DWG. NO. CN-1574-1.2 REV. 49

DUKE ENERGY CORPORATION
RELIEF REQUEST #09-GO-001
ATTACHMENT E, PAGE 4 OF 4

FOR INFORMATION ONLY

Certified as of 10/23/2008 at 12:57:17

NUCLEAR SERVICE WATER PUMP INTAKE PIT "B"

PUMP HOUSE SCREEN NOTE 8

STANDBY NUCLEAR SERVICE WATER POND NOTE 3

INTAKE STRUCTURE NOTE 7

LAKE WYLIE RN INTAKE STRUCTURE RN K-4 CN-1574-1.8

RN PUMP INTAKE PIT A RN J-10 CN-1574-1.8

TO STANDBY NUCLEAR WATER POND SAMPLE PUMP

B RN DISCHARGE SHORT LEG RN G-14 CN-1574-1.5

A RN DISCHARGE SHORT LEG RN K-8 CN-1574-1.5

B RN DISCHARGE LONG LEG RN C-14 CN-1574-1.5

A RN DISCHARGE LONG LEG RN K-11 CN-1574-1.5

RN PUMP MOTOR UPPER OIL RESERVOIR 1B

RN PUMP MOTOR LOWER OIL RESERVOIR 1B

RN PUMP MOTOR UPPER OIL RESERVOIR 2B

RN PUMP MOTOR LOWER OIL RESERVOIR 2B

NUCLEAR SERVICE WATER PUMP SS-B

NUCLEAR SERVICE WATER PUMP SS-D

RN PUMP MOTOR UPPER BRG OIL COOLER

MOTOR COOLER SS-D

RN STRAINER 1A AND 2A BACKFLUSH RN E-7 CN-1574-1.8

RN PUMPHOUSE TRASH BASKET

1B SUPPLY HEADER RN C-5 CN-1574-1.2

2B SUPPLY HEADER RN C-14 CN-1574-1.2

NUCLEAR SERVICE WATER STRAINER

RN PUMPHOUSE PIT B NOTE 24

CHEMICAL TREATMENT RN F-9 CN-1574-1.4

RN PUMP HOUSE PIT "B"

1B MOTOR COOLERS RN E-9 CN-1574-1.2

2B MOTOR COOLING RN E-9 CN-1574-1.2

RN SYSTEM BACKFLUSH DRAIN TO LAKE WYLIE RN L-8 CN-1574-1.8

ACCESS PORT

RN PUMP HOUSE PIT B

B RN SUPPLY RN L-4 CN-1574-1.1

RN PUMPHOUSE SCREEN WASHING TROUGH A

RN PUMPHOUSE SCREEN WASHING TROUGH B

NOTES:

1. SWO IS NORMALLY ALIGNED TO UNIT 1 IE POWER, BUT CAN BE ALIGNED TO UNIT 2 IE POWER OF CORRESPONDING CHANNEL.
2. VALVE IS INTERLOCKED TO OPEN UPON EMERGENCY LOW LEVEL IN EITHER RN PUMP PIT.
3. FULL POND EL. 574 FT. MSL. MAXIMUM DRAWDOWN 567 FT. MSL.
4. 18 FT. OF 12 IN. PIPE TO PROVIDE LOW EXIT VELOCITY.
5. OIL FILL CONNECTION.
6. FLOW SPREADERS.
7. 3.6 IN. X 2 IN. OPEN AREA BETWEEN BARS ON INTAKE BAR SCREENS.
8. 1 IN. X 1 IN. OPEN AREA IN SCREEN.
9.
10. LOCATE 2B IN. DRAIN LINES OFF BOTTOM OF 3B IN. PIPE AS CLOSE AS POSSIBLE TO VALVES 1RN3B AND 2RN3B FOR GRAVITY DRAIN TO LAKE.
11. CONNECTION FOR NUCLEAR SERVICE WATER SYSTEM PORTABLE UNWATERING PUMP WHILE UNWATERING PUMPHOUSE PIT.
12. 48 IN. NORMALLY LOCKED OPEN TUBE TURN MANWAY CLOSED FOR UNWATERING AND INSPECTING INTAKE LINE.
13. 8 IN. LINE HAS NORMALLY LOCKED MANWAY, OPENED, CLOSED FOR INSPECTION OF LINE.
14.
15. 4 IN. LINE CONNECTS TO PORTABLE 1000 SCFM AIR COMPRESSOR FOR UNWATERING INTAKE LINE.
16. VALVES 1 & 2RN39B AND 1 & 2RN28B INTERLOCKED TO OPEN WHEN PUMP STARTS, CLOSE WHEN PUMP STOPS. THEY OPEN ON A SAFETY INJECTION SIGNAL DUE TO THE PUMP MOTOR STARTING.
17. SIPHON BREAK VENT-TOP VENT 2 FT. ABOVE PIPING THE VENT MUST BE THREADED TO ACCOMODATE STANDARD FIRE HOSE.
18. IN ADDITION TO CONTROL ROOM INDICATION, GRADUATED SCALE OF SNSWP LEVEL TO BE PAINTED OR OTHERWISE INDICATED ON A STRUCTURE AND EASILY SEEN FROM OUTSIDE OF RN PUMP HOUSE.
19. THREADED TO ACCEPT FIRE HOSE FOR CLAM BACKWASH PROVISIONS.
20. NUCLEAR SERVICE WATER SYSTEM PORTABLE UNWATERING PUMP DISCHARGE LINE TO BE 6" # FLEXIBLE HOSE. HOSE TO BE CONNECTED AT NOTE 11 (COORDINATES B-5) WHEN UNWATERING PUMPHOUSE PIT.
21. FLEXIBLE CONNECTION ADDED TO AID IN MOVING EQUIPMENT FOR MAINTENANCE.
22. NO PIPING INSULATION REQUIRED.
23. RN STUFFING BOX FLUSH CONNECTION.
24. RN STRAINER BACKWASH DRAIN HAS FLANGED STRAINER BASKET (1" X 1" MESH) AT OUTLET.
25. UPPER BEARING OIL COOLER FLUSH CONNECTION.
26. THERE IS A 14" DIA. OPENING IN TROUGH A & B DRAIN LINES IN THE RN PUMPHOUSE.
27. 1RN38B AND 2RN38B ARE STAINLESS STEEL VALVES.
28. VALVE ITEM NO. 8B-40B INSTALLED AT LOCATION 2RN-38B, 1RN-38B IS INSTALLED WITH THE FLOW DIRECTION ARROW ON THE VALVE BODY POINTING UPSTREAM TOWARDS VALVE 2RN-15, 1RN-15 RESPECTIVELY.
29. STAINLESS STEEL VALVE INSTALLED AT 1RN3A AND 1RN4B.
30.
31. WATER FROM THE PUMP DISCHARGES UP THE SHAFT AND OUT THE SEAL LINES WHEN THE PUMP IS OPERATING.
32.
33. THE SPOOL PIECES BETWEEN VALVES 1,2RN910 AND INSTRUMENTS 1,2RNFE9160 CAN BE REMOVED WHEN PERFORMING MAINTENANCE ON CHECK VALVES 1,2RN910.
34. SEE PIPING ISO. FOR EXACT PIPE SPEC. CHANGE LOCATIONS.
35. RN PUMP DRIVER STAND DRAIN LINE ROUTED TO RN PUMPHOUSE PIT B.
36. RN STRAINER PACKING GLAND LEAKOFF DRAIN LINE ROUTED TO RN PUMPHOUSE PIT B.
37. ABANDONED IN PLACE PER CE-61761.
38. ABANDONED IN PLACE PER CE-61768.
39.
40. VALVE INSTALLED IN REVERSE OF FLOW DIRECTION.
41. REFERENCE CNM 1201.05-0122 003 FOR CONNECTION "K" DRAIN OPTIONS.

LINE LISTING	PIPE SPEC.	PRESSURE	TEMPERATURE	CLASS	MATERIAL
01	150.3	115 PSIA	100°F	C	CS
03	150.6	48 PSIA	100°F	C	CS
04	150.4	25 PSIA	150°F	C	CS
06	150.4	115 PSIA	100°F	C	CS
08	150.5	115 PSIA	150°F	C	CS
12	151.4	115 PSIA	100°F	G	SS
19	NA	ATMOS	100°F	H	CONCRETE
20	150.4	ATMOS	100°F	F	CS
21	150.5	115 PSIA	150°F	C	CS
22	150.5	75 PSIA	150°F	C	CS
23	150.6	115 PSIA	100°F	F	CS
24	150.6	ATMOS	100°F	F	CS
25	150.3	48 PSIA	100°F	C	CS
29	151.3	115 PSIA	100°F	F	SS
30	151.4	115 PSIA	150°F	C	SS
31	151.3	115 PSIA	150°F	C	SS
38	2781.2	25 PSIA	250°F	C	SS
48	151.3	25 PSIA	250°F	C	SS
50	151.4	115 PSIA	150°F	C	SS
51	151.4	25 PSIA	150°F	C	SS
52	151.3	48 PSIA	100°F	C	SS
59	2781.2	ATMOS	100°F	C	SS
60	151.4	115 PSIA	100°F	C	SS
67	151.3	115 PSIA	100°F	C	SS
68	151.3	115 PSIA	150°F	C	SS

DESIGN FLOW

NO.	FLOW
02	40 GPM
03	4 GPM
04	20,000 GPM
05	1,000 GPM

ABANDONED COMPONENTS RELATED

QA CONDITION 4
QA CONDITION 1

DUKE POWER COMPANY
CATAWBA NUCLEAR STATION UNIT 1 & 2

FLOW DIAGRAM OF NUCLEAR SERVICE WATER SYSTEM (RN)

NO.	REVISIONS	DRN	DATE	CHKD	DATE	APPR	DATE
49	REV PER CD500291	VDC	06-11	RSF	06-11	RGW	06-11
48	REV PER CD1101802	VDC	06-30	TLC	06-30	PFB	06-31
47	REV PER CD501811	VDC	06-29	TLC	06-29	PFB	06-29
46	REV PER PIP C-07-01001 EXEMPT, CODE G. 10	JLC	07-29	RSF	07-29	JCH	07-29
45	REV PER CD500138 IMP. DATE 10-25-06	VDC	06-16	RSF	06-16	JCH	06-16
44	REV PER CD500065 IMP. DATE 5-17-06	VDC	06-30	RSF	06-30	TVM	06-30
-	REV PER CD500082 IMP. DATE 5-17-06						
ORIG.	ORIGINAL DRAWING RETIRED	VDC	06-30				

	CIVIL	ELEC.	MECH.
INSPECTED			

							RCL	DSA	WPJ
							RCL	DSA	W
							RCL	DSA	W
							RCL	DSA	TEG
							RCL	DSA	KBJ
							RCL	DSA	RSN

DESIGNER RC RUCY DATE 10/30/75 INSP. WAIVED DATE ---
DRAWN TOM JONES DATE 10/29/75 INSP. TC McMEEKIN DATE 11/5/75
CHECKED AL SNOW DATE 10/30/75 APPR. TF WYLIE DATE 11/20/75
SCALE DWG. NO. CN-1574-1.2 REV. 49

ERN:CN000H0Z

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