DUKE ENERGY.

Scott L. Batson
Vice President
Oconee Nuclear Station

Duke Energy
ON01VP | 7800 Rochester Hwy
Seneca, SC 29672

o: 864.873.3274
f. 864.873. 4208
Scott.Batson@duke-energy.com

ONS-2015-039

May 4, 2015

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

10 CFR 50.55a

Duke Energy Carolinas, LLC (Duke Energy)
Oconee Nuclear Station, Units 1, 2 and 3
Docket Numbers 50-269, 50-270, 50-287
Renewed License Numbers DPR-38, DPR-47, and DPR-55

Subject: Fifth Ten Year Inservice Inspection Interval, Relief Request No. 14-ON-001; Inspection Impracticality of Letdown Cooler Nozzle Inside Radius Sections

References:

1. Duke Energy Letter, Oconee, Units 1, 2 and 3 - *Fifth Interval Inservice Inspection Plan*, dated July 15, 2014, (ADAMS Accession No. ML14202A008)

Pursuant to 10 CFR 50.55a(g)(5)(iii), Duke Energy requests the NRC to grant relief regarding impracticality to inspect inside radius sections of the Letdown Cooler nozzles for the duration of the fifth (ten-year) inservice inspection (ISI) interval. Relief Request 14-ON-001 renews a relief request which was approved for the previous two ISI intervals which describes the impracticality of the examination and provides the justification for granting relief from the edition of Section XI of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) applicable to the fifth ISI Interval.

This relief is needed prior to the Oconee Unit 1, 2016 Fall refueling outage (1EOC29) projected to start November 5, 2016. Duke Energy requests approval by May 1, 2016 in support of planning for 1EOC29. The relief request details are provided as an enclosure to this letter.

If there are any questions or further information is needed you may contact David Haile at (864) 873-4742,

Sincerely,

Scott L. Batson
Vice President
Oconee Nuclear Station

Enclosure

Relief Request Serial #14-ON-001:
Request for Relief in Accordance with 10 CFR 50.55a(g)(5)(iii) for the Letdown Cooler Nozzle Inside Radius Sections

A047
NRR

cc (with enclosure):

Mr. Victor McCree, Regional Administrator
U.S. Nuclear Regulatory Commission – Region II
Marquis One Tower
245 Peachtree Center Ave., NE Suite 1200
Atlanta, Georgia 30303-1257

Mr. James R. Hall, Project Manager (ONS)
(by electronic mail only)
U.S. Nuclear Regulatory Commission
11555 Rockville Pike
Mail Stop O-8B1
Rockville, MD 20852

Jeffery Whited
(by electronic mail only)
U.S. Nuclear Regulatory Commission
11555 Rockville Pike
Mail Stop O-8B1A
Rockville, MD 20852

Mr. Eddy Crowe
NRC Senior Resident Inspector
Oconee Nuclear Station

Enclosure to ONS-2015-039

Duke Energy Carolinas, LLC
Oconee Nuclear Station, Units 1, 2, and 3

Relief Request Serial #14-ON-001

Request for Relief in Accordance with 10 CFR 50.55a(g)(5)(iii) for the Letdown Cooler Nozzle Inside Radius Sections

Fifth Inservice Inspection Interval

1. ASME Code Component(s) Affected

High Pressure Injection System, ISI Class 1 Letdown Cooler Nozzle Inside Radius Sections.

Oconee Unit 1 has two Letdown Coolers 1A and 1B. Each component has typically four B3.160 welds. The coolers also have operational ready spares of similar design that are rotated from spare to installed components as required by maintenance.

Oconee Unit 2 has two Letdown Coolers 2A and 2B. Each component has typically four B3.160 welds. The coolers also have operational ready spares of similar design that are rotated from spare to installed components as required by maintenance.

Oconee Unit 3 has two Letdown Coolers 3A and 3B. Each component has typically four B3.160 welds. The coolers also have operational ready spares of similar design that are rotated from spare to installed components as required by maintenance.

2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI, 2007 Edition with the 2008 Addenda.

3. Applicable Code Requirement

IWB-2500, Table IWB-2500-1, Examination Category B-D, Full Penetration Welded Nozzles in Vessels, Item No. B3.160, Nozzle Inside Radius Section require a volumetric examination of the of inside radius sections on heat exchanger nozzle to shell welds.

4. Impracticality of Compliance

Due to the size and geometry of the nozzle inside radius on the Letdown Coolers, Duke Energy has been unable to perform a meaningful (i.e. unable to get sound into the area of interest) volumetric examination. The weld joint geometry is essentially a branch connection arrangement using a set-on nozzle and the nozzle thickness prevents access to the examination volume. RT examination method has the same restrictions with geometry as UT and therefore is not a practical method to use either.

5. Burden Caused by Compliance

In order to scan all of the required volume, the Letdown Cooler nozzles would have to be redesigned to allow scanning of the inner radius, which is impractical. See Attachment A for a drawing (OM-201-3276 and 1N37804-2) of the typical Letdown Coolers. The drawing in Attachment "A" is for the Unit 2 "B" Letdown Cooler but the configuration for the nozzle inside radius sections is the same for all 3 Units and all letdown coolers of this design.

6. Proposed Alternate Examination

None proposed or planned.

7. Duration of Proposed Alternative

The proposed alternative is requested for use during the 5th inservice inspection intervals for Oconee Units 1, 2 and 3, beginning July 15, 2014, currently scheduled to end July 15, 2024.

8. Precedents

8.1. Duke Energy, Oconee Nuclear Station Units 1, 2, and 3, Relief Request No. ONS-009 submitted May 12, 1994 and approved November 11, 1995, TAC Nos. M88484, M88485, and M88486.

8.2. Duke Energy Corporation, Oconee Nuclear Station Units 1, 2, and 3, Relief Request No. 04-ON-015 submitted December 21, 2004 and approved June 14, 2005 (ML043630370), TAC Nos. M5485, M5486, and M5487.

9. Justification for Granting Request for Relief

The ultrasonic examination of the weld volume adjacent the inside radius section, as required by ASME Section XI, Table IWB-2500-1, Examination Category B-D, Item Number B3.150 is a more critical location and will provide adequate assurance of the integrity of the welded connection.

Duke Energy will use code required pressure testing and VT-2 visual examination to ensure component integrity. The Code requires (reference Table IWB-2500-1, Examination Category B-P, All pressure Retaining Components (Item Number B15.10 Heat Exchangers) that a system leakage test be performed after each refueling outage for Class 1 components. These tests require a VT-2 visual examination for evidence of leakage. This testing will provide reasonable assurance of weld/component integrity.

In addition to the above Code required examinations (volumetric and VT-2 visual examination during pressure testing), there are other activities which provide a high level of confidence that, in the unlikely event that leakage did occur through these inside radius sections, it would be detected. Specifically, leakage from these inside radius sections would be detected by monitoring of the Reactor Coolant System (RCS) inventory, which is performed once each shift under unit specific procedure PT/1, 2, or 3/A/0600/10, "RCS Leakage".

This RCS leakage monitoring is a requirement of Technical Specification 3.4.13, "Reactor Coolant System Leakage". Any leakage is also evaluated in accordance with this Technical Specification.

The leakage could also be detected through several other methods. One is the Reactor Building air particulate monitor. This monitor is sensitive to low leak rates; the iodine monitor, gaseous monitor and area monitor are capable of detecting any fission products in the coolant and make these monitors sensitive to coolant leakage. A second is the level indicator in the Reactor Building normal sump. A third is a loss of level in the Letdown Storage Tank.

Based on the required volumetric examinations, VT-2 test, and other activities previously listed, it is Duke's belief that this provides a reasonable assurance of component integrity. Thus, an acceptable level of quality and safety will have been achieved and will not endanger public health and safety.

Attachments to 14-ON-001

Letdown Cooler Drawings For Unit 2 (Typical For Units 1, 2, and 3)

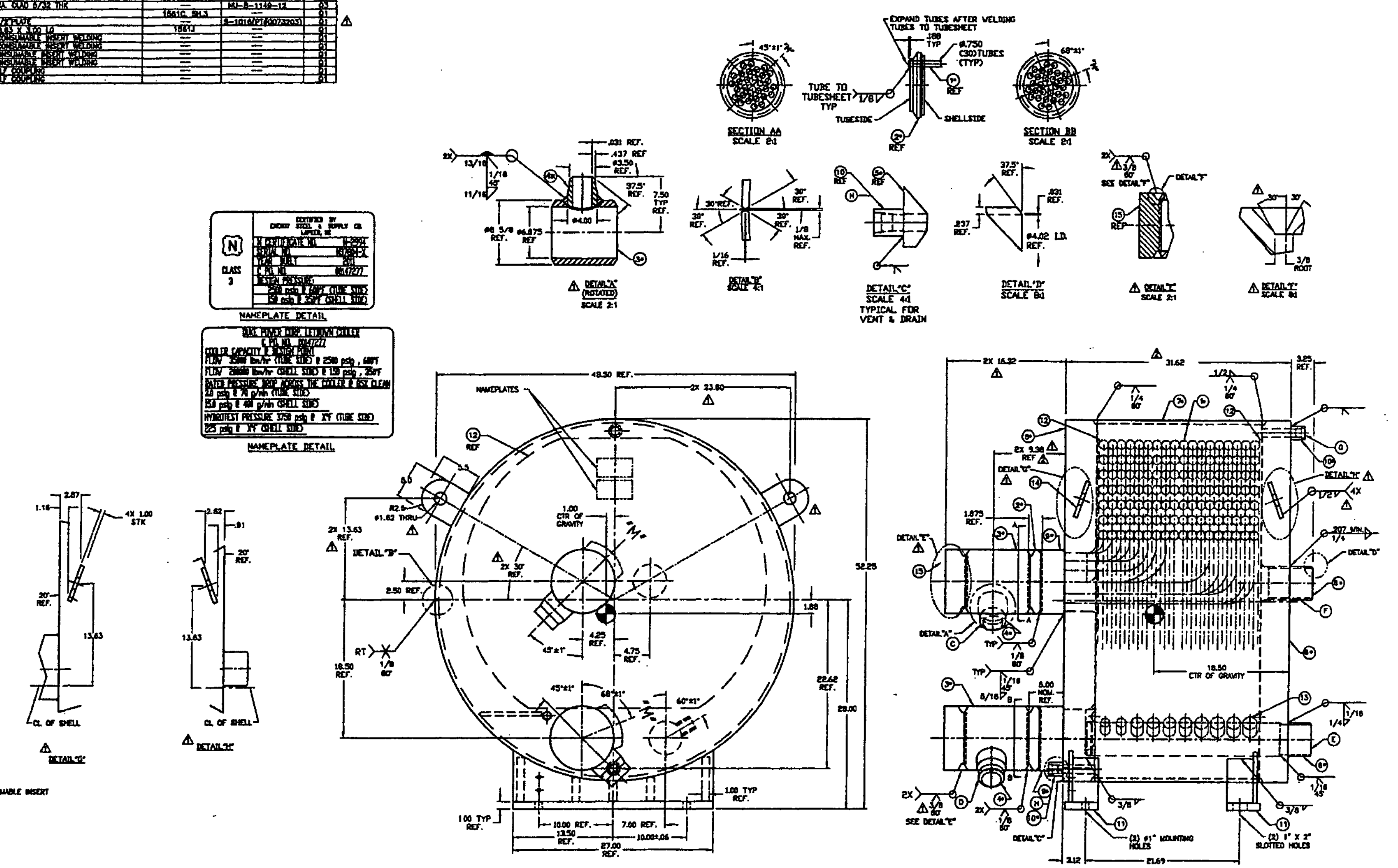
- OM-201-3276 Sheets 1 & 2, *Letdown Cooler Assembly*
- 1N37804-2, *Letdown Cooler "2B" Serial Number N37804-2*

PART NO.	QTY	PART NAME	MATERIAL	SPEC.	REMARKS	ESSC	GRAHAM	Q LEVEL
		MATERIAL LIST				REFERENCE DRAWING NUMBER		
1*	30	TUBE COILS	T-316/L S.S.	SA213	3/4 O.D. X .070 MWG X 48'-0" LG. SMLS. ET TESTED	—	—	Q1
2*	2	TUBE SHEET	T-316L S.S.	SA240	PLATE	1561Q	—	Q1
3*	2	TUBE SIDE CHANNEL BODY	T-316/L S.S.	SA182	FORGED BAR	1561F, IT.1	—	Q1
4*	2	CHANNEL NOZZLE	T-316/L S.S.	SA182	FORGED BAR	1561F, IT.2	—	Q1
5*	1	CASING BASE PLATE	CARB. STL	SA516 GR.70	PLATE	1561B, IT.1	—	Q1
6*	1	CASING END PLATE	CARB. STL	SA516 GR.70	PLATE	1561C, IT.1	—	Q1
7*	1	CASING SHELL	CARB. STL	SA516 GR.70	PLATE, .500 THK	1561A	NU-B-1149-7	Q1
8*	1 EA	CASING NOZZLE PIPE	CARB. STL	SA106 GR.B	SEAMLESS PIPE	1561C, SH.2, IT.2&3	—	Q1
9*	2	CASING PIPE TO TUBESHEET	T-316/L S.S.	SA312	SEAMLESS PIPE	1561B, IT.2	—	Q1
10	2	SOCKET WELD COUPLING	FORG. STL	SA105	ANSI B16.11	—	—	Q1
11	1 EA	SUPPORTS	CARB. STL	SA516 GR.70	PLATE	1561D&1561E	—	Q1
12	1 EA	FLOWSEAL	T-304 S.S.	304 S.S. MESH/SA240 .018 GA. CLAD 5/32 THK		—	NU-B-1149-12	Q3
13	1	SPARGER PIPE WELDMENT	CARB. STL	SA106 GR.B	SEAMLESS PIPE	1561C, SH.3	—	Q1
14	4	LIFT LUG	CARB. STL	SA516 GR.70	1" x 5" x 5 1/2" PLATE	—	B-1016/PT#0073203	Q1 ⚠
15	2	CAP (FLAT COVER PLATE)	T-316/L S.S.	SA182	FORGED BAR ø8.63 X 3.00 LG	1561J	—	Q1
C*	—	TUBE SIDE INLET	3" SCH160 PIPE (.438) END BEVELED FOR CONSUMABLE INSERT WELDING			—	—	Q1
D*	—	TUBE SIDE OUTLET	3" SCH160 PIPE (.438) END BEVELED FOR CONSUMABLE INSERT WELDING			—	—	Q1
E*	—	SHELL SIDE INLET	4" SCH40 PIPE (.237) END BEVELED FOR CONSUMABLE INSERT WELDING			—	—	Q1
F*	—	SHELL SIDE OUTLET	4" SCH40 PIPE (.237) END BEVELED FOR CONSUMABLE INSERT WELDING			—	—	Q1
G*	—	SHELL SIDE VENT	1" 3000#(SOCKET, THREAD WELD COMBIN.) HALF COUPLING			—	—	Q1
H*	—	SHELL SIDE DRAIN	1" 3000#(SOCKET, THREAD WELD COMBIN.) HALF COUPLING			—	—	Q1

"*" DENOTES "PRESSURE RETAINING ITEMS"

ECN	REV	DESCRIPTION	REV. BY, DATE	APPR. BY V. ENGR.	APPR. BY PRJ. ENGR.	APPR. BY QA
588	0	INITIAL RELEASE	BP8/9/11	DJ8/9/11	JB8/9/11	SM8/9/11
611	1	REVISED DETAILS "A","E","F", B.O.M., REVISED WELD JOINTS BTW ITEM 3 & 15,REVISED QTY & REPOSITIONED ITEM 14, ADDED DETAILS "G" & "H",REVISED DIMENSIONS	BP9/16/11	DJ9/16/11	JB9/16/11	SM9/16/11
621	2	REVISED DIMENSIONS, REMOVED CUST. P.O. AND SPEC. REFERENCED REV. LEVEL	BP10/7/11	DJ 10/7/11	JB 10-7-11	SM 10/7/11

NOZZLE LOADS				
3" TUBE SIDE OUTLET				
CONDITION/LOAD	Fa (LB)	Fsr (LB)	Mt (IN-LB)	Mbr (IN-LB)
NORMAL OPERATION	±688	±1131	±15815	±12863
NORMAL + OBE	±737	±1186	±16384	±17239
NORMAL + SSE	±806	±1240	±16973	±20113
3" TUBE SIDE INLET				
CONDITION/LOAD	Fa (LB)	Fsr (LB)	Mt (IN-LB)	Mbr (IN-LB)
NORMAL OPERATION	±906	±843	±11924	±13329
NORMAL + OBE	±967	±1003	±17330	±16838
NORMAL + SSE	±1068	±1184	±22736	±23848
4" SHELL SIDE NOZZLES				
CONDITION/LOAD	Fa (LB)	Fsr (LB)	Mt (IN-LB)	Mbr (IN-LB)
NORMAL OPERATION	±634	±634	±6420	±6420
NORMAL + OBE	±1268	±1268	±12840	±12840
NORMAL + SSE	±1585	±1585	±16050	±16050



NOTES:

1. NOMENCLATURE
   Fa = AXIAL FORCE WITH RESPECT TO NOZZLE
   Fsr = RESULTANT SHEAR FORCE
   Mt = TORSIONAL MOMENT
   Mbr = RESULTANT BENDING MOMENT
2. RESULTANT SHEAR FORCE CAN ACT ALONG ANY SHEAR AXIS. RESULTANT BENDING MOMENT CAN ACT ABOUT ANY BENDING AXIS.
3. NOZZLE LOADS ARE TO BE APPLIED AS PLUS OR MINUS (+ OR −) AS CONSERVATIVE FOR DESIGN.
4. NOZZLE LOADS ARE TO BE APPLIED AT THE NOZZLE TO PRESSURE BOUNDARY INTERFACE(TANGENT AND NORMAL TO PRESSURE BOUNDARY WALL).
5. FOR AN INDIVIDUAL NOZZLE LOCATION, THE EQUIPMENT STRUCTURE SHALL BE DESIGNED TO WITHSTAND ALL FORCES AND MOMENTS FOR THAT NOZZLE APPLIED SIMULTANEOUSLY. FOR CALCULATING FORCES AND MOMENTS AT OTHER LOCATIONS (SUCH AS SUPPORTS) DUE TO NOZZLE LOADS, MINIMUM VALUES OF RESULTANT FORCES AND MOMENTS DUE TO ALL NOZZLES SHALL BE DETERMINED BY SQUARE ROOT OF THE SUM OF THE SQUARES OF EFFECTS OF INDIVIDUAL NOZZLES.
6. OVERPRESSURE PROTECTION TO BE PROVIDED IN SHELL SIDE PIPING NEAR HEAT EXCHANGER.
7. CORROSION ALLOWANCE : 0.0 IN CARBON STEEL, 0.0 IN STAINLESS STEEL.
8. SURFACE EXAMINATION (NDE): ALL CARBON STEEL TO CARBON STEEL WELDS SHALL RECEIVE MAGNETIC PARTICLE EXAMINATION (MT). ALL STAINLESS STEEL TO STAINLESS STEEL AND STAINLESS STEEL TO CARBON STEEL WELDS SHALL RECEIVE LIQUID PENETRANT EXAMINATION (PT). ALL WELDS, REGARDLESS OF ALLOY, SHALL BE VISUALLY EXAMINED (VT). COIL SUPPORT TO COIL TUBE WELDS TO RECEIVE (VT) ONLY.
9. "N" DENOTES MARK ON TUBESHEET VERTICAL CENTERLINE FOR ORIENTATION IN RELATION TO CASING PIPE VERTICAL CENTERLINE DURING WELDING.
10. REMOVE ALL BURRS, BREAK SHARP EDGES.
11. WELD PREP FOR CAP (ITEM 15) U-GROOVE WELD WITH OR WITHOUT CONSUMABLE INSERT INSERT IS ACCEPTABLE.
12. MAXIMUM SAFE LOAD PER LIFTING LUG 12000 LBS.

CUSTOMER	DUKE ENERGY COMPANY
CUST. ORDER NO.	00147277 ⚠
ESSC JOB NO.	37804
DESIGN	A.S.M.E. SEC.III, ND CL.3, 1989 EDITION, NO ADDENDA
CONSTRUCTION	A.S.M.E.
INSPECTION	A.S.M.E. & CUSTOMER
STAMPING	A.S.M.E. ("N" STAMP REQ'D)
PAINT	COMM. GRIT BLAST CARBON STEEL (SSPC-SP10) (1) PRIME COAT – CARBOLINE CARBOGUARD 890N (#2716 GRAY) (1) FINISH COAT – CARBOLINE CARBOGUARD 890N(#2014 PASTEL YELLOW) PER DUKE POWER CO. SPECIFICATION ATTACHMENT NO.: NSCS-01, REV. 1/25/06 (REV.0)

OM 201.-3276.001

QA CONDITION 1

STATUS	NO.	REVISIONS	DRN	DATE	CHK'D	DATE	APPR	DATE	CIVIL	ELEC.	MECH./OTHER
A	2	VENDOR ISSUE, ED. EX. G.20	—	—	—	—	RDD	10-13-11	BRP	-W-	KWR.---

INSPECTED

NOT TO SCALE. SCALE 2:1

ALL DIMENSIONS ARE SHOWN IN INCHES.

DUKE ENERGY COMPANY , OCONEE NUCL. STA. P.O. NO. 00147277 ⚠

DUKE POWER CO. SPECIFICATION NO. OSS-0201.00-00-0002 ⚠

LOAD CASE	MAXIMUM ANCHOR BOLT LOAD PULLOUT LOAD,P(LBF)	SHEAR LOAD, V(LBF)
NORMAL	821	758
NORMAL + OBE	2081	1839
NORMAL + SSE	3260	2180

	DESIGN PRESS.	TEST PRESS.	DESIGN TEMP.	ESTIMATED WEIGHT	
	DESIGN CONDITIONS				
SHELL SIDE	150 PSIG	225 PSIG	350°F	EMPTY	6358 LBS
TUBE SIDE	2500 PSIG	3750 PSIG	600°F	FLOODED	7856 LBS

energysteel

Energy Steel & Supply Co.
3123 John Conley Drive
Lapeer, MI 48446
(810) 538-4990 Phone
(810) 538-0578 Fax
www.energysteel.com

TOLERANCE ± UNLESS OTHERWISE SPECIFIED
1. FRACTIONAL 1/8
2. DECIMAL .X.X .2 / .X.XX .13 / .X.XXX .030
3. ANGLES 2 1/2°
4. SURFACE FINISH μ in.
5. BREAK SHARP EDGES
6. FILLET RADII

DESCRIPTION	LETDOWN COOLER ASS'Y
REF. DRAWING No/s	NU-D-1149-1 REV. A, CUST. P.O.,1561 SHT 1
ESSC PART No/S.	N37804
DRAWING No.	2065
REV.	2
DATE	8/9/11
SHEET	1 OF 2

ERN:UX00STU0

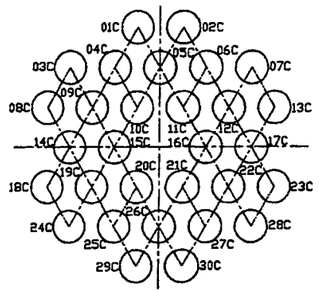
MATERIAL LIST						REFERENCE DRAWING NUMBER		Q LEVEL
PART NO.	QTY	PART NAME	MATERIAL	SPEC.	REMARKS	ESSC	GRAHAM	
1*	30	TUBE COILS	T-316/L S.S.	SA213	3/4"O.D. X .070 @WG X 86'-0" LG. SMLS. ET TESTED	---	---	Q1
2*	2	TUBE SHEET	T-316L S.S.	SA240	PLATE	1561G	---	Q1
3*	2	TUBE SIDE CHANNEL BODY	T-316/L S.S.	SA182	FORGED BAR	1561F, IT.1	---	Q1
4*	2	CHANNEL NOZZLE	T-316/L S.S.	SA182	FORGED BAR	1561F, IT.2	---	Q1
5*	1	CASING BASE PLATE	CARB. STL	SA516 GR.70	PLATE	1561B, IT.1	---	Q1
6*	1	CASING END PLATE	CARB. STL	SA516 GR.70	PLATE	1561C, IT.1	---	Q1
7*	1	CASING SHELL	CARB. STL	SA516 GR.70	PLATE .500 THK	156'A	NU-B-1149-7	Q1
8*	1 EA	CASING NOZZLE PIPE	CARB. STL	SA106 GR.B	SEAMLESS PIPE	1561C, SH.2, IT.2&3	---	Q1
9*	2	CASING PIPE TO TUBESHEET	T-316/L S.S.	SA312	SEAMLESS PIPE	1561B, IT.2	---	Q1
10	2	SOCKET WELD COUPLING	FORG. STL	SA105	ANSI B16.11	---	---	Q1
11	1 EA	SUPPORTS	CARB. STL	SA516 GR.70	PLATE	1561D&1561E	---	Q1
12	1 EA	FLOWSEAL	T-304 S.S.	304 S.S. MESH/SA240 .018 GA. CLAD 5/32 THK		---	NU-B-1149-12	Q3
13	1	SPARGER PIPE WELDMENT	CARB. STL	SA106 GR.B	SEAMLESS PIPE	1561C, SH.3	---	Q1
14	4	LIFT LUG	CARB. STL	SA516 GR.70	1" X 8" X 8 1/2"PLATE	---	S-1016(PT#0073203)	Q1
15	2	CAP (FLAT COVER PLATE)	T-316/L S.S.	SA182	FORGED BAR 49.63 X 3.00 LG	1561J	---	Q1
C*	---	TUBE SIDE INLET			3" SCH160 PIPE (.438) END BEVELED FOR CONSUMABLE INSERT WELDING	---	---	Q1
D*	---	TUBE SIDE OUTLET			3" SCH160 PIPE (.438) END BEVELED FOR CONSUMABLE INSERT WELDING	---	---	Q1
E*	---	SHELL SIDE INLET			4" SCH40 PIPE (.237) END BEVELED FOR CONSUMABLE INSERT WELDING	---	---	Q1
F*	---	SHELL SIDE OUTLET			4" SCH40 PIPE (.237) END BEVELED FOR CONSUMABLE INSERT WELDING	---	---	Q1
G*	---	SHELL SIDE VENT			1"3000#(SOCKET, THREAD WELD COMBIN.) HALF COUPLING	---	---	Q1
H*	---	SHELL SIDE DRAIN			1"3000#(SOCKET, THREAD WELD COMBIN.) HALF COUPLING	---	---	Q1

"*" DENOTES "PRESSURE RETAINING ITEMS"

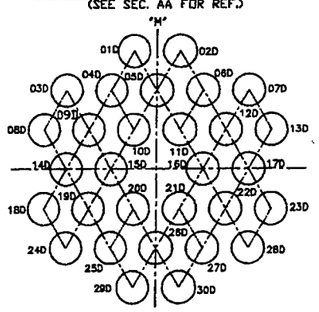
ECN	REV	DESCRIPTION	REV. BY, DATE	APPR. BY		
				W. ENGR.	PRJ. ENGR.	QA
588	0	INITIAL RELEASE	BPB/9/11	DJB/9/11	JBB/9/11	SMB/9/11
611	1	REVISED DETAILS "D","E", B.O.M., WJ-32 & WJ-35, REVISED QTY & REPOSITIONED ITEM 14,ADDED WJ-40 THRU WJ-43	BPB/9/11	DJB/9/11	JBB/9/11	SMB/9/11

INLET & OUTLET TUBESHEETS
WELD JOINT IDENT. CHART

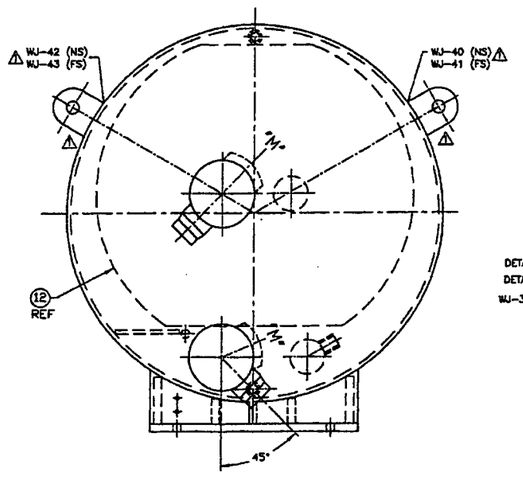
TUBE NO. INL	TUBE NO. OUT	JOINT NO.
01C	01D	WJ-01C,D
02C	02D	WJ-02C,D
03C	03D	WJ-03C,D
04C	04D	WJ-04C,D
05C	05D	WJ-05C,D
06C	06D	WJ-06C,D
07C	07D	WJ-07C,D
08C	08D	WJ-08C,D
09C	09D	WJ-09C,D
10C	10D	WJ-10C,D
11C	11D	WJ-11C,D
12C	12D	WJ-12C,D
13C	13D	WJ-13C,D
14C	14D	WJ-14C,D
15C	15D	WJ-15C,D
16C	16D	WJ-16C,D
17C	17D	WJ-17C,D
18C	18D	WJ-18C,D
19C	19D	WJ-19C,D
20C	20D	WJ-20C,D
21C	21D	WJ-21C,D
22C	22D	WJ-22C,D
23C	23D	WJ-23C,D
24C	24D	WJ-24C,D
25C	25D	WJ-25C,D
26C	26D	WJ-26C,D
27C	27D	WJ-27C,D
28C	28D	WJ-28C,D
29C	29D	WJ-29C,D
30C	30D	WJ-30C,D

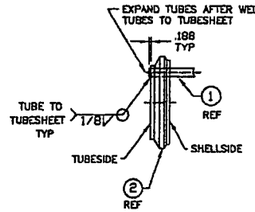


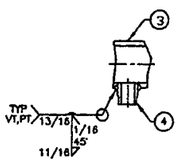
TUBESHEET (TUBESIDE INLET) ROTATED
END TUBE HOLES MAP(TUBESIDE VIEW)
(SEE SEC. AA FOR REF.)



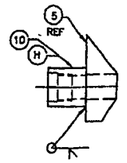
TUBESHEET (TUBESIDE OUTLET) ROTATED
END TUBE HOLES MAP(TUBESIDE VIEW)
(SEE SEC.BB FOR REF.)



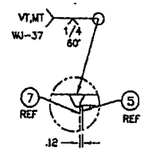




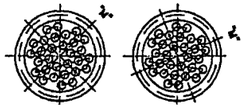
DETAIL"A"
(ROTATED)



DETAIL"C"
SCALE 4:1
TYPICAL FOR VENT & DRAIN

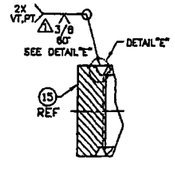


DETAIL"B"
SCALE 4:1

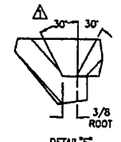


SECTION AA
SCALE 2:1

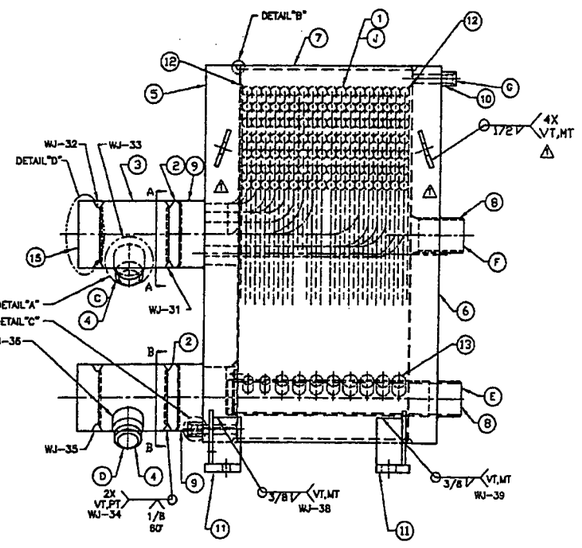
SECTION BB
SCALE 2:1



DETAIL"D"
SCALE 2:1



DETAIL"E"
SCALE 8:1



NOTES.
1. REMOVE ALL BURRS, BREAK SHARP EDGES.
2. SURFACE EXAMINATION (NDE): ALL CARBON STEEL TO CARBON STEEL WELDS SHALL RECEIVE MAGNETIC PARTICLE EXAMINATION (MT). ALL STAINLESS STEEL TO STAINLESS STEEL AND STAINLESS STEEL TO CARBON STEEL WELDS SHALL RECEIVE LIQUID PENETRANT EXAMINATION (PT). ALL WELDS, REGARDLESS OF ALLOY, SHALL BE VISUALLY EXAMINED (VT). COIL SUPPORT TO COIL TUBE WELDS TO RECEIVE (VT) ONLY.

OM 201.-3276.002

QA CONDITION 1

STATUS	NO.	REVISIONS	DRN	DATE	CHKD	DATE	APPR	DATE
A	1	VENDOR ISSUE, ED. EX. C.28					RDD	8-30-11

BPD -W- KWR ---
CIVIL ELEC. MECH. OTHER
INSPECTED

energysteel
Energy Steel & Supply Co.
3123 John Conley Drive
Lapeer, MI 48446
(810) 538-4995 Phone
(810) 538-0578 Fax
www.energysteel.com

NOT TO SCALE.

ALL DIMENSIONS ARE SHOWN IN INCHES.

TOLERANCE ± UNLESS OTHERWISE SPECIFIED
1. FRACTIONAL
2. DECIMAL X.X, X.XX, X.XXX
3. ANGLES
4. SURFACE FINISH
5. BREAK SHARP EDGES
6. FILLET RADII

DESCRIPTION: LETDOWN COOLER ASS'Y WELDMAP
REF. DRAWING No/s: 2065 SHT 1, 1561 SHT 1 & 2
ESSC PART No/S.: N37804
DRAWING No: 2065 | REV. 1 | DATE 8/9/11 | SHEET 2 OF 2

ERN: EXAMINATOR

BILL OF MATERIALS

ITEM	TYPE	SPEC.	GRADE	DESCRIPTION	CONST.	SIZE	SCH.
A	SS	SA182	316L	CHANNEL UPPER CONNECTON (NOZZLE CONNECTION C)	FOR	3"	160
B	SS	SA182	316L	CHANNEL LOWER CONNECTION (NOZZLE CONNECTION D)	FOR	3"	160
C							
D							
E							
F							
G							
H							
J							
K							
L							
M							
N							
P							
Q							
R							
S							
T							
U							
V							
W							
X							
Y							
Z							

NOTES:

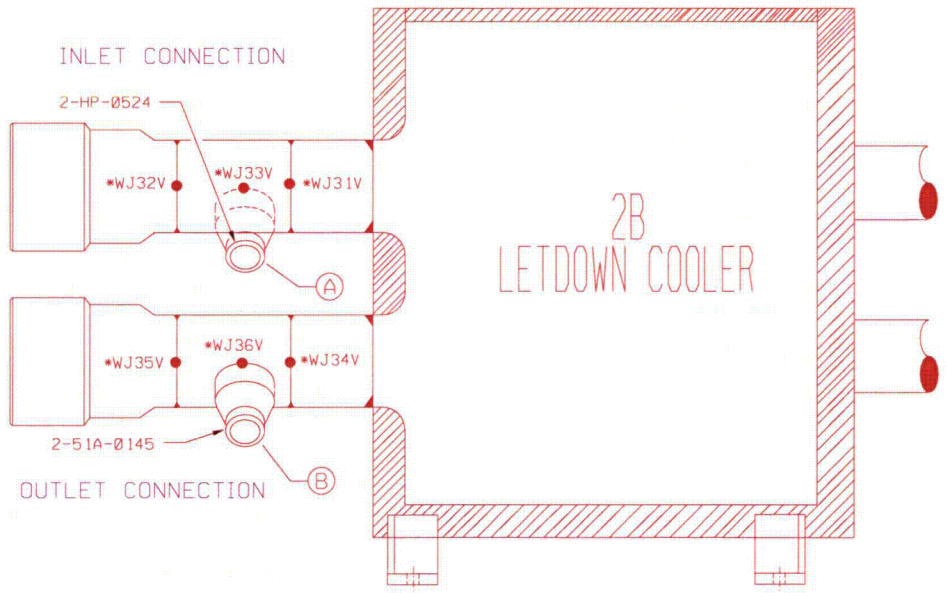
1. WELDS TRANSFERRED FROM: NA

WELD TRANSFER CHART

ORIG. WELD NUMBER	SIZE X WALL THICKNESS	NEW WELD NUMBER	ORIG. WELD NUMBER	SIZE X WALL THICKNESS	NEW WELD NUMBER

2. ALL WELD NO'S SHALL BE PRECEDED BY: 1-N37804-2-
3. LAST WELD NO. WJ36V | LAST THD JOINT *: NA
4. REF. LAYOUT DRAWING: OM-201.-3276.001
5. REF. FLOW DIAGRAM: OFD-101A-2.1
6. DESIGN TEMP./DESIGN PRESS.: 600°F / 2500 PSIG
7. COOLER CONSTRUCTED PER ASME III CLASS 3
8. THE DRAWING NUMBER WILL BE THE COOLER SERIAL NUMBER
   ALL 8 COOLERS WILL BE DESIGNATED AS UNIT 1 SYSTEM HP(51A)
9. THIS COOLER IS CURRENTLY LETDOWN COOLER "2B"
10. VENDER WELDS (REF. OM-201.-3276.001)

ERN: 0I000 15U



* SEE NOTE 10

ISO NOT FOR CONSTRUCTION SEE DESIGN DRAWING

NO.	REVISIONS	DRAWN BY / DATE	TECH REVIEW / DATE
Ø	WO 1997784 ADD WELDS WJ31V - WJ36V, ADD BOM ITEMS A AND B ADD NOTES 7-10	SCK 10/6/11	CRH 10/24/11

DUKE POWER COMPANY
OCONEE NUCLEAR STATION UNIT 2

TITLE: LETDOWN COOLER "2B" SERIAL NUMBER N37804-2

SYS.	HP	LINE NO.	NA
CODE	SEC III	DUKE CLASS	NA
QA CONDITION	1	XI CLASS	A
PIPING SPEC.	NA		
LOCATION	REACTOR BUILDING		

DWG. NO. 1-N37804-2 REV. Ø