

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

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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.

\*On a one-time basis during the March/April 1987 outage, the weights of three Row 8 baskets may be substituted for three adjacent Row 9 baskets.

D. C. COOK - UNIT 2

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Amendment No.

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ATTACHMENT 3 TO AEP:NRC:0900E

Summary Of Ice Weight  
Statistical Evaluation

To support this T/S exemption request, we are submitting evaluation of our most recent ice basket weights. This analysis compares the observed mean ice weights of Row 9, Group 1 with Row 8, Group 1 and the observed mean ice weights of Row 9, Group 2 with Row 8, Group 2. The purpose of this comparison of observed means was to determine whether the mean weight of Row 9 was statistically different from the mean of Row 8. If the means are not significantly different, we can conclude that the Row 9 samples and the Row 8 samples came from the same population. This would statistically show that there is as much ice in Row 9 as in Row 8. We formulated the null hypothesis that the difference between the Row 9 true mean and the Row 8 true mean was zero; that is, the true means are equal. The alternate hypothesis is that the true means are different. We used the Student t distribution as the test statistic and performed the two-tailed test at the 95% confidence level. (Walpole, R. E., Introduction to Statistics, 2nd ed., Macmillan Publishing Co., New York, 1974, p. 204.)

Our analysis of the most recent weighings (March 1987) showed there was no reason to reject the null hypothesis for either Group 1 or Group 2, and we conclude that the Row 9 and Row 8 samples came from the same population. This shows that we are 95% confident that the Row 9 and Row 8 basket weights are equivalent. There is no statistical evidence showing the true means of Row 8 and Row 9 are different. This evaluation applies only to this one-time change and the current ice basket weighings. The correlation between ice basket weights in Rows 8 and 9 has not always been as strong in past surveillances, and for this reason we are limiting our application to an exemption request on a one-time basis.

A summary of the Row 8 and Row 9 ice weights for the March 1987 weighing is given in Table 2 of Attachment 2. As can be seen, the mean weights of the Row 8 and 9 baskets as well as the lower limit at a 95% confidence level are very nearly equal.

Additionally, there has been very little ice weight loss from the March 1986 weighing to the March 1987 weighing as shown in Table 3. Therefore we would not expect a significant ice loss in the Row 9 baskets that we were unable to weigh.

Table 3

## Ice Weight Losses\*

<u>Row</u>	<u>Group</u>	<u>May 86 Average Ice Wgt.</u>	<u>March 87 Average Ice Wgt.</u>	<u>Weight Difference (3/86-3/87)</u>
8	1	1439	1421	-18
8	2	1405	1373	-32
8	3	1329	1339	10
9	1	1397	1386	-11
9	2	1425	1428	3
9	3	1408	1331	-77

\* Data taken for different baskets in May 1986 and March 1987.