

Enclosure 1  
SONGS ISFSI-Only Emergency Plan - Revision 1

# **San Onofre Nuclear Generating Station (SONGS)**

## **Independent Spent Fuel Storage Installation (ISFSI) Only Emergency Plan**

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## **PART I**

### **1.0 INTRODUCTION**

The San Onofre Nuclear Generating Station (SONGS) is owned by Southern California Edison (SCE), San Diego Gas and Electric (SDG&E) and the cities of Anaheim and Riverside, California. SCE is authorized to act as agent for the participants and has exclusive responsibility for the operation of the facility.

The SONGS INDEPENDENT SPENT FUEL STORAGE INSTALLATION (ISFSI) Only Emergency Plan (IOEP) describes the plan for responding to emergencies that may arise at the station's ISFSI. In this condition, no reactor operations can take place and all irradiated fuel is removed from the Spent Fuel Pools (SFPs). This IOEP addresses the risks associated with SONGS' ISFSI-Only conditions.

As provided in the ISFSI storage system Final Safety Analysis Reports (FSARs), the analyses of the potential radiological impacts of postulated off-normal, natural phenomenon, and accident events in an ISFSI-Only condition indicates that any releases beyond the EXCLUSION AREA BOUNDARY (EAB) would result in a DOSE to the public below the radiation limits established in 10 CFR 72.106(b). Areas where exposure levels could potentially warrant pre-planned response measures are generally limited to the ISFSI pad and nearby vicinity; 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 a spectrum of emergencies. 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 SONGS IOEP is developed to respond to potential radiological emergencies at the SONGS ISFSI. Because there are no postulated off-normal, natural phenomenon, or accident events that would result in OFFSITE DOSE consequences that are 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 SONGS were granted by the Nuclear Regulatory Commission (NRC) on June 4, 2015 (ADAMS Accession Number: ML15082A204).

The IOEP revision 0 was approved per NRC Safety Evaluation dated November 30, 2017.

## **2.0 DISCUSSION**

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

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

This Plan describes the organization and responsibilities for implementing emergency measures. It describes interfaces with OFFSITE government agencies (Federal, State and local) which may be notified in the event of an emergency and may provide assistance. Fire, rescue and ambulance services are provided by the United States Marine Corps Camp Pendleton Fire Department (USMC CPFD). Law enforcement services are provided by the Federal Bureau of Investigation (FBI) and local public entities. Medical services are provided by Mission Hospital Regional Medical Center in Mission Viejo, California. Additionally, Tri-City Medical Center in Oceanside, California, can provide the medical services specified in this Plan.

Because there are no postulated events that would result in OFFSITE DOSE consequences that are large enough to require OFFSITE emergency planning, emergencies are divided into two EMERGENCY CLASSIFICATION LEVELS: UNUSUAL EVENT (UE) and ALERT.

SONGS is responsible for planning and implementing emergency measures associated with the SONGS ISFSI. This Plan is provided to meet this responsibility. To carry out specific emergency measures discussed in this Plan, detailed implementing procedures are established and maintained.

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

### **2.2 FACILITY DESCRIPTION**

SONGS has permanently ceased power operations and all Units 2 and 3 irradiated fuel has been removed from the SFPs and placed into dry storage within the SONGS ISFSI.

SONGS Unit 1 has been permanently shut down since 1993 and is in the decommissioning phase. Above-ground structures have been dismantled. Unit 1 fuel is stored in the SONGS ISFSI and in the GE-Hitachi Morris facility.

By letter dated June 12, 2013, SCE certified its intention to permanently cease power operations at SONGS Units 2 and 3 as of June 7, 2013, pursuant to 10 CFR 50.82(a)(1)(i). By letters dated June 28, 2013 and July 22, 2013, SCE certified permanent removal of fuel from the Unit 2 and Unit 3 reactor vessels, pursuant to 10 CFR 50.82(a)(1)(ii). The 10 CFR 50 licenses for SONGS Units 2 and 3 no longer authorize operation of the reactors, or emplacement or retention of fuel into the reactor vessels, as specified in 10 CFR 50.82(a)(2).

The San Onofre ISFSI is located on the coast of southern California in San Diego County, near the border with Orange County. The site is located entirely within the boundaries of the United States Marine Corps Base, Camp Pendleton, California. There is public access between the beaches north and south of the station. Interstate Highway 5 and the Atchison, Topeka, and Santa Fe Railway pass within 1000 feet of the station.

**2.3 SUMMARY OF EMERGENCY ACTIONS**

This Plan is activated by the ISFSI Shift Supervisor (ISS), who assumes the position of EMERGENCY DIRECTOR (ED) upon DECLARATION of an emergency based upon CLASSIFICATION of an event according to the EMERGENCY ACTION LEVEL (EAL) criteria. The emergency measures described in the subsequent sections and implementing procedures are implemented in accordance with the CLASSIFICATION and nature of the emergency at the direction of the ED. Regulatory authorities and OFFSITE support organizations are notified in accordance with this Plan. The ED 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 Plan describe the detailed plans and actions of the SONGS EMERGENCY RESPONSE ORGANIZATION (ERO), including interfaces with OFFSITE support organizations.

### 3.0 REFERENCES

References consulted in the writing of this Plan are listed in this section. With exception of regulatory requirements, inclusion of material on this list does not imply adherence to all criteria or guidance stated in each individual reference.

- 3.1 10 CFR 20, "Standards for Protection Against Radiation"
- 3.2 10 CFR 50.47, "Emergency Plans"
- 3.3 10 CFR 50, Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities"
- 3.4 10 CFR 72.13, "Applicability"
- 3.5 10 CFR 72.32, "Emergency Plans"
- 3.6 10 CFR 72.44, "License conditions"
- 3.7 10 CFR 72.106, "Controlled area of an ISFSI or MRS"
- 3.8 NUREG-1140, Final Report published January 1988, "A Regulatory Analysis on Emergency Preparedness for Fuel Cycle and Other Radioactive Material Licensees"
- 3.9 NUREG-0586, "Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities"
- 3.10 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)
- 3.11 NUREG-0728, Report to Congress, "NRC Incident Response Plan"
- 3.12 US NRC Regulatory Guide 1.101, "Emergency Planning and Preparedness for Nuclear Power Reactors", revision 4, July, 2003
- 3.13 NRC Information Notice No. 85-44, "Emergency Communication System Monthly Test"
- 3.14 NRC Information Notice No. 90-08, "KR-85 Hazards From Decayed Fuel"
- 3.15 EPA-400-R-92-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents", October 1991
- 3.16 American Nuclear Insurers Bulletin #5B (1981), "Accident Notification Procedures for Liability Insured"
- 3.17 NRC letter dated June 4, 2015, SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 1, 2, AND 3 AND INDEPENDENT SPENT FUEL STORAGE INSTALLATION -EXEMPTIONS FROM CERTAIN EMERGENCY PLANNING REQUIREMENTS AND RELATED SAFETY EVALUATION (TAC NOS. MF3835, MF3836, AND MF3837). (ADAMS Accession Nos: Letter ML15082A204; Exemption: ML15082A143 on June 4, 2015).
- 3.18 San Onofre 2 & 3 UFSAR (DSAR)



- 3.19** Advanced NUHOMS Horizontal Modular Storage System for Irradiated Nuclear Fuel Certificates of Compliance, Final Safety Analysis Reports and Technical Specifications
- 3.20** HI-STORM UMAX Canister Storage System Certificates of Compliance, Final Safety Analysis Reports and Technical Specifications
- 3.21** NEI 99-01, Rev. 6, "Development of Emergency Action Levels for Non-Passive Reactors"
- 3.22** Environmental Protection Agency, "Protective Action Guide and Planning Guidance for Radiological Incidents," Draft for Interim Use and Public Comment (March 2013)
- 3.23** 10 CFR 72.3, "Definitions"

## 4.0 DEFINITIONS AND ABBREVIATIONS

### 4.1 DEFINITIONS

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

**Accident Assessment** - Accident assessment consists of a variety of actions taken to determine the nature, effects and severity of an accident.

**Accountability** - A procedural or discretionary PROTECTIVE ACTION taken for all persons within the ISFSI PROTECTED AREA, which involves the gathering of personnel into pre-designated areas, and the subsequent verification that the location of these personnel is known.

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

**Annual** - Frequency of occurrence is met if performed within 1.25 times a 12-month interval as measured from the previous performance. This definition does not apply to the term "annual" when it relates to the conduct of the EMERGENCY PREPAREDNESS Exercise and alternate year INTEGRATED DRILL. The Exercise and alternate year INTEGRATED DRILL are performed within the calendar year.

**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.

**Biennial** - Occurring every two calendar years.

**Classification** - The comparison of conditions, indications, and reports associated with an off-normal, natural phenomenon, or accident event to the approved emergency classification system, to determine the most accurate EMERGENCY ACTION LEVEL.

**Command and Control** - When in Command and Control of the event, the designated individual has overall responsibility for the SONGS emergency response efforts.

**Controlled Area** - The area immediately surrounding the SONGS ISFSI for which SCE exercises authority over its use and within which ISFSI operations are performed. The ISFSI Controlled Area is bounded within the EAB.

**Corrective Action** - Those emergency measures taken to lessen or terminate an emergency situation to prevent an uncontrolled release of radioactive material, or to reduce the magnitude of a release. Corrective actions include, but are not limited to, equipment repair or shutdown, installation of emergency structures, firefighting, repair, and damage control.

**Declaration** - Official determination by the EMERGENCY DIRECTOR that conditions at the ISFSI meet the criteria for an EMERGENCY ACTION LEVEL warranting CLASSIFICATION of an emergency at the UNUSUAL EVENT or ALERT EMERGENCY CLASSIFICATION LEVEL.

**Decontamination** - The reduction or removal of radioactive material contamination from a structure, area, material, object, or person. Decontamination may be accomplished by (1) treating the surface so as to remove or decrease the contamination, (2) letting the material stand so that the radioactivity is decreased as a result of natural decay, and (3) covering the contamination.

**Design Basis Accident (DBA)** - Credible accident events as analyzed in the ISFSI storage system Final Safety Analysis Reports (FSARs).

**Dose** - A generic term that means absorbed dose, dose equivalent, effective dose equivalent, deep dose equivalent, committed dose equivalent, committed effective dose equivalent, or TOTAL EFFECTIVE DOSE EQUIVALENT.

**Dose Rate** - The amount of ionizing (or nuclear) radiation to which an individual would be exposed per unit of time. As it would apply to DOSE rate to a person, it is usually expressed as rems per hour or in submultiples of this unit, such as millirems per hour. The DOSE rate is commonly used to indicate the level of radioactivity in a contaminated area.

**Emergency Action Level (EAL)** - A pre-determined, site-specific, observable threshold for an INITIATING CONDITION that when met or exceeded places the station in a given EMERGENCY CLASSIFICATION LEVEL.

**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 potential or actual effects or consequences, and the resulting ONSITE and OFFSITE response actions. The Emergency Classification Levels applicable to the SONGS ISFSI, in ascending order of severity, are:

- UE
- ALERT

**Emergency Director (ED)** - The Director of the facility in COMMAND AND CONTROL of the event. The ISFSI Shift Supervisor fills the role of ED throughout an event.

**Emergency Plan Implementing Procedures (EPIPs)** - Specific procedures describing actions needed to implement the IOEP and describing the methods established to maintain and monitor the IOEP.

**Emergency Preparedness (EP)** - A state of readiness that provides reasonable assurance that adequate protective measures can and will be taken upon implementation of the Emergency Plan in the event of a radiological emergency. Also, the SCE organization responsible for the Emergency Preparedness program.

**Emergency Response Facility (ERF)** - The security center of the station from which the ISFSI can be monitored. The facility containing the communication equipment necessary for both normal and emergency conditions. It is operated under the direction of the ISS/ED and serves as the primary location for event CLASSIFICATION, emergency DECLARATION and Notifications to OFFSITE agencies, ASSESSMENT ACTIVITIES, and CORRECTIVE ACTION direction.

**Emergency Response Organization (ERO)** - Organization of personnel who may be called upon during an emergency to perform duties to mitigate accident conditions at SONGS.

**Emergency Response Personnel** - Personnel who may be called upon during an emergency to perform duties to mitigate accident conditions at SONGS.

**Essential Personnel** - SONGS personnel that either have assigned emergency response duties, are security personnel, are required for maintaining the safe operation of the ISFSI, or are personnel either identified as essential by the ISS/ED or performing critical tasks under the direction of the ISS/ED.

**Exclusion Area** - The area surrounding the reactor where the licensee has the authority to determine all activities, including exclusion or removal of personnel and property (10 CFR 100.3). The Exclusion Area is determined as an area of such size that an individual located at any point on its boundary for two hours immediately following onset of the postulated fission product release would not receive a total radiation DOSE to the whole body in excess of 25 rem or a total radiation DOSE in excess of 300 rem to the thyroid from iodine exposure [10 CFR 100.11(a)(1)]. In accordance to the letter dated March 31, 2014 (ADAMS Accession No. ML 14092A332), SONGS analyses demonstrate that the radiological consequences of design basis accidents at SONGS will not exceed the 1 rem limit of the EPA PAGs at the EXCLUSION AREA BOUNDARY.

**Exclusion Area Boundary (EAB)** - For SONGS, the Exclusion Area Boundary (EAB) is roughly formed by two semicircles with radii of 1967.5 ft. each, centered on the Unit 2 Containment dome and a point 134 ft. southeast of the Unit 3 Containment dome, with a tangent connecting the landward arcs and seaward arcs of the two semicircles. The EAB is depicted in the San Onofre 2 & 3 UFSAR (DSAR) Figure 2.1-5.

**Hostage** - A person(s) held as leverage against the station to ensure that demands will be met by the station.

**Hostile Action** - An act toward the SONGS 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 SONGS ISFSI. Non-terrorism-based EALs should be used to address such activities (i.e., this may include violent acts between individuals within the VEHICLE BARRIER SYSTEM boundary).

**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 designed and constructed for the interim storage of spent nuclear fuel, solid reactor-related Greater Than Class C (GTCC) waste, and other radioactive materials associated with spent fuel and reactor-related GTCC waste storage.

**Initiating Condition (IC)** - An event or condition that aligns with the definition of one of the ECLs by virtue of the potential or actual effects or consequences.

**Integrated Drill** - A drill that incorporates multiple demonstration requirements to be conducted in connection with one another.

**Local Government Agencies** - Orange County and San Diego County.

**Offsite** - The area around the station that lies beyond the EAB.

**Onsite** - The area around the station that lies within the EAB.

**Projectile** - An object directed toward the SONGS ISFSI that could cause concern for its continued capability, reliability, or personnel safety.

**Protected Area (PA)** - That area within the ISFSI security boundary as defined in SONGS's Security Plan.

**Protective Actions** - Those emergency measures taken for the purpose of preventing or minimizing radiological, or other hazard, exposures to affected population groups.

**Quarterly** - Frequency of occurrence is met if performed within 1.25 times a 92-day interval as measured from the previous performance.

**Radiologically Controlled Area (RCA)** - An area in which radioactive material is present and the potential exists for the spread of radioactive contamination. The area will be posted for the purpose of protecting individuals against undue risks from exposure to radiation and radioactive materials.

**Site Boundary** - The SONGS easement boundary, which is also the legally surveyed Site Boundary, is delineated in the San Onofre 2 & 3 UFSAR (DSAR) Figure 1.2-1. The site, comprising 83.63 acres, is approximately 4500 feet long and 800 feet wide.

**Staffed Warning Point** - OFFSITE agency location that is staffed 24 hours per day such as 911 call-centers or other staffed watch locations.

**Total Effective Dose Equivalent (TEDE)** - The sum of the effective DOSE equivalent (for external exposure) and the committed effective DOSE equivalent (for internal exposure).

**Unusual Event (UE)** - Events are in process 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.

**4.2 ABBREVIATIONS**

**Cal OES** - California Governor's Office of Emergency Services

**CFR** - Code of Federal Regulations

**DBA** - Design Basis Accident

**DSAR** - Defueled Safety Analysis Report

**EAB** - Exclusion Area Boundary

**EAL** - Emergency Action Level

**ECL** - Emergency Classification Level

**ED** - Emergency Director

**EP** - Emergency Preparedness

**EPIP** - Emergency Plan Implementing Procedure

**ERF** - Emergency Response Facility

**ERO** - Emergency Response Organization

**FSAR** - Final Safety Analysis Report

**IOEP** - ISFSI-Only Emergency Plan

**ISFSI** - Independent Spent Fuel Storage Installation

**NRC** - Nuclear Regulatory Commission

**PA** - Protected Area

**RCA** - Radiologically Controlled Area

**TEDE** - Total Effective Dose Equivalent

**UE** - Unusual Event

**UFSAR** - Updated Final Safety Analysis Report

## PART II

### 1.0 ASSIGNMENT OF RESPONSIBILITY (ORGANIZATION CONTROL)

*Planning Standard 50.47(b)(1) (as exempted in Reference 3.17) – Primary responsibilities for emergency response by the nuclear facility licensee and by State and local organizations 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.*

### 1.1 EMERGENCY RESPONSE AND RESPONSIBILITIES

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

The individual in charge of the SONGS emergency response is given the title of EMERGENCY DIRECTOR (ED). 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 DIRECTOR (ED).

During an emergency, the EMERGENCY RESPONSE ORGANIZATION (ERO) replaces the normal station organization. The ERO provides the following functions:

- Control and operation of station activities
- Mitigation of the emergency condition
- Protection of ONSITE personnel
- Event CLASSIFICATION and emergency DECLARATION
- Radiological monitoring
- Emergency notifications to Federal, State and LOCAL GOVERNMENT AGENCIES
- Coordination of emergency support for firefighting, security and rescue/first aid

The on-shift personnel are available 24 hours per day. The on-shift personnel can perform all required response actions, including manning of communications, until individuals arrive to augment shift personnel. The ERO maintains the depth and capability for continuous 24-hour coverage of the emergency response for a protracted period.

## 1.2 OFFSITE RESPONSE ORGANIZATIONS (ORO)

Agreements are maintained with OFFSITE organizations who do not take part in the organizational control of the emergency, that provide assistance when called upon during an emergency or during the recovery phase. These agreements identify the emergency measures to be provided, the mutually accepted criteria for implementation, and the arrangements for exchange of information. The actual letters and memoranda of agreement are maintained in Emergency Preparedness files. These organizations provide services of:

- a. Fire protection;
- b. Rescue operations;
- c. Ambulance services;
- d. Medical and hospital services;
- e. Law enforcement.

State and LOCAL GOVERNMENT AGENCY response will be in accordance with each agency's plans and procedures, and commensurate with the hazard posed by the emergency.

### **United States Marine Corps Camp Pendleton Fire Department**

USMC CPFDD provides fire response per Agreement.

### **United States Marine Corps Camp Pendleton Fire Department**

USMC CPFDD provides rescue operations per Agreement.

### **United States Marine Corps Camp Pendleton Fire Department**

Agreement for prompt ambulance transport of personnel is maintained with USMC CPFDD. Such service is available on a 24 hour per day basis.

### **Mission Hospital Regional Medical Center**

Agreement for hospital and medical services is maintained with Mission Hospital Regional Medical Center. This facility is equipped and qualified for receiving and treating contaminated and/or injured persons requiring immediate hospital care.

### **Tri-City Medical Center**

Agreement for hospital and medical services is maintained with Tri-City Medical Center. This facility is equipped and qualified for receiving and treating contaminated and/or injured persons requiring immediate hospital care.

### **Law Enforcement**

Law enforcement services are provided by the FBI and local public entities per the Security Plan.



## 2.0 EMERGENCY RESPONSE ORGANIZATION (ERO)

*Planning Standard 50.47(b)(2) – On-shift facility licensee responsibilities for emergency response are unambiguously defined, adequate staffing to provide initial facility accident response in key functional areas is maintained at all times, timely augmentation of response capabilities is available and the interfaces among various onsite response activities and offsite support and response activities are specified.*

### 2.1 ON-SHIFT POSITIONS

SONGS has personnel on-shift at all times that provide the initial response to an event. Members of the on-shift organization are trained on their responsibilities and duties in the event of an emergency and are capable of performing all necessary response actions until the augmentation personnel arrive or the event is terminated. The normal shift staffing assignments include the roles and responsibilities for their emergency response functions. The relationship between normal and emergency response positions for the shift personnel is unchanged when an event occurs. (See Table 2-1.)

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

The ISFSI Shift Supervisor (ISS) is the on-shift individual who makes the initial event CLASSIFICATION and assumes the role of ED upon emergency DECLARATION and has the authority and responsibility to immediately and unilaterally initiate any emergency actions. If the ISS is unavailable or incapacitated, another on-shift person qualified as ED will assume the ED duties.

The ED has the authority to suspend any security measure described in the Physical Security Plan as necessary to facilitate response to emergency conditions.

The Non-delegable responsibilities of the ISS/ED include the following:

- Event CLASSIFICATION and emergency DECLARATION
- Decision to notify OFFSITE agencies
- Authorization for the use of EPA-400 emergency exposure controls (emergency worker DOSE limits that exceed 10 CFR 20 occupational exposure limits)

Key delegable responsibilities of the ED include the following:

- Management of available station resources
- Initiation of assessment and mitigative/CORRECTIVE ACTIONS
- Initiation of ONSITE PROTECTIVE ACTIONS
- Decision to call for OFFSITE law enforcement, firefighting or ambulance assistance
- Augmentation of the EMERGENCY RESPONSE ORGANIZATION as deemed necessary
- Notification of SCE corporate officers and the SCE Corporate Communications Department
- Notification of OFFSITE agencies (State and LOCAL GOVERNMENT AGENCIES, Marine Corps Base Camp Pendleton and NRC)

**Security**

Station Security is administered by the Security Plan and reports to the ED when implementing the IOEP. Security personnel assist the ED as directed.

**2.2 AUGMENTED POSITION**

The ERO is responsible for implementing the actions described in this Plan. The ERO is made up of on-shift personnel (described in section 2.1), augmented by the Resource Manager. Supplemental personnel are contacted as needed.

**Resource Manager**

The Resource Manager will be in contact with the ED within two hours of CLASSIFICATION. The Resource Manager will augment the ED by assisting in assessment of the emergency conditions (refer to Table 2-1) and coordinating required resources, including public information interface. The Resource Manager does not need to physically report to SONGS to perform their responsibilities. Supplemental personnel shall report at the discretion of the ED and/or the Resource Manager.

**2.3 SUPPLEMENTAL PERSONNEL**

Additional personnel resources may be directed to report to SONGS to provide support as needed to assess radiological conditions, conduct maintenance and repair activities, develop and implement CORRECTIVE ACTION plans, and assist with recovery actions. The supplemental personnel are available from SONGS staff and SCE, and can be requested from various contractors.

## 2.4 FUNCTIONAL RESPONSIBILITIES

Table 2-1 below lists the functional responsibilities of on-shift and augmented positions that fulfill emergency staffing capabilities.

**TABLE 2-1  
EMERGENCY RESPONSE ORGANIZATION Staffing and Responsibility**

FUNCTIONAL AREA	LOCATION	SHIFT STAFFING	AUGMENTED OFFSITE RESPONSE
Assessment of Condition	EMERGENCY RESPONSE FACILITY	One (1) ISFSI Shift Supervisor / EMERGENCY DIRECTOR (a)	One (1) Resource Manager
Emergency Direction and Control	EMERGENCY RESPONSE FACILITY	EMERGENCY DIRECTOR (a)	---
Notifications / Communications	EMERGENCY RESPONSE FACILITY	EMERGENCY DIRECTOR (a)	---
Radiological ACCIDENT ASSESSMENT and PROTECTIVE ACTIONS	EMERGENCY RESPONSE FACILITY / On Scene	ISFSI Shift Supervisor / EMERGENCY DIRECTOR (a)	Resource Manager (b)
			One (1) or more RP Support (c)
CORRECTIVE ACTIONS	EMERGENCY RESPONSE FACILITY / On Scene	EMERGENCY DIRECTOR (a)	Resource Manager (b) / Supplemental / Support Personnel
Firefighting	On Scene	Per Fire Protection Program Plan	OFFSITE Response Organization
Rescue	On Scene	---	OFFSITE Response Organization
First Aid	On Scene	Shift Personnel	---
Security	Per Security Plan	Per Security Plan	---

- (a) One person comprising the on-shift minimum staff. May perform concurrent functions.  
 (b) One person comprising the augmented ERO. May perform concurrent functions.  
 (c) For a declared emergency involving radiological consequences (E-HU1), a minimum of one person trained in radiological monitoring and assessment will report to the SONGS ISFSI within four hours of the emergency DECLARATION.

**3.0 EMERGENCY RESPONSE SUPPORT AND RESOURCES**

*Planning Standard 50.47(b)(3) (as exempted in Reference 3.17) – Arrangements for requesting and effectively using assistance resources have been made and other organizations capable of augmenting the planned response have been identified.*

Letters and Memoranda of Agreement for OFFSITE organizations that have pre-agreed arrangements to support ONSITE response actions are maintained on file.

No other specific assistance has been pre-identified.

Fire, Ambulance and Local Law Enforcement Agency response is at the request and direction of the ED as previously discussed in Part II, Section 1.2 of this Plan.

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

#### 4.0 EMERGENCY CLASSIFICATION SYSTEM

*Planning Standard 50.47(b)(4) (as exempted in Reference 3.17) – A standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee.*

SONGS utilizes NEI 99-01, Revision 6, "Development of Emergency Action Levels for Non-Passive Reactors" 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 Emergency Action Level Technical Bases Manual (IOEP-2).

This Plan 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 SONGS 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.

#### 4.1 UNUSUAL EVENT

Events are in progress or have occurred which indicate a potential degradation of the level of safety of the SONGS ISFSI or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring OFFSITE response or monitoring are expected. State and LOCAL GOVERNMENT AGENCIES, Marine Corps Base Camp Pendleton, 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.

#### 4.2 ALERT

Events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the SONGS 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 and LOCAL GOVERNMENT AGENCIES, Marine Corps Base Camp Pendleton, and the NRC is required.

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

Both EMERGENCY CLASSIFICATION LEVELS are characterized by EALs consisting of specific instrument readings and/or observations which are used to tell the SONGS 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 SONGS ISFSI:

- Hazards and Other Conditions
- ISFSI Malfunction

The applicable ISFSI Storage System FSARs describe the DESIGN BASIS ACCIDENTS (DBAs) applicable to the SONGS ISFSI, along with the radiological DOSE calculation results. Specific guidance for classifying emergencies is found in site procedures and the ISFSI-Only Emergency Plan Emergency Action Level Technical Bases Manual (IOEP-2).

EALs shall be reviewed with State and LOCAL GOVERNMENT AGENCIES and Marine Corps Base Camp Pendleton on an ANNUAL basis.

## 5.0 NOTIFICATION METHODS AND PROCEDURES

*Planning Standard 50.47(b)(5) (as exempted in Reference 3.17) – Procedures have been established for notification, by the licensee, of State and local response organizations and for notification of emergency personnel by all organizations; the content of initial and followup messages to response organizations has been established.*

### **Notification and Mobilization of SONGS EMERGENCY RESPONSE PERSONNEL**

EIPs are established to alert and notify ONSITE EMERGENCY RESPONSE PERSONNEL of the initial CLASSIFICATION or any escalation of an emergency by verbal announcement over portable radios. Each emergency CLASSIFICATION may result in augmentation personnel being notified to respond. Call trees may be utilized to make this notification.

### **Bases for Notification of OFFSITE Agencies**

SONGS, in cooperation with State and LOCAL GOVERNMENT AGENCIES and Marine Corps Base Camp Pendleton, has established mutually agreeable methods and procedures for notification of OFFSITE Response Organizations consistent with the approved emergency CLASSIFICATION and action level scheme. Notifications to OFFSITE agencies include a means of verification. Commercial telephone is the communication process used to notify the State and LOCAL GOVERNMENT AGENCIES and Marine Corps Base Camp Pendleton of a declared emergency.

Notification to the State and LOCAL GOVERNMENT AGENCIES and Marine Corps Base Camp Pendleton is required within 60 minutes of emergency DECLARATION, escalation, or change in radiological release status.

The following OFFSITE agencies, at a minimum, will receive emergency messages:

- State of California
- Orange County
- San Diego County
- Marine Corps Base Camp Pendleton

Follow-up messages will be made to these agencies approximately every 2 hours utilizing a notification form.

SONGS, in coordination with State and LOCAL GOVERNMENT AGENCIES and Marine Corps Base Camp Pendleton, has established the content of the emergency messages to be sent from SONGS. These messages shall contain the following information if it is known and appropriate:

- Location of incident (SONGS), and name and telephone number (or communications channel identification) of caller.
- Date / time of incident.
- Class of emergency and EAL.
- SONGS emergency response actions underway.
- Request for any needed ONSITE support by OFFSITE agencies.
- Prognosis for worsening or termination of event based upon facility (instrumentation or response team) information.

#### **NRC Event Notification**

The NRC is notified immediately following notification of the appropriate State and LOCAL GOVERNMENT AGENCIES and Marine Corps Base Camp Pendleton, and not later than 60 minutes after the time of initial emergency DECLARATION, escalation, termination or entry into the recovery phase. Notification to the NRC is the responsibility of the ED. Communications with the NRC Operations Center will be performed primarily via commercial telephone. Cellular and/or satellite phone may be used as the back-up means of communication.

#### **Support Organizations**

Medical, rescue, and firefighting support services are notified for assistance, using commercial telephone, as the situation dictates.

American Nuclear Insurers (ANI) is notified at an ALERT DECLARATION with requests for assistance as necessary.



**6.0 EMERGENCY COMMUNICATIONS**

*Planning Standard 50.47(b)(6) (as exempted in Reference 3.17) – Provisions exist for prompt communications among principal response organizations to emergency personnel.*

**Reliable Communications**

SONGS has reliable primary and backup communication systems installed. Communications with all organizations will be performed primarily via commercial telephone. Cellular and/or satellite phone may be used as the back-up means of communication.

SONGS maintains the capability to make initial notifications to the designated State and LOCAL GOVERNMENT AGENCIES, Marine Corps Base Camp Pendleton, and NRC STAFFED WARNING POINTS on a 24 hour per day basis. Communications will be performed primarily via commercial telephone. Cellular and/or satellite phone may be used as the back-up means of communication.

Communications with the California Governor's Office of Emergency Services (Cal OES), Orange County, San Diego County, Marine Corps Base Camp Pendleton, and NRC are provided from the ERF.

ERO notification may be performed by the use of call trees. ONSITE communications amongst the ERO is by use of portable radios.

Coordinated communications exist with ambulance and hospital services.

The communication systems listed in Table 6-1 below provide 24-hour ONSITE and OFFSITE communications capability. Communication systems are tested to verify proper operation at the testing frequency specified in the table below. Communication systems that are listed with a testing frequency of "Frequent Use" indicates that the associated equipment is normally used at a sufficiently high regularity (e.g., multiple times each day), such that separate additional testing is not needed. Functionality is verified through normal (frequent) use of the system.

**TABLE 6-1  
Communication Systems**

Communication System	Testing Frequency
Commercial telephone system	Frequent Use
Portable radios	Frequent Use
Mobile communications devices (cellular and/or satellite phones)	QUARTERLY*

\* Performance of drill requirements specified in Section 14 satisfies the testing frequency

**7.0 PUBLIC INFORMATION**

*Planning Standard 50.47(b)(7) (as exempted in Reference 3.17) – The principal points of contact with the news media for dissemination of information during an emergency are established in advance, and procedures for coordinated dissemination of information to the public are established.*

As the principle point of contact for the dissemination of information during an event at the station, SCE Corporate Communications Department personnel will be notified of a declared emergency. SCE Corporate Communications Department will monitor media activity and coordinate with senior management disseminating public information per communication protocols. As necessary, news conference(s) can be conducted at the site or other coordinated location. SCE Corporate Communications Department personnel, or senior SONGS management will represent the facility as the spokesperson. If an event occurs at the SONGS ISFSI, information will be disseminated to the public in a timely manner.

The SCE Corporate Communications Department personnel address any misinformation related to a declared emergency.

## 8.0 EMERGENCY FACILITY AND EQUIPMENT

*Planning Standard 50.47(b)(8) – Adequate emergency facilities and equipment to support the emergency response are provided and maintained.*

This section of the Plan identifies and describes the emergency response facilities, the communication systems, the assessment facilities and equipment, the first aid and medical facilities, and protective equipment and supplies that can be utilized during an emergency.

### 8.1 EMERGENCY RESPONSE FACILITY

EMERGENCY RESPONSE FACILITY (ERF) is staffed in accordance with Section 2.0. The ERF is open on a continuous basis. There is no activation needed.

The emergency COMMAND AND CONTROL functions are managed within the ERF. Within the ERF, the ED (or other personnel as directed) can assess conditions, evaluate the magnitude and potential consequences of abnormal conditions, initiate preventative and CORRECTIVE ACTIONS; and perform notifications.

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

### 8.2 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.

#### **Portable Radiation and Contamination Monitoring Instruments**

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

#### **Communication Systems**

Communication systems are identified and tested as described in Section 6.

#### **Emergency Supplies**

Emergency kit contents listed in Appendix A 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.

#### **First Aid Facilities**

First aid supplies and equipment are located at the SONGS ISFSI. Qualified personnel are available 24 hours per day to provide medical treatment as referenced in Section 12.

**9.0 ACCIDENT ASSESSMENT**

*Planning Standard 50.47(b)(9) (as exempted in Reference 3.17) – Adequate methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition are in use.*

The ASSESSMENT ACTIVITIES required to evaluate a particular emergency depend on the specific nature and CLASSIFICATION of the emergency. The ED is responsible for the initial measurement of ISFSI DOSE RATES after an off-normal, natural phenomenon, or accident event. The EALs identify the parameter value to determine the emergency condition. CLASSIFICATION of events is performed by the ED in accordance with the EAL scheme.

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

Notification of a radiological release assessment is in accordance with Section 5.0.

**10.0 PROTECTIVE ACTIONS**

*Planning Standard 50.47(b)(10) (as exempted in Reference 3.17) – A range of protective actions has been developed for emergency workers and the public.*

PROTECTIVE ACTIONS for ONSITE personnel are provided for their health and safety. Implementation guidelines for ONSITE PROTECTIVE ACTIONS are provided in EPIPs.

Additionally, the EPIPs provide for a range of PROTECTIVE ACTIONS (e.g. relocation of personnel and personnel take cover) to protect ONSITE personnel during HOSTILE ACTIONS.

**ACCOUNTABILITY**

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

ACCOUNTABILITY of all personnel inside the ISFSI PROTECTED AREA (PA) should be accomplished within 60 minutes after emergency DECLARATION and maintained thereafter. If personnel are unaccounted for, teams shall be dispatched to locate the personnel.

Non-ESSENTIAL PERSONNEL located outside of the ISFSI PA but within the SITE BOUNDARY will be directed to report to an assembly area or exit the site, as appropriate. The ED is responsible for controlling access to the site when the IOEP is activated.

## 11.0 RADIOLOGICAL EXPOSURE CONTROL

*Planning Standard 50.47(b)(11) – 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.*

SONGS maintains a radiological exposure control program to assure that protection against radiological exposure, as set forth in 10 CFR Part 20 is provided. This program is implemented through the radiological protection procedures which cover 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.

### **Exposure Guidelines**

During an emergency, DOSES above normal occupational radiation exposure limits may be authorized by the ED for activities such as saving a life, preservation of valuable equipment, or controlling exposure. Table 11-1 contains the guidelines for emergency exposure criteria, which is consistent with the EPA's, "Protective Action Guide and Planning Guidance for Radiological Incidents," Table 2-2, "Guidance on Dose Limits for Workers Performing Emergency Services".

### **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.

### **Access Control**

During a declared emergency, radiological surveys of the ISFSI area will be performed to determine the actual extent of the radiological conditions. As necessary, the ED will ensure RCAs and access controls are established to prevent personnel from entering the area. Recovery and CORRECTIVE ACTIONS will be planned and executed in a manner that minimizes exposure to personnel. Contaminated areas are isolated with appropriate radiological protection and access control. Personnel leaving contaminated areas are monitored for radioactive contamination. Supplies, instruments, and equipment that are in contaminated areas or have been brought into contaminated areas will be monitored prior to removal.

Restricted areas and contaminated items will be returned to normal use when contamination levels have been returned to acceptable levels. Contamination control criteria for returning areas and items to normal use are contained in the station procedures.

### 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 station procedures.

### 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 RCA. 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 personnel trained in radiological monitoring and assessment 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 station procedures.

**Table 11-1  
Emergency Worker Guidelines**

<b>Guideline DOSE Limit (Rem TEDE)</b>	<b>Activity</b>	<b>Condition</b>
5	All occupational exposures	All Emergency Workers may be authorized up to 5 Rem Emergency Exposure for the emergency; however all reasonably achievable actions should be taken to minimize DOSE. Attempts should be made to keep exposures within 10 CFR 20 limits.
10 (a)	Protecting valuable property necessary for public welfare	Lower DOSE not practicable.
25 (b)	Lifesaving or protection of large populations	Lower DOSE not practicable.
> 25 (b)	Lifesaving or protection of large populations	Only on a voluntary basis to persons fully aware of the risks involved.

Limit DOSE to the lens of the eye to 3 times the above values and DOSES to any other organ (including skin and body extremities) to 10 times the above values.

- (a) For potential DOSES >5 rem, medical monitoring programs should be considered.
- (b) In the case of a very large incident, may need to consider raising the property and lifesaving emergency worker guidelines to prevent further loss of life and massive spread of destruction.

**12.0 MEDICAL AND HEALTH SUPPORT**

*Planning Standard 50.47(b)(12) – Arrangements are made for medical services for contaminated injured individuals.*

Medical assistance is available ONSITE and OFFSITE for treatment of SONGS ISFSI personnel. Various means of transportation are 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 SCE in the form of personnel and/or equipment. SCE assures that persons providing these services are adequately prepared to handle contaminated individuals through detailed training classes, drills and exercises. Letters of Agreement with OFFSITE organizations and individuals for medical support are listed in Appendix C.

**ONSITE First Aid**

First aid assistance at the SONGS ISFSI is designed to handle a wide range of injuries. This task is accomplished by ONSITE individuals trained in basic first aid procedures.

**Medical Transportation**

Transportation of injured personnel is available via local emergency medical services, SONGS vehicles, or private vehicles. When personnel are transported to Mission Hospital Regional Medical Center or Tri-City Medical Center while in a contaminated condition, a person trained in radiological monitoring will be dispatched to monitor and maintain radiological controls.

**OFFSITE Medical Support**

The Mission Hospital Regional Medical Center in Mission Viejo, California, has medical facilities capable of handling various types of injuries. Mission Hospital Regional Medical Center is capable of treating patients with injuries of a non-radiological or radiological nature.

In addition, Tri-City Medical Center in Oceanside, California, has medical facilities capable of handling various types of injuries. Tri-City Medical Center is likewise capable of treating patients with injuries of a non-radiological or radiological nature.

Table 12-1 lists the main capabilities of the medical centers. Mission Hospital Regional Medical Center fully meets the requirements for medical support of the ISFSI Only Emergency Plan. Tri-City Medical Center is included solely as an additional resource for convenience and does not constitute a separate site-specific commitment for medical support.



**Table 12-1  
Medical Centers Capabilities**

Capability	Mission Hospital Regional Medical Center	Tri-City Medical Center
General medical treatment	Yes	Yes
Emergency medical treatment for individuals with injuries	Yes	Yes
Emergency medical treatment for individuals with injuries complicated by radioactive contamination	Yes	Yes
Emergency medical treatment for individuals exposed to excessive levels of radiation	Yes	Yes
Physical capacity, personnel, medical equipment and resources to provide evaluation and treatment of contaminated injured individuals 24 hours per day	Yes	Yes
Distance to SONGS	19 miles	27 miles

**13.0 EMERGENCY TERMINATION AND RECOVERY**

*Planning Standard 50.47(b)(13) – General plans for recovery and reentry are developed.*

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

**Emergency Termination and Notification**

Termination of an emergency status is the responsibility of the ED. The ED is also responsible for providing notification of the emergency termination and initiation of Recovery operations to the NRC, State and LOCAL GOVERNMENT AGENCIES and Marine Corps Base Camp Pendleton, the SONGS ERO and other organizations that may be providing ONSITE support.

**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 senior management position 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 senior management position also has the authority to revise or halt activities as circumstances dictate.

The ISFSI recovery will be terminated by the SONGS senior management position after the ISFSI has been returned to a stable condition.

## 14.0 EXERCISE AND DRILLS

*Planning Standard 50.47(b)(14) – Periodic exercises are (will be) conducted to evaluate major portions of emergency response capabilities, periodic drills are (will be) conducted to develop and maintain key skills, and deficiencies identified as a result of exercises or drills are (will be) corrected.*

### **Exercise and Drill**

SONGS conducts a BIENNIAL Exercise to test the adequacy of timing and content of implementing procedures and methods; to test emergency equipment and communication networks; and to ensure that emergency personnel are familiar with their duties. Each exercise will be evaluated by station evaluators and possibly Federal evaluators. SONGS will invite Federal, State, and LOCAL GOVERNMENT AGENCIES to participate or observe scheduled exercises upon request.

For alternating years, an INTEGRATED DRILL is conducted for the purpose of testing, developing, and maintaining the proficiency of emergency responders. BIENNIAL Exercises and alternate year INTEGRATED DRILLS will allow the ERO to demonstrate principal functional areas.

Exercise and drill scenarios are developed to provide reasonable assurance that anticipatory responses will not result from preconditioning of participants. Exercise and drill scenarios, as appropriate, emphasize coordination among ONSITE and OFFSITE Response Organizations.

Exercise and drills allow free play for decision making. The scenarios for use in exercises and drills include, at a minimum, the following:

- The basic objective(s) of each drill and exercise and appropriate evaluation criteria;
- The date(s), time period, place(s), and participating organizations;
- The simulated events;
- A time schedule of real and simulated initiating events;
- A narrative summary describing the conduct of the exercises or drills to include such things as simulated casualties, OFFSITE fire department assistance, rescue of personnel, use of protective clothing; and,
- A description of the arrangements for and advance materials to be provided to official observers.

The scenario should be varied from year to year such that all major elements of the plans and preparedness organizations are tested.

**Equipment and Proficiency Drills**

Drills are conducted to provide supervised instruction, training and practice opportunities for ERO members. Drills may be performed as part of the BIENNIAL exercise, INTEGRATED DRILL or as an independent drill. A drill may be a component of an exercise. Drills are supervised and evaluated by qualified personnel. Drills are conducted, in addition to the exercise at the frequencies indicated below:

**Communication Drills**

A communications drill with State and LOCAL GOVERNMENT AGENCIES is conducted ANNUALLY. A communications drill with NRC Headquarters is conducted ANNUALLY. Communication drills include the aspect of understanding the content of messages.

**Fire Drills**

A fire drill is conducted in accordance with SONGS Fire Protection Program.

**Medical Emergency Drills**

A medical emergency drill, involving a simulated contaminated individual, which contains provisions for participation by local support services organizations (i.e., ambulance and support hospital), is conducted ANNUALLY. The OFFSITE portions of the medical drill may be performed as part of the required BIENNIAL exercise or INTEGRATED DRILL.

**Radiation Protection Drills**

A Radiation Protection drill is conducted ANNUALLY.

**Augmentation Drills**

An unannounced augmentation drill is conducted ANNUALLY. This drill involves implementation of the ERO callout system procedure and documentation of the estimated response time for each responder. This drill demonstrates the capability to augment the ED after an emergency is declared.

**Critique and Evaluation**

Critiques shall be scheduled at the conclusion of each exercise or alternate year INTEGRATED DRILL to evaluate the performance of the organization. The ability of EMERGENCY RESPONSE PERSONNEL to self-evaluate weaknesses and identify areas for improvement is the key to successful exercise / drill conduct.

Exercise and drill objectives are evaluated against measurable demonstration criteria. Following the conclusion of each exercise or drill, a critique, including participants and evaluators, is conducted to evaluate the ability of the ERO to implement the IOEP and its implementing procedures.

Official observers from the NRC should observe, evaluate, and critique the required exercises.

A formal evaluation in the form of a written critique report is prepared following an exercise or drill involving the evaluation of designated objectives. The report evaluates and documents the ability of the ERO to respond to a simulated emergency situation. The report will also contain reference to Corrective Action Program documents and recommendations.

The critique process is used as the means for evaluating observer and participant comments to identify areas of ERO performance and the EMERGENCY PREPAREDNESS Program that require improvement, including emergency plan procedural changes. The Emergency Preparedness Manager is responsible for ensuring that items identified in the critique are correctly dispositioned, appropriate assignment of responsibility is made and that corrective actions are implemented in accordance with the Corrective Action Program.

## 15.0 RADIOLOGICAL EMERGENCY RESPONSE TRAINING

*Planning Standard 50.47(b)(15) – Radiological emergency response training is provided to those who may be called on to assist in an emergency.*

### 15.1 EMERGENCY RESPONSE PERSONNEL TRAINING

Requirements for EMERGENCY PREPAREDNESS training are specified in the EMERGENCY PREPAREDNESS Training Program. This program identifies the level and the depth to which individuals are to be trained. SONGS or Non-SONGS personnel who are brought in to assist with response, mitigating, or recovery actions who have not received emergency planning overview training will receive Just-In-Time training prior to performing response actions. This includes training on radiological hazards and Visitor/Escort responsibilities for personnel who are not badged for unescorted ISFSI PA access.

#### **EMERGENCY PREPAREDNESS Training Program**

The training for ERO personnel is developed from the position-specific responsibilities as defined in this Plan. Members of the ERO receive initial training and ANNUAL retraining. They also receive recurring Emergency Plan-related training ANNUALLY through General Employee Training and position-specific training as appropriate.

Specific training requirements for ERO, supplemental, and support personnel are delineated below:

#### **ISFSI Shift Supervisors/EMERGENCY DIRECTORS and Resource Managers**

Trained such that proficiency is maintained on the topics listed below. These subjects shall be covered as a minimum initially and on an ANNUAL basis.

- Emergency CLASSIFICATION
- State and LOCAL GOVERNMENT AGENCIES, Marine Corps Base Camp Pendleton, and NRC notifications
- ERO activation
- DOSE RATE meter operation
- Radiological release assessment
- Emergency exposure control
- PROTECTIVE ACTIONS for ONSITE personnel
- ISFSI DBAs

#### **Personnel Responsible for ACCIDENT ASSESSMENT**

The skills and knowledge required to perform monitoring of the ISFSI are provided to personnel qualified as ISS/ED.

Resource Managers who assist with ACCIDENT ASSESSMENT, CORRECTIVE ACTIONS, PROTECTIVE ACTIONS, and related activities receive appropriate training.

**Radiological Assessment Personnel**

Resource Managers who assist with radiological assessment, CORRECTIVE ACTIONS, PROTECTIVE ACTIONS, and related activities receive appropriate training.

Radiation Protection Technicians (SONGS or Non-SONGS) who may be called to supplement the ERO are trained in the course of their normal work to be able to provide support for radiological ACCIDENT ASSESSMENT and PROTECTIVE ACTIONS. Support activities include access control; radiological coverage (e.g., monitoring, surveys, and support) for personnel conducting repairs, CORRECTIVE ACTIONS, search and rescue, first aid, firefighting, contaminated injury response (including transport); as well as providing personnel monitoring and dosimetry.

**Fire Control Teams**

Station personnel are trained to report any fire to the ISS, then use available fire protection equipment within their level of competency. Responding USMC CPFD personnel are invited to receive training, as outlined in Section 15.2.

**Medical Support Personnel**

Mission Hospital Regional Medical Center personnel and Tri-City Medical Center personnel are invited to receive training, as outlined in Section 15.2.

**Security and Law Enforcement Personnel**

Station Security personnel are trained in accordance with the Security Plan. Local Law Enforcement Agency support personnel are invited to receive training, as outlined in Section 15.2.

**First Aid and Rescue Teams**

Selected individuals assigned on-shift ERO responsibility receive first aid training equivalent to Red Cross Adult First Aid/CPR/AED). Station personnel are trained to report any injury or medical emergency to the ISS, then provide first aid treatment within their level of competency. Responding USMC CPFD support personnel are invited to receive training as outlined in Section 15.2.

**Personnel who are badged for unescorted ISFSI PA access** receive initial and ANNUAL refresher training on general station procedures and policies. This training includes required actions to be taken if an emergency is declared at the SONGS ISFSI.

**Personnel assigned to work at the station who do not require unescorted ISFSI PA access**, including visitors, receive information on the actions to be taken if an emergency is declared at the SONGS ISFSI.

**15.2 SUPPORT ORGANIZATIONS TRAINING**

Training is made available to support organizations that may be called upon to provide assistance in the event of an emergency.

Non-SONGS organizations that may provide specialized services during an emergency (i.e., law enforcement, firefighting, rescue, medical services, and transport of injured personnel) are provided or offered site-specific emergency response training, ANNUALLY.

The training made available is structured to meet the needs of that organization with respect to the nature of their support. Training topics such as event notification, basic radiation protection, and interface activities between the OFFSITE organization and SONGS are made available.



**16.0 MAINTAINING EMERGENCY PREPAREDNESS**

*Planning Standard 50.47(b)(16) – Responsibilities for plan development and review and for distribution of emergency plans are established, and planners are properly trained.*

**16.1 EMERGENCY PREPAREDNESS RESPONSIBILITIES****SONGS ISFSI Senior Management Position**

Southern California Edison (SCE) is responsible for the maintenance of SONGS EMERGENCY PREPAREDNESS Program. The issuance and control of this Plan and the activities associated with EMERGENCY PREPAREDNESS at SONGS shall be the overall responsibility of the SONGS ISFSI Senior Management Position.

**Emergency Preparedness Manager**

Responsible for the following tasks:

- Maintaining and updating this IOEP and associated procedures, and documenting reviews and revisions
- Coordinating the IOEP with other station programs and procedures
- Overseeing the EMERGENCY PREPAREDNESS Training Program and ensuring that proper records are maintained to document training of the ERO
- Overseeing and documenting the EMERGENCY PREPAREDNESS Drill and Exercise Program
- Documenting and maintaining the EMERGENCY PREPAREDNESS Facilities and Equipment
- Documenting and maintaining the EMERGENCY PREPAREDNESS interfaces with OFFSITE agencies
- Performing and documenting appropriate evaluations of the EMERGENCY PREPAREDNESS Program and of declared emergency events
- Ensuring that the ERO is notified of updates to the IOEP or EPIPs
- Ensuring that the OFFSITE Response Organizations are notified of updates to the IOEP
- Ensuring that all the Letters and Memoranda of Agreement with support organizations are reviewed ANNUALLY and updated as needed
- Maintaining current knowledge of changes in Federal regulations and other guidance that impact emergency planning activities
- Submitting IOEP and related controlled document revisions to the NRC
- Ensuring that an independent review of the EMERGENCY PREPAREDNESS Program is conducted to meet the requirements of 10 CFR 50.54(t)

The individual assigned as the Emergency Preparedness Manager receives training in order to maintain an adequate knowledge of regulations, planning techniques and the latest applications of emergency equipment and supplies. This training may include:

- Courses specific or related to EMERGENCY PREPAREDNESS
- Observation of or participation in drills and/or exercises at other stations
- Participation in industry review and evaluation programs
- Participation in regional or national EMERGENCY PREPAREDNESS seminars, committees, workshops or forums
- 10 CFR 50.54(q) and 10 CFR 72.44(f) Evaluation Qualification and/or Training

## **16.2 REVIEW AND UPDATING OF THE IOEP**

It is important that a state of EMERGENCY PREPAREDNESS be maintained at all times. The IOEP is reviewed ANNUALLY and updated, as needed. The ANNUAL IOEP review/update includes required changes identified during 10 CFR 50.54(t) reviews, assessments, training, drills, and exercises.

Any needed changes shall be incorporated in the IOEP, IOEP Emergency Action Level Technical Bases Manual, and appropriate implementing procedures. The IOEP, IOEP Emergency Action Level Technical Bases Manual, and EIPs are distributed on a controlled basis.

Changes to the IOEP, IOEP Emergency Action Level Technical Bases Manual, and EIPs are subject to evaluation under 10 CFR 50.54(q) and 10 CFR 72.44(f).

### **EMERGENCY ACTION LEVELS (EALs) State and LOCAL GOVERNMENT AGENCY Review**

The EALs shall be made available for review with State and LOCAL GOVERNMENT AGENCIES ANNUALLY.

### **Implementing and Supporting Procedures**

EIPs provide specific instructions to be taken for each emergency CLASSIFICATION including responsibilities, notification of OFFSITE emergency organizations, and mobilization of the ERO. These procedures provide specific instructions to personnel for response to events and actions required to administer the EMERGENCY PREPAREDNESS Program. EIPs are updated as appropriate, in consideration of improvement opportunities identified during exercises, drills and training. Changes to these procedures are subject to evaluation under 10 CFR 50.54(q) and 10 CFR 72.44(f).

### **Emergency Response Directory**

Names and telephone numbers of the augmented ERO, supplemental personnel and applicable supporting OFFSITE organizations shall be reviewed and updated at least QUARTERLY.

### **Letters and Memoranda of Agreement**

ANNUALLY, each Letter or Memorandum of Agreement with support organizations is reviewed and verified current in order to assure the availability of assistance from each supporting organization.

**PART III**

**APPENDIX A**

**Emergency Equipment, Supplies, and Reference Materials**

**EMERGENCY RESPONSE FACILITY**

Procedures / Reference Material

ISFSI-Only Emergency Plan (IOEP-1)  
ISFSI-Only EAL Technical Bases Manual (IOEP-2)  
Emergency Response Directory (EP ERD)  
EMERGENCY PLAN IMPLEMENTING PROCEDURES

Equipment

Communications equipment (portable radios, cellular phone, satellite phone)  
Portable radiation monitoring equipment  
Portable emergency lighting  
Medical emergency response bag  
Dosimeters

Supplies

Contamination control supplies  
DECONTAMINATION supplies  
Protective clothing

## APPENDIX B

## Cross Reference IOEP Section to Planning Standards / Requirements / Criteria and Procedures

Table B-1

IOEP Part II Section	Planning Standard (10 CFR 50.47)**	Planning Requirement (Appendix E.IV)**	NUREG-0654, Section II Evaluation Criteria	Procedure
1.0	(b)(1)	A.1, 2, 4, 7	A	EPP-1, EPP-2
2.0	(b)(2)	A.1, 2, 4; C.1	B	EPP-1
3.0	(b)(3)	A.6, 7	C	EPP-2
4.0	(b)(4)	B.1, 2; C.1, 2	D	EPP-1
5.0	(b)(5)	A.6, 7; C.1; D.1,3; E	E	EPP-1
6.0	(b)(6)	C.1; D.1, 3; E	F	EPP-1
7.0	(b)(7)	Exempt	G	EPP-1
8.0	(b)(8)	E; G	H	EPP-1, EPP-2
9.0	(b)(9)	A.4; B.1; C.2; E	I	EPP-1
10.0	(b)(10)	C.1; E	J	EPP-1
11.0	(b)(11)	E	K	EPP-1
12.0	(b)(12)	A.6, 7; E	L	EPP-1, EPP-2
13.0	(b)(13)	H	M	EPP-1
14.0	(b)(14)	E9; F	N	EPP-2
15.0	(b)(15)	F	O	EPP-2, ADM-30
16.0	(b)(16)	G	P	EPP-2

\*\* Refer to the **SONGS** exemptions from portions of 10 CFR 50.47 and Appendix E for applicability.

**APPENDIX C**  
**List of Letters and Memoranda of Agreement**

<u>Organization</u>	<u>Applicable To</u>
Mission Hospital Regional Medical Center	Medical Treatment, including Contaminated Injured Person
Tri-City Medical Center	Medical Treatment, including Contaminated Injured Person
Marine Corps Installation West- Marine Corps Base Camp Pendleton	Firefighting / Search & Rescue / Transport, including Contaminated Injured Person

The actual letters and memoranda of agreement are maintained in Emergency Preparedness files.

Enclosure 2  
SONGS ISFSI-Only Emergency Action Level Technical Bases Manual – Revision 1

# **San Onofre Nuclear Generating Station (SONGS)**

## **Independent Spent Fuel Storage Installation (ISFSI) Only Emergency Plan**

### **Emergency Action Level Technical Bases Manual**

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## 1.0 INTRODUCTION

### 1.1 PURPOSE

This document contains the Nuclear Regulatory Commission (NRC) approved set of INITIATING CONDITIONS (ICs), their associated EMERGENCY ACTION LEVEL (EAL) thresholds, and their site-specific technical bases, for the San Onofre Nuclear Generating Station (SONGS) INDEPENDENT SPENT FUEL STORAGE INSTALLATION (ISFSI), using the EAL development methodology found in NEI 99-01 Revision 6.

Any changes to this document will be made in accordance with the requirements of 10 CFR 50.54(q) and 10 CFR 72.44(f).

Personnel responsible for emergency CLASSIFICATION and declaration shall use this document as a technical reference and an aid in EAL interpretation.<sup>1</sup> The primary tool for determining the EMERGENCY CLASSIFICATION LEVEL is the EAL Matrix Table in this manual. The user of the EAL Matrix Table may (but is not required to) consult the Emergency Action Level Technical Bases Manual in order to obtain additional information concerning the EALs being considered for CLASSIFICATION of an emergency.

This document is also used to facilitate review of any proposed changes to the SONGS ISFSI-Only EALs.

The SONGS ISFSI is essentially an interim spent fuel storage facility where the spent fuel is surrounded by inert gas inside a container called a canister. The canisters used at SONGS are stainless steel cylinders that are welded closed. The fuel is cooled by natural airflow around the canister. The fuel was moved to dry storage after several years in spent fuel pools, so the heat given off by the fuel has significantly decreased. Each canister is surrounded by additional steel, concrete, or other material to provide physical protection, structural integrity, and additional radiation shielding to workers and members of the public. These primary functions of the ISFSI are the focus of the ISFSI-Only ICs and EALs.

SCE was granted exemptions from portions of 10 CFR 50.47(b), 10 CFR 50.47(c)(2), and 10 CFR 50 Appendix E, Section IV. The basis for these exemptions has not changed and remains in effect for the ISFSI-Only Emergency Plan (IOEP). The changes to this Technical Bases Manual reflect the lowered radiological source term and risks associated with ISFSI storage relative to reactor at power operation or storage in spent fuel pools. Source terms and accident analyses associated with design basis accidents are documented in the dry storage systems' Final Safety Analysis Reports (FSARs).

With regard to event recognition and CLASSIFICATION, regulations specific to the declaration of emergencies are provided in planning standard 10 CFR 50.47(b)(4), 10 CFR 50 Appendix E.IV.B, and 10 CFR 72.32(a)(3).

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<sup>1</sup> Emergency event declaration is required to be made as soon as possible and within 30 minutes after the availability of the indications that an EMERGENCY ACTION LEVEL has been exceeded. Use of this document for assistance is not intended to delay event declaration.

The NRC, by letter to Nuclear Energy Institute (NEI) dated 03/28/13 (ML12346A463), documented its review of the draft version of NEI 99-01, Revision 6, dated November 2012 (ML12326A805), and found it acceptable for use by licensees seeking to upgrade their EMERGENCY ACTION LEVELS (EALs) in accordance with 10 CFR 50 Appendix E. The regulatory and technical analysis for this endorsement can be retrieved through ADAMS Accession No. ML13008A736.

## 1.2 **EMERGENCY CLASSIFICATION LEVELS (ECLS)**

As defined in NUREG-0654/FEMA-REP-1, nuclear power plant emergencies are separated into four ECLS:

- UNUSUAL EVENT (UE)
- ALERT
- Site Area Emergency
- General Emergency

The ECLS are escalated from least severe to most severe according to the relative threat to the health and safety of the public and emergency workers. An ECL is determined to be met by identifying abnormal conditions and then comparing them to ICs through EAL threshold values as discussed below. When multiple EALs are met, event declaration is based in the highest ECL reached.

The ISFSI Only ICs and EALs within this document use the lower two of the four ECLS. The source terms and release motive forces associated with an ISFSI are not sufficient to require declaration of a Site Area Emergency or General Emergency.

### 1.3 INITIATING CONDITIONS (ICS)

An IC is a general description of an event or condition that aligns with the definition of one of the ECLs by virtue of the potential or actual effects or consequences.

Each IC is given a unique identification code consisting of a hyphenated letter combination, a separate letter and one number. The hyphenated letter combination identifies the recognition category, the separate letter identifies the ECL, and the number identifies the sequence of the IC within the recognition category. The EAL identification codes are developed as follows:

#### Permanently Defueled Recognition Category Applicable to ISFSI

- PD-H – Hazards and Other Conditions

#### ISFSI Recognition Category

- E-H – ISFSI Malfunction

#### ISFSI Only ECLs (lowest to highest)

- U – UNUSUAL EVENT
- A – ALERT

For an ISFSI-Only station, the UNUSUAL EVENT ICs provide for an increased awareness of abnormal conditions while the ALERT ICs are specific to actual or potential impacts to spent fuel. Security and Judgment ICs and EALs were included to provide a basis for classifying events that cannot be readily classified based on observable events or physical conditions alone.

### 1.4 EMERGENCY ACTION LEVELS (EALS)

An EAL is a pre-determined, site-specific, observable threshold for an IC that, when met or exceeded, places the ISFSI in a given ECL.

EAL thresholds may utilize a variety of criteria including instrument readings and status indications; observable events; and entry into particular procedures.

EALs are individually identified by the IC identification code followed by the EAL number, such as E-HU1.1 for damage to a loaded canister CONFINEMENT BOUNDARY or PD-HA1.1 for a HOSTILE ACTION within the VEHICLE BARRIER SYSTEM (VBS).

All EAL CLASSIFICATION assessments shall be based upon valid indications, reports or conditions. A valid indication, report, or condition, is one that has been verified through appropriate means such that there is no doubt regarding the indicator's operability, the condition's existence, or the report's accuracy.

## 1.5 EAL TECHNICAL BASES MANUAL CONTENT

### EAL Matrix Table

This manual contains an EAL Matrix Table that addresses all of the recognition categories for the ISFSI EAL thresholds.

The EAL Matrix Table is designed as an evaluation tool that organizes the ECLs from the highest (ALERT) on the left to the lowest (UNUSUAL EVENT) on the right. Evaluating the EALs for each ECL from highest to lowest reduces the possibility that an event will be under classified. All EALs are to be reviewed for applicability prior to event declaration.

Other user aids, such as wallcharts, may be developed from the EAL Matrix Table to support evaluation of abnormal conditions in other human factored formats.

### EAL Documentation Format

Each EAL within the technical bases manual is documented in the following manner:

- IC Identification Number
- INITIATING CONDITION
- EAL Threshold Value(s)
- Basis
- Basis Reference(s)

## 2.0 DEFINITIONS AND ABBREVIATIONS

### 2.1 DEFINITIONS

**Advanced Horizontal Storage Module (AHSM)** - The Transnuclear AHSM is a reinforced concrete structure for storage of a loaded DRY SHIELDED CANISTER (DSC) at a spent fuel storage facility.

**Alert** - Events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the ISFSI or a security event that involves probable life-threatening risk to 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.

**Classification** - The comparison of conditions, indications, and reports associated with an off-normal, natural phenomenon, or accident event to the approved emergency classification system, to determine the most accurate EMERGENCY ACTION LEVEL.

**Confinement Boundary** - The barrier(s) between spent fuel and the environment once the spent fuel is processed for dry storage. As applied to the SONGS ISFSI, the Confinement Boundary is defined by the inner surface of the sealed Transnuclear DSC or Holtec MULTI-PURPOSE CANISTER (MPC).

**Dry Shielded Canister (DSC)** - A Transnuclear welded pressure vessel that provides confinement of intact or damaged fuel assemblies in an inert atmosphere.

**Emergency Action Level (EAL)** - A pre-determined, site-specific, observable threshold for an INITIATING CONDITION that, when met or exceeded, places the station in a given ECL.

**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 potential or actual effects or consequences, and the resulting ONSITE and OFFSITE response actions. The Emergency Classification Levels applicable to the SONGS ISFSI, in ascending order of severity, are:

- UE
- ALERT

**Exclusion Area Boundary (EAB)** - For SONGS, the Exclusion Area Boundary (EAB) is roughly formed by two semicircles with radii of 1967.5 ft. each, centered on the Unit 2 Containment dome and a point 134 ft. southeast of the Unit 3 Containment dome, with a tangent connecting the landward arcs and seaward arcs of the two semicircles. The EAB is depicted in the San Onofre 2 & 3 UFSAR (DSAR) Figure 2.1-5.

**Hostage** - A person(s) held as leverage against the station to ensure that demands will be met by the station.

**Hostile Action** - An act toward the SONGS 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 SONGS ISFSI. Non-terrorism-based EALs should be used to address such activities (i.e., this may include violent acts between individuals within the VBS boundary).

**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 designed and constructed for the interim storage of spent nuclear fuel, solid reactor-related Greater Than Class C (GTCC) waste, and other radioactive materials associated with spent fuel and reactor-related GTCC waste storage.

**Initiating Condition (IC)** - An event or condition that aligns with the definition of one of the ECLs by virtue of the potential or actual effects or consequences.

**Multi-Purpose Canister (MPC)** - A Holtec sealed spent nuclear fuel canister which provides the CONFINEMENT BOUNDARY for the contained radioactive materials.

**Offsite** - The area around the station that lies beyond the EAB.

**Onsite** - The area around the station that lies within the EAB.

**Projectile** - An object directed toward the SONGS ISFSI that could cause concern for its continued capability, reliability, or personnel safety.

**Protected Area (PA)** - That area within the ISFSI security boundary as defined in SONGS' Security Plan.

**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. A Security Condition does not involve a HOSTILE ACTION.

**Transfer Cask** - Container designed to contain the Transnuclear DSC or Holtec MPC during and after loading of spent fuel assemblies, prior to and during unloading, and to transfer the DSC or MPC to or from the Transnuclear AHSM or Holtec VERTICAL VENTILATED MODULE (VVM).

**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 OFFSITE response or monitoring are expected unless further degradation of occurs.

**Vehicle Barrier System (VBS)** - Vehicle control measures (passive or active) used to protect against the malevolent use of a land vehicle. The VBS consists of both active and passive components, terrain features, man-made structural features, and vehicle access checkpoints as defined in the SONGS Security Plan.

**Vertical Ventilated Module (VVM)** - A subterranean type overpack, which receives and contains the sealed Holtec MPC for interim spent fuel storage at an ISFSI. The Holtec VVM supports the MPC in a vertical orientation and provides gamma and neutron shielding, and also provides air flow through cooling passages to promote heat transfer from the MPC to the environs.

**2.2 ABBREVIATIONS**

**AHSM** - Advanced Horizontal Storage Module

**CFR** - Code of Federal Regulations

**DSC** - Dry Shielded Canister

**EAB** - Exclusion Area Boundary

**EAL** - Emergency Action Level

**ECL** - Emergency Classification Level

**ED** - Emergency Director

**EPA** - Environmental Protection Agency

**FAA** - Federal Aviation Administration

**FBI** - Federal Bureau of Investigation

**FEMA** - Federal Emergency Management Agency

**FSAR** - Final Safety Analysis Report

**IC** - Initiating Condition

**ISFSI** - Independent Spent Fuel Storage Installation

**ISS** - ISFSI Shift Supervisor

**MPC** - Multi-Purpose Canister

**mR** - milli-Roentgen Equivalent Man

**NEI** - Nuclear Energy Institute

**NORAD** - North American Aerospace Defense Command

**NRC** - Nuclear Regulatory Commission

**PA** - Protected Area

**SCE** - Southern California Edison

**SONGS** - San Onofre Nuclear Generating Station

**SSS** - Security Shift Supervisor

**UE** - Unusual Event



**VBS** - Vehicle Barrier System

**VVM** - Vertical Ventilated Module

3.0 EAL MATRIX TABLE

ALERT	UNUSUAL EVENT
<p><b>PD-HA1</b> HOSTILE ACTION within the VBS boundary.</p> <p><b>PD-HA1.1</b> A HOSTILE ACTION is occurring or has occurred within the VBS boundary as reported by the SSS.</p>	<p><b>PD-HU1</b> Confirmed SECURITY CONDITION or threat.</p> <p><b>PD-HU1.1</b> A SECURITY CONDITION that does not involve a HOSTILE ACTION as reported by the SSS.</p> <p><b>PD-HU1.2</b> Notification of a credible security threat directed at the site.</p>
<p><b>PD-HA3</b> Other conditions exist which in the judgment of the ISS/ED warrant declaration of an ALERT.</p> <p><b>PD-HA3.1</b> Other conditions exist which in the judgment of the ISS/ED 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 Guide exposure levels.</p>	<p><b>PD-HU3</b> Other conditions exist which in the judgment of the ISS/ED warrant declaration of an UNUSUAL EVENT.</p> <p><b>PD-HU3.1</b> Other conditions exist which in the judgment of the ISS/ED 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 the ISFSI has been initiated. No releases of radioactive material requiring OFFSITE response or monitoring are expected unless further degradation occurs.</p>

CONTINUED ON NEXT PAGE

3.0 EAL MATRIX TABLE (Continued)

ALERT	UNUSUAL EVENT
	<p><b>E-HU1</b> Damage to a loaded canister CONFINEMENT BOUNDARY.</p> <p><b>E-HU1.1</b> Damage to a loaded Transnuclear canister CONFINEMENT BOUNDARY as indicated by dose rates greater than ANY of the following:</p> <ul style="list-style-type: none"> <li>• 520 mR/hr (gamma) 3 feet from the surface at the top centerline.</li> <li>• 190 mR/hr (gamma) 3 feet from the surface of the neutron shield at the mid-height centerline.</li> <li>• 100 mR/hr on the surface of the front inlet bird screen of the AHSM. Two dose rate measurements are taken for each front inlet bird screen for the AHSM. These dose rate measurements are approximately 30 inches measured vertically from the surface of the ISFSI pad and within 24 inches from the centerline horizontally of each front bird screen.</li> <li>• 20 mR/hr on the outside surface of the AHSM door. Five dose rate measurements are taken on each door; one at the door center, and four others at equidistant locations around the door center at a radius of approximately 25 inches.</li> </ul> <p><b>E-HU1.2</b> Damage to a loaded Holtec canister CONFINEMENT BOUNDARY as indicated by dose rates greater than EITHER of the following:</p> <ul style="list-style-type: none"> <li>• 60 mR/hr (gamma + neutron) on the top of the VVM (closure lid cover plate). A minimum of four dose rate measurements shall be taken on the top of the VVM. These measurements shall be taken approximately 18 inches radially inward from the edge of the lid at the center point of each side.</li> <li>• 7,000 mR/hr (gamma + neutron) on the side of the TRANSFER CASK. A minimum of four dose rate measurements shall be taken on the side of the TRANSFER CASK, approximately at the cask mid-height plane. The measurement locations shall be approximately 90 degrees apart around the circumference of the cask. Dose rates shall be measured between the radial ribs of the water jacket.</li> </ul>

## 4.0 EAL TECHNICAL BASES

### 4.1 PD-HA1

#### **Initiating Condition:**

HOSTILE ACTION within the VBS boundary.

#### **EAL:**

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

#### **Basis:**

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

Timely and accurate communications between SSS and the ISS is essential for proper CLASSIFICATION of a security-related event.

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

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

This IC does not apply to incidents that are accidental events, acts of civil disobedience, or otherwise are not a HOSTILE ACTION perpetrated by a HOSTILE FORCE. Examples include the crash of a small aircraft, shots from hunters, physical disputes between employees, etc.

Reporting of these types of events is adequately addressed by the requirements of 10 CFR 73.71 or 10 CFR 50.72.

EAL #1 is applicable for any HOSTILE ACTION occurring, or that has occurred, within the VBS boundary. This includes any action directed against the ISFSI that is located within the VBS boundary.

In some cases, it may not be readily apparent if an aircraft impact within the VBS boundary was intentional (i.e., a HOSTILE ACTION). It is expected, although not certain, that notification by an appropriate Federal agency to the site would clarify this point. In this case, the appropriate federal agency is intended to be NORAD, FBI, FAA or NRC. The emergency declaration, including one based on other ICs/EALs, should not be unduly delayed while awaiting notification by a Federal agency.

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.

#### Additional SONGS Site-Specific Bases Information:

None.

#### **Basis Reference:**

1. NEI 99-01 Rev 6, PD-HA1

4.2 PD-HU1**Initiating Condition:**

Confirmed SECURITY CONDITION or threat.

**EALs:**

PD-HU1.1. A SECURITY CONDITION that does not involve a HOSTILE ACTION as reported by the Security Shift Supervisor.

PD-HU1.2. Notification of a credible security threat directed at the site.

**Basis:**

This IC addresses events that pose a threat to station personnel or the spent fuel, and thus represent a potential degradation in the level of station 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 SSS and the ISS is essential for proper CLASSIFICATION of a security-related event. CLASSIFICATION of these events will initiate appropriate threat-related notifications to station personnel and OFFSITE Response Organizations.

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

EAL #1 references 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. Credible security threat includes a HOSTILE ACTION within the SITE BOUNDARY outside of the VBS boundary.

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 ECL would be via IC PD-HA1.

**Additional SONGS Site-Specific Bases Information:**

None.

**Basis Reference:**

1. NEI 99-01 Rev 6, PD-HU1

4.3 PD-HA3**Initiating Condition:**

Other conditions exist which in the judgment of the ISS/ED warrant declaration of an ALERT.

**EAL:**

PD-HA3.1. Other conditions exist which in the judgment of the ISS/ED 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 Guide 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 ISS/ED to fall under the ECL description for an ALERT.

**Additional SONGS Site-Specific Bases Information:**

None.

**Basis Reference(s):**

1. NEI 99-01 Rev 6, PD-HA3
2. EPA-400, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents

## 4.4 PD-HU3

**Initiating Condition:**

Other conditions exist which in the judgment of the ISS/ED warrant declaration of a UE.

**EAL:**

PD-HU3.1. Other conditions exist which in the judgment of the ISS/ED indicate that events are in progress or have occurred which indicate a potential degradation of the level of safety of the ISFSI or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring OFFSITE response or monitoring are expected unless further degradation occurs.

**Basis:**

This IC addresses unanticipated conditions not addressed explicitly elsewhere but that warrant declaration of an emergency because conditions exist which are believed by the ISS/ED to fall under the ECL description for a UE.

**Additional SONGS Site-Specific Bases Information:**

None.

**Basis Reference:**

1. NEI 99-01 Rev 6, PD-HU3

## 4.5 E-HU1

**Initiating Condition:**

Damage to a loaded canister CONFINEMENT BOUNDARY.

**EAL:**

E-HU1.1. Damage to a loaded Transnuclear canister CONFINEMENT BOUNDARY as indicated by dose rates greater than ANY of the following:

- 520 mR/hr (gamma) 3 feet from the surface at the top centerline.
- 190 mR/hr (gamma) 3 feet from the surface of the neutron shield at the midheight centerline.
- 100 mR/hr on the surface of the front inlet bird screen of the AHSM. Two dose rate measurements are taken for each front inlet bird screen for the AHSM. These dose rate measurements are approximately 30 inches measured vertically from the surface of the ISFSI pad and within 24 inches from the centerline horizontally of each front bird screen.
- 20 mR/hr on the outside surface of the AHSM door. Five dose rate measurements are taken on each door; one at the door center, and four others at equidistant locations around the door center at a radius of approximately 25 inches.

E-HU1.2. Damage to a loaded Holtec canister CONFINEMENT BOUNDARY as indicated by dose rates greater than EITHER of the following:

- 60 mR/hr (gamma + neutron) on the top of the VVM (closure lid cover plate). A minimum of four dose rate measurements shall be taken on the top of the VVM. These measurements shall be taken approximately 18 inches radially inward from the edge of the lid at the center point of each side.
- 7,000 mR/hr (gamma + neutron) on the side of the TRANSFER CASK. A minimum of four dose rate measurements shall be taken on the side of the TRANSFER CASK, approximately at the cask mid-height plane. The measurement locations shall be approximately 90 degrees apart around the circumference of the cask. Dose rates shall be measured between the radial ribs of the water jacket.

**Basis:**

This IC addresses an event that results in damage to the CONFINEMENT BOUNDARY of a storage 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. The EAL threshold values, which are a technical specification multiple of "2 times", are 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 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.



As provided in the Transnuclear "Technical Specifications for the Standardized Advanced NuHoms® System Operating Controls and Limits" Amendment 4 to CoC 1029, Section 5.2.4 (Radiation Protection Program) and Section 5.4.2 (AHSM or AHSM-HS Dose Rate Evaluation Program Limits and Locations) contain radiation dose rates 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 AHSM. Keeping in line with NEI guidance that an UNUSUAL EVENT is warranted for radiation conditions at a level of 2 times the Technical Specification value, the values chosen for EAL E-HU1 represent these values.

Additional SONGS Site-Specific Bases Information:

None.

**Basis Reference(s):**

1. NEI 99-01 Rev 6, E-HU1
2. Certificate of Compliance No. 1029, Amendment 4, Appendix A, Technical Specifications for the Advanced NUHOMS System 5.2.4.e and 5.4.2
3. Certificate of Compliance No. 1040, Amendment 2, Appendix A, Technical Specifications for the HI-STORM UMAX Canister Storage System 5.3.4, 5.3.8.a, and 5.3.8.c
4. Holtec Report HI-2177667 Rev 3, HI-STORM UMAX CoC Dose Rate Limits for SONGS

Enclosure 3  
Revision 1 Summary of Changes and Analysis

**SAN ONOFRE NUCLEAR GENERATING STATION  
REPORT AND ANALYSIS SUMMARY  
10 CFR 50.54(q)(5) / 10 CFR 72.44(f)**

**Document Number: IOEP-1, Revision 1**

**Title: San Onofre Nuclear Generating Station (SONGS) Independent Spent Fuel Storage Installation (ISFSI) Only Emergency Plan**

**Action Request #: 1017-66237**

**Change Description**

The 10CFR50.54(q) evaluation for IOEP-1 Revision 1 is covered under AR 1017-66237 assignment 2. This revision includes:

- Addition of Tri-City Medical Center as a facility capable of treating patients with injuries of a non-radiological or radiological nature.
- Clarification of cellular phones as back-up means of communication.
- Removal of sampling equipment from Emergency Equipment section.
- Addition of information for just in time training.
- Editorial changes.

**Analysis Summary**

The changes do not contradict the licensing basis or the emergency plan content. The changes do not modify the licensing basis with regards to a reduction in effectiveness.

Mission Hospital Regional Medical Center in Mission Viejo is the medical facility currently listed in the NRC-approved Emergency Plan capable of treating radiological and non-radiological related conditions. The inclusion of Tri-City Medical Center into the emergency plan is made to simply recognize an additional resource that can be used as a matter of convenience. The use of the Tri-City Medical Center may facilitate treatment of non-radiological or radiological injuries. Mission Hospital Regional Medical Center and Tri-City Medical Center were the hospitals that met the requirements under the Permanently Defueled Emergency Plan. They both can perform the required Emergency Plan functions at the same level. Either hospital by itself will comply with the requirements of the ISFSI Only Emergency Plan. The changes do not alter any requirements or commitments for Mission Hospital Regional Medical Center. The Emergency Plan continues to establish the responsibilities of the medical and hospital supporting organizations; arrangements for medical services for contaminated injured are maintained; and radiological emergency response training is provided to medical and hospital support organizations who may be called on to assist in an emergency.

The cellular phones are already listed in Table 6-1, Communications Systems, and in Appendix A. Emergency Equipment, Supplies and Reference Materials. The change clarifies their purpose and requirements. The Emergency Plan continues to provide prompt communications among principal response organizations to emergency personnel.

Based on the initiating conditions for the Emergency Action Levels and the conditions present at the ISFSI, sampling equipment will not be used in the initial phases of the Emergency Plan Implementation. Should additional resources (including sampling equipment) be required at a later time, the Emergency Director and the Resource Manager will coordinate obtaining them

in accordance with Section 2. For a declared emergency involving radiological consequences (E-HU1), a minimum of one person trained in radiological monitoring and assessment will report to the SONGS ISFSI within four hours of the emergency declaration. This person will have sampling equipment to perform the radiological monitoring and assessment. The Emergency Plan continues to provide and maintain adequate emergency facilities and equipment to support the emergency response

Just in time training is applicable for SONGS or Non-SONGS personnel who are brought in to assist with response, mitigating, or recovery actions and have not received Emergency Plan overview training. The Emergency Plan continues to provide radiological emergency response training to those who may be called on to assist in an emergency

The Emergency Plan continues to meet the regulatory requirements of 10CFR50.47(b) and 10CFR50 Appendix E, as exempted. The capability and timeliness to perform the planning functions and elements related to the planning functions are maintained.

The changes can be implemented without prior NRC approval.

PREPARED BY: Lucia Sischo

DATE: 8-12-2020

REVIEWED BY: Kelli Gallion-Sholler

DATE: 8-12-2020

**SAN ONOFRE NUCLEAR GENERATING STATION  
REPORT AND ANALYSIS SUMMARY  
10 CFR 50.54(q)(5) / 10 CFR 72.44(f)**

<p><b>Document Number: IOEP-2, Revision 1</b>  <b>Title: San Onofre Nuclear Generating Station (SONGS) Independent Spent Fuel Storage Installation (ISFSI) Only Emergency Plan</b>  <b>Emergency Action Level Technical Bases Manual</b>  <b>Action Request #: 1017-66237</b></p>	
Change Description	Analysis Summary
<p>The 10CFR50.54(q) evaluation for IOEP-2 Revision 1 is covered under AR 1017-66237 assignment 3. This revision includes:</p> <ul style="list-style-type: none"> <li>• Clarification that in all cases an event is declared within 30 minutes of when indications are available, using wording consistent with NRC guidance.</li> <li>• Revision of Emergency Action Level (EAL) E-HU1.1 and corresponding EAL basis to align with Certificate of Compliance No. 1029, Amendment 4, Appendix A, which include additional Technical Specifications for the Transnuclear Storage System.</li> <li>• Revision of EAL E-HU1.2 to provide the same wording in Sections 3.0 and 4.5, and to correct measurement locations information in accordance with Holtec Report HI-2177667 Rev 3, HI-STORM UMAX CoC Dose Rate Limits for SONGS.</li> <li>• Editorial changes.</li> </ul>	<p>The changes do not contradict the licensing basis or the emergency plan content. The changes do not modify the licensing basis with regards to a reduction in effectiveness.</p> <p>Clarification that in all cases an event is declared within 30 minutes of when indications are available and using wording consistent with NRC guidance maintains the intent of the original text.</p> <p>In accordance with NEI 99-01 Rev 6, E-HU1 emergency action level threshold is "Damage to a loaded cask CONFINEMENT BOUNDARY as indicated by an on-contact radiation reading greater than (2 times the site-specific cask specific technical specification allowable radiation level) on the surface of the spent fuel cask". The additional EAL thresholds for EAL E-HU1.1 are two times the Technical Specification allowable radiation levels on the surface of the front inlet bird screen of the Advanced Horizontal Storage Module (AHSM) and on the outside surface of the AHSM door. Therefore, the same classification scheme as specified in NEI 99-01 Rev 6 is maintained.</p> <p>Use of the Holtec Report HI-2177667 Rev 3 is specific for SONGS and provides the equivalent measurement locations for a square lid. The thresholds for EAL E-HU1.2 continue to be two times the Technical Specification allowable radiation levels. Therefore, the same classification scheme as specified in NEI 99-01 Rev 6 is maintained.</p> <p>The Emergency Plan continues to meet the regulatory requirements of 10CFR50.47(b) and 10CFR50 Appendix E, as exempted. The capability and timeliness to perform the planning functions and elements related to the planning functions are maintained.</p> <p>The changes can be implemented without prior NRC approval.</p>

PREPARED BY: Lucia Sischo

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