GPU Nuclear

GPU Nuclear Corporation
Post Office Box 388
Route 9 South
Forked River, New Jersey 08731-0388
609 971-4000
Writer's Direct Dial Number:

May 7, 1993
C321-93-2135

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

Dear Sir:

Subject: Oyster Creek Nuclear Generating Station
Docket No. 50-219
Inservice Inspection Program
Submittal of Relief Request R11
Withdrawal of Relief Request R9

By letter dated April 16, 1992, GPU Nuclear submitted the Inservice Inspection (ISI) Program for the third ten year interval at the Oyster Creek Nuclear Generating Station. As directed by 10CFR 50.55a, the ISI Program was written to meet the 1986 edition of ASME Section XI, with no addenda. USNRC approval of this program has not been received.

As described in 10CFR 50.55a(g)(5)(iii), GPUN has reviewed and compared the ISI Program requirements for the inspection of stainless steel piping welds as described in ASME XI with the IGSCC Program requirements described in NRC Generic Letter 88-01.

By this letter, GPU Nuclear withdraws relief request R9 submitted in our original 10 year update and submits request R11, attached, to request relief from the specific requirements contained in ASME Section XI, as they relate to: 1) Category B-F/B5.10 weld examinations; 2) Category B-J/B9.10 weld examinations; and 3) Category C-F-1/C5.10 weld examinations.

If any additional information or assistance is required, please contact Mr. John Rogers at 609.971.4893.

John J. Barton
Vice President and Director
Oyster Creek

JJB/JJR
Attachment
cc: Administrator, Region I
Senior Resident Inspector
Oyster Creek NRC Project Manager

140112

A047 1/1

ATTACHMENT I

RELIEF REQUEST R11

CODE REFERENCE:

ASME Section XI 1986 edition, without addenda;

1. Pressure retaining dissimilar metal welds; Category B-F/B5.10.

2. Pressure retaining welds in Class 1 piping; Category B-J/B9.10.

3. Pressure retaining welds in Class 2 piping; Category C-F-1/C5.10.

CODE REQUIREMENT:

1 Category B-F/B5.10 examinations are required of each dissimilar metal weld in systems that see reactor coolant.

2. Category B-J/B9.10 piping, of nominal pipe size 4 inches and larger is subject to a surface and volumetric examination. The total number of circumferential butt welds selected for examination shall equal 25% of the circumferential butt welds in the class 1 piping systems in accordance with Table IWB-2500-1, Examination Category B-J.

3. Category C-F-1/C5.10 welds selected for examination shall include 7.5%, but not less than 28 welds, of all austenitic stainless steel high alloy welds not exempted by IWC-1200. The examinations shall be distributed in accordance with Table IWC-2500-1.

CODE RELIEF REQUEST:

Relief is requested from the requirements of ASME Section XI to not schedule, examine, or record on the NIS-1 report any weld which meets all four of the following conditions:

A. on piping made of austenitic stainless steel, **and**
B. which is 4 inches or larger in nominal diameter, **and**
C. contains reactor coolant at a temperature $\geq$ 200°F during power operation, **and**
D. is inspected as part of the Augmented ISI (Generic Letter 88-01) program.

Refer to Table 1 for details of this request.

PROPOSED ALTERNATIVE EXAMINATION:

The welds which are identified as being under both the requirements of: 1) the ASME Section XI Program in categories B-F/B5.10, B-J/B9.10, and C-F-1/C5.10; and 2) USNRC Generic Letter 88-01 shall be scheduled, examined by qualified personnel, with respective sample expansions in accordance with the NRC staff's position in Generic Letter (GL) 88-01, or in accordance with alternative measures approved by the USNRC staff.

BASIS FOR RELIEF:

A comparison of the ISI 10 Year Schedule for ASME Section XI Code examinations and the IGSCC examinations required by Generic Letter 88-01 was performed. A number of redundant examinations and conflicts in scheduling frequencies were identified. This information was combined with evaluations of radiation dose exposures and an opportunity to implement ALARA principles has become evident.

From the systems where ASME Section XI scope and IGSCC scope are common, there are 310 welds identified in the ASME Section XI scope that are also included within the 390 weld IGSCC inspection scope. See table 1. These ASME Section XI welds are identified by ASME categories/item numbers B-F/B5.10, B-J/B9.11, and C-F-1/C5.11. Based on the selection criteria in the 1986 Edition of ASME Section XI for the IGSCC/Section XI systems only, 132 welds are scheduled to be examined during the interval of which 95 weld inspections are common with IGSCC weld inspections. These 95 IGSCC/Section XI common welds are also included in the 426 weld inspections in the IGSCC schedule for the third inspection interval. See table 2.

Efforts have been made to consolidate the two inspection schedules for ASME XI and IGSCC scopes, but the differences between the two scheduling criteria often resulted in a duplication of inspections. The IGSCC limitations were due to the facts that: (1) the IGSCC scope has extreme inspection frequency criteria that can range from a 25% inspection sample within the ten year interval, to as many as 5 inspections of the same weld within the ten year interval, and (2) an IGSCC scope expansion caused by the reporting of a relevant IGSCC indication may cause Section XI exams to be repeated. The 1986 edition of ASME Section XI is also a factor in constraining the efforts to optimize the schedule of redundant IGSCC/Section XI inspections. Section XI makes the consolidation effort more complicated in that subarticles IWB-2400 and IWC-2400 restrict the sequence of examination and sample size (maximum and minimum scope) over the 3 inspection periods within the 10 year interval. In complying with subarticles IWX-2400, and IWX-2500, for those welds that fall within both ASME and IGSCC scopes, GPUN experienced a scheduling hardship that will ultimately result in excessive radiation exposure caused by the sometime conflicting scheduling requirements demanded by the Section XI Code and Generic Letter 88-01.

Attempts to consolidate the two inspection scopes during the previous inspection interval were defeated by these conflicting requirements of the Section XI Code and the Generic Letter 88-01. A detection of a flaw under the IGSCC requirements caused an expansion of scope which often resulted in the reinspection of a weld that had already been inspected for Section XI requirements in a previous inspection period. Also, an expansion of IGSCC scope during an outage sometimes resulted in the premature examination of a Section XI weld which was scheduled for a later inspection period. This weld was then subsequently re-examined during the following inspection period. These occurrences resulted in unnecessary radiation exposure to technicians and craft personnel. A review of available data has indicated that each required examination of one weld results in approximately 1 man-rem of exposure. A reduction of 95 redundant weld inspections will result in a reduction of approximately 95 man-rem. This is a significant radiation exposure reduction.

To meet the requirements of ASME Section XI, ultrasonic examinations must be performed in accordance with the requirements of paragraph IWA-2232, subarticle IWA-2300, and Appendix III. The examination technique and personnel qualifications are not as stringent as the upgraded examination criteria of GL 88-01. Further, the ASME requirements do not include the results of investigations performed on BWR piping. These studies have concluded that there is no significant mode of degradation other than IGSCC in austenitic stainless steel piping greater than 4" in nominal diameter which contains reactor coolant above 200°F during power operation.

During over 20 years of Section XI required surface examinations, not a single service induced OD crack has been discovered on any stainless steel weld at Oyster Creek. Typically, OD cracking of stainless steel welds has been limited to leachable chloride contamination resulting from wetted insulation. Presently, insulation on stainless steel piping within the ASME Section XI and GL 88-01 common boundaries is manufactured from low leachable chloride material. Additionally, the "haze" cracking experienced by some plants during the 1980s has not been a problem at Oyster Creek as there was no procurement of rolled and welded piping during that period.

Lastly, liquid penetrant testing is very radiation dose intensive due to the pre and post testing cleaning and minimum hold times for penetrant and developer. This also creates substantial amounts of mixed waste. GPU Nuclear has concurred with recommendations in GL 88-01 that inspections should focus on those approaches which are best suited for detecting and evaluation IGSCC. Continuing with the ASME Section XI examinations for the 95 common welds is counter productive and forces an undue hardship in radiation burden on our personnel. Therefore GPUN is requesting relief from the ASME Section XI volumetric and surface examination requirements of the 95 common welds based on the ongoing examination program for IGSCC. The details of the B-F/B5.10, B-J/B9.11, and C-F-1/C5.11 welds to be removed from the ASME Section XI program are provided on the attached tables.

TABLE 1
QUANTITY OF WELDS
COMMON IGSCC/SECTION XI SCOPE ; IGSCC SYSTEMS ONLY

IGSCC SYSTEMS	IGSCC WELD COUNT	SECT.XI WELD COUNT FOR IGSCC SYSTEMS				SECT.XI /IGSCC WELDS	PROPOSED SECT.XI SCOPE
		B5.10	B9.11	C5.11	TOTAL		
RECIR.	89	10	79	0	89	89	0
RWCU	132	0	50	0	50	50	0
CORE SPRAY	27	2	71	12	85	33	52
S.D. COOLING	14	0	80	0	80	14	66
ISO COND.	121	2	49	66	117	117	0
HEAD COOLING	7	3	9	0	12	7	5
TOTAL	390	17	338	78	433	310	123

TABLE 2
QUANTITY OF INSPECTIONS
COMMON IGSCC/SECTION XI SCOPE; IGSCC SYSTEMS ONLY

SYSTEMS	IGSCC WELDS	SECT.XI INSPECTIONS ON IGSCC SYSTEMS				SECT.XI /IGSCC WELD	PROPOSED SECT.XI SCOPE
		B5.10	B9.11	C5.11	TOTAL		
RECIR.	119	10	20	0	30	30	0
RWCU	123	0	13	0	13	13	0
CORE SPRAY	48	2	20	4	26	10	16
S.D. COOLING	28	0	25	0	25	6	19
ISO COND.	96	2	8	22	32	32	0
HEAD COOLING	12	3	3	0	6	4	2
TOTAL	426	117	89	26	132	95	37