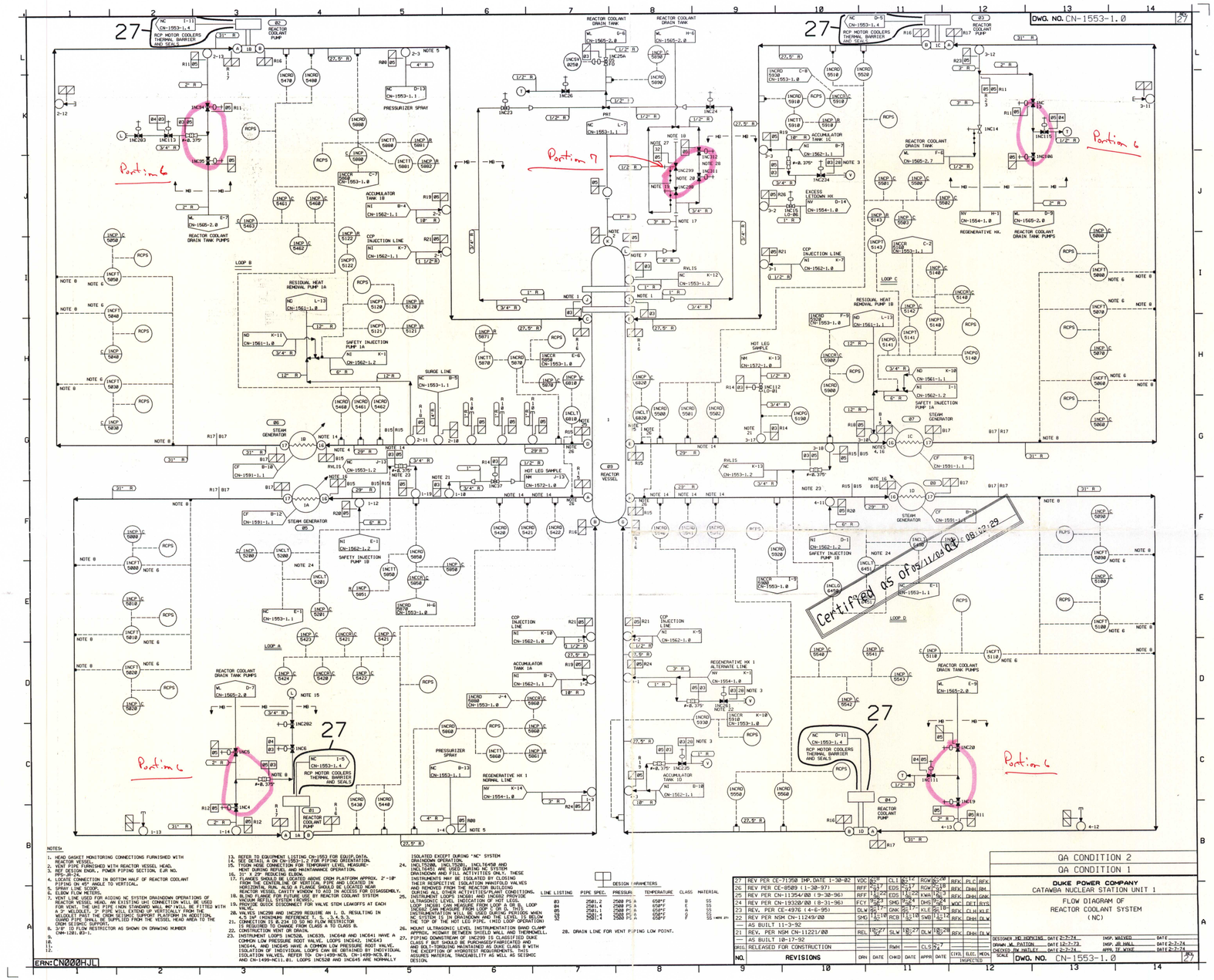
DWG. NO. CN-1553-1.0
REACTOR COOLANT DRAIN TANK
REACTOR COOLANT PUMP
RCP MOTOR COOLERS THERMAL BARRIER AND SEAL
REACTOR COOLANT DRAIN TANK PUMPS
ACCUMULATOR TANK 1A
ACCUMULATOR TANK 1B
ACCUMULATOR TANK 1C
ACCUMULATOR TANK 1D
RESIDUAL HEAT REMOVAL PUMP 1A
RESIDUAL HEAT REMOVAL PUMP 1B
SAFETY INJECTION PUMP 1A
SAFETY INJECTION PUMP 1B
CCP INJECTION LINE
HOT LEG SAMPLE
EXCESS LETDOWN HX
REGENERATIVE HX
REGENERATIVE HX 1 ALTERNATE LINE
PRESSURIZER SPRAY
SURGE LINE
STEAM GENERATOR
REACTOR VESSEL
LOOP A
LOOP B
LOOP C
LOOP D
Portion 6
Portion 7
Certified as of 09/11/09 08:12:29
NOTES:
1. HEAD GASKET MONITORING CONNECTIONS FURNISHED WITH REACTOR VESSEL.
2. VENT PIPE FURNISHED WITH REACTOR VESSEL HEAD.
3. FOR DESIGN ENGR., POWER PIPING SECTION, EJH NO. PPG-1.
4. LOCATE CONNECTION IN BOTTOM HALF OF REACTOR COOLANT PIPING ON 45° ANGLE TO VERTICAL.
5. SPRAY LINE SCOOP.
6. ELBOW FLOW METERS.
7. VENT LINE USED FOR ALIGNING NI SYSTEM DRAINDOWN OPERATIONS OF LOOP 1 ACCUMULATORS. EXISTING INC CONNECTION WILL BE USED FOR VENT. THE UNI PIPE (NON STANDARD WALL INC°WILL BE FITTED WITH A 2" WELDOLET. 2" PIPE WILL EXTEND UP VERTICALLY FROM THE WELDOLET PAST THE CRDM SEISMIC SUPPORT PLATFORM IN ADDITION, GUARD PIPE SHALL BE SUPPLIED FROM THE VESSEL HEAD AREA TO THE CRDM SEISMIC SUPPORT.
8. 3/4" ID FLOW RESTRICTOR AS SHOWN ON DRAWING NUMBER CNM-1201.03-1.
9.
10.
11.
12.
13. REFER TO EQUIPMENT LISTING CN-1553 FOR EQUIP.DATA.
14. SEE DETAIL 6 ON CN-1553-1.2 FOR PIPING ORIENTATION.
15. TYSON HOSE CONNECTION FOR TEMPORARY LEVEL MEASUREMENT DURING NI SYSTEM MAINTENANCE OPERATION. 1" X 2" REDUCING ELBOW.
16. FLANGES SHOULD BE LOCATED ABOVE CRDM PLATFORM APPROX. 2'-10" FROM THE CENTERLINE OF VERTICAL PIPE AND LOCATED IN HORIZONTAL RUN. ALSO A FLANGE SHOULD BE LOCATED NEAR THE REACTOR COOLANT PUMP TO FACILITATE PUMP DISASSEMBLY.
17. BLIND FLANGE FOR FUTURE USE OF REACTOR COOLANT SYSTEM VACUUM REFILL SYSTEM (RCVRS).
18. PROVIDE QUICK DISCONNECT FOR VALVE STEM LEAKOFFS AT EACH VALVE.
19. CHECK VES INC208 AND INC299 REQUIRE AN I. D. RESULTING IN 4.5 (SP (MINIMUM REFERENCE 1. 5. ;3.4.5.3.
20. CONNECTION 15 B.234 ID SO NO FLOW RESTRICTOR IS REQUIRED TO CHANGE FROM CLASS A TO CLASS B.
22. CONSTRUCTION VENT OR DRAIN.
23. INSTRUMENT LOOPS INC506, INC635, INC648 AND INC641 HAVE A COMMON LOW PRESSURE ROOT VALVE. LOOPS INC642, INC643 AND INC644 HAVE A COMMON LOW PRESSURE ROOT VALVE. ISOLATION OF INDIVIDUAL LOOPS CAN BE OBTAINED BY INDIVIDUAL ISOLATION VALVES. REFER TO: CN-1499-NC5, CN-1499-NC6, B1, AND CN-1499-NC11, B1. LOOPS INC508 AND INC649 ARE NORMALLY ISOLATED EXCEPT DURING "NC" SYSTEM DRAINDOWN OPERATION.
24. INCL15B4, INCL15D4, INCL15A4 AND INCL15B4 ARE USED DURING NC SYSTEM DRAINDOWN AND FILL ACTIVITIES ONLY. THESE INSTRUMENTS MAY BE ISOLATED BY CLOSING THEIR RESPECTIVE ISOLATION MANIFOLD VALVES AND REMOVED FROM THE REACTOR BUILDING.
25. ULTRASONIC LEVEL INDICATION OF HOT LEGS. LOOP INC681 CAN MEASURE FROM LOOP A OR B. LOOP INC682 CAN MEASURE FROM LOOP C OR D. THESE LOOPS ARE USED DURING NC SYSTEM DRAINDOWN WHEN NC SYSTEM IS IN DRAINDOWN AND THE LEVEL IS BELOW THE TOP OF THE HOT LEG PIPE. (MID LOOP OPERATION)
26. MOUNT ULTRASONIC LEVEL INSTRUMENTATION BAND CLAMP APPROX. MIDWAY BETWEEN SHIELD WALL AND THERMOWELL.
27. PIPING DOWNSTREAM OF INC299 IS CLASSIFIED DUKE CLASS F BUT SHOULD BE PURCHASED/FABRICATED AND BOLT-TORQUED/MAINTAINED AS DUKE CLASS B WITH THE EXCEPTION OF HYDROTEST REQUIREMENTS. THIS ASSURES MATERIAL TRACEABILITY AS WELL AS SEISMIC DESIGN.
28. DRAIN LINE FOR VENT PIPING LOW POINT.
DESIGN PARAMETERS
LINE LISTING | PIPE SPEC. | PRESSURE | TEMPERATURE | CLASS | MATERIAL
03 2501.2 2500 PS A 650°F B SS
04 2501.4 2500 PS A 650°F E SS
05 2501.1 2500 PS A 650°F A SS
06 2501.3 2500 PS A 650°F C SS
12 2501.4 2500 PS A 650°F F SS (NOTE 27)
ERN: CN000HJL
QA CONDITION 2
QA CONDITION 1
DUKE POWER COMPANY
CATAWBA NUCLEAR STATION UNIT 1
FLOW DIAGRAM OF REACTOR COOLANT SYSTEM (NC)
DESIGNER MD HOPKINS DATE 2-7-74
DRAWN W. PATTON DATE 12-7-73
CHECKED JW SMILEY DATE 2-7-74
IMP. WAIVED DATE
IMP. JR HALL DATE 2-7-74
APP. IF WINE DATE 2-7-74
SCALE DWG. NO. CN-1553-1.0
NO. REVISIONS DRN DATE CHKD DATE APPR DATE
INSPECTED CIVIL ELEC. MECH.
27 REV PER CE-7135B IMP, DATE 1-30-02
26 REV PER CE-6589 (1-30-97)
25 REV PER CN-1135A/00 (9-30-96)
24 REV PER CN-1932A/00 (8-31-96)
23 REV. PER CE-4976 (4-6-95)
22 REV PER NSM CN-1124B/00
— AS BUILT 11-3-92
21 REV. PER NSM CN-1122I/00
— AS BUILT 10-17-92
0R1G RELEASED FOR CONSTRUCTION

D-08