February 6, 2004

10 CFR 50.55a(a)(3)(i)

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Mail Stop: OWFN P1-35
Washington, D.C. 20555-0001

Gentlemen:

In the Matter of) Docket No. 50-296
Tennessee Valley Authority)

BROWNS FERRY NUCLEAR PLANT (BFN) - UNIT 3 - AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME) SECTION XI INSERVICE INSPECTION (ISI) PROGRAM, REQUEST FOR RELIEF 3-ISI-23 – REQUEST FOR DEFERRAL OF SEVEN REACTOR PRESSURE VESSEL WELD EXAMINATIONS FOR ONE OPERATING CYCLE

In accordance with 10 CFR 50.55a(a)(3)(i), TVA is requesting relief from certain inservice inspection (ISI) requirements in Section XI, of the ASME Boiler and Pressure Vessel Code. Specifically, TVA is requesting to defer, for one operating cycle (approximately 24 months), the volumetric examination of seven reactor pressure vessel (RPV) nozzle-to-vessel welds and nozzle inner radius sections. The examinations are scheduled to be performed during the Unit 3, Spring 2004, Cycle 11 refueling outage, which is the last refueling outage in the second ten-year ISI inspection interval. The second ten-year ISI inspection interval ends on November 18, 2005. Therefore, TVA is actually asking for a three to four month deferral from the end of the second 10-year ISI inspection interval to the Spring 2006 refueling outage.

TVA submitted a request for relief 3-ISI-18 by letter dated July 25, 2003, which adopts the examination frequency specified in the Boiling Water Reactor Vessel Internals Program (BWRVIP) 108 Report for RPV nozzles. The BWRVIP-108 Report concludes that the volumetric examination frequency for RPV nozzle-to-vessel welds and nozzle inner radius sections may be reduced from 100

the nozzles for each nozzle type (e.g., 1 of 4 main steam nozzles) each 10-year interval. The BWRVIP-108 Report requirements are currently being incorporated into ASME Code Case N-702. However, this Code Case is in the review and approval stages and will not be issued in time to support NRC's review and approval of TVA's request for relief.

As a result, TVA is requesting to defer examinations, for the seven remaining RPV nozzles, required for the second 10-year ISI interval to the first period of the third 10-year ISI interval, pending completion of the Code Case N-702 approval process. The Spring 2004 refueling outage (Cycle 11) is the last refueling outage of the Unit 3 second ten-year ISI interval. The next refueling outage (Cycle 12) for Unit 3 is in the Spring of 2006, which is approximately three to four months following the end of the second ten-year ISI inspection interval (November 18, 2005). TVA understands that if the Code Case N-702/BWRVIP-108 issue is unresolved at the time of the Spring 2006 refueling outage, the deferred examinations would be performed at that time and be credited to the second ten-year ISI inspection interval. The deferred nozzle examinations, if required, would be performed again prior to the end of the third ten-year ISI inspection interval.

The enclosure to this letter contains TVA's proposed request for relief 3-ISI-23. In the Unit 3 first ten-year ISI inspection interval 30 RPV nozzle-to-vessel welds and inner radius sections received a volumetric examination. In the Unit 3 second ten-year ISI interval, 20 of 31 RPV nozzle-to-vessel welds and 19 inner radius sections have received a volumetric examination. One nozzle inner radius section received an enhanced visual (EVT-1) examination from the vessel inside diameter. No indication of fabrication defects or service related cracking has been detected by these examinations. The examination results are provided in a table attached to the enclosed request for relief.

TVA requests approval of this request for relief by March 1, 2004, to support the BFN Unit 3, Spring 2004 refueling outage.

There are no new regulatory commitments in this letter. If you have any questions, please contact me at (256) 729-2636.

Sincerely,

Original signed by

T. E. Abney
Manager of Licensing
and Industry Affairs

Enclosure
cc (Enclosure):
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R. G. Jones, NAB 1A-BFN
D. C. Olcsvary, LP 6A-C
C. M. Root, PAB 1G-BFN
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K. W. Singer, LP 6A-C
M. D. Skaggs, POB 2C-BFN
E. J. Vigluicci, ET 11A-K
NSRB Support, LP 5M-C
EDMS-K

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ENCLOSURE

TENNESSEE VALLEY AUTHORITY
BROWNS FERRY NUCLEAR PLANT (BFN)
UNIT 3

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)
SECTION XI, INSERVICE INSPECTION (ISI) PROGRAM
REQUEST FOR RELIEF 3-ISI-23

REQUEST TO DEFER SEVEN RPV NOZZLE WELD EXAMINATIONS
FOR ONE OPERATING CYCLE

(SEE ATTACHED)

TENNESSEE VALLEY AUTHORITY
BROWNS FERRY NUCLEAR PLANT (BFN)
UNIT 3

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)
SECTION XI, INSERVICE INSPECTION (ISI) PROGRAM
REQUEST FOR RELIEF 3-ISI-23

REQUEST TO DEFER SEVEN RPV NOZZLE WELD EXAMINATIONS
FOR ONE OPERATING CYCLE

Executive Summary: In accordance with 10 CFR 50.55a(a)(3)(i), TVA is requesting relief from inservice inspection requirements of the 1989 Edition, no Addenda, Section XI of the ASME Boiler and Pressure Vessel Code for the volumetric examination of Class 1, reactor pressure vessel (RPV) nozzle-to-vessel welds and inner radius sections. The examination requirement is for a volumetric examination of the ASME Section XI, Examination Category B-D, "Full Penetration Welded Nozzles in Vessels," Item No.B3.90, "Reactor Vessel Nozzle to Vessel Welds and Item No. B3.100, "Reactor Vessel Nozzle Inner Radius Section."

This request for relief applies to four reactor recirculation inlet nozzles, two mainsteam nozzles and one jet pump nozzle (total of 7 nozzles) for the BFN Unit 3 Reactor Pressure Vessel.

On July 25, 2003, TVA submitted request for relief 3-ISI-18 which adopts the examination schedule/frequency specified in the Boiling Water Reactor Vessel Internals Program (BWRVIP) 108 Report for RPV nozzles. The BWRVIP-108 Report concludes that the volumetric examination frequency for RPV nozzle-to-vessel welds and nozzle inner radius sections may be reduced from 100 percent each 10-year ISI inspection interval to 25 percent of the nozzles for each nozzle type (e.g., 1 of 4 main steam nozzles), each 10-year interval.

The BWRVIP-108 Report requirements are

currently being incorporated into ASME Code Case N-702. However, this Code Case is in the review and approval stages and will not be issued in time to support NRC's review and approval of request for relief 3-ISI-18.

Consequently, TVA is proposing to defer examinations, for the seven remaining RPV nozzles, required for the second 10-year ISI interval to the first period of the third 10-year ISI interval. The second ten-year ISI inspection interval ends on November 18, 2005. Therefore, TVA is actually asking for a three to four month deferral from the end of the second 10-year ISI inspection interval to the Spring 2006 refueling outage.

Should request for relief 3-ISI-18 not be approved the subject nozzles would be examined in the Unit 3 Cycle 12 refueling outage, scheduled for the Spring of 2006. Since Unit 3 Cycle 11 is the last outage in the second ten-year ISI interval, TVA understands that if the examinations are performed in the Unit 3 Cycle 12 refueling outage, they will be credited to the second ten-year ISI inspection interval. The deferred nozzles would be examined again near the end of the third ten-year ISI interval, assuming the examination requirement still exists.

Previous examinations of the seven nozzles in question, as well as the other Unit 3 RPV nozzles, have not identified any fabrication defects or service related cracking. TVA considers the above proposed alternative examinations will provide an acceptable level of quality and safety.

Unit: Three (3)

ISI Interval: ASME Section XI, Second Ten-Year ISI Interval (November 19, 1996 to November 18, 2005)

System(s): Reactor Pressure Vessel (RPV),
Components: Nozzle-to-Vessel Weld and Inner Radius Section:

Reactor Recirculation Inlet Nozzles, N2G,

N2H, N2J, and N2K (Total of 4 nozzles)

Main Steam Nozzles, N3C and N3D (Total of 2 nozzles)

Jet Pump Instrumentation Nozzle, N8B (Total of 1 nozzle)

ASME Code Class: ASME Code Class 1

ASME Section XI Code Edition: 1989 Edition, no Addenda

Code Table: IWB-2500-1

Examination Category: B-D, "Full Penetration Welded Nozzles In Vessels"

Examination Item Number: B3.90, "Nozzle-To-Vessel Welds", and B3.100, "Nozzle Inner Radius Section," (Nozzles N2G, N2H, N2J, N2K, N3C, N3D, and N8B (Total of 7 nozzles)

Code Requirement: The 1989 Edition with no Addenda, ASME Section XI, Table IWB-2500-1, Examination Category B-D, Item No. B3.90 and Item No. B3.100, requires a volumetric examination of 100 percent each ten-year ISI inspection interval of the reactor pressure vessel (RPV) nozzle-to-shell welds and nozzle inner radius section.

Code Requirements From Which Relief Is Requested: The 1989 Edition with no Addenda, ASME Section XI, Table IWB-2500-1, Examination Category B-D, Item No. B3.90 and Item No. B3.100, requires a volumetric examination of 100 percent each inspection interval of the reactor pressure vessel (RPV) nozzle-to-shell welds and nozzle inner radius section.

Relief is requested to defer, for one operating cycle (i.e., 3 to 4 months following the end of the second 10-year interval), the volumetric examination of seven reactor pressure vessel (RPV) nozzle-to-shell welds and nozzle inner radius

section for nozzles N2G, N2H, N2J, N2K, N3C, N3D, and N8B. (Total of 7 nozzles)

List Of Items Associated With The Relief Request:

Reactor Pressure Vessel Nozzles, N2G, N2H, N2J, N2K. N3C, N3D, and N8B (Total of 7 nozzles)

Basis For Relief Request:

Pursuant to 10 CFR 50. 55a(a)(3)(i), TVA is requesting relief from ASME Section XI requirements to perform the volumetric examination described above.

TVA proposes to defer the seven nozzle examinations, submitted to the NRC on July 25, 2003, in request for relief 3-ISI-18, pending the outcome of the ASME Code Case N-702 review and approval process. Should relief request 3-ISI-18 not be approved to allow the 25 percent sampling criteria, the subject nozzles will be examined in the Unit 3 Cycle 12 refueling outage scheduled for the Spring of 2006. Since Unit 3 Cycle 11 (Spring 2004) is the last outage of the second ten-year ISI inspection interval, TVA understands that if the examinations are required in Unit 3 Cycle 12, they will be credited to the second 10-year ISI interval and not the third 10-year ISI interval and would be examined again near the end of the third 10-year interval, assuming the examination requirement still exists.

TVA considers the above proposed alternative examinations will provide an acceptable level of quality and safety. The proposed alternatives will also provide a significant savings in examination resources and radiation exposure (approximately 5 Rem).

In the first Unit 3 ten-year inspection interval, 30 reactor pressure vessel nozzle-to-shell welds and inner radius sections received a volumetric examination. No indication of fabrication defects or service related cracking has been detected by these examinations.

In the second Unit 3 ten-year inspection interval, 20 of 31 reactor pressure vessel nozzle-to-shell welds and 19 inner radius sections received a volumetric examination. One (1) inner radius section received an enhanced visual (EVT-1) examination from the vessel ID. (Reference request for relief 3-ISI-11, dated August 13, 2001, as supplemented January 9, and February 5, 2002.) No indication of fabrication defects or service related cracking has been detected by these examinations

Alternate Examination:

In accordance with 10 CFR 50.55a(a)(3)(i), TVA will perform the following alternate examinations:

TVA proposes to defer the volumetric examination of the seven nozzles for one operating cycle and perform the examination in the first outage of the Unit 3 third ten-year ISI interval, in the event request for relief 3-ISI-18 is not approved for use.

Justification For The Granting Of Relief:

The RPV nozzles were nondestructively examined during fabrication and have previously been examined using inservice ultrasonic techniques specific to the nozzle configuration. No indication of fabrication defects or service related cracking has been detected by these examinations. See Attachment B for RPV nozzle and inner radius section listing and UT examinations and coverage for the Unit 3 first and second ten-year ISI inspection intervals.

In the first Unit 3 ten-year inspection interval 30 reactor pressure vessel nozzle-to-shell welds and inner radius sections received a volumetric examination, no indication of fabrication defects or service related cracking has been detected by these examinations.

In the second Unit 3 ten-year inspection interval, 20 of 31 reactor pressure vessel

nozzle-to-shell welds and 19 inner radius sections received a volumetric examination. One (1) inner radius section received an enhanced visual (EVT-1) examination from the vessel ID. (Reference request for relief 3-ISI-11, dated August 13, 2001, as supplemented January 9, and February 5, 2002). No indication of fabrication defects or service related cracking has been detected by these examinations.

A significant number of effective examinations have been performed on BWR units that have been operational for periods up to 30 years using modern examination techniques. No degradation or failure mechanism has been identified in nozzle-to-vessel welds or nozzle inner radius section areas except for feedwater and CRDM nozzles. Feedwater and CRDM nozzles are not within the scope of this request for relief.

Based on the above, TVA feels that deferral of the seven Unit 3 RPV nozzle-to-vessel welds and nozzle inner radius section examinations for one operating cycle is justified.

Implementation Schedule:

This request for relief is applicable to the BFN Unit 3, Second Ten-Year ASME Section XI Inservice Inspection Interval, (November 19, 1996 to November 18, 2005).

Attachments:

Attachment A - (3 sketches)

Sketch SK-B3001, Reactor Pressure Vessel Assembly

Sketch SK-B3018, N2, Recirculation Inlet Nozzles, N3, Main Steam Nozzles, and N5, Core Spray Nozzles

Sketch SK-B3019, N8, Jet Pump Instrumentation Nozzle

Attachment B

Unit 3 RPV Nozzle and Inner Radius

Section Examination data

Attachment A

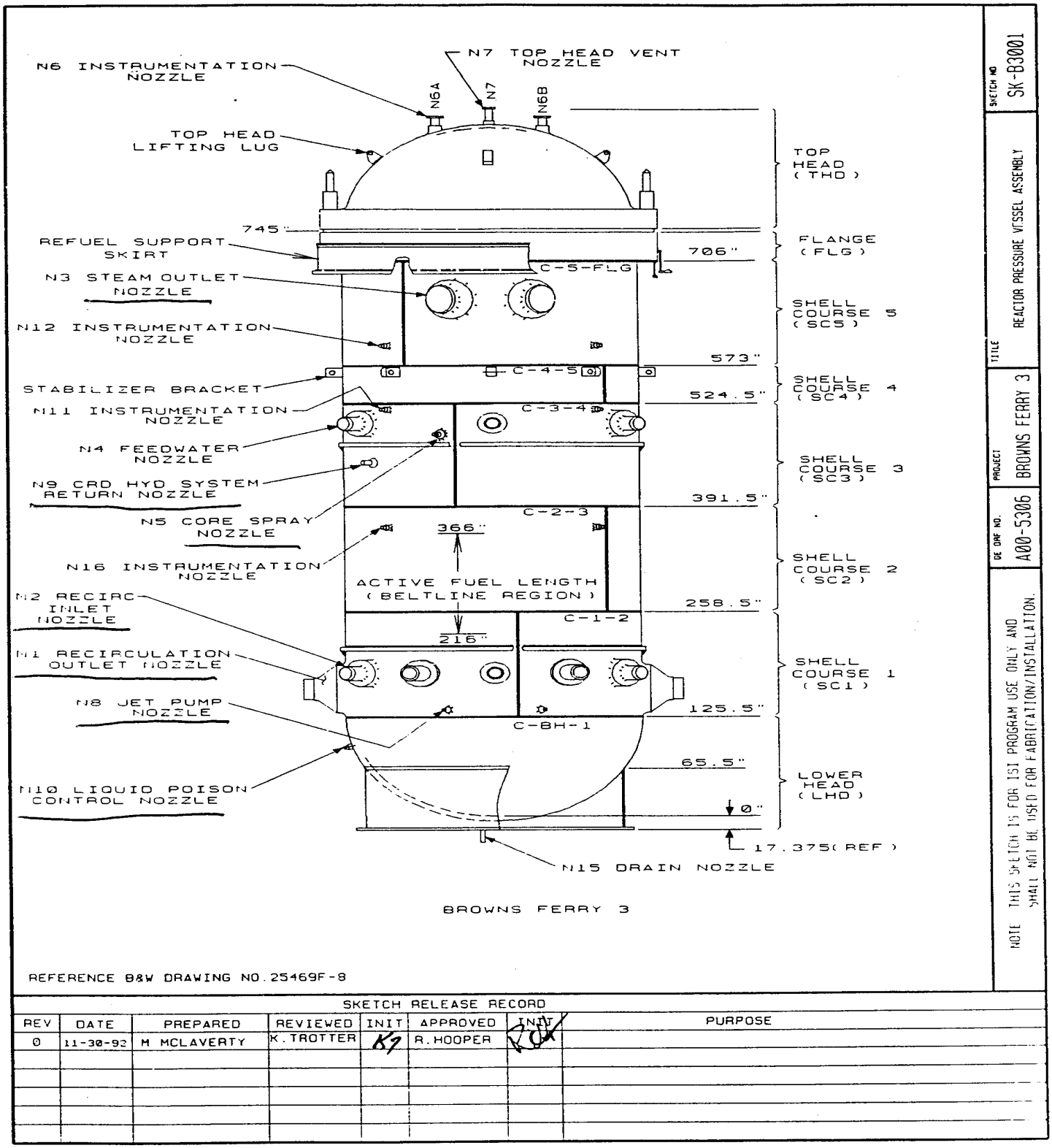
3-ISI-23

Three (3) Sketches

Sketch SK-B3001, Reactor Pressure Vessel Assembly

Sketch SK-B3018, N2, Recirculation Inlet Nozzles, N3, Main Steam Nozzles, and N5, Core Spray Nozzles

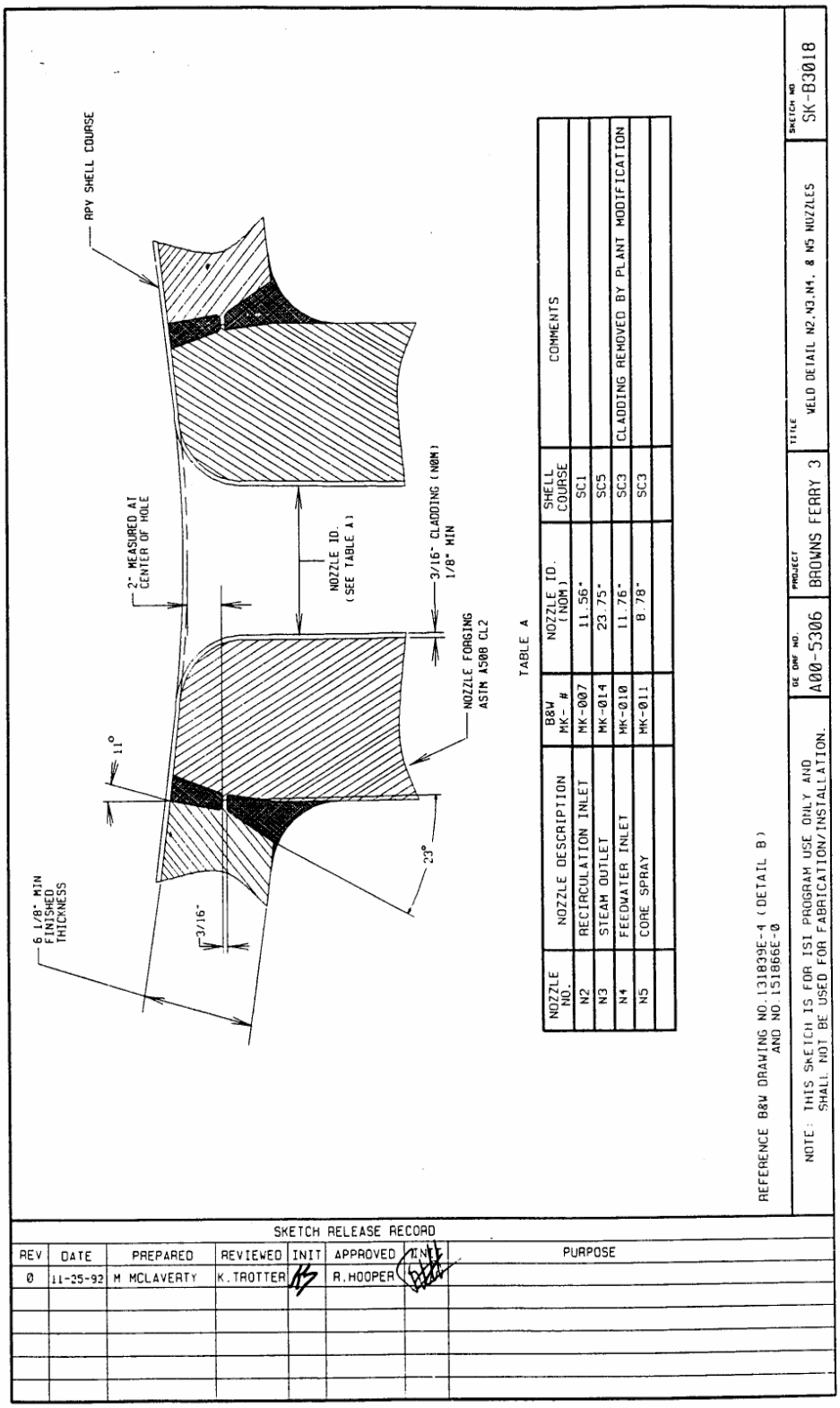
Sketch SK-B3019, N8, Jet Pump Instrumentation Nozzles



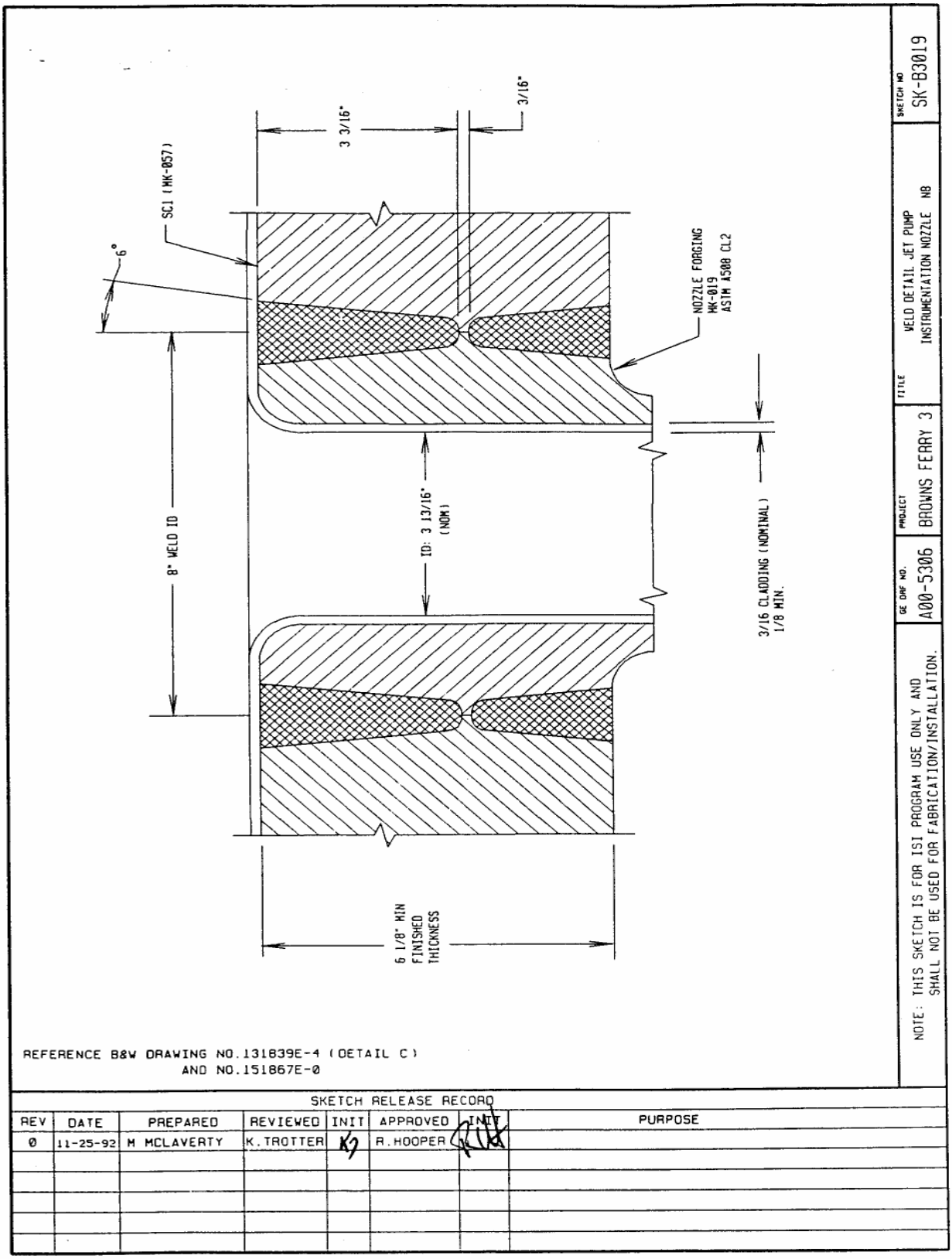
SKETCH RELEASE RECORD

REV	DATE	PREPARED	REVIEWED	INIT	APPROVED	INIT	PURPOSE
0	11-30-92	M MCLAVERTY	K. TROTTER	KT	R. HOOPER	RH	

SK-B3001


RPV SHELL COURSE
2" MEASURED AT CENTER OF HOLE
NOZZLE ID. (SEE TABLE A)
3/16" CLADDING (NOM) 1/8" MIN
NOZZLE FORGING ASTM A508 CL2
11°
23°
3/16"
6 1/8" MIN FINISHED THICKNESS
TABLE A
NOZZLE NO. | NOZZLE DESCRIPTION | B&W MK- # | NOZZLE ID. (NOM.) | SHELL COURSE | COMMENTS
N2 | RECIRCULATION INLET | MK-007 | 11.56" | SC1 |
N3 | STEAM OUTLET | MK-014 | 23.75" | SC5 |
N4 | FEEDWATER INLET | MK-010 | 11.76" | SC3 | CLADDING REMOVED BY PLANT MODIFICATION
N5 | CORE SPRAY | MK-011 | 8.78" | SC3 |
REFERENCE B&W DRAWING NO 131839E-4 (DETAIL B) AND NO 151866E-0
NOTE: THIS SKETCH IS FOR ISI PROGRAM USE ONLY AND SHALL NOT BE USED FOR FABRICATION/INSTALLATION.
GE DNF NO. A00-5306
PROJECT BROWNS FERRY 3
TITLE WELD DETAIL N2,N3,N4, & N5 NOZZLES
SKETCH NO SK-B3018
SKETCH RELEASE RECORD
REV | DATE | PREPARED | REVIEWED | INIT | APPROVED | INIT | PURPOSE
0 | 11-25-92 | M MCLAVERTY | K.TROTTER | | R.HOOPER | |

SK-B3018



SKETCH RELEASE RECORD

REV	DATE	PREPARED	REVIEWED	INIT	APPROVED	INIT	PURPOSE
0	11-25-92	M MCLAVERTY	K.TROTTER	KJ	R.HOOPER		

SK-B3019

Attachment B

3-ISI-23

UNIT 3 RPV NOZZLE
EXAMINATION SUMMARY

REQUEST FOR RELIEF 3-ISI-23

UNIT 3 RPV NOZZLE EXAMINATION SUMMARY

COMPONENT	CYCLE		DATE		REPORT #		RESULTS		COVERAGE	
N1A	2	8	10/18/79	10/8/98	R-256/R-272	R-205	A	A	25%	72%
N1A-IR	5B	8	11/16/93	10/8/98	R-1172	R-205A	A	A	100%	100%
N1B	4	10	12/8/81	3/29/02	R-112, R-149, R-157	R-156	A	A	20%	77%
N1B-IR	5B	10	11/16/93	3/29/02	R-1173	R-157	A	A	100%	100%
N2A	4	10	12/7/81	4/1/02	R-109, R-127, R-152	R-158	A	A	20%	77%
N2A-IR	4	10	12/9/81	4/1/02	R-161	R-159	A	A	100%	100%
N2B	2	8	10/19/79	10/8/98	R-238, R-258, R-265	R-206	A	A	25%	77%
N2B-IR	2	8	1016/79	10/8/98	R-233	R-206A	A	A	100%	100%
N2C	4	10	12/7/81	4/1/02	R-111, R-119, R-153	R-160	A	A	20%	77%
N2C-IR	4	10	12/9/81	4/1/02	R-162	R-161	A	A	100%	100%
N2D	2	8	10/16/79	10/8/98	R-235, R-260, R-266	R-207	A	A	25%	77%
N2D-IR	2	8	10/16/79	10/8/98	R-229	R-207A	A	A	100%	100%
N2E	4	10	12/7/81	4/1/02	R-110, R-150, R-154	R-162	A	A	20%	77%
N2E-IR	4	10	12/9/81	4/1/02	R-163	R-163	A	A	100%	100%
N2F	2	8	10/19/79	10/8/98	R-237, R-261, R-269	R-208	A	A	25%	77%
N2F-IR	2	8	10/16/79	10/8/98	R-231	R-208A	A	A	100%	100%
N2G	**4**	***11**	**12/8/81**		**R-113, R-148, R-158**		**A**		**20%**	
N2G-IR	**4**	***11**	**12/8/81**		**R-165**		**A**		**100%**	
N2H	**5B**	***11**	**11/13/93**		**R-1174**		**A**		**42%**	
N2H-IR	**5B**	***11**	**11/12/93**		**R-1204**		**A**		**100%**	
N2J	**5B**	***11**	**11/15/93**		**R-1175**		**A**		**42%**	
N2J-IR	**5B**	***11**	**11/14/93**		**R-1205**		**A**		**100%**	
N2K	**5B**	***11**	**11/15/93**		**R-1176**		**A**		**42%**	
N2K-IR	**5B**	***11**	**11/15/93**		**R-1206**		**A**		**100%**	
N3A	4	10	11/20/93	3/31/02	R-045, R-047, R-049, R-051, R-052	R-164	A	A	20%	77%
N3A-IR	4	10	11/22/93	3/10/02	R-061	R-165	A	A	100%	100%
N3B	2	8	10/23/79	10/8/98	R-273, R-293, R-253	R-209	A	A	25%	75%
N3B-IR	2	8	10/16/79	10/8/98	R-226	R-209A	A	A	100%	100%
N3C	**5B**	***11**	**11/10/93**		**R-1177**		**A**		**28%**	
N3C-IR	**5B**	***11**	**11/17/93**		**R-1207**		**A**		**100%**	
N3D	**5B**	***11**	**11/10/93**		**R-1178**		**A**		**28%**	
N3D-IR	**5B**	***11**	**11/11/93**		**R-1178**		**A**		**100%**	

COMPONENT	CYCLE		DATE		REPORT #		RESULTS		COVERAGE	
N4A	4	10	11/30/81	3/20/02	R-083, R-084, R-085	R-166	A	A	20%	77%
N4A-IR	4	10	11/23/81	3/20/02	R-067	R-167	A	A	100%	100%
N4B	2	8	10/22/79	10/14/98	R-251, R-270, R-281	R-211	A	A	25%	68%
N4B-IR	2	8	10/15/79	10/9/98	R-221	R-211A	A	A	100%	100%
N4C	2	8	10/22/79	10/14/98	R-250, R-268, R-282	R-212	A	A	25%	68%
N4C-IR	2	8	10/16/79	10/9/98	R-232	R-212A	A	A	100%	100%
N4D	5B	*11	11/16/93		R-1182		A		44%	
N4D-IR	5B	*11	11/9/93		R-1208		A		100%	
N4E	5B	*11	11/16/93		R-1183		A		43%	
N4E-IR	5B	*11	11/12/93		R-1209		A		100%	
N4F	4	10	11/20/81	3/20/02	R-054, R-057, R-068	R-168	A	A	20%	77%
N4F-IR	4	10	11/23/81	3/20/02	R-068	R-169	A	A	100%	100%
N5A	2	8	10/22/79	10/8/98	R-249, R-267, R-284	R-216	A	A	20%	64%
N5A-IR	2	8	10/16/79	10/8/98	R-228	R-216A	A	A	75%	100%
N5B	4	10	12/3/81	4/2/02	R-093, R-101, R-105	R-170	A	A	20%	71%
N5B-IR	4	10	11/24/81	3/31/02	R-081	R-171	A	A	83%	100%
N6A	5B	7	8/1795 9/27/91	3/1/97	R-591, R-591A	R-247	A	A	100%	100%
N6A-IR	5B	7	9/28/91	3/1/97	R-598	R-243	A	A	100%	100%
N6B	5B	*11	8/1795 9/27/91		R-592, R-592A		A		100%	
N6B-IR	5B	*11	9/28/91		R-597		A		100%	
N7	5B	10	8/1795 9/27/91	3/29/02	R-590, R-590A	R-125	A	A	100%	70%
N7-IR	5B	10	9/28/91	3/30/02	R-599	R-115	A	A	100%	100%
N8A	2	8	10/19/79	10/9/98	R-247, R-259, R-271	R-217	A	A	68%	71%
N8A-IR	2	8	10/16/79	10/9/98	R-230	R-217A	A	A	100%	100%
N8B	**5B**	***11**	**11/6/93**		**R-1185**		**A**		**68%**	
N8B-IR	5B	*11	11/7/93		R-1185		A		100%	
N9	4	10	12/3/81	4/1/02	R-092, R-103, R-099	R-172	A	A	25%	74%
N9-IR	4	10	1124/81	4/1/02	R-079	R-173	A	A	100%	100%
N10		*11								

Nozzles with IR following the nozzle number identify the nozzle inner radius
Nozzles in **Bold** are within the scope of this relief request
*Scheduled for examination in Unit 3 Cycle 11 Refueling Outage.