10 CFR 50.4
10 CFR 50.54
10 CFR 50.90

January 7, 2016 ZS-2015-0172

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Zion Nuclear Power Station, Units 1 and 2
Facility Operating License Nos. DPR-39 and DPR-48
NRC Docket Nos. 50-295, 50-304 and 72-1037

Subject: License Amendment Request for Proposed Revision to Zion Nuclear Power Station Defueled Station Emergency Plan

Pursuant to 10 CFR 50.54(q) and 10 CFR 50.4(b)(5), Zion*Solutions,* LLC (ZS) herewith submits a proposed change to the Zion Nuclear Power Station (ZNPS) Defueled Station Emergency Plan (DSEP). As required by 10 CFR 50.54(q)(ii)(4), ZS requests an amendment to the facility operating licenses listed above in accordance with 10 CFR 50.90.

The proposed revision of the DSEP is intended to implement an Independent Spent Fuel Storage Installation (ISFSI)-Only Emergency Plan. The major proposed changes to the DSEP include the removal of non-ISFSI related emergency event types; transfer of responsibility for implementing the Emergency Plan to ISFSI Management, and a revised emergency plan organization.

The proposed changes have been reviewed considering the requirements of 10 CFR 50.54(q), the planning standards of 10 CFR 50.47(b) and 10 CFR 50, Appendix E. These changes have been determined to cause a reduction in the effectiveness of the DSEP in accordance with the requirements of 10 CFR 50.54(q), and require prior NRC approval. The decrease in effectiveness is due to the decreased emergency condition levels where the remaining credible emergency scenarios exist only for the ISFSI, a decrease in Emergency Planning staffing, and a change in roles and responsibilities and organization. The entire plan has been revised to reflect the future ISFSI-Only application; and will be issued as Revision 0. Implementation of the ISFSI-Only plan is intended to occur once the ZNPS site Emergency Action Levels (EALs) are no longer applicable (in late 2016 or early 2017).

Attachment 1 provides a discussion of the proposed changes, technical analysis, regulatory analysis and environmental consideration. Attachment 2 provides the revised Emergency Plan reflecting the proposed changes. Attachment 3 provides the revised Emergency Action Level Basis Document.

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The proposed changes do not impact the public health and safety, and do not involve a Significant Hazards Consideration (SHC) pursuant to the provisions of 10 CFR 50.92 (see SHC provided in Attachment 1).

ZS requests approval of the proposed changes to the Emergency Plan by January 1, 2017.

No new regulatory commitments are established by this submittal.

Should you have any questions concerning this submittal, please contact me at (224) 789-4025.

I declare under penalty of perjury that the foregoing is true and correct.

Respectfully,

Gerard van Noordennen

Gerard van Noordennen
Vice President Regulatory Affairs
ZionSolutions, LLC

Attachments:

1. Defueled Station Emergency Plan (DSEP) Description and Evaluation of Changes
2. Zion Station Independent Spent Fuel Storage Installation (ISFSI) Emergency Plan, Rev. 0 DRAFT
3. Zion Station Independent Spent Fuel Storage Installation (ISFSI) Emergency Plan Emergency Action Level Basis Document, Rev. 0 DRAFT

cc: John B. Hickman, U.S. NRC Senior Project Manager
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Zion*Solutions*, LLC
ZS-2015-0172: Attachment 1

Defueled Station Emergency Plan (DSEP)

Description and Evaluation of Changes

License Amendment Request for Proposed Revision to

ZNPS Defueled Station Emergency Plan

DESCRIPTION AND EVALUATION OF CHANGES

1.0 INTRODUCTION

This license amendment request proposes changes to the ZNPS Defueled Station Emergency Plan (DSEP) in accordance with 10 CFR 50.54(q). Zion*Solutions*, LLC (ZS) proposes changes to the DSEP by removal of non-ISFSI related emergency event types; transfer of responsibility for implementing the Emergency Plan to ISFSI Management, and a revised emergency plan organization.

2.0 BACKGROUND

The emergencies addressed in this proposed plan are related to the dry storage of spent nuclear fuel at the ISFSI including off-normal, accident, natural phenomena, and hypothetical events and consequences as presented in the NAC International Modular Advanced Generation Nuclear All-Purpose Storage System Final Safety Analysis Report (MAGNASTOR FSAR).

The emergency planning zone for the ISFSI is the area within the ISFSI Controlled Area Boundary; the boundary that is established to limit dose to the public during normal operations and design basis accidents in accordance with the requirements of 10 CFR 72.104 and 10 CFR 72.106. The analyses of the radiological impact of potential accidents at the ISFSI site conclude that any releases beyond the ISFSI Controlled Area Boundary are expected to be less than the US Environmental Protection Agency (EPA) Protective Action Guide (PAG) exposure levels, as detailed in EPA-400-R-92-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents." The controlled area, as defined in 10 CFR 72.3, means the area immediately surrounding an ISFSI for which the licensee exercises authority over its use and within which ISFSI operations are performed.

The postulated worst-case accidents related to the ISFSI have insignificant consequences to the public health and safety. However, under regulatory guidance, all emergencies are classified as an ALERT. If an emergency condition develops, the ISFSI Shift Supervisor (ISS) assumes the position of Emergency Director (ED), classifies the emergency and implements the ISFSI Emergency Plan. The ED will notify designated management and determine the level of effort required to mitigate the event. Upon declaration of an emergency, the ED will assure notifications of the emergency have been given to the Illinois Emergency Management Agency (IEMA), Wisconsin Emergency Management, and the NRC Operations Center. Conditions are assessed and corrective actions are implemented to restore the facility to a normal safe condition.

The Zion Station ISFSI Emergency Plan is based on applicable regulations, industry guidelines, and the MAGNASTOR FSAR accident analyses for the dry cask storage system. Regulations include 10 CFR 50.47(b) as exempted, 10 CFR 50.54(q), 10 CFR 50 Appendix E as exempted, 10 CFR 72.32(c), 10 CFR 72.104, 10 CFR 72.106, and 10 CFR 72.212(b)(6).

3.0 PROPOSED CHANGES

The proposed changes to the Emergency Plan are discussed below:

Cover Page: The cover page has been changed to reflect the initial issue (Revision 0) of the Zion Station ISFSI Emergency Plan which was developed from Revision 18 of the Defueled Station Emergency Plan (DSEP).

Table of Contents: was revised to reflect ISFSI-specific content.

Section 1.0, Introduction: This section has been changed from the Introduction Section of Revision 18 of the DSEP to address only emergencies related to the dry storage of spent nuclear fuel and Greater Than Class C (GTCC) radioactive waste at the ISFSI. The bases for the Zion Station ISFSI Emergency Plan are established citing applicable regulations, industry guidelines, and the NAC MAGNASTOR FSAR accident analyses for the dry cask storage system.

Section 2.0, Facility Description: This section was revised to address only the ISFSI by deleting part of Sub-Section 2.1 (Site) and all of Sub-Section 2.3 (Zion Nuclear Power Station) which described the site (other than the ISFSI). Figure 2-1, "Zion Station Owner Controlled Boundary" and Figure 2-2, "Zion Station Owner Controlled Boundary" were added. Minor editorial changes were made in Sub-Section 2.3 (Independent Spent fuel Storage Installation).

Section 3.0, Postulated Emergency Conditions: This section was changed to reflect only ISFSI off-normal events and accidents by deleting Section 3.0 (Postulated Emergency Conditions) and Sub-Section 3.1 (ZNPS Accidents) which addressed site-related emergency conditions and accidents, respectively. Sub-Section 3.2 (ISFSI Off-Normal Events and Accidents) was re-numbered to Section 3.0. Sub-sections to the latter Section 3.0 were correspondingly re-numbered. References to the DSAR throughout were deleted.

Section 4.0, Classification: This section describes the methodology and guidance used in establishing the bases for classification of events. The title of Sub-Section 4.1 (Classification of Emergencies) of this section was changed to "Classification of Accidents". The introductory paragraph was changed by noting that consistent with NRC guidance and the intent in 10 CFR 72.32, accidents and off-normal events that rise to the level of an emergency at the ZNPS ISFSI are given the emergency classification of an ALERT. In accordance with the above, the text in this paragraph addressing Emergency Action Levels (EALs) for permanently defueled nuclear power plants was deleted.

Sub-Section 4.1.1 (Unusual Event) was deleted since only ALERT classifications are applicable to ISFSI. Sub-Section 4.1.1(Other Classification Levels) was deleted.

In Sub-Section 4.2 (Emergency Action Levels (EALS)), Table 4.1, "ZNPS Emergency Events" which included both site Unusual Event and Alert emergency classification levels was deleted, and Table 4.2, "ISFSI Emergency Events" was changed to Table 4.1. The statement concerning "Recognition Category Codes" was deleted since it no longer applicable.

Section 5.0, Response:

This section describes the emergency response actions and capabilities during emergencies. In Sub-Section 5.1 (Recognition and Classification), the text discussing the Emergency Director's (ED's) classification of the emergency as either an UNUSUAL EVENT or ALERT; and the ED's direction to activate the Defueled Emergency Response Organization (DERO) for an UNUSUAL EVENT, was deleted since they are not applicable to an ISFSI facility which, according to regulatory guidance, should be addressed only with an ALERT emergency classification.

In Sub-Section 5.2 (Notification and Activation), the recipient of the ED's notification, as well as the ED's activation of support effort were changed. The title of Sub-Section 5.3 (Defueled Emergency Response Organization Actions (DERO)) was changed to "Emergency Response Organization Actions"; and the in the bullet items, "DERO" was changed to "ERO". In Sub-Section 5.4 (Radiological Assessment) reference to ZNSP Site radioactive waste storage areas and radiological decommissioning work activities was deleted.

In Sub-Section 5.4.1 (Radiation Monitoring) and Sub-Section 5.4.2 (Radiological Exposure Control), reference to radiation protection personnel and management functions and responsibilities were deleted. Also, in Sub-Section 5.4.2, the time when emergency personnel will wear dosimetry was changed from "when required" to "as directed by the ED or RP personnel". In Sub-Section 5.5.2 (Decontamination Capabilities), the second paragraph referring to maintenance of decontamination capability was deleted, based on the statement in the first paragraph that contamination of individuals at the ISFSI, injured or not, is not a credible event. In Sub-Section 5.6 (First Aid and Medical), location of medical supplies was changed from "several locations" to "the ISFSI". Editorial changes were made in Sub-Sections 5.8 (Deactivation) and 5.9 (Recovery).

Section 6.0, Facilities and Equipment: This section describes the facilities and equipment available during emergencies. In Sub-Section 6.1.1 (Emergency Response Facility (ERF)), an editorial change was made regarding the personnel that would be accommodated in the ERF. Sub-Section 6.1.2 (Technical Support Center (TSC)) was deleted since this facility is not needed for an ISFSI-only facility. In Sub-Section 6.2.1 (Equipment) editorial changes were made regarding the location of dedicated emergency equipment and availability of appropriate facility documents. Sub-Section 6.2.2 (Fire Detection and Protection) was deleted since it addressed ZNPS fires of local origin caused by decommissioning

activities. An editorial change was made in Sub-Section 6.3.1 (Commercial Telephone System) regarding the type of personnel which the commercial telephone system is used to notify. An editorial change was made in Sub-Section 6.3.2 (Portable Radios) regarding which designated personnel are equipped with two-way portable radios for communications on-site.

Section 7.0, Organization and Responsibilities: The normal and emergency organizations are described in this section. In Sub-Section 7.1 (Normal Organization), reference to performance of decommissioning activities by various organizations during weekdays and some weekends was deleted. In Sub-Section 7.2.2 (Augmented DERO), the response of the On-Shift DERO to most situations from implementation of the DSEP has been deleted; and the functions of the Augmented DERO have been replaced by On-call support personnel.

Sub-Section 7.3.1 (On-Shift Radiation Protection Personnel) was deleted since the On-Shift Radiation Protection Personnel can be replaced by On-call support personnel. Figure 7.1 (Emergency Response Organization) was changed to eliminate the block containing On-Shift Radiation Protection since this function will be transferred to Offsite support personnel.

Section 8.0, Maintaining Emergency Prepareness: This section establishes the requirements for the maintenance of emergency preparedness. In Sub-Section 8.1 (Responsibilities), the Emergency Preparedness Manager, also called the Emergency Plan Manager, was replaced by the ISFSI Manager or designee. In Sub-section 8.3 (Drills and Exercises), the DERO was replaced by the ISFSI staff. In Sub-Section 8.3.1 (Drills), a Fire Drill was added. In Sub-Section 8.3.2 (Exercise), the text was changed to indicate that offsite response organizations "must" (as opposed to "will") be invited to participate in or observe the exercise.

Appendix A, Definitions, Abbreviations and Acronyms: In Section 1.0 (Definitions) there was a format change to number the Definitions. Upper and lower case changes were also made to several definitions. In Section 2.0 (Abbreviations and Acronyms), definitions for DERO and DSAR were deleted; and the definition for ERO was added.

Appendix B, Letters of Agreement: This Appendix contains a list of the written agreements in effect between Zion*Solutions*, LLC and offsite support organizations. The change made was to add the word "Organizations" for clarification.

Appendix C, Emergency Plan Procedures: This Appendix contains a list of applicable Emergency Plan Implementing Procedures. In this Emergency Plan revision, Emergency Plan Procedures EO-5 (Response to Decommissioning Events), EO-6 (Emergency Preparedness Radiological Support) and EO-8 (Response to Off-Normal Decommissioning Occurrences) were deleted since they were not applicable to the ISFSI.

4.0 TECHNICAL ANALYSIS

Zion*Solutions*, LLC (ZS) is the holder of Facility Operating Licenses DPR-39 and DPR-48 for the Zion Nuclear Power Station Unit 1 and Unit 2. The licenses, pursuant to the Atomic Energy Act of 1954 and 10 CFR Part 50, allow ZS to possess spent fuel at the permanently shutdown and defueled ZNPS facility. All spent fuel has been transferred to dry cask storage at the Independent Spent fuel Storage Installation (ISFSI) under the general license provisions of 10 CFR 72, Subpart K. Decommissioning activities are continuing.

The current Defueled Station Emergency Plan (DSEP) continues to meet the emergency planning requirements contained in 10 CFR 50 that are applicable to the permanently shutdown and defueled condition of the plant. ZS has previously requested exemptions (References 7.1, 7.2 and 7.4) from emergency planning requirements in 10 CFR 50.47 and in 10 CFR 50 Appendix E that are not applicable to a plant in decommissioning. The exemptions requested in References 7.1 and 7.2 were approved in Reference 7.3; and the exemption requested in 7.4 was approved in Reference 7.5. In addition, in Reference 7.6 ZS requested an additional exemption from regulations that are not applicable with all spent fuel stored at the ISFSI. The exemption in Reference 7.6 was approved in Reference 7.7. The latter exemption is incorporated by reference in this submittal and should be used as further justification for NRC approval of this proposed change.

5.0 REGULATORY ANALYSIS

5.1 Available Regulatory Requirement and Criteria

10 CFR 50.54(q) – *Conditions of License – Emergency Plans* – Requires that a License Amendment request be submitted to the NRC for approval prior to implementation of changes to the Emergency Plan which are considered to constitute a "reduction in effectiveness."

10 CFR 50.74 – *Emergency Plans* – As exempted.

10 CFR 50 Appendix E – *Emergency Planning and Preparedness for Production and Utilization Facilities* – As exempted.

The proposed change to the Emergency Plan continues to implement the applicable requirements of the regulations cited above as noted in the existing exemptions for emergency planning. Therefore, the revised Emergency Plan provides reasonable assurance that public health and safety is not endangered, and ZS continues to satisfy the applicable planning standards set forth in 10 CFR 50.47(b) and 10 CFR 50 Appendix E.

5.2 No Significant Hazards Consideration

In accordance with 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit, "ZS requests an amendment to Facility Operating Licenses DPR-39 and DPR-48 for the Zion Nuclear Power Station Unit 1 and Unit 2." The proposed amendment would revise the Emergency Plan to reflect that plant decommissioning has been substantially

completed[1], and that all spent fuel has been transferred to the ISFSI. ZS has evaluated whether a significant hazards consideration is involved with the proposed amendment by focusing on the three conditions set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

5.2.1 Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

ZS has, in effect, an NRC-approved emergency plan. The credible accidents involving the ISFSI and MAGNASTOR system have been analyzed and determined that none result in doses to the public beyond the owner controlled boundary (Figure 2-2 of the emergency plan) that would exceed the EPA PAGs. These analyses have not changed. With decommissioning completed, the ZNPS site-related accidents previously analyzed are no longer credible.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident from any accident previously evaluated.

5.2.2 Does the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No.

ZS has, in effect, an NRC –approved emergency plan. The credible accidents involving the ISFSI and MAGNASTOR system have been analyzed and determined that none result in doses to the public beyond the owner controlled boundary that would exceed the EPA PAGs. With decommissioning substantially completed[1], the ZNPS site accidents previously analyzed are no longer credible. Accidents associated with the ISFSI are addressed in the MAGNASTOE FSAR.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

5.2.3 Does the proposed amendment involve a significant reduction in the margin of safety?

Response: No.

Margin of safety is related to the ability of the fission product barriers (fuel cladding, primary containment) to perform their design functions during and following postulated accidents. ZS has, in effect, an NRC-approved emergency plan. The credible accidents involving the ISFSI and MAGNASTOR system have been analyzed and determined that none result in doses to the public beyond the owner controlled boundary that would exceed the EPA PAGs. With spent fuel

[1] Safe Transition to an ISFSI only E-plan is contingent on reducing plant side curie content to a level where a credible scenario no longer exists which could trigger a plant side Emergency Action Level (EAL) Threshold Value. Safe Transition will be a bounding number based on a calculated value of plant side curie inventory and will occur prior to the completion of decommissioning sometime in late 2016 or early 2017.

located at the ISFSI and decommissioning substantially completed[1], the ZNPS plant-related accidents previously analyzed are no longer credible.

Therefore, the proposed amendment does not involve a significant reduction in the margin of safety.

Based on the above, ZS concludes that the proposed amendment does not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of no significant hazards consideration is justified.

5.3 Conclusions

In conclusion, based on the considerations discussed above: 1) there is reasonable assurance that the health and safety of the public will not be endangered by operation of the facility in the proposed manner, (2) such activities will be conducted in compliance with the Commissioner's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

6.0 ENVIRONMENTAL CONSIDERATION

A review has determined that the proposed amendment would change the ZNPS DSEP to reflect that plant decommissioning has been substantially completed[1] and all spent fuel and GTCC radioactive waste is now located at the ISFSI. However, the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or a significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

7.0 RERERENCES

7.1 R. Krich, ComEd, to U.S. Nuclear Regulatory Commission, "Request for Approval of Defueled station Emergency Plan and Exemption from 10 CFR 50.47(b) and 10 CFR 50.47(c)(2)", dated April 13, 1999

7.2 R. Krich, ComEd, to U.S. Nuclear Regulatory Commission, "Revision to request for Approval of Defueled Station Emergency Plan and Exemption from 10 CFR 50.47(b) and 10 CFR 50.47(c)(2)", dated July 8, 1999

7.3 Letter from U.S. Nuclear Regulatory Commission to Mr. Oliver J. Kennedy, Request for Approval of Defueled Station Emergency Plan and Exemption from Certain Requirements of 10 CFR 50.47, "Emergency Plans", Zion Nuclear Power Station Unit, dated August 31, 1999

7.4 P. Thurman, Zion*Solutions*, LLC (ZS-2012-0307), "Request for Exemption to Revised Emergency Planning Rule", dated June 20, 2012

7.5 Letter from U.S. Nuclear Regulatory Commission to Mr. John Sauger, Request for Exemption from Certain Requirements of the Final Rule die Enhancements to Emergency Preparedness Regulations, Zion Nuclear Power Station, Units 1 and 2, dated March 30, 2015

7.6 J. Sauger, Zion*Solutions*, LLC (ZS-2014-0088), "License Amendment request for Proposed Revision to Zion Nuclear Power Station Defueled Station Emergency Plan and Request for Exemption from Certain Requirements of 10 CFR 50.47, and 10 CFR 50, Appendix E", dated May 27, 2014

7.7 Letter from U.S. Nuclear Regulatory Commission to Mr. John Sauger, Request for Exemption from Emergency Preparedness Requirements, Zion Nuclear Power Station, Units 1 and 2, dated July 20, 2015

ZionSolutions, LLC
ZS-2015-0172: Attachment 2

Zion Station

Independent Spent Fuel Installation (ISFSI) Emergency Plan

Revision 0 DRAFT

Zion Station
Independent Spent Fuel Storage Installation (ISFSI)
Emergency Plan

Revision 0 DRAFT

TABLE OF CONTENTS

1.0 INTRODUCTION

This document describes the Licensee's plan for responding to emergencies that may arise at the Zion Station Independent Spent Fuel Storage Installation (ISFSI).

The emergencies addressed in this plan are related to the dry storage of spent nuclear fuel and Greater Than Class C (GTCC) waste at the ISFSI, and include off-normal, accident, natural phenomena, and hypothetical events and consequences as presented in the NAC International, Inc. (NAC) Modular Advanced Generation Nuclear All-purpose Storage (MAGNASTOR) Final Safety Analysis Report (FSAR).

All of the Zion Station spent fuel and GTCC waste have been relocated to the ISFSI, therefore, only those off-normal events and accidents that apply to ISFSI storage conditions are addressed in this Emergency Plan.

The analyses of the radiological impact of potential accidents at the ISFSI site conclude that any releases beyond the ISFSI Controlled Area Boundary are less than the Environmental Protection Agency (EPA) Protective Action Guide (PAG) exposure levels, as detailed in EPA-400-R-92-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents." The Controlled Area, as defined in 10 CFR 72.3, means the area immediately surrounding an ISFSI for which the licensee exercises authority over its use and within which ISFSI operations are performed. The Licensee shall exclude access to the ISFSI Controlled Area if adverse radiological conditions require.

If an emergency condition develops, the ISFSI Shift Supervisor (ISS) is responsible for recognizing the event and assuming the role of the Emergency Director (ED). The ED is responsible for declaring the emergency and implementing the ISFSI Emergency Plan. The On-Shift Emergency Response Organization (On-Shift ERO) is responsible for performing emergency response activities and may be augmented with additional emergency response personnel at the discretion of the ED. Notification is made to State agencies and the Nuclear Regulatory Commission. Conditions are assessed and corrective actions are implemented to restore the facility to a normal safe condition.

The Zion Station ISFSI Emergency Plan is based on applicable regulations, industry guidelines, and the NAC MAGNASTOR FSAR accident analyses for the dry cask storage system.

2.0 FACILITY DESCRIPTION

2.1 SITE

The Zion Station ISFSI is sited on a tract of land of approximately 250 acres in the extreme eastern portion of the city of Zion, Lake County, Illinois, on the west shore of Lake Michigan. The site is approximately 6 miles NNE of the center of the city of Waukegan, Illinois and 8 miles south of the center of the city of Kenosha, Wisconsin.

2.2 SURROUNDING AREA

In the vicinity of the site (approximate 1 mile radius) is the extreme western portion of the City of Zion which encompasses the Zion Metra Train Station, a small public park (Edina Park), a portion of a light industrial region , including a warehouse facility, and a small number of residences. There are no schools, hospitals or prisons within a 1 mile radius of the site. The site is bordered on the north and south by the Illinois Beach State Park.

The centers of the closest communities of Zion and Winthrop Harbor are located approximately 1.6 miles and 2.5 miles away respectively. In addition to Shiloh Boulevard providing access to the site, there are three other highways or major roads (Illinois Route 173, 29th Street and Wadsworth Road) that intersect the 1 mile radius and extend westward to other principal north-south roads that are outside of the boundary. Additionally, part of the Chicago and Northwestern Railroad track system passes though the boundary (approximately 0.8 miles to the west) and is used for commuter and freight traffic.

The site is bounded on the east by Lake Michigan on which surface vessels and over which aircraft operate. Commercial barge and ship traffic does not ordinarily operate within five miles of the site.

2.3 INDEPENDENT SPENT FUEL STORAGE INSTALLATION

All of the Zion Station spent nuclear fuel and Greater Than Class C (GTCC) waste is in dry cask storage at the ISFSI located south of the ComEd switchyard (see Figure 2-1) within the Owner Controlled Boundary, as shown in Figure 2-2.

The cask storage pads are two 36 inch thick reinforced concrete slabs that are 689-feet wide by 148-feet long. They are independent structures separated by a reinforced concrete apron located between the two pads. In total, the cask storage pads are designed to accommodate 72 Vertical Concrete Casks (VCCs) (9 rows with 4 VCCs per row on each pad). Sixty-one (61) VCCs are used for the storage of spent fuel; and four (4) VCCs are used for the storage of GTCC waste.

The ISFSI pads are surrounded by the Protected Area (PA) fence. A second fence surrounds the PA fence and establishes an isolation zone between the two fences. The ISFSI is also located within the Radiological Restricted Area Boundary which provides an additional fenced perimeter. Both the ISFSI and the Radiological Restricted Area are inside the Site Boundary.

The ISFSI monitoring building provides for normal ISFSI access control and ISFSI monitoring. The Central Alarm Station is the portion of the ISFSI Monitoring Building where ISFSI monitoring is conducted. During an emergency, the ISFSI Monitoring Building becomes the Emergency Response Facility (ERF) and is the location where emergency events will be initially assessed, classified, and managed.

The ISFSI is designed for interim storage of spent fuel in a contained shielded system. The MAGNASTOR dry cask storage system is used under the provisions of 10 CFR 72 Part K, "General License for Storage of Spent Fuel at Power Reactor Sites." A general license is granted under 10 CFR 72.210 for storage of spent nuclear fuel in an ISFSI at power reactor sites to persons that are authorized to possess or operate nuclear power reactors under 10 CFR 50. ZS is authorized by the NRC to store and possess spent nuclear fuel at the Zion Station by Facility Operating Licenses (DPR-39 and DPR-48) pursuant to the provisions of 10 CFR 50.

The NAC MAGNASTOR system is a sealed canister based system for the storage and transportation of spent nuclear fuel. The primary components of the MAGNASTOR system consist of the Transportable Storage Canister and the Vertical Concrete Cask (VCC). The VCC provides radiation shielding and contains internal airflow paths that allow decay heat generated by the spent nuclear fuel stored within the Transportable Storage Canister to be removed by natural air circulation around the canister wall. For additional information on the MAGNASTOR system, refer to the MAGNASTOR FSAR, Certificate of Compliance No. 1031 and the Zion Nuclear Power Station Independent Spent Fuel Storage Installation (ISFSI), 10 CFR 72.212 Evaluation Report.

FIGURE 2-1

ZION STATION ISFSI

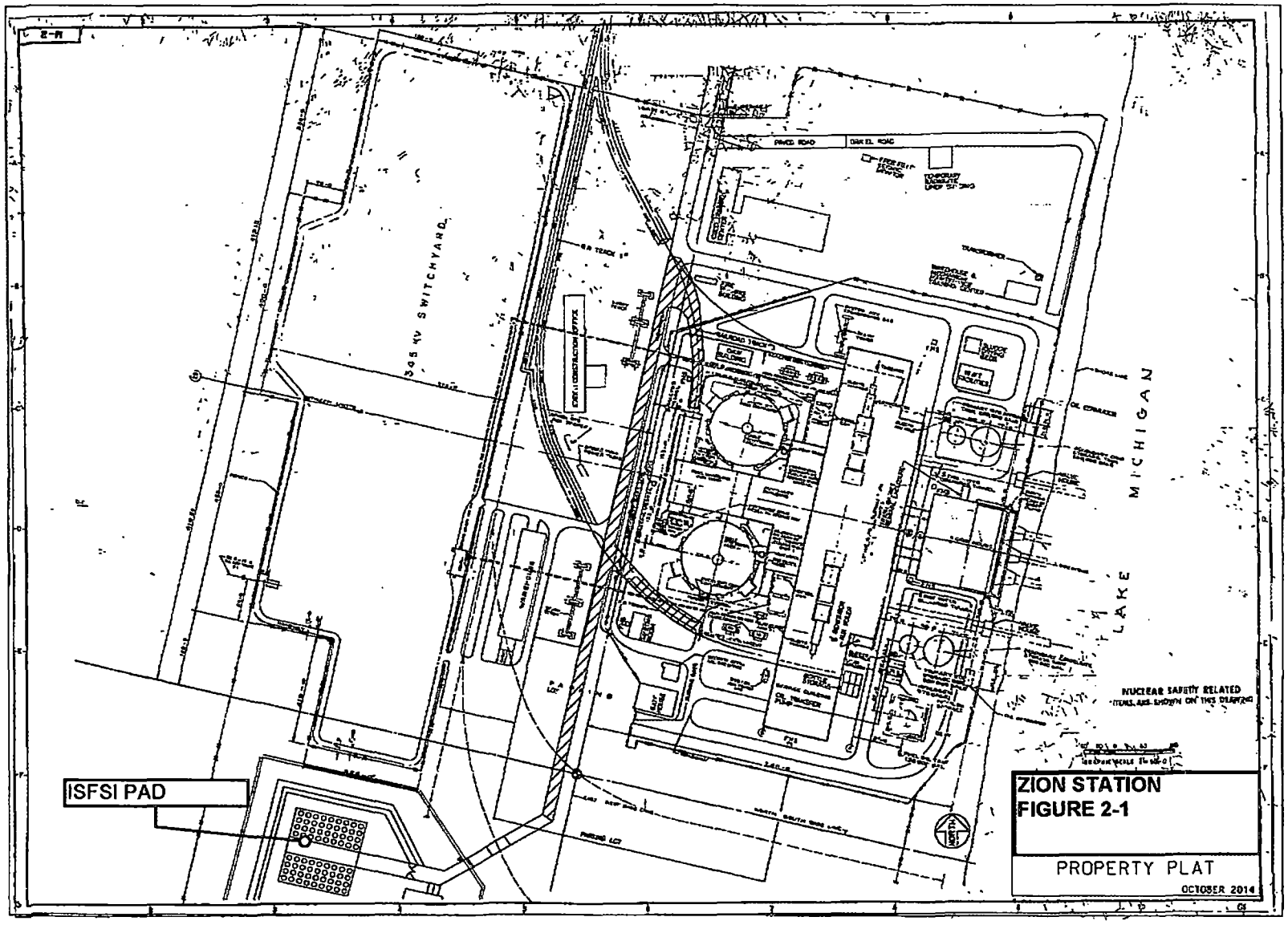
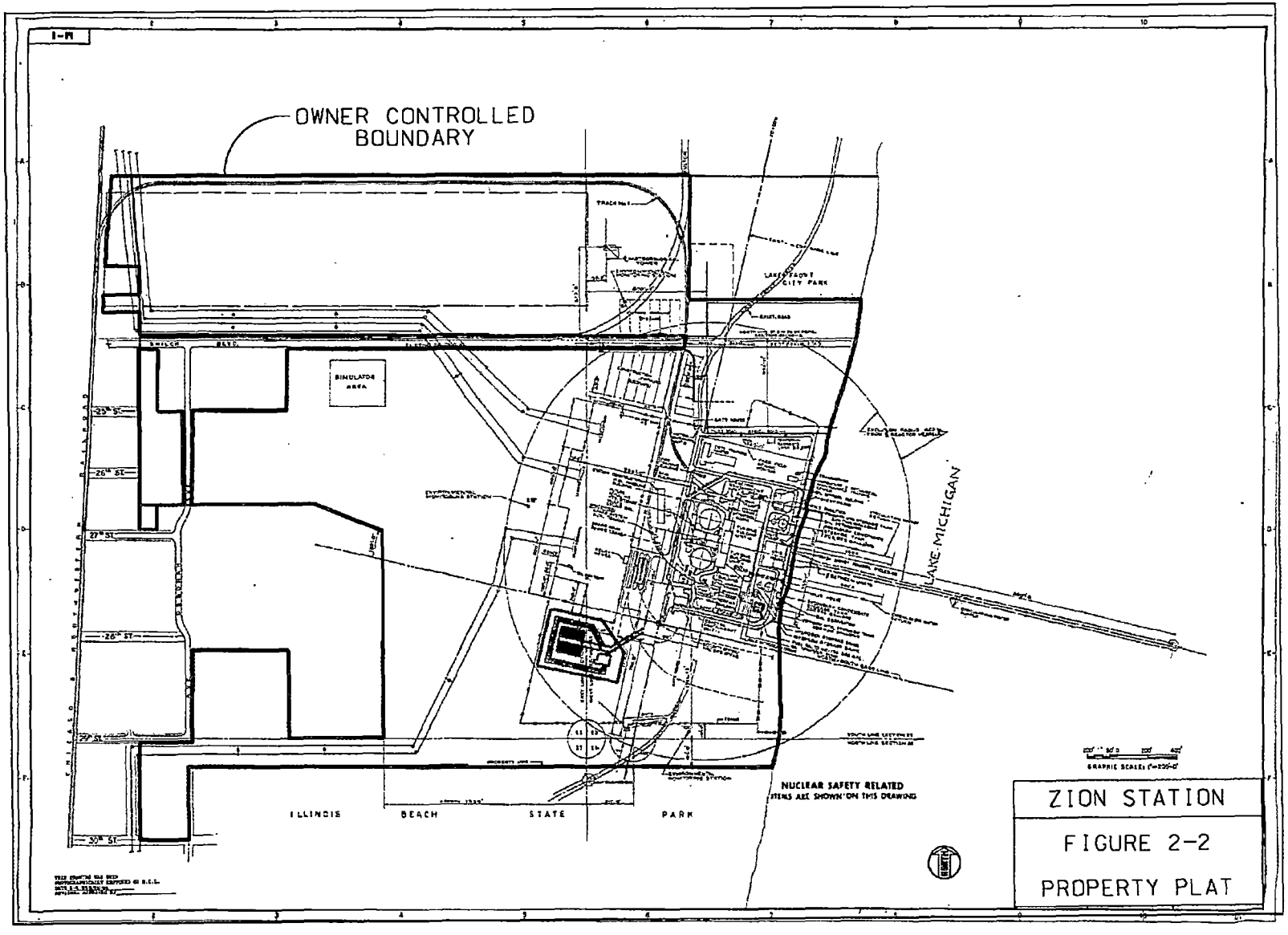


FIGURE 2-2

ZION STATION OWNER CONTROLLED BOUNDARY



3.0 ISFSI OFF-NORMAL EVENTS AND ACCIDENTS

The following is a description of off-normal events and accident conditions described in Chapter 12 of the MAGNASTOR FSAR that are applicable with all spent fuel located at the ISFSI for long term storage. The analyses demonstrate that the MAGNASTOR storage system satisfies the requirements of 10 CFR 72.24 and 10 CFR 72.122 for off-normal events and accident conditions. The design of the concrete cask and storage canister preclude the release of contamination from the contents during use of the storage system. Evaluations show that for off-normal events and accident conditions, there is no mechanistic failure of the confinement boundary of the storage canister. The storage canister maintains its structural integrity during off-normal events and accident conditions without release of radioactive material or excessive radiation exposure to workers or the general public. The storage canister has no credible leakage, and therefore, there is no release of radioactive material during off-normal events and accident conditions of storage.

Accidents and off-normal events that are analyzed for the ISFSI, including some events considered to be non-credible, have been reviewed. All spent fuel has been relocated to the ISFSI, therefore, only those off-normal events and accidents that apply to storage conditions are addressed. This plan classifies events based on predetermined Emergency Action Levels (EALs). This approach establishes clear, predetermined actions to an emergency event or accident, allowing a coordinated response to the eventual mitigation of the emergency condition and the restoration of the facility to a safe status.

3.1 ISFSI Off-Normal Events

The MAGNASTOR FSAR presents evaluations of postulated off-normal events that could occur once during any calendar year of operation.

- Severe Ambient Temperature Events ($>106^0$ F or $< -40^0$ F)
- Blockage of One-Half of the Air Inlets
- Small Releases of Radioactive Particulate from the Transportable Storage Canister exterior.

These off-normal events result in no serious radiological consequences.

3.2 ISFSI Accidents

The MAGNASTOR FSAR presents results of analyses of design basis and hypothetical accident conditions evaluated for the MAGNASTOR system. In addition to design basis accidents, the MAGNASTOR FSAR also addresses low-probability events including natural phenomena that might occur once over the lifetime of the ISFSI or have consequences that may result in maximum potential effect on the immediate environment. The analyses show that the MAGNASTOR system has a substantial design margin of safety and the system provides protection to the public and to site personnel. The following accidents have been evaluated.

3.2.1 Accident Pressurization.

This is a hypothetical event that assumes the failure of all fuel rods in a canister. No normal storage conditions are expected to lead to the rupture of all the fuel rods. Pressurization of the canister is caused by release of fission products and helium fill gas from the fuel rods. Analysis shows that the maximum Transportable Storage Canister pressure resulting from this accident is less than the Transportable Storage Canister design pressure.

There are no radiological consequences for this accident and there are no adverse consequences as a result of the maximum accident internal pressure.

Failure of fuel rods is unlikely to be detected by any measurement or inspection that could normally be undertaken from the exterior of the Transportable Storage Canister or VCC.

There are no corrective actions required.

3.2.2 Earthquake

The analysis shows that the design basis earthquake does not affect the MAGNASTOR concrete cask performance. The loaded concrete cask does not tip over for the design basis earthquake defined as a horizontal acceleration load of 0.37g at the top surface of the ISFSI pad. The maximum horizontal acceleration at the ZNPS ISFSI has been determined to be 0.19g. Maximum sliding distance of a concrete cask due to the horizontal acceleration is approximately 6.2 inches. With a minimum 16 feet center-to-center spacing of the casks there is sufficient clear space in between adjacent casks. Sliding due to the design basis earthquake will not cause adjacent concrete casks to impact one another, nor will it cause a concrete cask to slide off the ISFSI pad.

There are no radiological consequences for this accident.

An earthquake would be detected by ISFSI personnel feeling the movement of the area.

Corrective action consists of inspecting the VCCs following the event.

3.2.3 Explosion

An explosion is unlikely because administrative controls exclude explosive substances in the vicinity of the ISFSI. The closest explosive sources were evaluated and it was determined that MAGNASTOR design basis values were not exceeded.

There are no radiological consequences for this accident.

An explosion would be detected by visual or audible observation.

Inspection of the storage casks is required to ensure that the air inlets and outlets are free of debris. There are no recovery actions or corrective actions required for this accident event.

3.2.4 Failure of All Fuel Rods with a Subsequent Ground Level Breach of the Canister

Because no mechanistic failure of the Transportable Storage Canister was identified with the Failure of All Fuel Rods and since the Transportable Storage Canister is leak tight, this potential accident is not evaluated in the MAGNASTOR FSAR.

3.2.5 Fire

A fire is a very unlikely occurrence since there are no flammable materials stored in the area of the ISFSI pad. However, controls are in place limiting flammable materials to less than the 50 gallons in the direct vicinity of a VCC assumed in the hypothetical fire accident. The hypothetical fire accident is assumed to involve 50 gallons of fuel in the cask transport vehicle with the fire totally engulfing the entire base of a concrete cask. The duration of the analyzed fire is 8 minutes.

There are no significant radiological consequences for this accident. There may be local spalling of concrete during the fire event, which could lead to some minor reduction in shielding effectiveness and an insignificant increase in radiation dose rates on the cask surface.

Fires will be detected by visual observation or possibly by odor.

Following the fire, the concrete cask should be inspected for general deterioration of the concrete, loss of shielding (spalling of concrete), exposed reinforcing bar, and surface discoloration that could affect heat rejection. This inspection will determine the repair activities necessary to return the concrete storage cask to its design basis configuration.

3.2.6 Flood

The MAGNASTOR system is not adversely affected by a design basis flood having a depth of water of 50 feet and a flow velocity of 15 feet per second. The ISFSI is bounded by this accident since the ISFSI pads are constructed above Probable Maximum Surge and Sieche levels.

There are no radiological consequences for this accident.

Flooding will be detected by visual observation. Should water overflow the ISFSI pad, inspection of the concrete casks would be performed to ensure that the air inlets and outlets are free of debris.

3.2.7 Full Blockage of Air Inlets

The likely cause of complete cask air inlet blockage is the covering of the base of the cask with snow, water or earth in a catastrophic event that is beyond the design basis earthquake. This hypothetical event is a bounding accident and is not considered credible. The evaluation of the accident demonstrates that there are no adverse consequences providing at least two of the air inlets are cleared of obstruction within 58 hours of event initiation. The remaining air inlets should be cleared of obstructions as soon as possible after that. The blockage of the air inlets would be detected by a Technical Specification Surveillance required to be performed every 24 hours to ensure that all inlet and outlet screens are free of blockage or in response to natural phenomena.

There are no radiological consequences for this accident with exception of the dose received in clearing the air inlets. For the MAGNASTOR system, the estimated extremity dose is 448 mrem for clearing the 4 air inlets of a VCC. The whole body dose would be slightly less.

Blocked air inlets would be detected by visual observation. If observed, air /vent obstructions will be cleared.

3.2.8 Lightning

A lightning strike is a random weather related event. Since the MAGNASTOR storage cask is located on an unsheltered pad, the storage cask may be subject to a lightning strike. A lightning strike on a concrete cask may be visually detected at the time of the strike, or by visible surface discoloration at the point of entry or exit of the current flow. The analysis shows that the only area affected will be the surface of the VCC and that the increase VCC bulk temperature due to Joulean heating is not significant.

There are no radiological consequences for this accident.

Lightning strikes will be detected by visual observation.

The array of VCCs will be visually inspected for any damage following the lightning event and if damage is discovered, appropriate actions will be taken.

3.2.9 Maximum Anticipated Heat Load (133^0 F Ambient Temperature)

The cause of this condition is a weather event that causes the MAGNASTOR system to be subject to a 133^0 F ambient temperature with complete inlet flow blockage. The maximum component temperatures are less than the allowable temperatures for accident conditions and are also less than the temperature limits for normal conditions of storage. Available information from the U.S. National Oceanic and Atmospheric Administration for Chicago, Illinois indicates that the maximum temperature reached in the area has been 105^0 F.

There are no radiological consequences for this accident.

High ambient temperature would be detected by individual senses and monitored using thermometers or weather reports.

While the MAGNASTOR FSAR does not require recovery or corrective actions for this accident, ZS has surveillance requirements that would detect and correct air inlet flow blockages.

3.2.10 Tip-Over of the Concrete Cask

A hypothetical non-credible accident condition has been postulated involving the non-mechanistic tip over of a concrete storage cask. No design basis accidents will cause the concrete cask to tip over. An earthquake having a magnitude greatly exceeding the design basis earthquake would be required to tip over the concrete cask. Functionally, the concrete cask is not expected to suffer significant adverse effects due to this event. The concrete cask and canister are expected to continue to provide design basis shielding, geometry control of contents, contents confinement performance, and spent fuel cooling.

There is a radiological consequence due to the hypothetical tip over event since the bottom end of the concrete cask has significantly less shielding than the sides and top of the concrete cask. High dose rates can be expected at the exposed concrete cask bottom following the tip over event and would dictate the use of supplemental shielding until the concrete cask can be up- righted. Stringent access controls must be applied to ensure that personnel do not enter the area of radiation shine from the exposed bottom of the tipped over concrete cask. Following a tip over event, supplemental shielding should be used until the concrete cask can be up-righted. Surface and top and bottom edges of the concrete cask are expected to exhibit cracking and possible loss of concrete down to the layer of reinforcing bar.

The increased dose rate due to this cracking is not expected to be significant.

Tip-over casks will be detected by visual observation.

Recovery and corrective actions are described in the MAGNASTOR FSAR. As previously noted, tip over is not a credible event.

3.2.11 Tornado and Tornado Driven Missiles

A tornado is a random weather event having a higher probability of occurrence at certain times of the year and geographical locations. The postulated tornado wind loading and tornado missile impacts are not capable of overturning the cask, or penetrating the boundary established by the concrete cask. There is little potential for significant damage to the concrete cask, which provides radiation shielding. The worst tornado missile impact for a MAGNASTOR concrete cask at the ISFSI pad could cause a penetration of approximately 6 inches into the concrete shield. The loss of shielding would result in a local surface radiation dose rate of less than 600 mrem/hr at the point of penetration.

The presence of a tornado will be detected by weather reports or visual observation. Any subsequent damage will be detected by visual observation.

A tornado event is not expected to result in the need to take any corrective actions other than an inspection of the ISFSI. This inspection would be directed at ensuring the concrete cask inlets and outlets had not become blocked by wind-blown debris, and at checking for obvious surface damage to the concrete cask. In the worst case, a tornado missile could dislodge concrete to a depth of approximately 6 inches which would require repair of the damage by grouting.

3.2.12 24-Inch Cask Drop

The concrete cask may be lifted and moved by a transport frame. The transport frame raises the cask using a lifting attachment that connects to the two lifting lugs. The failure of one or more of the lifting lugs, or the failure of the lifting frame could result in a drop of the cask.

A drop of a cask would be visually observed at the time of the drop.

The detailed analysis is provided in Section 3 of the MAGNASTOR FSAR. The analysis indicates that damage occurs to the air inlet system; however, the damage and impact to cooling are bounded by the loss of one half of the air inlet evaluation. The analyses also show that stress placed on the structural components of the Transportable Storage Canister is within safety limits and that buckling of the canister will not occur. The analyses also indicate that the fuel baskets are structurally adequate to withstand a 24 inch drop. Administrative controls are in place to ensure the height of the cask does not exceed 24 inches and nominally less than 12 inches during transport.

Although the concrete cask remains functional following this event and no immediate corrective actions are required, the Transportable Storage Canister should be inspected and transferred to an undamaged concrete cask as soon as practicable. The damaged cask should be inspected and repaired as required prior to continued use. Prior to transferring the Transportable Storage Canister from the damaged concrete cask, inlet and outlet screen inspection frequencies should be evaluated for an increase based on the damaged cask's air flow path restrictions.

4.0 CLASSIFICATION

4.1 CLASSIFICATION OF ACCIDENTS

The Zion Station ISFSI Emergency Plan provides an emergency classification system based on Nuclear Energy Institute (NEI) 99-01, Revision 6, "Development of Emergency Action Levels for Non-Passive Reactors." Consistent with NRC guidance for an away-from-reactor ISFSI, accidents and off-normal events that rise to the level of an emergency at the ZNPS ISFSI are given the emergency classification of an ALERT. Classification of ISFSI emergencies at this level meet the intent for emergency planning in 10 CFR 72.32.

Accidents and off-normal events that are analyzed for the ISFSI, including some events considered to be non-credible, have been reviewed and where appropriate, have been assigned the emergency classification level of ALERT.

4.1.1 ALERT

The emergency classification level of ALERT signifies that events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the ISFSI.

The ALERT classification includes emergency situations which are not expected to threaten the public, but for which notification of the States of Illinois, Wisconsin and the NRC is required.

The purpose of the ALERT classification is to assure that the ERO is available to respond to perform event mitigation, radiation monitoring if required, and to provide the States of Illinois and Wisconsin; and the NRC with current information on status.

4.2 EMERGENCY ACTION LEVELS (EALS)

An event is classified using Procedure EO-4, "Emergency Preparedness Implementation." This procedure is based, in part, on the information contained in Table 4.1, "ISFSI Emergency Events"; and the Emergency Action Level Basis Document. The tables and supplemental information provided in the Emergency Action Level Basis Document identify possible Initiating Conditions, Recognition Category Codes, Emergency Action Level (EAL) Threshold Values, and the Emergency Classification associated with each Initiating Condition. EAL Threshold Values include predetermined values or conditions and are used to determine that the severity of an event has progressed to that which warrants being given the designated Emergency Classification.

During an event, recognition of the emergency condition is the responsibility of the ISS. When conditions described in a specific Emergency Action Level (EAL) are reached, the ISS assumes the position of Emergency Director and classifies the emergency. Upon classification of an ALERT the ED activates the ERO.

TABLE 4.1

ISFSI EMERGENCY EVENTS

Event Type	Recognition Category Code	Emergency Action Level Threshold Values	Emergency Classification Level
Damage to a loaded cask Confinement Boundary	E-HU1	Damage to a loaded cask CONFINEMENT BOUNDARY as indicated by an on contact radiation reading greater than two times the NAC Certificate of Compliance, Appendix A, Technical Specification limits of LCO 3.3.1 on the surface of the spent fuel cask Calculated Values (Two times the NAC Certificate of Compliance, Appendix A, Technical Specification limits of LCO 3.3.1) >190 mrem/hr gamma on vertical surface OR >10 mrem/hr neutron on vertical surface OR >900 mrem/hr (neutron + gamma) on the top	ALERT

Event Type	Recognition Category Code	Emergency Action Level Threshold Values	Emergency Classification Level
Security Condition	PD-HU1	Confirmed ISFSI Physical Security Plan security contingency event that results in the LLEA being requested to respond to the ISFSI. -OR- Notification of a credible threat to the site, reported by the NRC or other recognized offsite agency, that presents a risk to site personnel, a potential degradation to the level of safety at the site or a security threat to the ISFSI.	ALERT
Other conditions exist which in the judgment of the Emergency Director warrant declaration of an ALERT	PD-HU3	Other conditions exist which in the judgment of the Emergency Director indicate that events are in progress or have occurred which indicate a potential degradation of the level of safety at the ISFSI.	ALERT

5.0 RESPONSE

5.1 RECOGNITION AND CLASSIFICATION

Recognition of the emergency condition is the responsibility of the ISS. When conditions described in a specific Emergency Action Level (EAL) are reached, the ISS assumes the position of Emergency Director and classifies the emergency. A classification of Recovery is made when repairs are being made as required to return to an acceptable condition and parameters are stable or improving. Termination is declared when no EAL Threshold Values are exceeded and the ERO is no longer needed.

5.2 NOTIFICATION AND ACTIVATION

The ED will notify designated management and determine the level of effort required to mitigate the event.

Upon declaration of an emergency, the ED will assure notifications of the emergency have been given to the Illinois Emergency Management Agency (IEMA), Wisconsin Emergency Management, and the NRC Operations Center. The ED may delegate making the notification to others. Notification will be made to IEMA within 30 minutes and the NRC within 1 hour of declaring an emergency. Notification to IEMA should be made via the commercial telephone system. NRC notification should be accomplished using the NRC Event Notification System (ENS).

Wisconsin Emergency Management should be notified using commercial lines after notification is made to IEMA. However, this notification should not interfere with notifying the NRC. This notification may be made after the NRC is notified.

A designated member of management will be responsible for coordinating all public and corporate communications associated with a declared emergency.

5.3 EMERGENCY RESPONSE ORGANIZATION ACTIONS

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

- ISS recognizes off-normal condition, assesses its significance and assumes the role of ED.
- ED classifies the event and declares an ALERT.
- ED communicates the initiating conditions to On-Shift personnel.
- ED assesses danger to personnel and provides protective action guidance. Establishes access controls to affected areas if radiological conditions require.
- On-site personnel respond as directed by ED.
- Required notification to IEMA is completed within 30 minutes of the declaration of emergency.
- Required notification to the NRC is completed within one hour of the declaration of emergency.
- Zion*Solutions* management is notified. The Augmented support is activated as determined by the ED.
- Recovery actions are determined in accordance with EO-4, "Emergency Preparedness Implementation."
- ED deactivates Augmented ERO.
- The event is terminated in accordance with EO-4, "Emergency Preparedness Implementation."
- ED deactivates ERO
- ED position is deactivated.

5.4 RADIOLOGICAL ASSESSMENT

For the ISFSI, no postulated accident for the MAGNASTOR system results in a loss of canister confinement boundary, so a radiological release is not expected.

The ISS will ensure an assessment of ISFSI dose rates is performed after any natural phenomena event or accident condition. If this assessment indicates increased dose rates exceed EAL Threshold Levels, an ALERT will be declared.

5.4.1 Radiological Monitoring

With declaration of an ALERT due to increased dose rates, follow up radiological surveys will be performed and appropriate actions to limit access and exposure will be taken.

Recovery and corrective actions will be planned and executed in a manner that minimizes exposure to personnel.

5.4.2 Radiological Exposure Control

The ED shall limit radiation exposure during events and recovery actions. Personnel exposure during recovery from radiological emergencies should not exceed 10 CFR 20.1201 annual occupational dose limits to individual adults, except for emergency dose limits listed in EPA-400-R92-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents."

Personnel exposure will be kept As Low As Reasonably Achievable (ALARA).

Personnel exposure during radiological recovery operations will be controlled in accordance with the following 10 CFR 20.1201 dose limits:

1) Total effective dose equivalent (TEDE) 5 rem.

2) The sum of the deep-dose equivalent and the committed dose equivalent to any individual organ or tissue other than the lens of the eye being equal to 50 rem.

3) An eye dose equivalent of 15 rem.

4) A shallow-dose equivalent of 50 rem to the skin or to each of the extremities.

5) The dose received by an embryo/fetus during the entire pregnancy due to the occupational exposure of a declared pregnant worker should not exceed 0.50 rem (500 mrem).

The ED is responsible for limiting personnel exposure by controlling access to affected areas. Emergency response personnel will wear dosimetry as directed by the ED or RP personnel. Non occupational workers' exposure will be controlled in accordance with the 10 CFR 20.1301 dose limit of 0.1 rem in a year.

The ED is responsible for ensuring personnel exposures are limited during implementation of corrective and recovery actions necessary to return to normal activities.

5.5 PROTECTIVE MEASURES

5.5.1 Accountability/Evacuation

If determined to be necessary, the ED will initiate accountability of personnel. All reports of initial and continuous accountability of personnel shall be provided to the ED.

In the unlikely event that the ED decides that an evacuation is needed, the ED will notify personnel of the need to evacuate. Individuals leaving the site and/or ISFSI area will go to the assembly area designated by the ED. Appropriate steps will be taken to locate any persons not accounted for.

Personnel remaining on-site or arriving on-site following an evacuation shall report to the ERF (ISFSI Monitoring Building), or alternate location as directed.

Accountability and evacuation are controlled by Procedure EO-4, "Emergency Preparedness Implementation."

5.5.2 Decontamination Capabilities

The structural integrity of the MAGNASTOR dry cask storage system precludes the release of contents in any of the design basis normal conditions and off-normal or accident events, thereby assuring public health and safety during use of the system. There are no evaluated normal, off-normal, or accident conditions for the MAGNASTOR system that result in the breach of the canister and the subsequent release of fission products. For this reason, contamination of individuals at the ISFSI, injured or not, is not a credible event.

5.5.3 Access Control

Access control to the site and ISFSI area will be established at a location designated by the ED in an emergency.

5.5.4 Protective Equipment and Supplies

Radiation dose survey and personnel contamination survey equipment is available. Surveys will be conducted as necessary to ensure that personnel responding to an emergency are provided appropriate protection. Recovery actions will not be performed until a comprehensive radiation survey, if required, is conducted.

5.6 FIRST AID AND MEDICAL

Individuals trained in first aid will be available. Medical supplies are available at the ISFSI. The medical supplies are specified in EO-3, "Emergency Preparedness Administration" and accompanying job aids.

Injured persons requiring offsite medical care will be transported to the Vista Medical Center East for treatment. Arrangements have been made with the City of Zion Fire and Rescue Department to provide emergency transportation for personnel requiring offsite medical treatment. Both the Vista Medical Center East and the City of Zion Fire and Rescue Department have personnel trained in radiation protection measures. Personnel requiring offsite treatment may be transported to the hospital by ambulance or LLEA vehicle. All actions of offsite responders will be coordinated by the ED.

5.7 FIREFIGHTING

Designated personnel will coordinate on-site activities with the Zion Fire and Rescue Department. Firefighting is implemented in accordance with the ISFSI Fire Protection Program.

5.8 TERMINATION

In any emergency event, immediate response actions are directed toward limiting the consequences of the emergency in a manner that will afford maximum protection to on-site personnel. Once the immediate corrective and on-site protective actions have been implemented, and a stable and safe condition is established, deactivation of the emergency support personnel may be initiated. The ED will terminate the event and provide notification to on-site personnel and appropriate offsite authorities.

5.9 RECOVERY

Additional corrective actions may be necessary to complete the recovery and return to normal activities. All re-entry and recovery actions will be preplanned and will be documented. Radiological or other hazard areas will be posted with warning signs indicating radiation levels or other hazards. Efforts shall be made to limit radiation exposure.

The ED has the authority and responsibility to initiate the re-entry and recovery actions. Once re-entry is initiated, a designated member of Management assumes control and directs recovery and corrective actions. The ED is then deactivated.

The decision to initiate re-entry shall be made by the ED, and the following prerequisites shall be considered:

- Personnel monitoring requirements are determined.
- Portable radiation monitoring instruments are available, if needed.
- Communications are available.
- Radiological conditions are determined and are documented prior to entry.
- Habitability of evacuated areas is confirmed.

The designated member of Management will coordinate the restoration of the facility and has the authority to take the necessary actions to ensure the facility is returned to a safe condition. Recovery responsibilities include but are not limited to:

- Developing the recovery plan.
- Maintaining comprehensive hazard assessment of the facility.
- Prioritizing clean-up of affected areas and equipment.
- Isolating and repairing damaged equipment or systems.
- Documenting corrective actions taken related to recovery and the return to normal activities.

6.0 FACILITIES AND EQUIPMENT

6.1 EMERGENCY FACILITIES

6.1.1 Emergency Response Facility (ERF)

During an emergency the ISFSI Monitoring Building is designated as the Emergency Response Facility (ERF). Emergency conditions are normally managed by the ED at this location. The ERF provides sufficient space to accommodate personnel and has communications systems and other necessary equipment available.

6.1.2 Assembly Areas

Should an evacuation be necessary, personnel will be directed to report to a safe assembly area designated by the ED.

6.1.3 First Aid Supplies

Emergency first aid equipment and supplies are located in the ERF and other locations specified in EO-3, "Emergency Preparedness Administration."

6.2 SYSTEMS, EQUIPMENT, AND ADVISORY SERVICES

6.2.1 Equipment

Dedicated emergency equipment is located as designated in EO-3, "Emergency Preparedness Administration." Hospital emergency supplies are maintained at Vista Medical Center East.

Controlled copies of appropriate facility documents (drawings, procedures, Technical Specifications, FSAR, etc.) are available at the ERF.

6.2.2 Fire Detection and Protection

The ISFSI Monitoring Building is equipped with general occupancy smoke detectors, sprinklers, and portable fire extinguishers. Fires that cannot be extinguished by the installed sprinklers or by using portable fire extinguishers will be addressed by the City of Zion Fire and Rescue Department.

6.2.3 Meteorological Information

General meteorological (wind speed and wind direction) information needed to deal with an emergency can be obtained using the internet.

The meteorological data from the nearby Waukegan National Airport is available on the internet and is representative of the site conditions.

6.2.4 Offsite Advisories

LLEA frequency radio can be monitored for local information and advisories. NRC security advisories can be received at the ISFSI utilizing available communications systems.

6.3 COMMUNICATIONS

6.3.1 Commercial Telephone System

The commercial telephone system is used to notify support personnel. It is also used as the primary method of alerting State entities of an emergency, and is the backup method to notify the NRC.

6.3.2 Portable Radios

Two-way portable radios are available for communications on-site.

6.3.3 LLEA Frequency Radio

The ISFSI is equipped with City of Zion Police Department Radios operating on the LLEA frequency. These radios maintain a direct and continuous communications capability between the ISFSI and the LLEA.

6.3.4 Illinois Emergency Management Agency (IEMA).

The commercial phone system is normally used to communicate with IEMA.

6.3.5 NRC Emergency Notification System (ENS)

The ENS is a dedicated telephone system used to notify the NRC Operations Center. The NRC will be notified immediately after State notifications and within 1 hour of event classification or change in classification. In the event of failure of the ENS, commercial phone lines would be used to notify the NRC.

7.0 ORGANIZATION AND RESPONSIBILITIES

7.1 NORMAL ORGANIZATION

The Zion Station ISFSI organization is directed by the ISFSI Manager, who is responsible for overall management of the Emergency Preparedness Program. On-Shift supervision is provided by an ISFSI Shift Supervisor (ISS), who manages the activities of the ISFSI Security staff, and reports to the ISFSI Manager. The ISFSI Manager is not normally part of the On-Shift ERO.

7.2 EMERGENCY RESPONSE ORGANIZATION (ERO)

The ERO consists of an On-Shift ERO and an Augmented ERO. The On-Shift ERO is the ED. The ED may elect to utilize any employees or contract personnel that may be on site at the time of the emergency. ISFSI personnel shall respond to emergencies per the requirements of the Security Plan and the needs of the emergency. Personnel not specifically trained as a member of the ERO will be given specific direction prior to being assigned any task.

The ED can utilize other resources and offsite support organizations (Fire Department, LLEA, and Medical Facilities) as needed to support the emergency response and recovery actions. The ED will provide personnel with appropriate instructions and assignments to ensure that assistance resources are used effectively. Additional resources are expected to respond in a timely manner when contacted.

7.2.1 On-Shift ERO

Detection and recognition of conditions that warrant declaration of an emergency is the responsibility of the ISS. Upon declaration of an emergency, the ISS assumes the position of ED, assumes emergency response duties and implements the Emergency Plan.

The ED may delegate administrative duties to available personnel not otherwise involved with the emergency, including notifications to State, and Federal entities and Zion*Solutions* management. The ED has overall responsibility for the coordination of emergency response activities of the On-Shift and Augmented ERO.

The ED is responsible for directing all aspects of the response to an emergency. Depending on the situation, the ED may either remain in the ERF or perform designated activities from another location.

At the direction of the ED, employees and contract personnel on site at the time of the emergency may be used to conduct actions to bring the facility to a stable condition. On-Shift ISFSI personnel are excluded unless the emergency involves an ISFSI Security Contingency Event which, by the ISFSI Security Plan, requires their action.

7.2.2 Augmented ERO

For an Emergency Classification of ALERT involving radiological consequences or at the discretion of ED, On-call support personnel can be activated. The goal of the On-call support personnel is to provide specialized technical or other support within four hours of being activated. The size and composition is determined by the ED. The On-call support personnel may provide support to the ED to assess radiological conditions, provide technical support, support maintenance and repair activities, develop plans to implement corrective actions, and assist with recovery actions.

Personnel may be assigned to perform activities such as the following, if required:

- Assessing the extent of damaged equipment.
- Identifying short and long-term repair needs.
- Establishing repair priorities and deploying repair teams.
- Coordinating available resources to restore equipment and systems.
- Coordinating logistical needs.
- Performing radiological surveys and assessments.
- Coordinating news announcements with the Energy*Solutions* Corporate Communications.
- Facilitating communications with the NRC, IEMA, and other organizations.
- Assisting with recovery actions.

7.3 ON-SITE RESPONSIBILITIES

7.3.1 ISFSI Shift Supervisor (ISS)

The ISS is responsible for the detection and recognition of conditions that warrant declaration of an emergency. Upon identification of an emergency, the ISS assumes the position of ED, assumes emergency response duties, declares the emergency and implements the Emergency Plan.

7.3.2 Emergency Director (ED)

Actions the ED cannot delegate are:

- Classification of emergency.
- Authorization of radiation exposure in excess of 10 CFR 20 limits.
- Initiation of re-entry/recovery operations.
- Authorization of State and NRC notifications.
- Termination of the event.

The primary responsibilities of the ED are:

- Direction of emergency response actions.
- Command and control of the ERO.
- Classification and notification.
- Assessment of radiological conditions.
- Authorization of on-site protective actions.
- Determination of need for and requesting assistance.
- Implementation of Emergency Operation Procedures.
- Prioritization of emergency response actions.
- Periodic updates to State, and Federal entities.
- Mitigation of event.
- Interface with offsite agencies.
- Access control.
- Deactivation of emergency response personnel.

Although the On-Shift ISS will initially assume the position of ED, any ED qualified individual may be utilized to fulfill the positions duties and responsibilities.

7.4 CORPORATE SUPPORT

Corporate support may be provided by the Licensee's corporate organization.

7.5 LOCAL OFFSITE SUPPORT

Arrangements have been made with local organizations to provide:

- LLEA support for security events.
- Firefighting and rescue services.
- Transportation of contaminated injured personnel.
- Hospital services for medical treatment of contaminated injured personnel.

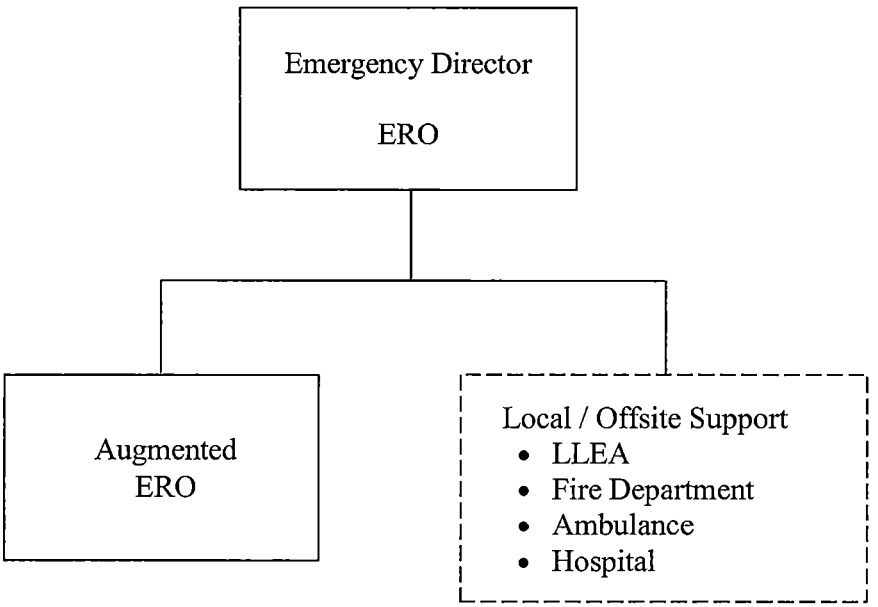
Letters of Agreement for each organization, for local offsite support, are maintained on file and are listed in Appendix B.

7.6 STATE AND FEDERAL GOVERNMENT

State and Federal government response is expected to be limited to documenting the notification of the emergency, periodically receiving updated information on the emergency, and coordinating public information news releases if necessary. Investigations or inquiries may be commenced by State or Federal officials following an event.

FIGURE 7.1

EMERGENCY RESPONSE ORGANIZATION



8.0 MAINTAINING EMERGENCY PREPAREDNESS

8.1 RESPONSIBILITIES

The ISFSI Manager has overall responsibility for maintaining emergency preparedness and is responsible for ensuring adequate resources. The ISFSI Manager or designee is responsible for ensuring the following tasks and functions are completed:

- Maintenance of readiness of the ERF and equipment.
- Development and maintenance of the Emergency Plan.
- Development and maintenance of the implementing procedures.
- Training and qualification of ERO personnel.
- Conduct of drills and exercises.
- Monitoring effectiveness of and providing input to emergency preparedness training.
- Maintaining agreements with local offsite support services.
- Reviewing EALs with state and local government authorities on an annual basis in accordance with 10 CFR 50, Appendix E (IV)(B).

8.2 TRAINING

Training will be implemented to provide the skills and knowledge necessary to maintain staff proficiency. Training will focus on non-routine and specialized activities that are particular to the individual functions and overall emergency response actions. Training may consist of, but not be limited to, classroom lecture, self-study, practical demonstrations, and facility drills.

8.2.1 Emergency Staff Training

Each person specifically charged with ERO responsibilities will be provided initial and continuing training. This continuing training will be conducted during the calendar year. Continuing training addresses general changes to the Emergency Plan, facilities, equipment, regulations, policies, and specific changes to their responsibilities (which are not considered part of their routine duties). This training will also address problem areas identified during audits, drills, or exercises.

8.2.2 Offsite Assistance Training

Organizations which may be called upon to render assistance on-site will be offered general facility familiarization sessions on an annual basis. These sessions may include a walk down of the facility, safety, building layout, access protocol, communications capabilities, and security requirements.

8.3 DRILLS AND EXERCISES

In addition to the training described earlier, the ISFSI staff will conduct drills to enhance skills and knowledge of the practical implementation of the Emergency plan and demonstrate the adequacy of emergency facilities, equipment, and implementing procedures. Drills allow interaction between evaluators and ERO personnel to reinforce requirements and overall process implementation. Drills will be scheduled with various objectives to demonstrate these capabilities. Some drills will focus on specific functions while others will involve a broader scope of the Emergency Plan. Offsite support organizations (e.g., ambulance service, fire department, and LLEA) may be invited to participate in drills.

8.3.1 Drills

In addition to training drills discussed above, the following drills will be conducted annually:

1) Radiation Monitoring Drill – demonstrating conduct of general area surveys.

2) Medical Emergency Drill – demonstrating the capability for transporting a contaminated injured worker offsite.

3) Fire Drill – conducted in accordance with the Fire Protection Program.

8.3.2 Exercise

An exercise will be conducted biennially to demonstrate the capability to implement the Emergency Plan. Objectives will be developed to ensure major elements of the Emergency Plan are performed and evaluated to ensure the appropriate level of preparedness is being maintained.

Offsite response organizations must be invited to participate in or observe the exercise.

8.3.3 Drill and Exercise Evaluation

Facility staff will evaluate the exercise and drills. Expectations for evaluators will be discussed with each evaluator prior to the drill/exercise. Evaluators should be assigned to evaluate functions or areas consistent with their expertise. Following the drill/exercise a critique of the evolution will be conducted and any identified deficiencies will be corrected through retraining, remedial drills, or by other means. Comment resolution will be assigned to responsible personnel for final implementation.

8.4 REVIEW AND UPDATE OF EMERGENCY PLAN, EAL BASIS DOCUMENT, AND EMERGENCY OPERATION PROCEDURES

8.4.1 Emergency Plan

This plan, including written agreements between the site and other organizations, will be reviewed annually. Approved changes to the plan will be incorporated into the appropriate implementing procedures along with the plan changes. Letters of Agreement will be reviewed annually and verified to be in effect at the time of the plan review. This may be accomplished via written communication or documented telephone conversation.

This is a controlled document to ensure changes are incorporated into distributed copies. Plan changes will be approved by the ISFSI Manager.

8.4.2 EAL Basis Document

The EAL Basis Document will be reviewed annually. The controls associated with the maintenance of this document are the same as established for EOs.

8.4.3 Emergency Operation Procedures (EOs)

Procedures which implement the Emergency Plan will be reviewed, revised and distributed in accordance with procedure and document control requirements. Revisions will be made whenever a plan change is made that affects the procedure, or other circumstances dictate a revision is necessary. EOs will be approved by the ISFSI Manager.

8.5 PERIODIC SURVEILLANCE

Facilities and equipment will be maintained in accordance with EO-3, "Emergency Preparedness Administration." Inventories of Emergency Plan kits and supplies will be conducted on a semi-annual basis and after Emergency Plan implementation (either by actual event or drill activity).

A list of telephone numbers that are important to emergency notification is verified on a semi-annual basis.

Commercial communication lines with IEMA will be verified semiannually. The dedicated NRC ENS system will be tested monthly.

8.6 INDEPENDENT REVIEW

All Emergency Plan program elements shall be reviewed by persons having no direct responsibility for the implementation of the Emergency Plan at least once every 12 months to satisfy the requirements of 10 CFR 50.54(t). An independent audit covering all program elements satisfies this requirement.

APPENDIX A

DEFINITIONS, ABBREVIATIONS AND ACRONYMS

1.0 DEFINITIONS

Actions

1) Assessment Actions – Actions taken during or after an incident to obtain and process information that is necessary to make decisions to implement specific emergency measures.

2) Corrective Actions – Actions taken to make improvements.

3) Emergency Actions – Actions taken to improve or terminate an emergency situation.

4) Protective Actions – Actions taken to avoid or reduce radiological exposure to personnel.

5) Recovery Actions – Actions taken after an emergency to restore the facility to pre-emergency condition.

6) Airborne Radioactivity – Any particulate radioactive material dispersed in the air.

7) Alert - Events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the ISFSI.

8) Confinement Boundary – The confinement boundary of the canister consists of the Transportable Storage Canister cylindrical shell, bottom plate, closure lid, and vent and drain port covers.

9) Contamination (Radioactive) – Radioactive material in any place where it is unwanted (e.g., on persons, places, or things).

10) Controlled Area – The area, as defined in 10 CFR 72.3, which immediately surrounds the ISFSI for which the license exercises authority over its use and within which ISFSI operations are performed. The Licensee shall exclude access to the ISFSI Controlled Area if adverse radiological conditions require.

11) Decontamination – The reduction or removal of contaminating radioactive material from a person, area, or object by cleaning or washing.

12) Emergency Action Level (EAL) – A pre-determined, site-specific, observable threshold for an Initiating Condition that, when met or exceeded, places the site in a given emergency classification level. EAL statements may utilize a variety of criteria including instrument readings and status indications; observable events; results of calculations and analyses; entry into particular procedures; and the occurrence of natural phenomena.

13) Emergency Response Organization (ERO) – The organization responsible under emergency conditions.

14) Emergency Director (ED) - The person in charge during an emergency.

15) Initiating Condition – An event where either the potential exists for a radiological or security emergency, or an event where such an emergency has occurred.

16) Independent Spent Fuel Storage Installation (ISFSI) – The facility designed and constructed to provide on-site dry storage of spent fuel.

17) MAGNASTOR System – The NAC International, Inc. Modular Advanced Generation Nuclear All-purpose Storage system which is being used for dry cask storage of spent fuel and GTCC waste at the ISFSI.

18) Normal Levels - Normal levels can be considered as the highest reading in the past twenty- four hours excluding the current peak value.

19) ODCM/RETS – This term is used to identify the specific section (RETS) of the controlling document (ODCM). RETS is Chapter 12 of the ODCM and contains values necessary to quantify limits set within certain Emergency Action Level Threshold Values.

20) Protective Action Guides (PAGs) – Guidelines provided by the EPA regarding projected absorbed dose to individuals in the general population, which warrant protective action.

21) Radiological Restricted Area (RRA) - An area, access to which is limited for the purpose of protecting individuals against undue risks from exposure to radiation and radioactive materials.

22) Site Boundary - The line beyond which the land is not owned, leased, or otherwise controlled by the licensee.

23) Transportable Storage Canister – The stainless steel canister that provides containment for the spent fuel. The loaded Transportable Storage Canisters are placed inside of the VCCs for on-site dry storage.

24) Unplanned - A parameter change or an event that is not the result of an intended evolution and requires corrective or mitigative actions.

25) Valid - An indication, report or condition, is considered to be Valid when it is verified by (1) an instrument response check, or (2) indications on related or redundant indicators, or (3) by direct observation by site personnel, such that doubt related to the indicator's operability, the condition's existence, or the report's accuracy is removed. Implicit in this definition is the need for timely assessment.

26) Vertical Concrete Cask (VCC) – The cask positioned on the ISFSI pad that contains the Transportable Storage Canister used to store spent fuel.

2.0 ABBREVIATIONS AND ACRONYMS

ALARA	As Low As Reasonably Achievable
CFR	Code of Federal Regulations
EAL	Emergency Action Level
ED	Emergency Director
ERF	Emergency Response Facility
ERO	Emergency Response Organization
IEMA	Illinois Emergency Management Agency
ISFSI	Independent Spent Fuel Storage Installation
ISS	ISFSI Shift Supervisor
LLEA	Local Law Enforcement Agency
mrem/hr	millirem (1/1000 rem) per hour
NRC	Nuclear Regulatory Commission
ODCM/RETs	Offsite Dose Calculation Manual/Radiological Effluent Technical Standards
Rem	Roentgen Equivalent Man - A measure of biological damage caused by radiation exposure
TLD	Thermo Luminescent Dosimeter
VCC	Vertical Concrete Cask
ZS	Zion*Solutions*, LLC

APPENDIX B

LETTERS OF AGREEMENT

This appendix lists the letters of agreement in effect between Zion*Solutions* and offsite authorities and support organizations. These agreements are reviewed annually. Signed copies of these agreements are maintained by the ISFSI Manager and are available upon request.

Organizations

City of Zion

- Fire and Rescue Department
- Police Department

Vista Medical Center East

APPENDIX C

EMERGENCY PLAN PROCEDURES

The following Emergency Plan Procedures implement the requirements specified in this plan.

EO No.	Title
EO-1	Response to Analyzed Events at the ISFSI
EO-2	Handling Medical Situations and Spills at the ISFSI
EO-3	Emergency Preparedness Administration
EO-4	Emergency Preparedness Implementation
EO-7	NRC Notification Requirements

ZionSolutions, LLC
ZS-2015-0172: Attachment 3

Zion Station

Independent Spent Fuel Storage Installation (ISFSI)

Emergency Action Level Basis Document

Revision 0 DRAFT

ZIONSOLUTIONS LLC
An EnergySolutions Company

Zion Station
Independent Spent Fuel Installation (ISFSI)
Emergency Plan
Emergency Action Level
Basis Document

Revision 0 DRAFT

E-HU1

(ISFSI)

ECL: ALERT

Initiating Condition (IC): Damage to a loaded cask CONFINEMENT BOUNDARY.

Emergency Action Level Threshold Values:

(1) Damage to a loaded cask CONFINEMENT BOUNDARY as indicated by an on-contact radiation reading greater than two times the NAC Certificate of Compliance, Appendix A, Technical Specification limits of LCO 3.3.1 on the surface of the Vertical Concrete Cask.

Basis:

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

Calculated Values

(Two times the NAC Certificate of Compliance,
Appendix A, Technical Specification limits of LCO 3.3.1)

>190 mrem/hr gamma on vertical surface
-OR-
> 10 mrem/hr neutron on vertical surface
-OR-
> 900 mrem/hr (neutron + gamma) on the top

Changes to these values will not be considered a reduction in effectiveness if the NAC C of C Technical Specification limits have been changed.

The existence of "damage" is determined by radiological survey. The technical specification multiple of "2 times", which is also used in Recognition Category A IC AU1, is used here to distinguish between non-emergency and emergency conditions. The emphasis for this classification is the degradation in the level of safety of the spent fuel cask and not the magnitude of the associated dose or dose rate. It is recognized that in the case of extreme damage to a loaded cask, the fact that the "on-contact" dose rate limit is exceeded may be determined based on measurement of a dose rate at some distance from the cask.

Security-related events for ISFSIs are covered under IC PD-HU1 (ALERT).

PD-HU1

(ISFSI)

ECL: ALERT

Initiating Condition: Confirmed SECURITY CONDITION or threat.

Emergency Action Level Threshold Values: (1 or 2 or 3)

Confirmed ISFSI Physical Security Plan SECURITY CONTINGENCY EVENT that results in the LLEA being requested to respond to the ISFSI.

Notification of a credible threat to the site, reported by the NRC or other recognized off site agency, that presents a risk to site personnel, a potential degradation to the level of safety at the site or a security threat to the ISFSI.

Basis:

This IC addresses events that pose a threat to site personnel or the ISFSI, and thus represents a potential degradation in the level of safety.

Security events which do not meet one of these EALs are adequately addressed by the requirements of 10 CFR § 73.71 or 10 CFR § 50.72.

Classification of these events will initiate appropriate threat-related notifications to site and ISFSI personnel and offsite 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 addresses threats to the ISFSI requiring assistance from the LLEA. These threats are discussed in detail in the ISFSI Physical Security Plan.

EAL #2 addresses the receipt of a credible threat that presents a risk to personnel or degradation of safety at the site. The threat is assumed to be credible if reported by the NRC or other recognized off site organization. Zion*Solutions* has chosen to use the EAL Threshold Values that would normally be associated with Recognition Category Code PD-HU1, Unusual Event to initiate an Emergency Classification of ALERT. This is consistent with the requirement set forth in 10 CFR 72.32(a)(3), *Classification of accidents*, to have a classification system for classifying accidents as "alerts." This change in classification of PD-HU1 provides the site, State and NRC with conservative notification of actions and/or activities that could have a security related impact on the ISFSI. This use of PD-HU3 makes it unnecessary to have a Recognition Category Code of PD-HA3 for the ISFSI since other requirements specify that if any of the Security

Contingency Event conditions in the ISFSI Physical Security Plan were to escalate, the proper notifications to State and Federal Agencies would be made.

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.

PD-HU3

(ISFSI)

ECL: ALERT

Although the use of Recognition Category Code PD-HU3 is associated with Unusual Event, Zion*Solutions* is also using it and the associate EAL Threshold Values in Table 4.2, "ISFSI Emergency Events", to designate ECL of ALERT for the ISFSI. Refer to the Basis for the explanation and justification

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

Emergency Action Level Threshold Values:

Other conditions exist which in the judgment of the Emergency Director indicate that events are in progress or have occurred which indicate a potential degradation of the level of safety at the site or ISFSI. No releases of radioactive material requiring offsite response or monitoring are expected.

Basis:

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

Zion*Solutions* has chosen to use the EAL Threshold Values that would normally be associated with Recognition Category Code PD-HU3, Unusual Event to initiate an Emergency Classification of ALERT. This is consistent with the requirement set forth in 10 CFR 72.32(a)(3), *Classification of accidents*, to have a classification system for classifying accidents as "alerts." This use of PD-HU3 makes it unnecessary to have a Recognition Category Code of PD-HA3 for the ISFSI.