Nebraska Public Power District

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NLS9000177
April 30, 1990

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

Subject: Supplemental Response to Generic Letter 88-01
Cooper Nuclear Station
NRC Docket No. 50-298, DPR-46

Reference: 1) Letter from P. W. O'Connor (NRC) to G. A. Trevors (NPPD) dated February 14, 1990, Review of NPPD's Response to Generic Letter 88-01 (TAC No. 69131)

2) Letter from G. A. Trevors (NPPD) to U.S. Nuclear Regulatory Commission dated July 24, 1989, "Request for Additional Information - Generic Letter 88-01" (TAC No. 69131)

3) Letter from L. G. Kuncl (NPPD) to U.S. Nuclear Regulatory Commission dated August 3, 1988, "IGSCC in BWR Austenitic Stainless Steel Piping, Generic Letter 88-01"

4) Letter from D. B. Vassallo (NRC) to L. G. Kuncl (NPPD) dated September 1, 1983 issuing Confirmatory Order

5) Letter from W. O. Long (NRC) to G. A. Trevors (NPPD) dated July 20, 1987 "Clarification of Effective Page - Technical Specifications for Cooper Nuclear Station"

Gentlemen:

Reference 1 found the District's previous responses to Generic Letter 88-01 acceptable with the exception of four areas as documented in the Staff's Safety Evaluation Report (SER) and contractor Technical Evaluation Report (TER). This letter provides the District's response to the four areas of concern.

1. Your responses concerning intergranular stress corrosion cracking (IGSCC) classifications and accessibility contain conflicting and inconsistent information. The staff will find these responses acceptable, provided that the recommendations described in Section 2.3.5 of the enclosed Technical Evaluation Report (TER) are implemented.

NPPD Response:

The recommendations described in Section 2.3.5 of the subject TER were implemented. The listing of welds provided in Reference 2 has been updated and is attached for information. The new listing accounts for

A001
1/1

portions of the Reactor Water Cleanup (RWCU) System that were replaced with IGSCC resistant material during the 1990 refueling outage . The resulting new welds are identified in the comments column of the new listing and the welds removed by the RWCU pipe replacement have been deleted. All inaccessible welds have been classified as IGSCC Category G and Weld RCA-BF-1 has been reclassified as IGSCC Category D. All welds reported to have cracks in Reference 2 have been either replaced or repaired, or were misidentified as having cracks and have been corrected accordingly in the attachment. No welds described in the attachment have flaw indications, consequently there are no IGSCC Category F welds.

2. Your responses declined to propose a Technical Specification change that includes a statement on inservice inspection (ISI) as required by this generic letter. This position is not acceptable. NPPD should propose an amendment to the Cooper Technical Specifications as required by Generic Letter 88-01. The model specification for boiling water reactors that was provided in Attachment B to the generic letter should be utilized unless changes are necessary to accommodate plant specific differences at Cooper Nuclear Station.

NPPD Response:

The District committed, in Reference 3, to be in conformance with the stated staff positions contained in Generic Letter 88-01 in regards to schedule, methods and personnel, and sample expansion. This commitment is identical in content to the model Technical Specification contained in the Generic Letter. The District is adhering to this commitment and will continue to do so. The District does not believe amending the Cooper Nuclear Station Facility Operating License to incorporate this commitment into the Technical Specifications is necessary and requests that the NRC reconsider its position on this item.

3. NPPD has also declined to propose an amendment to the Technical Specifications that limits the increase in unidentified leakage to 2 gpm over a period of 24 hours or less, as required by Generic Letter 88-01. Your position is unacceptable. NPPD should propose the required Technical Specification.

NPPD Response:

As described below, the District believes the existing leakage detection Technical Specifications are adequate.

a) There are no IGSCC Category D, E, F, or G welds inside the CNS containment with the exception of weld RCA-BF-1. This particular weld is on the capped CRD return line to the pressure vessel and has an inner diameter less than four inches. This weld was inspected during the 1990 refueling outage with no crack indications detected. While the TER notes that the scope of the subject generic letter is not limited to the welds inside the containment, the leakage detection systems in question are confined to the primary containment.

b) As a result of finding IGSCC cracking in 1983, the NRC issued a Confirmatory Order to the District, Reference 4, on September 1, 1983. The order directed enhanced leakage monitoring due to uncertainties in crack sizing and growth. The District believes this Confirmatory Order was issued solely on the basis of identified cracks in large bore IGSCC susceptible piping inside Cooper's containment.

c) A July 20, 1987 letter, Reference 5, removed the enhanced leakage detection requirements because the NRC had determined that the circumstance (IGSCC cracking) that had led to the Confirmatory Order (enhanced leakage requirements) was no longer applicable.

d) The District's basis regarding unidentified leakage rate is described in Cooper's Updated Safety Analysis Report, Section IV-10. The 5 gpm rate in Section 3.6.C of the Technical Specifications is extremely conservative relative to 150 gpm determined necessary to indicate rapid crack propagation.

e) The District replaced IGSCC susceptible piping in 1985 to ensure the continued safe operation of Cooper and ensure Cooper would meet General Design Criteria 4, 14, and 31.

In summary, the District believes any submission regarding enhanced leakage technical specifications is unwarranted and is voluntary in nature. Just six months before the issuance of Generic Letter 88-01, the NRC Staff agreed with the District regarding enhanced leakage detection requirements at Cooper. Since the existing leakage specification adequately provides for the public health and safety, the District believes the previous staff position (Reference 5) regarding leakage detection is adequate and does not plan to submit a Technical Specification change in this regard.

4. NPPD's position on reporting of flaws and flaw evaluation is not in conformance with the NRC staff position stated in Generic Letter 88-01. NPPD should modify its position on reporting requirements and repair criteria to conform to the NRC staff position as required in Generic Letter 88-01.

NPPD Response:

The District will conform to the NRC Staff position on reporting requirements as stated in Generic Letter 88-01. The District will notify the NRC of any flaws identified that do not meet IWB-3600 criteria of Section XI of the Code for Continued Operation without evaluation, or a change found in condition of welds previously known to be cracked. The District will also notify the NRC of flaw evaluation required for continued operation and/or flaw repair plans.

Should you have any further questions regarding this issue, please contact my office.

Sincerely,

G. A. Trevors
Division Manager
Nuclear Support

/jw
Attachment

cc: U.S. Nuclear Regulatory Commission
Region IV
Arlington, TX

NRC Resident Inspector Office
Cooper Nuclear Station

ITEM 2. INSERVICE INSPECTION PROGRAM

WELD NO.	SYSTEM	ISO	CFIG	SIZE	MAT (1)	SHT	SI (2)	IGSCC	CRC	PAST	EXISTING FLAW	FUTURE	COMMENTS
CWA-CF-45	RWCU	2605-4	V-P	6"	F20/P21	No	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
CWA-CF-46	RWCU	2605-4	P-T	6"	P21	Yes	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
CWA-CF-47	RWCU	2605-4	T-P	6"	P21	Yes	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
CWA-CF-48	RWCU	2605-4	P-E	6"	P21	Yes	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
CWA-CF-50	RWCU	2605-4	E-P	6"	P21	Yes	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
CWA-CF-51	RWCU	2605-4	P-E	6"	P21	No	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
CWA-CF-52	RWCU	2605-4	E-P	6"	P21	Yes	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
CWA-CF-54	RWCU	2605-4	P-E	6"	P21	No	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
CWA-CF-56	RWCU	2605-4	E-T	6"	F-26	Yes	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
CWA-CF-57	RWCU	2605-4	T-R	6"	F-26	Yes	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
CWA-CF-58	RWCU	2605-4	T-R	6"	F-26	Yes	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
RWCU-10	RWCU	2605-3	N-P	4"	P12	No	No	D	No	R.O. 12	No	Per G.L. 88-01	Will be replaced or deleted 1991 Outage.
RWCU-11	RWCU	2605-3	P-E	4"	P12	No	No	D	No	R.O. 12	No	Per G.L. 88-01	Will be replaced or deleted 1991 Outage.
RWCU-12	RWCU	2605-3	E-P	4"	P12	No	No	D	No	R.O. 12	No	Per G.L. 88-01	Will be replaced or deleted 1991 Outage.
RWCU-13	RWCU	2605-3	P-E	4"	P12	No	No	D	No	R.O. 12	No	Per G.L. 88-01	Will be replaced or deleted 1991 Outage.
RWCU-14	RWCU	2605-3	E-P	4"	P12	No	No	D	No	R.O. 12	No	Per G.L. 88-01	Will be replaced or deleted 1991 Outage.
RWCU-15	RWCU	2605-3	P-P	4"	P12	No	No	G	No	N/A	No	Per G.L. 88-01	Inaccessible, pipe will be rerouted in 1991.
RWCU-16	RWCU	2605-3	P-E	4"	P12	No	No	G	No	N/A	No	Per G.L. 88-01	Inaccessible, pipe will be rerouted in 1991.
RWCU-17	RWCU	2605-3	E-P	4"	P12	No	No	G	No	N/A	No	Per G.L. 88-01	Inaccessible, pipe will be rerouted in 1991.
RWCU-18	RWCU	2605-3	P-E	4"	P12	No	No	G	No	N/A	No	Per G.L. 88-01	Inaccessible, pipe will be rerouted in 1991.
RWCU-19	RWCU	2605-3	E-P	4"	P12	No	No	G	No	N/A	No	Per G.L. 88-01	Inaccessible, pipe will be rerouted in 1991.

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WELD NO.	SYSTEM	ISO	CFIG	SIZE	MAT (1)	SHT	SI (2)	IGSCC	CRC	PAST	EXISTING FLAW	FUTURE	COMMENTS
RWCU-20	RWCU	2605-3	P-E	4"	P12	No	No	G	No	N/A	No	Per G.L. 88-01	Inaccessible, pipe will be rerouted in 1991.
RWCU-21	RWCU	2605-3	E-P	4"	P12	No	No	G	No	N/A	No	Per G.L. 88-01	Inaccessible, pipe will be rerouted in 1991.
RWCU-22	RWCU	2605-3	P-E	4"	P12	No	No	G	No	N/A	No	Per G.L. 88-01	Inaccessible, pipe will be rerouted in 1991.
RWCU-23	RWCU	2605-3	E-P	4"	P12	No	No	G	No	N/A	No	Per G.L. 88-01	Inaccessible, pipe will be rerouted in 1991.
RWCU-24	RWCU	2605-3	P-P	4"	P12	No	No	G	No	N/A	No	Per G.L. 88-01	Inaccessible, pipe will be rerouted in 1991.
RWCU-25	RWCU	2605-3	P-P	4"	P12	No	No	D	No	R.O. 12	No	Per G.L. 88-01	Will be replaced or deleted 1991 Outage.
RWCU-26	RWCU	2605-3	P-E	4"	P12	No	No	D	No	R.O. 12	No	Per G.L. 88-01	Will be replaced or deleted 1991 Outage.
RWCU-27	RWCU	2605-1	E-P	4"	P12	No	No	D	No	R.O. 12	No	Per G.L. 88-01	Will be replaced or deleted 1991 Outage.
RWCU-28	RWCU	2605-1	P-E	4"	P12	No	No	D	No	R.O. 12	No	Per G.L. 88-01	Will be replaced or deleted 1991 Outage.
RWCU-29	RWCU	2605-1	E-T	4"	P12	No	No	D	No	R.O. 12	No	Per G.L. 88-01	Will be replaced or deleted 1991 Outage.
RWCU-29A	RWCU	2605-1	P-T	4"	P12	No	No	D	No	R.O. 12	No	Per G.L. 88-01	Will be replaced or deleted 1991 Outage.
RWCU-30	RWCU	2605-1	T-P	4"	P12	No	No	D	No	R.O. 12	No	Per G.L. 88-01	Will be replaced or deleted during the 1991 Outage.
RWCU-31	RWCU	2605-1	P-E	4"	P12	No	No	D	No	R.O. 12	No	Per G.L. 88-01	Will be replaced or deleted during the 1991 Outage.
RWCU-32	RWCU	2605-1	E-P	4"	P12	No	No	D	No	R.O. 12	No	Per G.L. 88-01	Will be replaced or deleted during the 1991 Outage.
RWCU-33	RWCU	2605-1	P-E	4"	P12	No	No	D	No	R.O. 12	No	Per G.L. 88-01	Will be replaced or deleted during the 1991 Outage.
RWCU-34	RWCU	2605-1	E-P	4"	P12	No	No	D	No	R.O. 12	No	Per G.L. 88-01	Will be replaced or deleted during the 1991 Outage.

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WELD NO.	SYSTEM	ISO	CFIG	SIZE	MAT (1)	SHT	SI (2)	IGSCC	CRC	PAST	EXISTING FLAW	FUTURE	COMMENTS
RWCU-35	RWCU	2605-1	P-E	4"	P12	No	No	D	No	R.O. 12	No	Per G.L. 88-01	Will be replaced or deleted during the 1991 Outage.
RWCU-36	RWCU	2605-1	E-P	4"	P12	No	No	D	No	R.O. 12	No	Per G.L. 88-01	Will be replaced or deleted during the 1991 Outage.
RWCU-37	RWCU	2605-1	P-E	4"	P12	No	No	D	No	R.O. 12	No	Per G.L. 88-01	Will be replaced or deleted during the 1991 Outage.
RWCU-38	RWCU	2605-1	E-P	4"	P12	No	No	D	No	R.O. 12	No	Per G.L. 88-01	Will be replaced or deleted during the 1991 Outage.
RWCU-39	RWCU	2605-1	P-E	4"	P12	No	No	D	No	R.O. 12	No	Per G.L. 88-01	Will be replaced or deleted during the 1991 Outage.
RWCU-40	RWCU	2605-1	E-P	4"	P12	No	No	D	No	R.O. 12	No	Per G.L. 88-01	Will be replaced or deleted during the 1991 Outage.
RWCU-41	RWCU	2605-1	P-E	4"	P12	No	No	D	No	R.O. 12	No	Per G.L. 88-01	Will be replaced or deleted during the 1991 Outage.
RWCU-42	RWCU	2605-1	E-P	4"	P12	No	No	D	No	R.O. 12	No	Per G.L. 88-01	Will be replaced or deleted during the 1991 Outage.
RWCU-43	RWCU	2605-1	P-P	4"	P12	No	No	D	No	R.O. 12	No	Per G.L. 88-01	Will be replaced or deleted during the 1991 Outage.
RWCU-44	RWCU	2605-1	P-E	4"	P12	No	No	D	No	R.O. 12	No	Per G.L. 88-01	Will be replaced or deleted during the 1991 Outage.
RWCU-45	RWCU	2605-1	E-P	4"	P12	No	No	D	No	R.O. 12	No	Per G.L. 88-01	Will be replaced or deleted during the 1991 Outage.
RWCU-46	RWCU	2605-1	P-E	4"	P12	No	No	D	No	R.O. 12	No	Per G.L. 88-01	Will be replaced or deleted 1991 Outage.
RWCU-47	RWCU	2605-1	E-VA	4"	P12	No	No	D	No	R.O. 12	No	Per G.L. 88-01	Will be replaced or deleted 1991 Outage.
RWCU-48	RWCU	2513-1	V-P	4"	P12	No	No	D	No	R.O. 12	No	Per G.L. 88-01	Will be replaced or deleted 1991 Outage.

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WELD NO.	SYSTEM	ISO	CFIG	SIZE	MAT (1)	SHT	SI (2)	IGSCC	CRC	PAST	EXISTING FLAW	FUTURE	COMMENTS
RWCU-49	RWCU	2513-1	P-P	4"	P12	No	No	D	No	R.O. 12	No	Per G.L. 88-01	Will be replaced or deleted 1991 Outage.
RWCU-63	RWCU	2605-2	T-R	4"	F26	Yes	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
RWCU-64	RWCU	2605-2	T-R	4"	F26	Yes	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
RWCU-65	RWCU	2605-2	T-P	4"	P21	No	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
RWCU-66	RWCU	2605-2	P-P	4"	P21	No	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
RWCU-67	RWCU	2605-2	P-P	4"	P21	No	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
RWCU-68	RWCU	2605-2	P-P	4"	P21	No	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
RWCU-69	RWCU	2605-2	P-P	4"	P21	No	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
RWCU-70	RWCU	2605-2	P-P	4"	P21	No	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
RWCU-71	RWCU	2605-2	P-P	4"	P21	No	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
RWCU-72	RWCU	2605-2	E-P	4"	P21	No	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
RWCU-73	RWCU	2605-2	P-E	4"	P21	No	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
RWCU-74	RWCU	2605-2	T-P	4"	P21	No	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
RWCU-75	RWCU	2605-2	P-T	4"	P21	No	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
RWCU-76	RWCU	2605-2	N-P	4"	P12/P21	No	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
RWCU-77	RWCU	2605-2	T-P	4"	P21	No	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
RWCU-78	RWCU	2605-2	P-E	4"	P21	Yes	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
RWCU-79	RWCU	2605-2	E-P	4"	P21	No	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
RWCU-80	RWCU	2605-2	P-E	4"	P21	Yes	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
RWCU-81	RWCU	2605-2	E-P	4"	P21	No	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
RWCU-82	RWCU	2605-2	P-V	4"	F21/P21	No	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
RWCU-83	RWCU	2605-2	V-T	4"	F20/F26	No	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
RWCU-84	RWCU	2605-3	P-T	4"	P12	Yes	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
RWCU-85	RWCU	2605-3	E-P	4"	P12	Yes	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
RWCU-86	RWCU	2605-3	P-E	4"	P12	No	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
RWCU-87	RWCU	2605-3	P-N	4"	P12/P21	No	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.

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WELD NO.	SYSTEM	ISO	CFIG	SIZE	MAT (1)	SHT	SI (2)	IGSCC	CRC	PAST	EXISTING FLAW	FUTURE	COMMENTS
RWCU-88	RWCU	2605-3	T-V	4"	F21/F26	No	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
RWCU-89	RWCU	2605-3	V-P	4"	F21/P21	No	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
RWCU-90	RWCU	2605-3	P-E	4"	P21	Yes	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
RWCU-91	RWCU	2605-3	E-P	4"	P21	No	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
RWCU-92	RWCU	2605-3	P-E	4"	P21	Yes	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
RWCU-93	RWCU	2605-3	E-N	4"	P12/F26	No	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
RWCU-94	RWCU	2605-4	T-P	4"	P21	No	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.
RWCU-95	RWCU	2605-4	P-C	4"	P21	No	No	A	No	R.O. 13	No	Per G.L. 88-01	Replaced 1990 Outage.

ITEM 2. INSERVICE INSPECTION PROGRAM

WELD NO.	CAT	ISO	SYSTEM	CFIG	SIZE	MAT (1) (3)	SHT	SI (2)	IGSCC	CRC	PAST	EXISTING FLAW	FUTURE	COMMENTS
CSA-BF-1	B-F	CNS-CS-4	Core Spray	SE-N	13.44	P20/RPV-1	No	Yes	A	Yes	R.O. 9, 10, 12	No	Per G.L. 88-01	
CSA-BF-4A	B-F	CNS-CS-4	Core Spray	P-E	10	P20/P2	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
CSA-BJ-2	B-J	CNS-CS-4	Core Spray	P-SE	10	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
CSA-BJ-3	B-J	CNS-CS-4	Core Spray	P-P	10	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
CSA-BJ-4	B-J	CNS-CS-4	Core Spray	E-P	10	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
CSB-BF-1	B-F	CNS-CS-3	Core Spray	SE-N	13.44	P20/RPV-1	No	Yes	A	Yes	R.O. 9, 10	No	Per G.L. 88-01	
CSB-BF-4A	B-F	CNS-CS-3	Core Spray	P-E	10	P20/P2	No	Yes	A	No	R.O. 9, 10	No	Per G.L. 88-01	
CSB-BJ-2	B-J	CNS-CS-3	Core Spray	P-SE	10	P20	No	Yes	A	No	R.O. 9, 10	No	Per G.L. 88-01	
CSB-BJ-3	B-J	CNS-CS-3	Core Spray	P-P	10	P20	No	Yes	A	No	R.O. 9, 10	No	Per G.L. 88-01	
CSB-BJ-4	B-J	CNS-CS-3	Core Spray	E-P	10	P20	No	Yes	A	No	R.O. 9, 10	No	Per G.L. 88-01	
CWA-BJ-1	B-J	CNS-RWCU-3	RWCU	P-P	6	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
CWA-BJ-2	B-J	CNS-RWCU-3	RWCU	P-P	6	P20	No	Yes	A	No	R.O. 9, 10	No	Per G.L. 88-01	
CWA-BJ-3	B-J	CNS-RWCU-3	RWCU	P-P	6	P20	Yes	No	A	No	R.O. 9	No	Per G.L. 88-01	
CWA-BJ-4	B-J	CNS-RWCU-3	RWCU	P-VA	6	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
CWA-BJ-5	B-J	CNS-RWCU-3	RWCU	VA-P	6	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
CWA-BJ-6	B-J	CNS-RWCU-3	RWCU	P-P	6	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
CWA-BJ-7	B-J	CNS-RWCU-3	RWCU	P-VA	6	P20	No	Yes	A	No	R.O. 9, 11	No	Per G.L. 88-01	

ITEM 2. INSERVICE INSPECTION PROGRAM

WELD NO.	CAT	ISO	SYSTEM	CFIG	SIZE	MAT (1) (3)	SHT	SI (2)	IGSCC	CRC	PAST	EXISTING FLAW	FUTURE	COMMENTS
CWA-BJ-8	B-J	CNS-RWCU-3	RWCU	VA-P	6	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
CWA-BJ-9	B-J	CNS-RWCU-3	RWCU	P-E	6	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
CWA-BJ-10	B-J	CNS-RWCU-3	RWCU	E-P	6	P20	No	Yes	A	No	R.O. 9, 10	No	Per G.L. 88-01	
CWA-BJ-11	B-J	CNS-RWCU-3	RWCU	P-P	6	P20	Yes	No	A	No	See Comment	No	Per G.L. 88-01	*
CWA-BJ-12	B-J	CNS-RWCU-3	RWCU	P-VA	6	P20	No	Yes	A	No	R.O. 9, 10	No	Per G.L. 88-01	
CWA-BJ-14	B-J	CNS-RWCU-3	RWCU	P-P	6	P20	No	Yes	A	No	R.O. 9, 10	No	Per G.L. 88-01	
CWB-BF-8	B-F	2509-1	RWCU	P-VA	4	P2/P12	No	No	D	No	R.O. 12	No	Per G.L. 88-01	**
JPA-BF-1	B-F	CE232-241-5	NB	SE-N	6	P20/RPV-1	No	No	A	No	R.O. 9, 13	No	Per G.L. 88-01	
JPB-BF-1	B-F	CE232-241-5	NB	SE-N	6	P20/RPV-1	No	No	A	No	R.O. 9	No	Per G.L. 88-01	
RAD-BF-7	B-F	CNS-RR-37	Recirc.	P-P	24	P20/P3	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
RAD-BJ-1	B-J	CNS-RR-37	Recirc.	PU-P	28	P20	No	Yes	A	No	R.O. 9, 10	No	Per G.L. 88-01	
RAD-BJ-2	B-J	CNS-RR-37	Recirc.	P-VA	28	P20	No	Yes	A	No	R.O. 9, 10	No	Per G.L. 88-01	
RAD-BJ-3	B-J	CNS-RR-37	Recirc.	VA-P	28	P20	No	Yes	A	No	R.O. 9, 10	No	Per G.L. 88-01	
RAD-BJ-4	B-J	CNS-RR-37	Recirc.	P-T	28	P20	No	Yes	A	No	R.O. 9, 10	No	Per G.L. 88-01	
RAD-BJ-5	B-J	CNS-RR-37	Recirc.	T-4W	30	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
RAD-BJ-6	B-J	CNS-RR-37	Recirc.	P-T	24	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
RAH-BJ-1	B-J	CNS-RR-37	Recirc.	4W-P	22	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	

ITEM 2. INSERVICE INSPECTION PROGRAM

WELD NO.	CAT	ISO	SYSTEM	CFIG	SIZE	MAT (1) (3)	SHT	SI (2)	IGSCC	CRC	PAST	EXISTING FLAW	FUTURE	COMMENTS
RAH-BJ-2	B-J	CNS-RR-37	Recirc.	4W-P	22	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
RAS-BF-1	B-F	CNS-RR-37	Recirc.	SE-N	29	P20/RPV-1	No	Yes	A	Yes	R.O. 9, 10	No	Per G.L. 88-01	
RAS-BF-12	B-F	CNS-RR-37	Recirc.	P-P	20	P20/P3	No	Yes	A	No	R.O. 9, 10	No	Per G.L. 88-01	
RAS-BJ-2	B-J	CNS-RR-37	Recirc.	SE-P	28	P20	No	Yes	A	No	R.O. 9, 10	No	Per G.L. 88-01	
RAS-BJ-3	B-J	CNS-RR-37	Recirc.	P-T	28	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
RAS-BJ-4	B-J	CNS-RR-37	Recirc.	T-P	28	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
RAS-BJ-5	B-J	CNS-RR-37	Recirc.	P-VA	28	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
RAS-BJ-6	B-J	CNS-RR-37	Recirc.	VA-P	28	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
RAS-BJ-6A	B-J	CNS-RR-37	Recirc.	P-WE	28	P20	Yes	No	A	No	R.O. 9	No	Per G.L. 88-01	
RAS-BJ-6B	B-J	CNS-RR-37	Recirc.	WE-F	4	P20	No	No	A	No	R.O. 9	No	Per G.L. 88-01	
RAS-BJ-7	B-J	CNS-RR-37	Recirc.	P-E	28	P20	Yes	No	A	No	R.O. 9	No	Per G.L. 88-01	
RAS-BJ-8	B-J	CNS-RR-37	Recirc.	E-PU	28	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
RAS-BJ-9	B-J	CNS-RR-37	Recirc.	T-E	20	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
RAS-BJ-10	B-J	CNS-RR-37	Recirc.	W-E	9	P20	Yes	No	A	No	R.O. 9	No	Per G.L. 88-01	
RAS-BJ-11	B-J	CNS-RR-37	Recirc.	E-E	20	P20	No	Yes	A	No	R.O. 9, 10	No	Per G.L. 88-01	
RBD-BF-7	B-F	CNS-RR-38	Recirc.	P-P	24	P20/P3	No	Yes	A	No	R.O. 9, 13	No	Per G.L. 88-01	
RBD-BJ-1	B-J	CNS-RR-38	Recirc.	PU-P	28	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	

ITEM 2. INSERVICE INSPECTION PROGRAM

WELD NO.	CAT	ISO	SYSTEM	CFIG	SIZE	MAT (1) (3)	SHT	SI (2)	IGSCC	CRC	PAST	EXISTING FLAW	FUTURE	COMMENTS
RBD-BJ-2	B-J	CNS-RR-38	Recirc.	P-VA	28	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
RBD-BJ-3	B-J	CNS-RR-38	Recirc.	VA-P	28	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
RBD-BJ-4	B-J	CNS-RR-38	Recirc.	P-T	28	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
RBD-BJ-5	B-J	CNS-RR-38	Recirc.	T-4W	30	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
RBD-BJ-6	B-J	CNS-RR-38	Recirc.	P-T	24	P20	Yes	No	A	No	R.O. 9	No	Per G.L. 88-01	
RBH-BJ-1	B-J	CNS-RR-38	Recirc.	4W-P	22	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
RBH-BJ-2	B-J	CNS-RR-38	Recirc.	4W-P	22	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
RBS-BF-1	B-F	CNS-RR-38	Recirc.	SE-N	29	P20/RPV-1	No	Yes	A	Yes	R.O. 9, 13	No	Per G.L. 88-01	
RBS-BJ-2	B-J	CNS-RR-38	Recirc.	SE-P	28	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
RBS-BJ-3	B-J	CNS-RR-38	Recirc.	P-P	28	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
RBS-BJ-4	B-J	CNS-RR-38	Recirc.	P-P	28	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
RBS-BJ-5	B-J	CNS-RR-38	Recirc.	P-VA	28	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
RBS-BJ-6	B-J	CNS-RR-38	Recirc.	VA-P	28	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
RBS-BJ-6A	B-J	CNS-RR-38	Recirc.	P-WE	28	P20	Yes	No	A	No	R.O. 9	No	Per G.L. 88-01	
RBS-BJ-6B	B-J	CNS-RR-38	Recirc.	WE-F	4	P20	No	No	A	No	R.O. 9	No	Per G.L. 88-01	
RBS-BJ-7	B-J	CNS-RR-38	Recirc.	P-E	28	P20	Yes	No	A	No	R.O. 9	No	Per G.L. 88-01	
RBS-BJ-8	B-J	CNS-RR-38	Recirc.	E-PU	28	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	

ITEM 2. INSERVICE INSPECTION PROGRAM

WELD NO.	CAT	ISO	SYSTEM	CFIG	SIZE	MAT (1) (3)	SHT	SI (2)	IGSCC	CRC	PAST	EXISTING FLAW	FUTURE	COMMENTS
RCA-BF-1	B-F	N/A	NB	N-SE	5	P18/RPV-1	No	No	D	No	R.O. 11, 13	No	Per G.L. 88-01	
RRA-BF-1	B-F	CNS-RR-38	Recirc.	SE-N	14	P20/RPV-1	No	Yes	A	Yes	R.O. 9	No	Per G.L. 88-01	
RRA-BJ-2	B-J	CNS-RR-38	Recirc.	P-SE	12	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
RRA-BJ-3	B-J	CNS-RR-38	Recirc.	P-P	12	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
RRA-BJ-4	B-J	CNS-RR-38	Recirc.	P-E	12	P20	Yes	No	A	No	R.O. 9	No	Per G.L. 88-01	
RRA-BJ-5	B-J	CNS-RR-38	Recirc.	R-E	12	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
RRB-BF-1	B-F	CNS-RR-38	Recirc.	SE-N	14	P20/RPV-1	No	Yes	A	Yes	R.O. 9	No	Per G.L. 88-01	
RRB-BJ-2	B-J	CNS-RR-38	Recirc.	P-SE	12	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
RRB-BJ-3	B-J	CNS-RR-38	Recirc.	T-P	12	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
RRC-BF-1	B-F	CNS-RR-38	Recirc.	SE-N	14	P20/RPV-1	No	Yes	A	Yes	R.O. 9, 10	No	Per G.L. 88-01	
RRC-BJ-2	B-J	CNS-RR-38	Recirc.	P-SE	12	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
RRC-BJ-3	B-J	CNS-RR-38	Recirc.	R-P	12	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
RRD-BF-1	B-F	CNS-RR-38	Recirc.	SE-N	14	P20/RPV-1	No	Yes	A	Yes	R.O. 9	No	Per G.L. 88-01	
RRD-BJ-2	B-J	CNS-RR-38	Recirc.	P-SE	12	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
RRD-BJ-3	B-J	CNS-RR-38	Recirc.	T-P	12	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
RRE-BF-1	B-F	CNS-RR-38	Recirc.	SE-N	14	P20/RPV-1	No	Yes	A	Yes	R.O. 9, 10	No	Per G.L. 88-01	
RRE-BJ-2	B-J	CNS-RR-38	Recirc.	P-SE	12	P20	No	Yes	A	No	R.O. 9, 10	No	Per G.L. 88-01	

ITEM 2. INSERVICE INSPECTION PROGRAM

WELD NO.	CAT	ISO	SYSTEM	CFIG	SIZE	MAT (1) (3)	SHT	SI (2)	IGSCC	CRC	PAST	EXISTING FLAW	FUTURE	COMMENTS
RRE-BJ-3	B-J	CNS-RR-38	Recirc.	P-P	12	P20	No	Yes	A	No	R.O. 9, 10	No	Per G.L. 88-01	
RRE-BJ-4	B-J	CNS-RR-38	Recirc.	P-E	12	P20	Yes	No	A	No	R.O. 9, 10	No	Per G.L. 88-01	
RRE-BJ-5	B-J	CNS-RR-38	Recirc.	R-P	12	P20	No	Yes	A	No	R.O. 9, 10	No	Per G.L. 88-01	
RRF-BF-1	B-F	CNS-RR-37	Recirc.	SE-N	14	P20/RPV-1	No	Yes	A	Yes	R.O. 9	No	Per G.L. 88-01	
RRF-BJ-2	B-J	CNS-RR-37	Recirc.	P-E	12	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
RRF-BJ-3	B-J	CNS-RR-37	Recirc.	P-P	12	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
RRF-BJ-4	B-J	CNS-RR-37	Recirc.	P-P	12	P20	Yes	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
RRF-BJ-5	B-J	CNS-RR-37	Recirc.	R-P	12	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
RRG-BF-1	B-F	CNS-RR-37	Recirc.	SE-N	14	P20/RPV-1	No	Yes	A	Yes	R.O. 9	No	Per G.L. 88-01	
RRG-BJ-2	B-J	CNS-RR-37	Recirc.	P-SE	12	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
RRG-BJ-3	B-J	CNS-RR-37	Recirc.	T-P	12	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
RRH-BF-1	B-F	CNS-RR-37	Recirc.	SE-N	14	P20/RPV-1	No	Yes	A	Yes	R.O. 9, 10	No	Per G.L. 88-01	
RRH-BJ-2	B-J	CNS-RR-37	Recirc.	P-SE	12	P20	No	Yes	A	No	R.O. 9, 10	No	Per G.L. 88-01	
RRH-BJ-3	B-J	CNS-RR-37	Recirc.	R-P	12	P20	No	Yes	A	No	R.O. 9, 10	No	Per G.L. 88-01	
RRJ-BF-1	B-F	CNS-RR-37	Recirc.	SE-N	14	P20/RPV-1	No	Yes	A	Yes	R.O. 9, 12	No	Per G.L. 88-01	
RRJ-BJ-2	B-J	CNS-RR-37	Recirc.	P-SE	12	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
RRJ-BJ-3	B-J	CNS-RR-37	Recirc.	T-P	12	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	

ITEM 2. INSERVICE INSPECTION PROGRAM

WELD NO.	CAT	ISO	SYSTEM	CFIG	SIZE	MAT (1) (3)	SHT	SI (2)	IGSCC	CRC	PAST	EXISTING FLAW	FUTURE	COMMENTS
RRK-BF-1	B-F	CNS-RR-37	Recirc.	SE-N	14	P20/RPV-1	No	Yes	A	Yes	R.O. 9, 12	No	Per G.L. 88-01	
RRK-BJ-2	B-J	CNS-RR-37	Recirc.	P-SE	12	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
RRK-BJ-3	B-J	CNS-RR-37	Recirc.	P-P	12	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	
RRK-BJ-4	B-J	CNS-RR-37	Recirc.	P-P	12	P20	Yes	No	A	No	R.O. 9	No	Per G.L. 88-01	
RRK-BJ-5	B-J	CNS-RR-37	Recirc.	P-P	12	P20	No	Yes	A	No	R.O. 9	No	Per G.L. 88-01	

*Weld located inside penetration and is considered inaccessible.

**Will be replaced or deleted in 1991.

(1) Nonconforming Material - P12, ASTM-A-312 TYPE 304
F19, ASTM-A-403 GRADE WP-304

Conforming Material - P20, 316 NG
P21, SA/A-312 TP316L
F20, A-403 GR WP-316
F21, A-182 GR F-316
F26, SA/A-403 WP-316L
F27, SA/A-182 GR F-316L

Other Material - P18, SB-166 Inconel

(2) The Stress Improved, SI, method utilized by NPPD was Induction Heating Stress improvement. Pre and post treatment inspections were performed within two years of the service date using methods and personnel approved by the NRC.

(3) XXX/XXX indicates a stainless steel to carbon steel weld.