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SUBJECT: Application for amend to License DPR-58, requesting relief from Tech Spec surveillance requirements till Unit 1 outage.

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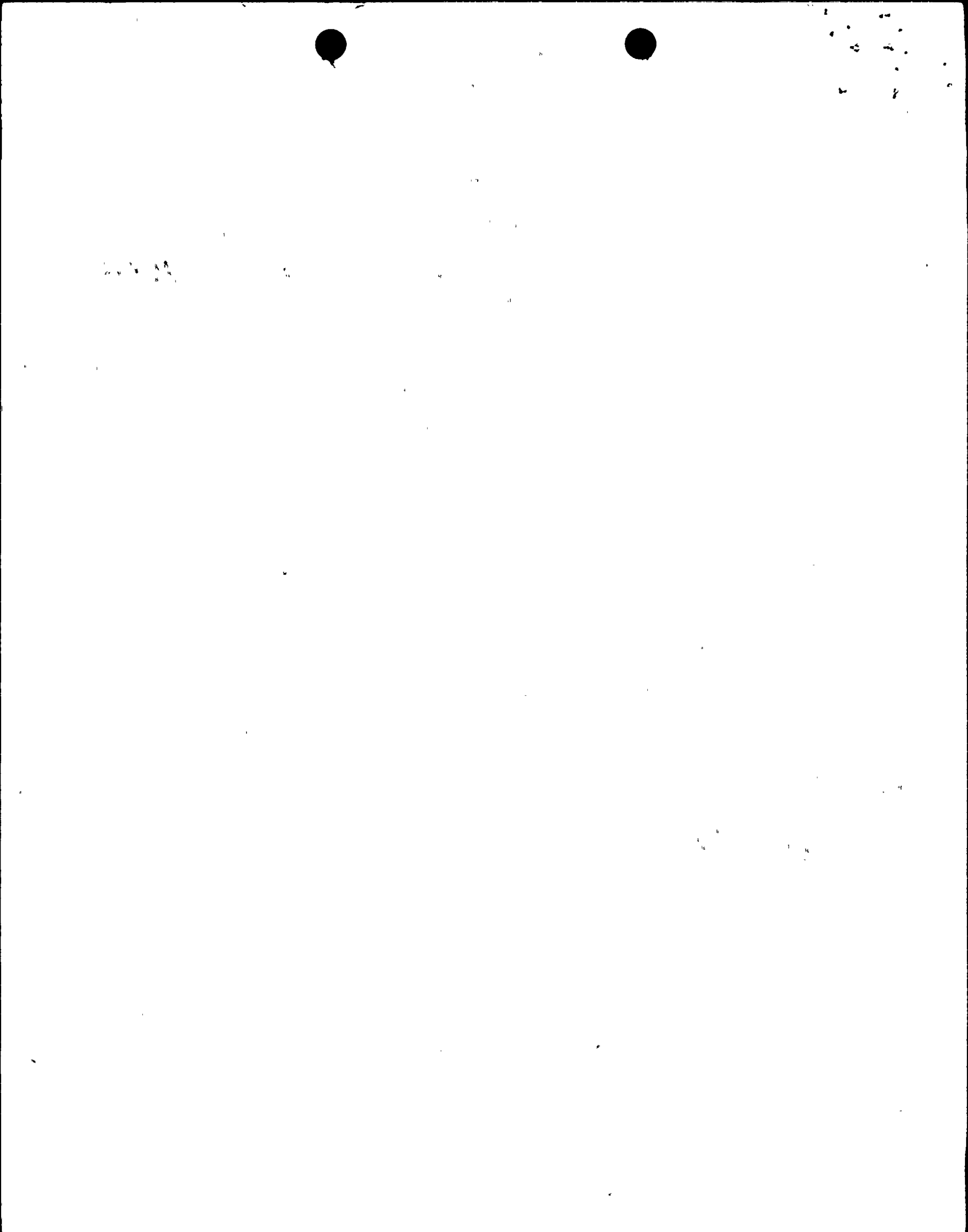
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AEP:NRC:0967L

Donald C. Cook Nuclear Plant Unit 1
Docket No. 50-315
License No. DPR-58
Surveillance Interval Extensions for Unit 1 Cycle 10

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Attn: T. E. Murley

August 9, 1988

Dear Dr. Murley:

This letter constitutes an application for amendment to the Technical Specifications (T/Ss) for the Donald C. Cook Nuclear Plant Unit 1. Specifically, we request an extension for certain surveillances which the T/Ss require to be performed beginning February 26, 1989. We are requesting relief from these T/S requirements until the Unit 1 refueling outage which is currently projected to begin by March 1989. These surveillances are difficult or impossible to complete with the unit in operation. Therefore, to avoid unnecessary shutdown of the plant and to allow for outage planning on other units, we ask that you respond to us by February 1, 1989.

A description of the proposed changes and our analyses concerning significant hazards considerations are contained in Attachment 1 to this letter. The proposed revised T/S pages are contained in Attachment 2.

All of the requested surveillance extensions are associated with surveillances normally performed during outages. The current refueling cycle has been lengthened due to a self-imposed limit of operation at 90% of rated thermal power.

This submittal includes proposed changes to Pages 3/4 3-12, 3/4 3-31, and 3/4 3-33. Changes to these pages were also requested in our letter AEP:NRC:0916W, dated March 26, 1987. During discussions on July 19, 1988, your staff indicated the changes proposed in AEP:NRC:0916W were expected to be granted in the near future. Therefore, we have included these pending changes in our present submittal.

Pursuant to a request by your staff on July 28, 1988, we will be submitting a request to delete the footnotes associated with the surveillance interval extensions which have been granted at

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various times for both of the Cook Nuclear Plant units. We anticipate this submittal will be made by September 15, 1988. This will be an administrative change, intended only to clean up the affected T/S pages. We are also investigating possibilities for eliminating the need for surveillance interval extensions. For example, the frequency of refueling outage-related surveillances could be increased from 18 months to 24 months. This topic will be the subject of a future submittal.

We believe that the proposed changes will not result in (1) a significant change in the types of effluents or a significant increase in the amount of any effluents that may be released offsite, or (2) a significant increase in individual or cumulative occupational radiation exposure.

These proposed changes have been reviewed by the Plant Nuclear Safety Review Committee (PNSRC) and will be reviewed by the Nuclear Safety and Design Review Committee (NSDRC) at their next regularly scheduled meeting.

In compliance with the requirements of 10 CFR 50.91 (b)(1), copies of this letter and its attachments have been transmitted to Mr. R. C. Callen of the Michigan Public Service Commission and Mr. G. Bruchmann of the Michigan Department of Public Health.

Pursuant to 10 CFR 170.12(c), we have enclosed an application fee of \$150.00 for the proposed amendments.

This document has been prepared following Corporate procedures which incorporate a reasonable set of controls to ensure its accuracy and completeness prior to signature by the undersigned.

Sincerely,



M. P. Alexich
Vice President

ldp

Attachments

cc: D. H. Williams, Jr.
W. G. Smith, Jr. - Bridgman
G. Bruchmann
R. C. Callen
G. Charnoff
NRC Resident Inspector - Bridgman
A. B. Davis - Region III

Attachment 1 to AEP:NRG:0967L

Reasons and 10 CFR 50.92
Significant Hazards Evaluation
for Changes to the
Technical Specifications for the
Donald C. Cook Nuclear Plant Unit 1

Introduction

As discussed in the cover letter, the purpose of this proposed amendment is to prevent an unscheduled surveillance outage in Unit 1 prior to our next refueling outage currently scheduled to begin by March 1989. This submittal requests extensions for surveillances that must be performed during shutdown or that present such operational difficulty that performing the surveillance is not practical at power. We propose to add the following Technical Specification (T/S) to Section 4.0 of the T/Ss.

- 4.0.7. By specific reference to this section, those surveillances which must be performed on or before April 1, 1989, may be delayed until the end of the Cycle 10-11 refueling outage (currently scheduled to begin during the latter part of the first quarter of 1989). For these specific surveillances under this section, the specified time intervals required by Specification 4.0.2 will be determined with the new initiation date established by the surveillance date during the Unit 1 1989 refueling outage.

We reference this specification by footnote in all surveillances that require this extension. This footnote will be applicable to the following T/Ss with the indicated surveillance due date. Dates given include the grace period allowed by T/S 4.0.2.

<u>T/S Affected</u>	<u>Description of Change</u>	<u>Due Date</u>
(1) 4.6.5.1.b.2	Delay ice basket weighing	2/26/89
(2) 4.6.5.1.b.3	Delay ice condenser flow passage inspection	3/05/89
(3) 4.6.5.3.1.b.1-b.5 4.6.5.4.c	Delay ice condenser inlet door testing and inlet door position monitoring system testing	3/05/89
(4) Table 4.3-1, Items 7 and 8 4.3.2.1.2 Table 4.3-2, Items 1.f and 4.d Table 4.3-7, Items 2, 3 and 11	Delay RTD Calibrations	3/26/89

Unit 1 Cycle 10 is currently projected to end by mid-February 1989. All of the surveillances for which we are requesting extensions fall due after the anticipated outage date. The changes are being requested to allow margin for unplanned outages which may occur prior to the refueling outage. The extensions may also be necessary if the Unit 2 steam generator replacement/refueling outage end date is delayed. The outage is currently on schedule and is expected to end in January 1989. In the event it is delayed, it may be desirable to operate Unit 1 at reduced power in order to stretch the cycle length and thereby avoid having both units out of service at the same time.

All of the requested extensions have been requested previously, either for Unit 1 or Unit 2. The table below provides information on our previous requests.

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Submittal # (Date)</u>	<u>Amendment (Date)</u>
1	Ice Basket Weighing	1	AEP:NRC:0967H (2/10/87)	108 (5/8/87)
2	Flow Passages & Related Inspections	1	AEP:NRC:0967H (2/10/87)	108 (5/8/87)
3	Inlet Door Testing	1	AEP:NRC:0967F (1/9/87)	107 (4/17/87)
4	RTD Calibrations	2	AEP:NRC:0916AF (1/11/88)	Request with- drawn since refueling outage began prior to surveillance due date (see AEP:NRC:0916AK dated 5/2/88)

In addition to the above surveillance extensions, we are requesting a minor editorial change to T/S Table 4.3-2. The editorial change is discussed in conjunction with the RTD calibration extension request (Group 4). The reasons and 10 CFR 50.92 analyses for each of the four surveillance groups are discussed separately below.

1) Ice Basket Weighing

We are requesting an extension of the surveillance interval for the ice condenser ice basket weighings required by T/S 4.6.5.1.b.2. The surveillance was last performed in March 1988. The due date, including grace period, for the surveillance is February 26, 1989. The surveillance is difficult to perform at power because baskets in Rows 1 and 9 have historically become frozen in place. (Row 1 is located closest to the containment wall, and Row 9 is closest to the crane wall; see drawing in Attachment 4.) To free the baskets requires manual scraping of ice or defrosting of the ice condenser. Neither of these are acceptable since loose or melted ice may land on the lower inlet doors potentially freezing them in place. Problems with freezing of the doors as a result of defrost operations has been encountered in the past and is discussed in the third section of this attachment. Freezing of the doors poses a significant problem since the doors are not accessible during power operation due to ALARA considerations. Thus, it is unlikely that the freezing condition would be identifiable or correctable.

In the past seven surveillances (performed in April 1985, June 1985, September 1985, December 1985, June 1986, July 1987, and March 1988) all ice basket weights for bays and row groups have met the acceptance criteria of T/S 4.6.5.1.b.2. This surveillance history shows that maintaining the required ice weight has not been a problem, and therefore we believe that the ice condenser will have sufficient ice weight to perform its safety function during the extension period.

In addition to the surveillance history, we have performed calculations of anticipated ice loss due to sublimation. These calculations support our belief that this extension will not impact the ability of the ice condenser to perform its safety function. These calculations, which are summarized in Attachment 3 to this letter, show that by April 1, 1989, all but one bay and two row-groups are expected to contain at least 1220 pounds of ice at the lower 95% confidence level as required by T/S 4.6.5.1.b.2. The ice condenser total ice weight is expected to be well over the minimum of 2,371,450 pounds required by T/S 4.6.5.1.b.2. The calculations used known ice weights from the beginning of this surveillance interval and extrapolated expected ice basket weights based on the average ice loss from the past seven ice weighings. The calculations determined the minimum average weights expected at the lower 95%

confidence level through April 1, 1989. (A more detailed description of the calculation is contained in Attachment 3).

The expected values for the one bay and two row-groups that may fall below the T/S average value of 1220 pounds per basket are Bay 24 (1200 pounds), Row 8 Group 3 (1206 pounds) and Row 9 Group 3 (1166 pounds). While these bays and row-groups might fall below the T/S limit, they are all above the 1098 pounds stated in the bases as the minimum acceptable average basket weight (reference - Bases Page B 3/4 6-4). These bases state that, "the minimum weight figure of 1220 pounds of ice per basket contains a 10 percent conservative allowance for ice loss through sublimation..." This statement indicates that the purpose of the 1220 pound surveillance limit is to ensure a minimum ice weight of 1098 pounds at the end of the surveillance interval. Therefore, we believe that since all bays and row-groups are expected to have ice basket weights well over 1098 pounds (with most bays and row-groups having ice basket weights well over 1220 pounds), the ice condenser has sufficient capability to perform its safety function during the requested extension period.

10 CFR 50.92 Evaluation

Per 10 CFR 50.92, a proposed amendment will not involve a significant hazards consideration if the proposed amendment does not:

- (1) involve a significant increase in the probability or consequences of an accident previously analyzed,
- (2) create the possibility of a new or different kind of accident from any accident previously analyzed or evaluated, or
- (3) involve a significant reduction in a margin of safety.

Our evaluation of the proposed change with respect to these criteria, based on the above information, is provided below.

Criterion 1

On the basis of the surveillance history of the ice baskets, the calculations of the sublimation rates, and the relatively short period of this extension, we believe that the extension will not result in a significant increase in the probability or consequences of a previously evaluated accident.

Criterion 2

The surveillance extension will not result in a change in plant configuration or operation. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously analyzed or evaluated.

Criterion 3

We believe that an extension of the surveillance interval will not result in a significant reduction in the margin of safety based on the excellent surveillance performance of this system, the calculations of sublimation rates and the relatively short period of this extension.

Lastly, we note that the Commission has provided guidance concerning the determination of significant hazards by providing certain examples (48 FR 14870) of amendments considered not likely to involve significant hazards consideration. The sixth of these examples refers to changes which may result in some increase to the probability of occurrence or consequences of a previously analyzed accident, but the results of which are within limits established as acceptable. We believe these changes fall within the scope of this example for the reasons cited above. Therefore we believe this change does not involve a significant hazards consideration as defined in 10 CFR 50.92.

2) Flow Passage Inspections

We are requesting an extension of the surveillance interval for ice condenser flow passage inspections required by T/S 4.6.5.1.b.3. The surveillance was last performed in March 1988. The due date, including the grace period, is March 5, 1989. The inspection cannot be completed at power because portions of the inspection must be performed from lower containment which is inaccessible during power operation due to ALARA considerations.

T/S 4.6.5.1.b.3 requires visual inspections of the lattice frames, intermediate and top deck floor gratings, the lower inlet plenum support structures and turning vanes, and at least 2 of the flow passages in each of the 24 ice condenser bays. The T/S requires that if a flow passage is found to have an accumulation of frost greater than 3/8 inches, an additional 20 flow passages from the same bay must be visually inspected. More than one restricted flow passage per bay is considered by the T/S to be evidence of abnormal degradation.

The T/S limit of no more than one restricted flow passage per bay is extremely conservative when compared to the assumptions used in safety evaluations performed for us by Westinghouse Electric Corp. (Westinghouse). The evaluations of short-term containment pressure resulting from the blowdown phase of a LOCA assumed that 20% of the flow area in each bay is blocked. (One completely blocked passage represents less than 1% of the available flow area in a bay.)

We have reviewed the as-found surveillance history of the T/S 4.6.5.1.b.3 testing from 1983 to the present. Only two failures were noted. The first failure detected was in July 1987. Frost accumulation greater than 3/8 inches was found in a total of 124 flow passages in 7 of the 24 bays. The worst case blockage, though, did not exceed 11% in the worst bay. The ice condenser was defrosted and manually cleaned to remove the accessible frost and ice buildup.

In March 1988, an inspection again revealed frost buildup greater than 3/8 inches in more than one flow passage per bay. This time, however, the blockage was limited to a total of only 12 flow passages in 4 of the 24 bays. The worst blockage in any bay was less than 3% of the total flow area of the bay. The ice condenser was manually cleaned to restore the flow passages to within T/S requirements.

Although some frost buildup has been identified during surveillance testing, the buildup has never approached levels assumed in the Westinghouse evaluations. The worst case degradation seen in any bay since 1982 still had approximately 50% margin to the evaluation limit. Additionally, the requested extension period should be very brief. These reasons give us confidence that the requested extension will not result in flow passage blockage in excess of what is presently evaluated.

For these reasons, we believe the extension will not significantly impact public health and safety.

10 CFR 50.92 Evaluation

Per 10 CFR 50.92, a proposed amendment will not involve a significant hazards consideration if the proposed amendment does not:

- (1) involve a significant increase in the probability or consequences of an accident previously analyzed,
- (2) create the possibility of a new or different kind of accident from any accident previously analyzed or evaluated, or
- (3) involve a significant reduction in a margin of safety.

Our evaluation of the proposed change with respect to these criteria is provided below.

Criterion 1

The surveillance history of the flow passage and related inspections gives us confidence that the frost buildup will not exceed that assumed in the evaluations performed by Westinghouse. In addition, the surveillance extension period is expected to be brief. For these reasons, we believe the extension will not result in a significant increase in the probability or consequences of a previously evaluated accident, nor will it result in a significant reduction in the margin of safety.

Criterion 2

The surveillance extension will not result in a change in plant configuration or operation. Therefore, this change is not expected to create the possibility of a new or different kind of accident from any accident previously analyzed or evaluated.

Criterion 3

See Criterion 1 above.

Lastly, we note that the Commission has provided guidance concerning the determination of significant hazards by providing certain examples (48 FR 14870) of amendments considered not likely to involve significant hazards consideration. The sixth of these examples refers to changes which may result in some increase to the probability of occurrence or consequences of a previously analyzed accident, but the results of which are within limits established as acceptable. We believe this change falls within the scope of this example for the reason discussed above. Therefore, we believe this change does not involve a significant hazards consideration as defined in 10 CFR 50.92.

3) Ice Condenser Lower Inlet Doors

We are requesting an extension for testing of the ice condenser lower inlet doors and inlet door position monitoring system required by T/Ss 4.6.5.3.1.b and 4.6.5.4.c. The testing is required by T/Ss to be performed during shutdown. It cannot be done at power because the doors are located in areas of containment which are inaccessible because of ALARA concerns. The testing was last performed in March 1988, in conjunction with flow passage and related inspections described previously in this letter. The next surveillance due date, including grace period, is March 5, 1989.

We have reviewed Unit 1 surveillance data from 1985 through the present. No failures were found in the inlet door position monitoring system. As for the lower inlet door testing required by T/S 4.6.5.3.1.b, no failures were found in surveillances performed in April or September 1985. In a surveillance done in December 1985, seven doors failed due to ice accumulation. After the ice was removed, all of the doors passed the retest and showed no signs of mechanical failure. Another surveillance was performed in June 1986, with all doors successfully passing. The failures found during the December 1985 surveillance are believed to have occurred as a result of outage work performed during the Unit 1 1985 refueling outage. Some of this work involved deliberate defrosting of the ice condenser, and was done after the September 1985 inlet door surveillances were performed. It is believed that water and ice from the defrost operation accumulated on the doors, causing the opening torques to exceed T/S limits. To prevent recurrence, the ice condenser defrost procedure now requires that the door opening torques be tested following a defrost operation. Additionally, operations personnel make a thorough visual inspection of the containment prior to startup after an extended outage. These inspections now include the lower inlet doors and would be expected to disclose excessive frost buildup on the doors, should it be present. No further problems have been detected since the September 1985 test. It is therefore our belief that the failures discovered in December 1985 were an isolated incident, and that adequate corrective action has been taken to prevent recurrence.

We also note that the period of the extension should be very brief. For these reasons, we believe the requested extension will not significantly impact public health and safety.

10 CFR 50.92 Criteria

Per 10 CFR 50.92, a proposed amendment will not involve a significant hazards consideration if the proposed amendment does not:

- (1) involve a significant increase in the probability or consequences of an accident previously analyzed,
- (2) create the possibility of a new or different kind of accident from any accident previously analyzed or evaluated, or
- (3) involve a significant reduction in a margin of safety.

Our evaluation of the proposed change with respect to these criteria is provided below.

Criterion 1

On the basis of the test history of the ice condenser lower inlet doors as well as the brief period of time the extension should be necessary, we believe the extension will not result in a significant increase in the probability or consequences of a previously evaluated accident.

Criterion 2

The surveillance extension will not result in a change in plant configuration or operation. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously analyzed or evaluated.

Criterion 3

We believe that an extension of the surveillance interval will not result in a significant reduction in a margin of safety for the reasons given in Criterion 1 above.

Lastly, we note that the Commission has provided guidance concerning the determination of significant hazards by providing certain examples (48 FR 14870) of amendments considered not likely to involve significant hazards consideration. The sixth of these examples refers to changes which may result in some increase to the probability of occurrence or consequences of a previously analyzed accident, but the results of which are within limits established as acceptable. We believe this change falls within the scope of this example for the reasons cited above. Therefore, we believe this change does not involve a significant hazards consideration as defined in 10 CFR 50.92.

4) RTD Calibrations

Extensions are requested for the calibration of resistance temperature detectors (RTDs). The T/S surveillances involving the RTD calibrations are listed below.

<u>T/S</u>	<u>Description</u>
1) Table 4.3-1, Item 7	Overtemperature delta T channel calibration
2) Table 4.3-1, Item 8	Overpower delta T channel calibration
3) 4.3.2.1.2	Total interlock function test for P-12
4) Table 4.3-2, Item 1.f and 4.d	Steam flow in two steam lines -- high coincident with T_{avg} -- low-low channel calibrations
5) Table 4.3-7, Item 2	Reactor coolant outlet temperature - T_{HOT} channel calibration
6) Table 4.3-7, Item 3	Reactor coolant inlet temperature - T_{COLD} channel calibration
7) Table 4.3-7, Item 11	Reactor coolant system subcooling margin monitor channel calibration

The extension is needed from March 26, 1989, until the refueling outage. The extensions requested in this category are for the calibration of the temperature sensors only. The calibration procedure requires data to be taken at RCS temperatures ranging from approximately 250°F through operating temperatures. This procedure cannot be performed at power because of the low temperatures necessary for the calibration.

The channels involved with the RTDs are subject to T/S required channel checks and/or channel functional tests. This testing, which will continue during the extension period, would be expected to provide indication of RTD drift. We have found RTDs at the Cook Nuclear Plant to be very stable, and have not experienced significant drifting problems. The Unit 1 RTDs are relatively new, having been replaced during the refueling outage which ended in November 1985. (The replacements were made in order to satisfy equipment qualification requirements and not because of problems

with the previous RTDs.) This increases our confidence in the dependability of the devices. Lastly, the extension period is expected to be very brief. For these reasons, we believe the requested extension will not significantly impact public health and safety.

10 CFR 50.92 Criteria

Per 10 CFR 50.92, a proposed amendment will not involve a significant hazards consideration if the proposed amendment does not:

- (1) involve a significant increase in the probability or consequences of an accident previously analyzed,
- (2) create the probability of a new or different kind of accident from any accident previously analyzed or evaluated, or
- (3) involve a significant reduction in a margin of safety.

Our evaluation of the proposed change with respect to these criteria is provided below.

Criterion 1

RTDs at the Cook Nuclear Plant have traditionally been very stable. Channels involving the RTDs are subject to T/S required channel checks and/or channel functional tests, which will continue to be performed during the extension period. Also, the extension period is expected to be very brief. For all these reasons, we believe the extension will not result in a significant increase in the probability or consequences of a previously evaluated accident, nor will it result in a significant reduction in a margin of safety.

Criterion 2

This extension will not result in a change in plant configuration or operation. Therefore, the extension should not create the possibility of a new or different kind of accident from any previously evaluated or analyzed.

Criterion 3

See Criterion 1 above.

Lastly, we note that the Commission has provided guidance concerning the determination of significant hazards by providing certain examples (48 FR 14870) of amendments considered not likely to involve significant hazards consideration. The sixth of these examples refers to changes which may result in some increase to the probability or consequences of a previously evaluated accident, but the results of which are within limits established as acceptable. We believe this change falls within the scope of this example, for the reasons cited above. Thus, we believe this change does not involve a significant hazards consideration as defined in 10 CFR 50.92.

Editorial Change

We are also proposing a minor editorial change to Functional Unit 1.f of Table 4.3-2. The description is changed from "T_{avg} -- Low" to "T_{avg} - Low-Low." This corrects an error in the text.^{avg} The text will then be consistent with the Functional Unit description for the same signal in Table 3.3-4. This change is purely editorial, and will not result in an increase in the probability or consequences of a previously analyzed accident, will not create the possibility of a new or different kind of accident from any accident previously analyzed or evaluated, and will not involve a significant reduction in a margin of safety.

Attachment 2 to AEP:NRC:0967L

Proposed Revised Technical Specification Pages