UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

November 13, 2023

Jean A. Fleming
Vice President, Licensing,
Regulatory Affairs, and PSA
Holtec International, LLC
Krishna P. Singh Technology Campus
1 Holtec Boulevard
Camden, NJ 08104

SUBJECT: NRC ISSUANCE OF INDIAN POINT ENERGY CENTER AMENDMENTS REGARDING CHANGES TO THE EMERGENCY PLAN AND EMERGENCY ACTION LEVEL SCHEME TO ADDRESS THE PERMANENTLY DEFUELED CONDITION (EPID L-2021-LLA-0237)

Dear Jean Fleming:

The U.S. Nuclear Regulatory Commission (NRC, the Commission) has issued the enclosed Amendment No. 65 to Provisional Operating License No. DPR-5 for Indian Point, Unit 1 (IP1), Amendment No. 296 to Renewed Facility License No. DPR-26 for Indian Point, Unit 2 (IP2), and Amendment No. 273 to Renewed Facility Operating License No. DPR-64 for Indian Point, Unit 3 (IP3). The amendments issued are in response to your application dated December 22, 2016 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML21356B704), as revised by letter dated February 4, 2022 (ML22035A121).

The amendment revises the site emergency plan and emergency action level scheme to reflect the permanently shutdown and defueled condition of the Indian Point Energy Center (IPEC). The amendment is effective as of the date of its issuance and shall be implemented within 60 days.

A copy of the related safety evaluation is also enclosed. A Notice of Issuance will be included in the Commission's monthly *Federal Register* notice.

In accordance with Title 10 of the *Code of Federal Regulations* 2.390, "Public inspections, exemptions, requests for withholding," of the NRC's "Agency Rules of Practice and Procedure," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's ADAMS. ADAMS is accessible from the NRC website at https://www.nrc.gov/reading-rm/adams.html.

If you have any questions concerning the above, please contact me at 301-415-8534 or via email at Karl.Sturzebecher@nrc.gov.

Sincerely,


Signed by Sturzebecher, Karl
on 11/13/23

Karl J. Sturzebecher, Project Manager
Reactor Decommissioning Branch
Division of Decommissioning, Uranium Recovery
and Waste Programs
Office of Nuclear Material Safety
and Safeguards

Docket Nos. 50-003, 50-247, 50-286

Enclosures:
1. Amendment No. 65 to DPR-5
2. Amendment No. 296 to DPR-26
3. Amendment No. 273 to DPR-64
4. Safety Evaluation

Cc w/enclosures: Indian Point ListServ

UNITED STATES
NUCLEAR REGULATORY COMMISSION
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HOLTEC DECOMMISSIONING INTERNATIONAL, LLC AND

HOLTEC INDIAN POINT 2, LLC

INDIAN POINT NUCLEAR GENERATING STATION, UNIT NO. 1

DOCKET NO. 50-003

AMENDMENT TO PROVISIONAL OPERATING LICENSE

Amendment No. 65
License No. DPR-5

1. The U.S. Nuclear Regulatory Commission (NRC, the Commission) has found that:

   A. The application for amendment by Holtec Decommissioning International, LLC (HDI), on behalf of Holtec Indian Point 2, LLC (IP1 & IP2) for Indian Point Nuclear Generating Station, Unit No. 1 at the Indian Point Energy Center complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in Title 10 of the *Code of Federal Regulations* (10 CFR), Chapter I, "Nuclear Regulatory Commission;"

   B. The facility will be maintained in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance: (i) that the activities authorized by this renewed license can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the rules and regulations of the Commission;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions," of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, by Amendment No. 65, Facility Operating License No. DPR-5 is hereby amended to authorize the revision to the Holtec Indian Point 1 Emergency Plan and Emergency Action Level Scheme as set forth in HDI application dated December 22, 2021, as supplemented by letter dated February 4, 2022, and evaluated in the NRC staff's safety evaluation issued with this amendment.

3. The license amendment is effective as of its date of issuance and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION

Signed by Lubinski, John
on 11/13/23

John W. Lubinski, Director
Office of Nuclear Material Safety
and Safeguards

Date of Issuance: November 13, 2023

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

HOLTEC DECOMMISSIONING INTERNATIONAL, LLC AND

HOLTEC INDIAN POINT 2, LLC

INDIAN POINT NUCLEAR GENERATING STATION, UNIT NO. 2

DOCKET NO. 50-247

AMENDMENT TO RENEWED FACILITY LICENSE

Amendment No. 296
Renewed License No. DPR-26

1. The U.S. Nuclear Regulatory Commission (NRC, the Commission) has found that:

   A. The application for amendment by Holtec Decommissioning International, LLC (HDI), on behalf of Holtec Indian Point 2, LLC (IP1 & IP2), for Indian Point Nuclear Generating Station, Unit No. 2 at the Indian Point Energy Center complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in Title 10 of the *Code of Federal Regulations* (10 CFR), Chapter I, "Nuclear Regulatory Commission;"

   B. The facility will be maintained in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance: (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the rules and regulations of the Commission;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions," of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, by Amendment No. 296, Facility Operating License No. DPR-26 is hereby amended to authorize the revision to the Holtec Indian Point 2 Emergency Plan and Emergency Action Level Scheme as set forth in HDI application dated December 22, 2021, as supplemented by letter dated February 4, 2022, and evaluated in the NRC staff's safety evaluation issued with this amendment.

3. The license amendment is effective as of its date of issuance and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION

Signed by Lubinski, John
on 11/13/23

John W. Lubinski, Director
Office of Nuclear Material Safety
and Safeguards

Date of Issuance: November 13, 2023

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

HOLTEC DECOMMISSIONING INTERNATIONAL, LLC AND

HOLTEC INDIAN POINT 3, LLC

INDIAN POINT NUCLEAR GENERATING STATION, UNIT NO. 3

DOCKET NO. 50-286

AMENDMENT TO RENEWED FACILITY LICENSE

Amendment No. 273
Renewed License No. DPR-64

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Holtec Decommissioning International, LLC (HDI), on behalf of Holtec Indian Point 3, LLC (IP3), for Indian Point Nuclear Generating Unit No. 3 at the Indian Point Energy Center complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in Title 10 of the *Code of Federal Regulations* (10 CFR), Chapter I, "Nuclear Regulatory Commission;"

   B. The facility will be maintained in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance: (i) that the activities authorized by this amendment license can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the rules and regulations of the Commission;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public;

   E. The issuance of this amendment is in accordance with 10 CFR Part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions," of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, by Amendment No. 273, Facility Operating License No. DPR-26 is hereby amended to authorize the revision to the Holtec Indian Point 3 Emergency Plan and Emergency Action Level Scheme as set forth in HDI application dated December 22, 2021, as supplemented by letter dated February 4, 2022, and evaluated in the NRC staff's safety evaluation issued with this amendment.

3. The license amendment is effective as of its date of issuance and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION

Signed by Lubinski, John
on 11/13/23

John W. Lubinski, Director
Office of Nuclear Material Safety
and Safeguards

Date of Issuance: November 13, 2023

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY

THE OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS

RELATED TO AMENDMENT NOS. 65, 296 AND 273

TO PROVISIONAL OPERATING LICENSE NO. DPR-5

RENEWED FACILITY OPERATING LICENSES NOS. DPR-26 AND DPR-64

HOLTEC DECOMMISSIONING INTERNATIONAL, LLC.

INDIAN POINT ENERGY CENTER

DOCKET NOS. 50-003, 50-247, and 50-286

1.0 INTRODUCTION

By application dated December 22, 2021 (Reference 1), as supplemented by letters dated February 4 and May 12, 2022 (References 2 and 3, respectively), and email dated December 5, 2022 (Reference 4), Holtec Decommissioning International, LLC (HDI, or the licensee) requested changes to the Indian Point Nuclear Generating Station, Units 1, 2, and 3 (known collectively as Indian Point Energy Center or IPEC) site emergency plan and emergency action level (EAL) scheme. The application's proposed license amendment request (LAR) would revise the IPEC site emergency plan and the IPEC EAL scheme, consistent with the U.S. Nuclear Regulatory Commission (NRC, the Commission) staff's approval of associated emergency preparedness and planning exemptions. The granting of these exemptions is based on the Commission's approval, as documented in Staff Requirements Memorandum (SRM) to SECY-22-0102, "Request by Holtec Decommissioning International, LLC for Exemptions from Certain Emergency Planning Requirements for the Indian Point Energy Center" (Reference 5).

The licensee's supplemental application dated February 4, 2022, contained a copy of the proposed IPEC permanently defueled emergency plan, "Indian Point Energy Center Permanently Defueled Emergency Plan (PDEP)," Revision 0, referred to hereafter as the permanently defueled emergency plan (PDEP), in Attachment 1 of the application; an EAL scheme, including a description and evaluation of the proposed changes and revisions in Attachment 2 of the application; and a comparison matrix to the NRC endorsed EAL scheme provided in the Nuclear Energy Institute (NEI) document NEI 99-01, Revision 6, "Development of Emergency Action Levels for Non-Passive Reactors," dated November 2012 (Reference 6), in Attachment 3 of the application.

The supplemental letters dated February 4 and May 12, 2022, provided additional information that clarified the application, but did not expand the scope of the application as originally noticed, or change the NRC's original proposed no significant hazards consideration determination as published in the *Federal Register* (FR) on January 25, 2022 (87 FR 3844).

1.1 Background

The IPEC facility consists of approximately 239 acres located at Indian Point in the Village of Buchanan of upper Westchester County in New York State. IPEC is located approximately 24 miles north of the New York City boundary line. Rockland County is located west of IPEC, across the Hudson River.

Indian Point Unit 1 (IP1) ceased generating on October 31, 1974, and all fuel was removed from the IP1 reactor vessel by January 1976. By June 19, 1980 (Reference 7), the Order Revoking Authority to Operate Facility was issued by the NRC for IP1. In 1996, the NRC issued an order approving the safe-storage condition of IP1. In 2003, the NRC issued Amendment No. 52 to IP1's provisional operating license that changed the license's expiration date to be consistent with that of the Indian Point Unit 1 (IP2) license at that time (Reference 8). On December 11, 2008, IPEC notified the NRC that all spent fuel assemblies had been removed from the IP1 spent fuel pool (SFP). IP1 spent fuel has been removed from the site or placed in the existing IPEC Independent Spent Fuel Storage Installation (ISFSI). Holtec Decommissioning International, LLC (HDI), which became the IPEC licensee on May 28, 2021 (Reference 9), on behalf of Holtec Indian Point 2, LLC and Holtec Indian Point 3, LLC, confirmed there is no IP1 spent fuel in wet storage at the IPEC site, as the previous owner Entergy on moved the IP1 spent fuel into onsite dry cask storage in an ISFSI (Reference 10).

By letter dated February 8, 2017 (Reference 11), in accordance with sections 50.4(b)(8), "Certification of permanent cessation of operations," and 50.82(a)(1)(i), "Termination of license – For power reactor licensees," to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities," Entergy Nuclear Operations, Inc., Entergy Nuclear Indian Point 2, LLC, and Entergy Nuclear Indian Point 3, LLC (collectively, "Entergy") certified to the NRC that it had decided to permanently cease power operations at IPEC, Units 2 and 3, by April 30, 2020 and April 30, 2021, subject to operating extensions through, but not beyond, 2024 and 2025, respectively.

Pursuant to 10 CFR 50.82(a)(1)(ii), by letters dated May 12, 2020, and May 11, 2021 (References 12 and 13, respectively), Entergy certified to the NRC that the fuel had been permanently removed from the IP2 and Indian Point Unit 3 (IP3) reactor vessels and placed in the SFP. Upon the docketing of these certifications, under 10 CFR 50.82(a)(2), the IP2 and IP3 licenses no longer authorize operation of the reactors or emplacement or retention of fuel into the reactor vessels. The spent fuel will be stored in the SFP and in dry cask storage at the onsite ISFSI until it is shipped offsite.

By letter dated December 22, 2021 (Reference 14), as supplemented by letters dated February 1, 2022, February 2, 2022, and May 12, 2022 (References 15, 16 and 17, respectively), HDI requested exemptions from specific portions of 10 CFR 50.47, "Emergency plans," and 10 CFR Part 50, Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities." The requested exemptions would allow IPEC to reduce emergency planning requirements and subsequently revise the IPEC Emergency Plan consistent with the anticipated permanently defueled condition of the station.

The licensee submitted the proposed IPEC PDEP and EAL scheme to the NRC in accordance with 10 CFR 50.54(q)(4), "Emergency plans," contingent on the NRC's prior approval of certain exemptions from specific requirements of 10 CFR 50.47 and Appendix E to 10 CFR Part 50. By letter dated November 1, 2023 (Reference 18), the NRC staff granted HDI exemptions from certain emergency preparedness and planning (EP) requirements in 10 CFR 50.47 and Appendix E to 10 CFR Part 50 in accordance with 10 CFR 50.12, "Specific exemptions."

In granting the requested exemptions, the NRC primarily relied on the IPEC site-specific analyses, which provided reasonable assurance that: (1) an offsite radiological release would not exceed the early phase protective action guides (PAGs), provided in the U.S. Environmental Protection Agency (EPA), EPA-400/R-17/001, "PAG Manual: Protective Action Guides and Planning Guidance for Radiological Incidents," January 2017 (Reference 19), at the site's exclusion area boundary (EAB) for the remaining design-basis accident (DBA) applicable to the IPEC facility in its permanently shutdown and defueled condition; and (2) in the highly unlikely event of a severe beyond DBA resulting in a loss of all cooling to the spent fuel stored in the IPEC SFP, there would be a significant amount of time between the initiating event and the possible onset of conditions that could result in a zirconium cladding fire. This time provides a substantial opportunity for event mitigation. IPEC is required to maintain effective strategies, sufficient resources, and adequately trained personnel to mitigate such an event. While a beyond DBA is unlikely, if State or local government officials determine that offsite protective actions are warranted, then sufficient time and capability would also be available for offsite response organizations (OROs) to implement these measures using a comprehensive emergency management plan (CEMP) or "all-hazards" approach.[1]

The Commission's approval of the requested exemptions is documented in the SRM to SECY-22-0102. With the NRC's approval of the requested EP exemptions, HDI stated that the proposed IPEC PDEP will continue to meet the remaining planning standards in 10 CFR 50.47(b) and the requirements in Appendix E to 10 CFR Part 50, as exempted.

In addition to the proposed changes in the IPEC PDEP, HDI is proposing to change the entire EAL scheme to reflect the permanently shutdown and defueled condition of IPEC. In accordance with Section IV.B.2 of Appendix E to 10 CFR Part 50, the licensee must receive NRC approval before implementing a change to the entire EAL scheme. The licensee stated that proposed permanently defueled condition IPEC EAL scheme was developed based on the guidance contained in NEI 99-01, Revision 6.

2.0 REGULATORY EVALUATION

2.1 Emergency Plan

Section 50.47 of 10 CFR sets forth the emergency plan requirements for nuclear power reactors. Specifically, 10 CFR 50.47(a)(1)(i) states, 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.

[1] A CEMP in this context, also referred to as an emergency operations plan, is addressed in the Federal Emergency Management Agency (FEMA) Comprehensive Preparedness Guide (CPG) 101, "Developing and Maintaining Emergency Operations Plans," Version 2.0, dated November 2010 (Reference 20).

Section 50.47(b) of 10 CFR establishes the standards that the onsite and offsite 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.

Appendix E, Section IV, "Content of Emergency Plans," to 10 CFR Part 50 provides the requirements for the content of the licensee's emergency plan.

In addition, 10 CFR 50.72(a)(3), "Immediate notification requirements for operating nuclear power reactors – General requirements," states:

> The licensee shall notify the NRC immediately after notification of the appropriate State or local agencies and not later than one hour after the time the licensee declares one of the Emergency Classes.

The EP regulations contained in 10 CFR 50.47(b) and Appendix E to 10 CFR Part 50 apply to both operating nuclear power reactors and permanently shutdown and defueled nuclear power reactors. However, the EP regulations are silent with regard to the fact that once a nuclear power reactor permanently ceases operation and permanently removes fuel from the reactor vessel, the risks of credible emergency accident scenarios at the facility are greatly reduced. Therefore, the consistent practice for permanently shutdown and defueled nuclear power reactors has been for the licensees to request exemptions under 10 CFR 50.12, which allow changes to the facility's emergency plan commensurate with the credible site-specific risks that are present during decommissioning. Such EP exemptions generally recognize the reduction in radiological risk as spent fuel ages and the preclusion of accidents that are strictly applicable to an operating nuclear power reactor.

The practice of granting exemptions from the Commission's EP regulations is a well-established part of the NRC regulatory process. This process allows licensees to address site-specific situations or to implement alternative approaches in response to circumstances that are not necessarily contemplated in regulations that are generally intended for operating nuclear power reactors. The exemption process, which allows the NRC to provide relief in appropriate circumstances where safety and security continue to be assured, is not unique to the decommissioning of nuclear power reactors or to the specific EP technical areas. The Commission makes decisions on exemption requests on a site-specific, case-by-case basis, following an established process that includes the NRC staff's detailed technical assessment on individual exemption requests. According to 10 CFR 50.12, the Commission may grant exemptions from the requirements of its regulations, which (1) are authorized by law, (2) will not present an undue risk to the public health and safety, (3) are consistent with the common defense and security, and present special circumstances.

The guidance in Revision 1 to NUREG-0654/FEMA-REP-1 (NUREG-0654), "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," published November 1980 (Reference 21), provides guidance for the format and content of an emergency plan, which can be applied to the planning standards in 10 CFR 50.47(b). NUREG-0654, which the current IPEC Emergency Plan is based on, therefore provides an acceptable method for nuclear power reactor licensees to develop radiological emergency response plans. In addition, Attachment 1, "Staff Guidance for Evaluation of Permanently Defueled Emergency Plans," to Interim Staff Guidance (ISG) document NSIR/DPR-ISG-02, "Emergency Planning Exemption Requests for Decommissioning Nuclear Power Plants," dated May 11, 2015 (Reference 22), provides an acceptable method for

the NRC staff's review of PDEPs for sites undergoing decommissioning, and was developed to ensure decommissioning facilities continue to meet remaining applicable evaluation criteria in Section II, "Planning Standards and Evaluation Criteria," to NUREG-0654.

2.2 Emergency Action Level Scheme

Paragraph 50.47(b)(4) of 10 CFR, as exempted for IPEC (exempted language indicated by **bold ~~strikethrough~~** text), 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~~**.

This requirement emphasizes the use of a standard emergency classification and action level scheme, thereby assuring that implementation methods are relatively consistent throughout the industry for a given reactor and containment design, while simultaneously providing an opportunity for a licensee to modify its EAL scheme as necessary to address plant-specific design considerations or preferences.

Section IV.B of Appendix E to 10 CFR Part 50, as exempted for IPEC (exempted language indicated by **bold ~~strikethrough~~** text), states:

> 1. 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.~~** The initial emergency action levels shall be discussed and agreed on by the applicant or licensee and State and Local governmental authorities and approved by the NRC. Thereafter, emergency action levels shall be reviewed with the State and local governmental authorities on an annual basis.
>
> 2. 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. Licensees shall follow the change process in Section 50.54(q) for all other emergency action level changes.

The NRC staff's emergency classification and action level scheme review is based upon a revision to the IPEC EAL scheme provided in the licensee's letter dated February 4, 2022. As part of this review, the NRC staff assessed the site-specific modifications made by IPEC to the guidance provided by NEI 99-01, Revision 6. The NRC endorsed the NEI 99-01 methodology by letter dated March 28, 2013 (Reference 23), as an acceptable method for developing EALs

required by 10 CFR 50.47(b)(4), Section IV.B.1 of Appendix E to 10 CFR Part 50, and the associated planning standard evaluation criteria in Section II.D of NUREG-0654. In addition, the NEI 99-01 methodology also provides guidance for permanently shutdown and defueled nuclear power reactors for the development of a site-specific emergency classification scheme.

3.0 TECHNICAL EVALUATION

3.1 Permanently Defueled Emergency Plan

Pursuant to HDI's certifications of permanent cessation of operations and permanent removal of fuel from the reactor vessel under 10 CFR 50.82, "Termination of license," no power reactor operations can take place, and HDI is prohibited from moving the fuel from the SFP to the reactor vessel. Consequently, the proposed PDEP describes the licensee's response to emergencies that may arise at the IPEC facility while it is in a permanently shutdown and defueled configuration. Recognizing that there are no longer any credible DBAs that would result in offsite dose consequences large enough to require offsite radiological emergency preparedness (REP) plans in accordance with 44 CFR Part 350, "Review and Approval of State and Local Radiological Emergency Plans and Preparedness," the PDEP no longer specifies the requirements for formal offsite REP planning. Additionally, the onsite EP activities contained in the IPEC PDEP are reduced in scope. The PDEP specifically implements the planning standards of 10 CFR 50.47(b) and the requirements in Appendix E to 10 CFR Part 50, as exempted by letter dated November 1, 2023.

This safety evaluation summarizes the NRC staff's technical evaluation of the IPEC PDEP, based on the planning standards of 10 CFR 50.47(b) and the requirements in Appendix E to 10 CFR Part 50, as exempted for IPEC, and using the remaining applicable evaluation criteria provided in NUREG-0654, as outlined in Attachment 1 to NSIR/DPR-ISG-002 (Reference 24). The proposed changes, as exempted for IPEC, are shown with **bold ~~strikethrough~~** text of the current wording associated with the regulations.

3.1.1 Assignment of Responsibility (Organizational Control)

Paragraph 50.47(b)(1) of 10 CFR, as exempted for IPEC, states:

> Primary responsibilities for emergency response by the nuclear facility licensee and by State and local organizations **~~within the Emergency Planning Zones~~** 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.

The IPEC PDEP identifies that the Shift Manager position consists of one Shift Manager for each unit[2] (IP2 and IP3 respectively). This position is staffed 24 hours a day and is the senior management position at the facility during off-hours and is responsible for monitoring facility conditions and approving onsite activities. The Shift Manager has the authority, management ability, and technical knowledge to classify and declare a facility emergency and assume the Emergency Director role.

[2] In accordance with Technical Specifications.

In response to a request for information clarify how the Shift Managers would assume the Emergency Director duties for a site event vs. a unit specific event, HDI stated, in part,

> Per procedures IP-EP-120, "Emergency Classification," and IP-EP-210 "Central Control Rooms," the Unit 3 Shift Manager (or Unit 2 Shift Manager if the Unit 3 Shift Manager is incapacitated) shall implement the appropriate procedures for any related decommissioning initial emergency classifications. For classifiable events that potentially impact both units (Security, Natural or Man Made), the Unit 3 Shift Manager will confer with the Unit 2 Shift Manager and SHALL declare the event in accordance with the procedure.

In addition to the Shift Manager, the proposed designated on-shift staffing includes one Non-Certified Operator (NCO) per unit[3] and a Radiation Protection Technician, along with security personnel. The IPEC Emergency Response Organization (ERO) is activated at the declaration of an Alert classification level and will augment the on-shift staff within approximately 2 hours of the declaration of an Alert classification level. However, the ERO may be activated, in part or in whole, at the discretion of the Shift Manager/Emergency Director for a Notification of Unusual Event (Unusual Event) classification level.

The normal on-shift staff complement provides the initial response to an emergency. This group is trained to handle emergency situations, including implementation of the IPEC PDEP and conduct routine and immediate site-specific accident mitigation response to an emergency. This group is trained to handle emergency situations, including implementation of the IPEC PDEP, and making initial accident assessments, emergency classifications, notifications, and protective action recommendations until ERO augmentation has occurred. The minimum staff required to conduct routine and immediate emergency mitigation is maintained at the facility. The designated on-shift personnel are those personnel required to direct or perform the site-specific mitigation strategies required for a loss of SFP inventory.

Arrangements are in place with OROs through letters of agreement for ambulance services, treatment of contaminated and injured patients, fire support services, and law enforcement response as requested by the facility. Evidence of these agreements with participating local services are listed in Appendix 1, "Letters of Agreement," of the IPEC PDEP.

OROs that may respond onsite as requested to a declared emergency at the IPEC facility include:

- Medical Support Organizations and Personnel
  - Verplanck Fire District
  - New York-Presbyterian Hudson Valley Hospital
- Firefighting Organizations
  - Verplanck Fire District
- Law Enforcement Agencies
  - New York State Police

Based on the NRC staff's review of the IPEC PDEP, as described above, the NRC staff finds that the proposed PDEP meets the applicable evaluation criteria of NUREG-0654, as outlined in Attachment 1 to NSIR/DPR-ISG-02. The IPEC PDEP adequately describes the concept of

[3] In accordance with Technical Specifications.

operations for individuals and organizations responsible for responding to emergencies at the site, identifies the position of Shift Manager/Emergency Director as the individual in charge of the emergency response, and identifies the minimum staff on duty at the plant during all shifts to provide emergency response. Additional personnel are available on an on-call basis to respond to plant emergencies. Based on this review, the NRC staff concludes that planning standard 10 CFR 50.47(b)(1), and the requirements of Sections IV.A.1, A.2, A.4 and A.7 of Appendix E to 10 CFR Part 50, as exempted for IPEC, pertaining to assignment of responsibility (organization control), are addressed in an acceptable manner in the IPEC PDEP considering the permanently shutdown and defueled status of the facility.

3.1.2 Onsite Emergency Organization

Paragraph 50.47(b)(2) of 10 CFR states:

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

The IPEC PDEP identifies that IPEC has designated personnel on-shift at all times, including one Shift Manager at each unit (IP2 and IP3), one NCO at each unit (IP2 and IP3), and one Radiation Protection Technician and security personnel, who will provide the initial response to an event. The Shift Manager is the on-shift individual who initially declares an emergency classification and assumes the role of Emergency Director. The Shift Manager/Emergency Director has the authority, management ability, and technical knowledge to classify and declare a facility emergency. In addition, the Emergency Director has other duties and responsibilities such as directing the activities of the emergency response personnel and the emergency response, classification of the event, and notification of the emergency classification to the State of New York, Westchester and Rockland counties, and the NRC. The IPEC PDEP also specifies the non-delegable and delegable responsibilities for the Emergency Director position.

Shift Managers/Emergency Directors, Technical Coordinators, and Radiation Protection Coordinators shall have training conducted such that proficiency is maintained on topics covered according to the PDEP. IPEC personnel available during emergencies to perform emergency response activities as an extension of their normal duties receive duty specific training. This includes facility on-shift personnel, maintenance, radiation protection, and security personnel.

The IPEC ERO (on-shift and augmented) is graphically illustrated in Figure B.1, “Emergency Response Organization.” Table B.1, “Emergency Response Organization Minimum Staffing Requirements,” provides the functional responsibilities of the on-shift and augmenting ERO positions that fulfill the emergency staffing requirements.

The IPEC PDEP is activated by the Shift Manager upon identification of an emergency situation based upon EAL criteria. The IPEC ERO is activated at an Alert classification. However, the ERO can be activated in part or in whole at the discretion of the Emergency Director for an Unusual Event. The ERO is to augment the on-shift staff within 2 hours of an Alert classification. The designated on-shift and augmented IPEC ERO staff are capable of continuous (24-hour) operations for a protracted period once the emergency classification has been made and the Shift Manager shall assume the position of Emergency Director. The on-shift staff is augmented

by additional personnel that report as directed after receiving notification of an emergency requiring augmented staff. Augmented staff provide the technical expertise required to assist the Emergency Director. The minimum augmented staff consists of a Technical Coordinator and a Radiation Protection Coordinator.

Based on the NRC staff's review of the IPEC PDEP, as described above, the NRC staff finds that the proposed PDEP meets the applicable evaluation criteria of NUREG-0654, as outlined in Attachment 1 to NSIR/DPR-ISG-02. The IPEC PDEP identifies: (1) the onsite ERO and its relationship to the normal shift complement; (2) the on-shift individual responsible for emergency response as the Shift Manager, who has the authority and responsibility to initiate the functional responsibilities for emergency response; (3) adequate staffing to provide initial facility accident response in key functional areas; (4) that timely augmentation of response capabilities is available; (5) that local services are identified with letters of agreement in place, and (6) arrangements for the treatment and transportation of contaminated injured personnel. Based on this review, the NRC staff concludes that planning standard 10 CFR 50.47(b)(2), and the requirements of Sections IV.A.1, A.2, A.3, A.4, A.9 and C.1 of Appendix E to 10 CFR Part 50, as exempted for IPEC, pertaining to the onsite emergency organization, are addressed in an acceptable manner in the IPEC PDEP, considering the permanently shutdown and defueled status of the facility.

3.1.3 Emergency Response Support and Resources

Paragraph 50.47(b)(3) of 10 CFR, as exempted for IPEC, states:

> Arrangements for requesting and effectively using assistance resources have been made**~~, arrangements to accommodate State and local staff at the licensee's Emergency Operations Facility have been made,~~** and other organizations capable of augmenting the planned response have been identified.

The IPEC PDEP indicates that the Emergency Director is authorized to request assistance, as needed, including offsite fire, ambulance and local law enforcement response. Letters of agreement are in place for those local agencies that would respond to the site if requested and for the local hospital that may be required to treat a contaminated injured individual from the site, as designated in the IPEC PDEP. These letters of agreement are discussed in Section 3.1.1 of this safety evaluation.

Based on the NRC staff's review of the IPEC PDEP, as described above, the NRC staff finds that the proposed PDEP meets the applicable evaluation criteria of NUREG-0654, as outlined in Attachment 1 to NSIR/DPR-ISG-02. The PDEP adequately describes the arrangements for requesting assistance from other organizations or individuals in an emergency, and that this assistance is supported by letters of agreement. Based on this review, the NRC staff concludes that planning standard 10 CFR 50.47(b)(3), and the requirements of Sections IV.A.7 of Appendix E to 10 CFR Part 50, as exempted for IPEC, pertaining to emergency response support and resources, are addressed in an acceptable manner in the IPEC PDEP, considering the permanently shutdown and defueled status of the facility.

3.1.4 Emergency Classification System

Paragraph 50.47(b)(4) of 10 CFR, as exempted for IPEC, states:

> 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.**

The IPEC PDEP identifies that the emergency classification system is based on consideration of conceivable consequences of potential situations ranging from incidents where effects on the facility and personnel are negligible to highly unlikely releases of radioactivity. The emergency classification of these conditions, both radiological and non-radiological, indicates the relative severity for immediate implementation of response actions. The revised EAL scheme categorizes accidents and/or emergency situations into one of two emergency classification levels (ECLs) depending on emergency conditions at the time of the incident. The ECLs applicable at IPEC, considering the permanently shutdown and defueled status of the facility, in order of increasing severity are listed as an Unusual Event and an Alert. The classification of emergencies up to an Alert is consistent with the regulations for an ISFSI in 10 CFR 72.32(a)(3), "Emergency Plan – Classification of accidents," as well as the exemptions granted to Section IV.C.1 to Appendix E, which eliminated the Site Area and General classification levels, as described in the NRC's letter dated November 1, 2023.

The IPEC EAL scheme, which specifies ECLs of Unusual Event and Alert, is based on NEI 99-01, Revision 6, as applied to a permanently shutdown and defueled nuclear power reactor with fuel stored onsite in the SFP and an ISFSI. When indications are available to on-shift personnel that an EAL threshold has been met, the event is assessed and the corresponding ECL is declared. IPEC maintains the capability to assess, classify, and declare an emergency condition within 30 minutes after the availability of indications that an EAL threshold has been reached, consistent with Section IV.C.2 to Appendix E, as exempted, which removed the requirement to classify within 15 minutes. Emergency classifications are to be made as soon as conditions are present and recognizable for the classification in accordance with the applicable EALs, but within 30 minutes in all cases after the availability of indications to operators that an EAL threshold has been reached. The initiating conditions, their corresponding EALs, and the technical bases for each classifiable EAL threshold, are contained in Attachment 2, "Permanently Defueled Emergency Action Level Technical Bases Document," to the licensee's letter dated February 4, 2022.

Based on the NRC staff's review of the IPEC PDEP, as described above, the NRC staff finds that the proposed PDEP meets the applicable evaluation criteria of NUREG-0654, as outlined in Attachment 1 to NSIR/DPR-ISG-02. The PDEP adequately identifies: (1) that the emergency classification system covers a spectrum of possible radiological and non-radiological emergencies at IPEC; (2) a graded scale of response for distinct classifications of emergency conditions; (3) actions appropriate for those classifications, and (4) criteria for escalation to a more severe classification. The specific instruments, parameters, or equipment status are described for each ECL in the EAL scheme. Based on this review, the NRC staff concludes that planning standard 10 CFR 50.47(b)(4), and the requirements of Sections IV.B.1, B.2, C.1 and C.2 of Appendix E to 10 CFR Part 50, as exempted for IPEC, pertaining to the emergency classification system, are addressed in an acceptable manner in the IPEC PDEP, considering the permanently shutdown and defueled status of the facility.

3.1.5 Notification Methods and Procedures

Paragraph 50.47(b)(5) of 10 CFR, as exempted for IPEC, states:

> Procedures have been established for notification, by the licensee, of State and local response organizations and for notification of emergency personnel by all organizations; the content of initial and follow-up messages to response organizations **and the public** has been established**; and means to provide early notification and clear instruction to the populace within the plume exposure pathway Emergency Planning Zone have been established**.

The IPEC PDEP identifies that the Emergency Director position, which is assumed by the Shift Manager, as responsible for initiating notification to the State of New York, Westchester and Rockland Counties, and the NRC, as well as initiating corrective actions and mitigative actions. Notification to the appropriate State and County authorities is required within 60 minutes of the emergency classification. The commercial telephone network serves as the primary means to provide emergency notification to State and County agencies. It is used to provide initial and updated notifications and for general information flow between these agencies.

In the event the commercial telephone system is unavailable, wireless communications can be used to make emergency notifications. In addition, electronic means may be used to transmit the notification message(s). The format and contents of the initial message between the facility and State and local authorities are specified in notification procedures and have been established with the review and agreement of responsible State and local authorities. Follow-up reports are provided as additional information describing the emergency situation becomes available and on an as-needed basis until such time the emergency condition has been terminated.

The NRC will be notified as soon as possible after State and County notifications and within 60 minutes of event classification or change in classification. Communications with the NRC Operations Center will be performed via the NRC Emergency Notification System (ENS) circuit or commercial telephone line. The ENS is a dedicated telephone system in place between the control room and the NRC. In the event that the ENS fails, commercial phone lines will be used to notify the NRC.

Onsite staff are informed of an emergency condition through the use of the plant public address (PA) system. Personnel have the ability to talk to the control room via party line phones that are strategically located within each unit. Plant personnel may initiate the communication to the control room from outlying party lines. These systems are used to call personnel and notify onsite personnel of the declaration, escalation, or termination of an emergency.

Based on the NRC staff's review of the IPEC PDEP, as described above, the NRC staff finds that the proposed PDEP meets the applicable evaluation criteria of NUREG-0654, as outlined in Attachment 1 to NSIR/DPR-ISG-02. The PDEP adequately describes the process for initiating notifications to the NRC and State and local officials, as well as the contents of the emergency messages to be sent. The licensee, in cooperation with the State of New York, Rockland and Westchester County, has established mutually agreeable methods and procedures for notification of OROs consistent with the approved EAL scheme and the contents of message form. Follow-up reports are provided as additional information describing the emergency becomes available, and on an as-needed basis, until such time that the emergency condition has been terminated. Based on this review, the NRC staff concludes that planning standard

10 CFR 50.47(b)(5), and the requirements of 10 CFR 50.72(a)(3) and Sections IV.A.6, A.7, C.1, C.2, D.1, D.3 and E of Appendix E to 10 CFR Part 50, as exempted for IPEC, pertaining to notification methods and procedures, are addressed in an acceptable manner in the IPEC PDEP, considering the permanently shutdown and defueled status of the facility.

3.1.6 Emergency Communications

Paragraph 50.47(b)(6) of 10 CFR, as exempted for IPEC, states:

> Provisions exist for prompt communications among principal response organizations to emergency personnel **~~and to the public~~**.

The IPEC PDEP identifies that various modes of communication are available to facility staff to transmit information within IPEC and to various locations offsite during normal and emergency conditions. There are provisions for 24-hour per day notification to State and county authorities, and the NRC, for activating the IPEC ERO personnel, and for periodic testing of the emergency communication systems. The Emergency Director is responsible for the notification of State and county agencies, and the NRC, and for initiating corrective and mitigative actions when an emergency declaration has been declared by IPEC.

A two-channel radio system is also available for communication between individuals onsite. One channel is assigned to each unit (IP2 and IP3) to communicate with individuals performing tasks within each unit. Personnel that may be required to staff emergency positions but are not on-site at the time an emergency is declared may be contacted by commercial telephone including land lines and/or wireless devices.

The licensee has extensive and reliable communication systems installed at IPEC. Examples of the communications systems may include the IPEC PA system, commercial telephones, to include wireless phones, and a two-channel radio system.

The IPEC PA system is designed for paging within all three IPEC units from the IP2 and IP3 control rooms. Personnel have the ability to talk to the control room via party line phones that are strategically located within each unit. Plant personnel may initiate the communication to the control room from outlying party lines. These systems are used to call personnel and notify onsite personnel of the declaration, escalation, or termination of an emergency.

The commercial telephone system is available in the IP2 and IP3 control rooms and throughout IPEC and is used for onsite and offsite communications; including the means for requesting medical, law enforcement and fire and rescue services via 911. It also provides for primary emergency notification communications between IPEC and State and county agencies. It will be used to provide initial and follow-up notifications and for general information flow between these agencies. If personnel required to staff ERO positions are not on-site at the time an emergency is declared, they may be contacted by commercial telephone. In the event the commercial telephone systems are unavailable, wireless communications can be used as a backup system. Communications with the NRC Operations Center will be performed via the NRC ENS circuit or commercial telephone line. This line of communication will be used for event notification and status updates. The NRC ENS utilizes the Federal Telecommunications System (FTS) telephone network for emergency communications. The FTS line exists between the NRC Operations Center and the IPEC control rooms. In the event the ENS system is unavailable, commercial telephones (including wireless telephones) will provide a backup means of communication with the NRC.

A two-channel radio system is available for use on-site and one channel is assigned to each unit (IP2 and IP3) to communicate with individuals performing tasks within each unit.

Periodic testing of the emergency communication systems is described in Section N, 2.1 "Communication Drills or Surveillances," of the IPEC PDEP.

Based on the NRC staff's review of the IPEC PDEP, as described above, the NRC staff finds that the proposed PDEP meets the applicable evaluation criteria of NUREG-0654, as outlined in Attachment 1 to NSIR/DPR-ISG-02. The PDEP adequately identifies that provisions exist for prompt communications among principal response organizations to emergency personnel. The communication methods provide a reliable primary and backup means of communication, and for plant-to-offsite communications with Federal, State, and local agencies. Based on this review, the NRC staff concludes that planning standard 10 CFR 50.47(b)(6) and the requirements of Sections IV.C.1, D.1, D.3 and E of Appendix E to 10 CFR Part 50, as exempted for IPEC, pertaining to emergency communications, are addressed in an acceptable manner in the IPEC PDEP, considering the permanently shutdown and defueled status of the facility.

3.1.7 Public Education and Information

Paragraph 50.47(b)(7) of 10 CFR, as exempted for IPEC, states:

> **~~Information is made available to the public on a periodic basis on how they will be notified and what their initial actions should be in an emergency (e.g., listening to a local broadcast station and remaining indoors),~~** [T]he principal points of contact with the news media for dissemination of information during an emergency **~~(including the physical location or locations)~~** are established in advance, and procedures for coordinated dissemination of information to the public are established.

The IPEC PDEP identifies that communications personnel will be notified of an emergency declaration and will serve as a spokesperson. The spokesperson function could also be performed by plant or corporate management. Upon receiving notification of an emergency declaration, the spokesperson contacts the control room and receives a brief description of the event. The spokesperson monitors media activity and coordinates with senior management to disseminate information to the public. The spokesperson will participate in news conferences as appropriate.

Based on the NRC staff's review of the IPEC PDEP, as described above, the NRC staff finds that the proposed PDEP meets the applicable evaluation criteria of NUREG-0654, as outlined in Attachment 1 to NSIR/DPR-ISG-02. The PDEP adequately identifies the organization that includes a communications position that would serve as the licensee's designated spokesperson should an emergency be declared at IPEC. The spokesperson is available for media inquiries, and the positional duties include coordinating with senior management to disseminate information to the public regarding an emergency at IPEC. Based on this review, the NRC staff concludes that planning standard 10 CFR Part 50.47(b)(7), as exempted for IPEC, pertaining to public education and information, are addressed in an acceptable manner in the IPEC PDEP, considering the permanently shutdown and defueled status of the facility.

3.1.8 Emergency Facilities and Equipment

Paragraph 50.47(b)(8) of 10 CFR states:

> Adequate emergency facilities and equipment to support the emergency response are provided and maintained.

The IPEC PDEP identifies that following the declaration of an emergency, the activities of the ERO will be coordinated from the control room. Control room personnel will assess facility conditions, evaluate the magnitude and potential consequences of abnormal conditions, initiate preventive, mitigating and corrective actions, and perform onsite and offsite notifications as appropriate. When activated, the ERO reports to the control room.

Due to the limited radiological consequences associated with postulated events at a permanently shutdown and defueled power reactor, and the limited offsite resources considered to be necessary in an emergency at the site, a designated facility to accommodate State and local staff is no longer required. An onsite facility can provide a place for effective direction and effective control in an emergency. The IPEC PDEP identifies that the control room as that onsite facility. This is consistent with Section IV.E.8.a to Appendix E of 10 CFR Part 50, as exempted, which eliminated the requirement for a separate licensee onsite technical support center, onsite operations support center and emergency operations facility.

The IPEC PDEP states that notification of an emergency declaration will be made to State and county authorities within 60 minutes after an emergency has been declared. The ERO is to augment the on-shift staff within 2 hours of an Alert classification, or at the discretion of the Shift Manager / Emergency Director. The designated on-shift and augmented IPEC ERO staff are capable of continuous (24-hour) operations for a protracted period.

IPEC maintains and operates onsite monitoring systems needed to provide data that is essential for initiating emergency measures and performing accident assessment, including dose assessment and assessing the magnitude of a release. This includes onsite radiation monitors and monitoring systems for plant processes, radiological conditions, meteorological conditions, and fire hazards. Annunciator and computer alarms are provided for a variety of parameters including the SFP and the SFP systems to indicate SFP level and temperature. The essential monitoring systems needed and the manner in which process monitors are used for accident recognition and classification is incorporated and detailed in IPEC's Permanently Defueled EAL Technical Basis Document.

IPEC's area radiation monitors (ARMs) provide for the direct measurement of in-plant exposure rates and process radiation monitors (PRMs) for the continuous measurement of facility effluents. The ARM readings allow continuous exposure rate determinations to be made remotely without requiring local hand-held meter surveys. This information may be used, initially, to aid in the determination of accessibility. The PRMs provide an immediate indication of a radiological release of effluents and can be used as an input into dose assessment.

Meteorological data is available in the control room. The data is used to determine the projected radiological consequences in the event of an accidental release of radioactivity to the environment.

Heat and smoke detectors are located at key locations in the facility with alarms annunciated in the control room. A detailed description of fire detection equipment is located in Fire Protection Program documents.

Table H-1, “Typical Emergency Equipment,” of the IPEC PDEP discusses the inventory of equipment. This equipment includes, but is not limited to, portable radiation monitoring equipment, emergency medical response equipment, dosimeters, and portable radios. The control room and emergency equipment are inspected and inventoried in accordance with IPEC Emergency Planning Procedures, with inspections including an operational check of instruments and equipment. Equipment, supplies, and parts that have a shelf life are identified, checked, and replaced, as necessary. In addition, sufficient reserves of equipment and instrumentation are stocked to replace emergency equipment and instrumentation removed from service for calibration and/or repair.

Based on the NRC staff’s review of the IPEC PDEP, as described above, the NRC staff finds that the proposed PDEP meets the applicable evaluation criteria of NUREG-0654, as outlined in Attachment 1 to NSIR/DPR-ISG-02. The PDEP adequately identifies the facilities, equipment, and ERO personnel, which report to the Emergency Director, that are available to assess conditions, evaluate the magnitude and potential consequences of abnormal conditions, initiate preventative, mitigating and corrective actions, and perform onsite and offsite notifications as appropriate to the emergency condition. Based on this review, the NRC staff concludes that planning standard 10 CFR 50.47(b)(8), as well as the requirements of Sections IV.E and G of Appendix E to 10 CFR Part 50, as exempted for IPEC, pertaining to emergency facilities and equipment, are addressed in an acceptable manner in the IPEC PDEP, considering the permanently shutdown and defueled status of the facility.

3.1.9 Accident Assessment

Paragraph 50.47(b)(9) of 10 CFR, as exempted for IPEC, states:

> Adequate methods, systems, and equipment for assessing and monitoring actual or potential **~~offsite~~** consequences of a radiological emergency condition are in use.

The IPEC PDEP identifies that station procedures provide for preventive and/or corrective actions to mitigate the consequences of events. Instrumentation, control systems, and radiation monitoring systems provide indications related to the safe and orderly implementation of corrective actions. These systems provide indication of SFP storage inventory (level), temperature, cooling, and supporting systems.

IPEC maintains procedures and strategies for the movement of any necessary portable equipment that will be relied upon for mitigating the loss of SFP water. These diverse strategies provide defense in-depth and ample time to provide makeup water or spray prior to the onset of zirconium cladding ignition, when considering the very low probability of beyond-design-basis events affecting the SFP.

IPEC maintains and operates the onsite monitoring systems needed to provide data that is essential for initiating emergency measures and performing accident assessment, including dose assessment and assessing the magnitude of a release. Initial dose assessment is performed by qualified on-shift personnel, and under the direction of the Emergency Director. All certified fuel handlers are qualified to perform dose assessment. This position is staffed

24 hours per day, 7 days per week. When the ERO is augmented, the Radiation Protection Coordinator assumes the dose assessment responsibilities.

Based on the NRC staff's review of the IPEC PDEP, as described above, the NRC staff finds that the proposed PDEP meets the applicable evaluation criteria of NUREG-0654, as outlined in Attachment 1 to NSIR/DPR-ISG-02. The PDEP adequately identifies the onsite capabilities and resources available to provide initial and continuing information for accident assessment throughout the course of an event. Based on this review, the NRC staff concludes that planning standard 10 CFR 50.47(b)(9), and the requirements of Sections IV.A.4, B.1 C.2, and E of Appendix E to 10 CFR Part 50, as exempted for IPEC, pertaining to accident assessment, are addressed in an acceptable manner in the IPEC PDEP, considering the permanently shutdown and defueled status of the facility.

3.1.10 Protective Actions

Paragraph 50.47(b)(10) of 10 CFR, as exempted for IPEC, states:

> A range of protective actions has been developed **~~for the plume exposure pathway EPZ~~** for emergency workers and the public. **~~In developing this range of actions, consideration has been given to evacuation, sheltering, and, as a supplement to these, the prophylactic use of potassium iodide (KI), as appropriate. Evacuation time estimates have been developed by applicants and licensees. Licensees shall update the evacuation time estimates on a periodic basis. Guidelines for the choice of protective actions during an emergency, consistent with Federal guidance, are developed and in place, and protective actions for the ingestion exposure pathway EPZ appropriate to the locale have been developed.~~**

The IPEC PDEP identifies a range of protective actions that have been developed for onsite individuals and individuals within the EAB. Protective actions for personnel onsite are provided for their health and safety. Procedures also provide protective actions to protect personnel during security events.

The IPEC PDEP states that station personnel, contractors, and visitors are notified of an emergency using the IPEC PA 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 that individuals in the EAB are notified as necessary of any emergency and the response actions to be taken.

During an Alert, or as directed by the Emergency Director, non-essential personnel (personnel not assigned emergency response functions, contractors, and visitors) are directed to relocate and assemble at a pre-designated assembly area outside the Protected Area. The Emergency Director may release non-essential personnel. Personnel assigned emergency response functions respond to the control room.

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 Protected Area should

be accomplished within 60 minutes after event declaration and maintained thereafter at the discretion of the Emergency Director. Following announcement of an emergency declaration, onsite personnel are responsible for reporting to designated areas and aiding the accountability process. If personnel are not accounted for, the Emergency Director is notified, and onsite announcements are made. If personnel are still unaccounted for following the onsite announcements, search and rescue operations are initiated. Accountability is coordinated between the Emergency Director or Technical Coordinator and Security.

In the event of a radiological release, or a suspected radiological release, personnel are monitored for radioactive contamination prior to leaving the Protected Area. Monitoring will be performed by Radiation Protection or trained monitoring personnel using instrumentation that is normally available or specifically assigned for this purpose. The licensee maintains an inventory of respiratory protection equipment, and anticontamination clothing that is made available to emergency workers remaining onsite should conditions warrant.

Based on the NRC staff's review of the IPEC PDEP, as described above, the NRC staff finds that the proposed PDEP meets the applicable evaluation criteria of NUREG-0654, as outlined in Attachment 1 to NSIR/DPR-ISG-02. The PDEP adequately identifies the protective actions for onsite personnel, including station personnel, contractors, and visitors (members of the public), and provides that protective equipment and supplies are maintained to support an emergency response. The PDEP also describes that plant evacuees are monitored for radioactive contamination prior to leaving the IPEC Protected Area. Based on this review, the NRC staff concludes that planning standard 10 CFR 50.47(b)(10), and the requirements of Sections IV.C.1, E, and I of Appendix E to 10 CFR Part 50, as exempted for IPEC, pertaining to protective response, are addressed in an acceptable manner in the IPEC PDEP, considering the permanently shutdown and defueled status of the facility.

3.1.11 Radiological Exposure Control

Paragraph 50.47(b)(11) of 10 CFR states:

> Means for controlling radiological exposures, in an emergency, are established for emergency workers. The means for controlling radiological exposures shall include exposure guidelines consistent with EPA Emergency Worker and Lifesaving Activity Protective Action Guides.

The IPEC PDEP states that 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, "Standards for Protection Against Radiation." The Shift Manager/Emergency Director has the responsibility to authorize emergency dose commitments in excess of 10 CFR Part 20 limits. Table K-1, "Emergency Exposure Criteria," to the IPEC PDEP, specifies the guidelines on emergency dose limits for personnel providing emergency response duties, which is consistent with Table 3-1, "Emergency Worker Guidelines," provided in the EPA PAG manual.
The Radiation Protection Coordinator is the individual responsible for the implementation of the radiation protection actions during an emergency. The facility supplies of personnel radiation protection equipment and gear are utilized to support the emergency response effort. Equipment such as respiratory protection gear and protective clothing is assigned to ERO members and facility response personnel in accordance with established facility radiation protection criteria.

Exposure accountability is maintained, and proper personnel radiological monitoring equipment is provided for all personnel during emergency conditions. Emergency workers will receive a dosimeter of legal record (DLR) badges and personal self-reading dosimeters capable of measuring expected exposures on a real time basis. Emergency workers are instructed to read self-reading dosimeters frequently, and DLRs may be processed with increased periodicity. Access to high radiation areas is only permitted with prior approval of the Emergency Director. Personnel are not allowed to enter known or potential high radiation areas unless their exposure has been properly evaluated.

During emergency conditions, HDI maintains normal plant decontamination and contamination control measures as closely as possible. However, these measures may be modified by the Radiation Protection Coordinator should conditions warrant. Contamination control measures are maintained to address access control, drinking water and food supplies, and the return of areas and items to normal use in accordance with proper radiation and contamination control techniques. The IPEC contamination control criteria for returning areas and items to normal use are contained in the facility procedures.

Based on the NRC staff's review of the IPEC PDEP, as described above, the NRC staff finds that the proposed PDEP meets the applicable evaluation criteria of NUREG-0654, as outlined in Attachment 1 to NSIR/DPR-ISG-02. The PDEP adequately identifies the means for controlling radiological exposures for emergency workers. Emergency worker dose limits are established for designated activities and under specific conditions. Based on this review, the NRC staff concludes that planning standard 10 CFR 50.47(b)(11), and the requirements of Section IV.E of Appendix E to 10 CFR Part 50, as exempted for IPEC, pertaining to radiological exposure control, are addressed in an acceptable manner in the IPEC PDEP, considering the permanently shutdown and defueled status of the facility.

3.1.12 Medical and First Aid Support

Paragraph 50.47(b)(12) of 10 CFR states:

> Arrangements are made for medical services for contaminated injured individuals.

The IPEC PDEP identifies that selected onsite personnel are trained to administer first aid. IPEC maintains onsite first aid supplies and equipment necessary for the treatment of contaminated or injured persons at various locations on-site.

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. Arrangements have been made for transporting injured, contaminated and irradiated personnel to the hospital via the Verplanck Fire District and an associated agreement is in place.

Based on the NRC staff's review of the IPEC PDEP, as described above, the NRC staff finds that the proposed PDEP meets the applicable evaluation criteria of NUREG-0654, as outlined in Attachment 1 to NSIR/DPR-ISG-02. The PDEP adequately identifies that arrangements are maintained for hospital and medical services located in the vicinity of the station, and for prompt ambulance transport by the Verplanck Fire District of persons with injuries involving radiological contamination to the designated hospital. The licensee also maintains onsite first aid supplies and equipment necessary for the treatment of injured person with radiological contamination or

over-exposures. Based on this review, the NRC staff concludes that planning standard 10 CFR 50.47(b)(12), and the requirements of Sections IV.A.6 and E of Appendix E to 10 CFR Part 50, as exempted for IPEC, pertaining to medical and first aid support, are addressed in an acceptable manner in the IPEC PDEP, considering the permanently shutdown and defueled status of the facility.

3.1.13 Recovery and Reentry

Paragraph 50.47(b)(13) of 10 CFR states:

> General plans for recovery and reentry are developed.

The IPEC PDEP identifies that the Shift Manager/Emergency Director assumes total responsibility for overall emergency response actions and recovery. Upon termination of an emergency and transition to the recovery phase, the Shift Manager/Emergency Director would initiate the recovery phase. Recovery is defined as those steps taken to return the facility to its pre-accident condition. Radiation exposure to personnel involved in the recovery will be kept as low as reasonably achievable and within the stated limits of 10 CFR Part 20. Radiation areas will be roped off and posted with warning signs and controlled in accordance with plant procedures. Access to these areas will be controlled, and exposures to personnel entering such areas documented. Shielding will be employed to the fullest extent possible.

Following an accident or emergency situation, the plan is to return facility conditions to within Technical Specification limits. A station nuclear safety/review committee reviews and approves recovery operations in accordance with its charter and the Technical Specifications. The Shift Manager / Emergency Director has the responsibility for determining when an accident or emergency situation is stable and the station is ready to enter the recovery phase.

Once the decision is made to enter the recovery phase, the extent of the staffing required for the Recovery Organization is determined. For events of a minor nature, (i.e. Unusual Event classifications) the normal on-shift organization is normally adequate to perform necessary recovery actions. The specific members of the Recovery Organization are selected based on the sequence of events that preceded the recovery activities as well as the requirements of the recovery phase.

The Site Recovery Director, as appointed by senior HDI management, is charged with the responsibility for directing the activities of the Recovery Organization. These responsibilities include:

- Ensuring an Event Summary Report is prepared and transmitted to offsite authorities;
- Overseeing the development of, and approving, a Recovery Plan and any special recovery procedures;
- Deactivating any of the IPEC ERO positions that were retained to aid in recovery, in the appropriate manner. Depending upon the type of accident, certain ERO positions may remain in place after initiation of the recovery phase;
- Approving information released by the public information organization that pertains to the emergency or the recovery phase of the accident;
- Maintaining a record/log of specific recovery actions taken;
- Working with senior company management in providing for assistance to employees affected by the event;

- Determining when the recovery phase is terminated. Recovery will be terminated when actions identified in the Recovery Plan have been completed;
- Identifying and documenting issues relating to Recovery operations;
- Coordinating the development and implementation of the recovery plan and procedures;
- Directing all onsite activities in support of recovery;
- Designating other recovery positions required in support of onsite recovery activities; and
- Developing a Root Cause Report.

Based on the NRC staff's review of the IPEC PDEP, as described above, the NRC staff finds that the proposed PDEP meets the applicable evaluation criteria of NUREG-0654, as outlined in Attachment 1 to NSIR/DPR-ISG-02. The PDEP adequately identifies the general goals for plant recovery and the organizational structure responsible for coordinating response and recovery from emergency conditions at the facility. Based on this review, the NRC staff concludes that planning standard 10 CFR 50.47(b)(13), and the requirements of Section IV.H. of Appendix E to 10 CFR Part 50, as exempted for IPEC, pertaining to recovery and reentry, are addressed in an acceptable manner in the IPEC PDEP, considering the permanently shutdown and defueled status of the facility.

3.1.14 Exercises and Drills

Paragraph 50.47(b)(14) of 10 CFR states:

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

The IPEC PDEP identifies that periodic exercises and drills will be conducted to evaluate major portions of emergency response capabilities and to develop and maintain key emergency response skills. Emergency exercises and drills are conducted to test and evaluate the adequacy of emergency facilities, equipment, procedures, communication channels, actions of emergency response personnel, and coordination between offsite organizations and the IPEC facility.

Additionally, biennial exercises shall be conducted to test the timing and content of implementing procedures and methods to test emergency equipment and communication networks and to ensure that emergency personnel are familiar with their duties. IPEC offers the OROs 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 OROs evaluated.

The IPEC PDEP also provided a summary of exercises and drills and associated elements:

- Communication Drill or Surveillances:
  - The ENS used to communicate with the NRC is tested monthly.
  - The communication links between the IP2 and IP3 control rooms and the State and County Warning Points will be tested monthly. An annual communication drill verifies that contact information is appropriate and current, and that the content of messages is adequate and understood.

    - The communication systems listed below, as detailed in Section F, of the PDEP, are used on a frequent basis. Therefore, periodic testing of these systems is not necessary.
        - Public Address System,
        - Commercial Telephone Systems, and
        - Radio System.
- Fire Drills: To test and evaluate the response and training of the facility's fire brigade, fire drills are conducted in accordance with the IPEC Fire Protection Program.
- Medical Drills: To evaluate the training of the facility's medical response and offsite medical response (ambulance and hospital), a medical drill is conducted annually with a simulated contaminated injured individual. 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.
- Radiation Protection Drills: On an annual basis, drills are conducted which involve response to, and analysis of, simulated airborne samples with elevated levels of activity. These drills also involve direct measurements of radiation levels in IPEC. Normal and emergency radiation procedures and processes are followed for the simulated conditions.

For each emergency preparedness exercise or drill conducted, a scenario package is developed. The information included in the scenario package is in accordance with station procedures. Controllers/Observers are assigned to evaluate the drill or exercise performance. Following each drill or exercise, a critique is conducted to evaluate the ability of the participants to implement the PDEP and Emergency Planning Procedures. Biennially, representatives from the NRC observe and evaluate an exercise including an evaluation of the licensee's ability to conduct an adequate self-critical critique.

Identified areas of the EP program that require improvement are entered, tracked, and resolved in the corrective action program. Feedback is provided to participants through critiques, drill or exercise reports, or during annual refresher training.

Based on the NRC staff's review of the IPEC PDEP, as described above, the NRC staff finds that the proposed PDEP meets the applicable evaluation criteria of NUREG-0654, as outlined in Attachment 1 to NSIR/DPR-ISG-02. The PDEP adequately identifies the general goals for exercises and drills, the intent of exercise scenarios, and that exercise and drill performance objectives are evaluated against measurable demonstration criteria. Based on this review, the NRC staff concludes that planning standard 10 CFR 50.47(b)(14), and the requirements of Sections IV.E.9 and F of Appendix E to 10 CFR Part 50, as exempted for IPEC, pertaining to exercises and drills, are addressed in an acceptable manner in the IPEC PDEP, considering the permanently shutdown and defueled status of the facility.

3.1.15 Radiological Emergency Response Training

Paragraph 50.47(b)(15) of 10 CFR states:

> Radiological emergency response training is provided to those who may be called on to assist in an emergency.

The IPEC PDEP identifies that radiological emergency response training is provided to those who may be called on to assist in an emergency. The IPEC ERO personnel receive initial, specialized and periodic continuing training.

The IPEC PDEP states that personnel qualified as Emergency Directors receive specialized training in the areas of:

- Emergency Notifications,
- Emergency Classification,
- Emergency Action Levels,
- Mitigative and Protective Actions, and
- Emergency Exposure Control.

In addition to the training received to qualify for their normal duties, personnel responsible for radiological assessment receive periodic training on the following topics, as applicable to their assigned emergency response roles:

- Dose Assessment,
- Basic Meteorology, and
- Transportation of contaminated injured individuals.

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.

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.

Based on the NRC staff's review of the IPEC PDEP, as described above, the NRC staff finds that the proposed PDEP meets the applicable evaluation criteria of NUREG-0654, as outlined in Attachment 1 to NSIR/DPR-ISG-02. The PDEP adequately identifies the level and depth of the emergency preparedness training program to which individuals are to be trained. Based on this review, the NRC staff concludes that planning standard 10 CFR 50.47(b)(15), and the requirements of Section IV.F of Appendix E to 10 CFR Part 50, as exempted for IPEC, pertaining to radiological emergency response training, are addressed in an acceptable manner in the IPEC PDEP, considering the permanently shutdown and defueled status of the facility.

3.1.16 Emergency Plan Development and Review

Paragraph 50.47(b)(16) of 10 CFR states:

> Responsibilities for plan development and review and for distribution of emergency plans are established, and planners are properly trained.

The IPEC PDEP identifies that the Site Vice President has overall responsibility for implementation of the Emergency Preparedness Program at IPEC. The overall Emergency Preparedness Program, including the IPEC PDEP is maintained by the Nuclear Manager. maintaining the program, the Nuclear Manager ensures the following:

- Development, maintenance, and revision of the PDEP and Emergency Planning Procedures are accomplished in accordance with applicable regulations and industry standards;
- Letters of Agreements are reviewed annually and updated as necessary;
- Review and approve the PDEP 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;
- EP Personnel maintain an adequate knowledge of planning techniques and applications of emergency equipment, supplies, and the Control Room; and
- Corrective actions identified during the conduct of exercises, drills, training, audits, and inspections are tracked in the Corrective Action Program.

The PDEP is reviewed and updated on an annual basis. The Nuclear Manager is responsible for determining which recommended changes are incorporated into the PDEP. Editorial changes to the PDEP can be held until the next revision. If no change to the PDEP is required, a memo to file shall be maintained to document the annual review.

An independent review of the Emergency Preparedness Program is conducted to meet the requirements of 10 CFR 50.54(t). Results of this review are submitted to the IPEC Vice President. The Nuclear Manager ensures that any findings that deal with offsite interfaces are reviewed with the appropriate agencies. Written notification will be provided to local agencies of the performance of the audit and the availability of the audit records for review at IPEC facilities. Records of the review are maintained for at least five years.

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, and
- Portable radios.

Emergency equipment and instrumentation are 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.

Based on the NRC staff's review of the IPEC PDEP, as described above, the NRC staff finds that the proposed PDEP meets the applicable evaluation criteria of NUREG-0654, as outlined in Attachment 1 to NSIR/DPR-ISG-02. The PDEP adequately identify responsibility for the issuance, control, and revision/updating of the PDEP, EPIPs, and support documents. Based on

this review, the NRC staff concludes that planning standard 10 CFR 50.47(b)(16), and the requirements of Section IV.G of Appendix E to 10 CFR Part 50, as exempted for IPEC, pertaining to emergency plan development and review, are addressed in an acceptable manner in the IPEC PDEP, considering the permanently shutdown and defueled status of the facility.

3.2 Emergency Action Level Scheme

The licensee currently utilizes an EAL scheme based on NEI 99-01, Revision 6, with site-specific modifications due to design issues and/or licensee preference. The licensee is revising its current EAL scheme using the guidance in Section 8, “Independent Spent Fuel Storage Installation (ISFSI) Initiating Conditions (ICs) and EALs,” and Appendix C, “Permanently Defueled Station ICs/EALs,” of NEI 99-01, Revision 6, as applied to a permanently shutdown and defueled nuclear power reactor with fuel stored onsite in the IPEC SFPs and ISFSI located at the IPEC facility.

As discussed in the NRC staff’s safety evaluation associated with the exemptions granted to IPEC from certain EP planning standards of 10 CFR 50.47 and requirements of Appendix E to 10 CFR Part 50, there are no longer any DBAs at IPEC that can result in a radiological release exceeding the EPA early phase PAGs at the EAB. Therefore, the NRC staff’s assessment of the risks and consequences of a radiological release at IPEC, based on its permanently shutdown and defueled condition of the facility, concluded that, per Section IV.C.1, to Appendix E, as exempted, the risks and consequences are insufficient to warrant a Site Area Emergency or General Emergency classification levels. As a result, the only ECLs applicable to the IPEC facility are an Unusual Event or an Alert.

In its letter dated February 4, 2022, HDI submitted its proposed EAL scheme for IPEC to reflect a permanently shutdown and permanently defueled condition, along with its technical basis and the EAL numbering scheme. The proposed EAL scheme is unique to IPEC, as it contains site-specific designations and descriptions.

The NRC staff verified that the proposed EAL scheme is consistent with the guidance provided in Section 8 and Appendix C to NEI 99-01, Revision 6, to ensure that the EAL scheme meets the standards of 10 CFR 50.47(b)(4) and requirements of Section IV.B of Appendix E to 10 CFR Part 50, as exempted, for a permanently shutdown and defueled nuclear power reactor with spent fuel stored onsite in the IPEC SFPs and ISFSI at the IPEC. The NRC staff reviewed the proposed EAL scheme, technical basis, comparison matrix, and all additional information provided and found that the proposed EAL scheme has site-specific modifications from the NEI 99-01, Revision 6, guidance due to specific plant designs and licensee preference.

The NRC staff verified that the instrumentation and setpoints derived for the proposed EAL scheme are consistent with the overall EAL scheme development guidance, address the plant-specific implementation strategies provided, and are consistent with a standard EAL scheme.

Although the EALs must be plant-specific, to ensure consistency and regulatory stability, the NRC staff reviewed the proposed EAL scheme with respect to the key characteristics, listed below, of an effective EAL scheme, found in the NRC endorsed guidance of NEI 99-01, Revision 6:

- Consistency, including standardization of intent, if not in actual wording (i.e., the EALs would lead to similar decisions under similar circumstances at different plants).

- Human factors engineering and user friendliness.
- Potential for ECL upgrade only when there is an increasing threat to public health and safety.
- Ease of upgrading and downgrading the ECL.
- Thoroughness in addressing and disposing of the issues of completeness and accuracy raised in Appendix 1, “Emergency Action Level Guidelines for Nuclear Power Plants,” to NUREG-0654 (i.e., the EALs are unambiguous and are based on site-specific indicators).
- Technical completeness for each ECL.
- Logical progression in classification for multiple events.
- The use of objective and observable values.

The IPEC EAL technical basis document is an integral part of the EAL scheme. The material in this document supports proper emergency classification decision-making by providing background and development information in a readily accessible format, which can be referred to in training situations and when making an actual emergency classification, if necessary. The document is also useful for establishing configuration management controls for emergency preparedness-related equipment and explaining an emergency classification to offsite authorities.

To aid in understanding the nomenclature used in this safety evaluation, the proposed EAL scheme for IPEC includes two ECLs: Unusual Event (U), and Alert (A). Initiating conditions (ICs) for entry into each of the two ECLs are specified for conditions relating to:

- Abnormal Radiation Levels/Radiological Effluent: PD-A
- Hazards and Other Conditions Affecting Plant Safety: PD-H
- System Malfunction: PD-S
- Hazards and Other Conditions Affecting ISFSI: E-H.

This safety evaluation uses the numbering system from the proposed plant-specific permanently defueled EAL scheme, which is consistent with the numbering system from the generic EAL scheme development guidance contained in NEI 99-01, Revision 6. The NRC staff verified that the numbering, sequencing, formatting, logical progression, and ease of upgrading/downgrading for these EALs are consistent with the overall EAL scheme development guidance and address the plant-specific implementation strategies provided, and are, therefore, consistent with a standard EAL scheme, as required by 10 CFR 50.47(b)(4).

For each IC, specific EAL threshold values are identified that would require the declaration of an ECL. The EAL scheme is intended to provide multiple and diverse threshold values for an Unusual Event and Alert to ensure accurate classification and timely declaration.

HDI made changes to the generic EAL scheme, throughout the proposed EAL scheme, as follows:

- Change “Notification of Unusual Event” to “Unusual Event.”
- Removed operating mode applicability as it does not apply in a permanently defueled condition.
- References to “plant” have been revised to “facility” to indicate that IPEC is no longer an operating nuclear power plant.

- Removed “Example” from EALs since they are no longer examples.
- Added site-specific basis information.

The NRC staff determined that these changes are administrative in nature, and as such, acceptable, since they do not impact the overall EAL scheme. An evaluation of the acceptability of the proposed EAL scheme is provided in the following sections.

3.2.1 Category “PD-A”: Abnormal Radiation Levels/Radiological Effluent

3.2.1.1 EAL PD-AU1, “Release of gaseous or liquid radioactivity greater than 2 times the Off-site Dose Calculation Manual (OCDM) limits for 60 minutes or longer.”

This EAL addresses a potential or actual decrease in the level of safety of the facility as indicated by a low-level radiological release that exceeds regulatory commitments for an extended period of time (e.g., an uncontrolled release). It includes any gaseous or liquid radiological release, monitored or un-monitored, including those for which a radioactivity discharge permit is normally prepared.

The NRC staff verified that the HDI’s implementation of this EAL, except for the site-specific changes identified below, is consistent with the guidance provided in Appendix C to NEI 99-01, Revision 6.

The licensee made the following site-specific changes to the generic EAL scheme:

- Initiating Condition: Inserted Offsite Dose Calculation Manual (ODCM) as the site-specific effluent release controlling document.
- Notes, Bullet #3: Replaced “have stopped due to actions to isolate the release path” with “have stopped due to isolation of the release path.”
- Added “OR” between the EALs as an operator aid to facilitate EAL navigation.
- EAL #1: Provided IPEC site-specific effluent radiation monitors and calculated threshold values.
- EAL #1: Replaced “2 times the alarm setpoint established by a current radioactivity discharge permit” with "the reading shown" and included IPEC site-specific calculated effluent radiation monitor threshold values on which to base the declaration of an UNUSUAL EVENT.
- EAL #2: Added “Confirmed.”
- EAL #2: Inserted “ODCM” as the site-specific effluent release controlling document.

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For the site-specific change to reference the ODCM as the site-specific effluent release controlling document, the NRC staff verified that IPEC implemented the developer notes for identifying the site-specific effluent release controlling document contained in NEI 99-01, Revision 6, as the basis for this specific EAL. The site-specific changes to the generic EAL scheme are administrative and do not affect the applicability of the EAL.

Based on the above, the NRC staff concludes that the plant-specific implementation method for this EAL is in alignment with the key characteristics of an effective EAL scheme (identified in Section 3.2 of this safety evaluation) and meets the planning standard of 10 CFR 50.47(b)(4) and the requirements of Section IV.B of Appendix E to 10 CFR Part 50. Therefore, the NRC staff finds this EAL acceptable.

3.2.1.2 EAL PD-AA1, “Release of gaseous or liquid radioactivity resulting in off-site dose greater than 10 mRem TEDE [Total Effective Dose Equivalent] or 50 mRem thyroid CDE [committed dose equivalent].”

This EAL addresses a release of gaseous or liquid radioactivity that results in projected or actual offsite doses greater than or equal to 1 percent of the EPA PAGs. It includes both monitored and un-monitored releases. Releases of this magnitude represent an actual or potential substantial degradation of the level of safety of the facility as indicated by a radiological release that significantly exceeds regulatory limits (e.g., a significant uncontrolled release).

The NRC staff verified that HDI’s implementation of this EAL, except for the site-specific changes identified below, is consistent with the guidance provided in Appendix C to NEI 99-01, Revision 6.

The licensee made the following site-specific changes to the generic EAL scheme:

- Notes, Bullet #3: Replaced “have stopped due to actions to isolate the release path” with “have stopped due to isolation of the release path.”
- Added “OR” between the EALs as an operator aid to facilitate EAL navigation.
- EAL #1: Provided IPEC site-specific effluent radiation monitors and calculated threshold values.
- EAL #3: Added “Confirmed.”
- EAL #3: Provided “the site boundary” as the site-specific dose receptor point.
- EAL #4: Provided “the site boundary” as the site-specific dose receptor point.

The site-specific changes to the generic EAL scheme are administrative and do not affect the applicability of the EAL.

Based on the above, the NRC staff concludes that the plant-specific implementation method for this EAL is in alignment with the key characteristics of an effective EAL scheme (identified in Section 3.2 of this safety evaluation) and meets the planning standard of 10 CFR 50.47(b)(4) and the requirements of Section IV.B of Appendix E to 10 CFR Part 50. Therefore, the NRC staff finds this EAL acceptable.

3.2.1.3 EAL PD-AU2, “UNPLANNED rise in facility radiation levels”

This EAL addresses a loss in water level above irradiated fuel sufficient to cause elevated radiation levels. This condition could be a precursor to a more serious event and is also indicative of a minor loss in the ability to control radiation levels within the facility. It is therefore a potential degradation in the level of safety of the facility.

The NRC staff verified that HDI’s implementation of this EAL, except for the site-specific changes identified below, is consistent with the guidance provided in Appendix C to NEI 99-01, Revision 6.

The licensee made the following site-specific changes to the generic EAL scheme:

- Added “OR” between the EALs as an operator aid to facilitate EAL navigation.
- EAL # 1.a: Provided IPEC site-specific SFP level indications.
- EAL # 1.b: Provided IPEC site-specific ARMs.

The site-specific changes to the generic EAL scheme are administrative and do not affect the applicability of the EAL.

Based on the above, the NRC staff concludes that the plant-specific implementation method for this EAL is in alignment with the key characteristics of an effective EAL scheme (identified in Section 3.2 of this safety evaluation) and meets the planning standard of 10 CFR 50.47(b)(4) and the requirements of Section IV.B of Appendix E to 10 CFR Part 50. Therefore, the NRC staff finds this EAL acceptable.

3.2.1.4 EAL PD-AA2, “UNPLANNED rise in facility radiation levels that impedes facility access required to maintain spent fuel integrity.”

This EAL addresses increased radiation levels that impede necessary access to areas containing equipment that must be operated manually or that requires local monitoring, in order to maintain systems needed to maintain spent fuel integrity. As used here, 'impede' includes hindering or interfering, provided that the interference or delay is sufficient to significantly threaten necessary facility access. It is this impaired access that results in the actual or potential substantial degradation of the level of safety of the facility.

The NRC staff verified that HDI’s implementation of this EAL, except for the site-specific changes identified below, is consistent with the guidance provided in Appendix C to NEI 99-01, Revision 6.

The licensee made the following site-specific changes to the generic EAL scheme:

- Added “OR” between the EALs as an operator aid to facilitate EAL navigation.
- EAL #1: Provided applicable IPEC site-specific areas.
- EAL #2: Re-worded to better align with the IC without changing the intent of the EAL.
- EAL #2: Eliminated the word “results” because the use of survey results is implied.
- EAL #2: Provided applicable IPEC site-specific areas.

The site-specific changes to the generic EAL scheme are administrative and do not affect the applicability of the EAL.

Based on the above, the NRC staff concludes that the plant-specific implementation method for this EAL is in alignment with the key characteristics of an effective EAL scheme (identified in Section 3.2 of this safety evaluation) and meets the planning standard of 10 CFR 50.47(b)(4) and the requirements of Section IV.B of Appendix E to 10 CFR Part 50. Therefore, the NRC staff finds this EAL acceptable.

3.2.2 Category “PD-H”: Hazards and Other Conditions Affecting Facility Safety

3.2.2.1 EAL PD-HU1, “Confirmed SECURITY CONDITION or threat”

This EAL addresses events that pose a threat to facility personnel or spent fuel cooling system equipment, 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, "Reporting of safeguards events," or 10 CFR 50.72. Security events assessed as HOSTILE ACTIONS are classifiable under IC PD-HA1.

The NRC staff verified that HDI's implementation of this EAL, except for the site-specific changes identified below, is consistent with the guidance provided in Appendix C to NEI 99-01, Revision 6.

The licensee made the following site-specific changes to the generic EAL scheme:

- Added "OR" between the EALs as an operator aid to facilitate EAL navigation.
- EAL #1: Provided the Security Shift Supervisor as the IPEC "site-specific security shift supervision."

The site-specific changes to the generic EAL scheme are administrative and do not affect the applicability of the EAL.

Based on the above, the NRC staff concludes that the plant-specific implementation method for this EAL is in alignment with the key characteristics of an effective EAL scheme (identified in Section 3.2 of this safety evaluation) and meets the planning standard of 10 CFR 50.47(b)(4) and the requirements of Section IV.B of Appendix E to 10 CFR Part 50. Therefore, the NRC staff finds this EAL acceptable.

3.2.2.2 EAL PD-HA1, "HOSTILE ACTION within the OWNER CONTROLLED AREA or airborne attack threat within 30 minutes."

This EAL addresses the notification of an aircraft attack threat or an occurrence of a hostile action within the Owner Controlled Area. This event will require rapid response and assistance due to the possibility of the attack progressing to the Protected Area, or the need to prepare the facility and staff for a potential aircraft impact.

The NRC staff verified that HDI's implementation of this EAL, except for the site-specific changes identified below, is consistent with the guidance provided in Appendix C to NEI 99-01, Revision 6.

The licensee made the following site-specific changes to the generic EAL scheme:

- Added "OR" between the EALs as an operator aid to facilitate EAL navigation.
- EAL #1: Provided the Security Shift Supervisor as the IPEC "site-specific security shift supervision."

The site-specific changes to the generic EAL scheme are administrative and do not affect the applicability of the EAL.

Based on the above, the NRC staff concludes that the plant-specific implementation method for this EAL is in alignment with the key characteristics of an effective EAL scheme (identified in Section 3.2 of this safety evaluation) and meets the planning standard of 10 CFR 50.47(b)(4) and the requirements of Section IV.B of Appendix E to 10 CFR Part 50. Therefore, the NRC staff finds this EAL acceptable.

3.2.2.3 EAL PD-HU2, “Hazardous event affecting equipment necessary for spent fuel cooling.”

This EAL addresses a hazardous event that causes damage to at least one train of a system needed for spent fuel cooling. The damage must be of sufficient magnitude that the system(s) train cannot, or potentially cannot, perform its design function.

The NRC staff verified that HDI’s implementation of this EAL, except for the site-specific change identified below, is consistent with the guidance provided in Appendix C to NEI 99-01, Revision 6.

The licensee made the following site-specific changes to the generic EAL scheme:

- EAL #1 (b and c): The term “SAFETY SYSTEM” was excluded because only those systems required to maintain spent fuel cooling are necessary in the permanently shutdown and defueled condition. These systems, by definition, are not SAFETY SYSTEMS.

The site-specific changes to the generic EAL scheme are administrative and do not affect the applicability of the EAL.

Based on the above, the NRC staff concludes that the plant-specific implementation method for this EAL is in alignment with the key characteristics of an effective EAL scheme (identified in Section 3.2 of this safety evaluation) and meets the planning standard of 10 CFR 50.47(b)(4) and the requirements of Section IV.B of Appendix E to 10 CFR Part 50. Therefore, the NRC staff finds this EAL acceptable.

3.2.2.4 EAL PD-HU3, “Other conditions exist which in the judgment of the Emergency Director warrant declaration of an UNUSUAL EVENT.”

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

The NRC staff verified that HDI’s implementation of this EAL, except for the site-specific change identified below, is consistent with the guidance provided in Appendix C to NEI 99-01, Revision 6.

The licensee made the following site-specific changes to the generic EAL scheme:

- Replaced “SAFETY SYSTEMS” with “systems needed to maintain spent fuel integrity” as the term “safety systems” is not applicable in the permanently shutdown and defueled condition.

The site-specific changes to the generic EAL scheme are administrative and do not affect the applicability of the EAL.

Based on the above, the NRC staff concludes that the plant-specific implementation method for this EAL is in alignment with the key characteristics of an effective EAL scheme (identified in Section 3.2 of this safety evaluation) and meets the planning standard of 10 CFR 50.47(b)(4)

and the requirements of Section IV.B of Appendix E to 10 CFR Part 50. Therefore, the NRC staff finds this EAL acceptable.

3.2.2.5 EAL PD-HA3, “Other conditions exist which in the judgment of the Emergency Director warrant declaration of an ALERT”

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

The NRC staff verified that HDI’s implementation of this EAL, except for the site-specific change identified below, is consistent with the guidance provided in Appendix C to NEI 99-01, Revision 6.

The licensee made the following site-specific change to the generic EAL scheme:

- Removed numbering from EAL, because there is only one EAL is associated with the IC.

The site-specific changes to the generic EAL scheme are administrative and do not affect the applicability of the EAL.

Based on the above, the NRC staff concludes that the plant-specific implementation method for this EAL is in alignment with the key characteristics of an effective EAL scheme (identified in Section 3.2 of this safety evaluation) and meets the planning standard of 10 CFR 50.47(b)(4) and the requirements of Section IV.B of Appendix E to 10 CFR Part 50. Therefore, the NRC staff finds this EAL acceptable.

3.2.3 Category “PD-S”: System Malfunction

3.2.3.1 EAL PD-SU1, “UNPLANNED Spent Fuel Pool temperature rise.”

This EAL addresses a condition that is a precursor to a more serious event and represents a potential degradation in the level of safety of the facility. If uncorrected, boiling in the pool will occur, and result in a loss of pool level and increased radiation levels. Escalation of the emergency classification level would be via PD-AA1 or PD-AA2.

The NRC staff verified that HDI’s implementation of this EAL, except for the site-specific changes identified below, is consistent with the guidance provided in Appendix C to NEI 99-01, Revision 6.

The licensee made the following site-specific change to the generic EAL scheme:

- Removed numbering from EAL, because there is only one EAL is associated with the IC.
- Provided IPEC site-specific temperature for the SFP.

The site-specific changes to the generic EAL scheme are administrative and do not affect the applicability of the EAL.

Based on the above, the NRC staff concludes that the plant-specific implementation method for this EAL is in alignment with the key characteristics of an effective EAL scheme (identified in Section 3.2 of this safety evaluation) and meets the planning standard of 10 CFR 50.47(b)(4)

and the requirements of Section IV.B of Appendix E to 10 CFR Part 50. Therefore, the NRC staff finds this EAL acceptable.

3.2.4 Category “E”: ISFSI Malfunction

3.2.4.1 E-HU1, “Damage to a loaded cask CONFINEMENT BOUNDARY.”

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

A spent fuel storage license contains technical requirements and operating conditions (fuel specifications, cask leak testing, surveillance, and other requirements) for the ISFSI and specifies what the licensee is authorized to store at the site.

The NRC staff verified that HDI’s implementation of this EAL, except for the site-specific changes identified below, is consistent with the guidance provided in Section 8 to NEI 99-01, Revision 6.

The licensee made the following site-specific changes to the generic EAL scheme:

- Removed numbering from EAL, because there is only one EAL is associated with the IC.
- Included the cask-specific technical specification values.

The site-specific changes to the generic EAL scheme are administrative and do not affect the applicability of the EAL.

Based on the above, the NRC staff concludes that the plant-specific implementation method for this EAL is in alignment with the key characteristics of an effective EAL scheme (identified in Section 3.2 of this safety evaluation) and meets the planning standard of 10 CFR 50.47(b)(4) and the requirements of Section IV.B of Appendix E to 10 CFR Part 50. Therefore, the NRC staff finds this EAL acceptable.

3.3 Conclusions

3.3.1 Emergency Plan Conclusions

Based on the NRC staff’s review of the proposed IPEC PDEP, as described in Section 3.1 of this safety evaluation, the NRC staff finds that the proposed PDEP meets the planning standards in 10 CFR 50.47(b) and the requirements in Appendix E to 10 CFR Part 50, as exempted. The IPEC PDEP provides reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency at the facility after docketing the certification of permanent fuel removal from the reactor vessel. Therefore, the NRC staff concludes that the licensee’s proposed IPEC PDEP and Permanently Defueled EAL scheme, as provided in Attachment 1, “Permanently Defueled Emergency Plan,” of HDI’s letter dated February 4, 2022, is acceptable.

3.3.2 EAL Scheme Conclusions

The NRC staff has reviewed the technical basis for the proposed EAL scheme for IPEC in the permanently shutdown and defueled condition, the modifications from NEI 99-01, Revision 6, and the licensee's evaluation of the proposed changes. The licensee chose, in part, to modify its EAL scheme from the generic EAL scheme development guidance provided in NEI 99-01, Revision 6, in order to adopt a format more in alignment with its currently approved EAL scheme, as well as alignment with licensee-specific writer's guides and preferences. The NRC staff determined that these modifications are administrative in nature and do not alter the intent of any specific EAL within an EAL, EAL category, or within the entire EAL scheme as stated in NEI 99-01, Revision 6.

The NRC staff determined that the proposed EAL scheme uses objective and observable values, is worded in a manner that addresses human factors engineering and user friendliness concerns, follows logical progression for escalating events, and allows for event downgrading and upgrading based upon the potential risk to the public health and safety. Risk assessments were appropriately used to set the boundaries of the ECLs and ensure that all EALs that trigger emergency classification are in the same range of relative risk.

Based on the above, as described in Section 3.2 of this safety evaluation, the NRC staff's review has determined that the proposed changes meet the guidance in NEI 99-01, Revision 6, the planning standard of 10 CFR 50.47(b)(4), and the requirements in Section IV.B to Appendix E of 10 CFR Part 50, as exempted for IPEC. Therefore, the NRC staff concludes that the proposed EAL scheme, as provided in Attachment 2, "Permanently Defueled Emergency Action Level Technical Bases Document," of HDI's letter dated February 4, 2022, is acceptable and provides reasonable assurance that the licensee can and will take adequate protective measures in the event of a radiological emergency.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the State of New York's official was notified of the proposed issuance of the amendment on November 22, 2022. The State of New York Energy Research and Development Authority (NYSERDA) officials responded with comments dated November 22, 2022 (ML22332A048) opposing the reduction of emergency planning requirements before all spent fuel at the site is removed from the spent fuel pools and placed in dry cask storage. The NRC staff considered the comments NYSERDA provided, as appropriate, as part of the review of HDI's submittals and this safety evaluation. Additionally, the NRC responded to NYSERDA comments in a letter dated March 3, 2023 (ML22336A142).

5.0 ENVIRONMENTAL CONSIDERATION

The amendment relates, in part, to changes in recordkeeping, reporting, or administrative procedures or requirements. The amendment also relates, in part, to changing requirements with respect to the installation or use of facility components located within the restricted area as defined in 10 CFR Part 20 because the amendment approves an acceptable EAL scheme which is required for operation of the facility. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding published in the *FR* on January 25, 2022 (87 FR 3844).

Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9), "Criterion for categorical exclusion; identification of licensing and regulatory actions eligible for categorical exclusion or otherwise not requiring environmental review," and 51.22(c)(10). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

6.0 CONCLUSION

The Commission has concluded, based on the IPEC emergency planning and preparedness considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that 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.

7.0 REFERENCES

1. Fleming, J., Holtec Decommissioning International, LLC, letter to U.S. Nuclear Regulatory Commission, "License Amendment Request to Revise the Emergency Plan and Emergency Action Level Scheme to Address the Permanently Defueled Condition," dated December 22, 2021 (Agencywide Documents Access and Management System Accession No. ML21356B704).

2. Fleming, J., Holtec Decommissioning International, LLC, letter to U.S. Nuclear Regulatory Commission, "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).

3. Fleming, J., Holtec Decommissioning International, LLC, letter to U.S. Nuclear Regulatory Commission, "License Amendment Request - Proposed Changes to the IPEC Nuclear Generating Station Emergency Plan and Emergency Action Level Scheme for the Permanently Defueled Condition," dated May 12, 2022 (ML22132A169).

4. M. Johnson, Holtec Decommissioning International, LLC, e-mail to K. Sturzebecher, U.S. Nuclear Regulatory Commission, dated December 5, 2022 (ML22340A037).

5. U.S. Nuclear Regulatory Commission, "Staff Requirements SECY-21-0102, "Request by Holtec Decommissioning International, LLC for Exemptions from Certain Emergency Planning Requirements for the IPEC Nuclear Generating Station," dated October 24, 2023 (ML23297A027).

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

7. U.S. Nuclear Regulatory Commission, "Order Revoking Authority to Operate Facility," dated June 19, 1980 (ML100290796)

8. Minns, J., U.S. Nuclear Regulatory Commission, letter to Entergy Nuclear Operations, Inc., "Indian Point Nuclear Generating Station, Unit 1 – Issuance of Amendment Re: Changes to Effectively Coordinate Indian Point Nuclear Generating Station, Units 1 and 2, Programs," dated August 11, 2003 (ML032240282).

9. Guzman, R., U.S. Nuclear Regulatory Commission, letter to Holtec International and Holtec Decommissioning International, LLC, "Indian Point Nuclear Generating Station, Unit Nos. 1, 2, and–3 - Issuance of Amendment Nos. 64, 295, and 271 Re: Order Approving Transfer of Licenses and Conforming License Amendments (EPID L-2019-LLM-0003)," dated May 28, 2021 (ML21126A005).

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11. Vitale, Anthony J., Entergy Nuclear Operations, Inc., letter to U.S. Nuclear Regulatory Commission, "Notification of Permanent Cessation of Power Operations Indian Point

Nuclear Generating Unit Nos. 2 and 3 Docket Nos. 50-247 and 50-286 License Nos. DPR-26 and DPR-64," dated February 8, 2017 (ML17044A004).

12. Vitale, Anthony J., Entergy Nuclear Operations, Inc., letter to U.S. Nuclear Regulatory Commission, "Certifications of Permanent Cessation of Power Operations and Permanent Removal of Fuel from the Reactor Vessel Indian Point Nuclear Generating Unit No. 2 NRC Docket No. 50-247 Renewed Facility Operating License No. DPR-26," dated May 12, 2020 (ML20133J902).

13. Vitale, Anthony J., Entergy Nuclear Operations, Inc., letter to U.S. Nuclear Regulatory Commission, "Certifications of Permanent Cessation of Power Operations and Permanent Removal of Fuel from the Reactor Vessel Indian Point Nuclear Generating Unit No. 3 NRC Docket No. 50-286 Renewed Facility Operating License No. DPR-64," dated May 11, 2021 (ML21131A157).

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15. Fleming, Jean A., Holtec Decommissioning International, LLC, letter to U.S. Nuclear Regulatory Commission, "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," dated February 1, 2022 (ML22032A017).

16. Fleming, Jean A., Holtec Decommissioning International, LLC, letter to U.S. Nuclear Regulatory Commission, "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," dated February 2, 2022 (ML22033A348).

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20. Federal Emergency Management Agency Comprehensive Preparedness Guide 101, "Developing and Maintaining Emergency Operations Plans," Version 2.0, dated November 2010 (http://www.fema.gov/pdf/about/divisions/npd/CPG_101_V2.pdf).

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