

margin to fuel rod internal pressure design criteria is obtained.

As part of a program to address these issues, the Westinghouse Electric Company has developed an LTA program in cooperation with the licensee that includes a ZIRLO fuel cladding with a tin content lower than the currently licensed range for ZIRLO. The NRC's regulations in 10 CFR 50.44, 10 CFR 50.46 and in 10 CFR part 50, Appendix K, make no provision for use of fuel rods clad in a material other than Zircalloy or ZIRLO. The licensee has requested the use of an LTA with a tin composition that is less than that specified in the licensing basis for ZIRLO, as defined in Westinghouse design specifications. Therefore, use of the LTA calls for exemptions from 10 CFR 50.44, 10 CFR 50.46 and 10 CFR part 50, Appendix K. As part of this program, the licensee's current plans are to include eight LTAs in the Catawba Nuclear Station, Unit 1, Cycle 15, core in non-limiting core locations during the refueling outage currently scheduled to begin in the Fall of 2003. The licensee has requested the exemption for both Catawba units, and the staff finds the exemption request for a total of up to eight LTAs to be applicable to either of the Catawba units.

Environmental Impacts of the Proposed Action

The NRC staff has completed its environmental evaluation of the proposed action and concludes that the proposed exemptions would not increase the probability or consequences of accidents previously analyzed and would not affect facility radiation levels or facility radiological effluents.

The proposed action will not significantly increase the probability or consequences of accidents, no changes are being made in the types of effluents that may be released offsite, and there is no significant increase in occupational or public radiation exposure. Therefore, there are no significant radiological environmental impacts associated with the proposed action.

With regard to potential nonradiological impacts, the proposed action does not involve any historic sites. It does not affect nonradiological plant effluents and has no other environmental impact. Therefore, there are no significant nonradiological environmental impacts associated with the proposed action.

Accordingly, the NRC staff concludes that there are no significant environmental impacts associated with the proposed action.

Environmental Impacts of the Alternatives to the Proposed Action

As an alternative to the proposed action, the staff considered denial of the proposed action (i.e., the "no-action" alternative). Denial of the application would result in no change in current environmental impacts. The environmental impacts of the proposed action and the alternative action are similar.

Alternative Use of Resources

The action does not involve the use of any different resource than those previously considered in the Final Environmental Impact Statement for the CNS, Units 1 and 2, NUREG-0921—"Final Environmental Impact Statement Related to the Operation of Catawba Nuclear Station; Units 1 and 2", U.S. Nuclear Regulatory Commission, dated January 1983.

Agencies and Persons Consulted

On July 9, 2003, the staff consulted with the South Carolina State official, Mr. Henry Porter, of the Department of Health and Environmental Control, regarding the environmental impact of the proposed action. The State official had no comments.

Finding of No Significant Impact

On the basis of the environmental assessment, the NRC concludes that the proposed action will not have a significant effect on the quality of the human environment. Accordingly, the NRC 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 December 3, 2002, as supplemented by letter dated April 8, 2003. Documents may be examined, and/or copied for a fee, at the NRC's Public Document Room (PDR), located at One White Flint North, Public File Area O1 F21, 11555 Rockville Pike (first floor), Rockville, Maryland. Publicly available records will be accessible electronically from the Agencywide Documents Access and Management System (ADAMS) Public Electronic Reading Room on the Internet at the NRC Web site, <http://www.nrc.gov/reading-rm/adams.html>. Persons who do not have access to ADAMS or who encounter problems in accessing the documents located in ADAMS, should contact the NRC PDR Reference staff by telephone at 1-800-397-4209 or 301-415-4737, or by e-mail to pdr@nrc.gov.

Dated at Rockville, Maryland, this tenth day of July, 2003.

For the Nuclear Regulatory Commission.

Leonard N. Olshan,

Acting Chief, Section I, Project Directorate II, Division of Licensing Project Management, Office of Nuclear Reactor Regulation.

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NUCLEAR REGULATORY COMMISSION

[Docket No. 50-315]

Indiana Michigan Power Company Donald C. Cook Nuclear Plant, Unit 1; Environmental Assessment and Finding of No Significant Impact

The U.S. Nuclear Regulatory Commission (NRC) is considering issuance of an exemption from Title 10 of the Code of Federal Regulations (10 CFR) part 50, Appendix G for Facility Operating License No. DPR-58, issued to Indiana Michigan Power Company (the licensee), for operation of the Donald C. Cook (D. C. Cook) Nuclear Plant, Unit 1, located in Berrien County, Michigan. Therefore, as required by 10 CFR 51.21, the NRC is issuing this environmental assessment and finding of no significant impact.

Environmental Assessment

Identification of the Proposed Action

The proposed action would exempt the licensee from the requirements of 10 CFR part 50, section 50.60(a) and Appendix G, which would allow the use of American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) Code Case N-641 as the basis for revised reactor vessel pressure and temperature (P-T) curves, and low temperature overpressure protection system setpoints in the D. C. Cook Unit 1, technical specifications.

The regulation, at 10 CFR part 50, section 50.60(a), requires, in part, that except where an exemption is granted by the Commission, all light-water nuclear power reactors must meet the fracture toughness requirements for the reactor coolant pressure boundary set forth in Appendices G and H to 10 CFR part 50. Appendix G to 10 CFR part 50 requires that P-T limits be established for reactor pressure vessels (RPVs) during normal operating and hydrostatic or leak-rate testing conditions. Specifically, 10 CFR part 50, Appendix G, states, "The appropriate requirements on both the P-T limits and the minimum permissible temperature must be met for all conditions." Appendix G of 10 CFR part 50 specifies that the requirements for these limits are the

ASME Code, section XI, Appendix G, limits.

ASME Code Case N-641 permits the use of alternate reference fracture toughness (*i.e.*, use of " K_{IC} fracture toughness curve" instead of " K_{IA} fracture toughness curve," where K_{IC} and K_{IA} are "Reference Stress Intensity Factors," as defined in ASME Code, section XI, Appendices A and G, respectively) for reactor vessel materials in determining the P-T curves and low temperature overpressure protection system setpoints for effective temperature and allowable pressure. Since the K_{IC} fracture toughness curve shown in ASME Code, section XI, Appendix A, Figure A-2200-1 (the K_{IC} fracture toughness curve), provides greater allowable fracture toughness than the corresponding K_{IA} fracture toughness curve of ASME Code, section XI, Appendix G, Figure G-2210-1 (the K_{IA} fracture toughness curve), using ASME Code Case N-641 to establish the P-T curves and low temperature overpressure protection system setpoints would be less conservative than the methodology currently endorsed by 10 CFR part 50, Appendix G. Therefore, an exemption to apply ASME Code Case N-641 is required.

The proposed action is in accordance with the licensee's application dated December 10, 2002.

The Need for the Proposed Action

The proposed exemption is needed to allow the licensee to implement ASME Code Case N-641 in order to revise the method used to determine the P-T curves and because low temperature overpressure protection system setpoints based on the method specified by Appendix G to 10 CFR part 50, unnecessarily restrict the P-T operating window.

The underlying purpose of Appendix G, is to protect the integrity of the reactor coolant pressure boundary (RCPB) in nuclear power plants. This is accomplished through regulations that, in part, specify fracture toughness requirements for ferritic materials of the RCPB. Pursuant to 10 CFR part 50, Appendix G, it is required that P-T limits for the reactor coolant system (RCS) be at least as conservative as those obtained by applying the methodology of the ASME Code, section XI, Appendix G. Current P-T limits produce operational constraints by limiting the P-T range available to the operator to heat up or cool down the plant. The operating window through which the operator heats up and cools down the RCS, becomes more restrictive with continued reactor vessel service. Reducing this operating window could

potentially have an adverse safety impact by increasing the possibility of inadvertent low temperature overpressure protection system (OPPS) actuation due to pressure surges associated with normal plant evolutions, such as reactor coolant pump start and swapping operating charging pumps with the RCS in a water-solid condition. P-T limits for an increased service period of operation of 32 effective full-power years for D. C. Cook Unit 1, based on ASME Code, section XI, Appendix G requirements, would significantly restrict the ability to perform plant heatup and cooldown, create an unnecessary burden to plant operations, and challenge control of plant evolutions required with OPPS enabled. Continued operation of D. C. Cook Unit 1 with P-T curves developed to satisfy ASME Code, section XI, Appendix G, requirements without the relief provided by ASME Code Case N-641, would unnecessarily restrict the P-T operating window, especially at low temperature conditions. Use of the K_{IC} curve in determining the lower bound fracture toughness of RPV steels is more technically correct than use of the K_{IA} curve, since the rate of loading during a heatup or cooldown is slow and is more representative of a static condition than a dynamic condition. The K_{IC} curve appropriately implements the use of static initiation fracture toughness behavior to evaluate the controlled heatup and cooldown process of a reactor vessel. The staff has required use of the conservatism of the K_{IA} curve since 1974, when the curve was adopted by the ASME Code. This conservatism was initially necessary due to the limited knowledge of the fracture toughness of RPV materials at that time. Since 1974, additional knowledge has been gained about RPV materials, which demonstrates that the lower bound on fracture toughness provided by the K_{IA} curve greatly exceeds the margin of safety required, and that the K_{IC} curve is sufficiently conservative to protect the public health and safety from potential RPV failure. Application of ASME Code Case N-641 will provide results that are sufficiently conservative to ensure the integrity of the RCPB, while providing P-T curves and low temperature overpressure protection system setpoints that are not overly restrictive. Implementation of the proposed P-T curves and low temperature overpressure protection system setpoints, as allowed by ASME Code Case N-641, will continue to provide significant safety margin for the RCPB.

In the associated exemption, the NRC staff has determined that, pursuant to 10

CFR part 50, section 50.12(a)(2)(ii), the underlying purpose of the regulation will continue to be served by the implementation of ASME Code Case N-641.

Environmental Impacts of the Proposed Action

The NRC has completed its evaluation of the proposed action and concludes that there are no significant environmental impacts associated with the use of the alternative analysis method to support the revision of the RCS P-T limits.

The proposed action will not significantly increase the probability or consequences of accidents, no changes are being made in the types of effluents that may be released off site, and there is no significant increase in occupational or public radiation exposure. Therefore, there are no significant radiological environmental impacts associated with the proposed action.

With regard to potential nonradiological impacts, the proposed action does not have a potential to affect any historic sites. It does not affect nonradiological plant effluents and has no other environmental impact. Therefore, there are no significant nonradiological environmental impacts associated with the proposed action.

Accordingly, the NRC concludes that there are no significant environmental impacts associated with the proposed action.

Environmental Impacts of the Alternatives to the Proposed Action

As an alternative to the proposed action, the staff considered denial of the proposed action (*i.e.*, the "no-action" alternative). Denial of the application would result in no change in current environmental impacts. The environmental impacts of the proposed action and the alternative action are similar.

Alternative Use of Resources

The action does not involve the use of any different resource than those previously considered in the Final Environmental Statement for the Donald C. Nuclear Plant Units 1 and 2, dated August 1973.

Agencies and Persons Consulted

On June 6, 2003, the staff consulted with the Michigan State official, Ms. Sara De Cair of the Department of Environmental Quality, regarding the environmental impact of the proposed action. The State official had no comments.

Finding of No Significant Impact

On the basis of the environmental assessment, the NRC concludes that the proposed action will not have a significant effect on the quality of the human environment. Accordingly, the NRC 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 December 10, 2002. Documents may be examined, and/or copied for a fee, at the NRC's Public Document Room (PDR), located at One White Flint North, Public File Area O1 F21, 11555 Rockville Pike (first floor), Rockville, Maryland. Publicly available records will be accessible electronically from the Agencywide Documents Access and Management System (ADAMS) Public Electronic Reading Room on the Internet at the NRC Web site, <http://www.nrc.gov/reading-rm/adams.html>. Persons who do not have access to ADAMS or who encounter problems in accessing the documents located in ADAMS, should contact the NRC PDR Reference staff by telephone at 1-800-397-4209 or 301-415-4737, or by e-mail to pdr@nrc.gov.

Dated at Rockville, Maryland, this 10th day of July 2003.

For the Nuclear Regulatory Commission.

L. Raghavan,

*Chief, Section 1, Project Directorate III,
Division of Licensing Project Management,
Office of Nuclear Reactor Regulation.*

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NUCLEAR REGULATORY COMMISSION

[Docket No. 70-143]

Nuclear Fuel Services, Inc.; Environmental Assessment and Finding of No Significant Impact

I. Introduction

The Nuclear Regulatory Commission (NRC) staff has received a license amendment request from Nuclear Fuel Services, Inc. (NFS) dated January 23, 2003, to amend Special Nuclear Material License SNM-124 to use International Commission on Radiation Protection (ICRP) Publication 68 for Derived Air Concentration (DAC) and the Annual Limit on Intake (ALI) determinations (Ref. 1, 2). An Environmental Assessment (EA) was performed by the NRC staff in support of its review of NFS' license amendment request, in accordance with the requirements of 10 CFR part 51. The conclusion of the EA is a Finding of No

Significant Impact (FONSI) for the proposed licensing action.

II. Supplementary Information

Background

The NFS facility in Erwin, TN is authorized under SNM-124 to possess nuclear materials for the fabrication and assembly of nuclear fuel components. The facility fabricates research and university reactor components and manufactures compact reactor fuel elements. The facility also performs recovery of scrap uranium.

Inhalation of dust in radiologically controlled areas poses an internal radiation hazard, and the NRC regulations in 10 CFR part 20 require licensees to implement certain protective measures to minimize that hazard. These measures include taking a variety of air samples, using respirators in certain work areas, posting airborne radioactivity warning signs outside the work areas, and putting the potentially exposed workers on a routine bioassay program to assess their intakes and verify the effectiveness of the protection program. Many of these protective measures are triggered when the air concentrations in the workplace reach specified fractions of the air concentrations tabulated in 10 CFR part 20 appendix B. NFS has requested to amend its license to permit the use of values other than those tabulated in Part 20 as the basis for triggering protective measures, and for assessing the internal dose to its workers. The basis for the amendment request is the recommendations in ICRP 68. In the amendment application, NFS maintains that the assessment of the radiological hazard based on 10 CFR part 20 Appendix B requires it to implement monitoring and protection programs at levels that are out of proportion with the true level of hazard, and that do not significantly add to worker protection. NFS believes that granting the exemption would enable it to reduce the size of its internal exposure program while, at the same time, provide a level of protection proportional to the actual hazard. NFS references an NRC Staff Requirements Memorandum (SECY-99-077) which directs the staff to grant exemptions to 10 CFR part 20 on this modeling issue on a case-by-case basis.

Review Scope

In accordance with 10 CFR part 51, this EA serves to (1) present information and analysis for determining whether to issue a Finding of No Significant Impact (FONSI) or to prepare an Environmental Impact Statement (EIS); (2) fulfill the

NRC's compliance with the National Environmental Policy Act when no EIS is necessary; and (3) facilitate preparation of an EIS when one is necessary. Should the NRC issue a FONSI, no EIS would be prepared and the license amendment would be granted.

This document serves to evaluate and document the impacts of the proposed action. Other activities on the site have previously been evaluated and documented in the 1999 Environmental Assessment (EA) for the Renewal of the NRC license for NFS (Ref. 3). The 1999 document is referenced when no significant changes have occurred. Besides the proposed licensing action, operations will continue to remain limited to those authorized by the license.

Proposed Action

The proposed action is to amend NRC Materials License SNM-124 to authorize the use of Derived Air Concentration (DAC) and the Annual Limit on Intake (ALI) values specified in International Commission on Radiation Protection Publication 68 (ICRP 68), entitled Dose Coefficients for Intake of Radionuclides by Worker (Ref. 2). The DAC/ALI values would be used to assign the effective dose to workers based on an aerosol particle size of 5 microns as specified in ICRP 68. The proposed DAC/ALI values are based on particle size studies, as currently described in Sections 3.2.5.1 and 12.13.5 of Materials License SNM-124 (Ref. 4).

Affected Environment

The affected environment for the proposed activity is the NFS site. A full description of the site and its characteristics is given in the 1999 Environmental Assessment (EA) for the Renewal of the NRC license for NFS (Ref. 3).

Effluent Releases and Monitoring

A full description of the effluent monitoring program at the site is provided in the 1999 Environmental Assessment for the Renewal of the NRC license for NFS (Ref. 3). Monitoring programs at the NFS facility comprise effluent monitoring of air and water and environmental monitoring of various media (air, soil, vegetation, and groundwater). This program provides a basis for evaluation of public health and safety impacts, for establishing compliance with environmental regulations, and for development of mitigation measures if necessary. The monitoring program is not expected to change as a result of the proposed action. The NRC has reviewed the