



10 CFR 140.8
10 CFR 140.11(a)(4)

LIC-17-0038
April 28, 2017

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

Fort Calhoun Station (FCS), Unit 1
Renewed Facility Operating License No. DPR-40
NRC Docket No. 50-285

Subject: Request for Exemption from 10 CFR 140.11(a)(4), Concerning Primary and Secondary Liability Insurance

References:

1. Letter from OPPD (T. Burke) to USNRC (Document Control Desk), "Certification of Permanent Cessation of Power Operations," dated August 25, 2016 (LIC-16-0067) (ML16242A127)
2. Letter from OPPD (T. J. Burke) to USNRC (Document Control Desk), "Certification of Permanent Removal of Fuel from the Reactor Vessel," dated November 13, 2016 (LIC-16-0074) (ML16319A254)
3. Letter from OPPD (S. M. Marik) to USNRC (Document Control Desk), "Request for Exemptions from Portions of 10 CFR 50.47 and 10 CFR Part 50, Appendix E," Dated December 16, 2016 (LIC-16-0109) (ML16356A578)

Pursuant to 10 CFR 140.8, Omaha Public Power District (OPPD) requests a permanent exemption from 10 CFR 140.11(a)(4) for Fort Calhoun Station (FCS). 10 CFR 140.11 requires licensees to have and maintain two levels of financial protection against off-site liability for each nuclear reactor which is licensed to operate, designed for the production of electrical energy, and has a rated capacity of 100,000 kilowatts electric (kWe) or more. The two levels of financial protection are as follows:

- Primary insurance coverage of \$450,000,000 from private sources; and,
- Secondary financial protection in the form of private liability insurance available under an industry retrospective rating plan.

OPPD is requesting an exemption to 10 CFR 140.11(a)(4) for FCS that would reduce the required level of primary off-site liability insurance to \$100,000,000 and eliminate the requirement for FCS to carry secondary financial protection. The exemption request is provided in the attachment to this letter.

On August 25, 2016, OPPD notified the NRC of the plans to permanently cease power operations at FCS as of October 24, 2016 (Reference 1). On November 13, 2016, OPPD notified the NRC that all fuel has been permanently removed from the FCS reactor vessel and placed into the FCS spent fuel pool (Reference 2). Since FCS has permanently ceased operations and submitted the certifications required by 10 CFR 50.82(a)(1)(i) and (ii), pursuant to 10 CFR 50.82(a)(2), the 10 CFR Part 50 license for FCS no longer authorizes operation of the reactor or placement or retention of fuel in the reactor vessel.

The underlying purpose of 10 CFR 140.11(a)(4) is to require sufficient liability insurance to ensure adequate funding of any claims resulting from a potential nuclear incident or precautionary evacuation associated with an individual power reactor. However, the regulation does not take into consideration the reduced potential for, and consequences of, such nuclear incidents at permanently shutdown facilities. The FCS is a single reactor site and the reactor is permanently shut down and defueled (Reference 2). The proposed exemption would allow a reduction in the level of financial protection against off-site liability at FCS to a level that is commensurate with the permanently defueled status of the facility and the underlying purpose of the rule.

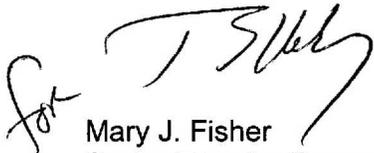
OPPD has performed an analysis for FCS showing that 530 days after shutdown provides sufficient decay of the spent fuel stored in the SFP such that there is a significant reduction in risk from SFP draining events. This reduction in risk supports the basis for the 10 CFR 140.8 "Specific exemptions" provided in the attachment to this letter. The analysis related to the 530 days decay time was provided with Reference 3.

FCS was shutdown on October 24, 2016 (Reference 1), the decay period of 530 days will be reached on April 7, 2018. Therefore, OPPD is requesting approval of this exemption request by March 1, 2018, and an effective date of April 7, 2018. The approval date of March 1, 2018 would permit sufficient time to arrange for the reduced offsite liability insurance coverage allowed by the exemption.

This letter contains no regulatory commitments.

If you should have any questions regarding this submittal or require additional information, please contact Mr. Bradley H. Blome at (402) 533-7270.

Respectfully,



Mary J. Fisher
Senior Director Decommissioning Fort Calhoun Station

MJF/epm

Attachment: Request for Exemption from 10 CFR 140.11(a)(4), Concerning Primary and Secondary Liability Insurance

c: K. M. Kennedy, NRC Regional Administrator, Region IV
J. Kim, NRC Senior Project Manager
S. M. Schneider, NRC Senior Resident Inspector

ATTACHMENT
REQUEST FOR EXEMPTION FROM 10 CFR 140.11(a)(4),
CONCERNING PRIMARY AND SECONDARY LIABILITY INSURANCE
OMAHA PUBLIC POWER DISTRICT
FORT CALHOUN STATION (FCS) UNIT NO. 1
DOCKET NO. 50-285

I. BACKGROUND

Fort Calhoun Station (FCS) is a single unit reactor site with the reactor permanently shut down and defueled (Reference 1 and 2). FCS is situated between the cities of Fort Calhoun and Blair Nebraska on the west bank of the Missouri River. By letter dated August 25, 2016 (Reference 1), pursuant to 10 CFR 50.82(a)(1)(i), Omaha Public Power District (OPPD) notified the NRC of its intention to permanently cease power operations at FCS on October 24, 2016. OPPD certified that fuel had been permanently removed from the reactor vessel on November 13, 2016 (Reference 2), in accordance with 10 CFR 50.82(a)(1)(ii). The reference 2 certification meets the requirements of 10 CFR 50.4(b)(9). Therefore, the 10 CFR Part 50 license for FCS no longer authorizes operation of the reactor or emplacement or retention of fuel into the reactor vessel, as specified in 10 CFR 50.82(a)(2).

Exemption from 10 CFR 140.11(a)(4) is requested in order to allow reduced offsite liability insurance coverage commensurate with the significantly reduced risks associated with the permanently defueled condition. OPPD has performed an analysis indicating that irradiated fuel decay for 530 days after shutdown provides sufficient time for operators to recover 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. FCS was shutdown on October 24, 2016, therefore, 530 days after shutdown will occur on April 7, 2018. The requested approval date of March 1, 2018, will enable OPPD adequate time before April 7, 2018 to arrange for the reduced offsite liability insurance coverage allowed by the exemption.

II. DETAILED DESCRIPTION

Pursuant to 10 CFR 140.8, "Specific exemptions," OPPD requests a permanent exemption from 10 CFR 140.11(a)(4) for FCS. 10 CFR 140.11(a)(4) requires licensees to have and maintain two levels of financial protection against off-site liability for each nuclear reactor which is licensed to operate, designed for the production of electrical energy, and has a rated capacity of 100,000 kilowatts electric (kWe) or more. The two levels of financial protection are as follows:

- Primary insurance coverage of \$450,000,000 from private sources; and,
- Secondary financial protection in the form of private liability insurance available under an industry retrospective rating plan.

The proposed exemption would reduce the required level of primary off-site liability insurance to \$100,000,000 and eliminate the requirement for FCS to carry secondary insurance coverage.

10 CFR 140.11(a)(4) reads as follows:

(a) Each licensee is required to have and maintain financial protection:

(4) In an amount equal to the sum of \$450,000,000 and the amount available as secondary financial protection (in the form of private liability insurance available under an industry retrospective rating plan providing for deferred premium charges equal to the pro rata share of the aggregate public liability claims and costs, excluding costs payment of which is not authorized by section 170o.(1)(D) of the Act, in excess of that covered by primary financial protection) for each nuclear reactor which is licensed to operate and which is designed for the production of electrical energy and has a rated capacity of 100,000 electrical kilowatts or more: Provided, however, that under such a plan for deferred premium charges for each nuclear reactor that is licensed to operate, no more than \$121,255,000 with respect to any nuclear incident (plus any surcharge assessed under subsection 170o.(1)(E) of the Act) and no more than \$18,963,000 per incident within one calendar year shall be charged. Except that, where a person is authorized to operate a combination of 2 or more nuclear reactors located at a single site, each of which has a rated capacity of 100,000 or more electrical kilowatts but not more than 300,000 electrical kilowatts with a combined rated capacity of not more than 1,300,000 electrical kilowatts, each such combination of reactors shall be considered to be a single nuclear reactor for the sole purpose of assessing the applicable financial protection required under this section.

III. DISCUSSION

The underlying purpose of 10 CFR 140.11(a)(4) is to require sufficient liability insurance to ensure adequate funding of any claims resulting from a potential nuclear incident or precautionary evacuation associated with an individual power reactor. The financial protection limits of 10 CFR 140.11 were established to require that licensees maintain sufficient insurance to cover the costs of a nuclear incident at an operating reactor.

This regulation does not take into consideration the reduced potential for, and consequences of, such nuclear incidents at permanently shutdown facilities. FCS is a single reactor site and the reactor is permanently shut down and defueled. The proposed exemption would allow a reduction in the level of offsite liability insurance coverage to a level that is commensurate with the permanently defueled status of FCS 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 spent fuel pool (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 offsite liability 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 140.1 1(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 offsite financial protection 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 offsite financial protection requirement to be reduced to \$100 million and not require secondary insurance once the spent fuel in the spent fuel pool 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 page 6, response to Question 4):

"Since the zirconium fire scenario would be possible for up to several years following shutdown, and since the consequences of such a fire could be severe in terms of offsite health consequences, property damage, and land contamination, the staff position is that full offsite liability coverage (both primary and secondary levels) must be retained for five years or until analysis has indicated that a zirconium fire is no longer possible. At that point, primary coverage would be reduced from \$200 million to \$100 million and participation in the secondary retrospective rating pool would no longer be required."

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.

IV. TECHNICAL EVALUATION

Section 14 of the FCS Updated Safety Analysis Report (USAR) described the design basis accident (DBA) and transient scenarios applicable to FCS 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 USAR involved failures or malfunctions of systems which could affect the reactor core.

However, as a result of the notification of permanent cessation of power operations submitted by OPPD pursuant to 10 CFR 50.82(a)(1), and the certification of permanent fuel removal from the reactor vessel, FCS is no longer authorized to operate the reactor or to place or retain fuel in the reactor vessel in accordance with 10 CFR 50.82(a)(2). Therefore, most of the DBA scenarios postulated in the USAR are no longer possible. The irradiated fuel will be stored in the

spent fuel pool (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) (Reference 9) and the updated Irradiated Fuel Management Plan (Reference 10).

Since the reactor is permanently defueled, the SFP and its supporting systems are only dedicated 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. SFP 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.

A. Accident Analysis Overview

Following termination of reactor operations at FCS 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.

OPPD's "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 FCS is presented below.

1. Consequences of a Postulated Accident

While spent fuel remains in the SFP, the only postulated accident that will remain applicable to FCS that could contribute to dose is the Fuel Handling Accident (FHA) in the Auxiliary Building, where the SFP is located. FCS maintains an analysis (Calculation FC08557, Fuel Handling Accident in the Spent Fuel Pool Site Boundary and Control Room Dose (Reference 11)) that has determined the Exclusion Area Boundary (EAB) dose due to a FHA occurring in the Auxiliary Building. The FHA analysis is performed using selective application of the Alternative Source Term (AST), the guidance in Regulatory Guide 1.183, Appendix B, and Total Effective Dose Equivalent (TEDE) dose criteria. The results of the analysis indicate that the EAB dose is within regulatory allowable limits for a FHA occurring in the Auxiliary Building within 10 days after shutdown.

The results of this analysis may be applied after November 13, 2016, the date that OPPD certified that all fuel has been permanently removed from the reactor vessel and placed in the SFP (Reference 2).

2. Consequences of Beyond Design Basis Events

With respect to beyond design basis events, FCS analyzed a partial drain down of the SFP water that would effectively impede any decay heat removal (adiabatic heatup). The analysis (Calculation FC08104, Maximum Cladding Temperature Analysis for Adiabatic Heat-up of Spent Fuel Assembly) compares the conditions for the hottest fuel assembly stored in the FCS SFP to a criterion proposed in SECY-99-168 (Reference 12) applicable to offsite emergency response for a unit in the decommissioning process. The analysis is included in Reference 3. This criterion considers the time for the hottest assembly to heat up from 30°C to 900°C adiabatically.

Based on the limiting fuel assembly decay heat and adiabatic heat up analysis, 530 days (1 year, 165 days) after permanent cessation of power operations, the time for the hottest fuel assembly to reach 900°C is 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 13), 900°C is an acceptable temperature to use for assessing the 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 heat up to occur, there is ample time to respond to any partial drain down event that might cause such an occurrence by restoring SFP 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.

c. Consequences of Other Analyzed Events

FCS 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 14) Supplement 1, Section 4.3.9, identifies that a SFP drain down event is a beyond design basis event. Although Calculation FC08104, Maximum Cladding Temperature Analysis for Adiabatic Heat-up of Spent Fuel Assembly, demonstrated a significant release of radioactive material from the spent fuel is not possible in the absence of water cooling after 530 days (1 year, 165 days) 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 FC08513, EAB Radiation Shine Dose 18 Months Post Shutdown with the SFP Drained. The analysis is included in Reference 3. It was determined that the gamma radiation dose rate at the EAB would be limited to small fractions of the US EPA Protective Action Guidelines (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 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.

Based on the data presented in Calculation FC08513, 530 days (1 year, 165 days) following permanent cessation of operations, the dose rate in the Control Room during an event involving a complete loss of SFP water will be below 2.32×10^{-3} mRem/hr, which is less than 15 mRem/hr.

V. PRECEDENTS

The following table provides examples of exemption requests to 10 CFR 140.11(a)(4) that were approved by the NRC Safety Evaluation Report (SER) indicated.

Previously Approved Exemptions to 10 CFR 140.11			
10 CFR 140.11	Facility	SER Dated	Comments
No Secondary Insurance	TMI Unit 2	7/29/94 Ref. 15	No Unit 2 fuel remaining on site.
\$100 million primary and no secondary insurance	Trojan	11/2/95 Ref. 16	Fuel stored in SFP for almost 3 years.
\$100 million primary and no secondary insurance	Connecticut Yankee	11/19/98 Ref. 17	Fuel stored in SFP for greater than 2 years.
\$100 million primary and no secondary insurance	Maine Yankee	1/7/99 Ref. 18	Fuel stored in SFP for about 2 years (shutdown for 2 1/2 years).
\$300 million primary and no secondary insurance	Millstone Unit 1	3/30/2004 Ref 19	Fuel stored in SFP greater than 5 years. *\$300 million is related to operating Units 2 and 3. Staff stated in SER that \$100 million would have been applicable for Unit 1 alone.
\$100 million primary and no secondary insurance	Kewanee	3/16/2015 Ref 20	Shutdown for about 22 months
\$100 million primary and no secondary insurance	Vermont Yankee	4/15/2016 Ref 21	Shutdown for about 16 months

VI. JUSTIFICATION FOR EXEMPTION

10 CFR 140.8 states that the Commission may, upon application of any interested person or upon its own initiative, grant such exemptions from the requirements of the regulations in this part as it determines are authorized by law and are otherwise in the public interest.

As discussed below, this exemption request satisfies the provisions of 10 CFR 140.8.

A. The exemption is authorized by law

10 CFR 140.8 allows the NRC to grant exemptions from the requirements of 10 CFR Part 140. The proposed exemption is consistent with the requirements of the Atomic Energy Act of 1954 as amended (Price-Anderson Act), which requires that power reactor licensees maintain some level of public liability financial protection. Exemptions granted to other licensees for insurance reductions of the same regulation being requested here by OPPD have been previously determined to be authorized by law and granted (see Section V of this attachment).

Additionally, as discussed in USNRC letter to Dominion Nuclear Connecticut, Inc. (Reference 19), post-shutdown insurance requirements for decommissioning nuclear power plants were addressed in a letter from the Executive Director for Operations to the Chairman of the Advisory Committee on Reactor Safeguards (ACRS) dated September 17, 2001. The staff and the ACRS agreed that onsite and offsite insurance coverage can be substantially reduced shortly after a facility permanently shuts down. The ACRS also accepted the staff's assessment that the primary insurance level can be reduced to \$100 million and that decommissioning licensees be released from participation in the secondary insurance pool. Therefore, the exemption is authorized by law.

B. The exemption is otherwise in the public interest

Approval of the exemption request would result in more efficient use of funds in the FCS decommissioning trust fund. The reduction in offsite financial protection from \$450 million to \$100 million and elimination of the requirement to participate in the secondary insurance pool would continue to require a level of financial protection commensurate with the underlying purpose of the rule while eliminating an unnecessary financial burden. Therefore, the proposed exemption is otherwise in the public interest.

VII. 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 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

Omaha Public Power District 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 exemption has 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 exemption would not increase the likelihood of the malfunction of any plant SSC.

When the exemption becomes 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 Protective Action Guidelines.

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

(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 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 140.11(a)(4).

VIII. CONCLUSION

Pursuant to the provisions of 10 CFR 140.8, OPPD is requesting a permanent exemption from 10 CFR 140.11(a)(4) for FCS. Based on the considerations discussed above, the requested exemption is authorized by law and otherwise in the public interest.

REFERENCES

1. Letter from OPPD (T. Burke) to USNRC (Document Control Desk), "Certification of Permanent Cessation of Power Operations," dated August 25, 2016 (LIC-16-0067) (ML16242A127)
2. Letter from OPPD (T. J. Burke) to USNRC (Document Control Desk), "Certification of Permanent Removal of Fuel from the Reactor Vessel," dated November 13, 2016 (LIC-16-0074) (ML16319A254)
3. Letter from OPPD (S. M. Marik) to USNRC (Document Control Desk), "Request for Exemptions from Portions of 10 CFR 50.47 and 10 CFR Part 50, Appendix E," Dated December 16, 2016 (LIC-16-0109) (ML16356A578)
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.
5. Staff Requirements Memo, "Re: SECY-96-256, Changes to Financial Protection Requirements for Permanently Shutdown Nuclear Power Reactors," dated January 28, 1997 (Accession Number 9702070060)
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
7. SECY-00-145, "Integrated Rulemaking Plan for Nuclear Power Plant Decommissioning," dated June 28, 2000.
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.
9. Letter from OPPD (M. J. Fisher) to USNRC (Document Control Desk), "Fort Calhoun Station, Unit No. 1, Post-Shutdown Decommissioning Activities Report," dated March 30, 2017 (LIC-17-0033) (ML17089A759)
10. Letter from OPPD (M. J. Fisher) to USNRC (Document Control Desk), "Fort Calhoun Station Irradiated Fuel Management Plan," Dated March 31, 2017 (LIC-17-0031) (ML17093A594)
11. FCS Calculation FC08557, Fuel Handling Accident in the Spent Fuel Pool Site Boundary and Control Room Dose, (Proprietary)
12. Commission Paper SECY-99-168, Improving Decommissioning Regulations for Nuclear Power Plants, dated June 30, 1999
13. NUREG-1738, "Technical Study of Spent Fuel Pool Accident Risk at Decommissioning Nuclear Power Plants," dated February 2001
14. NUREG-0586, "Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities," dated October 2002
15. Letter, USNRC to GPU Nuclear Corporation, "Exemption from the Requirements of 10 CFR 140.11(a)(4) for the Three Mile Island Nuclear Station, Unit 2 (TMI 2) (TAC NO M88362)," dated July 29, 1994
16. Letter, USNRC to Portland General Electric Company, "Exemption from the Requirements of Section 140.11 (a)(4) of Title 10 of the Code of Federal Regulations for the Trojan Nuclear Plant (TAC No. M92328)," dated November 2, 1995

17. Letter, USNRC to Connecticut Yankee Atomic Power Company, "Exemption from Financial Protection Requirement Limits of 10 CFR 50.54(w) and 10 CFR 140.11 (TAC No. M99775)," dated November 19, 1998
18. Letter, USNRC to Maine Yankee Atomic Power Company, "Exemption from Financial Protection Requirement Limits of 10 CFR 50.54(w) and 10 CFR 140.11 (TAC Nos. MA0659 and MA0660)," dated January 7, 1999
19. Letter, USNRC to Dominion Nuclear Connecticut, Inc., "Millstone Power Station, Unit 1 - Exemption from Certain Requirements of 10 CFR Part 140 (TAC NO. MA6658)," dated March 30, 2004. Also see 69 FR 17717, dated April 5, 2014.
20. Letter USNRC to Dominion Energy Kewaunee, Inc., "Kewaunee Power Station - Exemption From the Requirements of Title 10 of the Code of Federal Regulations, Part 140, Section 140.11 (A)(4) Concerning Primary and Secondary Liability Insurance (TAC NO. MF3916)," dated March 16, 2015 (ML15026A522 and ML15026A544)
21. Letter from USNRC to Entergy Nuclear Operations, Inc., "Vermont Yankee Nuclear Power Station – Exemption From the Requirements of Title 10 of the Code of Federal Regulations, Part 140, Section 140.11(A)(4), Concerning Primary and Secondary Liability Insurance (CAC NO. MF3980)," dated April 15, 2016 (ML16012A144 and ML16012A157)
22. Environmental Protection Agency, "Protective Action Guides and Planning Guidance for Radiological Incidents," EPA-400/R-17/001, dated January 2017 (EPA PAG Manual)
23. Letter from OPPD (M. J. Fisher) to USNRC (Document Control Desk), "Response to Request for Additional Information, Fort Calhoun Station, Unit No.1 - Final Request for Additional Information Concerning Exemption from the Requirements of 10 CFR 50.47 and Appendix E (CAC MF9067)," Dated April 14, 2017 (LIC-17-0037) (ML17104A191)