

Considerations on the Development and Submittal of an ISFSI-Only Emergency Plan

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Objectives

- Comparison of the requirements of 10 CFR 50.47(b) and Appendix E to 10 CFR Part 50, as exempted, versus ISFSI requirements under 10 CFR 73.32(a);
- The scope of changes to the licensee's (onsite) emergency plan to address the permanently removal of spent fuel from the SFP to dry cask storage;
- Details required in submittal to support NRC's evaluation of proposed reduction to ERO staffing; and
- Analysis required to support changes to EAL scheme.

Decommissioning Cycle



Above: The Connecticut Yankee site in 2003, before structural demolition.

Left: Aerial view of the CY site.

Below: The CY Independent Spent Fuel Storage Installation.



Recent History – Facilities

- Humboldt Bay
- Lacrosse
- Zion
- Kewaunee
- Crystal River

Regulations

- Exemptions reduce the Part 50 emergency preparedness requirements to those required by Part 72.
- Part 72 regulations are applicable to wet or dry storage of spent fuel – no additional exemptions required.
- Interim Staff Guidance (ISG): NSIR/DPR-ISG– 2 exemptions mirror the Part 72.32(a) requirements.

Guidance

- Revision 1 to NUREG-0654/FEMA-REP-1, “Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants”
- NSIR/DPR-ISG – 2, “Emergency Planning Exemption Requests for Decommissioning Nuclear Power Plants”
- Office of Nuclear Materials Safety and Safeguards / Spent Fuel Project Office (NMSS/SFPO) ISG – 16, “Emergency Planning”
- Nuclear Energy Institute (NEI) document NEI 99-01, Revision 6, “Development of Emergency Action Levels for Non-Passive Reactors”

Scope of Changes

- Emergency actions levels (EALs) for ISFSI only;
- Changes to on-shift staffing and emergency response organization augmentation; and
- Emergency plan only reflects the ISFSI.

Classification of Emergencies

- ***Unusual Event*** – Events are in progress or have occurred which indicate a potential degradation of the level of safety of the facility or indicate a security threat to facility protection has been initiated. No release of radioactive material requiring off-site response or monitoring are expected.
- ***Alert*** – Events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the facility or a security event that involves probable life threatening risk to site personnel or damage to ISFSI equipment because of HOSTILE ACTION.

EALs for ISFSI Only

ICs removed partially or in their entirety

ALERT	UNUSUAL EVENT
PD-AA1 (all EALs) Release of gaseous or liquid radioactivity resulting in offsite dose greater than 10 mrem TEDE or 50 mrem CDE	PD-AU1 (all EALs) Release of gaseous or liquid radioactivity greater than 2 times the ODCM limit for 60 minutes or longer.
PD-AA2 (all EALs) UNPLANNED rise in plant radiation levels that impedes plant access required to maintain spent fuel integrity.	PD-AU2 (all EALs) UNPLANNED rise in plant radiation levels.
	PD-SU1 (all EALs) UNPLANNED spent fuel pool temperature rise.
PD-HA1* HOSTILE ACTION within the OWNER CONTROLLED AREA or airborne attack threat within 30 minutes is occurring or has occurred. 1) A HOSTILE ACTION is occurring or has occurred within the OWNER CONTROLLED AREA as reported by the Security Shift Supervisor. <u>OR</u> * 1) A validated notification from NRC providing information of an aircraft attack threat within 30 minutes of the site.	PD-HU1* Confirmed SECURITY CONDITION or threat 1) A SECURITY CONDITION that does not involve a HOSTILE ACTION as reported by the Security Shift Supervisor. <u>OR</u> 1) Notification of a CREDIBLE SECURITY THREAT directed at the site. <u>OR</u> 1) A validated notification from the NRC providing information of an aircraft threat.
	PD-HU2 (all EALs)** Hazardous event affecting SAFETY SYSTEM equipment necessary for spent fuel cooling.

*Only the strike-through portion is being deleted.

**For an ISFSI-only facility, the condition addressed by PD-HU2 remains fully addressed by IC EU1.1.

EALs for ISFSI Only

ICs retained that adequately address the condition of the ISFSI-Only storage of the spent fuel

Alert	Unusual Event
Independent Spent Fuel Storage Installation (ISFSI)	
	E-HU1 Damage to a Dry Shielded Canister CONFINEMENT BOUNDARY.
Hazards and Other Conditions	
PD-HA1 HOSTILE ACTION is occurring or has occurred.	PD-HU1 Confirmed SECURITY CONDITION or threat.
PD- HA3 Other conditions exist which in the judgment of the Emergency Director\Coordinator warrant declaration of an Alert	PD-HU3 Other conditions exist which in the judgment of the Emergency Director\Coordinator warrant declaration of an UNUSUAL EVENT (UE).

Changes to On-shift Staffing and ERO Augmentation

Functional Area	Location	On-Shift Staff	Augmented Offsite Response
Assessment of Condition (Emergency Declaration)	Emergency response Facility	Emergency Director/Coordinator	Resource Manager
Emergency Direction and Control	Emergency response Facility	Emergency Director/ Coordinator	—
Notification/ Communication	Emergency response Facility	Emergency Director/Coordinator	—
Radiological Accident Assessment and Protective Actions	Emergency response Facility/On Scene	Emergency Director/Coordinator	Resource Manager
			Augmentation Responder – Note 1
Corrective Actions	Emergency response Facility/ On Scene	Emergency Director/Coordinator	—
Firefighting	On Scene	Per ISFSI Fire Protection Plan	Offsite Response Organization
Rescue Operations/First Aid	On Scene	Note 2	Offsite Response Organization
Security	Per ISFSI Security Plan	Per ISFSI Security Plan	N/A

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

Note 2: Provided by on-shift personnel who may be assigned other functions.

Submittals

- Details required in submittal to support NRC's evaluation of proposed reduction to ERO staffing and analysis required to support changes to EAL scheme.
 - Emergency classification tables
 - Summary of changes
 - Comparison Matrix of NEI 99-01 to the proposed facility classification system and new emergency action levels.
 - Supporting evaluations and calculations