CATEGORY 1

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9805150007 DOC.DATE: 98/05/07 NOTARIZED: YES DOCKET #
FACIL:50-305 Kewaunee Nuclear Power Plant, Wisconsin Public Servic 05000305
AUTH.NAME AUTHOR AFFILIATION
STEINHARDT,C.R. Wisconsin Public Service Corp.
RECIP.NAME RECIPIENT AFFILIATION
Document Control Branch (Document Control Desk)

SUBJECT: Application for amend to license DPR-43 TS to increase allowable massof U-235 per axial centimeter for fuel storage at plant.Approval is requested by 981125 to ensure that operation of cycle 23 is not delayed.Proposed TS pages encl.

DISTRIBUTION CODE: A001D COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 7+9
TITLE: OR Submittal: General Distribution

NOTES:

	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL
	PD3-3 LA	1	1	PD3-3 PD	1	1
	LONG,W	1	1			
INTERNAL:	ACRS	1	1	FILE CENTER 01	1	1
	NRR/DE/ECGB/A	1	1	NRR/DE/EMCB	1	1
	NRR/DRCH/HICB	1	1	NRR/DSSA/SPLB	1	1
	NRR/DSSA/SRXB	1	1	NUDOCS-ABSTRACT	1	1
	OGC/HDS2	1	0			
EXTERNAL:	NOAC	1	1	NRC PDR	1	1

C A T E G O R Y 1 D O C U M E N T

NOTE TO ALL "RIDS" RECIPIENTS:
PLEASE HELP US TO REDUCE WASTE. TO HAVE YOUR NAME OR ORGANIZATION REMOVED FROM DISTRIBUTION LISTS OR REDUCE THE NUMBER OF COPIES RECEIVED BY YOU OR YOUR ORGANIZATION, CONTACT THE DOCUMENT CONTROL DESK (DCD) ON EXTENSION 415-2083

TOTAL NUMBER OF COPIES REQUIRED: LTTR 14 ENCL 13

NRC-98-46

Public Service Corporation
(a subsidiary of WPS resources corporation)
600 North Adams Street
P.O. Box 19002
Green Bay, WI 54307-9002
1.800.450.7260

May 7, 1998

10 CFR 50.90

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

Ladies/Gentlemen:

Docket 50-305
Operating License DPR-43
Kewaunee Nuclear Power Plant
Proposed Amendment 154 to the Kewaunee Nuclear Power Plant Technical Specifications

References:
1) Technical Specification Amendment 124, dated July 23, 1996
2) B&W Fuel Company Report BAW-2095, "Kewaunee New and Spent Fuel Storage Rack Criticality Analysis," dated November, 1989
3) Framatome Technologies Document 32-1258304-00, "Kewaunee Criticality Analysis," dated May 16, 1997
4) Kewaunee Nuclear Power Plant Final Safety Analysis Report, dated September 19, 1975
5) Framatome Technologies Document 32-1266175-00, "Kewaunee Radiological Safety Analysis & Heat Loads for Siemens 14x14 FAs," dated April 5, 1998
6) Letter from C. R. Steinhardt (WPSC) to Document Control Desk (NRC), dated April 7, 1998

This proposed amendment (PA) to the Kewaunee Nuclear Power Plant (KNPP) Technical Specifications (TS) is being submitted for NRC approval to increase the allowable mass of uranium-235 (U^{235}) per axial centimeter for fuel storage at the Kewaunee Nuclear Power Plant. The current limit was approved in Reference 1.

Attachment 1 to this letter contains a description, a safety evaluation, a significant hazards determination and environmental considerations for the proposed changes. Attachments 2 and 3 contain the following affected TS page: TS 5.4-1. Attachment 4 contains a radiological assessment of the increased limit.

A001

9805150007 980507
PDR ADOCK 05000305
P PDR

To ensure that operation of cycle 23 is not delayed, Wisconsin Public Service Corporation respectfully requests that this amendment be approved before November 25, 1998.

In accordance with the requirements of 10 CFR 50.30(b), this submittal has been signed and notarized. A complete copy of this submittal has been transmitted to the State of Wisconsin as required by 10 CFR 50.91(b)(1).

Sincerely,

Clark R. Steinhardt
Senior Vice President - Nuclear Power

EDC/jmf

Attach.

cc - US NRC - Region III
US NRC Senior Resident Inspector
Electric Division, PSCW

Subscribed and Sworn to
Before Me This 7th Day
of May 1998

Jeanne M. Ferris
Notary Public, State of Wisconsin

My Commission Expires:
June 13, 1999

ATTACHMENT 1

Letter from C. R. Steinhardt (WPSC)

to

Document Control Desk (NRC)

Dated

May 7, 1998

Proposed Amendment 154

Description of Proposed Changes

Safety Evaluation

Significant Hazards Determination

Environmental Considerations

Introduction

This proposed amendment request is being submitted for NRC approval to increase the allowable mass of uranium-235 (U^{235}) per axial centimeter for fuel storage at the Kewaunee Nuclear Power Plant. The current limits are equal to 52.3 grams of U^{235} per axial centimeter for the spent fuel storage racks and 49.2 grams of U^{235} per axial centimeter for the new fuel storage racks. The restrictions are based on the criticality analysis in Reference 2. This analysis assumed 982 assemblies were in the spent fuel storage pool.

The requested limit for both the spent fuel storage racks and the new fuel storage racks is 56.067 grams U^{235} per axial centimeter. This corresponds to an initial heavy metal loading of 410.81 kg of U^{235} per assembly. The enrichment limit (5.00 weight percent) is unchanged from the present limit. The requested limit will allow the use of new Siemens Power Corporation heavy fuel assembly designs. The requested change to the Technical Specifications is based on the criticality analysis in Reference 3 and the radiological analysis in Attachment 4. This revised analysis assumes 990 assemblies are in the spent fuel pool.

Description of Proposed Changes to Technical Specification (TS) 5.4, FUEL STORAGE

The following describes the changes to each paragraph of section 5.4:

5.4.a.1.a. The U^{235} mass limit has been changed to 56.067 grams of U^{235} per axial centimeter.

5.4.a.2.a. The U^{235} mass limit has been changed to 56.067 grams of U^{235} per axial centimeter.

5.4.b This limit of 982 fuel assemblies in the spent fuel pool racks has been increased to 990 fuel assemblies.

Safety Considerations for Proposed Change to TS 5.4, FUEL STORAGE

The proposed changes are based on a criticality analysis in Reference 3 and a radiological analysis in Attachment 4. The k_{eff} limits (0.95 if flooded with unborated water, 0.98 if moderated by optimally misted moderator) are maintained and the radiological doses of all design basis events are within acceptable limits. Therefore, this change does not affect the health and safety of the public.

Significant Hazards Determination for Proposed Change to TS 5.4, FUEL STORAGE"

The proposed changes were reviewed in accordance with the provisions of 10 CFR 50.92 to determine that no significant hazards exist. The proposed changes will not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated.

The mass of the fuel assembly is increased by a small amount (30 pounds, or 2.4%), from that of the fuel assemblies now in the core. Even with this increase, the load on the fuel handling equipment is still well within design limits. Therefore, the probabilities of a fuel handling accident inside containment (FHAIC) and the fuel handling accident outside containment (FHAOC) are not changed.

The total core mass, with Siemens heavy fuel, is less than that assnmed in the original plant safety analysis (Reference 4). The proposed change does not alter the plant configuration, operating set points, or overall plant performance. The probability of other accidents is therefore not changed.

Attachment 4 shows that the consequences of a fuel handling accident or a large break loss of coolant accident are not significantly affected.

Any changes in the nuclear properties of the reactor core that may result from a higher mass of fuel U^{235} per axial centimeter will be analyzed and shown to meet acceptance criteria in the appropriate reload analysis, which would be completed prior to use.

2. Create the possibility of a new or different kind of accident from any accident previously evaluated.

As discussed above, the only safety issue significantly affected by the proposed change is the criticality analysis of the spent fuel storage racks and new fuel storage racks. Since it has been demonstrated that k_{eff} remains below the k_{eff} acceptance criteria, no new or different accident would be created through the use of fuel with up to 56.067 grams of U^{235} per axial centimeter at the Kewaunee Nuclear Power Plant.

The proposed change does not alter the plant configuration, operating set points, or overall plant performance and therefore does not create a new or different kind of accident from any accident previously evaluated.

3. Involve a significant reduction in the margin of safety.

The criticality analysis in Reference 3 demonstrates that adequate margins to criticality can be maintained with up to 56.067 grams of U^{235} per axial centimeter stored in either the new fuel storage racks or the spent fuel storage racks.

The bounding cases of the analysis demonstrate that k_{eff} remains less than 0.95 in the spent fuel storage racks and the new fuel storage racks if flooded with unborated water. The bounding cases of the analysis also demonstrate that k_{eff} remains less than 0.98 in the new fuel storage racks if moderated by optimally misted moderator. Therefore, the 56.067 grams of U^{235} per axial centimeter limit is acceptable for storage in both the new fuel storage racks and the spent fuel storage racks.

Any changes in the nuclear properties of the reactor core that may result from a higher mass of fuel U^{235} per axial centimeter will be analyzed in the appropriate reload analysis to ensure compliance with applicable reload considerations and requirements.

Environmental Considerations

This proposed amendment involves a change to a requirement with respect to the installation or use of a facility component located within the restricted area, as defined in 10 CFR 20. WPSC has determined that the proposed amendment involves no significant hazards considerations, no significant change in the types or increase in the amounts of any effluents that may be released off-site, and no significant increase in the individual or cumulative occupational radiation exposure. Accordingly, this proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with this proposed amendment.

ATTACHMENT 2

Letter from C. R. Steinhardt (WPSC)

to

Document Control Desk (NRC)

Dated

May 7, 1998

Proposed Amendment 154

Strikeout TS Page:

TS 5.4-1