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NUCLEAR REGULATORY COMMISSION
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MEMORANDUM TO: John T. Larkins, Executive Director
Advisory Committee on Reactor Safeguards and
Advisory Committee on Nuclear Waste

FROM: Ledyard B. Marsh, Director
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

SUBJECT: KEWAUNEE NUCLEAR POWER PLANT - ADVISORY COMMITTEE
ON REACTOR SAFETY REVIEW OF STRETCH POWER UPRATE
AMENDMENT (TAC NO. MB9031)

The purpose of this memorandum is to request the Advisory Committee on Reactor Safeguards (ACRS) consider not reviewing the stretch power uprate proposed by the Kewaunee Nuclear Power Plant (KNPP) licensee. Below are the details regarding the KNPP stretch power uprate and the staff's recommendation.

The staff has defined three categories for power uprates: measurement uncertainty recapture (MUR), stretch, and extended power uprates (EPU). MUR power uprates are less than 2 percent and are based on the use of more accurate feedwater flow measurement techniques. Stretch power uprates are uprates that do not require major modifications. Stretch power uprates usually involve changes to instrumentation setpoints. EPUs are uprates that require major modifications to the plant and usually require significant modifications to major balance-of-plant equipment such as the high pressure turbines, condensate pumps and motors, main generators, and/or transformers.

By application dated May 22, 2003, Nuclear Management Company, LLC (the licensee), requested an amendment to the KNPP Operating License and Technical Specifications (TSs) to increase the licensed rated power by 6.0 percent from 1673 megawatts thermal to 1772 megawatts thermal (ADAMS Accession No. ML031540080).

Based on its review of this application, the staff has categorized it as a stretch power uprate. The basis for this categorization is the limited modifications required for the plant to achieve the requested power level. The modifications required to achieve the stretch power uprate at KNPP are as follows:

- (1) Modification of the valve trim in the feedwater control valve,
- (2) Replacement of the high-pressure turbine outer cylinder horizontal joint bolting to accommodate the higher loading conditions, and
- (3) Replacement of the low-pressure turbine-to-jackshaft and low-pressure turbine-to-generator coupling bolts with higher strength material.

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The licensee replaced steam generators (SGs) in 2001. When the licensee replaced the SGs, it selected and installed replacement SGs with sufficient capacity to achieve the requested power uprate.

On April 4, 2003, the staff approved an application by the licensee for the use of 422 VANTAGE+ nuclear fuel with PERFORMANCE+ features (ADAMS Accession No. ML030940276). As part of the review for the 422 VANTAGE+ nuclear fuel, the staff has already reviewed many of the licensing-basis analyses at the higher power level. Therefore, the review for the power uprate application for such analyses is conducted only to ensure that the previously approved analyses remain valid.

On July 8, 2003, the staff approved an amendment to revise the KNPP Operating License and TSs to increase the licensed rated power by 1.4 percent from 1650 megawatts thermal to 1673 megawatts thermal using MUR (ADAMS Accession No. ML031530734).

The staff is currently reviewing, under a separate effort, the use of an upgraded computer code for design-basis accident containment integrity analyses called "Generation of Thermal-Hydraulic Information for Containment (GOTHIC) version 7.0p2 (GOTHIC 7)." The staff's review of the containment analyses using the GOTHIC 7 code is still in progress. The staff is conducting independent calculations to support its review in this area.

Based on the established ACRS review threshold of 5 percent, the ACRS could require that it review the current KNPP stretch power uprate request. However, the staff believes that the 5-percent threshold was originally established to (1) differentiate between power uprates within the design capacity of the plant and more complex power uprates with more important changes and potentially higher impacts on the plant and (2) ensure that the ACRS has an opportunity to review the more complex power uprates. Based on this, and based on the staff's determination that the KNPP power uprate request is for a 6-percent stretch power uprate with minor modifications, the staff requests the ACRS to consider not reviewing the stretch power uprate proposed by the KNPP licensee. To adequately schedule the staff's resources and review, we request the ACRS provide its decision regarding review of the KNPP stretch power uprate as soon as reasonably feasible.

Docket No. 50-305

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