

ATTACHMENT 2 TO AEP:NRC:0967H
REVISED PAGES FOR THE
DONALD C. COOK NUCLEAR PLANT UNIT 1
TECHNICAL SPECIFICATIONS

8702180406 870210
PDR ADDCK 05000315
P PDR

TABLE 4.3-7

POST-ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>
1. Containment Pressure	M	R *
2. Reactor Coolant Outlet Temperature - T_{HOT} (Wide Range)	M	R
3. Reactor Coolant Inlet Temperature - T_{COLD} (Wide Range)	M	R
4. Reactor Coolant Pressure - Wide Range	M	R
5. Pressurizer Water Level	M	R *
6. Steam Line Pressure	M	R *
7. Steam Generator Water Level - Narrow Range	M	R *
8. RWST Water Level	M	R
9. Boric Acid Tank Solution Level	M	R
10. Auxiliary Feedwater Flow Rate	M	R
11. Reactor Coolant System Subcooling Margin Monitor	M	R
12. PORV Position Indicator - Limit Switches	M	R *
13. PORV Block Valve Position Indicator - Limit Switches	M	R *
14. Safety Valve Position Indicator - Acoustic Monitor	M	R *

* The provisions of Specification 4.0.6 are applicable.

EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

d. At least once per 18 months by:*

1. Verifying automatic isolation and interlock action of the RHR system from the Reactor Coolant System when the Reactor Coolant System pressure is above 600 psig.
2. A visual inspection of the containment sump and verifying that the subsystem suction inlets are not restricted by debris and that the sump components (trash racks, screens, etc.) show no evidence of structural distress or abnormal corrosion.

e. At least once per 18 months, during shutdown, by:*

1. Verifying that each automatic valve in the flow path actuates to its correct position on a Safety Injection test signal.
2. Verifying that each of the following pumps start automatically upon receipt of a safety injection test signal:
 - a) Centrifugal charging pump
 - b) Safety injection pump
 - c) Residual heat removal pump

f. By verifying that each of the following pumps develops the indicated discharge pressure on recirculation flow when tested pursuant to Specification 4.0.5 at least once per 31 days on a STAGGERED TEST BASIS.

1. Centrifugal charging pump \geq 2405 psig
2. Safety Injection pump \geq 1445 psig
3. Residual heat removal pump \geq 195 psig

g. By verifying the correct position of each mechanical stop for the following Emergency Core Cooling System throttle valves:

1. Within 4 hours following completion of each valve stroking operation or maintenance on the valve when the ECCS subsystems are required to be OPERABLE.

* The provisions of Specification 4.0.6 are applicable.

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

shall be constituted of one basket each from Radial Rows 1, 2, 4, 6, 8 and 9 (or from the same row of an adjacent bay if a basket from a designated row cannot be obtained for weighing) within each bay. If any basket is found to contain less than 1220 pounds of ice, a representative sample of 20 additional baskets from the same bay shall be weighed. The minimum average weight of ice from the 20 additional baskets and the discrepant basket shall not be less than 1220 pounds/basket at a 95% level of confidence.

The ice condenser shall also be subdivided into 3 groups of baskets, as follows: Group 1 - bays 1 through 8, Group 2 - bays 9 through 16, and Group 3 - bays 17 through 24. The minimum average ice weight of the sample baskets from Radial Rows 1, 2, 4, 6, 8 and 9 in each group shall not be less than 1220 pounds/basket at a 95% level of confidence.

The minimum total ice condenser ice weight at a 95% level of confidence shall be calculated using all ice basket weights determined during this weighing program and shall not be less than 2,371,450 pounds.*

3. Verifying, by a visual inspection of at least two flow passages per ice condenser bay, that the accumulation of frost or ice on flow passages between ice baskets, past lattice frames, through the intermediate and top deck floor grating, or past the lower inlet plenum support structures and turning vanes is restricted to a nominal thickness of 3/8 inches. If one flow passage per bay is found to have an accumulation of frost or ice greater than this thickness, a representative sample of 20 additional flow passages from the same bay shall be visually inspected. If these additional flow passages are found acceptable, the surveillance program may proceed considering the single deficiency as unique and acceptable. More than one restricted flow passage per bay is evidence of abnormal degradation of the ice condenser.*
- c. At least once per 40 months by lifting and visually inspecting the accessible portions of at least two ice baskets from each 1/3 of the ice condenser and verifying that the ice baskets are free of detrimental structural wear, cracks, corrosion or other damage. The ice baskets shall be raised at least 12 feet for this inspection.

* The provisions of Specification 4.0.6 are applicable.

ATTACHMENT 3 TO AEP:NRC:0967H

DESCRIPTION OF ICE CONDENSER
SUBLIMATION CALCULATION

Description of Calculation

This section summarizes calculations done in support of our surveillance extension request. The details of these calculations are available upon request.

The ice loss per basket was calculated from the data of the past five surveillance intervals. Ice losses per basket per year were calculated for each bay and row-group using small sample statistics using average expected values and at the lower 95 percent confidence level. This ice loss rate was applied to the "as-left" ice weights of the latest surveillance (June 1986) for the length of the current surveillance interval, including the extension period (estimated to be thirteen months), for each bay and row-group combination. These results were then compared to the T/S acceptance criteria.

Results Summary

All results are presented in the form of tables providing both a best estimate of ice weights and the results of calculations performed at the lower 95 percent confidence level. The best-estimate results are shown for information purposes. We believe that the lower 95 percent confidence level data provide a suitable basis for regulatory approval of this T/S change request. The bay and row-group designations are in accordance with information presented in Attachment 4.

Table 1 lists the June 1986 "as-left" average ice basket weight for each bay and the expected weights in July 1987. All bays except bays 1, 7, and 24 are expected to have average basket weights above 1220 pounds at the lower 95 percent confidence level. Bays 1, 7, and 24 are expected to have average basket weights above 1098 pounds at the lower 95 percent confidence level.

Table 2 lists the "as-left" average ice basket weight for each row-group required to be weighed by T/S 4.6.5.1.b.2 and the expected weight in July 1987 at the lower 95 percent confidence level. All row-groups except Row 1 Group 2, Row 4 Group 3, and Row 9 Group 3 are expected to have average basket weights above 1220 pounds at the lower 95 percent confidence level. Row 1 Group 2, Row 4 Group 3, and Row 9 Group 3 are expected to have average basket weights above 1098 pounds at the lower 95 percent confidence level.

Table 3 lists the expected overall ice weight. As can be seen, the entire ice condenser is expected to have 2,545,376 pounds of ice with at least 95 percent confidence in July 1987, well above the 2,371,450 pound limit of T/S 4.6.5.1.b.2. The total ice weight was calculated using the average of the basket weights calculated for the row-groups at the lower 95 percent confidence level. The data for Rows 3, 5, and 7 for all groups was estimated as the average of the two adjacent row groups.

TABLE 1
Average Ice Weights per Basket by Bay

<u>Bay No.</u>	Average Ice Weight/ Basket As Left June 1986 (lbs.)	Expected Ice Weight/ Basket July 1987 (lbs.)	Expected Ice Weight/ Basket at Lower 95% Conf. Level July 1987 (lbs.)
1	1387	1337	1202
2	1480	1478	1471
3	1483	1479	1468
4	1471	1440	1391
5	1407	1362	1277
6	1391	1360	1304
7	1380	1307	1155
8	1434	1378	1287
9	1436	1377	1302
10	1410	1362	1300
11	1472	1455	1420
12	1423	1382	1319
13	1433	1395	1321
14	1435	1399	1353
15	1452	1428	1401
16	1440	1387	1326
17	1451	1403	1329
18	1469	1444	1386
19	1456	1447	1431
20	1491	1463	1413
21	1432	1386	1318
22	1454	1414	1369
23	1482	1446	1296
24	1430	1304	1134

TABLE 2
Expected Average Ice Weights per Basket by Row-Group

Row No. - Group No.	Average Ice Weight/ Basket As Left June 1986 (lbs.)	Expected Ice Weight/ Basket July 1987 (lbs.)	Ice Weight/ Basket at Lower 95% Conf. Level July 1987 (lbs.)
1-1	1397	1328	1250
1-2	1437	1349	1212
1-3	1578	1539	1430
2-1	1392	1359	1312
2-2	1439	1394	1314
2-3	1467	1427	1384
4-1	1356	1300	1224
4-2	1353	1308	1236
4-3	1391	1315	1206
6-1	1469	1447	1419
6-2	1502	1487	1462
6-3	1446	1413	1366
8-1	1451	1395	1332
8-2	1430	1377	1292
8-3	1441	1376	1263
9-1	1447	1409	1351
9-2	1484	1403	1291
9-3	1450	1335	1162

TABLE 3

Total Ice Weight Expected in July 1987

Based on Average
Ice Basket Weights

2,692,440

Based on Average
Ice Basket Weights
at the Lower 95%
Confidence Level

2,546,640

ATTACHMENT 4 TO AEP:NRC:0967H

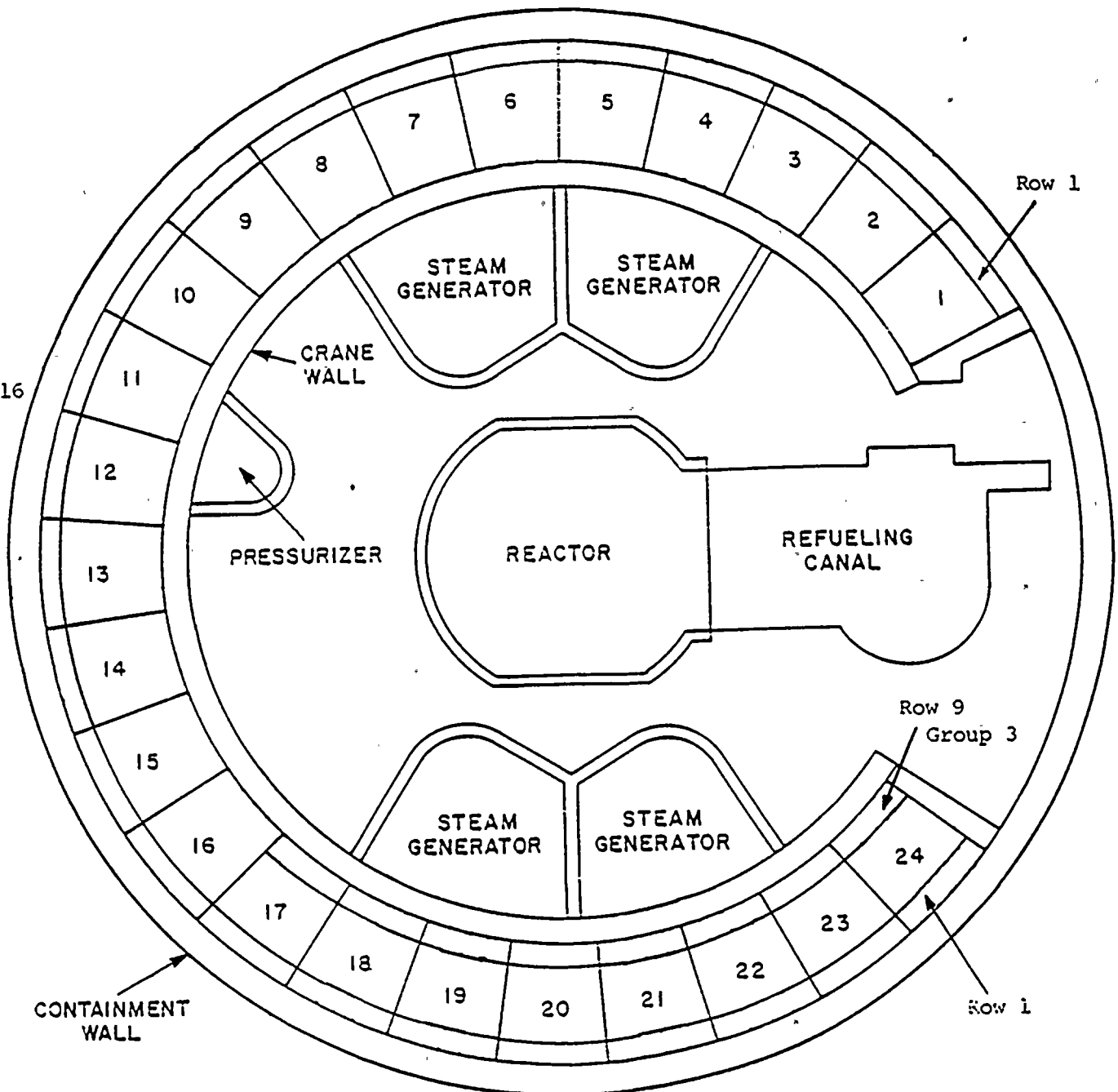
DRAWING OF ICE CONDENSER BAY
AND ROW-GROUP LAYOUT

ICE CONDENSER BAY AND
ROW-GROUP CONFIGURATION

DONALD C. COOK NUCLEAR PLANT

Group 1 - Bays 1-8

Group 2
Bays 9-16



Group 3 - Bays 17-24