

MAR 26 1987

Docket No. 50-305

Mr. D. C. Hintz  
Vice President - Nuclear Power  
Wisconsin Public Service Corp.  
P.O. Box 19002  
Green Bay, Wisconsin 54037-9002

Dear Mr. Hintz:

By letter dated January 27, 1987, Wisconsin Public Service Corporation applied for relief from the Kewaunee Plant Inservice Inspection Program, pursuant to 10 CFR 50.55a(g)(5)(iii), for four steam generator nozzles. The request deals with the percentage of inspection to be performed during successive inspection intervals on the nozzle inner radii, by volumetric examination methods.

We have concluded in the enclosed Safety Evaluation Report that the relief should be granted as requested. This action completes our TAC No. 64481.

Sincerely,

*/s/*

Morton B. Fairtile, Project Manager  
Project Directorate #1  
Division of PWR Licensing-A

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Date: 03/25/87 03/26/87

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Mr. D. C. Hintz  
Wisconsin Public Service Corporation

Kewaunee Nuclear Power Plant

cc:

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ENCLOSURE

SAFETY EVALUATION OF A REQUEST FOR RELIEF FROM  
SECTION XI EXAMINATION REQUIREMENTS  
WISCONSIN PUBLIC SERVICE CORPORATION  
KEWAUNEE NUCLEAR POWER PLANT  
Docket No.: 50-305

Materials Engineering Section  
Engineering Branch  
Division of PWR Licensing-A

I. Background Information

By letter dated January 27, 1987, Wisconsin Public Service Corporation (the Licensee) submitted a request for relief from a requirement of the 1980 Edition, Winter 1981 Addenda of Section XI of the ASME Code. The request pertains to the extent and frequency of examination of the inner radius sections of the steam generator feedwater and main steam nozzles. The request, supporting information, proposed alternative, and the staff's bases for granting the request pursuant to 10 CFR 50.55a(g) are provided herein.

II. Relief Request No. RR-2-4

1. Components Affected

Steam Generators 1A and 1B

<u>Isometric</u>	<u>Description</u>
M-1206	Steam Generator 1A Main Steam Nozzle Inside Radius Section
M-1206	Steam Generator 1B Main Steam Nozzle Inside Radius Section
M-1206	Steam Generator 1A Feedwater Nozzle Inside Radius Section
M-1206	Steam Generator 1B Feedwater Nozzle Inside Radius Section

2. Section XI Requirements

Perform volumetric examination of the nozzle inside radius section per the 1980W1981 Edition of Section XI, Table IWC-2500-1, Category C-B, Item C2.22. In the case of multiple vessels of similar design, size, and service (such as steam generators, heat exchangers), the required examinations may be limited to one vessel or distributed

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among the vessels. The required examinations shall have been completed during successive inspection intervals in accordance with Table IWC-2412-1 shown below:

TABLE IWC-2412-1  
INSPECTION PROGRAM B

Inspection Interval	Inspection Period, Calendar Years of Plant Service	Minimum Examinations Completed, %	Maximum Examinations Credited, %
1st	3	16	34
	7	50	67
	10	100	100
2nd	13	16	34
	17	50	67
	20	100	100
3rd	23	16	34
	27	50	67
	30	100	100
4th	33	16	34
	37	50	100
	40	100	...

3. Licensee's Basis for Requesting Relief

Relief is being sought from strict compliance with Table IWC-2412-1. Table IWC-2412-1 requires that a minimum of 16% of the required examinations be performed during the first inspection period with a maximum of 34% of the examinations to be credited to the first period. A minimum of 50% and a maximum of 67% of the examinations must be completed by the end of the second inspection period, and the remainder completed by the end of the ten-year interval.

Since two nozzles are required to be examined, strict conformance to Table IWC-2412-1 would necessitate performing a volumetric exam on one-half of a nozzle during the first inspection period, completing the examination of the other half of the same nozzle during the second inspection period, and performing full examination of the other nozzle during the third inspection period. The cumulative percentage of examinations for the two nozzles would then be 25% first period, 50% second period and 100% by end of interval, thereby meeting the cumulative percentages required by Table IWC-2412-1.

When only two examinations are required under an item number, it is unreasonable to require partial examination during both the first and second periods just to meet Table IWC-2412-1. Performance of a partial (i.e. half of a nozzle) examination requires the same preparation as the performance of a full nozzle exam. The manpower required for insulation removal, examination, and reinsulation is essentially the same whether one is examining half of a nozzle or a full nozzle. Performing examinations on a half of a nozzle during both the first and second period to be in strict conformance with Table IWC-2412-1 is not justified. The additional cost associated with performing the examination during both the first and second period and the additional radiation exposure received are not consistent with our practice of keeping radiation exposures as low as reasonably achievable (ALARA).

#### 4. Licensee's Proposed Alternative Method of Examination

Since two full nozzles need to be examined, WPSC will examine one full nozzle during either the first or second inspection period and the other nozzle will be examined during the third inspection period. This examination schedule ensures that both nozzles are fully examined by the end of the interval and also provides a distribution of the exams within the interval.

Examining one nozzle inside radius sections during either the first or second period provides the flexibility to schedule the exams based on refueling outage activities and workloads. The licensee will complete 50% of the required examinations by the end of the second inspection period and will complete the remainder of the examinations by the end of the inspection interval. This alternative meets the intent of distribution per Table IWC-2412-1 and does not introduce the additional manpower and ALARA concerns discussed above.

### III. NRC Staff Evaluation

The staff has reviewed the Code requirements applicable to the examination of the steam generator nozzles inner radius sections. Unless otherwise specified by the Code, the extent of examination shall cover 100% of the volume depicted in FIG. IWC-2500-4(a) or (b) of the 1980 Edition, Winter 1981 Addenda of Section XI during the inspection period. In the situation cited by the licensee where there are only two items to be examined when utilizing the multiple stream examination option, it is impractical to perform the examinations in accordance with the frequency and percentage limitations given in Table IWC-2412-1 of Section XI and also maintain the extent of coverage intended by the Code.

The licensee has proposed to examine one nozzle inner radius during the first or second inspection period and to examine the second nozzle inner radius during the third inspection period of the ten-year inspection interval at Kewaunee Nuclear Power Plant. This alternative is proposed in lieu of having to examine one-half of a nozzle inner radius during the first period, one-half during the second period, and the second nozzle inner radius during the third period. The extent and frequency proposed by the licensee are intended by and in keeping with the philosophy of representative sampling of Section XI of the Code. The examination of the nozzle inner radius section comprises part of the overall surveillance requirements of the nozzle areas susceptible to flaw initiation and allowing the licensee to implement his proposed alternative will not significantly affect the capability of early detection of flaws in the inner radius area. The staff, therefore, concludes that relief from the Code frequency requirement may be granted as requested.

Performed by G. Johnson