

February 13, 2003

Thomas L. Williamson
Director, Nuclear Safety and Regulatory Affairs
Maine Yankee Atomic Power Company
321 Old Ferry Road
Wiscasset, ME 04578-4922

SUBJECT: EXEMPTION FROM 10 CFR 72.212 AND 72.214 FOR DRY SPENT FUEL STORAGE ACTIVITIES

Dear Mr. Williamson:

This is in response to your letter dated November 7, 2002, as supplemented December 19, 2002, requesting an exemption from 10 CFR 72.212(a)(2), 72.212(b)(2)(i), 72.212(b)(7) and 10 CFR 72.214, pursuant to 10 CFR 72.7. In your letter you requested an exemption from the requirements in Certificate of Compliance (CoC) No. 1015, Appendix A, Limiting Conditions for Operation (LCO) Items 3.1.1.1, 3.1.1.2, 3.1.4.1, and 3.1.4.2 for the NAC-UMS dry spent fuel storage system. This exemption would allow Maine Yankee Atomic Power Company (MYAPC) to increase: (1) vacuum drying time limits based on canister heat load; (2) vacuum drying time limits after 24 hours of in-pool or forced air cooling; (3) time duration limit from completion of canister helium backfill through completion of canister transfer to the concrete cask; and (4) time duration limit from completion of in-pool or forced air cooling through completion of the canister transfer to the concrete cask.

We understand that you requested the increased vacuum drying time limits in order to reduce overall processing times and occupational dose to workers. MYAPC calculated that the reduction in radiological exposure to the operators, fuel handlers, and security personnel involved in handling, preparing and transferring the canisters would be approximately 5 rem during the remainder of the spent fuel loading campaign.

The U.S. Nuclear Regulatory Commission (NRC) staff performed a safety evaluation of the proposed exemption. The enclosed safety evaluation concludes that the requested changes will not compromise the thermal performance of the NAC-UMS system nor increase the potential for dose to members of the public.

In a letter dated January 15, 2002, the designer of the NAC-UMS system, NAC International, requested an amendment to CoC No. 1015, that requested, among several other changes, to increase the vacuum drying time limits. That request was supplemented on November 27, 2002. The information provided in the amendment request, as supplemented, is relevant to the exemption request by MYAPC and provides the safety basis for the time limits increase. This information has been determined to be an adequate basis to grant the exemption. Accordingly, the exemption will be effective immediately.

However, staff identified a discrepancy between the vacuum drying time limits proposed in the exemption request and the NAC-UMS amendment application. In particular, the time limits

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proposed in the exemption request for LCO 3.1.1.2 should be revised to be consistent with the NAC-UMS amendment application and the supporting analyzed design basis:

<u>Heat Load (L) (kW)</u>	<u>Time Limit (hours)</u>
14 < L ≤ 17.6	9 (requested 11 in the exemption request)
11 < L ≤ 14	16 (requested 18 in the exemption request)
8 < L ≤ 11	27 (requested 29 in the exemption request)
L ≤ 8	78 (requested 80 in the exemption request)

The exemption request values were 2 hours more than those analyzed in the amendment application. Please be advised that MYAPC must use the values contained in the NAC-UMS amendment application, as presented above.

The NRC staff evaluated the public health and safety and environmental impacts of the proposed exemption and determined that granting the exemption would not result in any significant impacts. For this action, an Environmental Assessment and Finding of No Significant Impact have been prepared and published in the Federal Register (68 FR 6784, February 10, 2003). A copy of the Federal Register Notice was provided to you by letter dated January 31, 2003. Based on the foregoing considerations, the staff has determined that granting the proposed exemption from the provisions of 10 CFR 72.212(a)(2), 72.212(b)(2)(i), 72.212(b)(7), and 10 CFR 72.214 is authorized by law, will not endanger life or property or the common defense and security, and is otherwise in the public interest. Specifically, this exemption permits MYAPC to increase the vacuum drying time limits as delineated in the attached Safety Evaluation Report. The increased time limits for these vacuum drying operations will not significantly impact the quality of the human environment. Therefore, the NRC staff has concluded that the proposed changes will not pose an increased risk to public health and safety.

If you have any questions, please contact me or Stephen O'Connor of my staff at 301-415-8500. Any future correspondence related to this action should reference Docket 72-30 and TAC No. L23528.

Sincerely,

/RA/
 Charles L. Miller, Deputy Director
 Spent Fuel Project Office
 Office of Nuclear Material Safety
 and Safeguards

Docket Nos.: 72-30, 72-1015, and 50-309

Enclosure: Safety Evaluation

cc: Mailing List

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Sincerely,
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 Charles L. Miller, Deputy Director
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Docket Nos.: 72-30, 72-1015, and 50-309

Enclosure: Safety Evaluation

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DATE	01/24/03		01/24/03		01/30/03		01/30/03		01/30/03

OFC	OGC		SFPO		SFPO
NAME	STreby (NLO)*		WHodges		CMiller
DATE	01/24/03		02/10/03		02/13/03

* - see previous concurrence

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SAFETY EVALUATION REPORT
Docket No. 72-30
Maine Yankee Atomic Power Station
Independent Spent Fuel Storage Installation

In a letter dated November 7, 2002, as supplemented on December 19, 2002, Maine Yankee Atomic Power Company (MYAPC or the licensee) requested the U.S. Nuclear Regulatory Commission's approval for an exemption from certain 10 CFR 72.212 and 72.214 requirements. Specifically, MYAPC requested an exemption from the requirements in Certificate of Compliance (CoC) No. 1015, Appendix A, Limiting Condition for Operation (LCO) Items 3.1.1.1, 3.1.1.2, 3.1.4.1, and 3.1.4.2 for the NAC-UMS storage system. The licensee's basis for the request was to reduce occupational exposure resulting from repeated vacuum drying cycles of the NAC-UMS system. There is no increase in potential dose to members of the public resulting from this exemption request.

The exemption would allow MYAPC to increase: (1) vacuum drying time limits based on canister heat load; (2) vacuum drying time limits after 24 hours of in-pool or forced air cooling; (3) time duration limit from completion of canister helium backfill through completion of canister transfer to the concrete cask; and (4) time duration limit from completion of in-pool or forced air cooling through completion of the canister transfer to the concrete cask

On January 15, 2002, NAC International submitted an application for an amendment to CoC No. 1015 for the NAC-UMS to, among other things, increase the times limits for certain loading operations to allow more time to complete these operations before entering the CoC technical specification required actions. This amendment is currently in the NRC licensing review process and will be noticed shortly in the Federal Register for proposed incorporation into 10 CFR 72.214 as an approved amendment to the NAC-UMS. Since the licensee is currently loading NAC-UMS systems and would likely reduce occupational dose with the extended vacuum drying time limits, MYAPC requested this exemption to allow it to use the amended time limits prior to issuance of the amendment.

The staff issued Interim Staff Guidance No. 11 (ISG-11), Revision 2, "Cladding Considerations for the Transportation and Storage of Spent Fuel," on July 30, 2002. This revision to ISG-11 increased the cladding temperature limit to 400 °C (752 °F) for normal conditions, which is less restrictive than the previous ISG-11 guidance limiting temperatures between approximately 330 °C and 380 °C depending principally on cooling time and burn-up. Furthermore, ISG-11, Revision 2, also changed the cladding temperature limit to 400 °C for "short term operations including cask drying. The NAC-UMS amendment application demonstrated that the cladding remains below 400 °C for normal conditions including all loading and transfer operations.

The staff reviewed and performed confirmatory analysis for the decay heat loads and associated cooling times for MYAPC fuel assemblies. The staff also reviewed the NAC's proprietary calculation governing the time restrictions for fuel during loading and transfer operations.

Based on the information presented in the NAC-UMS amendment application, MYAPC's exemption request, and the staff's independent calculations, the staff has reasonable assurance that extending the vacuum drying time limits for the NAC-UMS system does not cause the fuel cladding to exceed its thermal limits and is acceptable.

However, staff found a slight discrepancy between the vacuum drying time limits proposed in the exemption request and the NAC-UMS amendment application. In particular, the time limits proposed in the exemption request for LCO 3.1.1.2 should be revised to be consistent with the NAC-UMS amendment application and the supporting analyzed design basis:

<u>Heat Load (L) (kW)</u>	<u>Time Limit (hours)</u>
$14 < L \leq 17.6$	9 (requested 11 in the exemption request)
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The exemption request values were 2 hours more than those analyzed in the amendment application. The licensee must use the values contained in the NAC-UMS amendment application, as presented above.