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UNITED STATES NUCLEAR REGULATORY COMMISSION

WOLF CREEK NUCLEAR OPERATING CORPORATION

DOCKET NO. 50-482

WOLF CREEK GENERATING STATION

ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT

The U.S. Nuclear Regulatory Commission (the Commission) is considering issuance of an exemption from certain requirements of its regulations for Facility Operating License No. NPF-42, issued to Wolf Creek Nuclear Operating Corporation (the licensee), for operation of the Wolf Creek Generating Station (WCGS) located in Coffey County, Kansas.

ENVIRONMENTAL ASSESSMENT

Identification of Proposed Action:

The proposed action would exempt Wolf Creek Nuclear Operating Corporation from the requirements of 10 CFR 70.24, which requires a monitoring system that will energize clearly audible alarms if accidental criticality occurs in each area in which special nuclear material is handled, used or stored. The proposed action would also exempt the licensee from the requirements of 10 CFR 70.24(a)(3) to maintain emergency procedures for each area in which this licensed special nuclear material is handled, used, or stored to ensure that all personnel withdraw to an area of safety upon the sounding of the alarm and to conduct drills and designate responsible individuals for such emergency procedures.

The proposed action is in accordance with the licensee's application for exemption dated September 19, 1995.

The Need for the Proposed Action:

Power reactor license applicants are evaluated for the safe handling, use, and storage of special nuclear materials. The proposed exemption from criticality accident requirements is based on the original design for radiation monitoring at WCGS as discussed in the NUREG-0830, "Safety Evaluation Report Related to the Operation of Wolf Creek Generating Station, Unit No. 1." The exemption was granted with the original Part 70 license, but it expired with the issuance of the Part 50 license when the exemption was inadvertently not included in that license. Therefore, the exemption is needed to clearly define the design of the plant as evaluated and approved for licensing.

Environmental Impacts of the Proposed Action:

The NRC staff has completed its evaluation of the proposed action and concludes that there is no significant environmental impact if the exemption is granted. Inadvertent or accidental criticality will be precluded through compliance with the Wolf Creek Technical Specifications, the geometric spacing of fuel assemblies in the new fuel storage facility and spent fuel storage pool, and administrative controls imposed on fuel handling procedures. New fuel shipping containers only carry two new fuel assemblies. The procedure used for new fuel receipt requires the use of the monorail auxiliary hoist on the cask handling crane for all lifting operations. A special new fuel handling tool is required to be attached to the monorail auxiliary hoist to lift each fuel assembly from the shipping container. This new fuel handling tool can only be attached to the top nozzle of one fuel assembly at a time. The attached fuel assembly is moved to either the new fuel storage racks or the new fuel elevator if the assembly is going to be stored in the spent

fuel facility. Both of these storage positions will only accommodate one fuel assembly in a designed location. The spacing between new fuel assemblies in the storage racks is sufficient to maintain the array in a subcritical condition, even when flooded by non-borated water. The new fuel storage building provides space for dry storage of 66 new fuel assemblies, arranged in three double rows (2x11) of ports. Each port will hold just one fuel assembly. The ports within each double row are on 21 inch centers and there is a nominal 28 inch aisle between each pair of rows. The storage racks are protected from dropped objects by a steel protective cover. Therefore, the design of the new fuel storage rack, the fuel handling equipment, and the administrative controls are such that subcritically is assured under normal and accident conditions.

The spent fuel pool is divided into two separate and distinct regions, which for the purpose of criticality considerations may be considered as separate pools. Region 1, reserved for core-off-loading, has the capacity for a minimum of 200 assemblies. Region 2, reserved for fuel that has sustained at least 85 percent of design burnup, has an ultimate capacity to store 1140 spent fuel assemblies. Region 1 has fuel assemblies stored in two out of four box positions in a checker board pattern; the unused boxes serve to allow cooling water flow. The center-to-center distance for actual fuel assemblies is 12.92 inches, measured diagonally. The center-to-center spacing between any two adjacent fuel assemblies in the same row is 18.28 inches. Region 2 has fuel assemblies stored in three out of four box positions. During a normal refueling operation, each fuel assembly is first removed from the reactor to Region 1. After the refueling operation is complete and the suitability of each spent fuel assembly for movement into Region 2 is

verified, the fuel assembly may be moved into Region 2. Technical Specification (TS) 3.9.12 states that no spent fuel assemblies shall be placed in Region 2, nor shall any storage location be changed in designation from being in Region 1 to being in Region 2, while refueling operations are in progress. The TS also require that prior to storage of any fuel assembly in Region 2 that the burnup history of the fuel element be ascertained by analysis of its burnup history and independently verified. In summary, the training provided to all personnel involved in fuel handling operations, the design of the fuel handling equipment, the administrative controls, the technical specifications on new and spent fuel handling and storage and the design of the new and spent fuel storage racks preclude inadvertent or accidental criticality. In accordance with the NRC's Regulatory Position in Regulatory Guide 8.12, Revision 1, "Criticality Accident Alarm Systems," dated January 1981, an exemption from 10 CFR 70.24 is appropriate.

The proposed exemption will not affect radiological plant effluents nor cause any significant occupational exposures. Only a small amount, if any, radioactive waste is generated during the receipt and handling of new fuel (e.g., smear papers or contaminated packaging material). The amount of waste would not be changed by the exemption.

With regard to potential nonradiological impacts, the proposed exemption involves systems located within the restricted area as defined in 10 CFR Part 20. It does not affect nonradiological plant effluents and has no other environmental impact. Accordingly, the Commission concludes that there are no significant nonradiological environmental impacts associated with the proposed action.

Alternatives to the Proposed Action:

Since the Commission has concluded that there is no measurable environmental impact associated with the proposed action, any alternatives with equal or greater environmental impact need not be evaluated. The principal alternative would be to deny the requested exemption. The environmental impacts of the proposed action and the alternative action are similar.

Alternative Use of Resources:

This action does not involve the use of any resources not previously considered in the "Final Environmental Statement related to the operation of Wolf Creek Generating Station," dated June 1982 (NUREG-0878).

Agencies and Persons Consulted:

In accordance with its stated policy, on March 1, 1996, the staff consulted with the Kansas State official, Mr. Gerald Allen of the Kansas Department of Health and Environment, regarding the environmental impact of the proposed action. The State official had no comments.

FINDING OF NO SIGNIFICANT IMPACT

Based upon the environmental assessment, the Commission concludes that the proposed action will not have a significant effect on the quality of the human environment. Accordingly, the Commission has determined not to prepare an environmental impact statement for the proposed action.

For further details with respect to the proposed action, see the licensee's letter dated September 19, 1995, which is available for public inspection at the Commission's Public Document Room, The Gelman Building, 2120 L Street, NW., Washington, DC and at the local public document rooms located

at the Emporia State University, William Allen White Library, 1200 Commercial Street, Emporia, Kansas 66801, and the Washburn University School of Law Library, Topeka, Kansas 6621.

Dated at Rockville, Maryland, this 1st day of March 1996.

FOR THE NUCLEAR REGULATORY COMMISSION

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