HOLTEC DECOMMISSIONING INTERNATIONAL

Krishna P. Singh Technology Campus, 1 Holtec Blvd., Camden, NJ 08104
Telephone (856) 797-0900
Fax (856) 797-0909

10 CFR 50.90
10 CFR 50.54(q)(4)

February 23, 2021

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

SUBJECT: **License Amendment Request to Approve the Oyster Creek Nuclear Generating Station Independent Spent Fuel Storage Installation Only Emergency Plan**

Oyster Creek Nuclear Generating Station
Renewed Facility Operating License No. DPR-16
Docket No. 50-219 and 72-15

REFERENCE:
1. Letter from Exelon Generation Company to US NRC, "Certification of Permanent Removal of Fuel from the Reactor Vessel for Oyster Creek Nuclear Generating Station," September 25, 2018 (ML1826A258)
2. NRC Order Approving Transfer of the Oyster Creek Nuclear Generating Station and Conforming License Amendment, dated June 20, 2019 (ML19095A458)
3. Letter from Holtec Decommissioning International, LLS to US NRC, "Report on Status of Decommissioning Funding for Reactors and Independent Spent Fuel Storage Installations," March 31, 2020 (ML20091M858)

Pursuant to Title 10, Code of Federal Regulations (CFR) 50.90, Holtec Decommissioning International, LLC (HDI) hereby requests U.S. Nuclear Regulatory Commission (NRC) review and approval of the Oyster Creek Nuclear Generating Station (OCNGS) Independent Spent Fuel Storage Installation Facility (ISFSI) Only Emergency Plan (IOEP).

By letter dated September 25, 2018 (Reference 1), Exelon Generation Company submitted certifications for permanent cessation of reactor operations at OCNGS and permanent removal of fuel from the reactor vessel pursuant to 10 CFR 50.82(a)(1). Therefore, as specified in 10 CFR 50.82(a)(2), the 10 CFR Part 50 license for OCNGS no longer authorizes operation of the reactor or emplacement or retention of fuel in the reactor vessel.

On July 1, 2019, pursuant to the NRC Order (Reference 2), OCNGS ownership and the OCNGS operating licenses were transferred to Oyster Creek Environmental Protection, LLC and HDI, respectively. By letter dated March 31, 2020 (Reference 3), HDI provided an updated decommissioning schedule indicating that off-load of the OCNGS spent fuel pool (SFP) and transfer of the spent fuel to the ISFSI is expected to be completed by November 3, 2021. In support of this condition, revisions to the OCNGS Emergency Plan and associated Emergency

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Action level Scheme are proposed to comport with the requirements for a facility configuration with all spent nuclear fuel in dry storage within the ISFSI.

The reason for this proposed amendment request is to obtain NRC approval of the Oyster Creek ISFSI Only Emergency Plan (IOEP) and associated EAL Scheme. The proposed changes are being submitted to the NRC for approval prior to implementation, as required under 10 CFR 50.54(q)(4).

Enclosure 1 to this letter provides a description and evaluation of the proposed ISFSI Only Emergency Plan. Attachment 1 to the Enclosure provides a clean version (no mark-up) of the OCNGS IOEP and Attachment 2 to Enclosure 1 provides a clean version of the associated IO EALs.

HDI requests approval of the proposed emergency plan by July 15, 2021. Based on lessons learned from the Spring 2020 PNPS Spent Fuel Dry Cask Campaign and ongoing Oyster Creek Spent Fuel Dry Cask Transfers, HDI anticipates completion of OCNGS spent fuel transfer to complete in June of 2021.

The proposed changes have been evaluated in accordance with 10 CFR 50.91(a)(1) using criteria in 10 CFR 50.92(c), and HDI has determined that this change involves no significant hazards consideration. HDI has also determined that the proposed changes satisfy the criteria for categorical exclusion in accordance with 10 CFR 51.22(c)(9) and do not require an environmental review. Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment is required.

Pursuant to 10 CFR 50.91, “Notice for public comment; State consultation,” paragraph (b), a copy of this submittal is being provided to the State of New Jersey, Bureau of Nuclear Engineering.

Should you have any questions or require further information, please contact me at (856) 797-0900, x3813.

I declare under penalty of perjury that the foregoing is true and correct. Executed on February 23, 2021.]

Sincerely,

Andrea Sterdis

Digitally signed by Andrea Sterdis
DN: cn=Andrea Sterdis, c=US, o=Holtec Decommissioning International, ou=HDI, email=a.sterdis@holtec.com
Date: 2021.02.23 17:21:01 -05'00'

Andrea L. Sterdis
Vice President, Regulatory and Environmental Affairs
Holtec Decommissioning International, LLC

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Krishna P. Singh Technology Campus, 1 Holtec Blvd., Camden, NJ 08104
Telephone (856) 797-0900
Fax (856) 797-0909

Enclosure 1: Description of Proposed Changes, Technical and Regulatory Evaluation, Significant Hazards Determination, and Environmental Consideration.
Attachment 1 Oyster Creek ISFSI Only Emergency Plan
Attachment 2 Oyster Creek ISFSI Only Emergency Action Levels and Technical Basis

cc:
USNRC Regional Administrator, Region I
USNRC Project Manager, NMSS - Oyster Creek Nuclear Generating Station
USNRC Region I, Lead Inspector - Oyster Creek Nuclear Generating Station
Assistant Commissioner, Air Quality, Energy and Sustainability, NJ DEP
Assistant Director Radiation Protection Element, NJ Bureau of Nuclear Engineering

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Telephone (856) 797-0900
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HDI-OC-20-099

Enclosure 1

Description of Proposed Changes, Technical and Regulatory Evaluation, Significant Hazards Determination, and Environmental Considerations

License Amendment Request to Approve the Oyster Creek Nuclear Generating Station Independent Spent Fuel Storage Installation Only Emergency Plan and Emergency Action level Scheme.

(22 pages follow)

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Telephone (856) 797-0900
Fax (856) 797-0909

DESCRIPTION OF PROPOSED CHANGES, TECHNICAL AND REGULATORY EVALUATION, SIGNIFICANT HAZARDS DETERMINATION, AND ENVIRONMENTAL CONSIDERATIONS

Subject: License Amendment Request to Approve the Oyster Creek Nuclear Generating Station Independent Spent Fuel Storage Installation Only Emergency Plan and Emergency Action level Scheme

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1.0 INTRODUCTION

This evaluation supports a request to amend the Renewed Facility Operating License (OL) DPR-16 for Oyster Creek Nuclear Generating Station (OGNGS).

By letter on September 25, 2018 (Reference 1), Exelon Generating Company, LLC, provided certification of the permanent removal of fuel from the Reactor Vessel to the Nuclear Regulatory Commission (NRC) in accordance with 10 CFR Part 50.82(a)(1)(i) and (ii). Therefore, the 10 CFR Part 50 license for OCNGS no longer permits operation of the Reactor or emplacement or retention of fuel in the Reactor Vessel in accordance with 10 CFR Part 50.82(a)(2).

By letter dated Jun 11, 2019, the NRC issued License Amendment No. 296 to Renewed Facility Operating License No. DPR-16 for OCNGS approving the OCNGS Permanently Defueled Emergency Plan (PDEP) and associated Permanently Defueled Emergency Action Levels (EALs) (Reference 2). The PDEP and EALs rely upon exemptions from certain emergency planning requirements as approved by NRC letter dated October 16, 2018 (Reference 3). Additional changes to the OCNGS emergency plan and EAL Technical Bases Document are warranted to reflect the future storage of all OCNGS fuel in the Independent Spent Fuel Storage Installation (ISFSI) facility.

On September 28, 2018 (Reference 4), HDI submitted a Notification of Revised Post-Shutdown Decommissioning Activities Report (PSDAR) and on March 31, 2020 (Reference 5), HDI submitted a Report on the Status of Decommissioning Funding for Reactors and Independent Spent Fuel Storage Installations. The Report on Status of Decommissioning Funding for Reactors and Independent Spent Fuel Storage documented the HDI expectation that all OCNGS spent fuel be completely transferred to the ISFSI by November 4, 2021. To comport to the reduced scope of potential radiological accidents with all OCNGS spent fuel in dry cask storage within the ISFSI, HDI determined that implementation of the ISFSI Only Emergency Plan (IOEP) and the ISFSI Only EAL Technical Bases Document will be warranted.

The proposed ISFSI Only Emergency Plan is related to the operation of the ISFSI and would be implemented after all OCNGS spent fuel has been removed from the spent fuel pool (SFP) and placed in dry storage within the OCNGS site controlled ISFSI. Implementation of the proposed IOEP would involve the establishment of administrative controls for radiological source term accumulation limits and methods to control the accidental dispersal of the radiological source.

2.0 DESCRIPTION

The proposed amendment would modify the OCNGS license by replacing the existing PDEP and the associated EAL scheme with the IOEP and the ISFSI Only EAL scheme to reflect the storage of all OCNGS fuel in the ISFSI. The proposed changes reduce the scope of onsite emergency planning requirements to reflect the reduced scope of potential radiological accidents with all OCNGS spent fuel in dry cask storage within the ISFSI. After all spent fuel is in dry cask storage within the ISFSI, the number and severity of potential radiological accidents possible at OCNGS are substantially lower. There continues to be no need for offsite emergency response plans at OCNGS because no postulated design basis accident or reasonably conceivable beyond design basis accident can result in a radioactive release that exceeds Environmental Protection Agency (EPA) Protective Action Guides (PAGs) beyond the “site boundary”, as described in EPA’s PAG Manual "Protective Action Guides and Planning Guidance for Radiological Incidents" dated January 2017 (EPA PAG Manual) (Reference 6).

The robust nature and high integrity of the spent fuel storage system selected for use at the ISFSI is designed to prevent the release of radioactivity in the event of an accident, including environmental phenomena (e.g., earthquake and flooding). As a result of the high integrity dry shielded canister’s design and the substantial protection afforded the canisters, leakage of fission products from a canister is not considered to be a credible event.

The source term for an accidental release at the defueled reactor site is reduced significantly by the transfer of spent fuel from the SFP to the ISFSI and by the removal or decay of radioactive materials remaining in the plant. OCNGS has developed a methodology to determine potential doses at the Site Boundary if a radiological release were to occur during decontamination and dismantlement of radioactive structures, systems, and components (SSCs). In planning and preparation for decontamination and dismantlement activities, application of this methodology will consider administrative and engineering controls that will be in place to limit radiological source term accumulation as well as methods to limit the dispersal of radioactive materials. These controls will ensure that if-a radiological release were to occur, doses at the Site Boundary would not exceed two times the Offsite Dose Calculation Manual (ODCM) limits (2 times 1500 millirem/year) for 60 minutes, and therefore not result in doses to the public above EPA PAGs beyond the controlled area boundary. By ensuring that dose rates that could occur during decontamination and dismantlement activities cannot exceed twice the ODCM limit, the current radiological effluent EALs are no longer necessary and can be eliminated. Methods necessary to ensure a radiological release would not exceed two times the ODCM limits would be in addition to the requirements already specified in the ODCM for control of effluent releases and the requirement to maintain radiation doses received by personnel As Low As Reasonably Achievable.

Consistent with NRC approval provided in Reference 2, the current EAL scheme was implemented at OCNGS on June 29, 2019. The current EAL scheme is based on Nuclear Energy Institute (NEI) 99-01, "Development of Emergency Action Levels for Non-Passive

Reactors," Revision 6 (Reference 7). The proposed EAL scheme continues to be based on NEI 99-01, Revision 6, as appropriate, after the transfer of the spent fuel from the SFP to the ISFSI. The proposed revisions constitute a change in the emergency planning function commensurate with the ongoing and anticipated reduction in radiological source term at OCNGS.

3.0 PROPOSED CHANGES

Replacement of the OCNGS PDEP and associated EAL Technical Bases Document with the IOEP and the ISFSI EAL Only Technical Bases Document involves the following major changes to the OCNGS PDEP:

1) Removal of the various emergency actions related to the SFP,
2) Removal of non-ISFSI-related emergency event types,
3) Clarifying definitions for security EALs
4) Revision of the Emergency Response Organization (ERO), and
5) Identification of the “ISFSI Security Supervisor” (ISS) title as the position that assumes the Emergency Director (ED) responsibilities following an emergency declaration

The off-normal events and accidents addressed in the IOEP are related to the dry storage of spent nuclear fuel within the ISFSI and include only the off-normal, accident, natural phenomena, and hypothetical events and consequences presented in the Updated Final Safety Analysis Report (UFSAR), NUH-003, “Standardized NUHOMS Horizontal Modular Storage System for Irradiated Nuclear Fuel” (Reference 8) and UFSAR Holtec HI-STORM FW MPC System Rev 8 (Reference 9). After all fuel is removed from the OCNGS SFP, there will no longer be any potential for the accidents previously described in the OCNGS emergency plan that would increase risk to the health and safety of the public. These accidents included events specifically related to the storage of the spent fuel in the SFP. After the transfer of the spent fuel from the SFP to the ISFSI, the spent fuel storage and handling systems will be removed from operation.

The proposed revisions to the OCNGS Emergency Plan and associated EAL scheme are commensurate with the reduction in radiological hazards associated with the transfer of the spent fuel from the SFP to the ISFSI and will allow the facility to transition to an Emergency Plan and EAL scheme specifically related to the storage of the spent fuel in the ISFSI. The proposed changes are necessary to properly reflect the conditions of the facility and to maintain the effectiveness of the emergency plan.

3.1 Elimination of SFP Initiating Conditions and EALs

The Initiating Conditions (ICs) and EALs associated with emergency classification in the PDEP are based on NEI 99-01, Revision 6. Specifically, Appendix C of NEI 99-01 contains a set of ICs and EALs for permanently defueled nuclear power plants that had previously operated under a 10 CFR Part 50 license and have permanently ceased power operations. After all spent fuel has been transferred from the SFP to dry storage within the ISFSI, the NEI 99-01, Appendix C ICs and EALs that are specifically associated with the SFP are no

longer required to be in the emergency plan. Additionally, certain ICs and EALs, the primary function of which is not associated with the SFP, are also no longer required to be in the emergency plan when administrative controls are established to limit source term accumulation and the offsite consequences of uncontrolled effluent releases. Therefore, the ICs listed in Table 1, below, are proposed for elimination and are not included in the IOEP and EAL scheme.

Table 1 - Emergency Plan Initiating Conditions Being Deleted

ALERT	UNUSUAL EVENT
~~**PD-RA1** Release of gaseous or liquied radioactivity resulting in offsite dose greater than 10 mrem TEDE or 50 mrem thyroid CDE.~~	~~**PD-RU1** Release of gaseous or liquid radioactivity to the enviroment greater than 2 times the ODCM limit for 60 minutes or longer.~~
~~**PD-RA2** UNPLANNED rise in facility radiation levels that impedes facility access required to maintain spent fuel integrity.~~	~~**PD-RU2** UNPLANNED rise in facility radiation levels~~
	~~**PD-SU1** UNPLANNED Spent Fuel Pool temeperature rise.~~
PD-HA1 HOSTILE ACTION ~~within the OWNER CONTROLLED AREA or airborne attack threat within 30 minutes.~~ is occuring or has occurred. ~~1. A validated notification from NRC of an aircraft attack threat< 30 minutes from the site.~~ ~~**OR**~~ ~~2.~~ 1. ~~Notification by the Securrity Force that a~~ A HOSTILE ACTION is occurring or has occurred ~~within the OWNER CONTROLLED AREA.~~ as reported by the Security Shift Supervisor.	**PD-HU1** Confirmed SECURITY CONDITION or threat at the Independent Spent Fuel Storage Installation (ISFSI) 1. Notification of a credible secuity threat directed at the site ~~as determined per SY-AA-101-132, Security Assessment and Response to Unusual Activities~~. **OR** 2. ~~A validated notification from the NRC providing information of an aircraft threat~~. ~~**OR**~~ 3. ~~Notification by the Security Force of a~~ A SECURITY CONDITION that does not involve a HOSTILE ACTION as reported by the Security Shift Supervisor.
	~~PD-HU2 Hazardous Event affecting eqipment necessary for spent fuel cooling.~~ (1)

(1) For a facility in which all spent fuel is stored in the ISFSI, the condition addressed by PD-HU2 remains fully addressed by IC E-HU1

The ICs being deleted include all ICs associated with the categories of abnormal radioactive release and system malfunction associated with the SFP as well as security conditions associated with aircraft. These categories apply to the storage of spent fuel in the SFP and are not necessary or appropriate for a facility in which all spent fuel is stored in the ISFSI.

The ICs listed in Table 2, below, are being retained. The ICs being retained in the ISFSI Only Emergency Plan and associated EAL scheme are appropriate to address the condition of a facility in which all spent fuel is stored in the ISFSI.

Table 2 – ISFSI Only Emergency Plan Initiating Condtions

ALERT	UNUSUAL EVENT
Independent Spent Fuel Storage Installation	
	E-HU1: Damage to a loaded cask 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 warrant declaration of an ALERT.	**PD-HU3** Other conditions exist which in the judgment of the Emergency Director warrant declaration of an UNUSUAL EVENT.

3.2 Emergency Response Organization Revision

The current OCNGS PDEP provides for two (2) ERO augmented positions: a Technical Coordinator and a Radiation Protection Coordinator. The PDEP requires the ERO to be activated at an Alert classification (can be activated in part or in whole at the discretion of the ED for an Unusual Event) with the goal of the ERO to augment the on-shift staff within 2 hours of an Alert classification. The proposed OCNGS IOEP proposes replacing these positions with a Resource Manager and an individual trained in radiological monitoring and assessment.

The Resource Manager is provided to assist in assessing the event and obtaining needed resources. The Resource Manager is required to be in contact with the Emergency Director within two (2) hours of declaration of an Unusual Event or an Alert. Entry into the ISFSI Only Emergency Plan would result from an extreme natural phenomenon (beyond design basis) or a security condition, either of which would negatively impact or restrict the ability of responding personnel to access to the site.

The Resource Manager augments the Emergency Director by assisting in assessing the emergency condition and coordinating the required resources, including serving as the public information interface. Services provided to the Emergency Director by the Resource Manager can be provided remotely and do not necessitate an onsite response by the Resource Manager. By responding remotely, the actual response time is decreased (as compared to the ERO response required by the PDEP as described above) with no negative impact to services and functional responsibilities provided by the Resource Manager. The Resource Manager's functional responsibilities could be performed in a timely manner either by reporting to the site or performing the function remotely in the specified timeframe.

In addition, OCNGS proposes that a minimum of one person trained in radiological monitoring and assessment will report to the ISFSI within four (4) hours of an emergency declaration for an event involving radiological consequences.

The proposed OCNGS ISFSI Only Emergency Plan also provides that additional personnel resources may be directed to report to the ISFSI to provide support as needed to assess radiological conditions, support maintenance and repair activities, develop and implement corrective action plans, and assist with recovery actions. The augmentation personnel are available from OCNGS staff and can be requested from various contractors.

3.3 Replacement of the "Shift Manager" with the "ISFSI Shift Supervisor"

The current OCNGS PDEP assigns the authority and responsibility for command and control of emergencies to the Shift Manager. If an emergency condition develops, the Shift Manager assumes the role of Emergency Director. The proposed OCNGS ISFSI Only Emergency Plan proposes replacing the Shift Manager position with the ISFSI Security Supervisor (ISS).

The ISS is an on-shift position at the OCNGS site on a continuous, 24 hour per day basis, and is the senior management position during off-hours. This position is responsible for monitoring ISFSI conditions and managing the activities at the OCNGS ISFSI. This position assumes overall command and control of the response as the Emergency Director and is responsible for monitoring conditions and approving all onsite activities. The ISFSI Emergency Plan clearly identifies non-delegable responsibilities, along with other designated tasks assigned to the ISS.

3.4 ISFSI Only Emergency Plan

The ISFSI Only Emergency Plan describes OCNGS's plan for responding to emergencies while all spent fuel is in dry cask storage within the ISFSI. The ISFSI Only Emergency Plan is provided in Enclosure 1 to this submittal for NRC review and approval. This proposed emergency plan is associated with EALs for events related to the ISFSI. The ISFSI Only Emergency Plan addresses 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" (as previously exempted), and is consistent with regulations in 10 CFR 72.32 and 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" (Reference 10).

The OCNGS ISFSI Only Emergency Plan conservatively provides that the emergency planning zone for the ISFSI is the area within the Site Boundary. The Site Boundary establishes the perimeter of the Owner Controlled Area. The Site Boundary completely encompasses the ISFSI controlled area. The ISFSI controlled area, as defined in 10 CFR 72.3, "Definitions," means the area immediately surrounding an ISFSI for which OCNGS exercises authority over its use and within which ISFSI operations are performed.

The ISFSI controlled area is established to limit dose to the public during normal operations, anticipated occurrences, and DBAs in accordance with the requirements of 10 CFR 72.104, "Criteria for Radioactive Materials in Effluents and Direct Radiation from an ISFSI or MRS (Monitored Retrievable Storage)," and 10 CFR 72.106, "Controlled Area of an ISFSI or MRS." OCNGS's analysis of the radiological impact of potential accidents at the ISFSI concluded that any releases beyond the ISFSI controlled area are expected to be less than the EPA PAGs. The ISFSI controlled area is completely enclosed within the Site Boundary. Thus, any radiological releases beyond the Site Boundary will also be less than the EPA PAGs.

Based on the reduced number and consequences of potential radiological events with all spent fuel in dry storage within the ISFSI, the current offsite Comprehensive Emergency Management Plan (CEMP) approach will continue to be an effective method to protect the health and safety of the public. Additionally, the scope of the onsite emergency response organization and corresponding requirements in the Emergency Plan may be reduced without an undue risk to the public health and safety. The current OCNGS PDEP describes interfaces with the States of New Jersey including notifications of emergency declarations and annual reviews of OCNGS's emergency classification system with appropriate State representatives. The proposed OCNGS ISFSI Only Emergency Plan proposes to maintain these interfaces.

The analysis of the potential radiological impact of an accident in a condition with all irradiated fuel stored in the ISFSI indicates that any releases beyond the Site Boundary are below the EPA Protective Action Guidelines (PAG) exposure levels detailed in Reference 6. Exposure levels, which warrant pre-planned response measures, are limited to onsite areas. For this reason, radiological emergency planning remains focused onsite.

3.5 ISFSI Only Emergency Action Levels

Attachement 2 to this Enclosure 1 provides the OCNGS ISFSI Only EAL Technical Bases Document, which contains the proposed OCNGS ISFSI Only EAL Scheme for NRC review and approval. The current OCNGS PDEP EAL Scheme was approved by the NRC on June 11, 2019 (Reference 2). The proposed ISFSI Only EAL scheme would be implemented with the OCNGS ISFSI Only Emergency Plan (provided in Attachment 1 to Enclosure 1). Deletions from the currently approved EAL Scheme are identified in Table 1, "Emergency Plan Initiating Conditions Being Deleted," in Section 3.1, "Elimination of SFP Initiating Conditions and EALs," above.

Operating Modes and Applicability

The proposed ISFSI Only EAL Scheme is only applicable after all OCNGS spent nuclear fuel has been transferred out of the SFP and placed in dry storage within the ISFSI.

State and Local Government Review of Proposed Changes

State and local emergency management officials are advised of EAL changes that are implemented. Prior to implementation of this License Amendment Request (LAR), HDI will provide an overview of the new classification scheme to state and local emergency management officials in accordance with 10 CFR 50, Appendix E, Section IV.B.1.

4.0 TECHNICAL EVALUATION

4.1 Radiological Consequences of Design Basis Events

OCNGS site is located near the Atlantic Ocean within the State of New Jersey. OCNGS site is approximately 152 acres. The ISFSI facility within the site, is approximately 2.5 acres, and is in Lacey and Ocean Townships, Ocean County. OCNGS is about two miles inland from the shore of Barnegat Bay and seven miles west northwest of Barnegat Light on the Atlantic shorefront. The site is approximately nine miles south of Toms River, New Jersey, about fifty miles east of Philadelphia, Pennsylvania, and sixty miles south of Newark, New Jersey. Holtec’s subsidiary, Oyster Creek Environmental Protection, LLC (OCEP) owns approximately 708 acres of property to the east of Route 9 extending to the Barnegat Bay.

Water access to the site is provided by the Intercostal Waterway, which runs through Barnegat Bay.

Chapter 6 of the OCNGS Defueled Safety Analysis Report (DSAR) (Reference 21) describes the only DBA scenario that is applicable to OCNGS with fuel stored in the SFP. This chapter discusses a postulated fuel handling accident (FHA) as the DBA associated with fuel movement until the fuel has been transferred to the ISFSI. However, after transfer of all irradiated fuel from the SFP to dry storage within the ISFSI, the accident scenario postulated in the DSAR is no longer possible.

The off-normal events and accidents addressed in the OCNGS ISFSI Only Emergency Plan are related to the dry storage of spent nuclear fuel within the ISFSI and include only the off-normal, accident, natural phenomena, and hypothetical events and consequences presented in the NUHOMS Final Safety Analysis Report (FSAR) (Reference 8) and the HI-STORM FW FSAR (Reference 9). After all fuel is removed from the OCNGS SFP, there will no longer be any potential for the accidents previously described in the OCNGS DSAR that would increase risk to the health and safety of the public. These accidents included events specifically related to the storage of the spent fuel in the SFP. After the transfer of the spent fuel from the SFP to the ISFSI, the spent fuel storage and handling systems will be removed from operation consistent with the HDI revised OCNGS PSDAR (Reference 4).

The NUHOMS FSAR and HI-STORM FW FSAR describe the DBAs applicable to the OCNGS ISFSI along with the radiological dose calculation results. The analyses of the potential radiological impacts of postulated off-normal, natural phenomena, and accident events involving the ISFSI indicate that any releases would result in a dose to the public below the radiation limits established in 10 CFR 72.106(b). Exposure levels which warrant pre-planned response measures are limited to the ISFSI and immediate vicinity, and for this reason radiological emergency planning is focused on this area.

The ISFSI is a passive storage system that does not rely on electric power for heat transfer. After removal of the spent fuel from the SFP, there are no credible fuel-related accidents for which actions are required to prevent occurrence or to mitigate the consequences. There is no credible accident resulting in radioactive releases requiring offsite protective measures, as discussed in Section 3.4 above.

OCNGS began moving spent fuel to dry storage in 2002 in accordance with NUHOMS CoC No 1004, Amendment 4. The final NUHOMS Canister was loaded in 2018 under Amendment 10. The first Hi-Storm FW Canister with loaded fuel was placed on the ISFSI pad January 8, 2021 in accordance with Holtec HI-Storm FW CoC 1032, Amendment 5. The remaining spent fuel in the SFP is planned to be moved to dry storage in accordance with the Holtec Hi-Storm FW CoC 1032 Amendment 5. All remaining fuel in the OCNGS SFP is scheduled to be placed into ISFSI by November 2021(Reference 5).

The robust design and construction of the spent fuel storage systems selected for use at the ISFSI prevents the release of radioactivity in the event of an off~normal or accident event as described in NUHOMS and Holtec HI-STORM FSARs the Holtec FSARs (Reference 8 and Reference 9). Leakage of fission products from a canister confinement boundary breach is not considered to be a credible event, given the high integrity nature of the canister's design and the additional protection afforded by the storage casks.

After all spent fuel has been removed from the SFP, the estimated radiological inventory (non-fuel) that remains at the reactor facility is primarily attributable to activated reactor components and structural materials. There are no credible accident scenarios that can mobilize a significant portion of this inventory for release. As a result, the potential accidents that could occur during decommissioning the reactor facility have negligible offsite and onsite radiological consequences.

With all spent nuclear fuel in dry storage within the ISFSI, the radiological status of the facility required for implementing the proposed ISFSI Only Emergency Plan is summarized as follows:

- The remaining radiological source term at OCNGS will not create an unplanned/unanticipated increase in radiation or in liquid or airborne radioactivity levels that would result in doses to the public above EPA PAG limits at the Site Boundary.
- Source term accumulation from activities during decontamination and dismantlement of radioactive SSCs are controlled at a level that would preclude declaring an Unusual Event.
- Necessary radiological support personnel will be administratively required to be onsite during active decontamination and dismantlement of radioactive SSCs.

The ISFSI Only Emergency Plan describes the OCNGS plan for responding to emergencies while all spent fuel is in dry storage within the ISFSI, and is not intended to apply to the decontamination and dismantlement of radioactive SSCs.

NUREG-0586, "Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities," (NUREG-0586) (Reference 13) supports this conclusion in the following statement (Section 4.3.9.3):

> "The staff has reviewed activities associated with decommissioning and determined that many decommissioning activities not involving spent fuel that are likely to result in radiological accidents are- similar to activities conducted during the period of reactor operations. The radiological releases from potential accidents associated with these activities may be detectible. However, work procedures are designed to minimize the likelihood of an accident and the consequences of an accident, should one occur, and

> procedures will remain in place to protect health and safety while the possibility of significant radiological accident exists."

NUREG-0586 also includes the following statement (Section 4.3.9.4):

> "The staff has considered available information, including comments received on the draft of Supplement 1 of NUREG-0586, concerning the potential impacts of non-spent fuel related radiological accidents resulting from decommissioning. This information indicates, that with the mitigation procedures in place, the impacts of radiological accidents are neither detectible nor destabilizing. Therefore, the staff makes the generic conclusion that impacts of non-spent fuel related radiological accidents are SMALL. The staff has considered mitigation and concludes that no additional measures are likely to be sufficiently beneficial to be warranted."

Accordingly, controls designed to minimize the likelihood and consequence of off-normal or accident events would be implemented when decontamination or dismantling activities involving radioactive SSCs are being performed. Examples of potential controls for radiological source term accumulation limits include:

- limits on radioactive materials collected on filter media and resins (dose rate limit),
- limits on contaminated materials collected in shipping containers (dose rate limit),
- limits on surface or fixed contamination on work areas that may create airborne radioactive material (activity limits), and
- limits on contaminated materials collected in radioactive liquid storage tanks (activity concentration limits).

Examples of potential methods to control accidental dispersal of the radiological source term include limitations on dispersal mechanisms that may cause a fire (e.g., limits on combustible material loading, and use of fire watch to preclude fire), placement of a berm around a radioactive liquid storage tank, and packaging radioactive materials within confined boundaries with ventilation controls established.

4.2 Radiological Consequences of Postulated Events

1. Cask Drop Event (Fuel-Related Event)

HDI is the holder of a general license for the storage of spent fuel in an ISFSI at a decommissioning nuclear power site in accordance with the provisions of 10 CFR 72.210 and 10 CFR 72.212. The generally licensed ISFSI at OCNGS is used for interim, onsite, dry storage of spent nuclear fuel assemblies in the NUHOMS System CoC No.1004 and Holtec HI-STORM FW System CoC No.1032 (10 CFR 72.214).

As documented in the NUHOMS and Hi-Storm FW FSARs (References 8 and 9), analysis of the normal events, including drop events, determined that canister drops can be sustained without breaching the confinement boundary, preventing removal of spent fuel assemblies, or creating a criticality accident. There are no evaluated normal conditions, or off-normal or accident events, that result in damage to the canister producing a breach in the confinement boundary. Neither normal conditions of operation or off-normal events preclude retrieval of the fuel for transport and ultimate disposal.

The dry spent fuel storage casks used at OCNGS are approved for storage of spent fuel per 10 CFR 72.214; and, as such, are in compliance with the requirements of 10 CFR 72.24 and 10 CFR 72.122 for off-normal and accident events to ensure that they will provide safe storage of spent fuel during all analyzed off-normal and accident events. Therefore, no radiological release would be expected to occur.

2. Radioactive Material Handling Accident (Non-Fuel-Related Event)

The limiting non-fuel related event involves the release of radioactive material from either a liquid radioactivity storage tank or from a concentrated source, such as filters, resins, and shipping containers as discussed in NUREG-0586, Appendix I (Reference 13).

For liquid releases, the OCNGS Decommissioning Safety Analysis Report (DSAR) states there are no credible accidents that could exceed 10 CFR 20 limits.

For a concentrated solid source, the evaluated initiator to these events could be a fire, explosion, or a fuel handling event (cask drop). After all spent fuel has been moved to the ISFSI, there would be no concentrated source of radioactive material available to be released to the environment in an amount that could exceed two (2) times the ODCM limit at the site boundary (2 times 1500 millirem/year). During decontamination and dismantlement activities, administrative controls would be applied to the handling of open containers or other packages containing filters, resins, and other dispersable materials generated during dcommissioning activities such that a release to the environment from concentrated sources of these radioactive materials would not exceed two times the ODCM limit at the Site Boundary.

3. Accidents Initiated by External Events

The effects of external events, such as aircraft impacts, fires, floods, wind (including tornadoes), earthquakes, lightning, and physical security breaches on the ISFSI remain unchanged from the effects that were considered under the existing PDEP. Externally initiated events are addressed by the proposed ISFSI Only EALs.

In summary, there continues to be a low likelihood of any postulated event resulting in radiological releases requiring offsite protective measures, and there is no credible radioactive

material event (non-fuel related) resulting in radiological releases requiring declaration of an emergency.

5.0 SUMMARY

Oyster Creek Nuclear Generating Station (OCNGS) permanently ceased power operations on Sept 17, 2018. On Sept 25, 2018, Exelon Generation LLC, certified that OCNGS had permanently removed all fuel from the reactor vessel pursuant to 10 CFR 50.82(a)(1)(ii) (Reference 1). Therefore, as specified in 10 CFR 50.82(a)(2), the 10 CFR Part 50 license for OCNGS no longer authorizes operation of the reactor or emplacement or retention of fuel in the reactor vessel.

On July 1, 2019, pursuant to the NRC Order (Refernce 2), OCNGS ownership and the OCNGS operating licenses were transferred to Oyster Creek Environmental Protection, LLC (OCEP) and HDI respectively. The campagn to transfer the remaining OCNGS spent fuel from the SFP to the ISFSI is expected to copmlete by Novemeber 2021. Based on the redueced scope of potential radiological accidents with all spent fuel in dry cask storage within theISFSI, HDI proposed the implementation of the revised Emergency Plan and corresponding EAL scheme, to be implemented after completion of the trandfer of all OCNGS spent fuel to the ISFSI.

This proposed amendment would replace the existing OCNGS PDEP and its associated Permanently Defueled EAL Scheme with the ISFSI Only Emergency Plan (IOEP) and its associated EAL Scheme, as appropriate for the condition wherein all spent nuclear fuel is in dry storage within the ISFSI. The IOEP and ISFSI Only EAL Scheme are being submitted to the NRC for approval, as required under Section IV.B.2 of Appendix E to 10 CFR Part 50. Additionally, 10 CFR 50.54(q)(4) and 10 CFR 72.44(f) require that proposed changes receive prior approval by the NRC because they are considered to reduce the effectiveness of the Emergency Plan.

6.0 REGULATORY EVALUATION

The proposed emergency plan does not meet all of the standards of 10 CFR 50.47(b) and requirements of 10 CFR Part 50, Appendix E. However, OCNGS was previously granted exemptions from portions of 10 CFR 50.47(b), 10 CFR 50.47(c)(2), and 10 CFR 50, Appendix E, Section IV, by letter dated October 16, 2018 (Reference 3). The bases for these exemptions have not changed and remain in effect for the emergency plan changes requested in this document. Considering the previously granted exemptions, the emergency plan, as proposed, will continue to meet the remaining applicable requirements in 10 CFR Part 50, Appendix E and the remaining applicable planning standards of 10 CFR 50.47(b).

6.1 Applicable Regulatory Requirements/Criteria

The regulatory requirements, as exempted, are discussed below.

Title 10 of the Code of Federal Regulations (10 CFR), Section 50.47, "Emergency Plans," set forth emergency plan requirements for nuclear power plant facilities. The regulations in 10 CFR 50.47(a)(1)(i) state, in part:

> "No initial operating license for a nuclear power reactor will be issued unless a finding is made by the NRC that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency."

Section 50.47(b) establishes the standards that emergency response plans must meet for NRC staff to make a positive finding that there is reasonable assurance that the licensee can and will take adequate protective measures in the event of a radiological emergency.

- Planning Standard (1) of Section 50.47(b) states, in part: "[E]ach principal response organization has staff to respond and to augment its initial response on a continuous basis."
- Planning Standard (2) of Section 50.47(b) states, in part: "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 ... "
- Planning Standard (4) of Section 50.47(b) requires that a licensee's emergency response plan contain the following: "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."
- Planning Standard (8) of Section 50.47(b) states, in part: "Adequate emergency facilities and equipment to support the emergency response are provided and maintained."

10 CFR 50.54(q)(4) specifies the process for revising emergency plans where the change reduces the effectiveness of the plan. This regulation states the following:

> "The changes to a licensee's emergency plan that reduce the effectiveness of the plan as defined in paragraph (q)(1)(iv) of this section may not be implemented without prior approval by the NRC."

Section IV.A of Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," to 10 CFR Part 50, states, in part: "The organization for coping with radiological emergencies shall be described, including definition of authorities, responsibilities, and duties of individuals assigned to the licensee's emergency organization ... "

Section IV.C.1 of Appendix E requires that each emergency plan define the emergency classification levels that determine the extent of participation of the emergency response organization.

Section IV .E of Appendix E states, in part: "Adequate provisions shall be made and described for emergency facilities and equipment. .. " As identified in 10 CFR 72.13, "Applicability," the applicable emergency plan requirements for an ISFSI associated with a general license are specified in 10 CFR 72.32(c) and (d).

The proposed emergency plan continues to rely on previously granted exemptions from certain emergency planning requirements (Reference 3) since the bases for these exemptions have not changed and remain in effect.

In November 2012, NEI published NEI 99-01, Revision 6 (Reference 7). The NRC endorsed NEI 99-01, Revision 6, by letter dated March 28, 2013 (Reference 11). The changes being requested herein are based on Revision 6 to NEI 99-01. The proposed changes are conservatively being considered as a change to the EAL scheme development methodology. Pursuant to 10 CFR Part 50, Appendix E, Section IV.B.2, a revision to an entire EAL scheme must be approved by the NRC before implementation.

6.2 Aircraft-Related Emergency Action Levels

Security-based ICs and EALs were provided to licensees in NRC Bulletin 2005-02, "Emergency Preparedness and Response Actions for Security Based Events," dated July 18, 2005 (Reference 12). Bulletin 2005-02 was addressed to all holders of operating licenses for nuclear power reactors, except those who had permanently ceased power operations and had certified that fuel had been removed from the reactor vessel.

In 2009, the NRC amended its security regulations adding new security requirements pertaining to nuclear power reactors. This rulemaking established and updated generically applicable security requirements similar to those previously imposed by Commission orders issued after the terrorist attacks of September 11, 2001. In the Statements of Consideration (SOC) for the Final Rule for Power Reactor Security Requirements (74 Federal Register(FR) 13926; March 27, 2009), the Commission stated, in part:

> *Current reactor licensees comply with these requirements through the use of the following 14 strategies that have been required through an operating license condition. These strategies fall into the three general areas identified by §§ 50.54(hh){2)(i), (ii), and (iii). The firefighting response strategy reflected in § 50.54(hh){2)(i) encompasses the following elements:*
>
> *7. Spent fuel pool mitigation measures*

As such, the staff maintained EALs for potential or actual aircraft threats for facilities transitioning into decommissioning with spent fuel stored in a SFP, in addition to maintaining the mitigative strategies license conditions required by NRC Order, EA-02-026, "Interim Compensatory Measures (ICM) Order," issued February 25, 2002 (67 FR 9792; March 4, 2002).

The SOC further stated, in part:

> *The NRC believes that it is inappropriate that § 50.54(hh) should apply to a permanently shutdown defueled reactor where the fuel was removed from the site or moved to an ISFSI*.

Therefore, the ICs proposed for deletion also include those associated with the mitigative strategies and response procedures for potential or actual aircraft attack procedures as the spent fuel will have been removed from the SFP and stored in the ISFSI prior to the implementation of the changes requested herein.

6.3 No Significant Hazards Consideration Determination

Pursuant to 10 CFR 50.92, Holtec Decommissioning International, LLC (HDI) has reviewed the proposed changes and concludes that the changes do not involve a significant hazards consideration because the proposed changes satisfy the criteria in 10 CFR 50.92(c). These criteria require that operation of the facility in accordance with the proposed amendment would not (1) involve a significant increase in the probability or consequences of an accident previously evaluated; (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

The proposed changes would revise the Oyster Creek Nuclear Generating Station (ONCGS) site emergency plan and emergency action level (EAL) scheme commensurate with the hazards associated with a permanently shut down and defueled facility that has transferred all spent fuel from the spent fuel pool (SFP) to dry cask storage within the independent spent fuel storage installation (ISFSI).

The discussion below addresses each of these criteria and demonstrates that the proposed amendment does not constitute a significant hazard.

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

   Response: No.

   The proposed amendment would modify the OCNGS facility operating license by revising the emergency plan and EAL scheme. OCNGS has permanently ceased power operations and is permanently defueled. The proposed amendment is conditioned on all spent nuclear fuel being removed from wet storage in the SFP and placed in dry storage within the ISFSI. Occurrence of postulated accidents associated with spent fuel stored in a SFP is no longer credible in a SFP devoid of such fuel. The proposed amendment has no effect on plant structures, systems, or components (SSC) and therefore can neither affect the capability of any plant SSC to perform its design function nor increase the likelihood of the malfunction of any plant SSC. The proposed amendment would have no effect on any of the previously evaluated accidents in the OCNGS Defueled Safety Analysis Report (DSAR) (Reference 21) or the NUHOMS or the HI-STORM FW Final Safety Analysis Reports (FSAR) (References 8 and 9).

   Because OCNGS has permanently ceased power operations, the generation of fission products has ceased and the remaining source term continues to decay. This continues to significantly reduce the consequences of previously evaluated postulated accidents. Furthermore, previously generated source term materials have been removed from the site in accordance with applicable regulations and permitting requirements.

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

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

   Response: No.

   The proposed amendment constitutes a revision of the emergency planning function commensurate with the ongoing and anticipated reduction in radiological source term at OCNGS.

   The proposed amendment does not involve a physical alteration of the plant. No new or different types of equipment will be installed and there are no physical modifications to existing equipment as a result of the proposed amendment. Similarly, the proposed amendment would not physically change any SSC involved in the mitigation of any postulated accidents. Thus, no new initiators or precursors

of a new or different kind of accident are created. Furthermore, the proposed amendment does not create the possibility of a new failure mode associated with any equipment or personnel failures. The credible events for the ISFSI remain unchanged.

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

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

Response: No.

Because the 10 CFR Part 50 license for OCNGS no longer authorizes operation of the reactor or emplacement or retention of fuel into the reactor vessel, as specified in 10 CFR 50.82(a)(2), the postulated accidents associated with reactor operation are no longer credible. In addition, with all spent nuclear fuel transferred out of wet storage from the SFP and placed in dry storage within the ISFSI, a fuel handling accident is no longer credible. Therefore, there are no credible events that would result in radiological releases beyond the site boundary exceeding the EPA Protecive Action Guide (PAG) exposure levels, as detailed in the EPA's "Protective Action Guide and Planning Guidance for Radiological Incidents," dated January 2017 (Reference 6).

The proposed amendment does not involve a change in the plant's design, configuration, or operation. The proposed amendrr1ent does not affect either the way in which the plant structures, systems, and components perform their safety function or their design margins. Because there is no change to the physical design of the facility, there is no change to these margins.

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

Based on the above, HDI concludes that the proposed amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

6.4 Precedent

Similar changes to emergency plans and associated EAL Schemes approved by the NRC for plants that have transferred all fuel from the SFP to dry cask storage in the ISFSI include: 1) the La Crosse Boiling Water Reactor facility on September 8, 2014 (Reference 14), 2) the Zion Facility on May 14, 2015 (Reference 15) and December 20, 2016 (Reference 16), 3) the Kewaunee Power Station on March 2, 2017 (Reference 17), 4) the

Crystal River Unit 3 Nuclear Generating Plant on March 22, 2017 (Reference 18), 5) Vermont Yankee Nuclear Power Station on March 30, 2018 (Reference 19) and 6) Fort Calhoun Station Unit No1 on January 10, 2020 (Reference 20).

6.5 Conclusion

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

7.0 ENVIRONMENTAL CONSIDERATIONS

This amendment request meets the eligibility criteria for categorical exclusion from environmental review set forth in 10 CFR 51.22(c)(9) as follows:

(i) The amendment involves no significant hazards consideration.

As described in Section 6.3 of this evaluation, the proposed changes involve no significant hazards consideration.

(ii) There is no significant change in the types or significant increase in the amounts of any effluent that may be released offsite.

The proposed changes do not involve any physical alterations to the plant configuration or any changes to the operation of the facility that could lead to a change in the type or amount of effluent release offsite.

(iii) There is no significant increase in individual or cumulative occupational radiation exposure.

The proposed changes do not involve any physical alterations to the plant configuration or any changes to the operation of the facility that could lead to a significant increase in individual or cumulative occupational radiation exposure.

Based on the above, HDI concludes that the proposed change meets the eligibility criteria for categorical exclusion as set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

8.0 REFERENCES

1. Letter from Exelon Generation Company to US NRC, “Certification of Permanent Removal of Fuel from the Reactor Vessel for Oyster Creek Nuclear Generating Station,” September 25, 2018 (ML1826A258)

2. Letter from US NRC to Exelon Generating Company “OCNGS - Issuance of Amendment RE: Change to the Effective and Implementation Dates of License Amendment for Emergency Plan and Emergency Action Level Scheme for the Permanently Defueled Condition, June 11, 2019 (ML19098A258)

3. Letter, US NRC to Exelon Generating Company “OCNGS-Exemptions from Certain Emergency Planning Requirements and Related Safety Evaluation, October 16, 2018 (ML18220A980)

4. Letter, Holtec Decommissioning International, LLC to US NRC, “Notification of Revised Post-Shutdown Decommissioning Activities Report and Revised Site-Specific Decommissioning Cost Estimate for Oyster Creek Nuclear Generating Station,” September 28, 2018 (ML18275A116)

5. Letter, Holtec Decommissioning International, LLC to US NRC, “Report on Status of Decommissioning Funding for Reactors and Independent Spent Fuel Storage Installations,” March 31, 2020 (ML20091M858)

6. U.S. Environmental Protection Agency, "Protective Action Guide and Planning Guidance for Radiological Incidents," dated January 2017 (EPA-400/R-17/001)

7. Nuclear Energy Institute (NEI) 99-01, Revision 6, "Development of Emergency Action Levels for Non-Passive Reactors," dated November 2012 (ML12326A805)

8. NUH-003, “Updated Final Safety Analysis Report for the Standardized NUHOMS Horizontal Modular Storage System for Irradiated Nuclear Fuel” (Revision 16), July 27, 2017 (ML17213A407)

9. Holtec International “Updated Final Safety Analysis Report for HI-STORM FW MPC Storage System” Revision 8 dated August 31, 2020 supporting NRC CoC 1032 Amendment No.5 dated June 25, 2020 (ML20163A701)

10. NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Rev. 1, dated November 1980.

11. Letter, Mark Thaggard (USNRC) to Susan Perkins-Grew (NEI), "U.S. Nuclear Regulatory Commission Review and Endorsement of NEI 99-01, Revision 6, Dated November, 2012 (TAC No. D92368)," dated March 28, 2013 (ML12346A463)

12. NRC Bulletin 2005-02, "Emergency Preparedness and Response Actions for Security Based Events," dated July 18, 2005 (ML051740058)

13. NUREG-0586, "Generic Environmental Impact Statement of Decommissioning of Nuclear Facilities," Supplement 1, Volume 1, November 2002

14. Letter, U.S. Nuclear Regulatory Commission to Dairyland Power Cooperative (La Crosse Boiling Water Reactor), "Issuance of Amendment Relating to the Dairyland Power Cooperative La Crosse Boiling Water Reactor Request for Changes to the Emergency Planning Requirements," dated September 8, 2014 (ADAMS Accession No. ML14155A112)

15. Letter, U.S. Nuclear Regulatory Commission to ZionSolutions LLC (Zion Nuclear Power Station), "Issuance of Amendments Relating to the Emergency Planning Requirements for Zion Nuclear Power Station, Units 1 and 2", dated May 14, 2015 (ML15092A423)

16. Letter, U.S. Nuclear Regulatory Commission to ZionSolutions LLC (Zion Nuclear Power Station), "Issuance of Amendments Related to Changes to a Proposed Revision to the Zion Nuclear Power Station Defueled Station Emergency Plan (TAC NOs. L53114 and L53115)", dated December 20, 2016 (ML 16211A081)

17. Letter, U.S. Nuclear Regulatory Commission to Dominion Nuclear, "Safety Evaluation for the Proposed Revision to the Kewaunee Power Station Defueled Station Emergency Plan (TAC No. L53082)", dated March 2, 2017 (ML16195A323)

18. Letter, U.S. Nuclear Regulatory Commission to Crystal River Nuclear Plant, "Crystal River Unit 3 Nuclear Generating Plant - Issuance of Amendment Approving Independent Spent Fuel Storage Installation (ISFSI)-Only Emergency Plan and ISFSI-Only Emergency Action Level Bases Manual (TAC NO. L53129), dated March 22, 2017 (ML 17048A474)

19. Letter, U.S. Nuclear Regulatory Commission to Vermont Yankee Nuclear Power Station, Vermont Yankee Nuclear Power Station - Issuance Of Amendment to Change the Emergency Plan and Emergency Action Level Scheme to Reflect An ISFSI-Only Configuration" (Epid No. L-2017-Epr-0001), dated March 30, 2018 (ML18053A111)

20. Letter, U.S. Nuclear Regulatory Commission to Omaha Public Power District, "Fort Calhoun Station, Unit No. 1 - Issuance Of Amendment To Change the Emergency Plan snd Emergency Action Level Scheme to Reflect an ISFSI-Only Configuration (EPID NO. L-2019-LLA-0057)" dated January 10, 2020 (ML193436D682)

21. Oyster Creek Nuclear Generating Station, Defueled Safety Analysis Report, Rev 0, issued November 16, 2018.

HOLTEC
DECOMMISSIONING
INTERNATIONAL

Krishna P. Singh Technology Campus, 1 Holtec Blvd., Camden, NJ 08104
Telephone (856) 797-0900
Fax (856) 797-0909

Letter Number HDI-OC-20-099

Enclosure 1 Attachment 1

OYSTER CREEK ISFSI ONLY EMERGENCY PLAN

(48 pages follow)

SUMMARY OF REVISIONS

Revision 0 Initial Issue: xx, 2021

LIST OF TABLES

APPENDICES

Associated EALs

HDI-OC-EP-002 Oyster Creek ISFSI Only Emergency Action Levels and Technical Bases

1.0 INTRODUCTION

Oyster Creek Nuclear Generating Station (OCNGS) permanently ceased power operations on Sept 17, 2018. On Sept 25, 2018, Exelon Generation LLC, certified that OCNGS had permanently removed all fuel from the reactor vessel pursuant to 10 CFR 50.82(a)(1)(ii). On July 1, 2018 ownership and the license was transferred to Oyster Creek Environmental Protection, LLC (OCEP) with the decommissioning operator as Holtec Decommissioning International LLC, (HDI). Subsequently, all spent fuel has been transferred to the Independent Spent Fuel Storage Installation (ISFSI) facility.

The OCNGS ISFSI Only Emergency Plan (IOEP) describes the plan for responding to emergencies that may arise at the ISFSI. In this condition, no reactor operations can take place and all irradiated fuel has been removed from the Spent Fuel Pool. The IOEP adequately addresses the risks associated with OCNGS's current conditions.

The ISFSI Updated Final Safety Analysis Report (UFSAR) for NUHOMs and HI-STORM systems describe the Design Basis Accidents (DBAs) applicable to the OCNGS ISFSI along with the radiological dose calculation results. As provided in the ISFSI UFSARs, the analyses of potential radiological impacts of postulated off-normal, natural phenomena, and accident events involving the ISFSI indicate that any releases would result in a dose to the public below those limits established in 10 CFR 72.106(b). The analyses of the potential radiological impact of DBAs indicate that any releases beyond the Site Boundary are below the Environmental Protection Agency (EPS) Protective Action Guide (PAG) exposure levels, as detailed in the EPA's "Protective Action Guide and Planning Guidance for Radiological Incidents," dated January 2017. Exposure levels, which warrant pre-planned response measures are limited to the ISFSI and immediate vicinity, and for this reason, radiological emergency planning is focused on this area.

1.1 Purpose

The purpose of the IOEP is to assure an adequate level of preparedness by which to cope with a spectrum of emergencies that could be postulated to occur. This plan integrates the necessary elements to provide effective emergency response considering cooperation and coordination of off-site organizations expected to respond to potential emergencies.

1.2 Scope

The IOEP has been developed to respond to potential radiological emergencies at OCNGS ISFSI. Because there are no postulated accidents that would result in dose consequences that are large enough to require offsite emergency planning, the overall

scope of the IOEP details the actions necessary to safeguard onsite personnel. and minimize damage to property.

The concepts presented in the IOEP address the applicable regulations stipulated in 10 CFR 50.47, "Emergency Plans" and 10 CFR Part 50, Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," as exempted. Exemptions to selected portions of 10 CFR 50.47(b), 10 CFR 50.47(c)(2) and 10 CFR Part 50, Appendix E were previously approved by the NRC. The IOEP is consistent with the remaining 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 Facilities" (NUREG-0654). Appendix 2 contains a cross-reference to the applicable guidance in NUREG-0654.

Exemptions from selected portions of 10 CFR 50.47 and Appendix E to 10 CFR Part 50 were approved by the Nuclear Regulatory Commission (NRC) on October16, 2018 (ADAMS Accession Number ML18220A980).

2.0 DISCUSSION

2.1 Overview of ISFSI Emergency Plan

In the event of an emergency at OCNGS ISFSI, actions are required to identify and assess the nature of the emergency and to bring it under control in a manner that protects the health and safety of the public and onsite personnel. This plan describes the organization and responsibilities for implementing emergency measures. It describes interfaces with Federal, State of New Jersey, and local organizations that may be notified in the event of an emergency and may provide assistance.

Emergency services are provided by local public and private entities. Fire support services are provided by the local Fire Departments and county services. Law enforcement support services are provided by local, state, and federal law enforcement authorities, as appropriate. Ambulance service is provided by local First Aid responders.

OCNGS is licensed under the requirements of 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities." Consistent with the requirements of 10 CFR Part 50, the IOEP is based on the requirements of 10 CFR Part 50, Section 50.47(b) and Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," with approved exemptions.

Sections 5.0 thru 20.0 of this IOEP address the standards outlined in 10 CFR 50.47(b)(1) through (16). OCNGS is licensed to store spent fuel in the ISFSI under the General License provisions of 10 CFR 72.210 and 10 CFR 72.212.

Because there are no postulated accidents that would result in off-site dose consequences that are large enough to require off-site emergency planning, emergencies are divided into two classifications: 1) Notification of Unusual Event (Unusual Event) and 2) Alert. The classification scheme, developed in accordance with NEI 99-01, "Development of Emergency Action Levels for Non-Passive Reactors", Revision 6, November 2012, has been discussed and agreed upon with responsible offsite organizations and is compatible with their respective emergency plans (CEMP). If determined appropriate by government officials, protective actions may be implemented to protect the public using the existing all hazards emergency planning.

OCNGS is responsible for planning and implementing emergency measures within the site boundary. The IOEP is provided to meet this responsibility. To carry out specific emergency measures discussed in the IOEP, detailed emergency plan implementing procedures (EPIP) are established and maintained. A list of EPIPs is included in Appendix B.

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

2.2 Facility Description

The OCNGS site is located near the Atlantic Ocean within the State of New Jersey. The ISFSI facility is approximately 2.5 acres, is in Lacey Township, Ocean County. OCNGS is about two miles inland from the shore of Barnegat Bay and seven miles west northwest of Barnegat Light on the Atlantic shorefront. The site is approximately nine miles south of Toms River, New Jersey, about fifty miles east of Philadelphia, Pennsylvania, and sixty miles south of Newark.

Upon docketing of the 10 CFR 50.82(a)(1) certifications for permanent cessation of operations and permanent removal of fuel from the reactor vessel, the 10 CFR Part 50 license no longer authorizes operation of the reactor or emplacement or retention of fuel into the reactor vessel. Since OCNGS was permanently shut down and defueled, no additional fission products have been generated from the plant and the decay heat load

from the spent fuel will continue to decline. All spent fuel has been removed from the Spent Fuel Pool and transferred to the ISFSI. The OCNGS ISFSI is a robust and high integrity facility for the spent fuel storage. This facility is designed to prevent the release of radioactivity in the event of accidents, including environmental phenomena (e.g., earthquake and flooding).

2.3 Summary of Emergency Actions

The IOEP is activated by the ISFSI Security Supervisor (ISS) upon identification of an emergency situation based upon the Emergency Action Level (EAL) criteria. The ISS assumes the position of the Emergency Director upon classification of an emergency. The emergency measures described in the subsequent sections and EPIPs are implemented in accordance with the classification and nature of the emergency, and at the direction of the Emergency Director. Regulatory authorities and offsite support organizations are notified in accordance with this Plan. The Emergency Director has authority and responsibility for control and mitigation of the emergency, including emergency response resources, coordination of radiological assessment activities, and recovery implementation.

The following sections of this IOEP describe the detailed plans and actions of the OCNGS Emergency Response Organization (ERO), including interfaces with offsite support organizations.

3.0 DEFINITIONS AND ACRONYMS

3.1 Definitions

3.1.1 Accountability

A discretionary protective action taken for all persons onsite (within the ISFSI Protected Area) that involves the gathering of personnel into pre-designated areas and subsequent verification that the location of all personnel is known.

3.1.2 Alert

Events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the ISFSI or a security event that involves probable life-threatening risk to site personnel or damage to ISFSI equipment because of hostile action. Any releases are expected to be limited to

small fractions of the Environmental Protection Agency (EPA) Protective Action Guideline (PAG) exposure levels.

3.1.3 Annual

Once per calendar year, unless otherwise stated.

3.1.4 Assessment Actions

Those actions taken during or after an emergency for the purposes of obtaining and processing the information necessary to make decisions to implement specific emergency measures.

3.1.5 Biennial

Once per two calendar years, unless otherwise stated.

3.1.6 Corrective Action

Those emergency measures taken to mitigate or terminate an emergency situation at or near the source of the problem in order to prevent an uncontrolled release of radioactive material or to reduce the magnitude of a release (e.g., equipment shutdown, firefighting, equipment repair, and damage control).

3.1.7 Design Basis Accident (DBA)

Credible accident events as analyzed in the ISFSI Updated Final Safety Analysis Report.

3.1.8 Emergency Action Level (EAL)

A pre-determined, site-specific, observable threshold for an Initiating Condition (IC) that, when met or exceeded, places the ISFSI in a given emergency classification level.

3.1.9 Emergency Classification System

A system of classification in which emergency occurrences are categorized according to specific protective action levels. The two emergency classification levels, in ascending order of severity, are: Notification of Unusual Event (Unusual Event) and Alert.

3.1.10 Emergency Director

This position is the highest level of authority for the OCNGS Emergency Response Organization (ERO) and on-site emergency activities. This position is held by the ISFSI Shift Supervisor (ISS) or designated alternate. The ISS in the IOEP is equivalent to the Lead Security Shift Supervisor (LSSS) as defined in the ISFSI Only Security Plan.

3.1.11 Emergency Plan Implementing Procedure (EPIP)

Specific procedures describing actions taken by plant staff to activate and implement the IOEP.

3.1.12 Emergency Response Facility (ERF)

Facility containing the communications equipment necessary for emergency conditions. It is operated under the direction of the Emergency Director and serves as the primary location for classification of the emergency, notification of the emergency to offsite agencies, assessment actions, and emergency action direction.

3.1.13 Emergency Response Organization (ERO)

Organization comprised of assigned individuals who would respond and assist during a classified emergency.

3.1.14 Fire

Combustion characterized by heat and light. Sources of smoke such as slipping drive belts or overheated electrical equipment do not constitute fires. Observation of flame is preferred but is not required if large quantities of smoke and heat are observed.

3.1.15 Frequency

That unit of time specified (monthly, quarterly, etc.) plus or minus 25 percent, unless otherwise specifically stated. This definition does not apply to "Annual" when it is related to the conduct of the Biennial Exercise. Biennial Exercises are performed within the calendar year.

3.1.16 Hostile Action

An act toward the 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 ISFSI. Non-terrorism based EALs should be used to address such activities, (e.g., violent acts between individuals in the Owner Controlled Area).

3.1.17 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.

3.1.18 Independent Spent Fuel Storage Installation (ISFSI)

A complex that is designed and constructed for the interim storage of spent nuclear fuel and other radioactive materials associated with spent fuel storage.

3.1.19 ISFSI Controlled Area

That area immediately surrounding an ISFSI or MRS (Monitored Retrievable Storage Installation) for which the licensee exercises authority over its use and within which ISFSI or MRS operations are performed.

3.1.20 Initiating Condition (IC)

An event or condition that aligns with the definition of one of the two emergency classification levels by virtue of the potential or actual effects or consequences.

3.1.21 Local Assembly Area

A pre-designated area where personnel report to for organization, roll-call, and supervision when ISFSI accountability is initiated.

3.1.22 Notification of Unusual Event (Unusual Event)

Events are in progress or have occurred which indicate a potential degradation of the level of safety of the ISFSI or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring offsite response or monitoring are expected.

3.1.23 Owner Controlled Area (OCA)

The OCA is that Licensee-owned property located West of Route 9 and East of the intake and discharge canals.

3.1.24 Protected Area

The area normally within the facility security fence designated to implement the security requirements of 10 CFR 73.

3.1.25 Protective Actions

Those measures taken in anticipation of, or after an uncontrolled release of radioactive material, for the purpose of preventing or minimizing radiological exposures to persons that would be likely to occur if the actions were not taken.

3.1.26 Protective Action Guide (PAG)

The projected dose to an individual, resulting from a radiological incident at which specific protective actions to reduce or avoid that dose are warranted.

3.1.27 Radioactive Release

Any radioactive material beyond pre-emergency levels and not attributable to normal ISFSI operations, either detected or suspected of migrating beyond the Protected Area, while in a classified emergency.

3.1.28 Radiological Control Area (RCA)

An area in which radioactive material is present and the potential exists for the spread of radioactive contamination. The area is posted for the purpose of protecting individuals against undue risks from exposure to radiation and radioactive materials.

3.1.29 Recovery

The condition declared after the immediate hazards to life and safety due to the emergency have been removed and efforts are directed to returning affected areas to normal.

3.1.30 Recovery Actions

Those actions taken after the emergency has been controlled in order to restore the ISFSI to safe conditions.

3.1.31 Security Condition

Any Security Event as listed in the approved security contingency plan that constitutes a threat/compromise to site security, threat/risk to site personnel, or a potential degradation to the level of safety of the ISFSI. A security condition does not involve a hostile action.

3.1.32 Site

That property within the fenced boundary of OCNGS which is owned by OECP.

3.1.33 Site Boundary

That line beyond which the land is not owned, leased, or otherwise controlled by the licensee. This line establishes the perimeter of the Owner Controlled Area (OCA).

3.1.34 Substantial Degradation

Unanticipated conditions which are believed by the Emergency Director to fall under the emergency classification level description for an Alert.

3.2 Acronyms

ALARA	As Low As Reasonably Achievable
BNE	Bureau of Nuclear Engineering (New Jersey)
CDI	Comprehensive Decommissioning International, LLC
DBA	Design Basis Accident
DEP	Department of Environmental Protection (New Jersey)
EAL	Emergency Action Level
EPA	Environmental Protection Agency
EPIP	Emergency Plan Implementing Procedure
ERF	Emergency Response Facility
ERO	Emergency Response Organization

FSAR	Final Safety Analysis Report
FTS	Federal Telecommunication System
HDI	Holtec International Decommissioning, LLC
IC	Initiating Condition
IOEP	ISFSI Only Emergency Plan
ISFSI	Independent Spent Fuel Storage Installation
ISS	ISFSI Shift Supervisor / Security Operations Supervisor
LLEA	Local Law Enforcement Agency
LSSS	Lead Security Shift Supervisor
NJ-OEM	New Jersey-Office of Emergency Management
NRC	Nuclear Regulatory Commission
OCA	Owner Controlled Area
OCEP	Oyster Creek Environmental Protection, LLC
OCNGS	Oyster Creek Nuclear Generating Station
OEM	Office of Emergency Management (NJ State Police)
ORO	Offsite Response Organization
PAG	Protective Action Guide
RCA	Radiological Control Area
REAC/TS	Radiation Emergency Assistance Center/Training Site

4.0 REFERENCES

4.1 10 CFR 50.47, “Emergency Plans”

4.2 Appendix E to 10 CFR Part 50, "Emergency Planning and Preparedness for production and Utilization Facilities"

4.3 10 CFR Part 20, "Standards and Protection Against Radiation"

4.4 NUREG-0578, "TMl-2 Lessons Learned Task Force Status Report and Short-Term Recommendations" (July 1979)

4.5 NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Rev. 1

4.6 Regulatory Guide 1.101, "Emergency Planning and Preparedness for Nuclear Power Reactors"

4.7 Certificate of Compliance No. 1032, Amendment 5 for the HI-STORM FW Cask System, dated June 25, 2019 (ML020163A702)

4.8 NUH-003, “Updated Final Safety Analysis Report for the Standardized NUHOMS Horizontal Modular Storage System for Irradiated Nuclear Fuel” (Revision 16), July 27, 2017 (ML17213A407

4.9 Holtec International “Updated Final Safety Analysis Report for Hi-Storm FW MPC Storage System” Revision 8 dated August 31, 2020 supporting NRC CoC 1032 Amendment No.5 dated June 25, 2020 (ML20163A701)

4.9 OCNGS 10 CFR 72.212 Report for the NUHOMS System

4.10 OCNGS 10 CFR 72.212 Report for the HI-STORM FW System

4.11 4.12 NRC Bulletin (BL) 2005-02, "Emergency Preparedness and Response Actions for Security Based Events," dated July 18, 2005 (ML051740058)

4.13 Nuclear Energy Institute (NEI) 99-01, Revision 6, "Development of Emergency Action Levels for Non-Passive Reactors," dated November 2012 (ML12326A805)

4.14 EPA's "Protective Action Guides and Planning Guidance for Radiological Incidents, dated January 2017 (EPA PAG Manual)

4.15 Letter from Exelon Generation Company to US NRC, “Certification of Permanent Removal of Fuel from the Reactor Vessel for Oyster Creek Nuclear Generating Station,” September 25, 2018 (ML1826A258)

4.16 Letter, USNRC to Exelon Generation Company, " Oyster Creek Nuclear Generating Station - Exemptions from Certain Emergency Planning Requirements and Related Safety Evaluation," dated October 16, 2018 (ML19220A980)

4.17 NUREG-0586, "Generic Environmental Impact Statement of Decommissioning of Nuclear Facilities," Supplement 1, Volume 1, November 2002

4.18 NRC Information Notice No. 90-08: KR-85 Hazards from Decayed Fuel

4.19 10 CFR 72.13, "Applicability"

4.20 10 CFR 72.32, "Emergency Plan"

4.21 10 CFR 72.44, "License Conditions"

4.22 10 CFR 72.106, "Controlled Area of an ISFSI or MRS"

4.23 ISFSI Physical Security Plan

4.24 ISFSI EAL Technical Bases Document

5.0 ASSIGNMENT OF RESPONSIBILITY

Primary responsibilities for emergency response have been assigned, the emergency responsibilities of the various supporting organizations have been specifically established, and each principal response organization has staff to respond and to augment its initial response on a continuous basis.

5.1 Emergency Response and Responsibilities

HDI is responsible for the safe storage of spent fuel in accordance with NRC regulations. Responsibility for planning and implementing all emergency measures rests with HDI. The OCNGS ISFSI Organization has complete capability at all times to perform the detection, classification, initial response, and notification functions required during an emergency. The organization has an inherent emergency response and recovery function in its overall management and operation.

The ISFSI Shift Supervisor (ISS) is at OCNGS on a continuous, 24-hour per day basis, and is the senior management position during off-hours. This position is responsible for monitoring ISFSI conditions and managing the activities at the OCNGS ISFSI. The ISS

has the responsibility and authority to declare an emergency and initiate appropriate actions in accordance with written procedures to mitigate the consequences. When an off-normal, natural phenomenon, or accident event becomes apparent, the ISS shall assess the condition and assume the position of Emergency Director once an emergency declaration has been made.

The Emergency Director is responsible for the direction of all activities at the ISFSI site during an emergency. Should evaluation indicate the need, the Emergency Director has the authority to direct any or all personnel to relocate from the ISFSI and surrounding area and to notify all applicable agencies of the ISFSI status. The Emergency Director ensures that appropriate actions are taken, and management and applicable offsite supporting organizations and regulatory agencies are notified, as necessary. The functions associated within the Emergency Director's scope of responsibilities are specified on Table 6-1.

The Emergency Director does not have concurrent duties which conflict with the above responsibilities.

The on-shift staff positions are staffed on a 24-hour per day basis. The on-shift staff can perform all required IOEP actions. At the direction of the Emergency Director, additional personnel will be activated to support the on-shift staff.

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

5.2 Offsite Response Organizations

The Emergency Director coordinates the Offsite Response Organization (ORO) response (fire, ambulance, local law enforcement agencies (LLEA), and medical), access, and radiological controls with the onsite activities. Notification of an emergency declaration or change in classification is provided to the NJ OEM via the commercial telephone system. The State Police dispatching points receiving the notification are staffed on a 24-hour per day basis.

The response of the NJ OEM and local government agencies are in accordance with each agency's plans and procedures and are commensurate with the hazard posed by the emergency. The OROs listed below are capable of emergency response on a 24-hour per day basis.

5.2.1 Fire Department

The primary fire response and support is from the Forked River Volunteer Fire Department (FRVFD). The fire department is located approximately 2 miles from OCNGS, allowing for a timely response. Three additional fire departments located within 7 miles of the facility can provide additional support as necessary. New Jersey requires Mutual Aid Plans to be in place for coordinated fire support within Ocean County.

5.2.2 Ambulance Service

Arrangements are made for prompt ambulance transport of persons with injuries involving radioactivity to designated hospitals. Such service is available on a 24-hour per day basis and is confirmed by letter of agreement. Radiation monitoring services shall be provided by Oyster Creek whenever it becomes necessary to use the ambulance service for the transportation of contaminated persons.

5.2.3 Hospitals

OCNGS establishes communications with Southern Ocean Medical Center or Community Medical Center via commercial telephone. An agreement is in place with both Southern Ocean Medical Center and Community Medical Center for medical treatment of patients from OCNGS who have Injuries complicated by radioactive contamination. The hospitals have trained personnel and detailed procedures for handling radioactively contaminated patients from OCNGS.

5.2.4 Law Enforcement Agencies

Law enforcement support services are provided by the local law enforcement agency (LLEA), State, and Federal law enforcement authorities, as appropriate.

5.2.5 Nuclear Regulatory Commission

In the event of an emergency at the OCNGS ISFSI, the NRC Operations Center in Rockville, Maryland will be notified immediately after notification of NJ OEM and other local responders and not later than 60 minutes after an emergency declaration or change in classification. Classification and radiological information are communicated to this office over a commercial phone line or via a wireless system from the OCNGS ISFSI Emergency Response Facility (ERF).

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

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

6.0 EMERGENCY RESPONSE ORGANIZATION

Emergency Response Organization (ERO) responsibilities for emergency response are identified in Table 6-1, "Emergency Response Organization Staffing and Responsibilities."

6.1 On-Shift Positions

OCNGS maintains on-shift personnel capable of providing the initial response to an off-normal, natural phenomenon, or accident event on a 24-hour per day basis. Members of the on-shift organization are trained on their responsibilities and duties in the event of a declared emergency and are capable of performing all necessary response actions until any necessary augmenting staff arrives or the event is terminated. The on-shift staffing assignments include the roles and responsibilities for their emergency response functions.

6.1.1 ISFSI Shift Supervisor/Emergency Director

The ISS is at the OCNGS ISFSI on a 24-hour per day basis and is the senior management position during off-hours. This position is responsible for monitoring conditions and approving all onsite activities and has the requisite authority, management ability, technical knowledge, and staff to manage the site, emergency response, and recovery organizations.

The ISS has the responsibility and authority to declare an emergency and to initiate appropriate actions to mitigate the consequences of the emergency in accordance with written procedures. The ISS assumes the position of Emergency Director with overall command and control once an emergency classification has been made. The Emergency Director is responsible for the direction of the total emergency response effort and has the company authority to accomplish this responsibility.

The Emergency Director cannot delegate the following responsibilities:

- Classification of an event
- Approval of emergency notifications to New Jersey, and the NRC (although the task of making the notifications may be delegated)
- Authorization of radiation exposures in excess of 10 CFR Part 20 limits

The Emergency Director is responsible for assuring that appropriate corrective and protective actions are taken to mobilize emergency response personnel and for notifying management, OROs, and regulatory agencies, as necessary. Other responsibilities assumed by the Emergency Director associated with the functions listed in Table 6-1 include:

- Notification of the emergency classification to the NJ OEM and NRC
- Management of available station resources
- Initiation of mitigative actions
- Initiation of mitigative, corrective, and onsite protective actions
- Decision to call for LLEA, fire, or ambulance assistance
- Augmentation of the emergency staff, as deemed necessary
- Coordination of security activities
- Termination of the emergency condition when appropriate
- Performance of initial radiological assessment
- Maintaining a record of event activities
- Suspending security measures

6.1.2 Security

Security is maintained in accordance with the ISFSI Physical Security Plan. Security performs accountability as directed by the ISS or Emergency Director.

6.2 Augmented ERO Positions

OCNGS maintains the necessary personnel and resources to support the OCNGS ISFSI Emergency Director in responding to an emergency.

In addition to the resources listed below, additional personnel resources may be directed to report to the OCNGS ISFSI by the Emergency Director to provide additional support as needed to assess radiological conditions, support maintenance and repair activities, develop and implement corrective action plans, and assist with recovery actions. The augmentation personnel are available from OCNGS staff and can be requested from various contractors.

6.2.1 Resource Manager

The Resource Manager will be in contact with the Emergency Director within two (2) hours of an emergency declaration. The Resource Manager will augment the Emergency Director by assisting in the assessment of the emergency condition and coordinating any required resources, including serving as the public information interface. The Resource Manager does not need to physically report to OCNGS to perform the assigned responsibilities.

6.2.2 Augmented Responder

For a declared emergency involving radiological consequences, a minimum of one person trained in radiological monitoring and assessment will report to the OCNGS ISFSI within four (4) hours of the emergency declaration.

6.2.3 Offsite Response Organizations

Additional support is available from OROs, as described in Section 5.2 of this Plan.

6.3 Functional Responsibilities

Table 6-1 lists the functional responsibilities that fulfill emergency staffing capabilities.

TABLE 6-1

Emergency Response Organization Staffing and Responsibilities

FUNCTIONAL AREA	LOCATION	ON-SHIFT STAFF	AUGMENTED RESPONSE
Assessment of Condition (Emergency Declaration	Emergency Response Facility	Emergency Director	Resource Manager
Emergency Direction and Control	Emergency Response Facility	Emergency Director	---
Notifications / Communications	Emergency Response Facility	Emergency Director	---
Radiological Accident Assessment and Protective Actions	Emergency Response Facility / On Scene	Emergency Director	Resource Manager* Augmented Responder**
Corrective Actions	Emergency Response Facility / On Scene	Emergency Director	---
Fire Fighting	On Scene	Per Fire Protection Plan	Offsite Response Organization
Rescue and First Aid Treatment	On Scene	***	Offsite Response Organization
Site Access Control and Accountability	Security Station	Per ISFSI Physical Security Plan	---

* Augmented responder as described in Section 6.2
** As described in Section 6.2.2
*** Provided by on-shift personnel who may be assigned other functions.

7.0 EMERGENCY RESPONSE SUPPORT AND RESOURCES

Arrangements for requesting and effectively using resources have been made and other organizations capable of augmenting the planned response have been identified. Letters of Agreement are in place for those local organizations (fire, ambulance, LLEA, and medical) listed in Section 5.2 that will respond to an emergency at the OCNGS ISFSI. Letters of Agreement for each organization are maintained on file.

The Emergency Director coordinates the fire, ambulance, and LLEA response as previously discussed in Section 5.2.

The Emergency Director is authorized to request Federal assistance as needed. The NRC will act as the lead Federal agency providing coordination and support in response to an emergency at OCNGS as described in Section 5.2.5.

8.0 EMERGENCY CLASSIFICATION SYSTEM

A standard emergency classification and emergency action level scheme is in use. This section describes emergency classifications, Initiating Conditions (ICs), EALs, and postulated emergency situations.

8.1 Emergency Classification System

The emergency classification system covers the entire spectrum of possible radiological and non-radiological emergencies at the OCNGS ISFSI. The emergency classification system categorizes accidents and/or emergency situations into one of two emergency classification levels depending on emergency conditions at the time of the incident: Unusual Event and Alert. Each of these emergency classifications require notification to the ERO, NJ OEM and to the NRC.

The emergency classification system is based on NEI 99-01, "Development of Emergency Action Levels for Non-Passive Reactors", Revision 6. The classification system referenced in NEI 99-01, Revision 6 has been endorsed by the NRC and provides a standard method for classifying emergencies.

Once indications are available that an EAL is met, the event is classified, and the corresponding emergency classification level is promptly declared. Refer to the ISFSI Emergency Action Level Technical Bases for actual parameter values, and status used to classify emergencies.

Incidents may initially be classified as an Unusual Event and then escalated to an Alert if the situation deteriorates. The following Sections outline the actions at each emergency classification level.

Refer to the ISFSI EAL Technical Bases Document for actual parameter values and status used to classify emergencies.

8.1.1 Unusual Event

EVENTS ARE IN PROGRESS OR HAVE OCCURRED WHICH INDICATE A POTENTIAL DEGRADATION OF THE LEVEL OF SAFETY OF THE ISFSI OR INDICATE A SECURITY THREAT TO FACILITY PROTECTION

HAS BEEN INITIATED. NO RELEASES OF RADIOACTIVE MATERIAL REQUIRING OFFSITE RESPONSE OR MONITORING ARE EXPECTED UNLESS FURTHER DEGRADATION OF SAFETY SYSTEMS OCCURS.

The purpose of the Unusual Event declaration is to: 1) provide for an increased awareness of abnormal conditions; 2) provide for systematic handling of information and decision-making, and 3) augment on-shift personnel, if deemed necessary by the Resource Manager.

Upon declaration of an Unusual Event, offsite authorities shall be informed of the emergency declaration and the necessary documentation will be completed as specified in the EPIPs. The classification shall be maintained until the emergency is terminated or the emergency escalates to an Alert. If an escalation to an Alert occurs, offsite authorities will be informed of the change within 60 minutes of the change in classification.

8.1.2 Alert

EVENTS ARE IN PROGRESS OR HAVE OCCURRED WHICH INVOLVE AN ACTUAL OR POTENTIAL SUBSTANTIAL DEGRADATION OF THE LEVEL OF SAFETY OF THE 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.

The purpose of the Alert declaration is to: 1) perform event mitigation and radiation monitoring, if required, and 2) ensure that all necessary resources are being applied to accident mitigation.

Upon classification of an Alert, offsite authorities will be informed of the emergency and the necessary documentation will be completed as specified in the EPIPs. The classification shall be maintained until the emergency is terminated. OCNGS may enter Recovery operations while in the Alert classification.

8.2 Emergency Action Levels and Postulated Accidents

Both emergency classifications are characterized by EALs consisting of specific instrument readings and/or observations which indicate to the ISS that an IC has been met. These EALs are used to ensure that the initial classification of

emergencies can be accomplished rapidly, allowing for the prompt identification of the necessary mitigating actions.

EALs and ICs are provided under the following categories:

- ISFSI Malfunction
- Hazards and Other Conditions

The NUHOMS and Holtec HI-STORM FSARs describe the DBAs applicable to the OCNGS ISFSI and the radiological dose calculation results. Specific guidance for classifying emergencies is found in EPIPs and the ISFSI EAL Technical Bases Document.

The emergency classification system and the EALs are reviewed with the authorities of New Jersey on an annual basis.

9.0 NOTIFICATION METHODS AND PROCEDURES

Procedures are established for the prompt notification to NJ OEM and local organizations and for notification of OCNGS emergency personnel in the event of an emergency declaration. OCNGS has established the means for notification and dissemination of emergency messages. The content of initial and follow-up messages to response organizations has been established.

9.1 Basis for Notification

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

9.2 Emergency Messages

The Emergency Director is responsible for the notification of an emergency declaration to NJ OEM and the NRC within 60 minutes of the event classification or change in classification.

The format and content of the initial and follow-up messages to NJ OEM is specified in EPIPs and has been established with the review and agreement of responsible state authorities. The initial message contains the following information, as available:

- Identification of the facility
- Identification of the message sender
- Date and Time of the emergency declaration
- Emergency classification, including EAL
- Whether a release has occurred, is occurring, or is anticipated to occur
- Actual or projected dose rates at the Site boundary

Follow-up messages are provided as additional information describing the emergency situation becomes available, or as requested by NJ OEM, until such time that the emergency condition has been terminated.

9.3 Means of Providing Emergency Notification

Various communications systems, as described in Section 10.0 are available to perform emergency notifications. The Emergency Director is the primary individual for initiating notifications. However, the Emergency Director may designate an individual to perform the notifications. EPIPs and emergency telephone directories identify organizations and individuals to be notified and contain appropriate listings of telephone numbers.

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

9.3.1 New Jersey Office Of Emergency Management (NJ OEM)

Notification of an emergency declaration, and specific emergency information, is conveyed to the NJ OEM using the commercial telephone system. This system is available in the ERF on a 24-hour per day basis and is staffed continuously in the State Police dispatching points.

Other commercial means, including the use of wireless communications, will serve as a backup to the commercial telephone system.

9.3.2 NRC Event Notification

The NRC is notified immediately following notification of the NJ OEM and local government agencies, and not later than 60 minutes after the time of initial emergency declaration, escalation, termination, or entry into recovery phase. NRC notifications will be performed utilizing the commercial phone system.

9.3.3 ERO Notification

The Resource Manager is notified of an emergency declaration by an onsite announcement and the commercial telephone system, or other commercial means which may include land line and/or wireless devices. The Emergency Director is responsible for the notification to the Resource Manager. As described in Section 5.1 of this Plan, the on-shift staff positions are staffed on a 24-hour per day basis and can perform all required IOEP actions.

As described in Section 6.2, the Resource Manager will be in contact with the Emergency Director within two (2) hours of an emergency declaration. At the direction of the Emergency Director, additional personnel will be activated to augment the on-shift staff.

9.3.4 Notification of Offsite Response Organizations

The ORO support services described in Section 5.2 of this Plan are primarily notified of the need for assistance via 911 utilizing the commercial telephone system. Requests for ORO support services are the responsibility of the Emergency Director.

10.0 EMERGENCY COMMUNICATIONS

Provisions exist for prompt communications between principal response organizations and emergency response personnel. The communications systems listed in Table 10-1 provide 24-hour onsite and offsite communications capability allowing for prompt notification and activation of emergency personnel. In the event of an emergency declaration, these communications systems provide the appropriate means for alerting or activating emergency personnel in each response organization and allow continued means for contact throughout the emergency.

Communications systems providing the capability for onsite and offsite communications are tested to verify proper operation at the frequencies specified in Table 10-1. 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 a dedicated testing frequency is not needed. Functionality is verified through normal (frequent) use of the system.

TABLE 10-1

Communication Systems

Communication System	Testing Frequency
Commercial Telephone System	Weekly
Portable Radios	Frequent Use

11.0 PUBLIC INFORMATION

The Emergency Director or Resource Manager will notify the corporate public affairs office of an emergency declaration. Public affairs office personnel will monitor media activity and coordinate with senior management to address rumors and disseminate information to the public.

To ensure timely dissemination of information to the public, news conferences can be conducted onsite or at other locations, as necessary. Corporate public affairs personnel, or senior OCNGS or corporate management will represent the facility as the company spokesperson.

12.0 EMERGENCY FACILITY AND EQUIPMENT

Adequate emergency facilities and equipment to support the emergency response are provided and maintained. This section of the IOEP identifies and describes the ERF, assessment equipment, the first aid and medical facilities, and protective equipment and supplies that can be utilized during an emergency.

12.1 Emergency Response Facility

During an emergency, command and control functions are managed within the ERF. From this location, the Emergency Director (or other personnel, as directed} can assess ISFSI conditions; evaluate the magnitude and potential consequences of abnormal conditions; initiate preventative and corrective actions; and perform emergency notifications.

The ERF is staffed in accordance with Section 6.0 of this Plan. The facility provides sufficient space to accommodate anticipated response personnel and provides 24-hour availability of the communications systems specified in Section 10.0.

Radiological conditions resulting from the DBAs specified in the Holtec HI-STORM FSAR do not inhibit staffing of the ERF.

12.2 Emergency Equipment and Supplies

This section describes the monitoring instruments used to initiate emergency measures and provide continuing assessment of conditions throughout the course of an emergency.

12.2.1 Portable Radiation and Contamination Monitoring Instruments

OCNGS maintains portable radiation and contamination monitoring equipment necessary for monitoring the conditions of the ISFSI. These instruments are normally utilized and maintained by radiation monitoring personnel and are available for emergency use.

12.2.2 Communication Systems

Communications systems providing for 24-hour per day onsite and offsite communications capabilities are identified and tested as described in Section 10.0.

12.2.3 Emergency Supplies

Emergency equipment and supplies necessary to carry out the provisions of the IOEP and support procedures are maintained in the ERF.

Appendix A, "Emergency Equipment, Supplies, and Reference Materials," lists equipment, supplies, and. reference materials that are to be maintained in the ERF and other onsite locations.

13.0 ACCIDENT ASSESSMENT

Effective response to a potential emergency situation requires assessment to determine the nature of the emergency and its actual and potential consequences. OCNGS has established various methods to evaluate and monitor the effects of a potential emergency and has the appropriate means to ensure adequate assessment.

The assessment activities required to evaluate a particular emergency depend on the specific nature and classification of the emergency. The Emergency Director is responsible for the initial measurement of ISFSI dose rates after off-normal, natural phenomena, or accident events. The EALs identify the parameter value to determine the emergency condition. Classification of events is performed by the Emergency Director in accordance with the EAL scheme.

If the measured ISFSI dose rates exceed the EAL threshold, the Emergency Director ensures a radioactive release assessment in the vicinity of the affected storage module or cask is performed. After the assessment is complete, the Emergency Director contacts

the Resource Manager for assistance in interpreting the results of the radioactive release assessment.

Notification of the radiological release assessment is performed in accordance with Section 9.0.

14.0 PROTECTIVE ACTIONS

Protective actions for onsite personnel are provided for their health and safety. Implementation guidelines for onsite protective actions are provided in EPIPs. Additionally, implementing procedures provide for a range of protective actions to protect onsite personnel during hostile actions.

14.1 Accountability

The Emergency Director has the authority to initiate personnel accountability.

Accountability should be considered and used as a protective action whenever a risk to health or safety exists, or at the discretion of the Emergency Director. If personnel accountability is required, at the direction of the Emergency Director, all individuals at the facility (including employees without emergency assignments, visitors, and contractor personnel) shall be notified of the emergency and provided with instructions.

Accountability of all personnel inside the ISFSI Protected Area should be accomplished within 60 minutes after event declaration and maintained thereafter at the discretion of the Emergency Director. Following announcement of an emergency declaration, onsite personnel are responsible for reporting to designated areas and aiding the accountability process. If personnel are not accounted for, the Emergency Director is notified, and onsite announcements are made. If personnel are still unaccounted for following the onsite announcements, Security will initiate sweeps to locate the missing individual(s).

Accountability may be modified or suspended if the safety of personnel could be jeopardized by a security event or other event hazardous to personnel health and safety.

14.2 Personnel and Visitors Located Outside the ISFSI Protected Area

Other areas within the Site Boundary may be affected by the need to relocate personnel. If required, the Emergency Director will determine the specific areas requiring protective actions. Personnel and visitors located outside of the ISFSI Protected Area but within the Site Boundary, will be directed to report to an assembly area or exit the site as appropriate, in accordance with EPIPs. The

Emergency Director is responsible for controlling access to the site when the IOEP is activated.

15.0 RADIOLOGICAL EXPOSURE CONTROL

The means for controlling radiological exposures during an emergency are established for emergency workers. The means for controlling radiological exposures include exposure guidelines consistent with the Environmental Protection Agency's (EPA) Emergency Worker and Lifesaving Activity Protective Action Guides (PAGs).

15.1 Exposure Guidelines

During an emergency, doses above normal occupational radiation exposure limits may be authorized by the Emergency Director for activities such as saving a life, preservation of valuable equipment, or controlling exposure.

All reasonable measures shall be taken to control the radiation exposure to emergency response personnel providing rescue, first aid, decontamination, emergency transportation, medical treatment services, corrective actions, or assessment actions within applicable limits specified in 10 CFR Part 20. The Emergency Director is responsible for authorizing emergency response personnel to receive doses in excess of 10 CFR Part 20 limits. This authority cannot be delegated.

Table 15-1 contains the guidelines for emergency exposure criteria, which is consistent with Table 2-2, "Response Worker Guidelines," of the EPA's "Protective Action Guide and Planning Guidance for Radiological Incidents."

15.2 Radiation Protection

OCNGS maintains a radiological exposure control program to ensure that protection against radiological exposure, as set forth in 10 CFR Part 20, is provided. Exposure to individuals providing emergency functions will be consistent with the limits specified in Table 15-1 with every attempt, made to keep exposures As Low As Reasonably Achievable (ALARA).

15.2.1 Access Control

During a classified emergency, radiological surveys of the ISFSI and its immediate vicinity will be performed to determine the extent of the radiological concern. The Emergency Director will ensure Radiological Control Areas (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 personnel exposure.

15.2.2 Personnel Exposure Monitoring

Personal dosimeters are utilized to monitor the exposure of personnel during normal or emergency conditions. Adequate supplies of dosimeters are maintained for use during an emergency. Procedures describe the types of personal dosimeter devices, the manner in which they are1:to be used, who is to wear them, and how they are to be cared for.

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

15.3 Personnel Contamination Control

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

All personnel are monitored for radioactive contamination prior to leaving the site. Portable contamination monitoring instruments are available to frisk personnel for potential contamination.

During normal or emergency conditions, contamination should be removed from any part of a person's body prior to leaving the RCA. All personnel decontamination, including during an emergency, will be performed in accordance with established Radiation Protection procedures.

Documentation of surveys, contamination, and decontamination activities shall be maintained in accordance with Radiation Protection procedures.

TABLE 15-1

Response Worker Emergency Dose Limits

Guideline	Activity	Condition
5 Rem	All occupational exposures	All reasonably achievable actions have been taken to minimize dose.
10 Rem (a)	Protecting valuable property necessary for public welfare	Exceeding 5 rem unavoidable and all appropriate actions taken to reduce dose. Monitoring available to project or measure dose.
25 Rem (b)(c)	Lifesaving or protection of large populations	Exceeding 5 rem unavoidable and all appropriate actions taken to reduce dose. Monitoring available to project or measure dose.

(a) For potential doses > 5 rem, medical monitoring programs should be considered.

(b) In the case of a very large incident, consider the need to raise the property and lifesaving Response Worker Guideline to prevent further loss.

(c) Response actions that could cause exposures in excess of the 25 rem should only be undertaken with an understanding of the potential acute effects of radiation to the exposed responder and only when the benefits of the action clearly exceed the associated risks.

Note 1: Reference for this table is Table 2-2 of the EPA PAG Manual.

Note 2: The dose limits in Table 15-1 are in addition to any annual occupational dose already received.

16.0 MEDICAL AND HEALTH SUPPORT

Arrangements are made for medical services for injured individuals and/or contaminated injured individuals. OCNGS maintains on-shift personnel and supplies to provide first-aid for personnel working at the site. Medical emergency supplies are located in various locations.

If immediate professional medical help is required, arrangements exist with local ambulance and medical services to assist in the transport and treatment of injured personnel, as described in Section 5.2. Assistance is requested via 911 utilizing the commercial telephone system.

16.1 Onsite First Aid

First aid assistance at the OCNGS ISFSI is designed to address a wide range of common injuries. This task is accomplished by on-site individuals trained in basic first aid.

16.2 Medical Transportation

Lacey Township First Aid Squad and Lanoka Harbor First Aid Squad are the local 24-hour per day ambulance dispatch services. They will provide emergency transportation of personnel for offsite treatment, including the transport of contaminated injured workers. Transportation is also available via OCNGS vehicles or private vehicles, if necessary.

When personnel are transported to Southern Ocean Medical Center or Community Medical Center in a contaminated condition, personnel trained in radiological monitoring will be dispatched to monitor and maintain radiological controls.

16.3 Offsite Medical Support

Southern Ocean Medical Center or Community Medical Center both accepts and treats personnel with routine industrial injuries as well as injuries complicated by radioactive contamination or radiation exposure. Each hospital maintains the capability and facilities to provide radioactive decontamination. These services and facilities are available 24 hours per day.

17.0 EMERGENCY TERMINATION AND RECOVERY

OCNGS has established general plans described in the following sections to address recovery from potential emergencies at the OCNGS ISFSI. The recovery organization will be based on the normal OCNGS ISFSI organization. The senior management position directs the recovery organization and is responsible for:

- Ensuring the OCNGS ISFSI is maintained in a safe condition;
- Managing onsite recovery activities during the initial recovery phase;

- Keeping corporate support apprised of OCNGS ISFSI activities and requirements.

17.1 Emergency Termination and Notification

Termination of a declared emergency is the responsibility of the Emergency Director. The Emergency Director is also responsible for providing notification of the emergency termination and initiation of recovery operations to NJ OEM, OCNGS ISFSI personnel, the NRC, and other organizations that may be providing on-site support.

At the discretion of the Emergency Director, OCNGS may enter recovery operations and the ISFSI could be returned to a stable condition before terminating the emergency.

17.2 Recovery Operations

OCNGS is responsible for recovery measures and restoring the ISFSI to a stable condition. In an emergency event, immediate response actions are directed towards limiting the consequences of the emergency in a manner that will afford maximum protection to onsite personnel. Once the immediate assessment and protective actions have been implemented, the restoration and recovery measures can be initiated.

The extent and nature of the corrective and protective actions and the extent of recovery will depend on the emergency conditions and the status of the ISFSI. The general goals for recovery include:

- An orderly evaluation of the cause and effect of the emergency and implementation of solutions to prevent immediate recurrence of the incident
- A planned approach for returning the ISFSI to a stable condition by obtaining the appropriate resources, materials, and equipment
- A planned approach to coordinate with offsite authorities to identify and resolve situations that may impact the general public
- An evaluation of the radiation exposure records for all onsite emergency response personnel involved in the incident
- A planned approach to ensure that radiation exposures and contamination controls are consistent with the ALARA program

ISFSI recovery activities shall be in accordance with the ISFSI Technical Specifications and other licensee documents. During ISFSI recovery, the radiation exposure limits of 10 CFR Part 20 shall apply.

- If, during recovery operations, an emergency situation occurs, recovery efforts will be suspended until the emergency condition is resolved. The Emergency Director will re-evaluate ISFSI conditions prior to resuming recovery.

17.3 Termination of Recovery Operations

The recovery operations will be terminated by OCNGS's senior management position directing the recovery organization after the ISFSI is returned to a stable condition.

18.0 EXERCISES AND DRILLS

Periodic exercises are conducted to evaluate major portions of OCNGS's emergency response capabilities. Periodic drills are conducted to develop and maintain key skills. Deficiencies as a result of exercises or drills are identified and corrected.

An exercise tests the execution of the overall emergency preparedness and the integration of this preparedness. A drill is a supervised instruction period aimed at testing, developing, and maintaining skills in a particular response function. A summary of exercises and drills, including the associated elements for each, is outlined below.

18.1 Emergency Plan Exercises and Drills

A Biennial Exercise is conducted for the purposes of testing: 1) the adequacy of timing and content of implementing procedures and methods; 2) emergency equipment and communication networks, and; 3) to ensure that emergency personnel are familiar with their duties. OCNGS offers the following organizations the opportunity to participate to the extent that their assistance would be expected during an emergency declaration. However, participation is not required.

- NJ OEM
- Forked River Volunteer Fire Department, Bayville, Lanoka Harbor
- Southern Ocean Medical Center
- Community Medical Center
- LLEAs

At least one drill involving a combination of some' of the principal functional areas of emergency response shall be conducted in the interval between Biennial Exercises for the purpose of testing, developing, and maintaining the proficiency of emergency responders.

Exercise and Drill scenarios will include, at a minimum, the following:

- The basic objective(s) of the exercise/drill
- The date(s), time period, place(s), and participating organizations
- A time schedule of real and simulated events
- A narrative summary describing the conduct of the drill to include such items as simulated casualties, offsite fire assistance, rescue of personnel, and use of protective clothing

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

18.2 Equipment and Proficiency Drills

Drills are conducted for the purpose of training, developing, and maintaining the proficiency of emergency responders. Additionally, drills may be used to test and evaluate the adequacy of the ERF, equipment, procedures, communication channels, actions of emergency response personnel, and coordination between OROs and the facility.

18.2.1 Communication Drills

To ensure that emergency communications systems described in Section 10.0 are operable, communications tests are conducted as outlined below.

1. To test the capability to notify NJ OEM utilizing commercial telephone system, the capability is functionally tested annually. This drill will include the aspect of understanding the content of the message.
2. To test the capability to communicate with the NRC, communication systems are tested annually.
3. The following communications systems, as detailed in Section 10.0, are used on a frequent basis, therefore periodic testing of these systems is not necessary:
    - Commercial Telephone System

- Portable Radios

Performance of the Communication Drills satisfies the testing requirements specified in Section 10.0.

18.2.2 Staff Augmentation Drills

An unannounced, off-shift, staff augmentation drill shall be conducted annually. These drills shall involve implementation of the ERO callout system procedure and documentation of the estimated response time for each responder. This drill shall serve to demonstrate the capability to augment the Emergency Director after an emergency declaration.

18.2.3 Radiological Monitoring Drills

Radiological monitoring drills are conducted annually. These drills demonstrate the ability to perform radiological survey and assessment and can be performed separately or as part of an Emergency Plan exercise or drill.

18.2.4 Medical Emergency Drills

To evaluate the training of medical response personnel, a medical drill is conducted annually involving a simulated contaminated injured individual and may also contain provisions for participation by local fire department(s) and hospital(s) This drill may be performed separately or as part of the Biennial Exercise.

18.2.5 Fire Drills

Fire Drill are conducted in accordance with the OCNGS Fire Protection Program.

18.3 Critique Evaluation

Critiques are used to evaluate the performance of participating facility personnel and the adequacy of the ERF, equipment, and procedures. The ability of emergency response personnel to self-evaluate weaknesses and identify areas for improvement is key to successful exercise or drill conduct.

Exercise and drill performance objectives are evaluated against measurable demonstration criteria. As soon as possible 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 associated procedures.

Deficiencies identified during exercises or drills are entered into the corrective actions program.

A written 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 actions and recommendations for revisions to the IOEP, EPIPs and/or the upgrade of emergency equipment and supplies resulting from the exercise or drill.

19.0 RADIOLOGICAL EMERGENCY RESPONSE TRAINING

Radiological emergency response training is provided to those who may be called on to assist in an emergency. All personnel at the OCNGS ISFSI who fill required positions in the ERO will take part in a training program to ensure adequate preparedness to assist in an emergency situation. OROs that may be called upon for emergency assistance will also be invited to participate in appropriate training programs.

19.1 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. The training program for emergency response personnel is based on position-specific responsibilities as defined in the IOEP. Emergency response personnel in the following categories receive initial training and annual retraining:

19.1.1 ISFSI Shift Supervisors/Emergency Directors and Resource Managers

The ISS/Emergency Directors and Resource Managers shall have training conducted such that proficiency is maintained on the topics listed below. These subjects shall be covered as a minimum on an annual basis.

- EAL classification
- Offsite notification procedures
- ERO activation
- Dose rate meter operation
- Radioactive release assessment
- Emergency exposure control
- Protective actions for onsite personnel

- ISFSI DBAs
- Review of applicable drill and exercise-identified deficiencies

Personnel available during declared emergencies who may be called upon to perform emergency response activities as an extension of their normal duties receive duty-specific training. Additional emergency preparedness training is provided as part of annual access training.

19.1.2 First Aid Personnel

First Aid training is provided to personnel assigned on-shift in accordance with site training and qualification plan.

19.1.2 Radiation Monitoring Personnel

Radiation monitoring personnel shall have training conducted such that proficiency is maintained on the topics listed below. These subjects shall be covered as a minimum on an annual basis.

- Use of Radiation Protection procedures
- Use of emergency survey equipment
- Communications
- Field Surveys
- Role of dose assessment in an emergency
- Monitoring of radioactive releases
- Protective actions for onsite personnel
- Review of applicable drill and exercise-identified deficiencies

19.1.4 Personnel Badged for Unescorted Access

Personnel who are badged for unescorted access receive access training annually. Information pertaining to their safety and the safety of visitors under escort during a classified emergency is included in this training.

Access training shall include the following emergency preparedness topics:

- Basic Emergency Plan and implementing preparedness topics
- Emergency classification levels

- Call out of personnel during an emergency
- Personnel accountability procedures

19.2 Non-OCNGS Emergency Response Support Organizations

Training is offered annually to OROs that may be requested to provide assistance in the event of an emergency at the OCNGS ISFSI (e.g., law enforcement, firefighting, rescue, medical services, transport of injured, etc.). The training shall be structured to meet the needs of the particular organization with respect to the nature of their support. Training topics such as event notification, site access procedures, basic radiation protection, and interface activities between the ORO and OCNGS are included in the training.

19.3 Annual Emergency Action Level Training

The emergency classification system specified in Section 8.0 and the EALs are reviewed with the authorities of New Jersey, annually.

20.0 RESPONSIBILITY FOR THE PLANNING EFFORT: DEVELOPMENT, PERIODIC REVIEW, AND DISTRIBUTION

Responsibilities for IOEP development and review and for distribution of the IOEP are established and planners are properly trained.

20.1 Emergency Preparedness Responsibilities

20.1.1 Overall Authority and Responsibility

A member of OCNGS senior management has the overall authority and responsibility for emergency response planning and implementation of the IOEP. This responsibility includes ensuring that the emergency preparedness program is maintained and implemented as described in the IOEP, and that applicable requirements and regulations are met.

20.1.2 Maintaining the IOEP

The OCNGS ISFSI senior management position is responsible for maintaining an adequate knowledge of emergency preparedness regulations, emergency planning techniques, and the latest applications of emergency equipment and supplies. The position is responsible for the following tasks:

- Maintaining and updating this Plan and associated procedures
- Ensuring exercise and drill commitments stated in this Plan are met
- Ensuring material readiness of the ERF
- Overseeing the Emergency Preparedness Training Program
- Maintaining Emergency Preparedness interfaces with OROs
- Performing and documenting appropriate evaluations of the Emergency Preparedness program and classified emergency events

Individuals assigned the duties of maintaining the IOEP are required to maintain an adequate knowledge of regulations, planning techniques, and the latest applications of emergency equipment and supplies. Training for these individuals includes 10 CFR 50.54(q) Evaluation Qualification.

20.1.3 Audits

Independent audits of the emergency preparedness program meeting the requirements of 10 CFR 50.54(t) will be performed. All aspects of emergency preparedness, including exercise documentation, capabilities, procedures, and interfaces with state and local governments are audited.

20.2 Review and Updating of the IOEP

The IOEP, the associated EPIPs, and the ISFSI Only EAL Technical Bases Documents are reviewed at least annually, and updated as needed, in accordance with the requirements of 10 CFR 50.54(q). The review shall encompass the need for changes based upon the following:

- Written critiques and evaluations of drills and exercises
- Changes in the organizational structure
- Changes in the functions and capabilities of supporting agencies
- Changes in Federal or State regulations
- Modifications to the facility which would affect emergency planning
- Recommendations or agreement changes received from other organizations

Any changes shall be incorporated in the IOEP, EPIPs, and the ISFSI Only EAL Technical Bases Document. Proposed activities that may impact the IOEP must be evaluated per 10 CFR 50.54(q).

20.2.1 Emergency Telephone Directory

Names and telephone numbers of the ERO and supporting OROs shall be reviewed at least annually and updated as necessary).

20.2.1 Letters of Agreement

Written agreements with outside support organizations are evaluated biennially to determine if these agreements remain valid. If agreements are determined to no longer be valid, then they are updated and renewed with the applicable organization.

20.3 Training

The Emergency Preparedness position shall assist senior management in coordinating and/or providing emergency planning-related training. The position shall ensure that the training described in Section 19.0 is properly coordinated to ensure adequate qualifications, training, and retraining of personnel.

20.4 Maintenance and Inventory of Emergency Equipment and Supplies

Specific emergency response equipment and reference materials are listed in Appendix A. The items listed in Appendix A are inspected, inventoried, and operationally checked quarterly and after each use. Sufficient reserves are maintained to replace those which are removed for calibration or repair. Equipment in these inventories is checked and calibrated in accordance with approved procedures.

APPENDIX A

EMERGENCY EQUIPMENT, SUPPLIES, AND REFERENCE MATERIALS

APPENDIX A

EMERGENCY EQUIPMENT, SUPPLIES AND REFERENCE MATERIALS

EMERGENCY RESPONSE FACILITY

Procedures / Reference Materials

- ISFSI Only Emergency Plan
- ISFSI Only EAL Technical Bases Document
- Emergency Telephone Directory
- EPIPs

Equipment

- Portable radiation monitoring instrument
- Portable emergency lighting
- Medical emergency response kit

ONSITE LOCATIONS

Equipment / Supplies

- Portable radiation and contamination monitoring instruments
- Contamination control supplies
- Decontamination control supplies
- Protective clothing
- Dosimeters
- Radiological postings and barricades

APPENDIX B

CROSS-REFERENCE IOEP SECTION TO PLANNING STANDARDS/REQUIREMENTS/CRITERIA AND EPIPS

APPENDIX B

CROSS-REFERENCE BETWEEN THE PDEP, NUREG-0654/FEMA-REP-1, 10 CFR 50.47(b) PLANNING STANDARDS, AND APPENDIX E.IV PLANNING REQUIREMENTS

IOEP Section	Planning Standard (10CFR50.47)**	Planning Requirement (Appendix E.IV)**	NUREG-0654 Section II Evaluation Criteria	Procedure
5.0	(b)(1)	A.1,2,4,7	A	TBD
6.0	(b)(2)	A.1,2,4,9; C.1	B	TBD
7.0	(b)(3)	A.6,7	C	TBD
8.0	(b)(4)	B.1,2;C.1,2	D	TBD
9.0	(b)(5)	A.6,7;C.1,2;D.1,3;E	E	TBD
10.0	(b)(6)	C.1;D.1,3;E	F	TBD
11.0	(b)(7)	Exempt	G	TBD
12.0	(b)(8)	E;G	H	TBD
13.0	(b)(9)	A.4;B.1;C.2;E	I	TBD
14.0	(b)(10)	C.1;E;I	J	TBD
15.0	(b)(11)	E	K	TBD
16.0	(b)(12)	A.6,7;E	L	TBD
17.0	(b)(13)	H	M	TBD
18.0	(b)(14)	E9;F	N	TBD
19.0	(b)(15)	F	O	TBD
20.0	(b)(16)	G	P	TBD
**as exempted				

HOLTEC
DECOMMISSIONING
INTERNATIONAL

Krishna P. Singh Technology Campus, 1 Holtec Blvd., Camden, NJ 08104
Telephone (856) 797-0900
Fax (856) 797-0909

Letter Number HDI-OC-20-099

Enclosure 1 Attachment 2

OYSTER CREEK ISFSI ONLY

EMERGENCY ACTION LEVELS AND TECHNICAL BASES

(25 pages follow**)**

SUMMARY OF REVISIONS

Revision 0 Initial Issue: xx, 2021

1.0 PURPOSE

This document provides the detailed set of Emergency Action Levels (EALs) applicable to the Oyster Creek Nuclear Generating Station (OCNGS) when all nuclear fuel has been located at the Independent Spent Fuel Storage Installation (ISFSI) and the associated Technical Bases using the EAL development methodology found in NEI 99-01, "Development of Emergency Action Levels for Non-Passive Reactors," Revision 6 (NEI 99-01, Appendix C, Rev. 6). As a permanently defueled facility, OCNGS will use the Recognition Category "PD" (Permanently Defueled) to provide a site-specific emergency classification scheme including a set of Initiating Conditions (ICs) and EALs associated with the permanently defueled condition and Recognition Category "E" ICs for the ISFSI. Permanently defueled station ICs and EALs are addressed in Appendix C of NEI 99-01, Rev. 6. All recommendations for changes to this document or associated implementing procedures are reviewed in accordance with 10 CFR 50.54(q).

This document should be used to facilitate review of the OCNGS EALs, provide historical documentation for future reference, and serve as a resource for training. Individuals responsible for the classification of events will refer to the ICs and EALs contained in the matrix of this document. They may use the information in the associated "Basis" and "Notes" sections as a reference in support of EAL interpretation. An EAL matrix may be provided as a user aid.

Emergency classifications are to be made as soon as conditions are present and recognizable for the classification in accordance with the applicable EALs; but within 30 minutes in all cases after the availability of indications to operators that an EAL threshold has been reached. Use of this document for assistance is not intended to delay the emergency classification.

2.0 DISCUSSION

2.1. Permanently Defueled Facility

NEI 99-01, Appendix C, Rev. 6, provides guidance for an emergency classification scheme applicable to a permanently defueled facility. This is a facility that generated spent fuel under a 10 CFR Part 50 license, has permanently ceased operations and will store the spent fuel onsite for an extended period of time. The emergency classification levels applicable to permanently defueled facility are consistent with the requirements of 10 CFR Part 50 and NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, Rev. 1" (NUREG-0654).

The NRC has approved specific exemptions to Emergency Planning regulations for OCNGS confirming that no credible event can result in a significant radiological release beyond the site boundary. There is no source term and motive force available in the permanently defueled condition to warrant classifications of a Site Area Emergency or General Emergency.

Therefore, the generic ICs and EALs applicable to a permanently defueled facility may only result in either a Notification of UNUSUAL EVENT (UNUSUAL EVENT) or ALERT classification.

2.2. Independent Spent Fuel Storage Installation

Selected guidance in NEI 99-01, Rev. 6, is applicable to licensees electing to use their 10 CFR Part 50 emergency plan to fulfill the requirements of 10 CFR 72.32 for a stand-alone Independent Spent Fuel Storage Installation (ISFSI). The emergency classification levels applicable to an ISFSI are consistent with the requirements of 10 CFR Part 50. The initiating conditions germane to a 10 CFR 72.32 emergency plan (as described in NUREG-1567, "Spent Fuel Dry Storage Facilities") are subsumed within the classification scheme for a 10 CFR 50.47 emergency plan.

The analysis of potential onsite and offsite consequences of accidental releases associated with the operation of an ISFSI is contained in NUREG-1140, "A Regulatory Analysis on Emergency Preparedness for Fuel Cycle and Other Radioactive Material Licensees" (NUREG-1140). NUREG-1140 concluded that the postulated worst-case accident involving an ISFSI has insignificant consequences to public health and safety. This evaluation shows that the maximum offsite dose to a member of the public due to an accidental release of radioactive materials would not exceed 1 rem Total Effective Dose Equivalent.

Regarding the above information, the expectations for an offsite response to an ALERT classified under a 10 CFR 72.32 emergency plan are generally consistent with those for an UNUSUAL EVENT in a 10 CFR 50.47 emergency plan (e.g., to provide assistance if

requested). Also, the licensee's Emergency Response Organization (ERO) required for 10 CFR 72.32 emergency plan is different from that prescribed for a 10 CFR 50.47 emergency plan (e.g., there is no emergency technical support function required).

3.0 KEY TERMINOLOGY USED

There are several key terms that appear throughout the NEI 99-01, Rev. 6, methodology. These terms are introduced in this section to support understanding of subsequent material.

3.1 Emergency Classification Levels (ECLs)

One of a set of names or titles established by the U.S. Nuclear Regulatory Commission (NRC) for grouping off-normal events or conditions according to (1) potential or actual effects or consequences, and (2) resulting onsite and offsite response actions. The ECLs that remain applicable to OCNGS, in ascending order of severity, are:

3.1.1 UNUSUAL EVENT (UE)

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 releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

Purpose: The purpose of this classification is to assure that the first step in future response has been carried out, to bring the operations staff to a state of readiness, and to provide systematic handling of UNUSUAL EVENT information and decision-making.

3.1.2 ALERT

Events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the facility or a security event that involves probable life-threatening risk to site personnel or damage to site equipment because of HOSTILE ACTION. Any releases are expected to be limited to small fractions of the Environmental Protection Agency (EPA) Protective Action Guides (PAG) exposure levels.

Purpose: The purpose of this classification is to assure that emergency personnel are readily available to respond if the situation becomes more serious or to perform confirmatory radiation monitoring if required, and provide offsite authorities current information on facility status and parameters.

3.2 Initiating Condition (IC)

An event or condition that aligns with the definition of one of the two ECLs by virtue of the potential or actual effects or consequences.

Discussion: An IC describes an event or condition, the severity or consequences of which meets the definition of an ECL. An IC can be expressed as a continuous, measurable parameter (e.g., radiation monitor readings) or an event (e.g., an earthquake).

Appendix 1 of NUREG-0654 does not contain example EALs for each ECL, but rather ICs (i.e., conditions that indicate that a radiological emergency, or events that could lead to a radiological emergency, have occurred). NUREG-0654 states that the ICs form the basis for establishment by a licensee of the specific facility instrumentation readings (as applicable) which, if exceeded, would initiate the emergency classification. Thus, it is the specific instrument readings that would be the EALs.

3.3 Emergency Action Level (EALs)

A pre-determined, site-specific, observable threshold for an IC that, when met or exceeded, places the facility in a given ECL.

Discussion: EAL statements may utilize a variety of criteria including instrument readings and status indications, observable events, results of calculations and analyses, entry into particular procedures, and the occurrence of natural phenomena.

4 GUIDANCE ON MAKING EMERGENCY CLASSIFICATIONS

4.1 General Considerations

When making an emergency classification, the Emergency Director must consider all information having a bearing on the proper assessment of an IC. This includes the EAL plus Notes and the informing Basis information.

All emergency classification assessments should 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. For example, validation could be accomplished through an instrument channel check, response on related or redundant indicators, or direct observation by personnel. The validation of indications should be completed in a manner that supports timely emergency declaration.

For ICs and EALs that have a stipulated time duration (e.g., 15 minutes, 60 minutes, etc.), the Emergency Director should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the condition has exceeded, or will likely exceed, the applicable time. If an ongoing radiological release is detected and the release start time is unknown, it should be assumed that the release duration specified in the IC/EAL has been exceeded, absent data to the contrary.

A planned work activity that results in an expected event or condition which meets or exceeds an EAL does not warrant an emergency declaration provided that 1) the activity proceeds as planned and 2) the facility remains within the limits imposed by the operating license. Such activities include planned work to test, manipulate, repair, maintain, or modify a system or component. In these cases, the controls associated with the planning, preparation, and execution of the work will ensure that compliance is maintained with all aspects of the operating license provided that the activity proceeds and concludes as expected. Events or conditions of this type may be subject to the reporting requirements of 10 CFR 50.72.

The assessment of some EALs is based on the results of analyses that are necessary to ascertain whether a specific EAL threshold has been exceeded (e.g., gaseous and liquid effluent sampling, etc.); the EAL and/or the associated basis discussion will identify the necessary analysis. In these cases, the declaration period starts with the availability of the analysis results that show the threshold to be exceeded (i.e., this is the time that the EAL information is first available).

While the EALs have been developed to address a full spectrum of possible events and conditions which may warrant emergency classification, a provision for classification based on operator/management experience and judgment is still necessary. The NEI 99-01, Rev. 6, scheme provides the Emergency Director with the ability to classify events and conditions

based upon judgment using EALs that are consistent with the ECL definitions (refer to PD-HU3 and PD-HA3). The Emergency Director will need to determine if the effects or consequences of the event or condition reasonably meet or exceed a particular ECL definition.

4.2 Classification Methodology

To make an emergency classification, the user will compare an event or condition (i.e., the relevant facility indications and reports) to an EAL(s) and determine if the EAL has been met or exceeded. The evaluation of an EAL(s) must be consistent with the Notes. If an EAL has been met or exceeded, then the IC is considered met and the associated ECL is declared in accordance with facility procedures.

When assessing an EAL that specifies a time duration for the off-normal condition, the EAL time duration runs concurrently with the emergency classification time duration.

4.3 Classification of Multiple Events and Conditions

When multiple emergency events or conditions are present, the user will identify all met or exceeded EALs. The highest applicable ECL identified during this review is declared. For example:

- If an UNUSUAL EVENT EAL and an ALERT EAL are met, an ALERT should be declared.

There is no "additive" effect from multiple EALs meeting the same ECL. For example:

- If two UNUSUAL EVENT EALs are met, an UNUSUAL EVENT should be declared.

Related guidance concerning classification of rapidly escalating events or conditions is provided in Regulatory Issue Summary (RIS) 2007-02, "Clarification of NRC Guidance for Emergency Notifications During Quickly Changing Events."

4.4 Classification of Imminent Conditions

Although EALs provide specific thresholds, the Emergency Director must remain alert to events or conditions that could lead to meeting or exceeding an EAL within a relatively short period of time (i.e., a change in the ECL is Imminent). If, in the judgment of the Emergency Director, meeting an EAL is Imminent, the emergency classification should be made as if the EAL has been met. While applicable to all ECLs, this approach is particularly important at the higher ECL since it provides additional time for implementation of protective measures.

4.5 Emergency Classification Level Upgrading and Termination

An ECL may be terminated when the event or condition that meets the IC and EAL no longer exists. Events will not be downgraded.

As noted above, guidance concerning classification of rapidly escalating events or conditions is provided in RIS 2007-02.

4.6 Classification of Short-Lived Events

Event-based ICs and EALs define a variety of specific occurrences that have potential or actual safety significance. By their nature, some of these events may be short-lived and, thus, over before the emergency classification assessment can be completed. If an event occurs that meets or exceeds an EAL, the associated ECL must be declared regardless of its continued presence at the time of declaration. Examples of such events would be an earthquake or explosion.

4.7 Classification of Transient Conditions

It is important to stress that the emergency classification assessment period is not a "grace period" during which a classification may be delayed to allow the performance of a corrective action that would obviate the need to classify the event; emergency classification assessments must be deliberate and timely, with no undue delays.

4.8 After-the-Fact Discovery of an Emergency Event or Condition

In some cases, an EAL may be met but the emergency classification was not made at the time of the event or condition. This situation can occur when personnel discover that an event or condition existed which met an EAL, but no emergency was declared, and the event or condition no longer exists at the time of discovery. This may be due to the event or condition not being recognized at the time or an error that was made in the emergency classification process.

In these cases, no emergency declaration is warranted; however, the guidance contained in NUREG-1022, "Event Report Guidelines 10 CFR 50.72 and 50.73," is applicable. Specifically, the event should be reported to the NRC in accordance with 10 CFR 50.72 within one hour of the discovery of the undeclared event or condition. The licensee should also notify appropriate State and local agencies in accordance with the agreed upon arrangements.

4.9 Retraction of an Emergency Declaration

Guidance on the retraction of an emergency declaration reported to the NRC is discussed in NUREG-1022.

5 REFERENCES

5.1 Developmental

5.1.1 NEI 99-01 Revision 6, Development of Emergency Action Levels for Non-Passive Reactors, November 2012

5.1.2 10 CFR Part 50, Domestic Licensing of Production and Utilization Facilities

5.1.3 RIS 2007-02, Clarification of NRC Guidance for Emergency Notifications During Quickly Changing Events, February 2007

5.1.4 NUREG-1022, Event Reporting Guidelines 10 CFR 50.72 and 50.73

5.1.5 10 CFR 50.72, Immediate Notification Requirements for Operating Nuclear Power Reactors

5.1.6 NUREG-0654/FEMA-REP-1, Rev. 1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants

5.1.7 10 CFR 72.32, Emergency Plan

5.1.8 NUREG-1567, Spent Fuel Dry Storage Facilities

5.1.9 10 CFR 50.47, Emergency Plans

5.1.10 NUREG-1140, A Regulatory Analysis on Emergency Preparedness for Fuel Cycle and Other Radioactive Material Licensees

5.2 Implementing

5.2.1 HDI-OC-EP-001, ISFSI Only Emergency Plan

5.2.2 HDI-OC-EP-002, Emergency Action Levels and Technical Bases

5.3 Commitments

None

6 ACRONYMS & DEFINITIONS

6.1 Acronyms

ABN ..... Abnormal Operating Procedure
CDE ..... Committed Dose Equivalent
CFR ..... Code of Federal Regulations
cpm ..... Counts per Minute
EAL ..... Emergency Action Level
ECL ..... Emergency Classification Level
EPA ..... Environmental Protection Agency
FAA ..... Federal Aviation Administration
FBI ..... Federal Bureau of Investigation
FEMA ..... Federal Emergency Management Agency
HSM ..... Horizontal Storage Module
ISFSI ..... Independent Spent Fuel Storage Installation
IC..... Initiating Condition
mRem ..... milli-Roentgen Equivalent Man
MSL ..... Mean Sea Level
NEI ..... Nuclear Energy Institute
NORAD ..... North American Aerospace Defense Command
NRC ..... Nuclear Regulatory Commission
ODCM ..... Off-site Dose Calculation Manual
PAG ..... Protective Action Guide
PD ..... Permanently Defueled
rem ..... Roentgen Equivalent Man
TEDE ..... Total Effective Dose Equivalent
µCi/cc.....micro Curies per Cubic Centimeter
UFSAR ..... Final Safety Analysis Report as Updated

6.2 Definitions

NOTE: Selected terms used in IC and EAL statements are set in all capital letters (e.g., ALL CAPS).

ALERT: Refer to Section 3.1.2.

CONFINEMENT BOUNDARY: The irradiated fuel dry storage cask barrier(s) between areas containing radioactive substances and the environment.

Emergency Action Level (EAL): Refer to Section **Error! Reference source not found.**.

Emergency Classification Level (ECL): Refer to Section **Error! Reference source not found.**.

Initiating Condition (IC): Refer to Section **Error! Reference source not found.**.

HOSTILE ACTION: An act toward a Nuclear Power Plant (NPP) 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 NPP. Non-terrorism-based EALs should be used to address such activities (i.e., this may include violent acts between individuals in the owner controlled area).

HOSTILE FORCE: Any 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.

Imminent: The trajectory of events or conditions is such that an EAL will be met within a relatively short period of time regardless of mitigation or corrective actions.

INDEPENDENT SPENT FUEL STORAGE INSTALLATION (ISFSI): A complex that is designed and constructed for the interim storage of spent nuclear fuel and other radioactive materials associated with spent fuel storage.

NORMAL LEVELS: As applied to radiological IC/EALs, the highest reading in the past twenty-four hours excluding the current peak value.

OWNER CONTROLLED AREA (OCA): The property associated with the station and owned by the company. Access is normally limited to persons entering for official business.

PROTECTED AREA: An area that normally encompasses all controlled areas within the security protected area fence.

SECURITY CONDITION: Any Security Event as listed in the approved security contingency plan that constitutes a threat/compromise to site security, threat/risk to site personnel, or a potential degradation to the level of safety of the plant. A SECURITY CONDITION does not involve a HOSTILE ACTION.

UNPLANNED: A parameter change or an event that is not 1) the result of an intended evolution or 2) an expected plant response to a transient. The cause of the parameter change or event may be known or unknown.

VISIBLE DAMAGE: Damage to a component or structure that is readily observable without measurements, testing, or analysis. The visual impact of the damage is sufficient to cause concern regarding the operability or reliability of the affected component or structure.

7.0 ATTACHMENTS

Attachment 1: EAL Matrices

Attachment 2: EAL Bases

Attachment 1 – EALs Matrices

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

ALERT	UNUSUAL EVENT
Independent Spent Fuel Storage Installation	
.	**E-HU1:** Damage to a loaded cask 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 warrant declaration of an ALERT.	**PD-HU3** Other conditions exist which in the judgment of the Emergency Director warrant declaration of an UNUSUAL EVENT.

Attachment 1 – EALs Matrices

	ALERT	UNUSUAL EVENT
Hazards and Other Conditions Affecting Facility Safety		
Hostile Action	**PD-HA1** HOSTILE ACTION is occurring or has occurred. **Emergency Action Level (EAL):** 1. A HOSTILE ACTION is occurring or has occurred as reported by the Security Shift Supervisor.	**PD-HU1** Confirmed SECURITY CONDITION or threat. **Emergency Action Level (EAL):** 1. Notification of a credible security threat directed at the site. **OR** 2. A SECURITY CONDITION that does **not** involve a HOSTILE ACTION as reported by the Security Shift Supervisor.
Emergency Director Judgment	**PD-HA3** Other conditions exist which in the judgment of the Emergency Director warrant declaration of an ALERT. **Emergency Action Level (EAL):** Other conditions exist which, in the judgment of the Emergency Director, indicate that 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 site equipment because of HOSTILE ACTION. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.	**PD-HU3** Other conditions exist which in the judgment of the Emergency Director warrant declaration of an UNUSUAL EVENT. **Emergency Action Level (EAL):** Other conditions exist which in the judgment of the Emergency Director indicate that events are in progress or have occurred which indicate a potential degradation of the level of safety of the facility 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 equipment required for spent fuel cooling occurs.

ALERT		UNUSUAL EVENT
ISFSI Malfunction		
ISFSI		**E-HU1** Damage to a loaded cask CONFINEMENT BOUNDARY. **Emergency Action Level (EAL):** 1. Damage to a loaded cask CONFINEMENT BOUNDARY as indicated by a radiation reading for a NUHOMS System: • **> 1400 mRem/hr** (gamma + neutron) on the Horizontal Storage Module (HSM) front surface (applicable to type 1 61BTH DSC only) **OR** • **> 800 mRem/hr** (gamma + neutron) 3 feet from the HSM surface (applicable to 61BT DSC only) **OR** • **> 200 mRem/hr** (gamma + neutron) outside the HSM door on centerline of DSC **OR** • **> 40 mRem/hr** (gamma + neutron) end of shield wall exterior **OR** 2. Damage to a loaded cask CONFINEMENT BOUNDARY as indicated by a radiation reading for a HI-STORM FW System: • **>600 mRem/hr** (gamma + neutron) on the side of the HI-STORM OVERPACK excluding the inlet and outlet ducts. A minimum of twelve dose rate measurements shall be taken on the side of the OVERPACK in three sets of four measurements. One measurement set shall be taken approximately at the cask mid-height plan, 90 degrees apart around the circumference of the cask. The second and third measurement sets shall be taken approximately 60 inches above and below the mid-height plane, respectively, also 90 degrees apart around the circumference of the cask. **OR** • **>7,000 mRem/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. For a TRANSFER CASK with a neutron shield cylinder, dose rates shall be measured between the radial ribs of the neutron shield cylinder.

Attachment 2 – EAL Bases

Recognition Category PD EAL Basis

Recognition Category PD provides a stand-alone set of ICs/EALs for a Permanently Defueled nuclear facility to consider for use in developing a site-specific emergency classification scheme. For development, it was assumed that the plant had operated under a 10 CFR Part 50 license and that the operating company has permanently ceased plant operations. Further, the company intends to store the spent fuel within the ISFSI for some period of time.

OCNGS received NRC approval for exemptions from specific emergency planning requirements. These exemptions reflect the lowered radiological source term and risks associated with spent fuel pool storage relative to reactor at-power operation. Subsequently all spent fuel has been removed from the Spent Fuel Pool and located within the ISFSI. Source terms and accident analyses associated with plausible accidents are documented in the ISFSI Final Safety Analysis Report (FSAR), and site Decommissioning Safety Analysis Report (DSAR). As a result, each licensee will need to develop a site-specific emergency classification scheme using the NRC-approved exemptions, revised source terms, and revised accident analyses.

Recognition Category PD uses the same ECLs as operating reactors; however, the source term and accident analyses limit the ECLs to an UNUSUAL EVENT and ALERT. 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. The source terms and release motive forces associated with a permanently defueled facility would not be sufficient to require declaration of a Site Area Emergency or General Emergency.

A permanently defueled facility where all fuel has been located to the ISFSI is essentially a spent fuel storage facility. The ISFSI relies on passive decay heat removal and passive shielding further reducing the potential for events.

In NEI 99-01, Rev. 6, appropriate ICs and EALs from Recognition Category H was modified and included in Recognition Category PD to address a spectrum of the events that may affect an ISFSI.

Recognition Category E Basis

Recognition Category E provides a set of ICs/EALs for an ISFSI. An ISFSI is a complex that is designed and constructed for the interim storage of spent nuclear fuel and other radioactive materials associated with spent fuel storage. A significant amount of the radioactive material contained within a cask must escape its packaging and enter the atmosphere for there to be a significant environmental effect resulting from an accident involving the dry storage of spent

nuclear fuel. Formal offsite planning is not required because the postulated worst-case accident involving an ISFSI has insignificant consequences to the public health and safety.

An UNUSUAL EVENT is declared on the basis of the occurrence of an event of sufficient magnitude that a loaded cask confinement boundary is damaged or violated. This includes classification based on a loaded fuel storage cask confinement boundary loss leading to the degradation of the fuel during storage or posing an operational safety problem with respect to its removal from storage.

Attachment 2 – EAL Bases

PD-HA1

Initiating Condition:

HOSTILE ACTION is occurring or has occurred.

Emergency Action Level (EAL):

1. A HOSTILE ACTION is occurring or has occurred as reported by the Security Shift Supervisor.

Basis:

This IC addresses the notification of an aircraft attack threat or an occurrence of a HOSTILE ACTION within the OWNER CONTROLLED AREA. This event will require rapid response and assistance due to the possibility of the attack progressing to the PROTECTED AREA, or the need to prepare the facility and staff for a potential aircraft impact.

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 facility 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 (ORO), allowing them to be better prepared should it be necessary to consider further actions.

This IC does not apply to incidents that are accidental events, acts of civil disobedience, or otherwise are not a HOSTILE ACTION perpetrated by a HOSTILE FORCE. Examples include the crash of a small aircraft, shots from hunters, physical disputes between employees, etc. Reporting of these types of events is adequately addressed by other EALs, or the requirements of 10 CFR § 73.71 or 10 CFR § 50.72.

EAL #1 Basis

This EAL is applicable for any HOSTILE ACTION occurring, or that has occurred, in the OWNER CONTROLLED AREA. This includes any action directed against an ISFSI that is located outside the facility PROTECTED AREA.

Basis Reference(s):

1. NEI 99-01 Rev 6, PD-HA1
2. Station Security Plan

PD-HU1

Initiating Condition:

Confirmed SECURITY CONDITION or threat.

Emergency Action Level (EAL):

1. Notification of a credible security threat directed at the site.

2) OR

2. A SECURITY CONDITION that does **not** involve a HOSTILE ACTION as reported by the Security Shift Supervisor.

Basis:

This IC addresses events that pose a threat to facility personnel or ISFSI, and thus represent a potential degradation in the level of facility 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 ICs PD-HA1.

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 Basis

Addresses the receipt of a credible security threat.

EAL #2 Basis

References Security Force 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 § 2.39 information.

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

Basis Reference(s):

1. NEI 99-01 Rev 6, PD-HU1
2. Station Security Plan

Attachment 2 – EAL Bases

PD-HA3

Initiating Condition:

Other conditions exist which in the judgment of the Emergency Director warrant declaration of an ALERT.

Emergency Action Level (EAL):

1. Other conditions exist which, in the judgment of the Emergency Director, indicate that 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 site equipment because of HOSTILE ACTION. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.

Basis:

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

Basis Reference(s):

1. NEI 99-01, Rev 6, PD-HA3

Attachment 2 – EAL Bases

PD-HU3

Initiating Condition:

Other conditions exist which in the judgment of the Emergency Director warrant declaration of an UNUSUAL EVENT.

Emergency Action Level (EAL):

1. Other conditions exist which in the judgment of the Emergency Director indicate that events are in progress or have occurred which indicate a potential degradation of the level of safety of the facility 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 equipment required for spent fuel cooling occurs.

Basis:

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

Basis Reference(s):

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

Attachment 2 – EAL Bases

E-HU-1

Initiating Condition

Damage to a loaded cask CONFINEMENT BOUNDARY.

Emergency Action Level (EAL):

1. Damage to a loaded cask CONFINEMENT BOUNDARY as indicated by a radiation reading for a NUHOMS system:

- **> 1400 mRem/hr** (gamma + neutron) on the Horizontal Storage Module (HSM) front surface (applicable to type 1 61BTH DSC only)

  OR

- **> 800 mRem/hr** (gamma + neutron) 3 feet from the HSM surface (applicable to 61BT DSC only)

  OR

- **> 200 mRem/hr** (gamma + neutron) outside the HSM door on centerline of DSC

  OR

- **> 40 mRem/hr** (gamma + neutron) end of shield wall exterior

  OR

2. Damage to a loaded cask CONFINEMENT BOUNDARY as indicated by a radiation reading for a HI-STORM FW System:

- **>600 mRem/hr** (gamma + neutron) on the side of the HI-STORM OVERPACK excluding the inlet and outlet ducts. A minimum of twelve dose rate measurements shall be taken on the side of the OVERPACK in three sets of four measurements. One measurement set shall be taken approximately at the cask mid-height plan, 90 degrees apart around the circumference of the cask. The second and third measurement sets shall be taken approximately 60 inches above and below the mid-height plane, respectively, also 90 degrees apart around the circumference of the cask.

  OR

- **>7,000 mRem/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. For a TRANSFER CASK with a neutron shield cylinder, dose rates shall be measured between the radial ribs of the neutron shield cylinder.

Attachment 2 – EAL Bases

Basis:

This IC addresses an event that results in damage to the CONFINEMENT BOUNDARY of a storage cask containing spent fuel. It applies to irradiated fuel that is licensed for dry storage beginning at the point that the loaded storage cask is sealed. The word cask, as used in this EAL, refers to the storage container in use at the site for dry storage of irradiated fuel. The issues of concern are the creation of a potential or actual release path to the environment, degradation of any fuel assemblies' due to environmental factors, and configuration changes which could cause challenges in removing the cask or fuel from storage.

The existence of "damage" is determined by radiological survey. The cask technical specification multiple of "2 times", which is also used in Recognition Category R IC PD-RU1, is used here to distinguish between non-emergency and emergency conditions. The emphasis for this classification is the degradation in the level of safety of the spent fuel cask and not the magnitude of the associated dose or dose rate. It is recognized that in the case of extreme damage to a loaded cask, the fact that the "on-contact" dose rate limit is exceeded may be determined based on measurement of a dose rate at some distance from the cask.

NUHOMS system values are covered by step 1 and HI-STORM FW system values are covered by step 2.

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

Basis Reference(s):

1. NEI 99-01, Rev 6, E-HU1
2. Certificate of Compliance Number 1004 Amendments 9 & 10 for NUHOMS Sys
3. Certificate of Compliance Number 1032 Amendment 5 for HI-STORM FW Sys