ISFSI under the General License provisions of 10 CFR 72.210 and 10 CFR 72.212.

Because the analyses of the credible design basis events and consequences indicate there are no postulated accidents that would result in off-site dose consequences that are large enough to require off-site emergency planning, emergencies are divided into two classifications: 1) Notification of UNUSUAL EVENT and 2) ALERT. This classification scheme has been discussed and agreed upon with responsible off-site organizations and is compatible with the State Plan.



## **2.1 OVERVIEW OF ISFSI-ONLY EMERGENCY PLAN (IOEP) (Continued)**

The licensee is responsible for planning and implementing emergency measures associated with the CR-3 ISFSI. This Plan is provided to meet that responsibility. To carry out specific emergency measures discussed in this Plan, detailed implementing procedures are established and maintained. Appendix A provides a listing of the implementing procedures for this Plan.

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

## **2.2 FACILITY DESCRIPTION**

The CR-3 Plant is located at Red Level, Florida in Citrus County, about 5 miles south of Levy County. The site is 7.5 miles northwest of Crystal River, Florida and 90 miles north of St. Petersburg, Florida. CR-3 is situated on the Gulf of Mexico, within the Crystal River Energy Complex.

CR-3 formerly consisted of a single unit nominal 911 MWe / 2609 MWth Nuclear Power Plant, utilizing a Babcock & Wilcox (B&W) Company (currently AREVA) pressurized water reactor (PWR). The unit is certified to have ceased power operations and is permanently defueled in accordance with 10 CFR 50.82(a)(1)(i) and (ii). All spent fuel has been transferred to the CR-3 INDEPENDENT SPENT FUEL STORAGE INSTALLATION (ISFSI) which is located to the east of the CR-3 Plant. The CR-3 ISFSI is a robust and high integrity facility for the spent fuel storage system. This facility is designed to prevent the release of radioactivity in the event of accidents, including environmental phenomena (e.g., earthquake and flooding).

## **2.3 SUMMARY OF EMERGENCY ACTIONS**

The IOEP 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 COORDINATOR (EC). 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 EC. Regulatory authorities and off-site support organizations are notified in accordance with this Plan. The EC has authority and responsibility for control and mitigation of the emergency, including emergency response resources, coordination of radiological ASSESSMENT ACTIVITIES, RECOVERY implementation, and coordination of emergency response activities.

The following sections of this IOEP describe the detailed plans and actions of the CR-3 Emergency Response Organization (ERO), including interfaces with off-site support organizations.

### 3.0 **REFERENCES**

- 3.1 10 CFR 50.47, "Emergency Plans"
- 3.2 10 CFR Part 50, Appendix "E," "Emergency Planning and Preparedness for Production and Utilization Facilities"
- 3.3 10 CFR Part 20, "Standards for Protection Against Radiation"
- 3.4 NUREG-0578, "TMI-2 Lessons Learned Task Force Status Report and Short-Term Recommendations" (July 1979)
- 3.5 NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants" (November 1980)
- 3.6 Regulatory Guide 1.101, "Emergency Planning and Preparedness for Nuclear Power Reactors"
- 3.7 Environmental Protection Agency, "Protective Action Guide and Planning Guidance for Radiological Incidents," Draft for Interim Use and Public Comment (March 2013)
- 3.8 "State of Florida Radiological Emergency Management Plan" (herein referred to as State Plan)
- 3.9 State of Florida Statutes, Chapter 170J-1, "Control of Radiation Hazards"
- 3.10 CR-3 Defueled Safety Analysis Report (DSAR)
- 3.11 CR-3 Permanently Defueled Technical Specifications
- 3.12 Emergency Plan Implementing Procedures
- 3.13 Bayfront Health Seven Rivers Hospital "Radioactive Materials Procedure"
- 3.14 NRC Bulletin 2005-02, "Emergency Preparedness and Response Actions for Security-Based Events"
- 3.15 NEI 99-01, "Development of Emergency Action Levels for Non-Passive Reactors," Rev. 6
- 3.16 CR-3 Letter 3F0213-07 dated February 20, 2013. Crystal River Unit 3 – Certification of Permanent Cessation of Power Operations and that Fuel Has Been Permanently Removed from the Reactor. ML13056A005.
- 3.17 NRC Letter dated March 13, 2013. Crystal River Unit 3 Nuclear Generating Plant Certification of Permanent Cessation of Operation and Permanent Removal of Fuel From the Reactor.
- 3.18 NRC Letter dated March 30, 2015. Exemptions From Certain Emergency Planning Requirements And Related Safety Evaluation. ML15058A906.
- 3.19 ISFSI Storage System Certificates of Compliance, Updated Final Safety Analysis Reports and Technical Specifications.
- 3.20 10 CFR 72.106, Controlled area of an ISFSI or MRS.

## 4.0 **DEFINITIONS AND ABBREVIATIONS**

### 4.1 **DEFINITIONS**

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

1. **Accountability:** Discretionary protective action taken for all persons onsite (within the PROTECTED AREA) that involves the gathering of personnel into pre-designated areas and subsequent verification that the location of all personnel is known.
2. **Annual:** Once per calendar year unless otherwise specifically stated.
3. **Assessment Activities:** Actions taken during or after an emergency for the purpose of obtaining and processing the information that will be used to make the decisions to implement specific emergency measures.
4. **Controlled Area:** The area of land (approximately 884 acres) that is owned, leased, or otherwise controlled by the licensee. The CONTROLLED AREA is the area of land within the SITE BOUNDARY, as shown in Figure 2-2 of the DSAR. The PROTECTED AREA is located within the CONTROLLED AREA.
5. **Emergency Actions:** Assessment, corrective, and PROTECTIVE ACTIONS designed to achieve a safe, stable condition, and to immediately mitigate the effects of the emergency.
6. **Emergency Action Level (EAL):** A pre-determined, observable threshold for conditions that places the CR-3 ISFSI in a given emergency classification.

## 4.1 DEFINITIONS (Continued)

7. **Emergency Classification System:** A system of classification in which emergency occurrences are categorized according to specific protective action levels. The two emergency classifications in order of significance are UNUSUAL EVENT and ALERT. These classifications are defined by NEI 99-01, Rev. 6 as follows:
- a. **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 off-site response or monitoring are expected unless further degradation of safety systems occurs.
  - b. **Alert:** Events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the CR-3 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 PAG exposure levels.
8. **Emergency Coordinator (EC):** This position is the highest level of authority for the CR-3 ERO and on-site emergency activities. This position is held by the ISFSI Shift Supervisor or designated alternate.
9. **Fire:** Combustion characterized by heat and light. Sources of smoke such as slipping drive belts or overheated electrical equipment do not constitute fires. Observation of flame is preferred but is not required if large quantities of smoke and heat are observed.
10. **Frequency:** That unit of time specified (monthly, quarterly, etc.) plus or minus 25 percent unless otherwise specifically stated. This definition does not apply to "ANNUAL" when it is related to the conduct of the Biennial Exercise (NRC Evaluated). Biennial Exercises are performed within the calendar year.

#### 4.1 DEFINITIONS (Continued)

11. **Hostile Action:** An act toward the CR-3 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 CR-3 ISFSI. Non-terrorism-based EALs should be used to address such activities, (e.g., violent acts between individuals in the CONTROLLED AREA). (NEI 99-01, Rev. 6)
12. **Hostile Force:** One or more individuals who are engaged in a determined assault, overtly or by stealth and deception, equipped with suitable weapons capable of killing, maiming, or causing destruction. (NEI 99-01, Rev. 6)
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. **Local Assembly Area:** A pre-designated area personnel report to for organization, roll-call, and supervision when CR-3 ISFSI ACCOUNTABILITY is initiated.
15. **Protected Area:** The area encompassed by physical barriers and to which access is controlled.
16. **Protective Actions:** Those emergency measures taken after an uncontrolled release of radioactive material has occurred for the purpose of preventing or minimizing radiological exposures to persons that would be likely to occur if the actions were not taken.

#### 4.1 DEFINITIONS (Continued)

17. **Protective Action Guide (PAG):** The projected dose to an individual, resulting from a radiological incident at which a specific PROTECTIVE ACTION to reduce or avoid that dose is warranted.
18. **Recovery:** The condition declared after the immediate hazards to life and safety due to the emergency have been removed and efforts are directed to returning affected areas to normal.
19. **Recovery Actions:** Those actions taken after the emergency to restore the CR-3 ISFSI as nearly as possible to its pre-emergency condition.
20. **Release (Radioactive):** Any radioactive material beyond pre-emergency levels and not attributable to normal operations, either detected or suspected of migrating beyond the PROTECTED AREA, while in a declared emergency. (Florida Nuclear Plant Emergency Notification Form).
21. **Site Boundary:** That line beyond which the land is not owned, leased, or otherwise controlled by the licensee. This line establishes the perimeter of the CONTROLLED AREA (CA).

## 4.2 **ABBREVIATIONS**

CCSO	Citrus County Sheriff's Office
CR-3	Crystal River Unit 3
DEM	State of Florida Department of Community Affairs, Division of Emergency Management
DHBRC	Department of Health, Bureau of Radiation Control (State of Florida)
EAL	Emergency Action Level
EC	Emergency Coordinator
ENS	Emergency Notification System
EPA	U.S. Environmental Protection Agency
ERO	Emergency Response Organization
DSAR	Defueled Safety Analysis Report
ISFSI	Independent Spent Fuel Storage Installation
NRC	U.S. Nuclear Regulatory Commission
ORO	Offsite Response Organization
PAG	Protective Action Guide
RCA	Radiation Controlled Area
REAC/TS	Radiation Emergency Assistance Center/Training Site
SHRD	State Hot Ringdown
SWO	State Watch Office



## **5.0 ASSIGNMENT OF RESPONSIBILITY (ORGANIZATION CONTROL)**

The CR-3 ISFSI Organization has complete capability at all times to perform the detection, classification, initial response, and notification functions required during an emergency.

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 ISFSI ORGANIZATION**

The licensee is responsible for the safe storage of spent fuel in accordance with the State of Florida and NRC regulations. Responsibility for planning and implementing all emergency measures rests with the licensee.

The CR-3 ISFSI Organization has an inherent emergency response/RECOVERY function in its overall management and operation. This function can be delineated by reviewing management structure and responsibilities as follows:

1. **ISFSI Site Director**

The ISFSI Site Director is directly responsible for the operation of the CR-3 ISFSI and has ultimate responsibility for the overall effectiveness of the CR-3 IOEP.

2. **ISFSI Manager - Operations and Maintenance**

The ISFSI Manager - Operations and Maintenance reports to the ISFSI Site Director and is responsible for the safe operation and maintenance of the CR-3 ISFSI facility.

3. **ISFSI Shift Supervisor (ISS)**

The ISS reports to the ISFSI Manager - Operations and Maintenance and is at CR-3, 24-hours a day, and is the senior management position during off-hours. This position is responsible for monitoring conditions at the CR-3 ISFSI.

## **5.2 EMERGENCY RESPONSE AND RESPONSIBILITIES**

The ISFSI Shift Supervisor (ISS) has the responsibility and authority to declare an emergency and initiate appropriate actions in accordance with written procedures to mitigate the consequences. When an off-normal, natural phenomenon, or accident event becomes apparent, the ISS shall assess the condition and declare an emergency if warranted. When an emergency is declared the ISS assumes the position of the Emergency Coordinator (EC).

The EC is responsible for the direction of all activities at the ISFSI site during an emergency. Should evaluation indicate the need, the EC has the authority to direct any or all personnel to relocate from the ISFSI and surrounding area and to notify all applicable agencies of the ISFSI status. The EC ensures that appropriate actions are taken to mobilize emergency teams and to notify management and applicable off site supporting organizations and regulatory agencies as necessary.

The functions associated within the EC's scope of responsibilities are specified in Table 6-1. The EC does not have concurrent duties which conflict with these responsibilities. At the direction of the EC, additional personnel may be activated to support the on-shift staff.

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

### **5.3 OFFSITE RESPONSE ORGANIZATIONS (ORO)**

Response organizations are available on a continuous basis and interrelate to receive notifications and communications and provide medical and law enforcement support to the CR-3 ISFSI.

#### **5.3.1 FLORIDA STATE WATCH OFFICE (SWO)**

The Florida State Watch Office (SWO) is the primary point of contact for the State of Florida for the purpose of notification of an emergency declaration. Notification of an emergency will be made to the SWO within 60 minutes after an emergency declaration or change in classification. The SWO will notify the Division of Emergency Management (DEM) and Citrus County officials of an emergency at the CR-3 ISFSI.

The SWO is available on a 24-hour basis to receive emergency communications from CR-3 ISFSI staff and, in turn, contact State and local emergency response organizations, as appropriate.

Emergency notification is received from the EC or designated alternate via the State Hot Ringdown Telephone System (SHRD), or other means necessary.

The Duty Officer notifies the Florida Division of Emergency Management (DEM) and Citrus County officials. The Duty Officer, with assistance from the DEM, then notifies appropriate State agencies.

### **5.3.2 FLORIDA DIVISION OF EMERGENCY MANAGEMENT**

The State of Florida Department of Community Affairs' DEM is responsible for coordinating Federal, State and local radiological emergency response activities, and for preparing and maintaining the State Plan.

The Director, DEM is responsible for coordinating DEM emergency response. The DEM receives notification of an emergency at the CR-3 ISFSI via the SWO; verifies the information contained in the notification messages; and alerts key State, Local and Federal emergency response personnel, as appropriate.

### **5.3.3 CITRUS COUNTY SHERIFF'S OFFICE, DIVISION OF EMERGENCY OPERATIONS, EMERGENCY MANAGEMENT SECTION**

Citrus County Sheriff's Emergency Management is responsible for coordinating law enforcement and fire support at the CR-3 ISFSI. Communications are maintained through the Citrus County 9-1-1 Dispatch Center.

The CCSO is responsible for coordinating emergency operations at the local level and for keeping local officials advised of law enforcement actions involving the CR-3 ISFSI.

The Citrus County EOC in Lecanto, Florida maintains 24 hour per day communications through the County's Fire Dispatch/EOC via commercial telephone.

#### **5.3.4 BAYFRONT HEALTH SEVEN RIVERS HOSPITAL**

Bayfront Health Seven Rivers hospital in Crystal River, Florida serves as the hospital to treat injuries resulting from any non-radiological or radiological emergency situation at the CR-3 ISFSI.

The hospital will acknowledge and respond to all emergency medical requests from the Emergency Response Organization and management at the CR-3 ISFSI.

Treatment will be provided for non-radiological and radiological injuries. The hospital will maintain communications with the CR-3 ISFSI. The hospital will maintain communications with the Citrus County EOC on support needs or other agencies as appropriate.

The hospital will furnish the services of physicians to injured persons. The hospital will accept all patients dispatched from the CR-3 ISFSI. If necessary, the hospital will utilize radiological support provided by CR-3 ISFSI Staff.

#### **5.3.5 LOCAL EMERGENCY MEDICAL SERVICES**

Ambulance service is available 24 hours per day to provide assistance in the event of an emergency at the CR-3 ISFSI via the Citrus County 9-1-1 Dispatch Center.

Upon request, local ambulance services will provide emergency medical services. It will maintain communication with the CR-3 ISFSI, Bayfront Health Seven Rivers hospital and/or CCSO on support needs.

Upon request from the CR-3 ISFSI EC or designee, ambulance service will be provided, which includes emergency medical treatment and/or transportation to a designated hospital facility. The service shall accept all patients dispatched from CR-3 ISFSI and, where necessary, shall utilize the radiological support provided by CR-3 Staff.

### **5.3.6 NUCLEAR REGULATORY COMMISSION**

The NRC is the primary Federal agency providing coordination and support to the licensee in the event of an emergency at the CR-3 ISFSI. NRC responsibilities are directed toward a coordination of Federal efforts to provide assistance to the licensee and State and local governments in their planning and implementation of emergency preparedness procedures.

The NRC response must be regarded primarily as supportive of, and not a substitute for, responsible action by the licensee and other key response organizations. The NRC must be continually informed of status and possible radiological consequences, and be frequently updated on plans for emergency and RECOVERY ACTIONS and needs for assistance.

In the event of an emergency at the CR-3 ISFSI, the NRC Operations Center in Rockville, Maryland will be notified immediately after notification of the SWO and not later than 60 minutes after declaration of an emergency classification or change in classification. Classification information and radiological information are communicated to this office over a dedicated telephone line from the CR-3 ISFSI Emergency Response Facility. Emergency notification, ISFSI status information and radiological information is communicated via the Emergency Notification System (ENS). Other information is communicated via normal telephone service.

### **5.4 WRITTEN AGREEMENTS FOR EMERGENCY RESPONSE**

Discussions have been held and agreements reached and confirmed, in writing, with State, County and private sector organizations having responsibilities for coping with radiological emergencies. Appendix B contains a list of these agreements. A copy of each agreement is maintained on file.

## **6.0 EMERGENCY RESPONSE ORGANIZATION**

Emergency Response Organization (ERO) responsibilities for emergency response are listed in Table 6-1.

### **6.1 ON-SHIFT POSITIONS**

The personnel and resources of the CR-3 ISFSI organization maintain the capabilities necessary to respond to an emergency. All site activities are conducted under the direction and control of the ISFSI Manager - Operations and Maintenance. To provide support in required areas, the CR-3 ISFSI organization is broken down into functional areas headed by designated managers. As appropriate, these areas are further subdivided according to specific technical disciplines or support functions.

#### **6.1.1 ISFSI SHIFT SUPERVISOR (ISS) / EMERGENCY COORDINATOR (EC)**

The ISFSI Shift Supervisor (ISS) is at the CR-3 ISFSI on a 24-hour basis and is the senior management position during off-hours. This position is responsible for monitoring conditions at the CR-3 ISFSI. The ISS has the responsibility and authority to declare an emergency and to initiate appropriate actions in accordance with written procedures to mitigate the consequences of the emergency. The ISS will assume the position of EC upon declaration of an emergency and has the responsibility to notify the Resource Manager of an emergency at the CR-3 ISFSI.

The EC is responsible for the direction of all activities at the CR-3 ISFSI during any emergency. In accordance with site procedures, the EC shall evaluate the emergency and take necessary actions to mitigate the consequences. The EC has the authority to direct personnel to relocate or to direct activities on the Energy Complex as necessary to ensure personnel safety.

The EC is responsible for assuring that appropriate corrective and PROTECTIVE ACTIONS are taken to mobilize emergency response personnel and for notifying management and off site supporting organizations and regulatory agencies, as necessary.

#### **6.1.1 ISFSI SHIFT SUPERVISOR (ISS) / EMERGENCY COORDINATOR (EC) (Continued)**

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

- Classification of the event (Cannot be delegated)
- Notification of Local, State and Federal agencies
- Authorization of radiation exposure in excess of 10 CFR 20 limits. (Cannot be delegated)
- Management of available station resources
- Initiation of mitigative actions
- Initiation of corrective actions
- Initiation of onsite protective actions
- Decision to request 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
- Suspend security measures

#### **6.1.2 SECURITY**

Security staffing is maintained in accordance with the CR-3 ISFSI Security Plan.



## **6.2 CR-3 ISFSI AUGMENTED EMERGENCY RESPONSE ORGANIZATION**

The licensee maintains the necessary personnel and resources to support the CR-3 ISFSI EC in responding to an emergency.

### **6.2.1 RESOURCE MANAGER**

The Resource Manager will be in contact with the EC within two hours of classification. The Resource Manager will augment the EC 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 CR-3 to perform their responsibilities.

### **6.2.2 RADIOLOGICAL ASSESSMENT PERSONNEL**

For a declared emergency involving radiological consequences (EU1), a minimum of one person trained in radiological monitoring and assessment will report to the CR-3 ISFSI within four hours of the emergency declaration to assist the EC.

### **6.2.3 MEDICAL RESPONSE PERSONNEL**

Individuals trained in first aid will be available. Medical supplies are available at the CR-3 ISFSI. First aid assistance is designed to handle a wide range of injuries. This task is accomplished by on-site individuals trained in basic first aid procedures.

### **6.2.4 FIRE RESPONSE**

Firefighting response at the CR-3 ISFSI is implemented in accordance with the CR-3 ISFSI Fire Protection Plan. Citrus County Fire Rescue is designated to provide response and support services as requested. The nearest staffed fire department is approximately 10 miles away from the CR3 ISFSI, which allows for a timely response from the initial notification.

### **6.2.5 CORPORATE ORGANIZATION**

In the event of an emergency at the CR-3 ISFSI that requires personnel and other support resources beyond those available within the CR-3 ERO, support is available from other facilities and can be requested from various contractors. Additional support to CR-3 is available from off-site organizations, as previously discussed in Section 5.0 of this Plan.

#### **6.2.6 OFFSITE RESPONSE ORGANIZATIONS (ORO)**

Additional support is available from OROs, as previously discussed in section 5.3 of this IOEP.

**TABLE 6.1**  
**EMERGENCY RESPONSE ORGANIZATION STAFFING AND RESPONSIBILITIES**

FUNCTIONAL AREA	LOCATION	ON-SHIFT STAFF	AUGMENTED OFFSITE RESPONSE
Assessment of Condition (Emergency Declaration)	Emergency Response Facility	EMERGENCY COORDINATOR	Resource Manager
Emergency Direction and Control	Emergency Response Facility	EMERGENCY COORDINATOR	-----
Notification/Communication	Emergency Response Facility	EMERGENCY COORDINATOR	-----
Radiological Accident Assessment and Protective Actions	Emergency Response Facility/ On Scene	EMERGENCY COORDINATOR	Resource Manager
			Augmentation Responder - <b>Note 1</b>
Corrective Actions	Emergency Response Facility/ On Scene	EMERGENCY COORDINATOR	-----
Firefighting	On Scene	Per CR-3 ISFSI Fire Protection Plan	Offsite Response Organization
Rescue Operations	On Scene	---	Offsite Response Organization
First Aid	On Scene	On-Shift Personnel	---
Security	Per ISFSI Security Plan	Per ISFSI Security Plan	N/A

**Note 1: For a declared emergency involving radiological consequences (EU1), a minimum of one person trained in radiological monitoring and assessment will report to the CR-3 ISFSI within four hours of the emergency declaration.**

## **7.0 EMERGENCY RESPONSE SUPPORT AND RESOURCES**

Response support organizations from the local, State, Federal, and private sectors available to assist in an emergency at the CR-3 ISFSI are identified and described in Section 5.0.

CR-3 maintains agreements with organizations that can be relied upon in an emergency to provide assistance. The agreements are listed in Appendix B.

## **8.0 EMERGENCY CLASSIFICATION SYSTEM**

### **8.1 STANDARD CLASSIFICATION OF EMERGENCIES**

CR-3 utilizes NEI 99-01, "Development of Emergency Action Levels for Non-Passive Reactors" Rev. 6, as its basis for classifying emergencies. The classification system referenced in NEI 99-01, Rev. 6 has been endorsed by the NRC and offers a standard method for classifying emergencies. EALs are addressed in site procedures and the ISFSI Only Emergency Plan EAL Basis Manual (IOEP EALBM).

This IOEP addresses two (2) classifications of emergencies (UNUSUAL EVENT and ALERT), which represent a hierarchy of emergencies based on potential accidents that could occur at the CR-3 ISFSI. 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.

#### **8.1.1 Unusual Event**

Events are in progress or have occurred which indicate a potential degradation of the level of safety of the CR-3 ISFSI or indicate a security threat to facility protection has been initiated. No release of radioactive material requiring off-site response or monitoring are expected. The State of Florida and the NRC are notified of an UNUSUAL EVENT.

The purpose of the UNUSUAL EVENT classification is to bring the on-shift staff to a state of readiness and to provide for systematic handling of event information and its related decision making.

### 8.1.2 **Alert**

Events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the CR-3 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 PAG exposure levels.

As in the case of the UNUSUAL EVENT, the ALERT classification includes emergency situations which are not expected to threaten the public, but for which notification of the State of Florida and the NRC is required.

## 8.2 **EMERGENCY ACTION LEVELS AND POSTULATED ACCIDENTS**

Both emergency classifications are characterized by EALs consisting of specific instrument readings and/or observations which are used to tell the CR-3 ISS that an initiating condition has been met. These EALs are used to assure that the initial classification of emergencies can be accomplished rapidly, allowing for the prompt identification of the nature of mitigating activities needed.

EALs and Initiating Conditions are provided under the following categories for the CR-3 ISFSI:

- ISFSI Malfunction
- Hazards and Other Conditions

The ISFSI UFSAR describes the Design Basis Accidents (DBAs) applicable to the CR-3 ISFSI, along with the radiological dose calculation results. Specific guidance for classifying emergencies is found in site procedures and the ISFSI Only Emergency Plan EAL Basis Manual (IOEP EALBM).

EALs shall be reviewed with State of Florida and Citrus County government authorities on an ANNUAL basis.

## **9.0 NOTIFICATION METHODS AND PROCEDURES**

To provide prompt notification of affected personnel and emergency response organizations in the event of an emergency at the CR-3 ISFSI, the licensee has established means for notification and dissemination of emergency messages.

### **9.1 BASIS FOR NOTIFICATION**

The notification of personnel and emergency response organizations is commensurate with the hazard posed by the emergency. The EMERGENCY CLASSIFICATION SYSTEM described in Section 8.0 is the primary bases for notification and has been mutually agreed upon by applicable State and Federal response organizations.

The EC is responsible for identifying the appropriate emergency classification, declaring the emergency and initiating emergency notifications.

### **9.2 MEANS OF NOTIFICATION**

Various communications systems, as described in Section 10.0 are available to perform emergency notifications. The EC is the primary individual for initiating notifications; however, the EC may designate an individual to carry out appropriate notifications. Implementing procedures and various directories identify organizations and individuals to be notified and contain appropriate listings of telephone numbers.

The following sections describe the means of notifying, alerting, and mobilizing the various emergency response organizations or individuals.

### **9.2.1 CR-3 ISFSI STAFF**

Following declaration of an emergency, the EC will notify the Resource Manager. The Resource Manager will provide support to the EC as described in Section 6.0.

Notifications to other management and key personnel will be made as in accordance with established procedures. These notifications will be completed via the on-site telephone system, or other commercial means which may include land line and/or wireless devices.

### **9.2.2 FOSSIL-HYDRO PERSONNEL**

Upon declaration of an emergency, the EC or a delegate will notify the Fossil-Hydro facilities by telephone or other available means, and an appropriate response will be initiated. The EC or a delegate will provide further instructions, as required.

### **9.2.3 NUCLEAR REGULATORY COMMISSION**

The NRC Operations Center will be notified of an emergency via the Event Notification System (ENS) telephone line. Upon contact with the NRC, a description of the emergency is provided, along with potential consequences. Commercial phone lines will be used as a backup means of notification in the event of failure of the ENS.

### **9.2.4 FLORIDA STATE WATCH OFFICE (SWO)**

The Florida State Watch Office (SWO) will be notified of an emergency via the State Hot Ring Down (SHRD) telephone line. The commercial telephone systems serve as back-up communications systems. Upon contact, the content of the Florida Nuclear Plant Emergency Notification Form will be provided. The SWO will notify the Florida DEM and Citrus County officials of an emergency at the CR-3 ISFSI.

### **9.2.5 SUPPORT ORGANIZATIONS**

Medical, local law enforcement agency, and firefighting support services are primarily notified for assistance via the public 9-1-1 process. Requests for support services are the responsibility of the EC.



### **9.3     EMERGENCY MESSAGES**

Notification of an emergency is provided verbally to the SWO based on the content of the Florida Nuclear Plant Emergency Notification Form. The form may also be transmitted electronically. The content of the initial notification and follow-up message form has been established in conjunction with the State of Florida and includes the date and time of the incident, the class of emergency, and the EAL. Appropriate identification of the caller and time of the notification are also provided.

As additional information describing the emergency situation and local conditions becomes available, supplemental messages containing additional detail are provided.

## 10.0 **EMERGENCY COMMUNICATIONS**

Several modes of communication are available to transmit information at the CR-3 ISFSI; throughout the Crystal River Energy Complex; and to various locations off-site during normal and emergency conditions. In the event of an emergency at the CR-3 ISFSI, these communications systems provide the appropriate means for alerting or activating emergency personnel in each response organization and allow continued means for contact throughout the emergency.

The various communications systems provided for both on-site and off-site communications are used on a regular basis or tested periodically in accordance with established procedures. Periodic testing or frequent use of each system is conducted as follows:

<b><u>System</u></b>	<b><u>Use/Testing</u></b>
Commercial Telephones	Frequent Use
Portable UHF Radios	Frequent Use
SHRD	Tested Monthly
ENS	Tested Monthly

All systems are available at the CR-3 Emergency Response Facility on a 24-hour basis to allow prompt notification and activation of emergency response organizations.

## **11.0 PUBLIC INFORMATION**

The EC or Resource Manager will notify Corporate Communications following an emergency declaration. The Corporate Communications may establish a near-site response team for the CR-3 ISFSI.

The near-site response team will be staffed with a company spokesperson and media communicators, who will provide local interaction with the media. If an event occurs at the CR-3 ISFSI, information will be disseminated to the public in a timely manner.

Briefings with media organizations will be coordinated between Corporate Communications and the near-site response team per Corporate Communications protocols.

## **12.0 EMERGENCY FACILITY AND EQUIPMENT**

Adequate emergency facilities and equipment to support the emergency response are provided and maintained. This section of the IOEP 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 EC (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 provides sufficient space to accommodate anticipated response personnel and provides availability of communication systems as specified in Section 10.0. 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.

#### **12.2.1 PORTABLE RADIATION AND CONTAMINATION MONITORING INSTRUMENTS**

CR-3 maintains portable radiation and contamination monitoring equipment necessary for monitoring the conditions of the CR-3 ISFSI. These instruments are normally utilized and maintained by the Radiation Protection Group and are available for emergency use.

#### **12.2.2 COMMUNICATION SYSTEMS**

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

### **12.3 EMERGENCY SUPPLIES**

Emergency equipment and supplies necessary to carry out the provisions of the IOEP and support procedures are maintained at the Emergency Response Facility.

Table 12.1 lists typical emergency equipment and supplies.

Emergency kit contents listed in Table 12.1 are inspected, inventoried, and operationally checked at least quarterly and anytime a kit is opened and used.

Sufficient reserves of instruments/equipment are provided to replace those which are removed from emergency kits for calibration or repair. Calibration of instruments has been established at intervals recommended by instrument suppliers, or as required by Federal regulations.

### **12.4 FIRST AID FACILITIES**

First aid supplies and equipment are located at the CR-3 ISFSI. Qualified personnel are available 24 hours per day to provide medical treatment as referenced in Section 16.0.

Radiological wound monitoring on-site is performed using an appropriate instrument. If the severity of the wound restricts decontamination efforts by radiation protection personnel, the injured personnel will be referred to off-site medical personnel or transported to an off-site medical facility for treatment and further decontamination.

**TABLE 12.1**

**TYPICAL EMERGENCY EQUIPMENT/SUPPLIES**

**Kit Contents**

Compass	Pens, Pencils
Protective Clothing	Calculator
Air Sampler Heads	Plant Survey Map
Tape, Barricade	Area Map
Thermoluminescent Dosimeter (TLD) Badges	Tape, Masking
Radiation Signs	HP Probes
Plastic Rain Gear	Check Source
Smears	Area Monitor (or Electronic Dosimeters)
Air Filters, Particulate	Batteries
Charcoal Cartridges	Flashlight
Felt Marker, Black	Labeled Envelopes
Shoe Covers	SH-4 Sample Mount and Holder
Gloves	Bottle, for water samples
Pad Paper	Electronic Dosimeters

### **13.0 ACCIDENT ASSESSMENT**

Effective response to a potential emergency situation requires assessment to determine the nature of the emergency and its actual and potential consequences. The licensee has established various methods to evaluate and monitor the effects of a potential emergency at the CR-3 ISFSI and has the appropriate means to assure adequate assessment.

The ASSESSMENT ACTIVITIES required to evaluate a particular emergency depend on the specific nature and classification of the emergency. The ISS/EC 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 ISS/EC in accordance with the EAL scheme.

If the measured ISFSI dose rates exceed the EAL threshold, the ISS/EC then ensures a radioactive RELEASE assessment in the vicinity of the affected storage module or cask is performed. After completing the assessment, the EC will contact the Resource Manager for assistance 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 implementing procedures.

Additionally, implementing procedures provide for a range of protective actions (e.g. relocation of personnel and personnel take cover) to protect onsite personnel during HOSTILE ACTIONS.

### **14.1 CR-3 ISFSI ACCOUNTABILITY**

The EC has the authority to initiate personnel ACCOUNTABILITY of the CR-3 ISFSI.

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

When ACCOUNTABILITY is initiated, personnel will stop work, shut down potentially hazardous equipment, and proceed to the pre-designated LOCAL ASSEMBLY AREAS. ACCOUNTABILITY will take place and the results will be reported to the EC when requested.

ACCOUNTABILITY of all personnel inside the PROTECTED AREA should be accomplished within 60 minutes after event classification and maintained thereafter at the discretion of the EC. If personnel are unaccounted for, teams shall be dispatched to locate the personnel.



#### **14.2 CRYSTAL RIVER ENERGY COMPLEX ASSEMBLY, SHELTERING, OR RELOCATION**

Other areas of the Crystal River Energy Complex may be affected by the need to relocate personnel. If required, the EC will determine the specific areas that need to have personnel relocated. Personnel and visitors located outside of the PROTECTED AREA but within the SITE BOUNDARY will be directed to report to an assembly area or exit the site as appropriate. Relocation of personnel in these areas of the Crystal River Energy Complex will be in accordance with established procedures. The EC is responsible for controlling access to the CR-3 ISFSI site when the IOEP is activated.

## **15.0 RADIOLOGICAL EXPOSURE CONTROL**

CR-3 maintains a radiological exposure control program to assure that protection against radiological exposure, as set forth in 10 CFR Part 20 and Chapter 170J 1 of the State of Florida Statutes, is provided. This program is implemented through the "Radiological Protection Standard" which covers both normal and emergency radiation protection measures.

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.

### **15.1 EXPOSURE GUIDELINES**

During an emergency, doses above normal occupational radiation exposure limits may be authorized by the EC for activities such as saving a life, preservation of valuable equipment, or controlling exposure. Table 15.1 provides exposure guidelines for on-site emergency activities.

## **15.2 RADIATION PROTECTION**

The purpose of a Radiation Protection Program is to assure that radiation doses received by personnel are kept as low as reasonably achievable and do not exceed the prescribed limits for both normal and emergency conditions. The established measures to provide this assurance include access control, personnel monitoring, and contamination control.

### **15.2.1 ACCESS CONTROL**

During a declared emergency, radiological surveys of the ISFSI pad area will be performed to determine the actual extent of the radiological concern. As necessary, the EC 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.

### **15.2.2 PERSONNEL EXPOSURE MONITORING**

Personal dosimeters are utilized to monitor the exposure of personnel during normal or emergency conditions. Adequate supplies of dosimeters are maintained for use during an emergency. Procedures describe in detail the types of personal dosimeter devices, the manner in which they are to be used, who is to wear them, and how they are to be cared for.

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

### **15.3 CONTAMINATION CONTROL**

Various contamination control measures are utilized. These include access control measures and means for the decontamination of personnel, areas, and equipment. These activities are addressed in facility procedures and are briefly described below.

All personnel are monitored for radioactive contamination prior to leaving the site. During normal or emergency conditions, contamination should be removed from any part of a person's body prior to their leaving the RCA. All personnel decontamination, even during an emergency, will be performed under the supervision of the Radiation Protection Group and in accordance with established procedures.

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**

**GUIDELINES FOR EMERGENCY RESPONSE WORKER EXPOSURE**

<b>ACTIVITY</b>	<b>GUIDELINE</b>	<b>CONDITION</b>
All occupational exposures	5 rem	All reasonably achievable actions have been taken to minimize dose.
Protecting valuable property necessary for public welfare.	10 rem <sup>a</sup>	Exceeding 5 rem unavoidable and all appropriate actions taken to reduce dose. Monitoring available to project or measure dose.
Lifesaving or protection of large populations	25 rem <sup>b</sup>	Exceeding 5 rem unavoidable and all appropriate actions taken to reduce dose. Monitoring available to project or measure dose.

Notes: a For potential doses >5 rem, medical monitoring programs should be considered.

b In the case of a very large incident, consider need to raise property and lifesaving response worker guidelines.

**NOTE:** Reference for this table is Table 2-2 in the EPA PAG Manual.

**NOTE:** The dose limits listed above are in addition to any annual occupational dose already received.

## **16.0 MEDICAL AND HEALTH SUPPORT**

Medical assistance is available on-site and off-site for treatment of CR-3 ISFSI personnel. Various means of transportation are also available to transport individuals for radiological and non-radiological injuries.

The individuals and organizations providing emergency medical assistance as identified in this section either have the capability for evaluation of radiation exposure and uptake or they are provided this capability from the licensee in the form of personnel and/or equipment. The licensee assures that persons providing these services are adequately prepared to handle contaminated individuals through detailed training classes, drills and exercises. Letters of Agreement with off-site organizations and individuals for medical support are listed in Appendix B.

### **16.1 ON-SITE FIRST AID**

First aid assistance at the CR-3 ISFSI is designed to handle a wide range of injuries. This task is accomplished by medical response personnel. The medical response personnel are on-site individuals trained in basic first aid procedures. Medical response personnel are trained to handle injured personnel, with or without radiological considerations.

### **16.2 MEDICAL TRANSPORTATION**

Transportation of injured personnel is available via local emergency medical services, other CR-3 vehicles, or private vehicles. When personnel are transported to Bayfront Health Seven Rivers hospital while in a contaminated condition, a person trained in radiological monitoring will be dispatched to monitor and maintain radiological controls.

### **16.3 OFF-SITE MEDICAL SUPPORT**

The Bayfront Health Seven Rivers hospital in Crystal River, Florida has medical facilities capable of handling various types of injuries. Bayfront Health Seven Rivers hospital is capable of treating patients with injuries of a non-radiological or radiological nature.

Bayfront Health Seven Rivers hospital will provide for hospital treatment, medical examinations, and laboratory services for those employees, and other persons designated by the licensee. Medical records, including bioassay records, will be maintained permanently by the hospital.

When local facilities are considered inadequate because of the nature or severity of the injury sustained, the injured person may be referred to a trauma center in Florida or to Oak Ridge, Tennessee - REAC/TS for hospitalization. Oak Ridge Associated Universities (ORAU) operates a research hospital in Oak Ridge, Tennessee for the U.S. Department of Energy.

## **17.0 EMERGENCY TERMINATION AND RECOVERY**

The licensee has established general plans described in the following sections to yield RECOVERY from potential emergencies at the CR-3 ISFSI. The recovery organization will be based on the normal organization and would function with the senior management position being responsible for site activities.

### **17.1 EMERGENCY TERMINATION AND NOTIFICATION**

Termination of an emergency status is the responsibility of the EC. The EC is also responsible for providing notification of the emergency termination and initiation of RECOVERY operations to the NRC, State of Florida (SWO), the CR-3 ERO, and other organizations that may be providing on-site support.

### **17.2 RECOVERY OPERATIONS**

RECOVERY operations begin immediately following emergency termination and will address the specific emergency circumstances.

RECOVERY planning includes equipment to be repaired or replaced, licensing implications, special training requirements, offsite support, and determination of causes and consequences. Site procedures addressing RECOVERY operations provide an outline for a short term RECOVERY plan.

The ISFSI Site Director shall be responsible for the development and implementation of the RECOVERY plan and shall provide for detailed monitoring of the implementation and status reporting. The ISFSI Site Director also has the authority to revise or halt activities as circumstances dictate.

The RECOVERY will be terminated by the CR-3 senior management position after the ISFSI is returned to a stable condition.

## **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.

### **18.1 BIENNIAL EXERCISE AND DRILL**

A Biennial Exercise is conducted and tests the capability and a major portion of the basic elements existing within emergency preparedness plans and organizations. The State of Florida, the Citrus County Sheriff's Office and local support organizations (firefighting, ambulance and medical services) will be invited to participate to verify this capability to respond to an emergency scenario requiring response.

Drills are 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:

- Basic objective(s) of the exercise / drill.
- 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.

A remedial exercise will be conducted if it is determined that the emergency plan was not satisfactorily tested during the biennial exercise such that the NRC cannot find reasonable assurance that adequate protective measures can be taken in the event of a radiological emergency.



## 18.2 TRAINING DRILLS

Training drills serve as elements of training programs in which individuals demonstrate their ability to perform assigned emergency functions. During a training drill, on-the-spot correction of erroneous performance should be made and a demonstration of the proper performance should be offered. Problems should be noted for discussion as part of the training drill critique. Training drills shall be conducted at the FREQUENCY indicated below:

### a. Communication Drills

- Monthly – Communication between the CR-3 ISFSI and the Florida State Watch Office (SWO) shall be demonstrated.

These drills shall also include the aspect of understanding the content of messages.

### b. Medical Emergency Drills

- ANNUAL - This drill will involve medical response personnel and include a simulated contaminated individual and may also allow provisions for participation by local support agencies (i.e., ambulance and off-site medical facilities). The off-site portions of the drill may be performed as part of the Biennial Exercise.

### c. Radiological Monitoring

- ANNUAL - A drill involving radiation monitoring personnel to demonstrate ability to perform radiological survey and assessment.

### d. Staff Augmentation Drills

- ANNUAL – An unannounced off-shift staff augmentation drill is conducted annually. This drill 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 EC after an emergency classification.

Drill requirements may be satisfied as part of the Biennial Exercise. A critique shall be conducted as soon as practical after each drill or exercise. The critique shall evaluate the ability of the organization to respond to a simulated emergency situation.

### **18.3 CRITIQUES**

A critique is performed as soon as practicable after training drills and exercises to evaluate the ability of the participating organizations to respond as indicated in this IOEP. Recommendations for revisions to the CR-3 IOEP, the implementing procedures and/or the upgrading of emergency equipment and supplies as a result of the drill or exercise should be forwarded to the Emergency Planning Coordinator who shall review, coordinate, and assure that appropriate changes are implemented to correct any deficiencies. A written evaluation shall result from the critique of the Biennial Exercise. The ISFSI Site Director shall assure that identified deficiencies are corrected.

## **19.0 EMERGENCY RESPONSE ORGANIZATION TRAINING**

Radiological emergency response training is provided to those who may be called on to assist in an emergency. All personnel at the CR-3 ISFSI who fill required positions in the ERO will take part in a training program to assure adequate preparedness to assist in an emergency situation. Specific off-site support resources that may be called upon for emergency assistance will also be invited to participate in appropriate training programs. Emergency response personnel in the following categories receive initial training and ANNUAL retraining:

### **19.1 ISFSI SHIFT SUPERVISORS/EMERGENCY COORDINATORS AND RESOURCE MANAGERS**

These following 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 Design Basis Accidents.
- Review of applicable drill identified deficiencies and Human Performance Concerns.

### **19.2 MEDICAL RESPONSE PERSONNEL**

All medical response personnel are provided training. Training for personnel assigned to provide first aid support shall include courses equivalent to Red Cross Multi-Media.

### **19.3 RADIATION MONITORING PERSONNEL**

Initial and ANNUAL retraining for radiation monitoring personnel consists of the following topics:

- Use of Radiation Protection procedures.
- Use of emergency survey equipment.
- Communications.
- Field surveys.
- The role of dose assessment in an emergency.
- Monitoring of radioactive releases.
- Review of applicable drill identified deficiencies and Human Performance Concerns.

### **19.4 MEDICAL SUPPORT PERSONNEL**

Medical Support training is offered annually to Bayfront Health Seven Rivers hospital and local emergency medical services. The training will be structured to meet the needs of the respective organization with respect to the nature of their support.

## **20.0 RESPONSIBILITY FOR THE PLANNING EFFORT: DEVELOPMENT, PERIODIC REVIEW AND DISTRIBUTION OF EMERGENCY PLANS**

### **20.1 EMERGENCY PLANNING COORDINATION**

The ISFSI Site Director has overall authority and responsibility for emergency response planning. The CR-3 ISFSI Emergency Planning Coordinator develops and updates emergency plans and coordinates these plans with other response organizations. In the event that licensing actions by the NRC or changes in the State agencies or other off-site resources impact this Plan, the Emergency Planning Coordinator is responsible for identifying the particular impact and necessary revisions to the Plan. The Emergency Planning Coordinator reports to the ISFSI Manager-Operations and Maintenance.

The Emergency Planning Coordinator training will consist of periodic reviews of Federal emergency preparedness requirements and guidance documents and various site-specific documents related to emergency preparedness. Training is supplemented primarily by on-the-job activities and attendance of short courses, seminars, or executive conferences that relate specifically to emergency preparedness.

### **20.2 PLAN/PROCEDURES REVIEW AND UPDATE**

The CR-3 IOEP should be reviewed and verified to be current on an ANNUAL basis by the Emergency Planning Coordinator. Revisions to the CR-3 IOEP and implementing procedures identified in Appendix A will be reviewed in accordance with 10 CFR 50.54(q) requirements.

Procedures listed in Appendix A shall be reviewed and verified to be current by the appropriate individual in accordance with established procedures. These procedures will be updated as appropriate and will consider improvements identified during drills and training.

## **20.2 PLAN/PROCEDURES REVIEW AND UPDATE (Continued)**

In addition, there shall be a quarterly review and update of the notification rosters used to activate and implement the Plan.

Review of the CR-3 IOEP and the plans of support organizations shall consider applicable emergency planning criteria and regulations promulgated by the NRC, as applicable to the CR-3 ISFSI.

In addition to the above reviews and updates, the Emergency Planning Coordinator shall review and update appropriate support agreements (see Appendix B) as required. Support plans for other groups such as the fossil plant, procurement, and Bayfront Health Seven Rivers hospital may also be reviewed periodically.

## **20.3 TRAINING**

The Emergency Planning Coordinator shall assist management in coordinating and/or providing emergency planning-related training. They shall assure that the training described in Section 19.0, is properly coordinated to assure adequate qualification, training, and retraining of personnel.

## **20.4 AUDITS**

The licensee maintains a Corporate Nuclear Oversight Section (NOS) that will support audits of the CR-3 IOEP according to Corporate NOS audit practices and instructions, which meet the requirements of 10 CFR 50.54(t).

## **ISFSI ONLY EMERGENCY PLAN**

### **APPENDIX A**

#### **CROSS REFERENCE IOEP SECTION TO PLANNING STANDARDS/REQUIREMENTS AND IMPLEMENTING PROCEDURES**

**APPENDIX A**

**CROSS REFERENCE IOEP SECTION TO PLANNING STANDARDS/REQUIREMENTS AND  
IMPLEMENTING PROCEDURES**

<b>Regulatory Requirement</b>	<b>Corresponding IOEP Section(s)</b>	<b>Procedure</b>
10 CFR 50.47(b)(1)	5.0	Not Applicable (N/A)
10 CFR 50.47(b)(2)	6.0	EM-502, ISFS-190
10 CFR 50.47(b)(3)	5.0, 7.0, Appendix B	AI-4000
10 CFR 50.47(b)(4)	8.0	IOEP EAL Bases Manual
10 CFR 50.47(b)(5)	9.0	EM-205, EM-502
10 CFR 50.47(b)(6)	10.0	AI-4000
10 CFR 50.47(b)(7)	11.0	EM-502
10 CFR 50.47(b)(8)	12.0	AI-4000
10 CFR 50.47(b)(9)	13.0	EM-502, ISFS-190
10 CFR 50.47(b)(10)	14.0	EM-205
10 CFR 50.47(b)(11)	15.0	EM-502, EM-504, HPP-334
10 CFR 50.47(b)(12)	16.0	AI-4000
10 CFR 50.47(b)(13)	17.0	EM-502
10 CFR 50.47(b)(14)	18.0	AI-4000, AI-4001
10 CFR 50.47(b)(15)	19.0	TPP-219
10 CFR 50.47(b)(16)	20.0	AI-4000
10 CFR 50.47(c)(2)	2.1	N/A
10 CFR Part 50, Appendix E IV		
10 CFR Part 50, Appendix E IV.A	5.0, 6.0, 7.0	EM-502, AI-4000
10 CFR Part 50, Appendix E IV.B	8.0, 13.0	IOEP EAL Bases Manual
10 CFR Part 50, Appendix E IV.C	8.0, 9.0	EM-502
10 CFR Part 50, Appendix E IV.D	9.0, 10.0	EM-502
10 CFR Part 50, Appendix E IV.E	12.0	N/A
10 CFR Part 50, Appendix E IV.F	18.0, 19.0	TPP-219
10 CFR Part 50, Appendix E IV.G	20.0	AI-4000
10 CFR Part 50, Appendix E IV.H	17.0	EM-502
10 CFR Part 50, Appendix E IV.I	14.0	EM-911D
10 CFR Part 50, Appendix E V	Appendix A	N/A
10 CFR Part 50, Appendix E VI	Not Applicable	N/A



## **ISFSI ONLY EMERGENCY PLAN**

### **APPENDIX B**

#### **AGREEMENTS WITH SUPPORTING ORGANIZATIONS**

## **AGREEMENTS WITH SUPPORTING ORGANIZATIONS**

The following agreements are reviewed on an ANNUAL basis and updated as necessary. The documents are kept on file at CR-3 and maintained by the Emergency Planning Group.

1. Citrus County Sheriff's Office
2. Bayfront Health Seven Rivers Hospital
3. Nature Coast EMS

## SUMMARY OF CHANGES

DRR 2260279

Page / Section	Change	Reason/References
Cover	Removed Duke Energy Florida, LLC	Editorial
1.2	Added information regarding Rev 1 to the IOEP.	Editorial.
2.1	<ul style="list-style-type: none"> <li>Changed Duke Energy to the licensee</li> <li>Removed Duke Energy in reference to the Operating License DPR 72</li> </ul>	Editorial
3.10	Changed FSAR to DSAR	Editorial.
4.1	Reordered following change to CONTROLLED AREA definition	Editorial.
4.1.1	Deleted 'ISFSI' from PROTECTED AREA to align terms from Partial Site Release	Partial Site Release.
4.1.10	Deleted 'OWNER' from CONTROLLED AREA to align terms from Partial Site Release	Partial Site Release.
4.1.14	Changed Duke Energy to the licensee	Editorial
4.1.14	Changed definition of CONTROLLED AREA to align terms from Partial Site Release.	Partial Site Release.
4.1.21	Deleted to align terms from Partial Site Release: <ul style="list-style-type: none"> <li>'OWNER' from CONTROLLED AREA</li> <li>'O' from CA</li> </ul>	Partial Site Release.
4.2	Changed FSAR to DSAR	Editorial.
5.1	Changed Duke Energy to the licensee	Editorial
5.3.6	Changed Duke Energy to the licensee	Editorial
6.2	Changed Duke Energy to the licensee	Editorial
6.2.5	Removed Duke Energy when referring to other company facilities	Editorial
8.1	Changed Duke Energy to CR-3	Editorial
9.0	Changed Duke Energy to the licensee	Editorial
11.0	<ul style="list-style-type: none"> <li>Removed Duke Energy from Corporate Communications title.</li> <li>Revised the statement "The Corporate Communications will be notified at the company's Charlotte headquarters and a near-site response team may be established for the CR-3 ISFSI." To read "The Corporate Communications may establish a near-site response team for the CR-3 ISFSI."</li> </ul>	Editorial (removed specifics related to the location of Corporate Communication without changing response requirements)
12.2.1	Changed Duke Energy to CR-3	Editorial
13.0	Changed Duke Energy to the licensee	Editorial
14.1	Deleted 'ISFSI' from PROTECTED AREA to align terms from Partial Site Release	Partial Site Release.

## SUMMARY OF CHANGES

Page / Section	Change	Reason/References
14.2	Changed to align terms from Partial Site Release: <ul style="list-style-type: none"> <li>Deleted 'ISFSI' from PROTECTED AREA to align terms from Partial Site Release</li> <li>Capitalized PROTECTED AREA</li> </ul>	Partial Site Release.
16.0	Changed Duke Energy to the licensee	Editorial
16.2	Changed Duke Energy to CR-3	Editorial
16.3	<ul style="list-style-type: none"> <li>Removed Duke Energy when referring to employees.</li> <li>Changed Duke Energy to the licensee</li> </ul>	Editorial
17.0	<ul style="list-style-type: none"> <li>Removed Duke Energy when referring to organization.</li> <li>Changed Duke Energy to the licensee</li> </ul>	Editorial
17.2	Changed Duke Energy to CR-3	Editorial
20.4	Changed Duke Energy to the licensee	Editorial



CRYSTAL RIVER UNIT 3

**ISFSI ONLY EMERGENCY PLAN (IOEP)  
EMERGENCY ACTION LEVEL (EAL)  
BASES MANUAL**

Revision 1

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**Emergency Planning Coordinator**

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**Date**

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**ISFSI Site Director**

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**Date**

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## **1.0      PURPOSE**

This manual provides an explanation and rationale for each EMERGENCY ACTION LEVEL (EAL) included in the Independent Spent Fuel Storage Installation (ISFSI) Only EAL scheme for the CR3 ISFSI facility. The information provided should be used to facilitate reviews of EALs and provide documentation for future reference. Decision-makers performing the duties of the Emergency Coordinator (EC) may use the information included in this document as a technical reference in support of an EAL interpretation. This information may assist the EC in making classifications, particularly those involving judgment or multiple events.

This manual is an Emergency Plan Implementing Procedure (EPIP). Any revisions must be carefully considered for Emergency Plan impact by evaluating changes in accordance with 10 CFR 50.54(q).

## **2.0      REFERENCES**

- 2.1      NEI 99-01, Revision 6, November 2012, Development of Emergency Action Levels for Non-Passive Reactors, Appendix C, Permanently Defueled Station ICs/EALs and Section 8, Independent Spent Fuel Storage Installation (ISFSI) ICs/EALs.
- 2.2      Independent Spent Fuel Storage Installation (ISFSI) Only Emergency Plan (IOEP)
- 2.3      NUREG-1022, Event Reporting Guidelines: 10CFR50.72 and 50.73
- 2.4      NUREG-1536, Standard Review Plan for Spent Fuel Dry Storage Systems at a General License Facility
- 2.5      NSIR/DPR-ISG-01, Interim Staff Guidance, Emergency Planning for Nuclear Power Plants
- 2.6      NEI 03-12, Template for Security Plan, Training and Qualification, Safeguards Contingency Plan, and ISFSI Security Program.
- 2.7      10 CFR 2.390, Public inspections, exemptions, requests for withholding.

### 3.0 **DEFINITIONS**

Selected terms used in Initiating Condition (IC) and EAL statements 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.

**ALERT:** Events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the CR3 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 Environmental Protection Agency (EPA) Protective Action Guide (PAG) exposure levels.

**CONFINEMENT BOUNDARY:** The barrier(s) between spent fuel and the environment once the spent fuel is processed for dry storage. As applied to the CR3 ISFSI, the CONFINEMENT BOUNDARY is the Dry Shielded Canister (DSC) consisting of the DSC shell, the inner top and inner bottom cover plates, the siphon and vent block, the siphon and vent port cover plates, and the associated welds.

**CONTROLLED AREA (CA):** The area of land (approximately 884 acres) that is owned, leased, or otherwise controlled by the licensee. The CONTROLLED AREA is the area of land within the SITE BOUNDARY, as shown in Figure 2-2 of the DSAR. The PROTECTED AREA is located within the CONTROLLED AREA.

**CREDIBLE SECURITY THREAT:** A threat to the CR3 ISFSI confirmed and validated by Security per procedures or received over the Emergency Notification System (ENS) from the NRC.

**EMERGENCY ACTION LEVEL (EAL):** A pre-determined, observable threshold for plant conditions that places the plant in a given emergency classification.

**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 Notification of UNUSUAL EVENT (NOUE) and ALERT.

**HOSTILE ACTION:** An act toward the CR3 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 CR3 ISFSI. Non-terrorism-based EALs should be used to address such activities (i.e., this may include violent acts between individuals in the CONTROLLED AREA).

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

**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.



**PROTECTED AREA:** The area encompassed by physical barriers and to which access is controlled.

**SECURITY CONDITION:** 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 of the CR3 ISFSI. A SECURITY CONDITION does not involve a HOSTILE ACTION.

**SITE BOUNDARY:** That line beyond which the land is not owned, leased, or otherwise controlled by the licensee. This line establishes the perimeter of the CONTROLLED AREA (CA).

**UNUSUAL EVENT (UE):** 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 off-site response or monitoring are expected unless further degradation of safety systems occur.

# **ATTACHMENT 1**

## **EMERGENCY ACTION LEVEL TECHNICAL BASES**

**Table A-1: Recognition Category “PD” and “E” Initiating Condition Matrix**

UNUSUAL EVENT	ALERT
<b>PD-HU1:</b> Confirmed SECURITY CONDITION or threat. <i>(Attachment 1, Page 2)</i>	<b>PD-HA1:</b> HOSTILE ACTION is occurring or has occurred. <i>(Attachment 1, Page 4)</i>
<b>PD-HU3:</b> Other conditions exists which in the judgment of the Emergency Coordinator warrant declaration of an UNUSUAL EVENT (UE). <i>(Attachment 1, Page 6)</i>	<b>PD-HA3:</b> Other conditions exists which in the judgment of the Emergency Coordinator warrant declaration of an ALERT. <i>(Attachment 1, Page 7)</i>
<b>E-HU1:</b> Damage to a Dry Shielded Canister CONFINEMENT BOUNDARY <i>(Attachment 1, Page 8)</i>	

## Hazards and Other Conditions

**PD-HU1**

**ECL:** Unusual Event

**Initiating Condition:** Confirmed SECURITY CONDITION or threat.

**Emergency Action Levels:** (1 or 2)

UNUSUAL EVENT
<p>1. <u>Confirmed SECURITY CONDITION or threat.</u></p> <p>1) A SECURITY CONDITION that does not involve a HOSTILE ACTION as reported by the Security Shift Supervisor.</p> <p><b><u>OR</u></b></p> <p>2) Notification of a CREDIBLE SECURITY THREAT directed at the site.</p>

**SECURITY CONDITION:** 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 of the CR3 ISFSI. A SECURITY CONDITION does not involve a HOSTILE ACTION.

**HOSTILE ACTION:** An act toward the CR3 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 CR3 ISFSI. Non-terrorism-based EALs should be used to address such activities (i.e., this may include violent acts between individuals in the CONTROLLED AREA).

## Hazards and Other Conditions

**PD-HU1**

### **Basis:**

This IC addresses events that pose a threat to plant personnel or spent fuel and thus represent a potential degradation in the level of plant 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 assessed as HOSTILE ACTIONS are classifiable under IC PD-HA1.

Timely and accurate communications between Security Shift Supervision and the ISFSI Shift Supervisor/Emergency Coordinator are essential for proper classification of a security-related event. Classification of these events will initiate appropriate threat-related notifications to plant personnel and Off Site 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]*.

EAL #1 references the Security Shift Supervisor 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 § 2.390 information.

EAL #2 addresses the receipt of a CREDIBLE SECURITY THREAT. The credibility of the threat is assessed in accordance with Security procedures.

Emergency plans and implementing procedures are public documents; therefore, EALs should not incorporate Security-sensitive information. This includes information that may be advantageous to a potential adversary, such as the particulars concerning a specific threat or threat location. Security-sensitive information should be contained in non-public documents such as the Security Plan.

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

## Hazards and Other Conditions

**PD-HA1**

**ECL:** Alert

**Initiating Condition:** HOSTILE ACTION is occurring or has occurred.

**Emergency Action Levels:**

ALERT
<ol style="list-style-type: none"><li>1. <u>HOSTILE ACTION is occurring or has occurred</u> as reported by the Security Shift Supervisor.</li></ol>

**HOSTILE ACTION:** An act toward the CR3 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 CR3 ISFSI. Non-terrorism-based EALs should be used to address such activities (i.e., this may include violent acts between individuals in the CONTROLLED AREA).

## Hazards and Other Conditions

**PD-HA1**

### **Basis:**

This IC addresses the occurrence of a HOSTILE ACTION.

Timely and accurate communications between Security Shift Supervision and the ISFSI Shift Supervisor/Emergency Coordinator are essential for proper classification of a security-related event.

As time and conditions allow, these events require a heightened state of readiness by the plant staff and implementation of onsite protective measures (e.g., evacuation 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.

Emergency plans and implementing procedures are public documents; therefore, EALs should not incorporate Security-sensitive information. This includes information that may be advantageous to a potential adversary, such as the particulars concerning a specific threat or threat location. Security-sensitive information should be contained in non-public documents such as the Security Plan.

## Hazards and Other Conditions

**PD-HU3**

**ECL:** Unusual Event

**Initiating Condition:** Other conditions exist which in the judgment of the Emergency Coordinator warrant declaration of an UNUSUAL EVENT (UE).

### Emergency Action Levels:

UNUSUAL EVENT
1) Other conditions exist which in the judgment of the Emergency Coordinator 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 of safety systems 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 Coordinator to fall under the emergency classification level description for a UE.



## Hazards and Other Conditions

**PD-HA3**

**ECL:** Alert

**Initiating Condition:** Other conditions exist which in the judgment of the Emergency Coordinator warrant declaration of an ALERT.

### Emergency Action Levels:

ALERT
1) Other conditions exist which in the judgment of the Emergency Coordinator 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 Coordinator to fall under the emergency classification level description for an ALERT.

## ISFSI Malfunction

**E-HU1**

**ECL:** Unusual Event

**Initiating Condition:** Damage to a Dry Shielded Canister **CONFINEMENT BOUNDARY**.

**Emergency Action Levels:** (1 or 2 or 3 or 4)

UNUSUAL EVENT
<p><u>Damage to a Dry Shielded Canister</u> <u>CONFINEMENT BOUNDARY</u> as indicated by radiation readings greater than or equal to the following:</p> <ol style="list-style-type: none"> <li>1) 1300 mR/hr (gamma + neutron) on the radial surface of the fuel transfer cask while in transit to the ISFSI Horizontal Storage Module (HSM).</li> <li><u>OR</u></li> <li>2) 1050 mR/hr (gamma + neutron) on the HSM Front Bird Screen while stored in the HSM.</li> <li><u>OR</u></li> <li>3) 4 mR/hr (gamma + neutron) HSM Outside Door while stored in the HSM.</li> <li><u>OR</u></li> <li>4) 40 mR/hr (gamma + neutron) HSM End Shield Wall Exterior while stored in the HSM.</li> </ol> <p>NOTE: Radiation readings are taken at the locations prescribed by the Technical Specifications for the Standardized NUHOMS Horizontal Storage.</p>

**Mode Applicability:** All

**CONFINEMENT BOUNDARY:** The barrier(s) between spent fuel and the environment once the spent fuel is processed for dry storage. As applied to the CR3 ISFSI, the **CONFINEMENT BOUNDARY** is the Dry Shielded Canister (DSC) consisting of the DSC shell, the inner top and inner bottom cover plates, the siphon and vent block, the siphon and vent port cover plates, and the associated welds.

## ISFSI Malfunction

**E-HU1**

### **Basis:**

This IC addresses an event that results in damage to the CONFINEMENT BOUNDARY of a dry shielded canister containing spent fuel. It applies to irradiated fuel that is licensed for dry storage beginning at the point that the loaded storage canister 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 canister or fuel from storage.

The existence of “damage” is determined by radiological survey. NEI 99-01, Revision 6, November 2012, Development of Emergency Action Levels for Non-Passive Reactors, Section 8, Independent Spent Fuel Storage Installation (ISFSI) ICs/EALs recommends using “2 times” the site-specific cask specific technical specification allowable radiation level as the EAL. 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 dry shielded canister and not the magnitude of the associated dose or dose rate. It is recognized that in the case of extreme damage to a loaded canister, the fact that the “on-contact” dose rate limit is exceeded may be determined based on measurement of a dose rate at some distance from the canister.

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

An UNUSUAL EVENT in this EAL is categorized on the basis of the occurrence of an event of sufficient magnitude that a loaded Dry Shielded Canister (DSC) CONFINEMENT BOUNDARY is damaged or violated while in transit or storage.

This EAL applies to emergency conditions affecting a spent fuel DSC caused by an accident or natural phenomena. This EAL would be applicable at all times in all modes for a loaded DSC from the time the lid is installed, during transport to the INDEPENDENT SPENT FUEL STORAGE INSTALLATION (ISFSI) and while stored in the Horizontal Storage Module (HSM).

As provided in the Transnuclear “Standardized NUHOMS System Technical Specifications”, Section 5.2.4 (Radiation Protection Program) and Section 5.4.2 (HSM or HSM-H Dose Rate Evaluation Program) contain radiation dose levels for the DSC that should not be exceeded based on whether the DSC is being transported inside the fuel transfer cask or while it is stored in the HSM. Keeping in line with NEI guidance that a UNUSUAL EVENT warranted for radiation conditions at a level of twice the Technical Specification value, the values chosen for EAL E-HU1 represent these values. The “Note” in the EAL provides guidance on where the radiation readings are to be taken when evaluating this EAL.

# **ATTACHMENT 2**

## **EMERGENCY CLASSIFICATION TABLES**

**EMERGENCY CLASSIFICATION TABLE INDEX**

<b>HAZARDS AND OTHER CONDITIONS</b>		
<b>CATEGORY (H)</b>	<b>UNUSUAL EVENT (U)</b>	<b>ALERT (A)</b>
SECURITY <i>(Attachment 2, Page 2)</i>	HU1	HA1
Hazards and Other Conditions/ Emergency Coordinator Judgment <i>(Attachment 2, Page 3)</i>	HU3	HA3
<b>ISFSI MALFUNCTION</b>		
<b>CATEGORY (E)</b>	<b>UNUSUAL EVENT (U)</b>	<b>ALERT (A)</b>
ISFSI Malfunction <i>(Attachment 2, Page 4)</i>	HU1	Not Applicable

## EMERGENCY CLASSIFICATION TABLE

### PERMANENTLY DEFUELED (PD)

CATEGORY	UNUSUAL EVENT ( <u>HU1</u> )	ALERT ( <u>HA1</u> )
<u>Hazards And Other Conditions</u>  <b>(H)</b>	1. <u>Confirmed SECURITY CONDITION</u> or threat.  1) A SECURITY CONDITION that does not involve a HOSTILE ACTION as reported by the Security Shift Supervisor.  <u>OR</u>  2) Notification of a CREDIBLE SECURITY THREAT directed at the site.	1. <u>HOSTILE ACTION</u> is occurring or has occurred as reported by the Security Shift Supervisor.

## EMERGENCY CLASSIFICATION TABLE

**MODE: PERMANENTLY DEFUELED (PD)**

CATEGORY	UNUSUAL EVENT ( <u>HU3</u> )	ALERT ( <u>HA3</u> )
<b><u>Hazards And Other Conditions</u></b>  <b>(H)</b>	<p>1. <u>Other conditions exist which in the judgment of the Emergency Coordinator warrant declaration of a UE.</u></p> <p>1) Other conditions exists which in the judgment of the Emergency Coordinator 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 of safety systems occurs.</p>	<p>1. <u>Other conditions exist which in the judgment of the Emergency Coordinator warrant declaration of an ALERT.</u></p> <p>1) Other conditions exists which in the judgment of the Emergency Coordinator 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.</p>

**EMERGENCY CLASSIFICATION TABLE**  
**INDEPENDENT SPENT FUEL STORAGE INSTALLATION (ISFSI)**  
**MODE: All (E)**

CATEGORY	UNUSUAL EVENT ( <u>HU1</u> )	ALERT ( <u>HA1</u> )
<b><u>ISFSI Malfunction</u></b>  <b>(E)</b>	<p><u>Damage to a Dry Shielded Canister CONFINEMENT BOUNDARY</u> as indicated by radiation readings greater than or equal to the following:</p> <p>1300 mR/hr (gamma +neutron) on the radial surface of the fuel transfer cask while in transit to the ISFSI Horizontal Storage Module (HSM).</p> <p>OR</p> <p>1050 mR/hr (gamma + neutron) on the HSM Front Bird Screen while stored in the HSM.</p> <p>OR</p> <p>4 mR/hr (gamma + neutron) HSM Outside Door while stored in the HSM.</p> <p>OR</p> <p>40 mR/hr (gamma + neutron) HSM End Shield Wall Exterior while stored in the HSM.</p> <p>NOTE: Radiation readings are taken at the locations prescribed by the Technical Specifications for the Standardized NUHOMS Horizontal Storage System.</p>	<p style="text-align: center;"><b>Not Applicable</b></p>



## SUMMARY OF CHANGES

DRR 2260280

PAGE / SECTION	CHANGE	REASON & REFERENCES
3.0, Att1 p2, Att1 p4	Updated "Owner Controlled Area" definition to CONTROLLED AREA.	Reflect Partial Site Release terminology (DSAR)
3.0	Updated "Owner Controlled Area" definition to CONTROLLED AREA (Deleted "O" from "OCA").	Reflect Partial Site Release terminology (DSAR)
3.0	Updated definition of CONTROLLED AREA and moved definition alphabetically.	Updated to reflect Partial Site Release terminology (DSAR)
Att 1 p 8 & 9 Att 2 p 4	Deleted Amendment Number 14 to COC 1004 from Note and Basis for E-HU1	Current NUHOMS Tech Specs/COC are maintained in Records Management.