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10 CFR 50.12
10 CFR 50.54(w)(1)

RA-18-019

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

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

Subject: Request for Exemption from 10 CFR 50.54(w)(1), Concerning On-Site Property Damage Insurance

- Reference:**
- 1) Letter from Keith R. Jury, Exelon Generation Company, LLC to U.S. Nuclear Regulatory Commission - "*Permanent Cessation of Operations at Oyster Creek Nuclear Generating Station,*" dated January 7, 2011, (ML110070507)
 - 2) Letter from Michael P. Gallagher, Exelon Generation Company, LLC to U.S. Nuclear Regulatory Commission - "*Certification of Permanent Cessation of Power Operations for Oyster Creek Nuclear Power Station,*" dated February 14, 2018 (ML18045A084)
 - 3) Letter from Michael P. Gallagher, (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission – "*Request for Exemption from Portions of 10 CFR 50.47 and 10 CFR 50, Appendix E,*" dated August 22, 2017 (ML17234A082)

Pursuant to 10 CFR 50.12, "Specific exemptions," Exelon Generation Company, LLC (Exelon) requests a permanent exemption from 10 CFR 50.54(w)(1) for Oyster Creek Nuclear Generating Station (OCNGS). 10 CFR 50.54(w)(1) requires individual power reactor licensees to obtain insurance coverage from private sources to provide protection covering the licensee's obligation, in the unlikely event of an accident, to stabilize and decontaminate the reactor and the reactor site. Specifically, licensees must obtain insurance having a minimum coverage limit for each reactor station site of either \$1.06 billion or whatever amount of insurance is generally available from private sources, whichever is less. This insurance coverage is referred to as "onsite coverage" or "onsite insurance coverage."

Exelon is requesting an exemption to 10 CFR 50.54(w)(1) to reduce the minimum coverage limit of 10 CFR 50.54(w)(1) to \$50 million for OCNGS. The exemption request is provided in the attachment to this letter.

On January 7, 2011, Exelon informed the U.S. Nuclear Regulatory Commission (NRC) that OCNGS will permanently cease power operations by December 31, 2019 (Reference 1). On February 2, 2018, Exelon announced that it now plans to retire OCNGS no later than October 31, 2018 at the end of the current two-year operating cycle. Exelon informed the NRC of this change in Reference 2. Once OCNGS permanently ceases operations and submits the certifications required by 10 CFR 50.82(a)(1)(i) and (ii), pursuant to 10 CFR 50.82(a)(2), the 10 CFR 50 license for OCNGS will no longer authorize operation of the reactor or placement or retention of fuel in the reactor vessel.

The underlying purpose of 10 CFR 50.54(w)(1) is to require sufficient property damage insurance to ensure adequate funding of onsite post-accident recovery, stabilization and decontamination costs following an accident at an operating nuclear power plant. However, the regulation does not take into consideration the reduced potential for, and consequences of, such nuclear incidents at permanently shutdown facilities. The OCNGS facility is a single reactor site and the reactor will be permanently shut down no later than October 31, 2018 (Reference 2). The proposed exemption would allow a reduction in the level of onsite insurance coverage for OCNGS to a level that is commensurate with the planned permanently defueled status of the facility and the underlying purpose of the rule.

Exelon has performed an analysis for OCNGS showing that 12 months after shutdown provides sufficient decay of the spent fuel stored in the spent fuel pool (SFP) such that there is a significant reduction in risk from SFP draining events. This reduction in risk supports the basis for the 10 CFR 50.12, "Specific exemptions," provided in the attachment to this letter. The analysis related to the 12-month decay time was provided with Reference 3.

Based on the projected OCNGS cessation of operations which is expected no later than the end October 2018 (Reference 2), the decay period of 12 months will occur in October 2019. Therefore, Exelon is requesting approval of this exemption request by August 1, 2019, and a 60-day implementation date no later than October 31, 2019. The approval date of August 1, 2019, would permit sufficient time to arrange for the reduced offsite liability insurance coverage allowed by the exemption.

This letter contains no new regulatory commitments.

If you have any questions concerning this submittal, please contact Paul Bonnett at (610) 765-5264.

Respectfully,



Michael P. Gallagher
Vice President, License Renewal & Decommissioning
Exelon Generation Company, LLC

U.S. Nuclear Regulatory Commission
OCNGS Request for Exemption
Docket Nos. 50-219 and 72-15
March 29, 2018
Page 3

Attachment: Request for Exemption from 10 CFR 50.54(w)(1) Concerning On-Site Property
Damage Insurance

cc: w/Attachment

Regional Administrator - NRC Region I
NRC Senior Resident Inspector - Oyster Creek Nuclear Generating Station
NRC Project Manager, NRR - Oyster Creek Nuclear Generating Station
Director, Bureau of Nuclear Engineering - New Jersey Department of Environmental
Protection
Mayor of Lacey Township, Forked River, NJ

Attachment

Request for Exemption from 10 CFR 50.54(w)(1)

Concerning On-Site Property Damage Insurance

1. **SPECIFIC EXEMPTION REQUEST**

Pursuant to 10 CFR 50.12, "Specific exemptions," Exelon Generation Company, LLC (Exelon) requests a permanent exemption from 10 CFR 50.54(w)(1) for Oyster Creek Nuclear Generating Station (OCNGS). 10 CFR 50.54(w)(1) requires individual power reactor licensees to obtain insurance coverage from private sources to provide protection covering the licensee's obligation, in the unlikely event of an accident, to stabilize and decontaminate the reactor and the reactor site. Specifically, licensees must obtain insurance having a minimum coverage limit for each reactor station site of either \$1.06 billion or whatever amount of insurance is generally available from private sources, whichever is less. This insurance coverage is referred to as "onsite coverage" or "onsite insurance coverage."

Exelon is requesting an exemption to 10 CFR 50.54(w)(1) to reduce the minimum coverage limit of 10 CFR 50.54(w)(1) to \$50 million for OCNGS.

10 CFR 50.54(w)(1) reads as follows:

"(w) Each power reactor licensee under this part for a production or utilization facility of the type described in §§ 50.21(b) or 50.22 shall take reasonable steps to obtain insurance available at reasonable costs and on reasonable terms from private sources or to demonstrate to the satisfaction of the NRC that it possesses an equivalent amount of protection covering the licensee's obligation, in the event of an accident at the licensee's reactor, to stabilize and decontaminate the reactor and the reactor station site at which the reactor experiencing the accident is located, provided that:

(1) The insurance required by paragraph (w) of this section must have a minimum coverage limit for each reactor station site of either \$1.06 billion or whatever amount of insurance is generally available from private sources, whichever is less. The required insurance must clearly state that, as and to the extent provided in paragraph (w)(4) of this section, any proceeds must be payable first for stabilization of the reactor and next for decontamination of the reactor and the reactor station site. If a licensee's coverage falls below the required minimum, the licensee shall within 60 days take all reasonable steps to restore its coverage to the required minimum. The required insurance may, at the option of the licensee, be included within policies that also provide coverage for other risks, including, but not limited to, the risk of direct physical damage."

Exemption from 10 CFR 50.54(w)(1) is requested in order to allow reduced insurance coverage commensurate with the significantly reduced risks associated with the permanently defueled condition. Exelon has performed an analysis indicating that irradiated fuel decay for 12 months after shutdown provides sufficient time for operators to recover spent fuel pool (SFP) water inventory prior to reaching a temperature of 900 degrees Celsius (°C) where oxidation of the spent fuel and cladding could commence. This analysis was submitted in Reference 3. Because OCNGS expects final shutdown to occur no later than the end of October 2018 (Reference 2), 12 months after shutdown will occur in October 2019. The requested approval date of August 1, 2019, will enable Exelon adequate time before October 1, 2019, to arrange for the reduced insurance coverage allowed by the exemption.

2. **BACKGROUND**

The OCNGS site is a single unit facility located near the Atlantic Ocean within the State of New Jersey. The facility site, approximately 152 acres, is in Lacey Township, Ocean County. The OCNGS facility employs a General Electric boiling water reactor nuclear steam supply system licensed to generate 1930 megawatts-thermal. The boiling water reactor and supporting facilities are owned and operated by Exelon. The licensee, Exelon, is the holder of the Oyster Creek Nuclear Generating Station Renewed Facility Operating License No. DPR-16. The license provides, among other things, that the facility is subject to all rules, regulations, and orders of the NRC now or hereafter in effect.

By letter dated January 7, 2011 (Reference 1), pursuant to 10 CFR 50.82(a)(1)(i), Exelon notified the U.S. Nuclear Regulatory Commission (NRC) of its intention to permanently cease power operations at OCNGS by December 31, 2019. On February 2, 2018, Exelon announced that now plans to retire OCNGS in 2018, at the end of the current two-year operating cycle. Exelon informed the NRC of this change in a letter dated February 14, 2018 (Reference 2). Once fuel has been permanently removed from the reactor vessel, Exelon will submit a written certification to the NRC, in accordance with 10 CFR 50.82(a)(1)(ii) that meets the requirements of 10CFR 50.4(b)(9). Upon docketing of these certifications, the 10 CFR Part 50 license for OCNGS will no longer authorize operation of the reactor or emplacement or retention of fuel into the reactor vessel, as specified in 10 CFR 50.82(a)(2).

3.0 **BASIS FOR EXEMPTION REQUEST**

The underlying purpose of 10 CFR 50.54(w)(1) is to require sufficient property damage insurance to ensure adequate funding of onsite post-accident recovery, stabilization and decontamination costs following an accident at an operating nuclear power plant. The requirements of 10 CFR 50.54(w)(1) were developed taking into consideration the risks associated with an operating nuclear power reactor, including the potential consequences of a release of radioactive material from the reactor. The onsite insurance coverage must be either \$1.06 billion or whatever amount of insurance is generally available from private sources (whichever is less).

This regulation does not take into consideration the reduced potential for, and consequences of, such nuclear incidents at permanently shutdown facilities. The OCNGS facility is a single reactor site and the reactor will be permanently shut down and defueled. The proposed exemption would allow a reduction in the level of onsite insurance coverage to a level that is commensurate with the planned permanently defueled status of OCNGS and the underlying purpose of the rule.

Although the likelihood of an accident at an operating reactor is small, the consequences can be large, in part due to the high temperatures and pressures of the reactor coolant system as well as the inventory of radionuclides. For a permanently shutdown and defueled reactor, nuclear accidents involving the reactor and its associated systems, structures and components are no longer possible. Furthermore, reductions in the probability and consequences of non-operating reactor nuclear incidents are substantially reduced because; 1) the decay heat from the spent fuel decreases over time, which reduces the amount of cooling required to prevent the spent fuel from heating up to a temperature that could compromise the ability of the fuel cladding to retain fission products, and; 2) the relatively short-lived radionuclides contained in the spent fuel, particularly volatile components like iodine and noble gasses, decay away, thus reducing the inventory of radioactive materials available for release.

Although the potential for, and consequences of, nuclear accidents decline substantially after a plant permanently defuels its reactor, they are not completely eliminated. There are potential onsite and offsite radiological consequences that could be associated with the onsite storage of the spent fuel in the SFP. In addition, a site with a permanently shutdown and defueled reactor may contain an inventory of radioactive liquids, activated reactor components, and contaminated materials. For purposes of modifying the amount of onsite insurance coverage maintained by a permanently shutdown and defueled reactor licensee, the potential radiological consequences of these non-operating reactor nuclear incidents are appropriate to consider, despite their very low probability of occurrence.

NRC Proposed Rulemaking

The NRC staff has generically evaluated the legal, technical, and policy issues regarding the financial protection requirements for large nuclear power plants that have been permanently shut down. The results of these evaluations were summarized in SECY-96-256 (Reference 4) and the NRC staff recommended course of action was approved by the Commission in a Staff Requirements Memo (SRM) (Reference 5). These documents established the basis for the NRC exercising its discretionary authority to specify an appropriate level of onsite insurance coverage for permanently shutdown nuclear power reactors.

In SECY-97-186 (Reference 6), the NRC staff proposed rulemaking for Commission approval that was consistent with SECY-96-256, Option 2. In SECY-97-186, the NRC staff proposed changes to 10 CFR 50.54(w)(1) and 10 CFR 140.11(a)(4) that would establish appropriate levels of onsite insurance and offsite liability coverage for plants that are permanently shutdown and defueled and that meet specified facility configurations during permanent shutdown.

On October 30, 1997, the NRC published a proposed rulemaking to amend regulations governing liability coverage for permanently shutdown nuclear plants. The proposed rulemaking established four different configurations for permanently shutdown plants that encompassed anticipated spent fuel characteristics and storage modes during the period between permanent shutdown and termination of the license. The rulemaking proposed financial protection requirements for each of the four specified plant configurations, including a configuration where the plant is permanently shutdown, the reactor defueled, and the spent fuel stored in the spent fuel pool is not susceptible to a zircaloy cladding failure or gap release caused by an incipient fuel cladding failure if the pool is accidentally drained.

However, the NRC staff rulemaking efforts were suspended prior to issuing the final rule when it was realized that an NRC staff-approved technical basis did not exist for generic decay times after which the zirconium cladding failure concern could be eliminated. The proposed changes to regulations governing onsite insurance coverage were subsequently included in a risk-informed, integrated rulemaking initiative for decommissioning nuclear power plants, which has yet to be acted on. This rulemaking initiative, documented in SECY-00-145 (Reference 7), included onsite insurance coverage requirements based on the proposed decommissioning insurance rulemaking issued on October 30, 1997, as modified to address the public comments received in response to that proposed rulemaking. The modified rulemaking, as incorporated into SECY-00-145, would have allowed the minimum onsite insurance coverage to be reduced to \$25 million once the spent fuel in the SFP is no longer thermal-hydraulically capable of sustaining a zirconium fire, based on a plant-specific analysis.

As discussed in the staff response to a question in SECY-00-145 (see "NRC Staff Responses to NEI White Paper Comments on Improving Decommissioning Regulations," page 6, response to Question 3):

"The staff believes that full insurance coverage must be maintained for 5 years or until a licensee can show by analysis that its spent fuel pool is no longer vulnerable to such [a zirconium] fire."

In addition, as discussed in the staff response to a question in SECY-00-145 (see "NRC Staff Responses to NEI White Paper Comments on Improving Decommissioning Regulations," page 5, response to Question 2):

"Since the zirconium fire scenario would be possible for up to several years following shutdown, and since the consequences of such a fire are severe in terms of property damage and land contamination, the staff position is that full onsite liability coverage must be retained for five years or until analysis has indicated that a zirconium fire is no longer possible."

In a memorandum dated August 16, 2002 (Reference 8), the NRC Executive Director for Operations provided the NRC Commissioners a status of the regulatory exemptions for plants in decommissioning. This memorandum stated that,

"In the absence of any anticipated nuclear power plant decommissionings in the near term, the staff believes that there is no immediate need for moving forward with a majority of the decommissioning regulatory improvement work that is currently planned. Specifically, broad scope regulatory improvements for decommissioning nuclear power plants do not appear to be of sufficient priority given a lack of future licensees that would benefit at this time. Due to higher priorities, resources are being deferred for decommissioning rulemakings that are not currently in progress or not related to security.... If any plants do unexpectedly shutdown permanently, decommissioning regulatory issues would continue to be addressed through the exemption process in a manner similar to current practice."

Thus, the proposed rulemaking process changes for decommissioning plants discussed above were stopped in deference to the exemption process that had been used for previous licensees.

In January 2018, NRC issued its "Regulatory Analysis for Regulatory Basis: Regulatory Improvements for Power Reactors Transitioning to Decommissioning" NRC-2015-0070, RIN 3150-AJ59 (Reference 19). In Section 5.8 of this Regulatory Basis document the NRC staff assessed offsite and onsite financial protection requirements and indemnity agreements and proposed alternatives that include an alternative "FP-2." This alternative would involve rulemaking to reduce the on-site property damage requirement in 10 CFR 50.54(w) to \$50 million for a reactor that "is defueled and permanently shut down, and spent fuel in the SFP has decayed and cooled sufficiently that it cannot heat up to clad ignition temperature within 10 hours under adiabatic conditions." In Section 8.2.9 of the Regulatory basis document, the NRC staff has recommended alternative FP-2.

4.0 TECHNICAL EVALUATION

Section 15 of the OCNCS Updated Final Safety Analysis Report (UFSAR) describes the design basis accidents (DBAs) and transient scenarios applicable to OCNCS during power operations.

The most severe postulated accidents for nuclear power plants involve damage to the nuclear reactor core and the release of large quantities of fission products to the reactor coolant system. Many of the accident scenarios postulated in the UFSAR involve failures or malfunctions of systems which could affect the reactor core.

However, based on of the notification of permanent cessation of power operations submitted by Exelon pursuant to 10 CFR 50.82(a)(1) (Reference 2), and the planned removal of authorization to operate the reactor or to place or retain fuel in the reactor vessel in accordance with 10 CFR 50.82(a)(2) once it has been certified that all fuel has been permanently removed from the reactor, most of the DBA scenarios postulated in the UFSAR will no longer be possible. The irradiated fuel will be stored in the SFP and the Independent Spent Fuel Storage Installation (ISFSI) until it is shipped off site in accordance with the schedules to be provided in the Post Shutdown Decommissioning Activities Report (PSDAR) and the updated Irradiated Fuel Management Plan.

When the reactor is permanently defueled, the SFP and its supporting systems will be dedicated only to spent fuel storage. With the reactor defueled, the reactor vessel assembly and supporting structures and systems are no longer in operation and have no function related to the safe storage and management of irradiated fuel in the SFP. Fuel pool cooling and makeup capabilities function to remove decay heat from spent fuel stored in the fuel pool and to maintain a specified water temperature and level.

Accident Analysis Overview

Following the termination of reactor operations at OCNGS and the permanent removal of the fuel from the reactor vessel, the postulated accidents involving failure or malfunction of the reactor and supporting structures, systems and components are no longer applicable.

OCNGS' "Request for Exemptions from Portions of 10 CFR 50.47 and 10 CFR Part 50, Appendix E," (Reference 3) provides information on the disposition of accidents and other incidents of concern.

A summary of the postulated radiological accidents analyzed for the permanently shutdown and defueled condition of OCNGS is presented below.

1. Consequences of Design Basis Events

The postulated design basis accident that will remain applicable to OCNGS in its permanently shut down and defueled condition is the Fuel Handling Accident (FHA) in the Reactor Building where the SFP is located. An analysis based on the FHA was performed to determine the dose to operators in the control room and the public at the Exclusion Area Boundary (EAB) as a function of time after shutdown. The analysis shows that the dose at the EAB 33 days after shutdown (with no credit for containment) is less than 1 rem Total Effective Dose Equivalent (TEDE) and 5 rem Thyroid, which are the Environmental Protection Agency (EPA) Protective Action Guides (PAGs) thresholds for recommended evacuation (Reference 9). Due to the amount of decay assumed (33 days), the results of this analysis may be applied after December 3, 2019, assuming a OCNGS shutdown by October 31, 2018 (Reference 2).

2. Consequences of Beyond Design Basis Events

Hottest Fuel Assembly Adiabatic Heatup - Beyond Design Basis Event

The analysis (Reference 18) provided with Reference 3 compares the conditions for the hottest fuel assembly stored in the OCNCS fuel pools to the criteria proposed in SECY-99-168 "Improving Decommissioning Regulations for Nuclear Power Plants" (Reference 16), applicable to offsite emergency response for the unit in the decommissioning process. This criterion considers the time for the hottest assembly to heat up from 30 degrees Celsius (°C) to 900°C adiabatically. If the heat up time is greater than 10 hours, then offsite emergency preplanning involving the plant is not necessary.

Based on the limiting fuel assembly for decay heat and adiabatic heatup analysis presented in the Reference 3 analysis, at 12 months (365 days) after permanent cessation of power operations (12 months decay time), the time for the hottest fuel assembly to reach 900°C is greater than 10 hours after the assemblies have been uncovered. As stated in NUREG-1738, "Technical Study of Spent Fuel Pool Accident Risk at Decommissioning Nuclear Power Plants" (February 2001) (Reference 10), 900°C is an acceptable temperature to use for assessing onset of fission product release under transient conditions (to establish the critical decay time for determining availability of 10 hours to evacuate) if fuel and cladding oxidation occurs in air.

Because of the length of time it would take for the adiabatic heatup to occur, there is ample time to respond (≥ 10 hours) to any drain down event that might cause such an occurrence by restoring cooling or makeup, or providing spray. As a result, the likelihood that such a scenario would progress to a zirconium fire is not deemed credible.

3. Consequences of Other Analyzed Events

Loss of Spent Fuel Pool Cooling

OCNCS analyzed a drain down event of the SFP to determine a dose rate curve at the EAB and Control Room. NUREG-0586, "Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities," (Reference 17) Supplement 1, Section 4.3.9, identifies that a SFP drain down event is a beyond design basis event. Although the analysis (Reference 11) described above, demonstrated a significant release of radioactive material from the spent fuel is not possible in the absence of water cooling after 365 days (1 year) following permanent cessation of power operations, the potential exists for radiation exposure to an offsite individual in the event that shielding of the fuel is lost. The SFP water and the concrete pool structure serve as radiation shielding. A loss of water shielding above the fuel could increase the offsite radiation levels because of the gamma rays streaming up out of the SFP being scattered back to a receptor at the site boundary. The offsite and Control Room radiological impacts of a postulated complete loss of SFP water were assessed in Calculation C-1302-226-E310-458, "Dose at Exclusion Area Boundary and Control Room Due to Shine from Drained Spent Fuel Pool During SAFSTOR" (Reference 11). It was determined that the gamma radiation dose rate at the EAB would be limited to small fractions of the EPA PAGs. The EPA PAGs were developed to respond to a mobile airborne plume that could transport and deposit radioactive material over a large area. In contrast, the radiation field formed by gamma scatter from a drained SFP would be stationary rather than moving and would not cause transport or deposition of radioactive materials. The extended period required to

exceed the EPA 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 planning if efforts to reestablish shielding over the fuel are delayed.

5.0 JUSTIFICATION FOR EXEMPTIONS AND SPECIAL CIRCUMSTANCES

10 CFR 50.12 states that the Commission may, upon application by any interested person or upon its own initiative, grant exemptions from the requirements of the regulations of Part 50 which are authorized by law, will not present an undue risk to the public health and safety, and are consistent with the common defense and security. 10 CFR 50.12 also states that the Commission will not consider granting an exemption unless special circumstances are present. As discussed below, this exemption request satisfies the provisions of Section 50.12.

5.1 Exemptions

A. The exemptions are authorized by law

10 CFR 50.12 allows the NRC to grant exemptions from the requirements of 10 CFR Part 50. The proposed exemption would not result in a violation of the Atomic Energy Act of 1954, as amended, or the Commission's regulations. The NRC has granted exemptions to other licensees for insurance reductions of the same regulation being requested here by Exelon and have been previously determined to be authorized by law and granted (see Section 6.0 of this attachment).

In addition, the requested exemption is consistent with the guidelines presented by the NRC staff in SECY-96-256. The proposed exemption is not contrary to the Atomic Energy Act of 1954, as amended, or the Commission's regulations. Therefore, the exemption is authorized by law.

B. The exemptions will not present an undue risk to public health and safety

The requirements of 10 CFR 50.54(w)(1) and the existing level of onsite insurance coverage for OCNCS are predicated on the assumption that the reactor is operating. However, OCNCS will be a permanently shutdown and defueled facility. The planned permanently defueled status of the facility will result in a significant reduction in the number and severity of potential accidents, and correspondingly, a significant reduction in the potential for and severity of onsite property damage. The proposed reduction in the amount of onsite insurance coverage does not impact the probability or consequences of potential accidents. The proposed level of insurance coverage is commensurate with the reduced risk and reduced cost consequences of potential nuclear accidents at OCNCS once it is permanently defueled. Therefore, granting the requested exemption will not present an undue risk to the health and safety of the public.

C. The exemptions are consistent with the common defense and security

The proposed exemption would not eliminate any requirements associated with physical protection of the site and would not adversely affect OCNCS's ability to physically secure the site or protect special nuclear material. Physical security measures at OCNCS are not affected by the requested exemption. Therefore, the proposed exemption is consistent with the common defense and security.

5.2 Special Circumstances

Pursuant to 10 CFR 50.12(a)(2), the NRC will not consider granting an exemption to its regulations unless special circumstances are present. Exelon has determined that special circumstances are present because the plant will be permanently shut down and defueled and the radiological source term at the site will be reduced from that associated with reactor power operation. With the reactor power plant permanently shut down and defueled, the design basis accidents and transients postulated to occur during reactor operation will no longer be possible. In particular, the potential for a release of a large radiological source term to the environment from the high pressures and temperatures associated with reactor operation will no longer exist.

A. Application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule. (10 CFR 50.12(a)(2)(ii))

The underlying purpose of 10 CFR 50.54(w)(1) is to require sufficient property damage insurance to ensure funding of onsite post-accident recovery stabilization, and decontamination costs following an accident at an operating nuclear power plant. The requirements of 10 CFR 50.54(w)(1) were developed taking into consideration the risks associated with the operation of an operating nuclear power reactor, including the potential consequences of a release of radioactive material from the reactor. However, the regulation does not take into consideration the reduced potential for, and consequences of, nuclear incidents at permanently shutdown facilities.

The radiological consequences of accidents that will remain possible at OCNCS in the permanently defueled condition are substantially lower than those at an operating plant. Following 33 days after shutdown, it will no longer be possible for the radiological consequences of the design basis accident at OCNCS to exceed the limits of the EPA PAGs at the EAB.

The proposed reduction in the level of onsite insurance coverage from \$1.06 billion to \$50 million would continue to serve the underlying purpose of the rule by requiring a level of financial protection commensurate with the significant reduction in the probability and consequences of nuclear incidents at OCNCS. Consistent with the NRC's conclusions documented in SECY-00-145 (Reference 7), the proposed reduction in the level of onsite insurance coverage would continue to require sufficient property damage insurance to ensure funding for onsite post-accident recovery, stabilization, and decontamination costs in the unlikely event of an accident at OCNCS.

Therefore, application of the requirement in 10 CFR 50.54(w)(1) to maintain \$1.06 billion in onsite insurance coverage is not necessary to achieve the underlying purpose of this rule and special circumstances are present as defined in 10 CFR 50.12(a)(2)(ii).

B. Compliance would result in undue hardship or other costs that are significantly in excess of those contemplated when the regulation was adopted, or that are significantly in excess of those incurred by others similarly situated. (10 CFR 50.12(a)(2)(iii))

Continued application of the requirement to maintain \$1.06 billion in onsite insurance coverage for OCNCS would result in undue hardship and costs being incurred by the OCNCS

decommissioning trust fund for the purchase of unnecessary levels of onsite insurance coverage.

As stated in Section 6.0 of this attachment, other licensees of permanently shutdown power reactors have been granted exemptions by the NRC to the subject regulation in the same or lower insurance amounts being requested by Exelon for OCNCS.

Therefore, compliance with the rule would result in an undue hardship or other costs that are significantly in excess of those contemplated when the regulation was adopted, or that are significantly in excess of those incurred by others similarly situated and the special circumstances required by 10 CFR 50.12(a)(2)(iii) exist.

6.0 PRECEDENT

The exemption request for 10 CFR 50.54(w)(1) is consistent with exemption requests that recently have been issued by the NRC for other nuclear power reactor facilities beginning decommissioning. Specifically, the NRC granted similar exemptions to Entergy Nuclear Operations, Inc., for Vermont Yankee (Reference 12); to Duke Energy Florida, Inc. for Crystal River Unit 3 (Reference 13); and to Southern California Edison Company for SONGS, Units 1, 2, and 3 (Reference 14); and to Dominion Energy Kewaunee, Inc. for KPS (Reference 15).

Similar to the current request, these precedents each resulted in exemptions from the requirements in 10 CFR 50.54(w)(1) to reduce the minimum coverage limit of 10 CFR 50.54(w)(1) to \$50 million.

7.0 ENVIRONMENTAL ASSESSMENT

The proposed exemption meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(25), because the proposed exemption involves: (i) no significant hazards consideration; (ii) no significant change in the types or significant increase in the amounts of any effluents that may be released offsite; (iii) no significant increase in individual or cumulative public or occupational radiation exposure; (iv) no significant construction impact; (v) no significant increase in the potential for or consequences from radiological accidents; and (vi) the requirements from which the exemption is sought involve: (H) surety, insurance or indemnity requirements.

Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed exemption.

(i) No Significant Hazards Consideration Determination

Exelon has evaluated the proposed exemption to determine whether or not a significant hazards consideration is involved by focusing on the three standards set forth in 10 CFR 50.92 as discussed below:

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

Response: No.

The proposed exemptions have no effect on structures, systems, and components (SSCs) and no effect on the capability of any plant SSC to perform its design function.

The proposed exemptions would not increase the likelihood of the malfunction of any plant SSC.

When the exemptions become effective, there will be no credible events that would result in doses to the public beyond the exclusion area boundary that would exceed the Environmental Protection Agency (EPA) Protective Action Guides (PAGs). The probability of occurrence of previously evaluated accidents is not increased, since most previously analyzed accidents will no longer be able to occur and the probability and consequences of the remaining Fuel Handling Accident (FHA) are unaffected by the proposed amendment.

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

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

Response: No.

The proposed exemption does not involve a physical alteration of the plant. No new or different type of equipment will be installed and there are no physical modifications to existing equipment associated with the proposed exemption. Similarly, the proposed exemption will not physically change any SSCs involved in the mitigation of any accidents. Thus, no new initiators or precursors of a new or different kind of accident are created. Furthermore, the proposed exemption does not create the possibility of a new accident as a result of new failure modes associated with any equipment or personnel failures. No changes are being made to parameters within which the plant is normally operated, or in the setpoints which initiate protective or mitigative actions, and no new failure modes are being introduced.

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

3. Do the proposed exemptions involve a significant reduction in a margin of safety?

Response: No.

The proposed exemption does not alter the design basis or any safety limits for the plant. The proposed exemption does not impact station operation or any plant SSC that is relied upon for accident mitigation.

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

Based on the above, Exelon concludes that the proposed exemption presents no significant hazards consideration, and, accordingly, a finding of "no significant hazards consideration" is justified.

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

There are no expected changes in the types, characteristics, or quantities of effluents discharged to the environment associated with the proposed exemption. There are no materials or chemicals introduced into the plant that could affect the characteristics or types of effluents released offsite. In addition, the method of operation of waste processing systems will not be affected by the exemption. The proposed exemption will not result in changes to the design basis requirements of SSCs that function to limit or monitor the release of effluents. All the SSCs associated with limiting the release of effluents will continue to be able to perform their functions. Therefore, the proposed exemption will result in no significant change to the types or significant increase in the amounts of any effluents that may be released offsite.

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

The exemption will result in no expected increases in individual or cumulative occupational radiation exposure on either the workforce or the public. There are no expected changes in normal occupational doses.

(iv) There is no significant construction impact.

No construction activities are associated with the proposed exemption.

(v) There is no significant increase in the potential for or consequences from radiological accidents.

See the no significant hazards considerations discussion in Item (i)(1) above.

(vi) The requirements from which exemption is sought involve: (H) surety, insurance or indemnity requirements.

The requirements from which the exemption is sought involve financial protection and for the indemnification and limitation of liability of licensees pursuant to Section 170 of the Atomic Energy Act of 1954, as amended and 10 CFR 50.54(w)(1).

8.0 CONCLUSION

Pursuant to the provisions of 10 CFR 50.12, Exelon is requesting a permanent exemption from 10 CFR 50.54(w)(1) for OCNCS. Based on the considerations discussed above, the requested exemption is authorized by law, will not present an undue risk to the public health and safety, and is consistent with the common defense and security. In addition, special circumstances are present as set forth in 10 CFR 50.12.

9.0 REFERENCES:

1. Letter from Keith R. Jury, (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission - "*Permanent Cessation of Operations at Oyster Creek Nuclear Generating Station*," dated January 7, 2011, RA-11-007 (ADAMS Accession No. ML110070507)

Attachment

Request for Exemption from 10 CFR 50.54(w)(1)

Docket Nos. 50-219 and 72-15

Page A-12 of A-13

2. Letter from Michael P. Gallagher, (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission - "*Certification of Permanent Cessation of Power Operations for Oyster Creek Nuclear Power Station,*" dated February 14, 2018 (ML18045A084)
3. Letter from Michael P. Gallagher, (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission – "*Request for Exemption from Portions of 10 CFR 50.47 and 10 CFR 50, Appendix E,*" dated August 22, 2017 (ADAMS Accession No. ML17234A082)
4. Commission Paper, SECY-96-256, "Changes to the Financial Protection Requirements for Permanently Shutdown Nuclear Power Reactors, 10 CFR 50.54(w) and 10 CFR 140.11," dated December 17, 1996 (ADAMS Accession No. ML15062A483)
5. Staff Requirements Memo, "Re: SECY-96-256, Changes to Financial Protection Requirements for Permanently Shutdown Nuclear Power Reactors," dated January 28, 1997 (ADAMS Accession No. ML15062A483)
6. Commission Paper, SECY-97-186, "Changes to the Financial Protection Requirements for Permanently Shutdown Nuclear Power Reactors, 10 CFR 50.54(w) and 10 CFR 140.11," dated August 13, 1997 (ADAMS Accession No. ML992930019)
7. SECY-00-145, "Integrated Rulemaking Plan for Nuclear Power Plant Decommissioning," dated June 28, 2000 (ADAMS Accession No. ML003721626)
8. Memorandum from William D. Travers (NRC) to NRC Commissioners, "Status of Regulatory Exemptions for Decommissioning Plants (WITS 200100085, WITS 199900133, WITS 199900072)," dated August 16, 2002 (ADAMS Accession No. ML030550706)
9. Environmental Protection Agency Protective Action Guides and Planning Guidance for Radiological Incidents, Draft for Interim Use and Public Comment, dated March 2013
10. NUREG-1738, "Technical Study of Spent Fuel Accident Risk at Decommissioning Nuclear Power Plants," dated February 2001 (ADAMS Accession No. ML010430066)
11. C-1302-226-E310-458, Dose at Exclusion Area Boundary and Control Room Due to Shine from Drained Spent Fuel Pool During SAFSTOR," dated June 16, 2017
12. Vermont Yankee Nuclear Power Station—Exemption from the Requirements of Title 10 of the Code of Federal Regulations, Part 50, Section 50.54(w)(1) Concerning Insurance for Post-Accident Site Decontamination (CAC No. MF3981), dated April 15, 2016 (ADAMS Accession No. 16012A193)
13. Crystal River Unit 3 Nuclear Generating Plant—Exemption from the Requirements of Title 10 of the Code of Federal Regulations, Section 50.54(w)(1) Concerning Insurance for Post-Accident Site Decontamination (TAC No. L53108), dated March 16, 2016 (ADAMS Accession No. ML16020A463)
14. Request for Exemption from 10 CFR 50.54(w)(1), San Onofre Nuclear Generating Station Units 1, 2, and 3, dated October 22, 2015 (ADAMS Accession No. ML15299A220)
15. Kewaunee Power Station—Exemption from the Requirements of Title 10 of the Code of Federal Regulations, Part 50, Section 50.54(w)(1) Concerning Insurance for Post-Accident Site Decontamination (TAC No. MF3915), dated April 3, 2015 (ADAMS Accession No. ML15033A245)

Attachment

Request for Exemption from 10 CFR 50.54(w)(1)

Docket Nos. 50-219 and 72-15

Page A-13 of A-13

16. Commission Paper, SECY-99-168, *"Improving Decommissioning Regulations for Nuclear Power Plants,"* dated June 30, 1999 (ADAMS Accession No. ML992800087)
17. NUREG-0586, "Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities," Supplement 1, published November 2002
18. C-1302-226-E310-457, "Oyster Creek Nuclear Generating Station Zirconium Fire Analysis for Drained Spent Fuel Pool," dated June 19, 2017
19. NRC-2015-0070, RIN 3150-AJ59, *"Regulatory Analysis for Regulatory Basis: Regulatory Improvements for Power Reactors Transitioning to Decommissioning,"* dated January 2018 (ML17332A075)