

MAINE YANKEE
321 Old Ferry Road, Wiscasset, Maine 04578

September 1, 2015
OMY-15-042
Re: 10 CFR 72.4 and 10 CFR 72.7

ATTN: Document Control Desk,
Director, Division of Spent Fuel Management
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001

Maine Yankee Atomic Power Company
Maine Yankee Independent Spent Fuel Storage Installation
NRC License Nos. DPR-36 and SFGL-14 (NRC Docket Nos. 50-309 and 72-30)

Subject: Request for Exemption from Certain Requirements of 10 CFR 72.212 and
10 CFR 72.214 for the Maine Yankee Independent Spent Fuel Storage Installation

Pursuant to 10 CFR 72.7, "Specific Exemptions," Maine Yankee Atomic Power Company (Maine Yankee) requests an exemption from the requirements of 10 CFR 72.212(a)(2), 10 CFR 72.212(b)(3), 10 CFR 72.212(b)(5)(i), 10 CFR 72.212(b)(7), 10 CFR 72.212(b)(11), and 10 CFR 72.214 for the Maine Yankee Independent Spent Fuel Storage Installation (ISFSI). Specifically, Maine Yankee is requesting an exemption regarding the method of compliance defined in Amendment 5 of the NAC-UMS[®] Certificate of Compliance (CoC) No. 72-1015, Appendix A, "Technical Specifications for the NAC-UMS[®] System," Technical Specification (TS) A 5.4, "Surveillance After an Off-Normal, Accident, or Natural Phenomena Event." The exemption request is provided in Attachment 1.

The exemption request has been discussed with NAC, the Certificate of Compliance Holder for the NAC-UMS[®] System, and a copy of the exemption request will be provided to them as part of the distribution of this letter.

As discussed in a teleconference with the NRC on August 13, 2015, Maine Yankee requests approval of this exemption request by December 31, 2015. This requested date would permit Maine Yankee to utilize the Surveillance Requirement, Conditions, Required Actions and associated Completion Times of NAC-UMS[®] TS A 3.1.6 to comply with the requirement of NAC-UMS[®] TS A 5.4 during the upcoming winter and future winters.

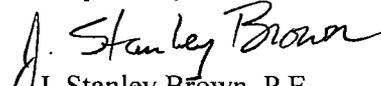
The regulatory commitment made in Attachment 1 of this document is defined below.

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NM5526

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If you have any questions regarding this submittal, please do not hesitate to contact me at
(207) 882-1303.

Respectfully,


J. Stanley Brown, P.E.
ISFSI Manager

Commitment:

1. Following the granting of the exemption, Maine Yankee will continue to proactively manage snow to prevent conditions that could result in inoperability of the Concrete Cask Heat Removal Systems for the NAC-UMS[®] Systems.

Attachment:

1. Maine Yankee Request for Exemption from Certain Requirements of 10 CFR 72.212 and 10 CFR 72.214

cc: D. Dorman, NRC Region I Administrator
M. S. Ferdas, Chief, Decommissioning Branch, NRC, Region I
J. Goshen, NRC Project Manager
P. J. Dostie, SNSI, State of Maine
J. Hyland, State of Maine
W. Fowler, NAC
E. Shewbridge, NAC
G. Carver, NAC

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1.0 Request for Exemption

Pursuant to 10 CFR 72.7, "Specific Exemptions," Maine Yankee Atomic Power Company (Maine Yankee) requests an exemption from certain requirements of 10 CFR 72.212(a)(2), 10 CFR 72.212(b)(3), 10 CFR 72.212(b)(5)(i), 10 CFR 72.212(b)(7), 10 CFR 72.212(b)(11), and 10 CFR 72.214 for the Maine Yankee Independent Spent Fuel Storage Installation (ISFSI). Specifically, Maine Yankee is requesting an exemption regarding the method of compliance defined in Amendment 5 of the NAC-UMS[®] Certificate of Compliance (CoC) No. 72-1015, Appendix A, "Technical Specifications for the NAC-UMS[®] System," Technical Specification (TS) A 5.4, "Surveillance After an Off-Normal, Accident, or Natural Phenomena Event."

Amendment 5 of the NAC-UMS[®] CoC No. 72-1015, Appendix A, NAC-UMS[®] TS A 5.4 states:

"A Response Surveillance is required following off-normal, accident or natural phenomena events. The NAC-UMS[®] SYSTEMs in use at an ISFSI shall be inspected within 4 hours after the occurrence of an off-normal, accident or natural phenomena event in the area of the ISFSI. This inspection must specifically verify that all the CONCRETE CASK inlets and outlets are not blocked or obstructed. At least one-half of the inlets and outlets on each CONCRETE CASK must be cleared of blockage or debris within 24 hours to restore air circulation."

Specifically, Maine Yankee is requesting the ability to utilize the Surveillance Requirement, Conditions, Required Actions, and Completion Times defined in NAC-UMS[®] TS A 3.1.6 to comply with NAC-UMS[®] TS A 5.4. If granted, Maine Yankee would implement NAC-UMS[®] TS A 5.4 as follows:

"A Response Surveillance [SR 3.1.6.1] is required following off-normal, accident or natural phenomena events. The NAC-UMS[®] SYSTEMs in use at an ISFSI shall be inspected **[in accordance with SR 3.1.6.1]** within 4 hours after the occurrence of an off-normal, accident or natural phenomena event in the area of the ISFSI **[to confirm operability of the CONCRETE CASK Heat Removal System for each NAC-UMS[®] System]**. ~~This inspection must specifically verify that all the CONCRETE CASK inlets and outlets are not blocked or obstructed. At least one-half of the inlets and outlets on each CONCRETE CASK must be cleared of blockage or debris within 24 hours to restore air circulation.~~ **[If a CONCRETE CASK Heat Removal System(s) for one or more NAC-UMS[®] Systems is determined to be inoperable, Condition A of TS A 3.1.6 shall be entered and the Required Actions and associated Completion Times met.]**"

2.0 Background

10 CFR 72.210 issues a general license to store spent fuel in an ISFSI at reactor sites as long as the 10 CFR 50 reactor license remains in effect. 10 CFR 72.212(a)(2) limits the storage of spent fuel to casks approved in 10 CFR 72, Subpart K. 10 CFR 72.212(b)(11) states that the casks "are approved for storage under the conditions specified in their Certificates of Compliance."

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The Nuclear Regulatory Commission (NRC) approved the use of the NAC-UMS[®] System by issuing Certificate of Compliance (CoC) No. 1015, NRC Docket No. 72-1015), effective November 20, 2000. This constituted NRC approval and the conditions for use in storing spent fuel under the general licensing provisions of 10 CFR 72.210.

Maine Yankee is a 10 CFR 72 general licensee that utilizes the NAC-UMS[®] System in accordance with the requirements of the NAC-UMS[®] System CoC No. 1015. On July 12, 2011, Maine Yankee notified the NRC that the 60 NAC-UMS[®] canisters storing spent nuclear fuel at the Maine Yankee ISFSI would be registered to Amendment No. 5 of NAC-UMS[®] CoC No. 1015.

The regulations require Maine Yankee to comply with the terms and conditions of NAC-UMS[®] CoC No. 1015. NAC-UMS[®] CoC No. 1015, Amendment 5 requires the general licensee to meet the requirements of the Technical Specifications (TS) for the NAC-UMS[®] System (Appendix A to the CoC). Thus, the regulations require Maine Yankee to comply with the TS for the NAC-UMS[®] System.

The NAC-UMS[®] TS Limiting Condition for Operation (LCO) 3.1.6, "Concrete Cask Heat Removal System," requires the Concrete Cask Heat Removal System for each NAC-UMS[®] System to be operable. The applicability of this TS is during storage operations. Storage operations is defined in TS A 1.1 to include all licensed activities that are performed at the ISFSI, while an NAC-UMS[®] System containing spent fuel is located on the storage pad within the ISFSI perimeter. For the Maine Yankee ISFSI, this equates to an applicability of "At all times," because there are 60 NAC-UMS[®] Systems that are utilized to store spent fuel on the ISFSI storage pad.

Operability of the Concrete Cask Heat Removal System for each NAC-UMS[®] System is established by performing Surveillance Requirement (SR) 3.1.6.1 at the required frequency. SR 3.1.6.1 provides the option to establish operability of the Concrete Cask Heat Removal System for each NAC-UMS[®] System by either verifying that the temperature differential meets the acceptance criteria via temperature monitoring or performing visual verifications of the inlet and outlet screens to ensure that they are not obstructed as defined in the TS Bases. This is consistent with the definition of operability provided in NAC-UMS[®] TS A 1.1.

If SR 3.1.6.1 is not met for a Concrete Cask Heat Removal System for one or more of the NAC-UMS[®] Systems, Condition A of TS A 3.1.6 is entered. Required Actions A.1, A.2, and A.3 require Maine Yankee to: 1. Immediately ensure that adequate heat removal exists to prevent exceeding short-term temperature limits; 2. Verify the fuel loading meets the CoC approved contents requirements within 7 days; and 3. Restore the Concrete Cask Heat Removal System for the affected NAC-UMS[®] System to an operable status within 25 days. If any of the Required Actions are not within their associated Completion Times, Condition B of TS A 3.1.6 is required to be entered.

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In addition TS A 5.4, “Surveillance After an Off-Normal, Accident, or Natural Phenomena Event,” provides additional requirements regarding the Concrete Cask Heat Removal System for each NAC-UMS[®] System. It requires in part:

“A Response Surveillance is required following off-normal, accident or natural phenomena events. The NAC-UMS[®] SYSTEMs in use at an ISFSI shall be inspected within 4 hours after the occurrence of an off-normal, accident or natural phenomena event in the area of the ISFSI. This inspection must specifically verify that all the CONCRETE CASK inlets and outlets are not blocked or obstructed. At least one-half of the inlets and outlets on each CONCRETE CASK must be cleared of blockage or debris within 24 hours to restore air circulation.”

The requirements of NAC-UMS[®] TS A 5.4 are not consistent with the requirements of NAC-UMS[®] TS A 3.1.6. These differences include:

- NAC-UMS[®] TS A 5.4 is only applicable after the occurrence of an off-normal, accident or natural phenomena event. While NAC-UMS[®] TS A 3.1.6 is applicable during storage operations (i.e., at all times which includes the time periods when off-normal, accident, and natural phenomena events occur). This inconsistency results in unnecessary complications (including the potential for different methods of implementation of the requirements) regarding the literal compliance with these TSs.
- TS A 5.4 requires the performance of a response surveillance following off-normal, accident or natural phenomena events in the area of the ISFSI by performing an inspection of the affected NAC-UMS[®] System within 4 hours after the occurrence of the event. This inspection is required to specifically verify that all the Concrete Cask inlets and outlets are not blocked or obstructed.
 - Literal compliance with TS A 5.4 would not permit the temperature monitoring system to be utilized to determine if there is blockage, because this is a monitoring activity not an inspection activity.
 - In addition, the phrase “after the occurrence” is not defined. For events that occur at a precise period of time (e.g., loss of instrumentation, an earthquake or tornado) it is readily apparent when “after the occurrence” occurs. In the case of an event that leads to blockage of greater than one-half of the inlets or outlets (snow storm), “after the occurrence” is subjective.

TS A 3.1.6 permits the use of temperature monitoring or visual verification in accordance with SR 3.1.6.1 to establish that the Concrete Cask Heat Removal System for each NAC-UMS[®] System is operable. The frequency for conducting the surveillance is at least once every 24 hours. This surveillance requirement has to be met when TS A 3.1.6 is applicable (i.e., during storage operations).

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- TS A 5.4 permits 24 hours to clear the blockage or debris from at least one-half of the inlets and outlets on each affected Concrete Cask (NAC-UMS[®] System).

In the event visual verifications of the inlets and outlets screens are utilized to meet SR 3.1.6.1 to establish operability and the air inlet or outlet screens are determined to be obstructed as defined in the Bases for SR 3.1.6.1 in Appendix 12C of the NAC-UMS[®] Final Safety Analysis Report (FSAR), then the affected Concrete Cask Heat Removal System(s) is required to be declared inoperable. Condition A of TS A 3.1.6 would be entered. Required Actions A.1, A.2, and A.3 require Maine Yankee to: 1. Immediately ensure that adequate heat removal exists to prevent exceeding short-term temperature limits; 2. Verify the fuel loading meets the CoC approved contents requirements within 7 days; and 3. Restore the Concrete Cask Heat Removal System for the affected NAC-UMS[®] System to an operable status within 25 days. If any of the Required Actions are not within their associated Completion Times, Condition B of TS A 3.1.6 is required to be entered.

Besides the differences in the time frames defined in the two TS, the number of inlet and outlet screens that must be cleared is also different. TS A 5.4 also only requires blockage be cleared from at least one-half of the inlets and outlets, while blockage from at least three inlets and outlets would have to be cleared to comply the Bases of SR 3.1.6.1.

3.0 Technical Justification

The purpose of both NAC-UMS[®] TS A 3.1.6 and NAC-UMS[®] TS A 5.4 is to ensure that the Concrete Cask Heat Removal System for each NAC-UMS[®] System in use remains operable. However, the methodology defined in the two TSs are inconsistent. Maine Yankee is requesting the ability to utilize the Surveillance Requirement, Conditions, Required Actions, and Completion Times defined in NAC-UMS[®] TS A 3.1.6 to comply with NAC-UMS[®] TS A 5.4. If granted, Maine Yankee would implement NAC-UMS[®] TS A 5.4 as follows:

“A Response Surveillance [SR 3.1.6.1] is required following off-normal, accident or natural phenomena events. The NAC-UMS[®] SYSTEMs in use at an ISFSI shall be inspected [in accordance with SR 3.1.6.1] within 4 hours after the occurrence of an off-normal, accident or natural phenomena event in the area of the ISFSI [to confirm operability of the CONCRETE CASK Heat Removal System for each NAC-UMS[®] System]. This inspection must specifically verify that all the CONCRETE CASK inlets and outlets are not blocked or obstructed. At least one half of the inlets and outlets on each CONCRETE CASK must be cleared of blockage or debris within 24 hours to restore air circulation. [If a CONCRETE CASK Heat Removal System(s) for one or more NAC-UMS[®] Systems is determined to be inoperable, Condition A of TS A 3.1.6 shall be entered and the Required Actions and associated Completion Times met.]”

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3.1 Utilization of SR 3.1.6.1

SR 3.1.6.1 permits temperature monitoring or visual inspection of the inlet and outlet screens to be utilized to establish the operability of the Concrete Cask Heat Removal System for each NAC-UMS[®] System to comply with LCO 3.1.6. The same method should also apply to compliance with the requirement of NAC-UMS[®] TS A 5.4 to perform a response surveillance within 4 hours after the occurrence of an off-normal, accident, or natural phenomena.

The Bases for NAC-UMS[®] TS A 3.1.6, SR 3.1.6.1 establishes that either visual inspection of the inlets and outlets screens or temperature monitoring will establish that adequate air flow past the canister is occurring and heat transfer is taking place. It states:

“Visual observation that all four air inlet and outlet screens are unobstructed and intact ensures that air flow past the CANISTER is occurring and heat transfer is taking place... Alternatively, based on the analyses, if the air temperature rise is less than the limits stated in the SR, adequate air flow and, therefore, adequate heat transfer is occurring to provide assurance of long-term fuel cladding integrity.” [Note: Each Vertical Concrete Cask has four inlet screens and four outlet screens (i.e., four sets of inlet and outlet screens or a total of eight inlet and outlet screens).]

This is consistent with the definition of operability provided in NAC-UMS[®] TS A 1.1:

“An OPERABLE CONCRETE CASK heat removal system transfers sufficient heat away from the fuel assemblies such that the fuel cladding and CANISTER component temperature do not exceed applicable limits. The CONCRETE CASK heat removal system is considered OPERABLE if the difference between the ISFSI ambient temperature and the average outlet air temperature is $\leq 102^{\circ}\text{F}$ for the PWR canister... or if all four air inlet and outlet screens are visually verified to be unobstructed...” [Note: Each Vertical Concrete Cask has four inlet screens and four outlet screens (i.e., four sets of inlet and outlet screens or a total of eight inlet and outlet screens).]

The following statements from the NAC-UMS[®] FSAR support the use of either method defined in SR 3.1.6.1 to establish operability to comply with NAC-UMS[®] TS A 3.1.6 or NAC-UMS[®] TS A 5.4:

Section	FSAR Statement
1.2.1.5.11	The Technical Specification requires either daily temperature measurements or daily visual inspection for inlet and outlet blockage to ensure the cask remains operable.

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Section	FSAR Statement
9.2.1	...the continuing operability of the concrete cask is verified on a 24-hour frequency by completion of SR 3.1.6.1, which allows verification by visual inspection of the inlet and outlet vents for blockage, or verification by measurement of the air temperature difference between ambient and outlet average. If the operable status of the concrete cask is reduced, the concrete cask will be returned to an operable status or placed in a safe condition as specified in the LCO.
11.1.2.2	This event [Blockage of Half of the Air Inlets] would be detected by the daily concrete cask operability inspection, which is performed either by outlet air temperature measurements or by visual inspection of the inlet and outlet screens for blockage and integrity.
11.2.8.3	Following the natural phenomenon event, perform the required Response Surveillance in accordance with Section A 5.4 of the Technical Specifications. Corrective actions shall be taken in accordance with the surveillance requirements to return the affected system to a safe operating condition, as applicable to the affected component(s). Concrete casks shall be restored to operable status in accordance with LCO A 3.1.6 of the Technical Specifications. Optional temperature-monitoring equipment, if used, should be verified as operable, or repaired and returned to service.
11.2.9.3	Following the natural phenomenon event, perform the required Response Surveillance in accordance with Section A 5.4 of the Technical Specifications. Corrective actions shall be taken in accordance with the surveillance requirements to return the affected system to a safe operating condition, as applicable to the affected component(s). Concrete casks shall be restored to operable status in accordance with LCO A 3.1.6 of the Technical Specifications. Optional temperature-monitoring equipment, if used, should be verified as operable, or repaired and returned to service.
11.2.11.4	Following the natural phenomenon event, perform the required Response Surveillance in accordance with Section A 5.4 of the Technical Specifications. Corrective actions shall be taken in accordance with the surveillance requirements to return the affected system to a safe operating condition, as applicable to the affected component(s). Concrete casks shall be restored to operable status in accordance with LCO A 3.1.6 of the Technical Specifications. Optional temperature-monitoring equipment, if used, should be verified as operable, or repaired and returned to service.

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Section	FSAR Statement
11.2.13.4	<p>Following the natural phenomenon event, perform the required Response Surveillance in accordance with Section A 5.4 of the Technical Specifications. Corrective actions shall be taken in accordance with the surveillance requirements to return the affected system to a safe operating condition, as applicable to the affected component(s).</p> <p>Following any event that could cause blockage of the concrete cask inlets and outlets, concrete casks shall be restored to operable status in accordance with LCO A 3.1.6 of the Technical Specifications. Optional temperature-monitoring equipment, if used, should be verified as operable, or repaired and returned to service.</p>

3.2 Utilization of Conditions, Required Actions, and Completion Times of TS A 3.1.6

TS A 5.4 permits 24 hours to clear the blockage or debris from at least one-half of the inlets and outlets on each Concrete Cask. This requirement causes confusion (including the potential for different implementation of the requirements), because it is different than Required Actions A.1 and A.3 of TS A 3.1.6 and their associated Completion Times. They require Maine Yankee to immediately ensure that no short-term temperature limits will be exceeded and restore the Concrete Cask Heat Removal System for the affected NAC-UMS[®] System to an operable status within 25 days.

The 24-hour time frame identified in TS A 5.4 may only be utilized if the operability of the Concrete Cask Heat Removal Systems for the NAC-UMS[®] Systems is established by utilizing the temperature monitoring system as defined in SR 3.1.6.1. If Maine Yankee is relying on visual verification of the inlet and outlet screens to establish operability of the Concrete Cask Heat Removal System for each NAC-UMS[®] System in accordance with SR 3.1.6.1, and the SR is not met, then Condition A of TS A 3.1.6 must be entered. Required Actions A.1, A.2, and A.3 require Maine Yankee to: 1. Immediately ensure that adequate heat removal exists to prevent exceeding short-term temperature limits; 2. Verify the fuel loading meets the CoC approved contents requirements with 7 days; and 3. Restore the Concrete Cask Heat Removal System for the affected NAC-UMS[®] System to an operable status within 25 days. If any of the Required Actions are not within their associated Completion Times, Condition B of TS A 3.1.6 is required to be entered.

3.3 Other Considerations

Section 11.1.2 of the NAC-UMS[®] FSAR provides an evaluation of the NAC-UMS[®] storage cask for the steady state effects of a blockage of one-half of the air inlets at the normal ambient temperature (76°F). Section 11.1.2 of the NAC-UMS[®] FSAR concludes that the component temperatures are within the allowable temperature range with one-half of the inlets blocked.

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Currently, Maine Yankee actively manages the accumulation of snow on the ISFSI pad to ensure that the inlet screens for the concrete casks are not blocked to prevent the occurrence of an off-normal event and entry into TS A 5.4. Blockage of the outlet screens by snow would be unusual. Following the granting of the requested exemption, Maine Yankee will continue to ensure that the Concrete Cask Heat Removal System for each NAC-UMS[®] System remains operable by complying with the requirements of TS A 3.1.6. Maine Yankee can more accurately comply with operability assessments “after the occurrence” of the event using temperature monitoring than the more subjective visual verification.

Chapter 11 of the NAC-UMS[®] FSAR includes analysis for off-normal events, accidents, and natural phenomenon events. The natural phenomenon events analyzed in Chapter 11 of the NAC-UMS[®] FSAR are severe ambient temperature conditions (Section 11.1.1), exceedance of maximum anticipated heat load (Section 11.2.7), earthquake (Section 11.2.8), flood (Section 11.2.9), lightning strike (Section 11.2.10), and tornado and tornado driven missiles (Section 11.2.11). In addition, while a snow storm is not specifically analyzed as a natural phenomenon event in Section 11 of the NAC-UMS[®] FSAR, it can lead to an off-normal event involving blockage of greater than one-half of the inlet screens, as defined in Section 11.1.2 of the NAC-UMS[®] FSAR. A snow storm can result in accumulation in front of and even into the inlet vents, and can have the appearance of “blockage,” when using an inspection process. However, based on experience, Maine Yankee does not expect blockage due to snow to affect the operability of the Concrete Cask Heat Removal System for a NAC-UMS[®] System, because the differential temperature is expected to remain well below the limit defined in TS SR 3.1.6.1. Maine Yankee clears snow proactively to preclude: 1) entry into TS A 5.4; and 2) gradual ice formation by freeze-thaw cycles acting on snow accumulation that could obstruct the inlets and outlets screens such that operability of the Concrete Cask Heat Removal System for a NAC-UMS[®] System may be challenged.

Following the granting of the exemption, Maine Yankee will continue to proactively manage snow to prevent conditions that could result in inoperability of the Concrete Cask Heat Removal Systems for the NAC-UMS[®] Systems. The exemption will permit Maine Yankee the flexibility to adapt its snow management methodology to respond to actual conditions affecting the Concrete Cask Heat Removal Systems and not specifically in response to subjective criteria with indeterminate starting times.

4.0 Applicable Regulations

The specific requirements for granting exemptions to 10 CFR Part 72 licensing requirements are set forth in 10 CFR 72.7, “Specific exemptions,” which states:

“The Commission may, upon application by 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 will not endanger life or property or the common defense and security and are otherwise in the public interest.”

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5.0 Exemption Request Considerations

Maine Yankee has reviewed 10 CFR 72 and determined that an exemption to certain requirements of 10 CFR 72.212(a)(2), 10 CFR 72.212(b)(3), 10 CFR 72.212(b)(5)(i), 10 CFR 72.212(b)(7), 10 CFR 72.212(b)(11), and 10 CFR 72.214 are necessary to permit the Maine Yankee ISFSI to utilize the Surveillance Requirement, Conditions, Required Actions, and Completion Times defined in NAC-UMS[®] TS A 3.1.6 to comply with the requirement of NAC-UMS[®] TS A 5.4.

5.1 Authorized by Law

10 CFR 72.7 allows the NRC to grant exemptions from the requirements of 10 CFR 72. Granting of the proposed exemptions will not result in a violation of the Atomic Energy Act of 1954, as amended, or the Commission's regulations. Therefore, the exemptions would be authorized by law.

5.2 No Undue Risk to Public Health and Safety

Chapter 11 of the NAC-UMS[®] FSAR provides analyses of loss of instrumentation, blockage of half of the air inlets, full blockage of air inlets and outlets, and various natural phenomena events. No new accident precursors are created by utilizing the Surveillance Requirement, Conditions, Required Actions, and Completion Times defined in NAC-UMS[®] TS A 3.1.6 to comply with NAC-UMS[®] TS A 5.4. Thus, the probability of postulated accidents is not increased. Also, based on the above, the consequences of postulated accidents are not increased. No changes are being made in the types or amounts of effluents that may be released offsite. There is no significant increase in occupational or public radiation exposure. Therefore, there is no undue risk to public health and safety.

5.3 Consistent with the Common Defense and Security

The Maine Yankee ISFSI will continue to be managed in accordance with the Maine Yankee ISFSI Physical Security Plan, and the outstanding NRC Orders and Interim Compensatory Measures. The proposed exemptions will not alter the scope of the licensee's security program. Therefore, the common defense and security is not impacted by this exemption.

5.4 Special Circumstances

While 10 CFR 72.7 does not specify a presentation of "special circumstances" similar to those required for 10 CFR 50 exemptions, Maine Yankee's exemption request can be elucidated by using three of the special circumstances identified in 10 CFR 50.12. The applicable special circumstances are discussed below:

- 5.4.1 10 CFR 50.12(a)(2)(i) - Application of the regulation in the particular circumstances conflicts with other rules or requirements of the Commission

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Maine Yankee must comply with the terms and conditions of the NAC-UMS[®] CoC No. 1015, including the TS. NAC-UMS[®] TS A 1.1, Definition of Operability and NAC-UMS[®] TS SR 3.1.6.1 both defines that the Concrete Cask Heat Removal System for each NAC-UMS[®] System can be determined to be operable by utilizing temperature monitoring or visual verifications of the inlet and outlet screens. However, literal compliance with NAC-UMS[®] TS A 5.4 only permits inspections of the inlet and outlet vents to be performed to verify operability. In addition, the time frame permitted by TS A 5.4 for clearing of blockage or obstructions is not consistent with the requirements of TS A 3.1.6. Permitting the Surveillance Requirement, Conditions, Required Actions, and associated Completion Times of NAC-UMS[®] TS A 3.1.6 to comply with NAC-UMS[®] TS A 5.4 would resolve these inconsistencies.

5.4.2 10 CFR 50.12(a)(2)(ii) - 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.

The underlying purpose of 10 CFR 72.212 is to allow reactor licensees to utilize dry fuel storage casks that have previously been found to be safe and appropriately analyzed for use by the cask designer, the cask user, and the NRC. The intent of NAC-UMS[®] TS A 3.1.6 and A 5.4 is to ensure that the Concrete Cask Heat Removal System for each NAC-UMS[®] System remains operable. The definition of operability provided in NAC-UMS[®] TS A 1.1 defines that the Concrete Cask Heat Removal System for each NAC-UMS[®] System is considered operable if the difference between the ISFSI ambient temperature and the average outlet air temperature is $\leq 102^{\circ}\text{F}$ for the PWR canister or if all air inlet and outlet screens are visually verified to be unobstructed. The Bases for NAC-UMS[®] TS A 3.1.6, SR 3.1.6.1 establishes that either visual inspection of the inlets and outlets screens or temperature monitoring will establish that adequate air flow past the canister is occurring and heat transfer is taking place.

5.4.3 10 CFR 50.12(a)(2)(iii) - Compliance would result in undue hardship or other costs that are significantly in excess of those contemplated when the regulation was adopted, or those incurred by others similarly situated.

Currently, Maine Yankee proactively engages in the removal of snow that could block the inlet screens for the NAC-UMS[®] Systems to avoid having the effective area of the inlet screens for any single NAC-UMS[®] System to be blocked by greater than 50% and preclude ice formations that could block the inlet screens. [Note: Snow blockage of the outlet screens would be unusual.] As a result, Maine Yankee often puts individuals in harm's way during blizzards and slippery winter conditions to ensure compliance with NAC-UMS[®] TS A 5.4 due to the inability to utilize the temperature monitoring system to comply with NAC-UMS[®] TS A 5.4. Additionally, verification that the inlet and outlet screens are free of blockage during a snowstorm is a difficult and subjective process which does not provide the level of demonstrated, documented acceptability that the temperature differential readings provide. This fact and operational flexibility is the reason that Maine Yankee installed and maintains a temperature monitoring

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system. The exemption would give Maine Yankee the operational flexibility during dynamic environmental conditions.

The additional operational flexibility would allow Maine Yankee to maintain doses to workers As Low As Reasonably Achievable (ALARA), because the frequency for clearing the vents would be reduced, and the clearing of the vents would be conducted in weather conditions that would improve efficiency.

6.0 Environmental Consideration

The proposed exemption does not increase the probability or consequences of accidents, no changes would be made to the types of effluents released offsite, and there would be no increase in occupational or public radiation exposure. Therefore, there are no significant radiological environmental impacts associated with the proposed action. Additionally the proposed action would not involve any construction or other ground disturbing activities, would not change the footprint of the existing ISFSI, and would have no other significant non-radiological impacts. The ISFSI is located on previously disturbed land, thus, the proposed exemption does not have the potential to create any significant impact on aquatic or terrestrial habitat in the vicinity of the ISFSI, or to threatened, endangered, or protected species. In addition, the proposed exemption does not have the potential to cause effects on historic or cultural properties, assuming such properties are present at the site of the Maine Yankee ISFSI.

The proposed exemption would meet 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 inspection or surveillance 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.

7.0 Conclusion

Maine Yankee has reviewed 10 CFR 72 and determined that an exemption to certain requirements of 10 CFR 72.212(a)(2), 10 CFR 72.212(b)(3), 10 CFR 72.212(b)(5)(i), 10 CFR 72.212(b)(7), 10 CFR 72.212(b)(11), and 10 CFR 72.214 is necessary to permit the Maine Yankee ISFSI to effectively utilize the Surveillance Requirement, Conditions, Required Actions and associated Completion Times of NAC-UMS[®] TS A 3.1.6 to comply with the requirement of NAC-UMS[®] TS A 5.4.

Such an exemption meets the specific exemption requirements of 10 CFR 72.7. The requested exemption is authorized by law, will not endanger life or property, and is consistent with the common defense and security. Special circumstances as defined in 10 CFR 50.12(a)(2)(i),

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10 CFR 50.12(a)(2)(ii) and (iii) would be present. In addition, the exemption request would meet the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(25).

Maine Yankee requests approval of this exemption request by December 31, 2015. This requested date would permit Maine Yankee to utilize the Surveillance Requirement, Conditions, Required Actions and associated Completion Times of NAC-UMS[®] TS A 3.1.6 to comply with the requirement of NAC-UMS[®] TS A 5.4 during the upcoming winter and future winters.

8.0 Precedent

No previous examples of an NRC-approved exemption request that dealt with a similar issue could be found. However, on July 14, 2010 (Reference 6), the NRC granted Maine Yankee an exemption from certain sections of 10 CFR 72.212 and 10 CFR 72.214 regarding the NAC-UMS[®] CoC and its Technical Specifications that establish that this type of exemption request is not a novel approach.

In addition, the Technical Specifications for the following 10 CFR 72 approved storage systems rely on the Technical Specifications for the Concrete Cask Heat Removal System to maintain operability during and following an off-normal, accident, or natural phenomenon event, because they do not possess a Technical Specification similar to NAC-UMS[®] TS A 5.4:

1. Appendix A of Certificate of Compliance No. 1031, Technical Specifications and Design Features for the Magnastor System, Amendment No. 4.
2. Appendix A of Certificate of Compliance No. 1040, Technical Specifications for the Hi-Storm UMAX Canister Storage System, Amendment No. 0.
3. Appendix A of Certificate of Compliance No. 1014, Technical Specifications for the Hi-Storm 100 Cask System, Amendment No. 8.
4. Appendix A of Certificate of Compliance No. 1032, Technical Specifications for the Hi-Storm FW MPC Storage System, Amendment No. 1.

9.0 References

1. Certificate of Compliance (CoC) for the NAC International (NAC) UMS System, U.S. Nuclear Regulatory Commission, dated November 20, 2000.
2. Amendment 5 of NAC-UMS[®] Certificate of Compliance No. 1015, including Appendix A, "Technical Specifications for the NAC-UMS[®] System."
3. NAC-UMS[®] FSAR, Chapter 11, "Accident Analyses," and Appendix 12C, "Technical Specification Bases for the NAC-UMS[®] System."

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4. Letter from J. Connell (Maine Yankee) to Document Control Desk (NRC), Maine Yankee Atomic Power Company Adoption of NAC-UMS[®] System, Amendment 5 Certificate of Compliance and Canister Registration, dated July 12, 2011.
5. NRC Safety Evaluation Report, Docket No. 72-1015, NAC-UMS[®] Storage System, Certificate of Compliance No. 1015, Amendment No. 5, dated January 12, 2009.
6. Letter from J. Goshen (NRC) to J. Connell (Maine Yankee), Maine Yankee Independent Spent Fuel Storage Installation Exemption from 10 CFR 72.212 and 72.214 (TAC No. 24420), dated July 14, 2010.