

# 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* <del>HOSTILE ACTION within the OWNER CONTROLLED AREA or airborne attack threat within 30 minutes is occurring or has occurred.</del>  1) A HOSTILE ACTION is occurring or has occurred <del>within the OWNER CONTROLLED AREA</del> as reported by the Security Shift Supervisor.  <del>OR</del> * 1) <del>A validated notification from NRC providing information of an aircraft attack threat within 30 minutes of the site.</del>	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. <del>OR</del> 1) Notification of a CREDIBLE SECURITY THREAT directed at the site. <del>OR</del> 1) <del>A validated notification from the NRC providing information of an aircraft threat.</del>
	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