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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

DAIRYLAND POWER COOPERATIVE

LA CROSSE BOILING WATER REACTOR

DOCKET NO: 50-409

EXEMPTION

1.0 BACKGROUND

Dairyland Power Cooperative (DPC) (the licensee) is the holder of Possession Only License No. DPR-45 for the La Crosse Boiling Water Reactor (LACBWR) in Genoa, Wisconsin. The license provides, among other things, that the facility is subject to all rules, regulations, and orders of the U.S. Nuclear Regulatory Commission (NRC, the Commission) now or hereafter in effect.

2.0 REQUEST/ACTION

Title 10 of the *Code of Federal Regulations* (10 CFR), Part 74, Section 74.19(b) requires, in part, a licensee authorized to possess special nuclear material (SNM) in a quantity exceeding one effective kilogram at any one time to establish, maintain, and follow written material control

and accounting (MC&A) procedures that are sufficient to enable the licensee to account for the SNM in its possession under license. Regulations at 10 CFR 74.19(c) require, in part, a licensee authorized to possess SNM, at any one time and site location, in a quantity greater than 350 grams of contained uranium-235, uranium-233, or plutonium, or any combination thereof, to conduct a physical inventory of all SNM in its possession under license at intervals not to exceed 12 months.

On February 4, 1980, NRC issued a license amendment for LACBWR, approving an increase in the capacity of the spent fuel pool by using a vertical two-tier storage rack configuration. The two-tiered storage rack configuration does not allow observation of areas below occupied areas of the upper rack and does not allow observation of the areas below occupied areas of the lower rack, without fuel handling activities. Spent fuel pool loading was completed after LACBWR shutdown in 1987.

Due to the physical layout of the spent fuel pool at LACBWR, fuel handling activities would need to occur in order for DPC to inventory all SNM in the LACBWR spent fuel pool. Historically, the licensee's annual physical inventory of SNM in the spent fuel pool consisted of verifying that each fuel assembly that can be observed (without fuel handling activity) is in its historical location and that no SNM items have been moved or are missing. In March 2006, NRC staff conducted an inspection of the MC&A safeguards program at LACBWR, which included review of the MC&A procedures and the annual physical inventory required in 10 CFR 74.19. The inspection resulted in a notice of violation related to the licensee's MC&A procedures and annual physical inventory of SNM.

In response to the notice of violation, DPC requested an exemption from certain inventory-

related requirements of 10 CFR 74.19(b) and 10 CFR 74.19(c), in a letter dated July 26, 2006. The exemption would limit the handling of fuel assemblies, due to the associated risks (fuel handling accident, fuel assembly damage, further fuel rod segment displacement from existing damaged fuel assemblies), and result in decreased radiation doses to workers. DPC wishes to rely upon the historical MC&A record at LACBWR to provide positive means of verification in performance of annual physical inventory of SNM. The licensee would also continue to use security measures or controls to assure no unauthorized access or diversion of contents from the spent fuel pool. DPC has commenced the preliminary stages of a dry cask storage project and requests exemption from these requirements until such time that LACBWR spent fuel is moved to dry cask storage, which is currently expected to occur in 2010.

NRC staff reviewed DPC's request and issued a request for additional information on February 8, 2007. DPC provided the additional information on March 21, 2007.

3.0 DISCUSSION

Pursuant to 10 CFR 74.7, the Commission may, upon application of any interested person or upon its own initiative, grant such exemptions from the requirements of the regulations in 10 CFR Part 74 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. The underlying purpose of 10 CFR 74.19 is to provide recordkeeping requirements for material control and accounting of SNM, including requirements for procedures and for conduct of an annual physical inventory of all SNM.

In 2006, while conducting work (that required fuel handling) in the spent fuel pool, DPC was

able to observe most of the fuel assemblies. No historical records discrepancies were found with respect to the lower tier fuel assemblies that were observed during that time. However, some fuel assemblies in the lower tier of the spent fuel pool have not been observed since 1987. Regarding these assemblies, the licensee must observe them by the completion of its next annual inventory, using existing procedures for any fuel handling needed, to confirm the assemblies are in the locations indicated by the accounting records. After DPC confirms the locations of the remaining assemblies in the lower tier of the spent fuel pool (that have not been observed since 1987) by completion of its next annual inventory, the licensee's claim of thorough MC&A documentation dating back to 1987 can be verified.

Since all assemblies will have been observed over a two-year period by the completion of the next inventory period in 2008, and the licensee has commenced the preliminary stages of a dry cask storage project that currently indicates that assemblies will be removed from the spent fuel pool within the next few years, the staff has determined that it will be sufficient for the licensee to continue its current inventory practice with regard to assemblies, following the 2008 inventory campaign. This approach will help prevent the future movement of certain fuel assemblies that might result in unnecessary fuel breakage, while still meeting the intent of the recordkeeping requirements of 10 CFR 74.19.

The licensee committed in its March 21, 2007, letter to place in the fuel debris storage baskets, all fuel rod segments and debris retrieved in the future. The licensee must inventory, on an annual basis, the contents of the stainless steel baskets that contain fuel pellets and other debris. The licensee must also revise all pertinent procedures to incorporate those future actions. In addition, the licensee must observe and note the presence of each bottom tier assembly prior to an assembly being placed above it in the upper tier position. The licensee

must also provide significant revisions to the dry storage project plan and/or timeline to the NRC in a timely manner (within 45 days).

The NRC staff has determined that granting of the licensee's proposed exemption, with certain conditions discussed above, will not result in a violation of the Atomic Energy Act of 1954, as amended, or the Commission's regulations. Therefore, the exemption is authorized by law.

4.0 CONCLUSION

Given the above considerations, the NRC staff concludes that by granting the proposed exemption with the above conditions, the underlying purpose of the requirements in 10 CFR 74.19 will be met. The Commission has determined that, pursuant to 10 CFR 74.7, the exemption is authorized by law, will not endanger life or property or the common defense and security, and is otherwise in the public interest. Therefore, the Commission hereby grants DPC an exemption from certain inventory-related requirements of 10 CFR 74.19(b) and 10 CFR 74.19(c) for LACBWR, provided the licensee satisfies the conditions set forth in the discussion above. This exemption will expire at the time the fuel is transferred to dry cask storage.

Pursuant to 10 CFR 51.32, the Commission has determined that the granting of this exemption will have no significant impact on the environment (72 FR 73383, December 27, 2007).

Dated at Rockville, Maryland, this 28th day of December 2007.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Keith I. McConnell, Acting Director
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs