EP Evaluation of Request by Holtec Decommissioning International, LLC for Exemptions from Certain Emergency Planning Requirements for Palisades Nuclear Plant

The following U.S. Nuclear Regulatory Commission (NRC) staff evaluation verifies that Holtec Decommissioning International, LLC (HDI, the licensee) provided the analyses described in Section 5.0, "Evaluation of Exemptions to EP [Emergency Planning] Regulations," of the Office of Nuclear Security and Incident Response (NSIR), Division of Preparedness and Response (DPR) Interim Staff Guidance (ISG) document NSIR/DPR-ISG-02, "Emergency Planning Exemption Requests for Decommissioning Nuclear Power Plants," dated May 11, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML14106A057). These analyses meet the criteria in the ISG to justify elimination of the requirement on the licensee to maintain the plume exposure pathway and ingestion pathway emergency planning zones (EPZ) and formal offsite radiological emergency preparedness plans. The discussion that follows lists each ISG criterion, followed by the NRC staff's evaluation of the licensee's consistency with that criterion for the Palisades Nuclear Plant (PNP).

1. The licensee performed an analysis indicating that any radiological release from the applicable remaining design basis accidents (DBAs) would be within the dose limits of section 50.67, "Accident source term," of Title 10 of the *Code of Federal Regulations* (10 CFR) and dose acceptance criteria in Regulatory Guide (RG) 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors" (ML003716792). The licensee evaluated the maximum 2-hour total effective dose equivalent (TEDE) to an individual located at the exclusion area boundary (EAB), and the 30-day TEDE to an individual at the outer boundary of the low population zone and the control room. The resulting doses would not approach the U.S. Environmental Protection Agency (EPA) early phase protective action guides (PAGs) recommendation for protection of the public.[1]

   Evaluation: HDI states that the irradiated fuel will be stored in the spent fuel pool (SFP) and an independent spent fuel storage installation (ISFSI). HDI further states, and the NRC staff agrees, that while spent fuel remains in the SFP, the only postulated DBAs that would remain applicable to the permanently defueled PNP facility that could contribute a significant dose would be: (1) a fuel handling accident (FHA) in the SFP; (2) a liquid waste incident; (3) a waste gas incident; and (4) postulated cask drop accident.

   Fuel Handling Accident

   HDI states that following permanent cessation of power operations and permanent removal of fuel from the PNP reactor, an FHA in the reactor cavity is no longer applicable because all irradiated spent fuel will either be stored in the PNP SFP or an ISFSI. Therefore, because an FHA can only occur during movement of spent fuel in the SFP, the FHA event is limited to the SFP. HDI's FHA analysis assumed 22.5 feet of water above the stored spent fuel. For a water cover depth of 22.5 ft, the licensee

[1] Use of the EPA early phase PAGs as a threshold is consistent with the planning basis for the 10-mile EPZ provided in NUREG-0396 (EPA 520/1-78-016), "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants" (ML051390356), and endorsed by the Commission in a policy statement published on October 23, 1979 in the *Federal Register* (FR) ("Planning Basis for Emergency Responses to Nuclear Power Reactor Accidents," 44 FR 61123).

calculated an elemental iodine decontamination factor of 252 and an overall iodine decontamination factor of 183.07 using guidance from RG 1.183 and from a technical paper entitled, “Evaluation of Fission Product Release and Transport for Fuel Handling Accident” (ADAMS Legacy Accession No. 8402080322). Consistent with RG 1.183, the licensee credited an infinite decontamination factor for the remaining particulate forms of the radionuclides contained in the gap activity. In accordance with RG 1.183, the licensee did not credit decontamination from water scrubbing for the noble gas constituents of the gap activity. The FHA utilizes the alternate source term methodology described in RG 1.183.

The NRC staff previously approved the revised DBA radiological consequence analyses in License Amendment No. 272, “Palisades Nuclear Plant – Issuance of Amendment No. 272 Re: Permanently Defueled Technical Specifications (EPID L-2021-LLA-0099,” dated May 13, 2022 (ML22039A198). As documented in the NRC’s safety evaluation for License Amendment No. 272, the staff determined that 17 days is the amount of time needed for decay to meet the EPA early phase PAG limit of 1 rem TEDE at the EAB. In using the same assumptions, except for decay time, the licensee’s dose analysis for an FHA with 60 days of decay in the SFP results in a dose of 0.014 rem TEDE at the EAB. This result meets the 6.3 rem acceptance criteria of RG 1.183 at the EAB and low population zone. In addition, it also meets the EPA early phase PAG criterion of 1 rem TEDE and below 10 percent EPA PAG threshold for declaration of a site area emergency. NRC Staff review of this calculation determined that the change in decay time is appropriate for this exemption request because the licensee’s request for the exemption is to show that the dose consequences from an accident after 12 months does not result in a radiological release requiring offsite protective actions, and the licensee’s calculation only accounts for 60 days of decay.

Based on the permanent shutdown of PNP on May 20, 2022, the 12 months of decay time will have elapsed on May 31, 2023. The NRC staff notes that the doses from an FHA are dominated by the isotope Iodine-131. After 12 months of decay, the thyroid dose from an FHA would be negligible. With 12 months of decay, the only isotope remaining in significant amounts, among those postulated to be released in a DBA FHA, would be Krypton-85. Because Krypton-85 primarily decays by beta emission, the calculated skin dose from an FHA release would make an insignificant contribution to the TEDE, which is the parameter of interest in the determination of the EPA early phase PAGs for sheltering or evacuation. The staff concludes that the dose consequences from an FHA for the permanently defueled PNP meet the applicable dose criteria and that the doses are below the EPA early phase PAG criterion of 1 rem TEDE.

Liquid Waste Incident

HDI states that a liquid tank failure remains a viable accident following the reactor being permanently defueled since liquid tanks may continue to store radioactive liquid. The accidents include an accidental discharge to the circulating water discharge canal, or failure of the primary system makeup storage tank or the utility water storage tank. HDI states that the primary makeup storage tank and the utility water storage tank have administrative controls that maintain tank activity concentrations such that 10 CFR Part 20, “Standards for Protection Against Radiation,” dose limits would not be exceeded in the event of a tank failure and that these concentration limits will be maintained in the permanently defueled condition.

HDI concluded that the PNP design and administrative controls ensure that radioactive liquid leakage or spillage will be retained within the facility or within 10 CFR Part 20 dose limits. In addition, HDI states that administrative controls and automatic interlocks, together with the fail-safe design of the instrumentation and control devices, provide assurance against discharge of liquid wastes to the environs in excess of 10 CFR Part 20 limits and would not approach the EPA early phase PAG criteria of 1 rem TEDE after a 90-day fuel decay period.

As documented in the NRC's safety evaluation for License Amendment No. 272, dated May 13, 2022, the staff previously reviewed and approved the liquid waste tank failure assumptions. In this evaluation, the staff determined that the licensee's administrative controls, system design, and system monitoring would maintain tank concentrations such that the dose limits provide in 10 CFR Part 20 would not be exceeded. For this exemption, the NRC staff finds that these conclusions are still appropriate and are consistent with the discussions provided in this exemption request.

Waste Gas Incident

HDI evaluated the accidental release of waste gas. HDI states that the volume control tank rupture accident is no longer applicable in the permanently defueled condition because primary coolant letdown will no longer be required to support primary coolant system operation. In addition, inputs into the volume control tank rupture accident discussed in the Updated Final Safety Analysis Report, Section 14.21.2 (ML21125A341), such as letdown flow and dose equivalent Iodine-131 requirements, will no longer be applicable in the permanently defueled condition. In the event that the volume control tank continues to hold reactor coolant fluid in the permanently defueled condition, the source term would be lower than during normal operation due to radioactive decay. HDI further states that, the primary coolant iodine and noble gas concentrations released to the atmosphere from the volume control tank after 17 days of decay would be significantly less than the source term from the FHA with 17 days of decay and the control room doses from the FHA.

As documented in the NRC's safety evaluation for License Amendment No. 272, dated May 13, 2022, the staff previously reviewed and approved the accidental release of waste gas assumptions. In the safety evaluation, the NRC staff determined that this accident would be bound by the FHA analysis given 17 days of decay in the volume control tank. For this exemption request, the NRC staff finds that these conclusions are still appropriate and are consistent with the discussions provided in this exemption request.

Postulated Cask Drop Accident

HDI evaluated the postulated cask drop accidents and provided an analysis that included a scenario in which a cask is dropped onto spent fuel which has decayed for 90 days. The licensee assumes the fuel handling building charcoal filters are not operating and all radiation is released unfiltered from the fuel handling building to the external environment.

As documented in the NRC's safety evaluations for License Amendment No. 226, "Palisades Plant – Issuance of Amendment Re: Alternative Radiological Source Term (TAC No. MD3087)," dated September 28, 2007(ML072470667), and License

Amendment No. 272, dated May 13, 2022, the NRC staff previously reviewed and approved that the licensee would not need the fuel handling areas ventilation system nor control room ventilation filtration to meet applicable dose criteria if the fuel in the SFP had been decaying for at least 90 days. Specifically, the NRC staff's conclusions were based on meeting the 6.3 rem acceptance criteria of RG 1.183 at the EAB and low population zone. In License Amendment No. 226, the staff reviewed and independently verified the licensee's assessment for a release assuming no filtration and 90 days of decay, which resulted in a dose of 0.08 rem at the EAB. For this exemption request, the NRC staff reviewed HDI's information provided in its requests for License Amendment Nos. 226 and 272, and the staff's safety evaluations for those respective license amendments, and accordingly finds that the assumptions and calculations used in those issued amendments are still appropriate for this safety evaluation analysis. Therefore, the staff finds the analyses by the licensee and the NRC staff for License Amendment No. 226 is acceptable for the current exemption request, and the stated dose result and is less than the EPA early phase PAG criterion of 1 rem TEDE and below 10% EPA PAG threshold for declaration of a site area emergency.

The NRC staff reviewed the consequences of the FHA in the SFP, the liquid waste incident, a waste gas incident, and a postulated cask drop accident in detail during the review of the previously approved license amendment requests and found them to be acceptable. Since this information has not changed for this exemption request, the NRC staff relied on previous analyses by the licensee and NRC staff safety evaluations for License Amendment Requests No. 226 and 272 to conduct the review of this exemption request. The NRC staff notes that, while the licensee continues to rely on the information from the previously approved license amendment requests, the calculated doses would be expected to be lower when the exemption is implemented, due to additional decay time beyond the time assumed in the NRC staff's respective safety evaluations for the approved License Amendment Nos. 226 and 272. Since the dose at the EAB will not exceed the 1 rem limit, the NRC staff finds it acceptable to support approval of the exemption request.

2. The licensee performed an analysis demonstrating that after the spent fuel has decayed for 12 months, with a complete loss of SFP water inventory with no heat loss (i.e., adiabatic heat-up), a minimum of 10 hours would be available before any fuel cladding temperature reaches 900 degrees Celsius (°C) from the time all cooling is lost.

   Evaluation: The NRC staff evaluates the ability to mitigate beyond-design-basis events considering the time available to implement measures to maintain the spent fuel cool or, if necessary, implement an appropriate emergency response. The NRC staff uses an assessment of the adiabatic heat-up to determine the available time because adiabatic heat-up is generally the limiting condition. The heat-up time calculated is the time to reach a temperature of 900°C, which correlates to 1,652 degrees Fahrenheit (°F) and the temperature where "runaway oxidation" (zirconium cladding fire) is expected to occur, as defined in NUREG-1738, "Technical Study of Spent Fuel Pool Accident Risk at Decommissioning Nuclear Power Plants," dated February 2001 (ML010430066).

   The 10-hour criterion, conservatively, does not consider the time to uncover the spent fuel and assumes instantaneous loss of cooling to the spent fuel. The 10-hour time period is also not intended to represent the time that it would take to repair all key safety systems or to repair a large SFP breach. The 10-hour criterion is a conservative period of time in which pre-planned mitigation measures to provide makeup water or spray to

the SFP can be reliably implemented before the onset of a zirconium cladding ignition. In addition, in the unlikely event that a release is projected to occur, 10 hours would provide sufficient time for offsite agencies, if deemed warranted, to take appropriate action to protect the health and safety of the public.

HDI performed an analysis demonstrating that 12 months after PNP permanently shut down, the spent fuel stored in the SFP will have decayed to the extent that the requested exemptions may be implemented at PNP without any additional compensatory actions. Given PNP's permanent shutdown date was May 20, 2022, and the fuel decay time of 12 months, May 31, 2023, terminates the period in which the spent fuel could heat-up to clad ignition temperature within 10 hours under adiabatic conditions. This analysis, "Spent Fuel Pool Heat Load Limits for Palisades," dated July 8, 2022, [non-public] was submitted by HDI in support of this exemption request. The analysis determined the decay time necessary to ensure at least a 10-hour heat-up time considering the thermal capacity of the portion of the spent fuel assembly that heats uniformly and the decay heat rate of the spent fuel. The HDI analysis shows that after the spent fuel has decayed for 12 months, for beyond-design-basis events where the SFP is drained and air cooling is not possible, at least 10 hours would be available from the time spent fuel cooling is lost until the hottest fuel assembly reaches a temperature of 900°C. This 10-hour minimum threshold provides sufficient time for the licensee to take mitigative actions, or if government officials deem warranted, for offsite protective actions to be initiated using a comprehensive emergency management plan or "all hazards" approach.[2]

HDI states that their determined doses at the EAB and the PNP control room 12 months after shutdown are less than 0.20 mrem/hour and 2.5 mrem/hour, respectively. The staff reviewed the details of the calculation used to support the determination of the 0.20 mrem/hour at the EAB and 2.5 mrem/hour at the control room doses. HDI's calculations used SCALE and Monte Carlo N-particle computer programs to perform their calculations. HDI's calculations approximated dose from the spent fuel to the top of the SFP and used the line beam response method to calculate the dose to the EAB and the PNP control room. The staff finds that the use of these computer codes, and the line beam response method to calculate dose are appropriate for determining doses from such a SPF accident to the EAB and control room. The NRC staff reviewed the calculation to verify that important physical properties of materials were within acceptable ranges and that the results were accurate. The staff determined that physical properties were appropriate and completed independent confirmatory calculations that produced similar results. Therefore, the staff found that after 12 months of decay, at least 10 hours would be available before a significant offsite release could begin. The staff concluded that the adiabatic heat-up calculation provided an acceptable method for determining that a minimum of 10 hours would be available before any spent fuel cladding temperature reaches 900°C from the time all cooling is lost.

The NRC staff reviewed and found the licensee's calculations acceptable and determined that the stated doses are an appropriate estimate for this beyond-design-basis event. Therefore, the staff finds that the licensee demonstrated through

[2] A comprehensive emergency management plan or "all-hazards" approach in this context, also referred to as an emergency operations plan, is addressed in the Federal Emergency Management Agency's (FEMA) Comprehensive Preparedness Guide 101, "Developing and Maintaining Emergency Operations Plans," Version 2.0, dated November 2010, https://www.fema.gov/sites/default/files/2020-07/developing-maintaining-emergency-operations-plans.pdf.

calculations that given the EPA early phase PAG limit of 1 rem TEDE, the licensee would have sufficient time to develop and implement onsite mitigative actions and that additional offsite measures could be taken without pre-planning if efforts to reestablish shielding over the spent fuel are delayed.

3. The licensee performed an analysis for a loss of SFP water inventory resulting in radiation exposure at the EAB and the control room (which indicates that any release would be less than the EPA early phase PAGs at the EAB).

   Evaluation: NUREG-0586, "Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities," Supplement 1 (ML023470327), section 4.3.9, "Radiological Accidents," identifies that a SFP drain down event is beyond-design-basis. The SFP water and the concrete pool structure serve as radiation shielding. A loss of water shielding above the spent fuel could increase the offsite radiation levels because of the gamma rays streaming up out of the pool and being scattered back to a receptor (i.e., person) at the site boundary. The radiation that is scattered due to interactions with air is sometimes referred to as "skyshine."

   HDI analyzed the bounding radiological consequences of a postulated complete loss of SFP water from the PNP SFP as a function of time after PNP's permanent shutdown. The primary purpose of HDI conducting this calculation was to determine the dose rates as a function of time at the EAB and in the control room due to loss of shielding for an event in which the spent fuel assemblies are uncovered following drain down. The dose rates determined by this calculation are due to direct and indirect radiation from spent fuel assemblies and does not consider a potential fire in the SFP for reasons discussed in the previous section above. The analysis also determined that the gamma radiation dose rates at the EAB from a loss of pool water shielding at the PNP SFP would be less than the EPA early phase PAGs.

   Based on an annual analysis, PNP determined that the dose rate to a receptor at the EAB and the limiting dose rate in the PNP control room at 12 months after permanent shutdown are less are less than 0.20 mrem/hour and 2.5 mrem/hour, respectively. PNP concluded that the extended time required to exceed the integrated EPA early phase PAG limit of 1 rem TEDE would allow sufficient time to develop and implement onsite mitigative actions and provide confidence that additional offsite measures could be taken without preplanning if efforts to reestablish shielding over the spent fuel are delayed.

   The NRC staff notes that, while the direct dose rate above the unshielded spent fuel would be high, licensee radiation protection personnel would restrict access to ensure that no one was subjected to the direct dose from the unshielded spent fuel. Therefore, the primary concern becomes the dose rate from gamma and neutron radiation that is scattered from interactions with the air above the PNP SFP. The licensee used appropriate methods to evaluate the effects of this source of radiation at the EAB and in the PNP control room. The analysis assumed 12 months of radioactive decay following operations. This is conservative and acceptable because it will be more than 12 months following shutdown when the exemption is implemented, if approved by the Commission.

   The NRC staff reviewed the licensee's analysis description, performed an independent evaluation, and finds that appropriate methods were used to evaluate the effects of this source of radiation at the PNP control room and the EAB. Therefore, the NRC staff concludes that the dose consequence from skyshine emitted from uncovered spent fuel

in the SFP due to a loss of SFP normal cooling would not exceed a level that would warrant protective actions under the EPA early phase PAGs.

4. Considering the site-specific seismic hazard, the licensee performed either an evaluation demonstrating a high confidence of a low probability (less than 1 x 10^{-5} per year) of seismic failure of the SFP storage structure, or an analysis demonstrating that the spent fuel has decayed sufficiently such that natural air flow in a completely drained SPF would maintain peak cladding temperature below 565˚C (the point of incipient cladding damage).

   Evaluation: In 2012, the licensee of PNP at that time, Entergy Nuclear Operations, Inc., conducted a seismic evaluation in response to an NRC letter to all power reactor licensees, "Request for Information Pursuant to Title 10 of the *Code of Federal Regulations* 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident," dated March 12, 2012 (ML12053A340). Entergy's evaluation provided an assessment of earthquake probabilities at potentially damaging accelerations at PNP. By letter dated May 22, 2014, the NRC accepted the results of this assessment indicating that the low seismic hazard screening criteria had been satisfied for PNP (ML14105A372).

   HDI developed an analysis demonstrating successful completion of the Enhanced Seismic Checklist provided in NUREG-1738 for the SFP demonstrating a high confidence of a low probability (less than 1 x 10^{-5} per year) of seismic failure of the SFP structures. This analysis is summarized in enclosure 4, to HDI's letter dated July 11, 2022, "Palisades Spent Fuel Pool High Confidence of Low Probability of Failure (HCLPF) Evaluation."

   Therefore, the NRC staff finds reasonable assurance that Criterion 4 of NSIR/DPR-ISG-02 is satisfied with respect to demonstrating a high confidence in a low probability of seismic failure for the PNP fuel handling building, including the SFP structures.

5. If the licensee is storing spent fuel in an SFP, the licensee should address for the decommissioning site the risk reduction measures identified in NUREG-1738 as industry decommissioning commitments (IDCs) and staff decommissioning assumptions (SDAs). The IDCs and SDAs are a set of design characteristics and operational capabilities that either help prevent a substantial loss of coolant inventory or increase the likelihood of recovery from such an event.

   Evaluation: In accordance with the safety analysis in NUREG-1738, the beyond-design-basis event sequences that dominate risk at a decommissioning nuclear power reactor are large earthquake and cask drop events. This is an important difference relative to an operating nuclear power reactor, where typically a large number of different initiating events make significant contributions to risk.

   Assurance that the results of the NUREG-1738 analysis are representative of the plant specific conditions at PNP can be established by assessing the facility against certain design and operational characteristics that were assumed in the NUREG-1738 analysis. These characteristics were identified in the NUREG-1738 study as recovery, mitigation, and emergency response activities assumptions that were relied on to evaluate the likelihood of success in event sequences. In table 4, "Industry Decommissioning Commitments (IDCs) Comparison," and table 5, "Staff Decommissioning Assumptions

(SDAs) Comparison" of the enclosure to its letter dated July 11, 2022, HDI described the conformance of the PNP facility and operations with the IDCs and the SDAs. In its discussion of the IDCs and SDAs, HDI addressed measures in place to minimize the potential risk from event sequences that dominate risk at a decommissioning reactor with spent fuel stored in an SFP (e.g., those IDCs and SDAs related to fuel cask handling activities and seismic events).

The NRC staff evaluation focused on the licensee's conformance with IDCs and SDAs that are related to the design and operation of structures, systems, and components associated with the PNP SFP. The summary below of the NRC staff's findings is based on an assessment of the licensee's IDC and SDA items:

IDC #1: Cask drop analyses will be performed, or single-failure-proof cranes will be used for handling of heavy loads (i.e., phase II of NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants: Resolution of Generic Technical Activity A36," dated July 1980 (ML070250180) will be implemented).

Evaluation: HDI states that the PNP crane design is consistent with this IDC. HDI states that heavy load lifts in and around the area of the SFP are performed by the fuel pool building crane (L-3). The design of this crane is single-failure-proof, as the main hoist meets the single failure criteria in accordance with NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants" (ML070205180), and NUREG-0554, "Single-Failure-Proof Cranes for Nuclear Power Plants" (ML110450636). HDI states that because the L-3 main hoist is single-failure-proof, the likelihood of dropping the spent fuel casks in and around the SFP is extremely low, and an accidental load drop is not considered to be a credible event, such that condition 5.1.2(1) of NUREG-0612 is satisfied and analysis of cask drop accidents in accordance with condition 5.1.2(4) of NUREG-0612 is not required. In addition, the PNP procedures provide instructions for lifting activities to meet the guidance provided in NUREG-0612. Although the main hoist of the spent fuel crane is designed and operated in accordance with single-failure-proof criteria for cask handling activities, there may be situations in which lifting devices used with the main hook do not meet these requirements or single-failure-proof features of the main hoist become disabled. In these situations, the crane would no longer meet single failure-proof requirements, and load drops could be postulated. HDI states that, accordingly, cask drop analyses were performed to document the consequences of postulated fuel transfer cask drop accidents in the fuel handling area at PNP. As discussed previously, under the cask drop analysis, the staff found that the previous License Amendment No. 226 analysis was acceptable for the current exemption request, and the stated dose result and is less than the EPA early phase PAG criterion of 1 rem TEDE and below 10 percent EPA PAG threshold for declaration of a site area emergency.

Because the L-3 main hoist is single-failure-proof, an accidental load drop is considered not to be a credible event such that condition 5.1.2(1) of NUREG-0612 is satisfied and analysis of cask drop accidents in accordance with condition 5.1.2(4) of NUREG-0612 is not required. Therefore, the NRC staff finds that HDI satisfies NUREG-1738 IDC #1.

IDC #2: Procedures and training of personnel will be in place to ensure that onsite and offsite resources can be brought to bear during an event.

Evaluation: HDI maintains PNP procedures to ensure onsite and offsite resources can be brought to bear during an event. These procedures (or equivalent) are required by

NRC regulations and will be implemented as necessary depending on the type of event. HDI states that the procedures and associated training will be updated as necessary to reflect the permanently shutdown and defueled condition.

HDI states that following the permanent shutdown and permanent removal of fuel from the PNP reactor vessel, the on-shift operations personnel, including certified fuel handlers and non-certified operators, will continue to be appropriately trained on the relevant procedures and on the various actions needed to provide makeup to the SFP. Following permanent cessation of power operations, maintaining SFP cooling, and inventory would be the highest priority activity. Therefore, the personnel needed to perform these actions will be always available. Finally, HDI states that periodic EP drills are conducted with opportunities for offsite response organization (ORO) participation to maintain proficiency in response to a plant event.

Based on the above information from HDI, the NRC staff concludes that HDI has adequate procedures and training of personnel will be in place to ensure that onsite and offsite resources can be brought to bear during an event to satisfy the conditions assumed in the NUREG-1738 analysis.

IDC #3: Procedures will be in place to establish communication between onsite and offsite organizations during severe weather and seismic events.

Evaluation: HDI maintains PNP procedures that provide guidance to establish and maintain communications between onsite and offsite organizations during severe weather and seismic events. These procedures provide direction for additional actions and communications with onsite and offsite stakeholders if the event does not reach the threshold for entry into an emergency classification. If the severity of the event requires entry into an emergency classification, communications with onsite and offsite organizations will be directed by the PNP emergency plan and associated procedures. The procedures list provided by HDI (or equivalent) will be updated as necessary to reflect the permanently shutdown and defueled condition.

Based on the above, the NRC staff concludes that HDI has adequate procedures that provide guidance to establish and maintain communications between onsite and offsite organizations during severe weather and seismic events to satisfy the assumed conditions in the NUREG-1738 analysis.

IDC #4: An offsite resource plan will be developed which will include access to portable pumps and emergency power to supplement onsite resources. The plan would principally identify organizations or suppliers where offsite resources could be obtained in a timely manner.

Evaluation: HDI states that PNP has procedures in place to ensure that onsite and offsite resources can be brought to bear during an event. HDI states that two trained on-shift individuals at PNP can implement necessary actions to supply makeup water to the PNP SFP in approximately 2 hours. The two on-shift individuals are assigned to perform this task and they do not have other assigned required emergency preparedness activities during the performance of this task that would inhibit timely performance. Therefore, the personnel needed to perform these actions will be available at all times.

HDI maintains PNP procedures that provide guidance to establish and maintain communications between onsite and offsite organizations during severe weather and seismic events. The PNP has multiple portable pumps and portable emergency generators that meet the Extensive Damage Mitigation Guidelines. In addition, the PNP emergency plan provides guidance for communicating with and obtaining offsite resources.

HDI maintains procedures and strategies for the movement of any necessary portable equipment that will be relied upon for mitigating the loss of SFP water. Events involving a loss of SFP cooling and/or water inventory can be addressed by implementation of SFP inventory makeup strategies required under 10 CFR 50.155(b)(2), “Mitigation of beyond-design-basis events.” These capabilities are maintained by license condition 6.b of PNP Renewed License No. DPR-20.These diverse strategies provide defense-in-depth and ample time to provide makeup water or spray to the SFP prior to the onset of zirconium cladding ignition when considering very low probability beyond-design-basis events affecting the SFP. This portable equipment can be used as required by abnormal procedures and event-based procedures may be used to support mitigation strategies for SFP damage and water supply.

Therefore, the NRC staff concludes that HDI has adequate procedures regarding effective use of onsite and offsite resources to respond to events affecting the SFP to satisfy the conditions assumed in the NUREG-1738 analysis.

IDC #5: SFP instrumentation will include readouts and alarms in the control room (or where personnel are stationed) for SFP temperature, water level, and area radiation levels.

Evaluation: HDI states that PNP maintains a technical specification that the SFP water level be maintained at or above 647 feet elevation. HDI states SFP level is monitored by a local level indicator (ruler), which provides indication in the control room using a camera/monitor. A control room low-level alarm at 646 feet is provided via SFP level switch LS-0924.

SFP temperature is monitored by temperature indicating alarms TIA-0925, “Spent Fuel Pool Temp Alarm Indicator,” and TIA-0926, “Spent Fuel Pool Temp Alarm Indicator,” located in the SFP area. Both TIA-0925 and TIA-0926 provide input to the Plant Process Computer (PPC) with workstations in the control room and include urgent PPC alarms at 140°F with audible annunciation as well as a PPC warning alarms at 125°F. Additionally, temperature indicating alarm TIA-0917, “Discharge From Spent Fuel Pool Heat Exchanger,” also located in the SFP area provides an alarm at 115°F on the C-40 panel in the auxiliary building which also results in an alarm in the control room. Area radiation monitors RIA-5709 and RIA-2313, “Spent Fuel Pool Criticality Monitors,” monitor the SFP area with readouts and a common alarm in the control room. HDI states they currently have instrumentation in the SFP that meets the intent of this IDC.

Based on the above, the NRC staff concludes that HDI maintains adequate SFP monitoring instrumentation to satisfy the conditions assumed in the NUREG-1738 analysis regarding monitoring events affecting the SFP.

IDC #6: SFP seals that could cause leakage leading to fuel uncovery in the event of seal failure shall be self-limiting to leakage or otherwise engineered so that drainage cannot occur.

Evaluation: HDI states that the SFP seal around the tilt pit gate meets the intent of the IDC. Seal failure would result in a self-limiting loss of SFP water inventory of approximately 6-7 feet, well above the top of the spent fuel. In addition, the bottom elevation of the gate seal is above the top of the spent fuel, therefore, leakage by the gates could not lead to uncovered spent fuel.

The NRC staff finds that the described design features that limit the potential for drainage through the fuel transfer system and SFP cooling system are consistent with the assumptions used in the analysis presented in NUREG-1738, and are, therefore, acceptable.

IDC #7: Procedures or administrative controls to reduce the likelihood of rapid drain down events will include (1) prohibitions on the use of pumps that lack adequate siphon protection or (2) controls for pump suction and discharge points. The functionality of anti-siphon devices will be periodically verified.

Evaluation: PNP states that design PNP System Operation Procedure (SOP)-27, “Fuel Pool System,” provides the directions for filling and draining the SFP and includes limits on the SFP level. HDI provides the suction, discharge, skimmer and tilt pit fill lines enter the SFP at elevations greater than 644 feet, 5 inches to assure that failures of downstream piping cannot result in unacceptable drainage of SFP water inventory.

Failure of the outlet piping system would result in draining of the SFP to the outlet level which still maintains an adequate level of water for shielding and cooling requirements. Such a failure could occur because of a wind or tornado generated missile striking a portion of the SFP cooling pump P-51B discharge piping that extends above the SFP building floor. Failure of the inlet piping would result in no loss of water from the SFP as there is no downcomer by which a siphon could be started.

Margins to the Top of Fuel for Piping Failures:

- SFP cooling discharge line: 23.5 feet
- SFP cooling suction line: 20.4 feet
- SFP cooling tilt pit fill line: 24.0 feet
- SFP cooling skimmer line: 23.5 feet
- SFP bulkhead gate failure: 17.0 feet

SFP structure integrity, including the concrete SFP and the SFP steel liner is required for maintaining water inventory. Detection of gross leakage during normal operation can be accomplished with the SFP level alarm. Leakage detection for SFP stainless steel liners is a manual process of observing flow from channels between the liner and concrete through telltale drains.

Accordingly, the NRC staff concludes that the physical configuration of inlet and outlet connections and use of anti-siphon devices provide adequate control to minimize the

potential for rapid drainage through permanent systems and are consistent with the assumptions used in the analysis presented in NUREG-1738.

IDC #8: An onsite restoration plan will be in place to provide repair of the SFP cooling systems or to provide access for makeup water to the SFP. The plan will provide for remote alignment of the makeup source to the SFP without requiring entry to the refuel floor.

Evaluation: HDI states that it has various procedures that provide guidance for providing makeup water to the SFP. PNP abnormal operating procedure (AOP)-26, “Loss of SFP Level,” would likely be the initial procedure entered for this scenario. The inventory loss sections direct the user to use various sources of makeup water for the SFP.

If access to the SFP floor is available, one method is via the normal method of filling from primary makeup water via hose. Additionally, an emergency fill option from the fire protection system via a spool piece in the SFP heat exchanger room. HDI states there are multiple ways to add makeup water to the SFP with or without entry to the refuel floor.

PNP procedures provide actions to makeup and cool the SFP by alternate means using diverse and flexible mitigation strategies (FLEX) strategies during an extended loss of all AC power. SFP makeup water is provided via the portable FLEX pump manifold staged at the turbine building 590 foot elevation. HDI states SFP makeup water can be accomplished through one of two methods, including direct fill from a hose routed to the SFP or through a hard pipe connection in SFP heat exchanger room. Further, PNP procedures specify that the installation of the SFP spray monitor nozzles and direct fill should be given priority over the hard pipe fill connection due to expected SFP area high radiation levels if the SFP water level cannot be maintained. However, this method requires access to the SFP floor area; the hard pipe method does not.

For a loss of SFP cooling event, HDI states that AOP-26 provides cooling options and makeup water options. Additionally, if needed, HDI can employ Severe Accident Management Guidelines and use Emergency Management Guidelines. Severe Accident Guidelines provide guidance if the SFP water level is not intact and/or level is low or lowering due to an event. All response actions to restore SFP level are the options described above (includes plans for both an available access to the SFP floor as well as cases where access is not available). HDI’s exemption application states that these PNP procedures provide options if all the normal means are unavailable.

In addition, HDI states that two installed diesel-driven fire pumps and one motor-driven fire pump are available and can provide 1,500 gallons per minute makeup water from the facility intake via hard pipe or hose stations. In addition, HDI states that two onsite FLEX pumper units with a capacity of 1,000 gallons per minute each can provide makeup water from the facility intake or from Lake Michigan directly.

Based on the above, the NRC staff finds that the planned SFP cooling and makeup water capability, with access to numerous sources of makeup inventory without requiring access to the refuel floor conforms to the capabilities assumed for the NRC staff analysis presented in NUREG-1738.

IDC #9: Procedures will be in place to control SFP operations that have the potential to rapidly decrease SFP inventory. These administrative controls may require additional operations or management review, management physical presence for designated operations or administrative limitations such as restrictions on heavy load movements.

Evaluation: HDI states that the PNP SFP design has no drains in the main fuel storage area of the pool. HDI states that failure of the outlet piping would result in a loss of water only to the level of the outlet piping (located at 647 feet 6 inch elevation, 6 inches below skimmer), which would still maintain an adequate amount of water for shielding and cooling requirements. Failure of the inlet piping would result in a loss of water to the level of the inlet opening (located at 644 feet 5 inches elevation, 3 feet 7 inches below skimmer), which would also maintain an adequate water level in the SFP for shielding and cooling. HDI states the top of the active fuel is located at the 624 foot elevation (24 feet below the skimmer).

HDI states that the PNP permanently defueled technical specifications requires that the SFP level be maintained ≥ 647 feet elevation during movement of irradiated fuel assemblies or a fuel cask in the SFP. The SFP level is allowed to be below the 647 feet elevation to support fuel cask movement if the displaced water level with the cask submerged raises SFP level to the ≥ 647 feet elevation.

Further, HDI states that administrative limitations, such as restrictions on heavy loads movements, are controlled by Operating Requirements Manual Section 3.21. PNP plant procedure FHS-M-23, “Movement of Heavy Loads in the SFP Area,” which also controls heavy loads in the vicinity of the SFP, provides extensive instructions to ensure that the requirements of NUREG-0612 are met for heavy loads.

HDI states that dry cask loading operations will have additional management oversight and additional administrative controls in place as a high integrated risk activity and an Infrequent Evolution Brief would also be held. PNP procedure FHS-M-39B, “Fuel Loading and Dry Storage Cask (DSC) Sealing Operations for Dry Fuel Loading Operations,” contains other numerous requirements to control dry cask loading operations.

These include, but are not limited to:

- SFP water level should be adjusted to 13-14 inches below the top of the skimmer plate in preparation for filling the DSC with SFP water (when filling DSC with pool water, SFP level will go down between 3 inches and 4 inches);
- prior to cask loading, all required persons will have completed the training program for the Cask System per PNP Administrative Procedure 5.26, “Independent Spent Fuel Storage Installation Training and Certification Program”;
- the SFP water level shall be monitored hourly (via television monitor or locally) whenever the DSC is in the SFP, and fuel is in the DSC to ensure that the SFP is not overflowing and that the water level is not unintentionally rising; and
- with the DSC slightly suspended in the SFP, inspect lifting rig and load carrying members for any signs of overloading and distortion.

PNP Procedure FHS-M-34, “Unloading the Multi-Assembly Sealed Basket (MSB),” contains further requirements:

- care must be taken to ensure the SFP-impact limiting pad (ILP) will not be set on the SFP liner weld seams (setting on weld seams may cause fuel pool leakage);
- use of an ILP in the SFP for setting the cask on; and
- control room communications established and verified prior to any lift in the SFP.

HDI states that additional dry cask operations in the SFP are controlled under several other plant procedures. HDI stated that the review of these procedures confirm that there are no dry cask-related SFP operations which could result in a rapid drain down event.

Based on the above, the NRC staff finds that the described procedures are consistent with the administrative controls considered in the NRC staff analysis presented in NUREG-1738.

IDC #10: Routine testing of the alternative fuel pool makeup system components will be performed and administrative controls for equipment out of service will be implemented to provide added assurance that the components would be available, if needed.

Evaluation: HDI states that PNP practices align with this IDC. Discussion in IDC-8 above provides the methods to align makeup water sources to the SFP without requiring entry to the SFP floor (i.e., refuel floor). HDI states that if access to the SFP floor is available, additional options exist, which are described in IDC-8. HDI states that for the pumps identified in this section, preventative maintenance (PM) measures shall be in place to ensure that they will perform as required when placed in service. These PMs shall be implemented and scheduled in accordance with the PM program. HDI states PNP procedures provide guidance for the conduct of operations, administrative processes, and specifies the authority and responsibilities of individuals to ensure the requirements of federal regulations, industry good practices, and standards are met, including adherence to operating procedures. Performance of the procedures identified above will be in accordance with these requirements.

Based on HDI’s statement in its application and HDI’s discussion in IDC-8, NRC staff finds that the described administrative controls conform to those considered in the NRC staff analysis presented in NUREG-1738.

SDA #1: Licensee’s SFP cooling design will be at least as capable as that assumed in the risk assessment, including instrumentation. Licensees will have at least one motor-driven and one diesel-driven fire pump capable of delivering inventory to the SFP.

Evaluation: HDI states that the PNP SFP cooling system is as capable as that assumed in Section 3.0 of NUREG-1738. HDI states that the PNP SFP cooling system is a seismically analyzed system containing two motor-driven cooling pumps and two heat exchangers in series. The heat exchangers transfer decay heat to the component cooling water system, then to the ultimate heat sink. HDI states that a filtration system is manually operated to maintain SFP cleanup. In addition, PNP has two diesel-driven and one motor-driven pump in the fire water system and three motor-driven pumps in the service water system capable of delivering water inventory to the SFP.

The NRC staff finds that the cooling and makeup capabilities, as described by the licensee in its application, are comparable to the capabilities considered in the NRC staff analysis presented in NUREG-1738, and are, therefore, acceptable.

SDA #2: Walk-downs of SFP systems will be performed at least once per shift by the operators. Procedures will be developed for and employed by the operators to provide guidance on the capability and availability of onsite and offsite inventory makeup sources and time available to initiate these sources for various loss of cooling or inventory events.

Evaluation: HDI states that currently, the staff performs walk-downs of the SFP system each shift as driven by operator rounds and by surveillance testing procedures. These include local and remote SFP level (both physical level and two redundant remote indicators), and SFP gate inner and outer nitrogen pressures. HDI states that there are multiple methods to alert the control room of a SFP event, including alarms and redundant SFP water level indicators. HDI states that walkdown of the SFP system remains in place following the permanent cessation of power operations. HDI also states that PNP procedures meet the requirements of this SDA by providing guidance on the capability and availability of permanent and portable makeup sources. AOP-38, “Acts of Nature,” requires inspection of facility areas, including the SFP and dry spent fuel storage casks following a seismic event. The procedural direction for methods to diagnose the loss of cooling and/or inventory with description of steps, and sequences to establish make up to the SFP are discussed in IDC #8. This discussion also provides direction in a Beyond Design-Basis External Event.

The NRC staff finds that the monitoring of the SFP systems is consistent with the NRC staff analysis presented in NUREG-1738 based on the improvements in SFP monitoring capability and reliability implemented since the publication of NUREG-1738, specifically in response to the events at Fukushima Dai-ichi in 2011.

SDA #3: Control room instrumentation that monitors SFP temperature and water level will directly measure the parameters involved. Level instrumentation will provide alarms at levels associated with calling in offsite resources and with declaring an emergency.

Evaluation: HDI states that PNP permanently defueled technical specifications require that the SFP water level be maintained at or above 647 feet elevation. HDI states the SFP level is monitored by a local level indicator (ruler), which provides indication in the control room via a camera/monitor. A control room low-level alarm at 646 feet is provided via SFPL level switch LS-0924. HDI states that SFP temperature is monitored by temperature indicating alarms TIA-0925, “Spent Fuel Pool Temp Alarm Indicator,” and TIA-0926, “Spent Fuel Pool Temp Alarm Indicator,” located in the SFP area. Both TIA-0925 and TIA-0926 provide input to the PPC with workstations in the control room and include urgent PPC alarms at 140°F with audible annunciation as well as PPC warning alarms at 125°F. Additionally, temperature indicating alarm TIA-0917, discharge from spent fuel pool heat exchanger, also located in the SFP area provides an alarm at 115°F on the C-40 panel in the auxiliary building which also results in an alarm in the control room. HDI states that regarding the declaration of an emergency, HDI will employ permanently defueled emergency action levels using an NRC-approved emergency action level scheme, based on Appendix C of the Nuclear Energy Institute (NEI)

document NEI 99-01, “Development of Emergency Action Levels for Non-Passive Reactors,” Revision 6 (ML12326A805). PNP currently has instrumentation in the SFP that meets the intent of this SDA.

Based on the above, the NRC staff finds that the SFP monitoring capability is consistent with the assumptions in the analysis presented in NUREG-1738.

SDA #4: The licensee determines that there are no drain paths in the SFP that could lower the pool level (by draining, suction, or pumping) more than 15 feet below the normal pool operating level and that licensee must initiate recovery using offsite sources.

Evaluation: HDI states that there are no drain paths that could lower the SFP level by more than 15 feet below the normal SFP operating level. Suction and discharge piping for the SFP cooling system are greater than 20 feet above the top of the active fuel and approximately 3 feet below the normal level, such that a loss of 15 feet cannot occur.

Based on HDI’s statement in its application, the NRC staff concludes that the SFP design protections against drainage are consistent with the assumptions used in the analysis presented in NUREG-1738.

SDA #5: Load drop consequence analysis will be performed for facilities with non-single, failure-proof systems. The analyses and any mitigative actions necessary to preclude catastrophic damage to the SFP that would lead to a rapid pool draining would be sufficient to demonstrate that there is high enough confidence in the facility’s ability to withstand a heavy load drop.

Evaluation: HDI states that the PNP SFP design is in alignment with this SDA. HDI states that heavy load lifts in and around the area of the SFP are performed by the L-3 crane. HDI also states that the design of the L-3 crane is single-failure-proof as noted in the response to IDC-1. HDI states that load drop consequence analyses have been performed, as previously described (in the response to IDC-1).

Based on the above, the NRC staff finds that PNP’s protection against heavy load drops is consistent with the assumptions considered in the analysis presented in NUREG-1738.

SDA #6: Each decommissioning plant will successfully complete the seismic checklist provided in Appendix 2B to NUREG-1738. If the checklist cannot be successfully completed, the decommissioning plant will perform a plant specific seismic risk assessment of the SFP and demonstrate that SFP seismically induced structural failure and rapid loss of inventory is less than the generic bounding estimates provided in NUREG-1738 ($<1 \times 10^5$ per year including non-seismic events).

Evaluation: The licensee of PNP at the time Entergy Nuclear Operations, Inc., conducted a seismic evaluation in response to an NRC letter to all power reactor licensees, “Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident,” dated November 27, 2012 ML123340102). This evaluation provided an assessment of earthquake probabilities at

potentially damaging. The NRC accepted the results of this assessment indicating that the low seismic hazard screening criteria had been satisfied at PNP by letter dated March 4, 2014 (ML14063A583).

HDI conducted an evaluation to assess seismically induced structural failure and rapid loss of inventory. The assessment demonstrates that the risk of a SFP seismically induced structural failure and rapid loss of inventory is less than the generic bounding estimates provided in NUREG-1738 (1×10^{-5} per year including non-seismic events).

Therefore, the NRC staff finds that PNP satisfies NUREG-1738 SDA #6.

SDA #7: Licensees will maintain a program to provide surveillance and monitoring of Boraflex in high-density spent fuel racks until such time as spent fuel is no longer stored in these high-density racks.

Evaluation: HDI states that, in Amendment 207 (February 26, 2002; ML020600121), the NRC authorized PNP to discontinue crediting Boraflex as a neutron absorber in their Region II spent fuel racks. With the removal of credit for Boraflex in the criticality safety analysis, surveillances for Boraflex monitoring were discontinued. As there is no credit taken for Boraflex in the criticality safety analysis, there is no need to resume surveillance testing during decommissioning. In a similar manner, for the one remaining Region I spent fuel rack utilizing Carborundum as its neutron absorber, the Carborundum material is no longer credited in the current criticality safety analysis. Therefore, no surveillance of the neutron absorber is needed for this spent fuel rack.

HDI also states that the remainder of the Region I Carborundum spent fuel racks were replaced with new racks containing Metamic as their neutron absorber in a re-rack project in 2013. A coupon monitoring surveillance program is utilized to ensure that the Metamic material does not degrade beyond limits. HDI states this surveillance program will continue as long as there is fuel in the Region I spent fuel racks.

The NRC staff views Amendment 207 and the PNP monitoring and surveillance program regarding metamict racks of equivalent rigor to SDA #7. Therefore, the NRC staff finds that HDI satisfies NUREG-1738 SDA #7.

Based on the above evaluations, the NRC staff concludes that the design and operation of structures, systems, and components associated with SFP storage provide for safe storage of spent fuel and are consistent with the capabilities assumed in the analysis presented in NUREG-1738.

In addition to an evaluation against the specific NSIR/DPR-ISG-02 criteria above, Table 1, "Evaluation of Specific Exemptions to Emergency Planning Requirements," provides the NRC staff's evaluation of HDI's specific exemptions, shown as "strikethrough" text, requested from the requirements of 10 CFR 50.47, "Emergency plans," and Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," to 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," based on the justification provided by HDI and evaluation criteria above.

Table 1 **Evaluation of Specific Exemptions to EP Requirements**
10 CFR 50.47(b): The onsite ~~and, except as provided in paragraph (d) of this section, offsite~~ emergency response plans for nuclear power reactors must meet the following standards:
NRC Staff's Evaluation: The NRC requires a level of licensee EP commensurate with the potential consequences to public health and safety, and common defense and security at the licensee's site. HDI's exemption request included radiological analyses to show that, as of 90 days after the permanent cessation of power operations, the radiological consequences of the only remaining applicable DBAs would not exceed the limits of the EPA early phase PAGs at the EAB. HDI also performed an analysis which shows that, 12 months after the shutdown of PNP, the spent fuel stored in the SFP will have decayed to the extent that in the unlikely event all cooling is lost to the spent fuel and a heat-up under adiabatic conditions resulted, 10 hours would be available to take mitigative actions before the hottest fuel assembly reached 900˚C. NUREG-1738, and enhancements put into place as a result of the events of September 11, 2001, and the Fukushima Dai-ichi accident, support the NRC staff assumption that: only a highly unlikely, beyond design basis event (e.g., extreme earthquake or large aircraft impact) could result in an SFP fire. In addition, there would be a significant amount of time between the initiating event and the possible onset of conditions that could result in an SFP zirconium cladding fire. This time provides a substantial opportunity for event mitigation. Licensees are required to maintain effective strategies, sufficient resources, and adequately trained personnel to mitigate such an event. If State or local governmental officials determine that offsite protective actions are warranted, then sufficient time and capability would be available for ORO to implement these measures using a comprehensive emergency management plan or "all hazards" approach. Considering the very low probability of beyond-design-basis events affecting the SFP and with the time available to initiate mitigative actions consistent with plant conditions (i.e., the time between the loss of both water and air cooling to the spent fuel, and before the onset of a postulated zirconium cladding fire), formal offsite radiological emergency preparedness plans (in accordance with 44 CFR Part 350, "Review and Approval of State and Local Radiological Emergency Plans and Preparedness,") are not considered necessary for a permanently shut down and defueled nuclear power reactor.
10 CFR 50.47(b)(1): 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

Table 1 **Evaluation of Specific Exemptions to EP Requirements**
initial response on a continuous basis.
NRC Staff's Evaluation: NUREG-0396, "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants," provides that emergency response plans should be useful for responding to any accident that would produce offsite radiological doses in excess of the EPA early phase PAGs. Additionally, it introduced the concept of generic plume exposure pathway EPZs as a basis for the planning of response actions, which would result in dose savings in the environs of nuclear facilities in the event of a serious power reactor accident. As previously discussed, HDI has provided radiological analyses, which show that as of 90 days after permanent cessation of power operations, the radiological consequences for the remaining applicable DBAs at PNP will not exceed the limits of the EPA early phase PAGs at the EAB. In addition, reactor core melt (Class 9) scenarios, which were also considered in NUREG-0396, are no longer applicable to a permanently shut down and defueled power reactor. Considering the very low probability of beyond-design-basis events affecting SFP and the time available to initiate mitigative actions consistent with plant conditions (i.e., the time between the loss of both water and air cooling to the spent fuel and the time before the onset of a postulated zirconium cladding fire), formal offsite REP plans (in accordance with 44 CFR Part 350) are not considered necessary for a permanently shut down and defueled nuclear power reactor. Therefore, designated plume exposure and ingestion pathway EPZs are no longer needed.
10 CFR 50.47(b)(3): 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.
NRC Staff's Evaluation: With the termination of reactor power operations at PNP and the permanent removal of the fuel from the reactor vessel to the SFP, most of the accident scenarios postulated for an operating reactor are no longer possible. The spent fuel will be stored in the PNP SFP and the ISFSI and will remain onsite until it can be moved offsite for long-term storage or disposal. The reactor, reactor coolant system (RCS), and secondary systems are no longer in operation and have no function related to the storage of the spent fuel. Therefore, postulated accidents involving failure or malfunction of the reactor, RCS, or supporting systems are no longer applicable. During reactor decommissioning, the principal public safety concerns involve the radiological risks associated with the storage of spent fuel onsite. The emergency operations facility (EOF) is a support facility for the purpose of managing the overall licensee emergency response (including coordination with Federal, State, and local officials), coordination of radiological and environmental assessments, and determination of recommended public protective actions. Considering the very low probability of beyond-design-basis events affecting the SFP and the time available to initiate mitigative actions consistent with plant conditions (i.e., the time between the loss of both water and air cooling to the spent fuel and the time before the onset of a postulated zirconium cladding fire), formal

Table 1 **Evaluation of Specific Exemptions to EP Requirements**
offsite REP plans (in accordance with 44 CFR Part 350) are not considered necessary for a permanently shut down and defueled nuclear power reactor. Therefore, an EOF would not be needed to coordinate these types of assessments for determining public protective actions. The PNP control room, or another onsite location, can provide for the communication and coordination with offsite organizations for the level of support required. Onsite staff will continue to maintain and provide for communication and coordination capabilities with offsite authorities for the purpose of notification and for the level of support required for the only remaining applicable DBAs and the prompt implementation of mitigative actions in response to an event affecting the SFP.
10 CFR 50.47(b)(4): A standard emergency classification and action level scheme, the basis 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~~.
NRC Staff's Evaluation: Considering the very low probability of beyond design-basis events affecting the SFP and the time available to initiate mitigative actions consistent with plant conditions (i.e., the time between the loss of both water and air cooling to the spent fuel and the time before the onset of a postulated zirconium cladding fire), formal offsite REP plans (in accordance with 44 CFR Part 350) are not needed. The PNP Permanently Defueled Emergency Plan will continue to maintain arrangements for requesting and using assistance resources from offsite support organizations. Therefore, minimum initial offsite response measures are not required.
10 CFR 50.47(b)(5): 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~~.
NRC Staff's Evaluation: Considering the very low probability of beyond-design-basis events affecting the SFP and the time available to initiate mitigative actions consistent with plant conditions (i.e., the time between the loss of both water and air cooling to the spent fuel and the time before the onset of a postulated zirconium cladding fire), offsite REP plans (in accordance with 44 CFR Part 350) are not needed. Therefore, a means to provide early notification and clear instruction to the populace within a designated plume exposure pathway EPZ is no longer required.
10 CFR 50.47(b)(6): Provisions exist for prompt communications among principal response organizations to emergency personnel~~ and to the public~~.
NRC Staff's Evaluation: Considering the very low probability of beyond-design-basis events affecting the SFP and the time available to initiate mitigative actions consistent with plant conditions (i.e., the time between the loss of both water and air cooling to the spent fuel and the time before the onset of a postulated zirconium cladding fire), offsite REP plans (in accordance with 44 CFR Part 350) are not needed. Therefore, the requirement to provide prompt communication to the public within a designated plume exposure EPZ in regard to initial or predetermined protective actions is no longer needed.

Table 1 **Evaluation of Specific Exemptions to EP Requirements**
10 CFR 50.47(b)(7): ~~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.
NRC Staff's Evaluation: Considering the very low probability of beyond-design-basis events affecting the SFP and the time available to initiate mitigative actions consistent with plant conditions (i.e., the time between the loss of both water and air cooling to the spent fuel and the time before the onset of a postulated zirconium cladding fire), offsite REP plans (in accordance with 44 CFR Part 350) are not needed. Therefore, the requirement to provide periodic information to the public within a designated plume exposure EPZ on how they will be notified and what their initial or predetermined protective actions should be in an emergency is not needed.
10 CFR 50.47(b)(9): Adequate methods, systems, and equipment for assessing and monitoring actual or potential ~~offsite~~ consequences of a radiological emergency condition are in use.
NRC Staff's Evaluation: Considering the very low probability of beyond-design-basis events affecting the SFP and the time available to initiate mitigative actions consistent with plant conditions (i.e., the time between the loss of both water and air cooling to the spent fuel and the time before the onset of a postulated zirconium cladding fire), offsite REP plans (in accordance with 44 CFR Part 350) are not needed. Therefore, the requirement for assessing or monitoring offsite consequences beyond the EAB is not needed.
10 CFR 50.47(b)(10): 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.~~
NRC Staff's Evaluation: HDI's analysis demonstrated that, as of 90 days after the permanent cessation of power operations at PNP, no credible events within the design basis would result in doses to the public that would exceed the EPA early phase PAGs at the EAB. Therefore, EPZs beyond the EAB and the associated protective actions developed from evacuation time estimates are no longer required. Additionally, in the unlikely event of an SFP accident, the iodine isotopes, which contribute to an offsite dose from an operating reactor power accident, are not present, so potassium iodide distribution would no longer serve as an effective or necessary supplemental protective action. As such, the NRC staff concludes that HDI provides an acceptable level of EP at PNP in its permanently shut down and defueled condition, and also provides reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency at PNP.

Table 1 **Evaluation of Specific Exemptions to EP Requirements**
Although formal offsite REP plans (in accordance with 44 CFR Part 350) have typically been exempted for decommissioning sites, OROs will continue to be relied upon for firefighting, law enforcement, ambulance, and medical services in support of the licensee's (onsite) emergency plan. The licensee is responsible for providing protective measures for any emergency workers responding onsite. Additionally, the licensee is responsible for control of activities within the EAB, including public access. The licensee actions that are necessary to protect the health and safety of members of the public who are in the EAB may include, but are not limited to, evacuation, sheltering, and decontamination in the unlikely event of a release of radioactive materials.
10 CFR 50.47(c)(2): ~~Generally, the plume exposure pathway EPZ for nuclear power plants shall consist of an area about 10 miles (16 km) in radius and the ingestion pathway EPZ shall consist of an area about 50 miles (80 km) in radius. The exact size and configuration of the EPZs surrounding a particular nuclear power reactor shall be determined in relation to local emergency response needs and capabilities as they are affected by such conditions as demography, topography, land characteristics, access routes, and jurisdictional boundaries.~~ The size of the EPZs ~~also~~ may be determined on a case-by-case basis for gas-cooled nuclear reactors and for reactors with an authorized power level less than 250 MW thermal. ~~The plans for the ingestion pathway shall focus on such actions as are appropriate to protect the food ingestion pathway.~~
NRC Staff's Evaluation: Considering the very low probability of beyond-design-basis events affecting the SFP and with the time available to initiate mitigative actions consistent with plant conditions (i.e., between the loss of both water and air cooling to the spent fuel and the time before the onset of a postulated zirconium cladding fire), formal offsite REP plans (in accordance with 44 CFR Part 350) are not needed. Therefore, an EPZ is not required. Section 50.47(c)(2) and footnote 1 to Appendix E to 10 CFR Part 50 both states, in part: "The size of the EPZs also may be determined on a case-by-case basis for gas-cooled nuclear reactors and for reactors with an authorized power level less than 250 MW [megawatts] thermal." This provision is not applicable to PNP because it is not a gas-cooled reactor, and it has permanently ceased power operations. Therefore, no exemption is required.
10 CFR Part 50, Appendix E, Section IV.1: The applicant's emergency plans shall contain, but not necessarily be limited to, information needed to demonstrate compliance with the elements set forth below, i.e., organization for coping with radiological emergencies, assessment actions, activation of emergency organization, notification procedures, emergency facilities and equipment, training, maintaining emergency preparedness, and recovery~~, and onsite protective actions during hostile action~~. In addition, the emergency response plans submitted by an applicant for a nuclear power reactor operating license under this Part, or for an early site permit (as applicable) or combined license under 10 CFR Part 52, shall contain information needed to demonstrate compliance with the standards described in § 50.47(b), and they will be evaluated against those standards.
NRC Staff's Evaluation: The 2011 EP Final Rule (76 FR 72560; November 23, 2011) made generically applicable the security-based response elements of NRC Bulletin 2005-02, "Emergency Preparedness and Response Actions for Security-Based Events," dated July 18, 2005 (ML051740058). The enhancements of NRC Bulletin 2005-02 were not applicable to holders of operating

Table 1 **Evaluation of Specific Exemptions to EP Requirements**
licenses for power reactors that had permanently ceased operations and had certified that fuel had been removed from the reactor vessel. Since PNP has certified that it has permanently ceased operations at PNP and that all fuel has been removed from the reactor vessels, the requirement for onsite protective actions during hostile action is not necessary for PNP. Additionally, the NRC excluded non-power reactors from the definition of "hostile action" at the time of the 2011 EP Final Rule because, as defined in 10 CFR 50.2, "Definitions," a non-power reactor is not considered a nuclear power reactor and a regulatory basis had not been developed to support the inclusion of non-power reactors in the definition of "hostile action." Like a non-power reactor, a decommissioning power reactor also has a lower likelihood of a credible accident resulting in radiological releases requiring offsite protective measures than does an operating power reactor. For all of the above reasons, the NRC staff concludes that a decommissioning power reactor is not a facility that falls within the definition of "hostile action." Although this analysis provides a justification for exempting PNP from "hostile action" related requirements, some EP requirements for security-based events are maintained. The classification of security-based events, notification of offsite authorities, and coordination with offsite agencies are still required.
10 CFR Part 50, Appendix E, Section IV.2: ~~This nuclear power reactor license applicant shall also provide an analysis of the time required to evacuate various sectors and distances within the plume exposure pathway EPZ for transient and permanent populations, using the most recent U.S. Census Bureau data as of the date the applicant submits its application to the NRC.~~
NRC Staff's Evaluation: Refer to basis for exemption from 10 CFR 50.47(b)(10).
10 CFR Part 50, Appendix E, Section IV.3: ~~Nuclear power reactor licensees shall use NRC approved evacuation time estimates (ETEs) and updates to the ETEs in the formulation of protective action recommendations and shall provide the ETEs and ETE updates to State and local governmental authorities for use in developing offsite protective action strategies.~~
NRC Staff's Evaluation: Refer to basis for exemption from 10 CFR Part 50, Appendix E, Section IV.2.
10 CFR Part 50, Appendix E, Section IV.4: ~~Within 365 days of the later of the date of the availability of the most recent decennial census data from the U.S. Census Bureau or December 23, 2011, nuclear power reactor licensees shall develop an ETE analysis using this decennial data and submit it under § 50.4 to the NRC. These licensees shall submit this ETE analysis to the NRC at least 180 days before using it to form protective action recommendations and providing it to State and local governmental authorities for use in developing offsite protective action strategies.~~
NRC Staff's Evaluation: Refer to basis for exemption from 10 CFR Part 50, Appendix E, Section IV.2
10 CFR Part 50, Appendix E, Section IV.5: ~~During the years between decennial censuses, nuclear power reactor licensees shall estimate EPZ permanent resident population changes once a year, but no later than 365 days from the date of the previous~~

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~~estimate, using the most recent U.S. Census Bureau annual resident population estimate and State/local government population data, if available. These licensees shall maintain these estimates so that they are available for NRC inspection during the period between decennial censuses and shall submit these estimates to the NRC with any updated ETE analysis.~~
NRC Staff's Evaluation: Refer to basis for exemption from 10 CFR Part 50, Appendix E, Section IV.2.
10 CFR Part 50, Appendix E, Section IV.6: ~~If at any time during the decennial period, the EPZ permanent resident population increases such that it causes the longest ETE value for the 2-mile zone or 5-mile zone, including all affected Emergency Response Planning Areas, or for the entire 10-mile EPZ to increase by 25 percent or 30 minutes, whichever is less, from the nuclear power reactor licensee's currently NRC approved or updated ETE, the licensee shall update the ETE analysis to reflect the impact of that population increase. The licensee shall submit the updated ETE analysis to the NRC under § 50.4 no later than 365 days after the licensee's determination that the criteria for updating the ETE have been met and at least 180 days before using it to form protective action recommendations and providing it to State and local governmental authorities for use in developing offsite protective action strategies.~~
NRC Staff's Evaluation: Refer to basis for exemption from 10 CFR Part 50, Appendix E, Section IV.2.
10 CFR Part 50, Appendix E, Section IV.A.1: A description of the normal plant ~~operating~~ organization.
Staff's Evaluation: Because the NRC docketed the certifications of permanent cessation of operations and permanent removal of fuel from the reactor vessel, the 10 CFR Part 50 licenses for PNP no longer authorizes operation of the PNP reactor or emplacement or retention of fuel into the reactor vessel, as specified in 10 CFR 50.82(a)(2), "Termination of license." Because HDI is no longer authorized to operate the PNP reactor, PNP does not have a plant "operating" organization in regards to power operation. Rather, the site is maintained by an on-shift staff responsible for safely managing and storing spent fuel. A description of the plant organization, as it relates to the requirements in Section IV.A.1 to Appendix E of 10 CFR Part 50 is still required.
10 CFR Part 50, Appendix E, Section IV.A.3: ~~A description, by position and function to be performed, of the licensee's headquarters personnel who will be sent to the plant site to augment the onsite emergency organization.~~
NRC Staff's Evaluation: The number of staff at decommissioning sites is generally small but is commensurate with the need to safely store spent fuel at the facility in a manner that is protective of public health and safety. HDI furnished information concerning its SFP inventory makeup strategies that could be used in the event of a catastrophic loss of SFP water inventory and states that designated on-shift personnel will be trained to implement such strategies with equipment maintained onsite. The on-shift individuals will be able to implement the necessary tasks within 2 hours. As such, designation of specific licensee headquarters personnel is not necessary for the augmentation of the on-shift staffing and, therefore, is not described.
10 CFR Part 50, Appendix E, Section IV.A.4: Identification, by position and function to be performed, of persons within the

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licensee organization who will be responsible for making ~~offsite~~ dose projections, and a description of how these projections will be made and the results transmitted to State and local authorities, NRC, and other appropriate governmental entities.
NRC Staff's Evaluation: PNP's analyses demonstrated that, as of 90 days after permanent cessation of power operations, no DBA would result in doses in excess of the EPA early phase PAGs to the public beyond the EAB. While it is unlikely that a beyond-DBA would result in doses in excess of the EPA early phase PAGs to the public beyond the EAB, the licensee still must be able to determine if a radiological release is occurring, thereby achieving the underlying purpose of this regulatory provision. If a release is occurring, then the licensee's staff should promptly communicate that information to offsite authorities for their consideration. The offsite authorities are responsible for deciding what, if any, protective actions should be taken that they consider appropriate to protect public health and safety. Considering the very low probability of beyond-design-basis events affecting the SFP and the time available to initiate mitigative actions consistent with plant conditions (i.e., the time between the loss of both water and air cooling to the spent fuel and the time before the onset of a postulated zirconium cladding fire), formal offsite REP plans (in accordance with 44 CFR Part 350) are not needed. Therefore, offsite dose projections are not required.
10 CFR Part 50, Appendix E, Section IV.A.5: ~~Identification, by position and function to be performed, of other employees of the licensee with special qualifications for coping with emergency conditions that may arise. Other persons with special qualifications, such as consultants, who are not employees of the licensee and who may be called upon for assistance for emergencies shall also be identified. The special qualifications of these persons shall be described.~~
NRC Staff's Evaluation: HDI furnished information concerning its SFP inventory makeup strategies that could be used in the event of a catastrophic loss of SFP water inventory and states that designated on-shift personnel are trained to implement such strategies with equipment maintained onsite. PNP will have on-shift individuals able to implement the necessary tasks within 2 hours. As such, additional employees or other persons with special qualifications are not anticipated. Considering the very low probability of beyond-design-basis events affecting the SFP and the time available to initiate mitigative actions consistent with plant conditions (i.e., the time between the loss of both water and air cooling to the spent fuel and the time before the onset of a postulated zirconium cladding fire), offsite REP plans (in accordance with 44 CFR Part 350) are not needed. Therefore, personnel with special qualifications, as directed in 10 CFR Part 50, Appendix E, Section IV.A.5, are not required.
10 CFR Part 50, Appendix E, Section IV.A.7: ~~By June 23, 2014,~~ [I]dentification of~~, and a description of the~~ assistance expected from, appropriate State, local, and Federal agencies with responsibilities for coping with emergencies, including ~~hostile action at the site. For purposes of this appendix, "hostile action" is defined as~~ an act directed toward a nuclear power plant or its personnel that include the use of violent force to destroy equipment, take hostages, and/or intimidate the licensee to achieve an end. This includes attack by air, land, or water using guns, explosives, projectiles, vehicles, or other devices used to deliver destructive

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force.
NRC Staff's Evaluation: Refer to basis for exemption from 10 CFR Part 50, Appendix E, Section IV.1.
10 CFR Part 50, Appendix E, Section IV.A.8: ~~Identification of the State and/or local officials responsible for planning for, ordering and controlling appropriate protective actions, including evacuations when necessary.~~
NRC Staff's Evaluation: Considering the very low probability of beyond-design-basis events affecting the SFP and the time available to initiate mitigative actions consistent with plant conditions (i.e., the time between the loss of both water and air cooling to the spent fuel and the time before the onset of a postulated zirconium cladding fire), offsite REP plans (in accordance with 44 CFR Part 350) are not needed. Therefore, identification of the State and/or local officials responsible for detailed preplanning for, and ordering appropriate protective actions, including evacuations, when necessary, is no longer required.
10 CFR Part 50, Appendix E, Section IV.A.9: ~~By December 24, 2012, for nuclear power reactor licensees, a detailed analysis demonstrating that on-shift personnel assigned emergency plan implementation functions are not assigned responsibilities that would prevent the timely performance of their assigned functions as specified in the emergency plan.~~
NRC Staff's Evaluation: As part of the 2011 EP Final Rule, the NRC concluded that the staffing analysis requirement was not necessary for non-power reactor licensees because staffing at non-power reactors is generally small, which is commensurate with operating the facility in a manner that is protective of the public health and safety. The similarities with regard to risk profile between PNP and non-power reactors show that the PNP facility should be treated in a similar fashion as a non-power reactor for purposes of EP. Therefore, the staff concludes that a detailed staffing analysis is not needed for a decommissioning reactor.
10 CFR Part 50, Appendix E, Section IV.B.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.
NRC Staff's Evaluation: Considering the very low probability of beyond-design-basis events affecting the SFP and the time available to initiate mitigative actions consistent with plant conditions (i.e., the time between the loss of both water and air cooling to the spent fuel and the time before the onset of a postulated zirconium cladding fire), offsite REP plans (in accordance with

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44 CFR Part 350) are not needed. Therefore, a decommissioning reactor like PNP is not required to have emergency action levels to determine protective measures offsite. With respect to emergency action levels for hostile action, refer to basis for exemption from 10 CFR Part 50, Appendix E, Section IV.1.
10 CFR Part 50, Appendix E, Section IV.C.1: The entire spectrum of emergency conditions that involve the alerting or activating of progressively larger segments of the total emergency organization shall be described. The communication steps to be taken to alert or activate emergency personnel under each class of emergency shall be described. Emergency action levels (based not only on onsite ~~and offsite~~ radiation monitoring information but also on readings from a number of sensors that indicate a potential emergency, ~~such as the pressure in containment and the response of the Emergency Core Cooling System~~) for notification of offsite agencies shall be described. The existence, but not the details, of a message authentication scheme shall be noted for such agencies. The emergency classes defined shall include: (1) notification of unusual events, (2) alert, ~~(3) site area emergency, and (4) general emergency~~. These classes are further discussed in NUREG-0654/FEMA [Federal Emergency Management Agency] -REP-1.
NRC Staff's Evaluation: For a permanently shutdown and defueled power reactor, containment pressure and emergency core cooling system are no longer required. Therefore, they would have no parameters indicating a potential emergency. Other indications, such as SFP level, SFP temperature, and area radiation monitors indicate the conditions at PNP. HDI's analysis demonstrated that, as of 90 days after the permanent cessation of power operations, no credible events within the DBA would reach the dose criteria for the declaration of a Site Area Emergency or a General Emergency. As discussed previously, the probability of a beyond-DBA condition that could reach emergency classifications of a Site Area Emergency or a General Emergency is very low. In the unlikely event of a severe beyond-DBA resulting in the loss of all cooling to the stored fuel, as of 12 months after the permanent cessation of power operations at PNP, it would take at least 10 hours from the time the fuel is uncovered until it reaches a temperature of 900˚C. During this time, PNP could initiate mitigative actions consistent with plant conditions. The need for offsite radiation monitoring systems in support of event classification above an Alert classification level is no longer required because of the very low probability of beyond-design-basis events occurring that would affect SFP structural integrity, as well as the time available to initiate SFP mitigative measures before the onset of a postulated zirconium cladding fire.
10 CFR Part 50, Appendix E, Section IV.C.2: ~~By June 20, 2012, nuclear power reactor~~ [L]icensees shall establish and maintain the capability to assess, classify, and declare an emergency condition ~~within 15 minutes~~ after the availability of indications to plant operators that an emergency action level has been exceeded and shall promptly declare the emergency condition as soon as possible following identification of the appropriate emergency classification level. Licensees shall not construe these criteria as a grace period to attempt to restore plant conditions to avoid declaring an emergency action due to an emergency action level that has been exceeded. Licensees shall not construe these criteria as preventing implementation of response actions deemed by the licensee to be necessary to protect public health and safety provided that any delay in declaration does not deny the State and

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local authorities the opportunity to implement measures necessary to protect the public health and safety.
NRC Staff's Evaluation: HDI states that it will maintain the capability to assess, classify, and declare an emergency condition within 30 minutes after the availability of indications to operators that an emergency action level threshold has been reached. In the 2011 EP Final Rule, non-power reactor licensees were not required to assess, classify, and declare an emergency condition within 15 minutes. Like non-power reactors, a decommissioning power reactor has a low likelihood of a credible accident resulting in radiological releases requiring offsite protective measures. For these reasons, the NRC staff concludes that a decommissioning power reactor such as PNP should not be required to assess, classify, and declare an emergency condition within 15 minutes.
10 CFR Part 50, Appendix E, Section IV.D.1: Administrative and physical means for notifying local, State, and Federal officials and agencies ~~and agreements reached with these officials and agencies for the prompt notification of the public and for public evacuation or other protective measures, should they become necessary,~~ shall be described. This description shall include identification ~~of the appropriate officials, by title and agency,~~ of the State and local government agencies ~~within the EPZs~~.
NRC Staff's Evaluation: Refer to basis for exemption from 10 CFR 50.47(b) and 10 CFR 50.47(b)(10).
10 CFR Part 50, Appendix E, Section IV.D.2: ~~Provisions shall be described for yearly dissemination to the public within the plume exposure pathway EPZ of basic emergency planning information, such as the methods and times required for public notification and the protective actions planned if an accident occurs, general information as to the nature and effects of radiation, and a listing of local broadcast stations that will be used for dissemination of information during an emergency. Signs or other measures shall also be used to disseminate to any transient population within the plume exposure pathway EPZ appropriate information that would be helpful if an accident occurs.~~
NRC Staff's Evaluation: Refer to basis for exemption from 10 CFR Part 50, Appendix E, Section IV.D.1.
10 CFR Part 50, Appendix E, Section IV.D.3: A licensee shall have the capability to notify responsible State and local governmental agencies ~~within 15 minutes~~ after declaring an emergency. ~~The licensee shall demonstrate that the appropriate governmental authorities have the capability to make a public alerting and notification decision promptly on being informed by the licensee of an emergency condition. Prior to initial operation greater than 5 percent of rated thermal power of the first reactor at the site, each nuclear power reactor licensee shall demonstrate that administrative and physical means have been established for alerting and providing prompt instructions to the public with the plume exposure pathway EPZ. The design objective of the prompt public alert and notification system shall be to have the capability to essentially complete the initial alerting and notification of the public within the plume exposure pathway EPZ within about 15 minutes. The use of this alerting and notification capability will range from immediate alerting and notification of the public (within 15 minutes of the time that State and local officials are notified that a situation exists requiring urgent action) to the more likely events where there is substantial time available for the appropriate governmental authorities to make a judgment whether or not to activate the public alert and notification system. The alerting and notification capability shall additionally include administrative and physical means for a backup method of public alerting and~~

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~~notification capable of being used in the event the primary method of alerting and notification is unavailable during an emergency to alert or notify all or portions of the plume exposure pathway EPZ population. The backup method shall have the capability to alert and notify the public within the plume exposure pathway EPZ, but does not need to meet the 15 minute design objective for the primary prompt public alert and notification system. When there is a decision to activate the alert and notification system, the appropriate governmental authorities will determine whether to activate the entire alert and notification system simultaneously or in a graduated or staged manner. The responsibility for activating such a public alert and notification system shall remain with the appropriate governmental authorities.~~
NRC Staff's Evaluation: HDI proposed in its exemption request to complete emergency notifications within 60 minutes after an emergency declaration or a change in classification to the State of Michigan and local government agencies. The NRC Staff concludes this timeframe is consistent with 10 CFR 50.72(a)(3), "Immediate notification requirements for operating nuclear power reactors" and the notification time to the NRC is appropriate because PNP is in the permanently defueled condition and the rapidly developing scenarios associated with events initiated during reactor power operations are no longer credible. Also refer to basis for exemption from 10 CFR 50.47(b) and 10 CFR 50.47(b)(10).
10 CFR Part 50, Appendix E, Section IV.D.4: ~~If FEMA has approved a nuclear power reactor site's alert and notification design report, including the backup alert and notification capability, as of December 23, 2011, then the backup alert and notification capability requirements in Section IV.D.3 must be implemented by December 24, 2012. If the alert and notification design report does not include a backup alert and notification capability or needs revision to ensure adequate backup alert and notification capability, then a revision of the alert and notification design report must be submitted to FEMA for review by June 24, 2013, and the FEMA-approved backup alert and notification means must be implemented within 365 days after FEMA approval. However, the total time period to implement a FEMA-approved backup alert and notification means must not exceed June 22, 2015.~~
Staff's Evaluation: Refer to the basis for 10 CFR Part 50, Appendix E, Section IV.D.3 regarding the alert and notification system requirements.
10 CFR Part 50, Appendix E, Section IV.E.8.a.(i): A licensee ~~onsite technical support center and an emergency operations~~ facility from which effective direction can be given and effective control can be exercised during an emergency;
NRC Staff's Evaluation: The technical support center (TSC) is an area located close to the control room that provides plant management and technical support to the reactor operating personnel located in the control room during emergency conditions. It has technical data displays and plant records available to assist in the detailed analysis and diagnosis of abnormal plant conditions and any significant release of radioactivity to the environment. The TSC is also the primary communications center for the plant during an emergency. With the permanently shutdown and defueled status of PNP and the storage of the spent nuclear fuel in the SFP and ISFSI, the TSC and EOF will no longer be required to meet their original purpose during an emergency or support initial SFP mitigation actions if needed. The basis for the EOF exemption is provided in the basis for exemption from 10 CFR 50.47(b)(3).

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10 CFR Part 50, Appendix E, Section IV.E.8.a.(ii): ~~For nuclear power reactor licensees, a licensee onsite operational support center;~~
NRC Staff's Evaluation: The operations support center (OSC) is an onsite area separate from the control room and the TSC where licensee operations support personnel will assemble in an emergency. The OSC should provide a location where plant logistic support can be coordinated during an emergency and restrict control room access to those support personnel specifically requested by the shift supervisor. With the permanently shutdown and defueled status of PNP and the storage of the spent nuclear fuel in the SFP and ISFSI, an OSC will no longer be required to meet its original purpose during an emergency or support initial SFP mitigation actions if needed. HDI states that an onsite facility will continue to be maintained, from which effective direction can be given and effective control may be exercised during an emergency.
10 CFR Part 50, Appendix E, Section IV.E.8.b: ~~For a nuclear power reactor licensee's emergency operations facility required by paragraph 8.a of this section, either a facility located between 10 miles and 25 miles of the nuclear power reactor site(s), or a primary facility located less than 10 miles from the nuclear power reactor site(s) and a backup facility located between 10 miles and 25 miles of the nuclear power reactor site(s). An emergency operations facility may serve more than one nuclear power reactor site. A licensee desiring to locate an emergency operations facility more than 25 miles from a nuclear power reactor site shall request prior Commission approval by submitting an application for an amendment to its license. For an emergency operations facility located more than 25 miles from a nuclear power reactor site, provisions must be made for locating NRC and offsite responders closer to the nuclear power reactor site so that NRC and offsite responders can interact face-to-face with emergency response personnel entering and leaving the nuclear power reactor site. Provisions for locating NRC and offsite responders closer to a nuclear power reactor site that is more than 25 miles from the emergency operations facility must include the following:~~ (1) ~~Space for members of an NRC site team and Federal, State, and local responders;~~ (2) ~~Additional space for conducting briefings with emergency response personnel;~~ (3) ~~Communication with other licensee and offsite emergency response facilities;~~ (4) ~~Access to plant data and radiological information; and~~ (5) ~~Access to copying equipment and office supplies;~~
NRC Staff's Evaluation: Refer to basis for exemption from 10 CFR 50.47(b)(3).

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10 CFR Part 50, Appendix E, Section IV.E.8.c: ~~By June 20, 2012, for a nuclear power reactor licensee's emergency operations facility required by paragraph 8.a of this section, a facility having the following capabilities:~~ (1)~~ The capability for obtaining and displaying plant data and radiological information for each reactor at a nuclear power reactor site and for each nuclear power reactor site that the facility serves;~~ (2)~~ The capability to analyze plant technical information and provide technical briefings on event conditions and prognosis to licensee and offsite response organizations for each reactor at a nuclear power reactor site and for each nuclear power reactor site that the facility serves; and~~ (3)~~ The capability to support response to events occurring simultaneously at more than one nuclear power reactor site if the emergency operations facility serves more than one site; and~~
NRC Staff's Evaluation: Refer to basis for exemption from 10 CFR 50.47(b)(3).
10 CFR Part 50, Appendix E, Section IV.E.8.d: ~~For nuclear power reactor licensees, an alternative facility (or facilities) that would be accessible even if the site is under threat of or experiencing hostile action, to function as a staging area for augmentation of emergency response staff and collectively having the following characteristics: the capability for communication with the emergency operations facility, control room, and plant security; the capability to perform offsite notifications; and the capability for engineering assessment activities, including damage control team planning and preparation, for use when onsite emergency facilities cannot be safely accessed during hostile action. The requirements in this paragraph 8.d must be implemented no later than December 23, 2014, with the exception of the capability for staging emergency response organization personnel at the alternative facility (or facilities) and the capability for communications with the emergency operations facility, control room, and plant security, which must be implemented no later than June 20, 2012.~~
NRC Staff's Evaluation: Refer to basis for exemption from 10 CFR Part 50, Appendix E, Section IV.1 regarding "hostile action."
10 CFR Part 50, Appendix E, Section IV.E.8.e: ~~A licensee shall not be subject to the requirements of paragraph 8.b of this section for an existing emergency operations facility approved as of December 23, 2011;~~
NRC Staff's Evaluation: Refer to basis for exemption from 10 CFR 50.47(b)(3).
10 CFR Part 50, Appendix E, Section IV.E.9.a: Provisions for communications with contiguous State/local governments ~~within the plume exposure pathway EPZ~~. Such communication shall be tested monthly.
NRC Staff's Evaluation: HDI will maintain the PNP primary and backup communications with the contiguous State and local governments: specifically, State of Michigan and Van Buren County. Because EPZs would be eliminated, PNP would no longer describe provisions to communicate with Berrien and Allegan County. The onsite response facilities will be combined into a single facility, as described in the basis for Appendix E to 10 CFR Part 50, Section IV.E.8.a(i). A description of the communications systems and the testing frequencies will be provided.

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10 CFR Part 50, Appendix E, Section IV.E.9.c: ~~Provision for communications among the nuclear power reactor control room, the onsite technical support center, and the emergency operations facility; and among the nuclear facility, the principal State and local emergency operations centers, and the field assessment teams. Such communications systems shall be tested annually.~~
NRC Staff's Evaluation: Considering the very low probability of beyond-design-basis events affecting the SFP and the time available to initiate mitigative actions consistent with plant conditions (i.e., the time between the loss of both water and air cooling to the spent fuel and the time before the onset of a postulated zirconium cladding fire), offsite REP plans (in accordance with 44 CFR Part 350) are not needed. There is no need for a TSC, EOF, or offsite field assessment teams to meet the underlying purpose of the rule. With the elimination of the requirements for a TSC, EOF, and the field assessment teams, performing annual testing of communications among them is no longer required. Communications with State and local governments will be through the commercial phone system. Due to its frequency of use, the testing of that system is not necessary.
10 CFR Part 50, Appendix E, Section IV.E.9.d: Provisions for communications by the licensee with NRC Headquarters and the appropriate NRC Regional Office Operations Center from the ~~nuclear power reactor control room, the onsite technical support center, and the emergency operations~~ facility. Such communications shall be tested monthly.
NRC Staff's Evaluation: Based on the smaller facility staff and the greatly reduced required interaction with State and local emergency response facilities, the NRC staff concludes that the functions of the control room, EOF, TSC, and the OSC may be combined into one or more locations. As discussed previously, there is no need for the TSC and EOF. As a result, communications between the EOF and TSC and the NRC, and monthly testing of these capabilities, are no longer needed. The Emergency Notification System used to communicate with the NRC will continue to be tested monthly.
10 CFR Part 50, Appendix E, Section IV.F.1: The program to provide for: (a) The training of employees and exercising, by periodic drills, of radiation emergency plans to ensure that employees of the licensee are familiar with their specific emergency response duties, and (b) The participation in the training and drills by other persons whose assistance may be needed in the event of a radiation emergency shall be described. This shall include a description of specialized initial training and periodic retraining programs to be provided to each of the following categories of emergency personnel: i. Directors and/or coordinators of the plant emergency organization; ii. Personnel responsible for accident assessment, including control room shift personnel; iii. Radiological monitoring teams; iv. Fire control teams (fire brigades); v. Repair and damage control teams; vi. First aid and rescue teams; vii. Medical support personnel; viii. ~~Licensee's headquarters support personnel;~~

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ix. Security personnel. In addition, a radiological orientation training program shall be made available to local services personnel; e.g., local emergency services~~/Civil Defense~~, local law enforcement personnel~~, local news media persons~~.
NRC Staff's Evaluation: Decommissioning power reactor sites typically have a level of emergency response that does not require additional response by the licensee's headquarters personnel. HDI states that the number of staff at PNP during the decommissioning process will be small but commensurate with the need to safely store spent fuel at the facility in a manner that is protective of public health and safety. HDI will maintain a level of emergency response that does not require additional response by headquarters personnel. The on-shift and emergency response positions are defined in the PNP Permanently Defueled Emergency Plan and will be regularly tested through drills and exercises, audited, and inspected by HDI and the NRC. Therefore, the NRC staff considers exempting the licensee's headquarters personnel from training requirements to be reasonable. Due to the low probability of DBA or other credible events to exceed the EPA early phase PAGs, offsite emergency measures are limited to support provided by local police, fire departments, and ambulance and hospital services, as appropriate. Local news media personnel no longer need radiological orientation training since they will not be called upon to support the formal Joint Information Center. The term "Civil Defense" is no longer commonly used, so references to this term in the regulation are not needed.
10 CFR Part 50, Appendix E, Section IV.F.2: The plan shall describe provisions for the conduct of emergency preparedness exercises as follows: Exercises shall test the adequacy of timing and content of implementing procedures and methods, test emergency equipment and communications networks, ~~test the public alert and notification system,~~ and ensure that emergency organization personnel are familiar with their duties.
NRC Staff's Evaluation: Refer to basis for exemption from 10 CFR Part 50, Appendix E, Section IV.D.1.
10 CFR Part 50, Appendix E, Section IV.F.2.a: ~~A full participation exercise which tests as much of the licensee, State, and local emergency plans as is reasonably achievable without mandatory public participation shall be conducted for each site at which a power reactor is located. Nuclear power reactor licensees shall submit exercise scenarios under § 50.4 at least 60 days before use in a full participation exercise required by this paragraph 2.a.~~ [**F.2.a.(i), (ii), and (iii)** are not applicable.]
NRC Staff's Evaluation: Considering the very low probability of beyond-design-basis events affecting the SFP and the time available to initiate mitigative actions consistent with plant conditions (i.e., the time between the loss of both water and air cooling to the spent fuel and the time before the onset of a postulated zirconium cladding fire), offsite REP plans (in accordance with

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44 CFR Part 350) are not needed. Therefore, conducting a full participation exercise with State and local agencies is not required. However, HDI will continue to invite the State of Michigan and Van Buren County to participate in the PNP periodic drills and exercises conducted to assess their ability to perform responsibilities related to an emergency at PNP, to the extent defined by the PNP Permanently Defueled Emergency Plan. The licensee would be exempt from 10 CFR Part 50, Appendix E, Section IV.F.2.a.(i)-(iii) because the licensee would be exempt from the umbrella provision of 10 CFR Part 50, Appendix E, Section IV.F.2.a.
10 CFR Part 50, Appendix E, Section IV.F.2.b: Each licensee at each site shall conduct a subsequent exercise of its onsite emergency plan every 2 years. ~~Nuclear power reactor licensees shall submit exercise scenarios under § 50.4 at least 60 days before use in an exercise required by this paragraph 2.b. The exercise may be included in the full participation biennial exercise required by paragraph 2.c. of this section.~~ In addition, the licensee shall take actions necessary to ensure that adequate emergency response capabilities are maintained during the interval between biennial exercises by conducting drills, including at least one drill involving a combination of some of the principal functional areas of the licensee's onsite emergency response capabilities. The principal functional areas of emergency response include activities such as management and coordination of emergency response, accident assessment, event classification, notification of offsite authorities, and assessment of the onsite ~~and offsite~~ impact of radiological releases, ~~protective action recommendation development, protective action decision making, plant~~ system repair and mitigative action implementation. During these drills, activation of all of the licensee's emergency response facilities ~~(Technical Support Center (TSC), Operations Support Center (OSC), and the emergency operations facility (EOF))~~ would not be necessary, licensees would have the opportunity to consider accident management strategies, supervised instruction would be permitted, operating staff in all participating facilities would have the opportunity to resolve problems (success paths) rather than have controllers intervene, and the drills may focus on the onsite exercise training objectives.
NRC Staff's Evaluation: Refer to basis for exemption from 10 CFR Part 50, Appendix E, Section IV.F.2.a for the basis for exemption from requirements related to offsite actions. The basis for the TSC exemption is provided in the basis for exemption from 10 CFR Part 50, Appendix E, Section IV.E.8.a.(i). The basis for the OSC exemption is provided in the basis for exemption from 10 CFR Part 50, Appendix E, Section IV.E.8.a.(ii). The basis for the EOF exemption is provided in the basis for exemption from 10 CFR 50.47(b)(3).

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10 CFR Part 50, Appendix E, Section IV.F.2.c: ~~Offsite plans for each site shall be exercised biennially with full participation by each offsite authority having a role under the radiological response plan. Where the offsite authority has a role under a radiological response plan for more than one site, it shall fully participate in one exercise every two years and shall, at least, partially participate in other offsite plan exercises in this period. If two different licensees each have licensed facilities located either on the same site or on adjacent, contiguous sites, and share most of the elements defining co-located licensees, then each licensee shall:~~ (1) ~~Conduct an exercise biennially of its onsite emergency plan;~~ (2) ~~Participate quadrennially in an offsite biennial full or partial participation exercise;~~ (3) ~~Conduct emergency preparedness activities and interactions in the years between its participation in the offsite full or partial participation exercise with offsite authorities, to test and maintain interface among the affected State and local authorities and the licensee. Co-located licensees shall also participate in emergency preparedness activities and interaction with offsite authorities for the period between exercises;~~ (4) ~~Conduct a hostile action exercise of its onsite emergency plan in each exercise cycle; and~~ (5) ~~Participate in an offsite biennial full or partial participation hostile action exercise in alternating exercise cycles.~~
NRC Staff's Evaluation: Refer to basis for exemption from 10 CFR Part 50, Appendix E, Section IV.F.2.a.
10 CFR Part 50, Appendix E, Section IV.F.2.dx: ~~Each State with responsibility for nuclear power reactor emergency preparedness should fully participate in the ingestion pathway portion of exercises at least once every exercise cycle. In States with more than one nuclear power reactor plume exposure pathway EPZ, the State should rotate this participation from site to site. Each State with responsibility for nuclear power reactor emergency preparedness should fully participate in a hostile action exercise at least once every cycle and should fully participate in one hostile action exercise by December 31, 2015. States with more than one nuclear power reactor plume exposure pathway EPZ should rotate this participation from site to site.~~
NRC Staff's Evaluation: Refer to basis for exemption from 10 CFR Part 50, Appendix E, Section IV.2.
10 CFR Part 50, Appendix E, Section IV.F.2.e: Licensees shall enable any State or local Government ~~located within the plume exposure pathway EPZ~~ to participate in the licensee's drills when requested by such State or local government.
NRC Staff's Evaluation: HDI will continue to invite the State of Michigan and Van Buren County to participate in the PNP periodic drills and exercises conducted to assess their ability to perform responsibilities related to an emergency at PNP, to the extent defined by the PNP Permanently Defueled Emergency Plan. Also see the basis for exemption from 10 CFR Part 50, Appendix E, Section IV.2.
10 CFR Part 50, Appendix E, Section IV.F.2.f: Remedial exercises will be required if the emergency plan is not satisfactorily tested during the biennial exercise, such that NRC, ~~in consultation with FEMA,~~ cannot (1) find reasonable assurance that adequate

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protective measures can and will be taken in the event of a radiological emergency or (2) determine that the Emergency Response Organization (ERO) has maintained key skills specific to emergency response. ~~The extent of State and local participation in remedial exercises must be sufficient to show that appropriate corrective measures have been taken regarding the elements of the plan not properly tested in the previous exercises.~~
NRC Staff's Evaluation: Considering the very low probability of beyond-design-basis events affecting the SFP and the time available to initiate mitigative actions consistent with plant conditions (i.e., the time between the loss of both water and air cooling to the spent fuel and the time before the onset of a postulated zirconium cladding fire), offsite REP plans (in accordance with 44 CFR Part 350) are not needed. Therefore, the requirement to conduct a full participation exercise with State and local agencies is not needed. Because the NRC staff previously concluded that full participation emergency plan exercises are not required, and FEMA does not have responsibilities related to onsite EP, NRC consultation with FEMA is not necessary.
10 CFR Part 50, Appendix E, Section IV.F.2.i: Licensees shall use drill and exercise scenarios that provide reasonable assurance that anticipatory responses will not result from preconditioning of participants. ~~Such scenarios for nuclear power reactor licensees must include a wide spectrum of radiological releases and events, including hostile action.~~ Exercise and drill scenarios as appropriate must emphasize coordination among onsite and OROs.
NRC Staff's Evaluation: For decommissioning power reactor sites, there are limited events that could occur and, as such, the purpose of ensuring that responders do not get preconditioned to certain scenarios is not necessary to achieve the underlying purpose of this rule provision. Considering the very low probability of beyond-design-basis events affecting the SFP and the time available to initiate mitigative actions consistent with plant conditions (i.e., the time between the loss of both water and air cooling to the spent fuel and the time before the onset of a postulated zirconium cladding fire), offsite REP plans (in accordance with 44 CFR Part 350) are not needed. Therefore, drills involving principle functional areas associated with formal offsite REP are not needed.
10 CFR Part 50, Appendix E, Section IV.F.2.j: ~~(i) The exercises conducted under paragraph 2 of this section by nuclear power reactor licensees must provide the opportunity for the ERO to demonstrate proficiency in the key skills necessary to implement the principal functional areas of emergency response identified in paragraph 2.b of this section.~~ ~~(ii) Each exercise must provide the opportunity for the ERO to demonstrate key skills specific to emergency response duties in the control room, TSC, OSC, EOF, and joint information center.~~ ~~(iii) In each 8-calendar-year exercise cycle, nuclear power reactor licensees shall vary the content of scenarios during exercises conducted under paragraph 2 of this section to provide the opportunity for the ERO to demonstrate proficiency in the key skills necessary to respond to the following scenario elements:~~ ~~(1) Hostile action directed at the plant site;~~ ~~(2) No radiological release or an unplanned minimal radiological release that does not require public protective actions;~~ ~~(3) An initial classification of, or rapid escalation to, a Site Area Emergency or General Emergency;~~

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~~(4) Implementation of strategies, procedures, and guidance under § 50.155(b)(2); and~~ ~~(5) Integration of offsite resources with onsite response.~~ ~~(iv) The licensee shall maintain a record of exercises conducted during each 8-year exercise cycle that documents the content of scenarios used to comply with the requirements of section IV.F.2.j of this appendix.~~ ~~(v) Each licensee shall conduct a hostile action exercise for each of its sites no later than December 31, 2015.~~ ~~(vi) The first 8-year exercise cycle for a site will begin in the calendar year in which the first hostile action exercise is conducted. For a site licensed under 10 CFR part 52, the first 8-year exercise cycle begins in the calendar year of the initial exercise required by section IV.F.2.a of this appendix.~~
NRC Staff's Evaluation: For decommissioning power reactor sites, there are limited events that could occur and, as such, the purpose of ensuring that responders do not get preconditioned to certain scenarios is not necessary to achieve the underlying purpose of this provision. Considering the very low probability of beyond-design-basis events affecting the SFP and the time available to initiate mitigative actions consistent with plant conditions (i.e., the time between the loss of both water and air cooling to the spent fuel and the time before the onset of a postulated zirconium cladding fire), offsite REP plans (in accordance with 44 CFR Part 350) are not needed. Therefore, drills involving principle functional areas associated with formal offsite REP are not needed.
10 CFR Part 50, Appendix E, Section IV.I: ~~By June 20, 2012, for nuclear power reactor licensees, a range of protective actions to protect onsite personnel during hostile action must be developed to ensure the continued ability of the licensee to safely shut down the reactor and perform the functions of the licensee's emergency plan.~~
NRC Staff's Evaluation: Refer to basis for exemption from 10 CFR Part 50, Appendix E, Section IV.E.8.d.