



10 CFR 50.90
10 CFR 50.54(q)

HDI-IPEC-22-080

November 17, 2022

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

Subject: License Amendment Request to Approve the Independent Spent Fuel Storage
Installation-Only Emergency Plan

Indian Point Nuclear Generating Unit Nos. 1, 2, and 3
Docket Nos. 50-003, 50-247, and 50-286
Provisional Operating License No. DPR-5
Renewed Facility License No. DPR-26
Renewed Facility License No. DPR-64

- References:
- 1) Letter, Entergy Nuclear Operations, Inc. to U.S. Nuclear Regulatory Commission (NRC), "Certifications of Permanent Cessation of Power Operations and Permanent Removal of Fuel from the Reactor Vessel, Indian Point Nuclear Generating Unit No. 2," dated May 12, 2020 (Letter NL-20-042) (ML20133J902)
 - 2) Letter, Entergy to NRC, "Certifications of Permanent Cessation of Power Operations and Permanent Removal of Fuel from the Reactor Vessel, Indian Point Nuclear Generating Unit No. 3," dated May 11, 2021 (Letter NL-21-033) (ML21131A157)
 - 3) Letter, NRC to Entergy, "Indian Point Nuclear Generating Station, Unit Nos. 1, 2, and 3 - Order Approving Transfer of Licenses and Draft Conforming Administrative License Amendments, (EPID-L-2019-LLM-0003)," dated November 23, 2020 (ML20297A321)
 - 4) Letter, Holtec Decommissioning International, LLC (HDI) to NRC, "Report on Status of Decommissioning Funding for Reactors and Independent Spent Fuel Storage Installations," dated March 25, 2022 (ML22084A059)
 - 5) Letter, HDI to NRC, "License Amendment Request to Revise the Emergency Plan and Emergency Action Level Scheme to Address the Permanently Defueled Condition," dated December 22, 2021 (Letter HDI-IPEC-21-016) (ML21356B704)

- 6) Letter, HDI to NRC, "Revision to Holtec Decommissioning International, LLC (HDI) License Amendment Request to Revise the Emergency Plan and Emergency Action Level Scheme to Address the Permanently Defueled Condition," dated February 4, 2022 (ML22035A121)

In accordance with Title 10 of the Code of Federal Regulations (10 CFR) 50.90, "Application for amendment of license, construction permit, or early site permit," Holtec Decommissioning International, LLC (HDI), on behalf of Holtec Indian Point 2, LLC (IP1 & IP2) and Holtec Indian Point 3, LLC (IP3), collectively referred to as Indian Point Energy Center (IPEC), requests U.S. Nuclear Regulatory Commission (NRC) review and approval of the IPEC Independent Spent Fuel Storage Installation Facility (ISFSI)-Only Emergency Plan (IOEP) and associated Emergency Action Level (EAL) scheme to reflect removal of all spent nuclear fuel from the IP2 and IP3 Spent Fuel Pits (SFPs) to dry cask storage within a site controlled ISFSI.

In References 1 and 2, Entergy certified to the NRC, in accordance with 10 CFR 50.82(a)(1)(i), that power operations ceased at IP2 on April 30, 2020, and at IP3 on April 30, 2021. In addition, Entergy certified in accordance with 10 CFR 50.82(a)(1)(ii), that the fuel was permanently removed from the IP2 reactor vessel and placed in the IP2 SFP on May 12, 2020, and that the fuel was permanently removed from the IP3 reactor vessel and placed in the IP3 SFP on May 11, 2021. Therefore, as specified in 10 CFR 50.82(a)(2), the 10 CFR Part 50 license for IPEC no longer authorizes operation of the reactor or emplacement or retention of fuel in the reactor vessels.

On May 28, 2021, pursuant to the NRC Order (Reference 3), Entergy notified the NRC that IPEC ownership and the IPEC operating licenses were transferred to Holtec Indian Point 2, LLC (IP1 & IP2) and Holtec Indian Point 3, LLC (IP3).

In Reference 5, as amended by Reference 6, HDI submitted the Permanently Defueled Emergency Plan (PDEP) and Permanently Defueled EAL scheme for NRC review and approval, commensurate with the significantly reduced risk associated with the spent fuel stored in the IP2 and IP3 SFPs after it has sufficiently decayed such that the radiological impact of accidents is not expected to result in radioactive releases that exceed U.S. Environmental Protection Agency (EPA) Protective Action Guidelines (PAGs) beyond the site boundary.

HDI expects that transfer of the spent fuel from the IP2 and IP3 SFPs to dry storage within the ISFSI will be completed before February 2023 and December 2023, respectively. In support of these conditions, HDI is proposing revisions to the IPEC emergency plan and associated EAL scheme to comport with the requirements for a facility configuration with all spent fuel in dry storage within an ISFSI. The reason for this proposed amendment request is to obtain NRC approval of the IPEC 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).

HDI requests review and approval of the proposed license amendments by November 15, 2023, and a thirty-day implementation period following HDI's notification to the NRC that all spent fuel assemblies have been transferred from the IP2 SFP and IP3 SFP to dry storage within the ISFSI.

The Enclosure to this letter provides a description and evaluation of the proposed IOEP. The

evaluation includes the regulatory evaluation, the no significant hazards consideration determination, and the environmental considerations.

Attachment 1 to the Enclosure provides the IPEC IOEP.

Attachment 2 to the Enclosure provides the ISFSI EAL Technical Bases Document.

HDI has reviewed the proposed amendments in accordance with 10 CFR 50.91(a)(1), using the criteria in 10 CFR 50.92, and concludes that this change does not involve a 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)(10) and do not require an environmental review. Therefore, in accordance with 10 CFR 51.22(b), no environmental impact statement or environmental assessment is required.

As required by 10 CFR 50.91, "Notice for public comment; State consultation," paragraph (b), copies of this application, with the enclosure, are being provided to the New York State Department of Health and Emergency Management Agency. HDI has discussed the proposed amendment with cognizant state and local response organizations. HDI will continue to communicate with representatives from the State of New York and local emergency preparedness personnel regarding implementation of these changes.

This letter contains no new regulatory commitments. Should you have any questions or require additional information, please contact Mr. Walter Wittich, IPEC Licensing at 914-254-7212.

I declare under penalty of perjury that the foregoing is true and correct. Executed on November 17, 2022.

Sincerely,

Jean A. Fleming
Vice President, Licensing, Regulatory and PSA
Holtec International

Enclosure: Description and Evaluation of Proposed Changes - License Amendment Request to Approve the Independent Spent Fuel Storage Installation-Only Emergency Plan

Attachment 1: ISFSI-Only Emergency Plan

Attachment 2: ISFSI Emergency Action Level Technical Bases Document

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CC:

NRC Project Manager, NRC NMSS

NRC Region I Regional Administrator

NRC Senior Regional Inspector, IPEC

New York State (NYS) Liaison Officer Designee, NYSERDA

NYS Public Service Commission

HDI-IPEC-22-080

Enclosure

Description and Evaluation of Proposed Changes

License Amendment Request to Approve the Independent Spent Fuel Storage
Installation-Only Emergency Plan

DESCRIPTION AND EVALUATION OF PROPOSED CHANGES

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Attachment 1: ISFSI-Only Emergency Plan

Attachment 2: ISFSI Emergency Action Level Technical Bases Document

1.0 INTRODUCTION

In accordance with Title 10 of the Code of Federal Regulations (10 CFR) 50.90, "Application for amendment of license, construction permit, or early site permit," Holtec Decommissioning International, LLC (HDI), on behalf of Holtec Indian Point 2, LLC (IP1 & IP2) and Holtec Indian Point 3, LLC (IP3), collectively referred to as Indian Point Energy Center (IPEC), requests U.S. Nuclear Regulatory Commission (NRC) review and approval of the IPEC Independent Spent Fuel Storage Installation Facility (ISFSI)-Only Emergency Plan (IOEP) and associated Emergency Action Level (EAL) scheme to reflect removal of all spent fuel from the IP2 and IP3 Spent Fuel Pits (SFPs) to dry cask storage within a site controlled ISFSI.

IP1 was permanently shutdown on October 31, 1974, and all spent fuel was removed from the IP1 reactor vessel in 1975. All spent fuel has since been removed from the IP1 SFP and transported offsite or placed in the existing ISFSI as reported in the Entergy letter to the NRC regarding this subject, dated December 11, 2008 (ADAMS Accession No. ML083510667) (Reference 1). The IP1 Provisional Operating License prohibits taking the reactor to criticality or operation of the facility at any power level, and the IP1 Technical Specifications do not allow fuel to be loaded into the reactor core or moved into the reactor containment building without prior review and authorization by the NRC. IP1 is being maintained in SAFSTOR status. The IP1 SFP is no longer in use because all spent fuel has been transferred to the ISFSI and other material has been removed, and the IP1 SFP has been drained.

In References 2 and 3, Entergy certified to the NRC, in accordance with 10 CFR 50.82(a)(1)(i), that power operations ceased at IP2 on April 30, 2020 and at IP3 on April 30, 2021. In addition, Entergy certified in accordance with 10 CFR 50.82(a)(1)(ii), that the fuel was permanently removed from the IP2 reactor vessel and placed in the IP2 SFP on May 12, 2020 and that the fuel was permanently removed from the IP3 reactor vessel and placed in the IP3 SFP on May 11, 2021. Therefore, as specified in 10 CFR 50.82(a)(2), the 10 CFR Part 50 license for IPEC no longer authorizes operation of the reactors or emplacement or retention of fuel in the IP2 and IP3 reactor vessels.

By letter dated December 22, 2021 (Reference 4), as amended by letter dated February 4, 2022 (Reference 5), HDI proposed the Permanently Defueled Emergency Plan (PDEP) and Permanently Defueled EAL scheme, commensurate with the significantly reduced risk associated with the spent fuel stored in the IP2 and IP3 SFPs after it has sufficiently decayed such that the radiological impact of accidents is not expected to result in radioactive releases that exceed U.S. Environmental Protection Agency (EPA) Protective Action Guidelines (PAGs) beyond the site boundary. The PDEP and the associated EALs rely upon exemptions from certain emergency planning requirements as submitted to the NRC by letter dated December 22, 2021 (Reference 6), supplemented by letters dated February 1, 2022 (Reference 7) and February 2, 2022 (Reference 8). The additional changes to the IPEC PDEP and the PDEP EAL Technical Bases Document to transition to the IOEP, as proposed within, are warranted to reflect the future storage of all IPEC fuel in the ISFSI.

HDI expects that transfer of the spent fuel from the IP2 and IP3 SFPs to dry storage within an ISFSI will be completed before February 2023 and December 2023, respectively. In support of these conditions, implementation of the IOEP and the associated EAL Technical Bases Document are proposed to comport with the requirements for a facility configuration with all spent nuclear fuel in dry storage within an ISFSI.

HDI requests review and approval of the proposed license amendments by November 15, 2023, and a thirty-day implementation period following HDI's notification to the NRC that all spent fuel assemblies have been transferred from the IP2 SFP and IP3 SFP to dry storage within an 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.

Pending Licensing Actions under NRC Review

On August 2, 2022, (Reference 9) HDI submitted a License Amendment Request (LAR) to revise the IP2 PDTS to modify staffing requirements following the transfer of spent fuel to dry storage.

On November 2, 2022 (Reference 10) HDI submitted a LAR to Revise Indian Point Nuclear Generating Unit Nos. 2 and 3 Renewed Facility Licenses and Permanently Defueled Technical Specifications and IP3 Appendix C Technical Specifications to Reflect Permanent Removal of Spent Fuel from the IP2 and IP3 Spent Fuel Pits.

In conjunction with this LAR, HDI intends to submit a LAR to the NRC requesting approval of a proposed revision to the Indian Point Physical Security Plan (PSP) to accommodate transition to an Indian Point ISFSI Only PSP (IOPSP).

The above LARs coordinate with the proposed revisions addressed via this LAR.

2.0 DESCRIPTION

The proposed amendment would modify the IPEC license by replacing the IPEC PDEP and the associated EAL scheme with the IOEP and its associated EAL scheme to reflect the storage of all IPEC fuel on the ISFSI. The proposed changes reduce the scope of onsite emergency planning requirements to reflect the reduced scope of potential radiological accidents with all IPEC 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 IPEC are substantially lower. There continues to be no need for offsite emergency response plans because no postulated DBA or reasonably conceivable beyond design basis accident can result in a radioactive release that exceeds EPA 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 11).

The robust nature and high integrity of the spent fuel storage system in 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 canisters' design and the substantial protection afforded by 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 SFPs to the ISFSI and by the removal or decay of radioactive materials remaining in the facility. IPEC has established an activity limit, which in conjunction with administrative controls, reduces the potential for a release of radioactive materials during decontamination and dismantlement of radioactive structures, systems, and components

(SSCs) (Reference 12). In planning and preparation for decontamination and dismantlement activities, application of this activity limit 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 result in doses to the public above EPA PAGs. By ensuring that dose rates that could occur during decontamination and dismantlement activities cannot exceed twice the Offsite Dose Calculation Manual (ODCM) limit, the current radiological effluent EALs are no longer necessary and can be eliminated.

The proposed ISFSI EAL scheme is based on Nuclear Energy Institute (NEI) 99-01, "Development of Emergency Action Levels for Non-Passive Reactors," Revision 6 (Reference 13) (NEI 99-01, Revision 6), as appropriate, after the transfer of the spent fuel from the SFPs 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 IPEC.

3.0 PROPOSED CHANGES

Implementation of the IOEP and the associated EAL Technical Bases Document involves the following significant changes to the IPEC emergency plan:

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

The Holtec International (Holtec) Final Safety Analysis Report (FSAR) for the HI-STORM 100 Cask System describes the Design Basis Accidents (DBAs) applicable to the IPEC ISFSI along with the radiological dose calculation results (Reference 14). As provided in the Holtec FSAR, 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). 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 Holtec FSAR Certificate of Compliance (CoC) No. 1014.

The IPEC ISFSI contains casks loaded under Amendments 2, 4, 6, 9, and 15 of CoC No. 1014. It is anticipated that the remaining spent fuel will be loaded under Amendment 15 of CoC No. 1014, issued on May 13, 2021 (Reference 15). After all fuel is removed from the IPEC SFPs, there will no longer be any potential for the accidents previously described in the IPEC 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 SFPs. After the transfer of the spent fuel from the SFPs to the ISFSI, the spent fuel storage and handling systems will be removed from operation.

The proposed IOEP and the associated EAL scheme are commensurate with the reduction in radiological hazards associated with the transfer of the spent fuel from the SFPs 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 proposed PDEP currently under NRC review are based on NEI 99-01, Revision 6 (Reference 13). 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 operations.

After all irradiated fuel has been removed from the IP2 and IP3 SFPs and placed in dry storage within the ISFSI, the NEI 99-01, Appendix C ICs and EALs that are associated with the SFPs are no longer required to be in the emergency plan. Additionally, certain ICs and EALs whose primary function is not associated with the SFPs 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, proposed revisions to the ICs are shown in Table 1 in ***Bold Italics*** and the deletions are shown using *italicized strikethrough*. The ICs being deleted are either associated only with operation of the SFPs or are ICs for which administrative controls to limit possible effluent releases have been established.

Table 1 - Emergency Plan Initiating Conditions Being Deleted or Revised

ALERT	UNUSUAL EVENT
<p><i>PD-AA1</i> Release of gaseous or liquid radioactivity resulting in offsite dose greater than 10 mRem TEDE or 50 mRem thyroid GDE.</p> <p>[EAL is being deleted in its entirety]</p>	<p><i>PD-AU1</i> Release of gaseous or liquid radioactivity greater than 2 times the Offsite Dose Calculation Manual (ODCM) limits for 60 minutes or longer.</p> <p>[EAL is being deleted in its entirety]</p>
<p><i>PD-AA2</i> UNPLANNED rise in facility radiation levels that impedes facility access required to maintain spent fuel integrity.</p> <p>[EAL is being deleted in its entirety]</p>	<p><i>PD-AU2</i> UNPLANNED rise in facility radiation levels.</p> <p>[EAL is being deleted in its entirety]</p>
<p><i>PD-HA1</i> HOSTILE ACTION within the OWNER CONTROLLED AREA or airborne attack threat within 30 minutes is occurring or has occurred.</p> <p>EMERGENCY ACTION LEVEL (EALs): (1 or 2)</p> <p>4. A HOSTILE ACTION is occurring or has occurred within the ISFSI as reported by the Security Shift Supervisor.</p> <p>OR</p> <p>2. A validated notification from NRC of an aircraft attack threat within 30 minutes</p>	<p>PD-HU1 Confirmed SECURITY CONDITION or threat at the Independent Spent Fuel Storage Installation (ISFSI).</p> <p>EMERGENCY ACTION LEVEL (EALs): (1 or 2 or 3)</p> <p>1. A SECURITY CONDITION that does <u>not</u> involve a HOSTILE ACTION as reported by the Security Shift Supervisor.</p> <p>OR</p> <p>2. Notification of a credible security threat directed at the site.</p>

<i>of the site</i>	OR 3. <i>A validated notification from the NRC providing information of an aircraft threat.</i>
	PD-HU2 Hazardous event affecting equipment necessary for spent fuel cooling. [EAL is being deleted in its entirety]
PD-HA3 Other conditions exist which in the judgment of the Emergency Director warrant declaration of an ALERT. [EAL is being retained in its entirety.]	PD-HU3 Other conditions exist which in the judgment of the Emergency Director warrant declaration of an UNUSUAL EVENT. [EAL is being retained in its entirety.]
	PD-SU1 UNPLANNED spent fuel pool temperature rise. [EAL is being deleted in its entirety.]
	E-HU1 Damage to a loaded cask CONFINEMENT BOUNDARY [EAL is being retained in its entirety.]

The ICs being deleted include those ICs associated with the categories of abnormal radioactive release and system malfunction associated with the SFPs as well as security conditions associated with aircraft. These categories apply to the storage of spent fuel in the SFPs and are not necessary, nor appropriate, for a facility in which all spent fuel is stored in the ISFSI.

The ICs being retained in the IOEP and the associated ISFSI EAL scheme are appropriate to address the condition of a facility in which all spent fuel is stored in the ISFSI.

Deletion of PD-AA1 and PD-AU1

With all irradiated fuel removed from the SFPs and relocated within dry casks placed in the ISFSI, there are no longer any credible accident scenarios that could pose a radiological risk at the exclusion area boundary. The remaining source term within the facility includes SFP water, residual water in the Reactor Coolant System and interfacing systems, resins used in waste processing, and activated reactor plant system equipment.

Deletion of PD-AA2, PD-AU2, PD-HU2, and PD-SU1

PD-AA2, PD-AU2, PD-HU2, and PD-SU1 provide protection with fuel stored in the SFPs. With all irradiated fuel removed from the SFPs and relocated within dry casks placed in the ISFSI, there are no longer any credible accident scenarios that could pose a radiological risk at the exclusion area boundary. There is no longer a need to provide the protection that these EALs afforded.

Modification of PD-HA1 and PD-HU1

With respect to the aircraft-related EALs; Interim Compensatory Measures (ICM) Order EA-02-026, "Issuance of Order for Interim Safeguards and Security Compensatory Measures for -

Indian Point Nuclear Generating Station, Units 2 & 3" (Reference 16), Section B.5.b mitigation strategies was issued and subsequent 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 17). 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 (Reference 18) (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.

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. The Commission notes that the § 50.54(hh) do not apply to any current decommissioning facilities that have already satisfied the § 50.82(a) requirements."

On November 28, 2011, the NRC issued a letter to holders of Licenses for Operating Power Reactors that rescinded Item B.5.b of the ICM Order EA-02-026 (Reference 19). The rulemaking codified generically applicable security requirements previously issued by orders and updated the existing power reactor security requirements.

The NRC has subsequently incorporated the strategies and guidelines under 10 CFR 50.54(hh)(2) into 10 CFR 50.155(b)(2), Extensive Damage Mitigation Guidelines (EDMGs) (Reference 20). 10 CFR 50.155(b)(2) provides strategies and guidelines to maintain or restore SFP cooling capabilities under the circumstances associated with loss of large areas of the plant impacted by the event, due to explosions or fire. However, as stated in 10 CFR 50.155(a)(2)(iv), this section does not apply after the certifications for permanent shutdown and removal of fuel under 10 CFR 50.82(a)(1) have been submitted, and all irradiated fuel has been removed from the SFPs.

Neither the ICM Order EA-12-026 nor 10 CFR 155(b)(2) continue to apply to IPEC after all the spent fuel has been transferred to the ISFSI. Additionally, HDI has requested the removal of the Mitigation Strategy License Conditions from the IPEC Renewed Facility Licenses (DPR-26 and DPR-64) (Reference 10). 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 SFPs and stored in the ISFSI prior to the implementation of the changes requested herein.

3.2 Emergency Response Organization Revision

The proposed IPEC PDEP currently under NRC review provides for two (2) augmenting ERO positions: a Technical Coordinator and a Radiation Protection Coordinator. The proposed PDEP requires the ERO to be activated at an Alert classification (can be activated in part or in whole at the discretion of the Emergency Director (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 IPEC 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 IOEP 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 time needed to respond is decreased (as compared to the ERO response proposed 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 time frame.

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

The proposed IPEC IOEP 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 IPEC staff and can be requested from various contractors.

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

The proposed IPEC PDEP currently under NRC review 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 IPEC IOEP proposes replacing the Shift Manager position with the ISFSI Shift Supervisor (ISS).

The ISS is an on-shift position at the IPEC 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 IPEC 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 IOEP clearly identifies non-delegable responsibilities, along with other designated tasks assigned to the ISS.

4.0 TECHNICAL EVALUATION

4.1 Radiological Consequences of Design Basis Events

Section 6.2 of the IP2 and IP3 DSARs describe the DBAs related to the IP2 SFP and IP3 SFP, respectively (References 21 and 22). These postulated accidents are predicated on spent fuel being stored in the IP2 or IP3 SFPs. Thus, a spent fuel handling accident is no longer applicable as a design basis accident once all spent fuel is offloaded from the IP2 SFP and IP3 SFP and transferred to dry storage within an ISFSI. The ISFSI is a passive storage system that does not rely on electric power for heat transfer. After removal of the irradiated fuel from the SFPs, there are no credible fuel related accidents for which actions of a Certified Fuel Handler (CFH), or Non-Certified Operator (NCO) are required to prevent occurrence or to mitigate the consequences. There is no credible accident resulting in radioactive releases requiring offsite protective measures.

The robust design and construction of the spent fuel storage system selected for use at the ISFSI prevents the release of radioactivity in the event of an off-normal or accident event as described in the ISFSI FSAR. 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.

The IPEC PSDAR (Reference 22) identified that IPEC will decommission using a DECON method. In this method, equipment, structures, and portions of the facility and site that contain radioactive contaminants are promptly removed or decontaminated to a level that permits termination of the license shortly after cessation of operations.

After all the irradiated fuel has been removed from the SFPs, the estimated radiological inventory (non-fuel) that remains at the IPEC reactor facilities is primarily attributable to activated reactor components and structural materials.

The off-normal events and accidents addressed in the IPEC 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 Hi-Storm 100 Cask System FSAR (Reference 14). After all fuel is removed from the IPEC SFPs, there will no longer be any potential for the accidents previously described in the IPEC 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 SFPs. After the transfer of the spent fuel from the SFPs to the ISFSI, the spent fuel storage and handling systems will be removed from operation consistent with the HDI IPEC PSDAR (Reference 23).

The HI-STORM 100 Cask System FSAR (Reference 14) describes the DBAs applicable to the IPEC 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.

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

- The remaining radiological source term at IPEC 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 IOEP describes the IPEC 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 24) 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. Implementation of the 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. 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.

As discussed in the previously requested exemption from various emergency planning requirements contained in 10 CFR 50.47 and 10 CFR Part 50, Appendix E (References 6, 7, and 8), an analysis of the potential radiological impact of DBAs at IPEC in a permanently defueled condition indicates that any releases beyond the site boundary are below EPA PAG exposure levels. The basis for these exemptions has not changed and remains in effect for the proposed emergency plan changes.

4.2 Radiological Consequences of Postulated Events

Although the limited scope of DBAs that remain applicable to the IPEC facility justifies a reduction in the necessary scope of emergency response capabilities, IPEC also assessed beyond design basis events using past industry precedence, including information contained in Appendix I, "Radiological Accidents," of NUREG-0586 (Reference 24).

With fuel stored within the SFPs, the most severe postulated beyond design basis event involves a highly unlikely sequence of events that causes heat up of the irradiated fuel, postulated to occur without any heat transfer, such that the zircaloy fuel cladding reaches ignition temperature (adiabatic heat up). The resultant zircaloy fire could lead to the release of large quantities of fission products to the atmosphere. However, after removal of the irradiated fuel from the SFPs, the configuration of the irradiated fuel stored in dry storage precludes the possibility of such a scenario.

With this previously limiting beyond design basis scenario no longer possible, IPEC assessed the following beyond design basis events associated with performance of decommissioning activities with all irradiated fuel stored in the IPEC ISFSI. A summary of the assessments is provided below

4.2.1 Cask Drop Event (Fuel-Related Event)

HDI is the holder of a general license for the storage of spent fuel in the ISFSI at decommissioning nuclear power sites in accordance with the provisions of 10 CFR 72.210 and 10 CFR 72.212. The generally licensed ISFSI at IPEC is used for interim, onsite, dry storage of spent nuclear fuel assemblies in the Holtec HI-STORM 100 Cask System (Coc No. 1014). The IPEC ISFSI contains casks loaded under Amendments 2, 4, 6, 9, and 15. It is anticipated that the remaining spent fuel will be loaded under Amendment 15 of CoC No. 1014, issued on May 13, 2021 (Reference 15).

As documented in the Hi-Storm 100 Cask System FSAR (Reference 14) 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 nor off-normal events preclude retrieval of the fuel for transport and ultimate disposal.

The dry spent fuel storage casks used at IPEC 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 above regulatory requirements.

4.2.2 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 24).

Section 6.5 of the IP2 and IP3 DSARs address an accidental drop of a High-Integrity Container. Compliance with an activity limit ensures that the release resulting from the High-Integrity Container drop event remains bounded by the consequences of the FHA and remains below the 1 rem Environmental Protection Agency Protective Action Guideline (References 21 and 22).

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. During decontamination and dismantlement activities, administrative controls would be applied to the handling of open containers or other packages containing filters, resins, and other dispersible materials generated during decommissioning 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 (Reference 12).

4.2.3 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 EALs.

4.3 Summary of Radiological Consequences

In summary, there continues to be a low likelihood of any ISFSI-related design basis event or any other 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.

4.4 ISFSI-Only Emergency Plan

The IOEP describes IPEC's plan for responding to emergencies while all spent fuel is in dry cask storage within the ISFSI. The IOEP is provided in Attachment 1 to this enclosure for NRC review and approval. This proposed emergency plan is associated with EALs for events related to the ISFSI. The IOEP 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 exempted (References 6, 7, and 8)), 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 25).

The IPEC IOEP conservatively provides that the emergency planning zone for the ISFSI is the area within the Site Boundary. 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 the ISFSI for which IPEC 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 the ISFSI or MRS [Monitored Retrievable Storage]," and 10 CFR 72.106, "Controlled Area of the ISFSI or MRS." Analyses 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, there will continue to be no need for offsite emergency response plans for the protection of the public beyond the site boundary. 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 proposed IPEC PDEP describes interfaces with the State of New York including notifications of emergency declarations and annual reviews of the IPEC emergency classification system with appropriate State representatives. The IOEP 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 PAG exposure levels detailed in Reference 12. Exposure levels, which warrant pre-planned response measures, are limited to onsite areas. For this reason, radiological emergency planning remains focused onsite.

4.5 ISFSI Emergency Action Levels

Attachment 2 to this Enclosure provides the IPEC ISFSI EAL Technical Bases Document, which contains the proposed IPEC ISFSI EAL scheme for NRC review and approval. The proposed IPEC PDEP EAL scheme is under review by the NRC (References 4 and 5). The proposed ISFSI EAL scheme would be implemented with the IPEC IOEP (Attachment 1 to this Enclosure). Deletions from the proposed PDEP EAL scheme are identified in Table 1, "Emergency Plan Initiating Conditions Being Deleted or Revised," in Section 3.1 of this Enclosure, "Elimination of

SFP Initiating Conditions and EALs."

Operating Modes and Applicability

The proposed ISFSI EAL scheme is only applicable after all IPEC spent nuclear fuel has been transferred out of the IP2 and IP3 SFPs and placed in dry storage within the ISFSI.

State and Local Government Review of Proposed Changes

In support of this license amendment, discussions have been held with cognizant state and local response organizations regarding the draft proposed changes of the IPEC IOEP and EAL scheme. HDI will continue to communicate with representatives from the State of New York and local emergency preparedness personnel regarding implementation of these changes.

Prior to implementation of this LAR, HDI will provide an overview of the new classification scheme to the State of New York and local emergency management officials in accordance with 10 CFR 50, Appendix E, Section IV.B.1.

5.0 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, IPEC previously submitted a request for 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 December 22, 2021 (Reference 6) and supplemented by letters dated February 1, 2022 (Reference 7) and February 2, 2022 (Reference 8). The bases for these exemptions have not changed and remain in effect for the emergency plan changes requested in this document. Considering the previously requested exemptions, the IPEC emergency plan, as proposed, will continue to meet the remaining applicable requirements in Appendix E to 10 CFR Part 50, and the remaining applicable planning standards of 10 CFR 50.47(b).

5.1 Applicable Regulatory Requirements/Criteria

The regulatory requirements, as exempted, are discussed below. Exemptions from regulation are indicated using ~~strikethrough~~ text.

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) (with proposed exemption) 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, ~~and State and local response plans call for reliance on information provided by facility licensees for determinations of minimum initial offsite response measures.~~"*
- 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. licensee desiring to make such a change after February 21, 2012 shall submit an application for an amendment to its license. In addition to the filing requirements of §§ 50.90 and 50.91, the request must include all emergency plan pages affected by that change and must be accompanied by a forwarding letter identifying the change, the reason for the change, and the basis for concluding that the licensee's emergency plan, as revised, will continue to meet the requirements in appendix E to this part and, for nuclear power reactor licensees, the planning standards of § 50.47(b)."

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.B.1 of Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," to 10 CFR Part 50, states, in part (with proposed exemption):

"The means to be used for determining the magnitude of, and for continually assessing the impact of, the release of radioactive materials shall be described, including emergency action levels that are to be used as criteria for determining the need for notification and participation of local and State agencies, the Commission, and other Federal agencies, and the emergency action levels that are to be used for determining when and what type of protective measures should be considered within ~~and outside~~ the site boundary to protect health and safety. The emergency action levels shall be based on in-plant conditions and instrumentation in addition to onsite ~~and offsite~~ monitoring. ~~By June 20, 2012, for nuclear power reactor licensees, these action levels must include hostile action that may adversely affect the nuclear power plant."~~

Section IV.B.2 of Appendix E states that:

"A licensee desiring to change its entire emergency action level scheme shall submit an application for an amendment to its license and receive NRC approval before implementing the change."

Section IV.C.1 of Appendix E requires (with proposed exemption) that each emergency plan

define the emergency classification levels that determine the extent of participation of the emergency response organization. EALs are used by plant personnel in determining the appropriate emergency classification level to declare. This section states, in part:

"Emergency action levels (based not only on onsite and offsite radiation monitoring information but also on readings from a number of sensors that indicate a potential emergency, such as the pressure in containment and the response of the Emergency Core Cooling System) for notification of offsite agencies shall be described. The existence, but not the details, of a message authentication scheme shall be noted for such agencies. The emergency classes defined shall include: (1) Notification of unusual events, [and] (2) alert, (3) site area emergency, and (4) general emergency."

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 the 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 requested exemptions from certain emergency planning requirements (References 6, 7 and 8) since the bases for these exemptions have not changed and remain in effect.

The proposed ISFSI EAL scheme is based on guidance provided in NEI 99-01, Revision 6, as appropriate after the transfer of spent fuel from the IPEC SFPs to the ISFSI. In November 2012, NEI published NEI 99-01, Revision 6 (Reference 13). The NRC endorsed NEI 99-01, Revision 6, by letter dated March 28, 2013 (Reference 26). The proposed revisions constitute a change in the emergency planning function commensurate with the ongoing and anticipated reduction in radiological source term at IPEC.

The proposed amendment is being submitted to the NRC pursuant to 10 CFR 50.90 for the purpose of revising the IPEC emergency plan to establish an emergency plan appropriate for a permanently defueled facility with irradiated fuel in dry cask storage within the ISFSI and a commensurate EAL scheme, predicated on approval of the exemptions proposed in Reference 6, as supplemented by References 7 and 8. The proposed changes are conservatively considered as a change to the EAL scheme. 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 prior to implementation.

5.2 No Significant Hazards Consideration Determination

In accordance with Title 10 of the Code of Federal Regulations (10 CFR) 50.90, "Application for amendment of license, construction permit, or early site permit," Holtec Decommissioning International, LLC (HDI), on behalf of Holtec Indian Point 2, LLC (IP1 & IP2) and Holtec Indian Point 3, LLC (IP3), collectively referred to as Indian Point Energy Center (IPEC), requests U.S. Nuclear Regulatory Commission (NRC) review and approval of the IPEC Independent Spent Fuel Storage Installation Facility (ISFSI)-Only Emergency Plan (IOEP) and associated Emergency Action Level (EAL) scheme to support transfer of all spent fuel from the IP2 and IP3 Spent Fuel Pools (SFPs) to the ISFSI.

Entergy certified to the NRC, in accordance with 10 CFR 50.82(a)(1)(i), that power operations ceased at IP2 on April 30, 2020 and at IP3 on April 30, 2021. In addition, Entergy certified in accordance with 10 CFR 50.82(a)(1)(ii), that the fuel was permanently removed from the IP2

reactor vessel and placed in the IP2 SFP on May 12, 2020 (Reference 2) and that the fuel was permanently removed from the IP3 reactor vessel and placed in the IP3 SFP on May 11, 2021 (Reference 3).

HDI expects that transfer of the spent fuel from the IP2 and IP3 SFPs to dry storage within an ISFSI will be completed before February 2023 and December 2023, respectively. In support of these conditions, the proposed changes would revise the Indian Point Energy Center (IPEC) 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 pits (SFPs) to dry cask storage within the independent spent fuel storage installation (ISFSI).

In accordance with 10 CFR 50.92, 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 discussion below addresses each of these criteria and demonstrates that the proposed license amendment for IP1, IP2, and IP3 (hereinafter collectively referred to as "facility" or "the facility") 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 IPEC facility operating license by revising the Emergency Plan and EAL scheme. IPEC 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 SFPs and placed in dry storage within the ISFSI. Occurrence of postulated accidents associated with spent fuel stored in a SFP are no longer credible in a SFP devoid of such fuel. The proposed amendment has no effect on facility structures, systems, or components (SSCs) and therefore can neither affect the capability of any facility SSC to perform its design function nor increase the likelihood of the malfunction of any SSC. The proposed amendment would have no effect on any of the previously evaluated accidents in the IPEC Defueled Safety Analysis Report (DSAR) or the Holtec HI-STORM Final Safety Analysis Report (FSAR) for all the dry casks to be stored in the ISFSI.

Because IPEC 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 IPEC.

The proposed amendment does not involve a physical alteration of the facility. 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 IPEC no longer authorizes operation of the reactors or emplacement or retention of fuel into the reactor vessels, 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 SFPs 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 Protective Action Guide (PAG) exposure levels, as detailed in the EPA's "Protective Action Guide and Planning Guidance for Radiological Incidents," dated January 2017.

The proposed amendment does not involve a change in the facility's design, configuration, or operation. The proposed amendment does not affect either the way in which the facility 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 amendment does not involve a significant reduction in a margin of safety.

Based on the above, HDI concludes that the proposed changes to the IPEC emergency plan and EAL scheme present 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.

5.3 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 27), 2) the Zion Facility on May 14, 2015 (Reference 28) and December 20, 2016 (Reference 29), 3) the Kewaunee Power Station on March 2, 2017 (Reference 30), 4) the Crystal River Unit 3 Nuclear Generating Plant on March 22, 2017 (Reference 31), 5) San Onofre Nuclear Generating Station on November 30, 2017 (Reference 32), 6) Vermont Yankee Nuclear Power Station on March 30, 2018 (Reference 33), 7) Fort Calhoun Station on January 10, 2020 (Reference 34), 8) Pilgrim Nuclear Power Station on October 21, 2021 (Reference 35) and 9) Three Mile Island Nuclear Station on April 7, 2022 (Reference 36).

5.4 Conclusion

Based on the analyses and considerations described 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, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

6.0 ENVIRONMENTAL 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 hazard consideration.

As described in Section 5.2 of this evaluation, the proposed amendment involves no significant hazards consideration.

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

The proposed amendment does not involve any physical alterations to the facility configuration 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 amendment does not involve a significant increase in individual or cumulative occupational radiation exposure.

Based on the above, HDI concludes that the proposed amendment 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 License Amendment.

7.0 REFERENCES

1. Letter from Entergy to NRC, "Notification of Unit 1 Transfer of 160 Spent Fuel Assemblies from the Spent Fuel Pool to the Indian Point Independent Spent Fuel Storage Installation," (ADAMS Accession No. ML083510667), dated December 11, 2008
2. Letter from Entergy to NRC, "Certifications of Permanent Cessation of Power Operations and Permanent Removal of Fuel from the Reactor Vessel, Indian Point Nuclear Generating Unit No. 2," (Letter NL-20-042) (ADAMS Accession No. ML20133J902), dated May 12, 2020
3. Letter from Entergy to NRC, "Certifications of Permanent Cessation of Power Operations and Permanent Removal of Fuel from the Reactor Vessel, Indian Point Nuclear Generating Unit No. 3," (Letter NL-21-033) (ADAMS Accession No. ML21131A157), dated May 11, 2021
4. Letter from Holtec Decommissioning International, LLC (HDI) to U.S. Nuclear Regulatory Commission (NRC), "License Amendment Request to Revise the Emergency Plan and Emergency Action Level Scheme to Address the Permanently Defueled Condition," (Letter HDI-IPEC-21-016) (ADAMS Accession No. ML21356B704), dated December 22, 2021
5. Letter from Holtec Decommissioning International, LLC (HDI) to U.S. Nuclear Regulatory Commission (NRC), "Revision to Holtec Decommissioning International, LLC (HDI) License Amendment Request to Revise the Emergency Plan and Emergency Action Level Scheme to Address the Permanently Defueled Condition," (Letter HDI-IPEC-22-018) (ADAMS Accession No. ML22035A121), dated February 4, 2022
6. Letter from Holtec Decommissioning International, LLC (HDI) to US NRC, "Request for Exemptions from Certain Emergency Planning Requirements of 10 CFR 50.47 and 10 CFR Part 50, Appendix E," (Letter HDI-IPEC-21-015) (ADAMS Accession No. ML21356B693) dated December 22, 2021
7. Letter from Holtec Decommissioning International, LLC (HDI) to U.S. NRC, "Supplement to Holtec Decommissioning International, LLC (HDI) Request for Exemptions from Certain Emergency Planning Requirements of 10 CFR 50.47 and 10 CFR Part 50, Appendix E for Indian Point Unit Nos. 1, 2, and 3 Including Site-Specific Calculations," (Letter HDI-IPEC-22-013) (ADAMS Accession No. ML22032A117) dated February 1, 2022
8. Letter from Holtec Decommissioning International, LLC (HDI) to U.S. NRC, "Revision to Holtec Decommissioning International, LLC (HDI) Request for Exemptions from Certain Emergency Planning Requirements of 10 CFR 50.47 and 10 CFR Part 50, Appendix E for Indian Point Unit Nos. 1, 2, and 3," (Letter HDI-IPEC-22-014) (ADAMS Accession No. ML22033A348), dated February 2, 2022
9. Letter from Holtec Decommissioning International, LLC (HDI) to U.S. NRC, "License Amendment Request to Revise Indian Point Nuclear Generating Unit No. 2 Permanently Defueled Technical Specifications to Modify Staffing Requirements

following Transfer of Spent Fuel to Dry Storage,” dated August 2, 2022 (Letter HDI-IPEC-22-057) (ML22214A128)

10. Letter from Holtec Decommissioning International, LLC (HDI) to U.S. NRC, “License Amendment Request to Revise Indian Point Nuclear Generating Unit Nos. 2 and 3 Renewed Facility Licenses and Permanently Defueled Technical Specifications and IP3 Appendix C Technical Specifications to Reflect Permanent Removal of Spent Fuel from the IP2 and IP3 Spent Fuel Pits,” (HDI-IPEC-22-076) (ADAMS Accession No. [ML22306A165), dated November 2, 2022.
11. U.S. Environmental Protection Agency, “Protective Action Guides and Planning Guidance for Radiological Incidents,” EPA-400/R-17-001 (EPA PAG Manual), dated January 2017
12. Calculation Number HOLTEC00037-CALC-001, Activity Limits in Support of an ISFSI-Only EAL Scheme at Indian Point Energy Center, Rev. 0, dated October 24, 2022
13. NEI 99-01, Revision 6, “Development of Emergency Action Levels for Non-Passive Reactors,” (ADAMS Accession No. ML12326A805), dated November 21, 2012
14. Letter from Holtec International, “Holtec International Final Safety Analysis Report for the HI-STORM 100 Cask System,” Revision 23 (ADAMS Accession No. ML22108A275), dated April 18, 2022
15. Letter from U.S. Nuclear Regulatory Commission to Holtec International, “Issuance of Certificate of Compliance No. 1014, Amendment No. 15 for the HI-STORM 100 Multipurpose Canister Storage System (Docket No. 72-1014, CAC No. 001028, EPID: L-2019-LLA-0059,” dated May 13, 2021 (ML21118A863)
16. Letter from Samuel J. Collins (U.S. Nuclear Regulatory Commission) to Michael Kansler (Entergy Nuclear Operations, Inc), “Issuance of Order for Interim Safeguards and Security Compensatory Measures for – Indian Point Nuclear Generating Station, Unit Nos. 2 & 3,” dated February 25, 2002 (ADAMS Accession No. ML020500410)
17. NRC Bulletin (BL) 2005-02, “Emergency Preparedness and Response Actions for Security Based Events,” dated July 18, 2005 (ADAMS Accession No. ML051740058)
18. Federal Register, Volume 74, No. 58, Nuclear Regulatory Commission, 10 CFR Parts 50, 52, 72 and 73, “Power Reactor Security Requirements,” dated March 27, 2009 (pages 13926-13993)
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21. Letter from Holtec Decommissioning International, LLC (HDI) to U.S. NRC, "Biennial Defueled Safety Analysis Report Update, and Regulatory Commitment Change Summary – September 2020 to September 2022," (ADAMS Accession No. ML22257A127), dated September 14, 2022
22. IP3 Defueled Safety Analysis Report, Revision 0 (ADAMS Accession No. ML21270A056), dated November 9, 2021
23. Letter from Holtec Decommissioning International, LLC (HDI) to U.S. NRC, "Post Shutdown Decommissioning Activities Report including Site-Specific Decommissioning Cost Estimate for Indian Point Nuclear Generating Units 1, 2 and 3," (ADAMS Accession No. ML19354A698), dated December 19, 2019 as amended by March 25, 2022 HDI Report on Status of Decommissioning Funding for Reactors and Independent Spent Fuel Storage Installations (ADAMS Accession No. ML22084A059)
24. NUREG-0586, "Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities," (ADAMS Accession Nos. ML023470304, ML023470323, ML023500187, ML023500211, ML023500223), dated October 2002
25. NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1," Published November 1980
26. NRC letter, Mark Thaggard 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)," (ADAMS Accession No. ML12346A463), dated March 28, 2013
27. Letter from 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 (ML14155A112)
28. Letter from U.S. Nuclear Regulatory Commission to ZionSolutions LLC (Zion Nuclear Power Station), "Safety Evaluation Report for Defueled Station Emergency Plan License Amendments for Zion Units 1 and 2," dated May 14, 2015 (ML15092A423)
29. Letter from 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 (ML16211A060)

30. Letter from 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)
31. Letter from 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 (ML17048A474)
32. Letter from Marlayna G. Vaaler (U.S. Nuclear Regulatory Commission) to Thomas J. Palmisano (Southern California Edison Company) – "San Onofre Nuclear Generating Station, Units 1, 2, and 3 - Issuance of Amendments to Revise the Permanently Defueled Emergency Plan (CAC Nos. L53160, L53161, and L53162)", dated November 30, 2017 (ADAMS Accession No. ML17310B482)
33. Letter from 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)
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36. Letter from U.S. Nuclear Regulatory Commission to Constellation Energy Generation, LLC, "Three Mile Island Nuclear Station, Unit 1 – Issuance of Amendment to Change the Three Mile Island Station Emergency Plan and Emergency Action Level Scheme to Reflect an Independent Spent Fuel Storage Installation-Only Configuration," (EPID No. L-2021-LLA-0036), dated April 7, 2022 (ML22074A025)

Enclosure, Attachment 1

HDI-IPEC-22-080

ISFSI-Only Emergency Plan

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Part I: INTRODUCTION

Section A: Purpose

The purpose of the Independent Spent Fuel Storage Installation (ISFSI)-Only Emergency Plan (IOEP) is to ensure an adequate level of preparedness to cope with the spectrum of emergencies that could be postulated to occur with all spent fuel stored in the Indian Point Energy Center (IPEC) ISFSI. This plan integrates the necessary elements to provide effective emergency response considering cooperation and coordination of organizations expected to respond to potential emergencies.

Section B: Background

Description of the Indian Point Energy Center

Indian Point Nuclear Generating Units 1, 2, and 3 (IP1, IP2, and IP3), collectively referred to as Indian Point Energy Center (IPEC)) are located on the east side of the Hudson River. IPEC is about 24 miles north of New York City, at Indian Point, Village of Buchanan, in upper Westchester County, New York State. IPEC is about 2.5 miles southwest of the City of Peekskill; 8.3 miles south of West Point; and 2.3 miles north of Montrose Point. Rockland County is located west of IPEC, across the Hudson River.

By letter dated December 11, 2008, IPEC notified the NRC that all spent fuel assemblies had been removed from the IP1 spent fuel pit (SFP). By letter dated May 12, 2020, Entergy submitted certifications for permanent cessation of reactor operations at IP2 and permanent removal of fuel from the IP2 reactor vessel pursuant to 10 CFR 50.82(a)(1). By letter dated May 11, 2021, Entergy submitted certifications for permanent cessation of reactor operations at IP3 and permanent removal of fuel from the IP3 reactor vessel pursuant to 10 CFR 50.82(a)(1). Subsequently, all spent fuel in the IP2 and IP3 SFPs has been transferred to the on-site ISFSI.

This 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 SFPs. This IOEP adequately addresses the risks associated with IPEC's current condition.

The Holtec International (Holtec) Final Safety Analysis Report (FSAR) for the HI-STORM 100 Cask System describes the Design Basis Accidents (DBAs) applicable to the IPEC ISFSI along with the radiological dose calculation results. As provided in the Holtec FSAR, 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).

The analyses of the potential radiological impact of DBAs indicate that any releases beyond the Site Boundary are below the Environmental Protection Agency (EPA) 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. The IPEC 10 CFR 72.212 Report for the HI-STORM 100 System discusses compliance with Amendments 2, 4, 6, 9 and 15 of the Holtec HI-STORM 100 System Certificate of Compliance (CoC) terms, conditions, and specifications.

Section C: Scope

The IOEP has been developed to respond to potential radiological emergencies at the IPEC ISFSI. Because there are no postulated off-normal, natural phenomena or accident events 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.

The concepts presented in this 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 from selected portions of 10 CFR 50.47 and 10 CFR 50, Appendix E, were granted for IPEC by the NRC on *[insert date]* (ADAMS Accession Number: ML *[insert #]*). This plan is consistent with the remaining applicable requirements and applicable guidance 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 applicable guidance.

Abbreviations and acronyms used in this IOEP are included in Appendix 3.

Section D: Planning Basis

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

Emergency services are provided by local, public, and private entities. Fire support services are provided by the Verplanck Fire District; law enforcement support services are provided by the New York State Police, and Federal law enforcement authorities, as appropriate; ambulance services are provided by the Verplanck Fire District; and medical services are provided by New York-Presbyterian Hudson Valley Hospital in Cortland Manor.

Because there are no postulated events that would result in offsite dose consequences large enough to require pre-planned offsite radiological emergency response, emergencies are divided into two classifications: 1) Notification of Unusual Event (Unusual Event) and 2) Alert.

The emergency 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 with cognizant state and local response organizations. If determined appropriate by government officials, protective actions may be implemented to protect the public using the existing all-hazards approach to emergency planning.

IPEC is responsible for planning and implementing emergency measures within the site boundary. The IOEP is provided to meet that responsibility. To carry out specific emergency measures discussed in this IOEP, detailed emergency plan implementing procedures (EPIPs) are established and maintained. A list of EPIPs is included in Appendix 2.

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, exercises and drills, planning, and coordination appropriate to maintain an adequate level of emergency preparedness.

The IOEP is activated by the ISFSI Shift Supervisor (ISS) upon identification of an emergency based upon the Emergency Action Level (EAL) criteria. Upon declaration of an emergency, the ISS assumes the position of the Emergency Director. The emergency measures described in the subsequent sections and EPIPs are implemented in accordance with the emergency classification and nature of the emergency, and under the direction of the Emergency Director. Regulatory authorities and offsite support organizations are notified in accordance with this IOEP.

The Emergency Director has the ultimate authority and responsibility for control and mitigation of the emergency, including requesting 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 IPEC Emergency Response Organization (ERO), including interfaces with offsite support organizations.

This IOEP documents the methods by which the IPEC Emergency Preparedness Program meets the criteria set forth in 10 CFR Part 50, Section 47(b), and Appendix E, as exempted.

The IOEP, Revision 0, was approved per NRC Safety Evaluation in License Amendment **[insert #]** dated **[Insert date]**.

Part II: PLANNING STANDARDS AND CRITERIA

Section A: 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.

1. IPEC Emergency Response and Responsibilities

Holtec Decommissioning International, LLC (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 IPEC 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 IPEC ISFSI 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 IPEC 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, including making the necessary notifications. 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 individuals 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 B-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 situation and obtaining additional resources needed to respond to the event.

The functions assigned to the On-Shift and Augmenting ERO positions are specified in Section B of this IOEP. The ERO maintains the depth, qualifications, and

capability for continuous 24-hour coverage of the emergency response for a protracted period. The Emergency Director has the authority and is responsible for maintaining and ensuring the continuity of personnel and resources.

2. Offsite Response Organizations

Offsite Response Organizations (OROs) (local law enforcement support; medical and ambulance services, including hospital support; and fire/rescue support) may be requested to respond to an emergency at the IPEC ISFSI. The Emergency Director is responsible for requesting and coordinating the response provided by the OROs with the onsite activities. The OROs described in this IOEP are capable of 24-hour emergency response. Details related to the anticipated support from each ORO are described in Section C of this IOEP.

Letters of Agreement (LOAs) are listed in Appendix 1 and are addressed in Part 2, Section C of this IOEP.

Section B: Emergency Response Organization

Key ERO positions and associated responsibilities for each position are outlined below. The IPEC ERO provides for an initial emergency response and timely augmentation of on-shift personnel, when required. The interface among IPEC response personnel and OROs has been previously arranged.

1. IPEC Emergency Response Organization

Table B-1, Emergency Response Organization Minimum Staffing Requirements, outlines the minimum staffing required for emergency response. The ERO may be activated, in part or in whole, at any time at the discretion of the Emergency Director.

1.1 On-Shift Positions

IPEC 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 function:

(1) ISFSI Shift Supervisor / Emergency Director

The ISS is at the IPEC 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.

Other responsibilities assumed by the Emergency Director associated with the functions listed in Table B-1 include:

- Notification of the emergency classification to the State of New York, Westchester and Rockland Counties, and the NRC;
- Management of available station resources;
- Initiation of mitigative, corrective, and onsite protective actions;
- Decision to call for law enforcement, fire, or ambulance assistance;
- Augmentation of the emergency staff, as deemed necessary;

- Coordination of security activities;
- Performance of initial radiological assessment;
- Maintaining a record of event activities; and
- Suspending security measures; and
- Termination of the emergency condition when appropriate.

The Emergency Director cannot delegate the following responsibilities:

- Classification of an event
- Approval of emergency notifications to the State of New York, Westchester and Rockland Counties, and the NRC (although the task of making 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.

(2) Security

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

1.2 Augmenting ERO

IPEC maintains the necessary personnel and resources to support the Emergency Director in responding to an emergency. Personnel designated to augment the on-shift ERO are part of the Augmenting ERO. The Augmenting ERO is established to assure that a sufficient number of appropriately qualified personnel are available on a 24-hour-per-day, 7-day-per-week basis to respond to emergency situations.

During an emergency at the IPEC ISFSI, the initial phase of the response is managed by the On-Shift ERO. Following an Alert emergency declaration, or at the discretion of the Emergency Director, the Augmenting ERO is notified using a callout process, including onsite public address announcements.

A partial or complete activation of the Augmenting ERO may be implemented at an Unusual Event classification (refer to Section D of this IOEP), at the discretion of the Emergency Director.

The Augmenting ERO consists of the following positions:

(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 IPEC to perform the assigned responsibilities. Supplemental personnel shall report at the discretion of the Emergency Director and/or the Resource Manager.

(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 IPEC ISFSI within four (4) hours of the emergency declaration.

In addition to the resources listed above, supplemental personnel may be directed to report to the IPEC 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 IPEC staff and can be requested from various contractors.

2. Offsite Emergency Assistance

Offsite organizations may respond to a declared emergency at the IPEC ISFSI. Each of these organizations are capable of 24-hour-per-day, 7-day-per-week response and operation. The details of their responsibilities are described in Part 2, Section C, of this IOEP and are contained in their respective LOAs, listed in Appendix 1.

Table B-1

Emergency Response Organization Minimum Staffing Requirements

MAJOR FUNCTIONAL AREA	LOCATION	POSITION	AUGMENTING CAPABILITY
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	---

* As described in Part 2, Section B.1.2(1)

** As described in Part 2, Section B.1.2(2)

*** Provided by on-shift personnel assigned other functions.

Section C: 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. LOAs are in place for those organizations (local law enforcement support; medical and ambulance services, including hospital support; and fire/rescue support) identified below, that will respond to an emergency at the IPEC ISFSI.

1. Support Provided by Local Organizations

The availability of local support services to assist with the emergency response has been ascertained and LOAs from each organization described below have been obtained. All support is provided utilizing the National Incident Management System (NIMS) and the Incident Command System (ICS).

1.1 Law Enforcement

When notified that assistance is required, IPEC will notify the New York State Police, which is the lead Local Law Enforcement Agency (LLEA). The handling of security matters is addressed in the ISFSI Physical Security Plan and Incident Response Plan.

1.2 Ambulance Service

Ambulance service is provided by the Verplanck Fire District in accordance with the LOA with the Verplanck Fire District. The Verplanck Fire District will coordinate with other responding agencies, as necessary. This service is available on a 24-hour-per-day basis. Onsite procedures contain instructions that cover the call for assistance and the handling of the ambulance service personnel.

1.3 Hospital

The New York-Presbyterian Hudson Valley Hospital in Cortland Manor has agreed to accept patients from IPEC who have been injured, contaminated, or irradiated. The hospital provides facilities such as an emergency room, a laboratory, a radiology department, and a nuclear medicine department.

1.4 Fire

Offsite firefighting and rescue support are provided by the Verplanck Fire District in accordance with the LOA with the Verplanck Fire District. The Verplanck Fire District will coordinate with other responding agencies, as necessary.

2. State and County (Local) Government Response

Except for emergency notifications described in Part 2, Section E of this IOEP, and the services described in Part 2, Section C, Paragraph 1, of this IOEP, no specific coordination with the State of New York or the counties surrounding IPEC is required. State and local response to an emergency will be performed in accordance with each organization's plans and procedures.

3. Federal Response Support and Resources

In the event of an emergency at the IPEC ISFSI, the NRC Operations Center in Rockville, Maryland will be notified immediately after notification of the State of New York and local governments and not later than 60 minutes after an emergency declaration or change in classification. Classification and radiological information are communicated to this office over the commercial telephone line or via a wireless system from the IPEC 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 IPEC ISFSI. NRC responsibilities are directed toward a coordination of Federal efforts to assist 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 IPEC 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.

4. Letters of Agreement

HDI has entered into agreements with the OROs identified above that will provide support (local law enforcement support; medical and ambulance services, including hospital support; and fire/rescue support) in the event of an emergency at the IPEC ISFSI.

The agreements are listed in Appendix 1 and are maintained on file. These agreements identify the emergency measures to be provided, the mutually accepted criteria for implementation, and the arrangements for exchange of information.

Section D: Emergency Classification System

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

This section describes the emergency classification and EAL scheme used to determine the minimum response to an abnormal event at the IPEC ISFSI.

1. Emergency Classification System

The emergency classification system addresses possible or anticipated events and radiological and non-radiological emergencies at the IPEC 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: 1) Unusual Event and 2) Alert. Each of these emergency classifications require notification of the IPEC ERO, the State of New York, Westchester and Rockland Counties, and 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.

When 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 EAL Technical Bases Document 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.

HDI maintains the capability to assess, classify, and declare an emergency condition within 30 minutes after the availability of indications to plant personnel that an EAL threshold has been exceeded. The ISS promptly declares the emergency condition as soon as possible following identification of the appropriate ECL.

1.1 Unusual Event

An Unusual Event classification indicates 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.

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.

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 EIPs. The classification shall be maintained until the emergency is terminated or the emergency escalates to an Alert.

1.2 Alert

If an escalation to an Alert occurs, offsite authorities will be informed of the change within 60 minutes of the change in classification.

An Alert classification indicates 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 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 EIPs. The classification shall be maintained until the emergency is terminated. IPEC may enter Recovery operations while in the Alert classification.

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 Holtec HI-STORM FSAR describes the DBAs applicable to the IPEC ISFSI and the radiological dose calculation results. Specific guidance for classifying emergencies is found in EIPs and the ISFSI EAL Technical Bases Document.

3. State and Local Governmental Authorities

The EALs have been discussed with the State of New York and local governments (Westchester and Rockland Counties). Further, State and local governmental authorities are provided the opportunity to review the ISFSI EALs annually.

Section E: Notification Methods and Procedures

Procedures are established for notification to the State of New York and local response organizations (Westchester and Rockland Counties) and IPEC ERO personnel. The content of initial and follow-up messages to these organizations has been established.

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 Part 2, Section D of this IOEP is the primary bases for notification and has been mutually agreed upon by applicable State and Federal organizations.

The ISS is responsible for identifying the appropriate emergency classification, declaring the emergency and initiating emergency notifications.

Notification of an emergency declaration to is required within 60 minutes of emergency declaration, escalation, or change in radiological release status.

The following will receive notification of an emergency declaration:

- State of New York
- Westchester County
- Rockland County

IPEC, in cooperation with State and local authorities, has established mutually agreeable methods for notification. Notification methods to offsite agencies include a means of verification or authentication. Notification of an emergency declaration is the responsibility of the Emergency Director.

1.1 Initial Notification

For all classified events, Initial Notification shall be provided to the State of New York, Westchester County, and Rockland County within 60 minutes of the emergency declaration.

The format and content of the initial message is specified in EIPs and has been established with the review and agreement of responsible state authorities. The initial notification contains the following information, as available:

- 1) Authenticity, i.e. "This is NOT an Exercise (Drill)" or "This is an Exercise (Drill)";
- 2) Location of incident and the name and telephone number (or other applicable contact information) of the individual providing the notification;
- 3) Date and time of the incident;
- 4) Emergency classification and EAL;
- 5) Emergency response actions underway;

- 6) Whether a release has occurred, is occurring, or is anticipated to occur;
- 7) Actual or projected dose rates at the site boundary
- 8) Any request for on-site support from OROs; and

1.2 Follow-up Messages

Follow-up messages will be provided to the State of New York, Westchester County, and Rockland County as needed or on agreed upon intervals established with the offsite authorities. The content of follow-up messages is consistent with that provided for initial notifications described above, as known and appropriate.

2. Notification of the NRC

The NRC is notified immediately following notification of the State of New York and local governments, 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. Notification to the NRC is the responsibility of the Emergency Director.

3. Notification of the IPEC ERO

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 Part 2, Section B of this IOEP, the on-shift staff positions are staffed on a 24-hour-per-day basis and can perform all required actions to implement this IOEP.

As described in Part 2, Section B of this IOEP, the Resource Manager will be in contact with the Emergency Director within two (2) hours of an emergency declaration. Additionally, an Augmented Responder will be contacted for an event requiring radiological accident assessment. At the direction of the Emergency Director, additional personnel will be activated to augment the on-shift staff.

All onsite personnel are notified of the emergency declaration, escalation, or termination of an emergency by an announcement over the IPEC plant page system and portable radios, or through an electronic notification system capable of notifying site personnel by multiple means of communications (e.g., cell phone, email, text, landline, etc.).

Section F: Emergency Communications

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

Communication systems are tested to verify proper operation at the testing frequency specified in Table F-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 separate additional testing is not needed. Functionality is verified through normal (frequent) use of the system.

Table F-1
Emergency Communications Systems

Communication System	Testing Frequency
Commercial Telephone System	Frequent Use
Portable Radios	Frequent Use
Wireless Communications	Frequent Use

Communications equipment is operationally checked in accordance with Part 2, Section H of this IOEP to ensure reliable operation. The commercial telephone system is available at the IPEC ISFSI. The commercial telephone system is used for onsite and offsite communications; including the means for requesting medical, law enforcement and fire/rescue services via 911; and as the primary means of notifying and activating the IPEC ERO.

Commercial telephones serve as the primary means of providing emergency notifications to the State of New York, Westchester and Rockland Counties, and the NRC and are used to provide initial and follow-up notifications and for general information flow between these agencies.

In the event the commercial telephone systems are unavailable, wireless communications can be used as a backup means to make emergency notifications and maintain continuous communications with the state and counties and can serve as a backup means of notifying and activating the IPEC ERO.

Section G: Public Education and Information

The principal points of contact with the news media for dissemination of information during an emergency are established in advance, and procedures for coordinated dissemination of information to the public are established.

The Emergency Director or Resource Manager will notify Communications personnel of an emergency declaration. Communications personnel will serve as spokesperson and 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. Communications personnel, or senior IPEC or HDI management will represent the facility as the company spokesperson.

Section H: Emergency Facilities 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.

This section of the IOEP also describes the surveillance programs used to monitor and ensure that facilities and equipment are maintained in a high degree of constant readiness.

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 Part 2, Section B of this IOEP. The facility provides sufficient space to accommodate anticipated response personnel and provides 24-hour availability of the communications systems specified in Part 2, Section F of this IOEP. Radiological conditions resulting from the DBAs specified in the Holtec HI-STORM FSAR do not inhibit staffing of the ERF.

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.

2.1 Portable Radiation and Contamination Monitoring Instruments

IPEC 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.

2.2 Communication Systems

Communications systems providing for 24-hour-per-day onsite and offsite communications capabilities are identified and tested as described in Part 2, Section F of this IOEP.

2.3 First Aid Facility

First aid supplies and equipment are located at the ERF. Qualified personnel are available on a 24-hour-per-day basis to provide medical treatment as referenced in Part II, Section L of this IOEP.

2.4 Emergency Supplies

Emergency equipment and supplies necessary to carry out the provisions of the IOEP and EIPs are maintained at the ERF. Emergency kits are maintained in accordance with the EIPs and contain self-reading dosimeters. Sufficient reserves of instruments/equipment are provided to replace those which are removed from emergency kits for calibration or repair. Calibration of instruments has been established at intervals recommended by instrument suppliers, or as required by Federal regulations.

Table H-1 lists equipment, supplies, and reference materials that are to be maintained in the ERF and other onsite locations. Emergency equipment and supplies are stored at various locations throughout the site for immediate use by emergency forces.

TABLE H-1
Typical Emergency Equipment

Emergency equipment and supplies are stored at various locations throughout the site for immediate use by emergency personnel. The following is a listing of the types of equipment and supplies stored at various locations.

Emergency Response Facility

Procedures / Reference Materials	IOEP ISFSI EAL Technical Bases Document Emergency Telephone Directory EIPs
Equipment:	Portable radiation monitoring instruments Potable emergency lighting Medical emergency response kit

Onsite Locations

Equipment / Emergency Supplies:	Portable radiation and contamination monitoring instruments Contamination control supplies Decontamination supplies Protective clothing Dosimeters Radiological postings and barricades
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Section I: Accident Assessment

Effective response to a potential emergency requires assessment to determine the nature of the emergency and its actual and potential consequences. IPEC 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 values 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 Part 2, Section E of this IOEP.

Section J: Protective Actions

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

1. Notification of On-site Personnel

Facility personnel, contractors, and visitors are notified of an emergency using the IPEC Public Address System. Announcements include response actions to be taken by onsite and contractor personnel. Additionally, the announcements describe any necessary actions for visitors.

The Security Force will ensure the onsite emergency response personnel are notified as necessary of any emergency and the response actions to be taken.

2. 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 Controlled 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 suspended or delayed if movement of personnel would place them in more danger than leaving them in place, such as outside weather conditions or security events.

Accountability of persons located within the Site Boundary but outside the ISFSI Controlled Area is not required.

3. Personnel and Visitors Located outside of the ISFSI Controlled 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

Controlled Area but within the Site Boundary, will be directed to report to an assembly area or exit the site as appropriate, in accordance with EIPs.

In the event of a suspected radiological release, personnel are monitored for radioactive contamination prior to leaving the facility. Portable radiation survey meters are available to monitor for potential contamination

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

Section K: Radiological Exposure Control

The means for controlling radiological exposures during an emergency are established for emergency workers. Exposure guidelines in this section are consistent with the EPA PAG Manual (EPA-400/R-17/001).

The general guideline for emergency personnel exposure will be to keep it as low as reasonably achievable (ALARA). 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, or corrective or assessment actions within applicable limits specified in 10 CFR Part 20.

1. Emergency Exposure Guidelines

Radiation exposure in an emergency is controlled taking every reasonable effort to minimize exposure. However, circumstances may warrant exposure in excess of 10 CFR Part 20 limits. Saving a life, measures to circumvent substantial exposures to the general public, or the prevention of damage to critical equipment may be sufficient cause for above normal exposures. The Emergency Director is responsible for authorizing personnel to receive doses in excess of 10 CFR Part 20 limits, if necessary. Table K-1 identifies the exposure guidelines for emergency activities.

Table K-1
Emergency Exposure Criteria
(Refer to Note 1)

Guideline	Activity	Condition
5 rem	All occupational exposures	All reasonably achievable actions have been taken to minimize dose.
10 rem ^(a)	Protecting critical infrastructure necessary for public welfare	Exceeding 5 rem is unavoidable and all appropriate actions have been taken to reduce dose. Monitoring available to project or measure dose.
25 rem ^{(b)(c)}	Lifesaving or Protection of Large Population	Exceeding 5 rem is unavoidable and all appropriate actions have been taken to reduce dose. Monitoring available to project or measure dose.
>25 rem ^{(b)(c)}	Lifesaving or protection of large populations	All conditions above and only for people fully aware of the risks involved.

NOTES:

1. Reference for this table is Table 3-1 of the EPA PAG Manual.
- (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) Only on a voluntary basis. Response actions that could cause exposures in excess of 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.

2. Radiation Protection

IPEC 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 K-1 with every attempt, made to keep exposures ALARA.

3. 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.

4. 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 are to be used, who is to wear them, and how they are to be cared for. Emergency worker dose records are maintained in accordance with Radiation Protection procedures.

5. 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 under the supervision of personnel trained in radiological monitoring and assessment and in accordance with established procedures.

Portable contamination monitoring instruments are available to frisk personnel for potential contamination.

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

Section L: Medical and Public Health Support

Arrangements are made for medical services for contaminated injured individuals. On-shift personnel and equipment are available to provide first aid for personnel working at the site. Medical emergency supplies are located at various locations onsite.

If urgent professional medical help is needed, local ambulance services are available to transport seriously ill, injured, or radioactively contaminated-injured personnel.

1. Onsite First Aid

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

2. Medical Transportation

Arrangements have been made for transporting injured, contaminated, and irradiated personnel to the hospital via the Verplanck Fire District. These services are available on a 24-hour-per-day basis. Transportation is also available via IPEC vehicles or private vehicles, if necessary.

When personnel are transported to the hospital in a contaminated condition, personnel trained in radiological monitoring will be dispatched to monitor and maintain radiological controls.

3. Offsite Medical Support

An agreement is in place with New York-Presbyterian Hudson Valley Hospital for medical treatment of patients from IPEC who have injuries complicated by radioactive contamination. The hospital has trained personnel for handling radioactively contaminated patients from IPEC. These services and facilities are available on a 24-hour-per-day basis.

Part 2, Section C of this IOEP contains details of the ambulance and hospital arrangements and capabilities.

Section M: Re-Entry and Recovery Planning

IPEC has established general plans described in the following sections to address recovery from potential emergencies at the IPEC ISFSI. The recovery organization will be based on the normal IPEC ISFSI organization.

The senior management position directs the recovery organization and is responsible for:

- Ensuring the IPEC ISFSI is maintained in a safe condition;
- Managing onsite recovery activities during the initial recovery phase;
- Keeping corporate support apprised of IPEC ISFSI activities and requirements.

1. Recovery Operations

IPEC 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 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.

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

Section N: Drill and Exercise Program

Periodic exercises are conducted to evaluate major portions of emergency response capabilities. Periodic drills are conducted to develop and maintain key emergency response skills. Deficiencies resulting from 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.

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 organization(s)
- 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
 - 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.

The scenarios are designed to allow free play in exercising the decision-making process associated with such emergency response actions as exposure control, emergency classification, and the ERO and additional staff augmentation process. Starting times and pre-notification for exercises are coordinated with and agreed upon by all participating organizations.

1. Exercises

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.

Offsite organizations are invited and offered the opportunity to participate to the extent assistance would be expected during an emergency declaration. However, participation by offsite organizations is not required, nor are offsite response organizations evaluated.

2. Drills

Drills are conducted for the purpose of training, developing, and maintaining the proficiency of emergency responders. 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.

2.1 Equipment and Proficiency Drills

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.

Drills may be performed as part of the biennial exercise, integrated drill, or as an independent drill. A drill may be a component of an exercise. Drills are supervised and evaluated by qualified personnel.

Drills and/or surveillance tests are conducted at IPEC for the following:

(1) Communication Drills or Surveillances

To ensure that emergency communications systems described in Part 2, Section F of this IOEP are operable, communications tests are conducted as outlined below.

- To test the capability to notify the State of New York, Westchester County, and Rockland County utilizing commercial telephone system, the capability is functionally tested annually. This drill will include the aspect of understanding the content of the message.
- To test the capability to communicate with the NRC, communication systems are tested annually.
- The communication systems listed below, as detailed in Part 2, Section F of this IOEP, are used on a frequent basis. Therefore, periodic testing of these capabilities is not necessary.
 - Commercial Telephone System
 - Portable Radios
 - Wireless communications

Performance of the Communication Drills satisfies the testing requirements specified in Part 2, Section F of this IOEP.

(2) Fire Drills

Fire Drills are conducted in accordance with the Fire Protection Plan.

(3) Medical 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 and hospital. This drill may be performed separately or as part of the

biennial exercise. The Verplanck Fire District and New York-Presbyterian Hudson Valley Hospital are invited to participate to demonstrate and practice the receipt and treatment of contaminated patients.

(4) Radiation Protection 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 exercise or drill.

(5) 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 ISS / Emergency Director after an emergency declaration.

3. Critique and Evaluation

Critiques are used to evaluate the performance of participating 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 action 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. The report will also contain reference to corrective actions and recommendations for revisions to the IOEP, EIPs and/or the upgrade of emergency equipment and supplies resulting from the exercise or drill.

Section O: 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 IPEC ISFSI who fill required positions in the ERO will take part in a training program to ensure adequate preparedness to assist in an emergency. OROs that may be called upon for emergency assistance will also be invited to participate in appropriate training programs.

1. Emergency Response 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.

1.1 ERO Training (ISFSI Shift Supervisor / Emergency Director and Resource Manager)

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/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 as delineated in the sections below:

(1) First Aid Response

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

(2) Fire Response

Fire Training is conducted in accordance with the Fire Protection Plan.

(3) 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/Exercise-Identified Deficiencies

(4) Security

Security Response is based upon a normal daily security function that is to safeguard the site. Security personnel receive specialized training in the following areas:

- Assembly / Accountability
- Site Evacuation
- Search and Rescue

(5) 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

Personnel assigned to work at IPEC receive initial and periodic refresher training on general station procedures and policy. This training includes required actions to be taken if an emergency is declared.

2. Support Organization Training

Training is offered annually to support organizations (fire, ambulance, medical, and law enforcement agencies) that may be called upon to provide assistance in the event of an emergency. The training shall be structured to meet the needs of that organization with respect to the nature of their support. Topics of event notification,

site access and orientation, basic radiation protection, and interface activities are included in the training.

3. Training Records

Records associated with training of IPEC personnel are documented and maintained in accordance with facility procedures. Records associated with training offered and/or provided to OROs is documented and maintained in accordance with facility procedures.

Section P: Responsibility for the Maintenance of the Planning Effort

Responsibilities for development, review, and distribution of the IOEP and actions that must be performed to maintain the IOEP are established, and personnel who perform the planning are properly trained.

1. Responsibility for Development and Maintenance of the Plan

1.1 Overall Authority and Responsibility

A member of IPEC's 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.

1.2 Maintaining the Emergency Preparedness Program

The IPEC 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:

- Development, maintenance, and revision of the IOEP and EIPs are accomplished in accordance with applicable regulations and industry standards.
- LOAs listed in Appendix 1 are reviewed biennially and updated as necessary.
- Review and approve the IOEP and Emergency Planning Procedures prior to implementation.
- Development and maintenance of 10 CFR 50.54(q) evaluations of program changes.
- Adequate support is provided to ensure the training program for offsite response personnel is in place and maintained.
- Development and maintenance of a working relationship with OROs.
- Oversee Emergency Preparedness Training Program and ensuring that proper records are maintained to document training and retraining of the ERO.
- Preparation for and conduct of the EP drill and exercise program.
- Documenting the activities of the Emergency Preparedness Program as required by law and regulations.
- Corrective actions identified during the conduct of exercises, drills, training, audits, and inspections are tracked in the Corrective Action Program.
- Ensuring an independent review of the Emergency Preparedness Program is conducted to meet the requirements of 10 CFR 50.54(t).

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.

2. Review and Update of the IOEP

The IOEP, the associated EIPs, and the ISFSI EAL Technical Bases Document 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 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, EIPs, and the ISFSI EAL Technical Bases Document. Proposed activities that may impact the IOEP must be evaluated per 10 CFR 50.54(q) and 10 CFR 72.44(f).

The IOEP and EIPs are distributed on a controlled basis.

3. Review and Update of the IOEP

A phone list contains telephone numbers used by the IPEC ERO during an emergency. This directory contains names and phone numbers of the IPEC ERO, support personnel, and applicable offsite organizations. These numbers are verified at least annually and updated as necessary.

4. Letters of Agreement

Appendix 1 of this IOEP contains a listing of LOAs with support agencies. Every two years, each Agreement is reviewed and verified current in order to assure the availability of assistance from each supporting organization.

5. Cross-Reference to Planning Criteria

The IOEP is formatted in the same manner as Attachment 1 of ISG-02, as detailed in Appendix 2. This allows for ease in auditing evaluation criteria.

6. Inventory and Maintenance of Emergency Equipment and Supplies

Periodic inventory, testing, and calibration of emergency equipment and supplies are conducted in accordance with approved procedures. This equipment includes, but is not limited to:

- Portable radiation monitoring equipment
- Emergency medical response equipment

- Dosimeters
- Portable Radios

Emergency equipment and instrumentation (refer to Part 2, Section H of this IOEP) shall be inventoried, inspected, and operationally checked periodically as indicated by the procedure and after each use. Sufficient reserves of equipment and instrumentation are stocked to replace emergency equipment and instrumentation removed from service for calibration and/or repair.

Part III: APPENDICES

Appendix 1 Letters of Agreement

Copies of LOAs for the offsite emergency response supporting organizations listed below are maintained in the Emergency Planning Department files.

1. Verplanck Fire District (Fire/Ambulance)
2. New York-Presbyterian Hudson Valley Hospital
3. New York State Police

Per Section P, the LOAs with outside support organizations and government agencies are reviewed and confirmed every two years. These letters are updated as needed. Letters with no specific end date remain in effect until terminated in writing by either party.

Appendix 2 Cross-Reference Sections of the IOEP to Emergency Planning Procedures

Cross reference table of regulations and guidance documents to the IOEP and EPIPs.

Emergency Plan Section	Planning Standard 10 CFR 50.47**	Planning Requirement Appendix E.IV**	ISG-02, Attachment 1 Evaluation Criteria	Procedure
A	(b)(1)	A.1, 2, 4, 7	A	To Be Determined (TBD)
B	(b)(2)	A.1, 2, 4; C.1	B	TBD
C	(b)(3)	A.6, 7	C	TBD
D	(b)(4)	8.1, 2; C.1, 2	D	TBD
E	(b)(5)	A.6, 7; C.1; D.1, 3; E	E	TBD
F	(b)(6)	C.1; D.1, 3; E	F	TBD
G	(b)(7)	Exempt	G	TBD
H	(b)(8)	E;G	H	TBD
I	(b)(9)	A.4; 8.1; C.2; E	I	TBD
J	(b)(10)	C.1; E	J	TBD
K	(b)(11)	E	K	TBD
L	(b)(12)	A.6, 7; E	L	TBD
M	(b)(13)	H	M	TBD
N	(b)(14)	E9; F	M	TBD
O	(b)(15)	F	O	TBD
P	(b)(16)	G	P	TBD

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

Appendix 3 Abbreviations and Definitions

Abbreviations

Any abbreviation followed by a lower case "s" denotes the plural form of the term.

ALARA	As Low As Reasonably Achievable
CFR	Code of Federal Regulations
CoC	Certificate of Compliance
DBA	Design Basis Accident
EAL	Emergency Action Level
ECL	Emergency Classification Level
EPA	U.S. Environmental Protection Agency
EPIP	Emergency Plan Implementing Procedure
ERF	Emergency Response Facility
ERO	Emergency Response Organization
FSAR	Final Safety Analysis Report
HDI	Holtec Decommissioning International, LLC
IC	Initiating Condition
ICS	Incident Command System
IP1	Indian Point Unit 1
IP2	Indian Point Unit 2
IP3	Indian Point Unit 3
IOEP	ISFSI-Only Emergency Plan
IPEC	Indian Point Energy Center
ISFSI	Independent Spent Fuel Storage Installation
ISG	Interim Staff Guidance
ISS	ISFSI Shift Supervisor
LLEA	Local Law Enforcement Agency
LOA	Letter of Agreement
mRem	milli-Roentgen Equivalent Man
mSv	millisievert
NIMS	National Incident Management System
NRC	U.S. Nuclear Regulatory Commission
ORO	Offsite Response Organization
PAG	Protective Action Guide
RCA	Radiologically Controlled Area
SFP	Spent Fuel Pit

Definitions

Accountability - The process used by the IPEC ERO to identify potentially missing and/or injured personnel within the ISFSI Controlled Area during an emergency.

Annual – Frequency of occurrence equal to once per calendar year, between January 1st and December 31st.

Assessment Actions - Those actions taken during or after an accident to obtain and process information that is necessary to make decisions to implement specific emergency measures.

Biennial – Frequency of occurrence equal to once per two calendar years.

Classification - The classification of emergencies is divided into TWO (2) categories or conditions, covering the postulated spectrum of emergency situations. Each emergency classification is characterized by Emergency Action Levels (EALs) or event initiating conditions. The two classifications address emergencies of increasing severity.

Corrective Actions - Those emergency measures taken to ameliorate or terminate an emergency situation at or near its source.

Drill - A supervised instruction period aimed at testing, developing and maintaining skill in a particular operation.

Emergency Action Level (EAL) - A predetermined, site-specific, observable threshold for a plant Initiating Condition that places the plant in a given emergency class.

Emergency Director - A previously designated and trained individual who assumes total responsibility for directing all licensee activities related to an emergency at the site.

Emergency Plan Implementing Procedures – Procedures that provide detailed information necessary to maintain the Emergency Planning Program and implement required tasks during an emergency.

Indian Point Energy Center (IPEC) - The combined areas immediately surrounding IP1, IP2, and IP3, and the ISFSI that are owned and operated by the licensee.

ISFSI Controlled Area – The area surrounding the IPEC ISFSI encompassed by physical barriers and to which access is controlled.

Offsite - Locations outside of the Indian Point Energy Center Site boundary.

On-site - The area within the Indian Point Energy Center Site boundary.

Owner Controlled Area - The fenced area containing licensee property.

Protective Action Guide (PAG) - Projected radiological dose values to individuals in the general population who warrant protective action. Protective Action Guides contain criteria used to determine whether the general population needs protective action regarding projected radiological doses, or from actual committed (measured) dose values.

Radiologically Controlled Area – Any area within plant buildings or on plant property where access is restricted and monitored for the purpose of radiation protection.

Recovery Actions - Those actions taken after the emergency to restore the plant as nearly as possible to its pre-emergency condition.

Site Boundary - That line beyond which the land is neither owned, leased, nor otherwise controlled by the site licensee. For dose assessment purposes the Site Boundary is the closest distance at which members of the public would be exposed to a radioactive release.

Enclosure, Attachment 2

HDI-IPEC-22-080

ISFSI Emergency Action Level Technical Bases Document

Indian Point Energy Center

ISFSI-Only Emergency Action Level Technical Bases Document

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1.0 PURPOSE

This document provides the detailed set of Emergency Action Levels (EALs) applicable to the Indian Point Energy Center (IPEC)) when all nuclear fuel has been located at the INDEPENDENT SPENT FUEL STORAGE INSTALLATION (ISFSI). As a permanently defueled facility, IPEC 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, "Development of Emergency Action Levels for Non-Passive Reactors," Revision 6 (Reference 5.1.1). 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 IPEC 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 technical 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 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

Appendix C of NEI 99-01 provides guidance for an emergency classification scheme applicable to a permanently defueled station, which 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 (ECLs) applicable to a permanently defueled facility are consistent with requirements of 10 CFR Part 50 (Reference 5.1.2), as exempted (Reference 5.1.3), and the guidance presented in NSIR/DPR-ISG-02, "Interim Staff Guidance, Emergency Planning Exemption Requests for Decommissioning Nuclear Power Plants," (ISG-02) (Reference 5.1.4).

To relax the emergency plan requirements applicable to an operating station, the owner of a permanently defueled station must demonstrate that no credible event can result in a significant radiological release beyond the site boundary. Analyses have been performed, confirming that the source term and motive force available in the

permanently defueled condition are insufficient to warrant classifications of a Site Area Emergency or General Emergency.

Therefore, the generic ICs and EALs applicable to a permanently defueled station with all spent fuel stored in the ISFSI, may result in either a NOTIFICATION of UNUSUAL EVENT (UNUSUAL EVENT) or an 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 ISFSI. The ECLs applicable to an ISFSI are consistent with the requirements of 10 CFR Part 50, as exempted (Reference 5.1.3). The ICs germane to a 10 CFR 72.32 emergency plan (as described in NUREG-1567, "Spent Fuel Dry Storage Facilities" (Reference 5.1.5)) 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," (Reference 5.1.6). 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 (TEDE).

Regarding the above information, the expectations for an offsite response to an ALERT classified under a 10 CFR 72.32 emergency plan (Reference 5.1.7) are generally consistent with those for an UNUSUAL EVENT in a 10 CFR 50.47 emergency plan (Reference 5.1.8) (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 Level

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 on-site and off-site response actions.

The ECLs that are applicable to IPEC, in ascending order of severity, are:

3.1.1 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.

The purpose of this classification is to assure that the first step in future response has been carried out, to bring the IPEC staff to a state of readiness, and to provide systematic handling of 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.

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

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., a Security Condition).

Each IC is given a unique identification code consisting of letter combinations and one number. The first letter(s) establish the scope of the IC followed by hyphen. The next letter identifies the recognition category. The final letter identifies the ECL. Finally, a number identifies the sequence of the IC within the recognition category.

The EAL identification codes are developed as follows:

Permanently Defueled Recognition Categories

- PD-H – Hazards and Other Conditions Affecting Plant Safety

ISFSI Recognition Category

- E-H – Hazards and Other Conditions Affecting ISFSI

3.3 Emergency Action Level

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

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.

4.0 GUIDANCE ON MAKING EMERGENCY CLASSIFICATIONS

4.1 General Considerations

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 facility 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., 60 minutes), the ISFSI Shift Supervisor (ISS) / 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 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 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 (Reference 5.1.9).

While the EALs have been developed to address possible or anticipated events and conditions which may warrant emergency classification, a provision for classification based on ISS / Emergency Director's experience and judgment is still necessary. The NEI 99-01, Rev. 6, scheme provides the ISS / 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 ISS / 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 ISS / Emergency Director 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 related 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 Emergency Director 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,” (RIS 2007-02) (Reference 5.1.10).

4.4 Classification of Imminent Conditions

Although EALs provide specific thresholds, the ISS / 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 IMMIDENT). If, in the judgment of the ISS / Emergency Director, meeting an EAL is IMMIDENT, the emergency classification should be made as if the EAL has been met.

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 a SECURITY CONDITION.

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,” (NUREG-1022) (Reference 5.1.11) 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.

5.0 REFERENCES

5.1 Developmental References

- 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 Letter from Holtec Decommissioning International, LLC (HDI) to U.S. NRC, "Revision to Holtec Decommissioning International, LLC (HDI) Request for Exemptions from Certain Emergency Planning Requirements of 10 CFR 50.47 and 10 CFR Part 50, Appendix E for Indian Point Unit Nos. 1, 2, and 3," (ADAMS Accession No. ML22033A348), dated February 2, 2022
[Upon issuance of the requested exemptions, this Reference will be eliminated and replaced by Implementing Reference 5.2.3 citing the NRC document approving the exemptions]
- 5.1.4 NSIR/DPR-ISG-02, Interim Staff Guidance, Emergency Planning Exemption Requests for Decommissioning Nuclear Power Plants
- 5.1.5 NUREG-1567, Spent Fuel Dry Storage Facilities
- 5.1.6 NUREG-1140, A Regulatory Analysis on Emergency Preparedness for Fuel Cycle and Other Radioactive Material Licensees
- 5.1.7 10 CFR 72.32, Emergency Plan
- 5.1.8 10 CFR 50.47, Emergency Plans
- 5.1.9 10 CFR 50.72, Immediate Notification Requirements for Operating Nuclear Power Reactors
- 5.1.10 RIS 2007-02, Clarification of NRC Guidance for Emergency Notifications During Quickly Changing Events, February 2007
- 5.1.11 NUREG-1022, Event Reporting Guidelines 10 CFR 50.72 and 50.73

5.2 Implementing References

- 5.2.1 IPEC ISFSI-Only Emergency Plan
- 5.2.2 Procedure Number [TBD], "*Emergency Classification*"

5.3 Commitments

None

6.0 ACRONYMS, ABBREVIATIONS, AND DEFINITIONS

6.1 Acronyms and Abbreviations

CFR.....	Code of Federal Regulations
CoC.....	Certificate of Compliance
DSAR.....	Defueled Safety Analysis Report
EAL.....	Emergency Action Level
ECL.....	Emergency Classification Level
EPA.....	Environmental Protection Agency
FEMA.....	Federal Emergency Management Agency
ISFSI.....	Independent Spent Fuel Storage Installation
IC.....	Initiating Condition
IP1.....	Indian Point Unit 1
IP2.....	Indian Point Unit 2
IP3.....	Indian Point Unit 3
MPC.....	Multi-Purpose Canister
mRem.....	milli-Roentgen Equivalent Man
NEI.....	Nuclear Energy Institute
NRC.....	U.S. Nuclear Regulatory Commission
PAG.....	Protective Action Guide
PD.....	Permanently Defueled
Rem.....	Roentgen Equivalent Man
TEDE.....	Total Effective Dose Equivalent

6.2 Definitions

6.2.1 **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 EPA PAG exposure levels.

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

- 6.2.3 EMERGENCY ACTION LEVEL (EAL): A pre-determined, site-specific, observable threshold for an Initiating Condition that, when met or exceeded, places the facility in a given ECL.
- 6.2.4 EMERGENCY CLASSIFICATION LEVEL (ECL): One of a set of names or titles established by the 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, in ascending order of severity, are UNUSUAL EVENT and ALERT:
- 6.2.7 HOSTAGE: A person(s) held as leverage against the licensee to ensure that demands will be met by the facility.

NOTE

A Hostile Action-Based program is not necessary for decommissioned nuclear power reactors; however, the consideration of HOSTILE ACTIONS for EAL purposes is still applicable.

- 6.2.8 HOSTILE ACTION: An act toward a facility 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 facility. 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 (OCA)).
- 6.2.9 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.
- 6.2.10 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.
- 6.2.11 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.

- 6.2.12 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.
- 6.2.15 ISFSI CONTROLLED AREA: The area surrounding the IPEC ISFSI encompassed by physical barriers and to which access is controlled.
- 6.2.16 PROJECTILE: An object directed toward a facility that could cause concern for its continued operability, reliability, or personnel safety.
- 6.2.17 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 facility. A SECURITY CONDITION does not involve a HOSTILE ACTION.
- 6.2.19 UNUSUAL EVENT (NOTIFICATION OF UNUSUAL EVENT): Events are in progress or have occurred which indicate a potential degradation of the level of safety of the facility or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation occurs.

7.0 ATTACHMENTS

Attachment 1, EAL Matrices

Attachment 2, EAL Bases

Attachment 1
EAL Matrices

Table PD-1: Recognition Category “PD” Initiating Condition Summary Matrix

UNUSUAL EVENT	ALERT
PD-HU1 Confirmed SECURITY CONDITION or threat at the Independent Spent Fuel Storage Installation (ISFSI).	PD-HA1 HOSTILE ACTION is occurring or has occurred.
PD-HU3 Other conditions exist which in the judgment of the Emergency Director warrant declaration of an UNUSUAL EVENT.	PD-HA3 Other conditions exist which in the judgment of the Emergency Director warrant declaration of an ALERT.

Table E-1: Recognition Category “E” Initiating Condition Summary Matrix

UNUSUAL EVENT
E-HU1 Damage to a loaded cask CONFINEMENT BOUNDARY.

ALERT		UNUSUAL EVENT	
Hazards and Other Conditions Affecting Facility Safety			
Security	<p>PD-HA1 HOSTILE ACTION is occurring or has occurred.</p> <p>EMERGENCY ACTION LEVEL (EAL): A HOSTILE ACTION is occurring or has occurred within the ISFSI as reported by the Security Shift Supervisor.</p>	<p>PD-HU1 Confirmed SECURITY CONDITION or threat at the Independent Spent Fuel Storage Installation (ISFSI).</p> <p>EMERGENCY ACTION LEVEL (EALs): (1 or 2)</p> <ol style="list-style-type: none"> 1. A SECURITY CONDITION that does not involve a HOSTILE ACTION as reported by the Security Shift Supervisor. <p>OR</p> <ol style="list-style-type: none"> 2. Notification of a credible security threat directed at the site. 	
Emergency Director Judgment	<p>PD-HA3 Other conditions exist which in the judgment of the Emergency Director warrant declaration of an ALERT.</p> <p>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.</p>	<p>PD-HU3 Other conditions exist which in the judgment of the Emergency Director warrant declaration of an UNUSUAL EVENT.</p> <p>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 off-site response or monitoring are expected unless further degradation of systems needed to maintain spent fuel integrity occurs.</p>	
ALERT		UNUSUAL EVENT	
ISFSI Malfunction			
ISFSI	None	<p>E-HU1 Damage to a loaded cask CONFINEMENT BOUNDARY.</p> <p>EMERGENCY ACTION LEVEL (EAL):</p> <ol style="list-style-type: none"> 1. Damage to a loaded cask CONFINEMENT BOUNDARY as indicated by an on-contact radiation reading greater than EITHER of the following: <ul style="list-style-type: none"> • 40 mRem/hr (gamma + neutron) on the top of the OVERPACK • 220 mRem/hr (gamma + neutron) on the side of the OVERPACK, excluding inlet and outlet ducts 	

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 on the ISFSI pad for some period of time.

When in a permanently defueled condition, the plant licensee typically receives approval from the NRC for exemption from specific emergency planning requirements. These exemptions reflect the lowered radiological source term and risks associated with spent fuel pit storage relative to reactor at-power operation. Source terms and accident analyses associated with plausible accidents are documented in the station's Defueled Safety Analysis Report (DSAR), as updated. 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 as documented in the station's DSAR.

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 Categories A, C, F, H, and S were modified and included in Recognition Category PD to address a spectrum of the events that may affect a spent fuel pit. Once all of the irradiated fuel has been removed from the spent fuel pit the spectrum of potential emergency events that may occur are again greatly reduced. Based on industry precedence, some of Hazard Recognition Category (PD-H) ICs and EALs, as reflected in this document, are being maintained.

Table PD-1: Recognition Category "PD" Initiating Condition Matrix, provides a summary of initiating conditions associated with Recognition Category PD.

Recognition Category E EAL Basis

Recognition Category E provides an IC/EAL 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

PD-HU1

EMERGENCY CLASSIFICATION LEVEL:

UNUSUAL EVENT

INITIATING CONDITION:

Confirmed SECURITY CONDITION or threat at the Independent Spent Fuel Storage Installation (ISFSI).

EMERGENCY ACTION LEVEL (EALs): (1 or 2)

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

OR

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

Basis:

This IC addresses events that pose a threat to facility personnel 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.

Classification of these events will initiate appropriate threat-related notifications to facility personnel and OROs.

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

EAL #1 references the Security Shift Supervisor because these are the individuals trained to confirm that a security event is occurring or has occurred. Training on security event confirmation and classification is controlled due to the nature of Safeguards and 10 CFR § 2.39 information.

EAL #2 addresses the receipt of a credible security threat. The credibility of the threat is assessed in accordance with the IPEC Safeguards Contingency Plan (Reference 2).

Emergency plans and implementing procedures are public documents; therefore, EALs should not incorporate Security-sensitive information. This includes information that may be advantageous to a potential adversary, such as the particulars concerning a specific threat or threat location. Security-sensitive information should be contained in non-public documents such as the IPEC Safeguards Contingency Plan. Escalation of the ECL would be via IC PD-HA1.

Additional IPEC Site-Specific Bases Information

The determination of “credible” is made through use of information found in the IPEC Safeguards Contingency Plan (Reference 2).

0-AOP-SEC-1, “Response to Security Compromise” (Reference 3) provides guidance for response to security related events based on contingency events at IPEC, including validation of the threats. Hostile Action should not be construed to include acts of civil disobedience or felonious acts that are not part of a concerted attack on IPEC. 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).

Basis Reference(s):

1. NEI 99-01 Rev. 6, PD-HU1
2. IPEC Safeguards Contingency Plan
3. 0-AOP-SEC-1, “Response to Security Compromise”

PD-HA1

EMERGENCY CLASSIFICATION LEVEL:

ALERT

INITIATING CONDITION:

HOSTILE ACTION is occurring or has occurred.

EMERGENCY ACTION LEVEL (EAL):

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

Basis:

This IC addresses the occurrence of a HOSTILE ACTION within the IPEC OWNER CONTROLLED AREA.

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 on-site protective measures (e.g., evacuation, dispersal or sheltering). The ALERT declaration will also heighten the awareness of OROs, 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.

This EAL is applicable for any HOSTILE ACTION occurring, or that has occurred, in the IPEC ISFSI.

Emergency plans and implementing procedures are public documents; therefore, EALs should not incorporate Security-sensitive information. This includes information that may be advantageous to a potential adversary, such as the particulars concerning a specific

threat or threat location. Security-sensitive information should be contained in non-public documents such as the IPEC Safeguards Contingency Plan.

Additional IPEC Site-Specific Bases Information

0-AOP-SEC-1, "Response to Security Compromise" (Reference 3) provides guidance for response to security related events based on contingency events at IPEC.

Basis References:

1. NEI 99-01 Rev. 6, PD-HA1
2. IPEC Safeguards Contingency Plan
3. 0-AOP-SEC-1, "Response to Security Compromise"

PD-HU3

EMERGENCY CLASSIFICATION LEVEL:

UNUSUAL EVENT

INITIATING CONDITION:

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 off-site response or monitoring are expected unless further degradation of systems needed to maintain spent fuel integrity 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 ECL description for an UNUSUAL EVENT.

Additional IPEC Site-Specific Bases Information

None

Basis Reference(s):

1. NEI 99-01, PD-HU3
2. IPEC ISFSI-Only Emergency Plan, Part 2, Section B, "Emergency Response Organization"

PD-HA3

EMERGENCY CLASSIFICATION LEVEL:

ALERT

INITIATING CONDITION:

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.

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 ECL description for an ALERT.

Additional IPEC Site-Specific Bases Information

None

Basis Reference(s):

1. NEI 99-01, PD-HA3
2. IPEC ISFSI-Only Emergency Plan, Part 2, Section B, "Emergency Response Organization"

E-HU1

EMERGENCY CLASSIFICATION LEVEL:

UNUSUAL EVENT

INITIATING CONDITION

Damage to a loaded cask CONFINEMENT BOUNDARY.

EMERGENCY ACTION LEVEL (EAL):

Damage to a loaded cask CONFINEMENT BOUNDARY as indicated by an on-contact radiation reading greater than **EITHER** of the following:

- 40 mRem/hr (gamma + neutron) on the top of the OVERPACK
- 220 mRem/hr (gamma + neutron) on the side of the OVERPACK, excluding inlet and outlet ducts

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 issues of concern are the creation of a potential or actual release path to the environment, degradation of one or more fuel assemblies due to environmental factors, and configuration changes which could cause challenges in removing the cask or fuel from storage.

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

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

Additional IPEC Site-Specific Bases Information

The results of the ISFSI Safety Analysis Report (SAR) [per NUREG 1536], or a SAR

referenced in the cask Certificate of Compliance (CoC) and the related NRC Safety Evaluation Report, identify the natural phenomena events and accident conditions that could potentially affect the CONFINEMENT BOUNDARY. This EAL addresses damage that could result from the range of identified natural or man-made events (e.g., a dropped or tipped over cask, EXPLOSION, FIRE, EARTHQUAKE, etc.).

An UNUSUAL EVENT in this EAL is categorized 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.

CONFINEMENT BOUNDARY means the outline formed by either: (1) the sealed, cylindrical enclosure of the Multi-Purpose Canister (MPC) shell welded to a solid baseplate, a lid welded around the top circumference of the shell wall, the port cover plates welded to the lid, and the closure ring welded to the lid and MPC shell providing the redundant sealing; or (2) the sealed, cylindrical enclosure of the Shielded Transfer Canister (STC) inner shell welded to a solid base plate and an upper flange, with the upper flange bolted to a solid closure lid with the lid to flange interface having a double elastomeric o-ring seal, and with the lid having vent and drain ports with bolted solid cover plates with each cover plate having an elastomeric o-ring seal.

The on-contact radiation readings equate to 2 times the value presented in Appendix A of the Holtec International HI-STORM 100 Cask System CoC No. 72-1014, Technical Specification 5.7.4 (Reference 3). Because the IPEC ISFSI contains casks loaded under Amendments 2, 4, 6, 9, 12 and 15 of the Holtec International HI-STORM 100 Cask System CoC No. 72-1014, this EAL utilizes the allowable levels of Amendment 2 as these would be the first to be reached in the case of a confinement boundary failure issue. On-contact radiation readings are defined in Amendment 2 as 20 mRem/hr on the top of the overpack, and 110 mRem/hr on the side of the overpack, excluding near the inlet and outlet ducts per the cask system technical specifications (Reference 3).

Minor surface damage that does not affect storage cask boundary is excluded from the scope of this EAL.

Basis Reference(s):

1. NEI 99-01, Rev. 6, E-HU1
2. Holtec International HI-STORM 100 Cask System CoC No. 72-1014 Amendments 2, 4, 6, 9, and 15
3. Technical Specifications for the HI-STORM 100 Cask System, Administrative Control 5.7.4