ATTACHMENT 2 TO AEP:NRC:1071F

DESCRIPTION OF PROPOSED LICENSE CONDITIONS AND

T/S CHANGES, AND 10 CFR 50.92 SIGNIFICANT

HAZARDS CONSIDERATION ANALYSIS

Introduction

This letter requests T/S changes necessary to support our upcoming Unit 2 Cycle 8 reload. The changes involve Section 3/4 and corresponding basis, Section 5 (Design Section) and license conditions restrictions regarding maximum fuel assembly enrichment. The changes allow storage of Westinghouse fuel assemblies and increase the maximum nominal enrichment of Unit 2 fresh fuel assemblies stored in the new fuel storage vault from 3.50 to 4.55 weight percent U-235, and in the spent fuel pool from 3.50 to 4.95 weight percent U-235. The proposed T/S and license conditions related to fuel assembly enrichment are based on criticality and thermal-hydraulic concerns. As discussed later in this attachment, analyses have been performed that demonstrate the acceptability of the proposed T/S changes with regard to the criticality concerns. We have also concluded that the current analysis of record for the thermal-hydraulic concerns remains bounding. In addition to the changes discussed above, we are also proposing an editorial change to Unit 2 T/S license condition 2.C(3)(p). This license condition from Cycle 4 should be removed based on the Cycle 6 submission. The Unit 2 Cycle 6 SER justifies their removal. The words were inserted for Unit 2 Cycle 4.

Description of Changes

The proposed license conditions and T/S changes are as follows:

1) In Unit 2 T/S 5.3.1 (Fuel Assemblies), the maximum enrichment of reload fuel is being increased from 4.23 to 4.95 weight percent U-235. In addition, the words "shall have a maximum enrichment of" have been changed to "may be enriched up to."

2) In Units 1 and 2 T/S 5.6.1.1, two new subparagraphs c.1 and c.2 have been added. Subparagraph c.1 identifies a separate region, defined as Region 1, in the fuel storage racks. This Region 1 is to be used for storage of Westinghouse fuel with nominal enrichment above 3.95 weight percent U-235 and a burnup less than 5,550 MWD/MTU. In addition, the fuel in Region 1 must be stored in a three-out-of-four cell configuration with one symmetric cell location of each 2 x 2 cell array vacant.

   Subparagraph c.2 addresses the boundary conditions between the Region 1 of subparagraph c.1, and the rest of the spent fuel storage racks, called Region 2. This boundary condition is that the three-out-of-four storage requirement for Region 1, must be carried into Region 2 by, at least, one row. This boundary condition is illustrated in a new figure, Figure 5.6-1 entitled, "Donald C. Cook Nuclear Plant Schematic for Fuel Storage Racks Interface Boundary Between Regions 1 and 2."

3) In Units 1 and 2 T/S 5.6.1.2 (Criticality-Spent Fuel), the maximum nominal enrichment of all types of Westinghouse fuel assemblies is being changed to 4.95 weight percent U-235. The Westinghouse fuel types considered are 15 x 15 OFA and STD, and 17 x 17 STD, OFA, and Vantage 5. Two minor editorial changes involve insertion of the word "maximum" in front of "nominal" for consistency and the addition of "ANF" after Exxon. The analysis of record is still in effect for ANF fuel.

4) In Units 1 and 2 a new T/S 3/4.9.15 has been added requiring that the boron concentration in the fuel storage pool be greater than 2,400 ppm whenever fuel assemblies with burnups less than 5,550 MWD/MTU are in the storage pool. The basis for this new limiting condition for operation is to ensure that K_{eff} will be less than 0.95 even if a fuel assembly is stored in a rack in Region 1 that is supposed to be vacant (See proposed T/S Change 2).

   When this limiting condition for operation is not met, the action required will involve suspension of all movement of fuel assemblies in the fuel storage pool, and to restore the boron concentration to within its limit. In addition the provisions of Specification 3.0.3 are not applicable.

   The corresponding surveillance requirements require a determination that the boron concentration in the fuel storage pool be at least at its minimum, at least once per 7 days when fuel assemblies with enrichment greater than 3.95 weight percent U-235 and burnup less than 5,550 MWD/MTU are in the fuel storage pool

5) In Units 1 and 2 T/S 5.6.2 (Criticality - New Fuel), reference to Fuel Types I, II, III, IV and V was deleted, and a new subsection was added with a table similar to the one in subsection 5.6.1.2 for clarity.

6) In Unit 2 license condition 2.C(3)(s), the maximum enrichment of fuel stored in the spent fuel pool is being increased from 4.23 to 4.95 weight percent U-235. The upper limit on fissile fuel density of 50.5 grams of U-235 per axial centimeter of fuel assembly has been deleted since this limit is not used in the spent fuel pool analysis. The same proposed change applies to license condition 2.C(5) for Unit 1. In addition, Unit 2 license condition 2.C(3)(p) has been deleted.

Description of the Unit 2 Cycle 8 Reload

Unit 2 Cycle 8 will be the first Unit 2 reload supplied by Westinghouse since Cycle 3. Westinghouse has replaced Advanced Nuclear Fuels (ANF), which supplied the previous four reloads. The Cycle 8 core will consist of 193 fuel assemblies, 77 of which will be newly fabricated. The remaining 116 assemblies are ANF assemblies that have been used in previous Unit 2 cycles. Cycle 8 is currently scheduled to begin on August 1, 1990.

The new fuel assemblies for the Cycle 8 reload are of the Vantage 5 type. The outstanding feature of the Vantage 5 type assemblies is the use of a burnable poison which is integral to the fuel rods. The Vantage 5 fuel rods are coated with ZrB_2, which replaces the traditional burnable poison rod. The Vantage 5 fuel assembly design is described in WCAP 10444-P-A, which was accepted by the NRC via a Safety Evaluation Report issued July 1985.

Summary of Criticality Analyses

Attachment 1 contains criticality analyses for the spent fuel pool and the new fuel storage vault prepared for us by Westinghouse. The analyses were performed in such a way that they bound all types of Westinghouse fuel currently in use or planned for use in the Cook Nuclear Plant. These types include Westinghouse 15 x 15 (Standard and OFA) and 17 x 17 (Standard, OFA, and Vantage 5) fuel assemblies.

In accordance with the acceptance criteria of Chapter 9.1.1 (New Fuel Storage) of the NRC Standard Review Plan, the Westinghouse analyses demonstrate that the spacing between fuel assemblies in the storage racks is sufficient to maintain the array when fully loaded with fuel assemblies with a maximum nominal enrichment of 4.55 weight percent U-235, and flooded with pure water, in a subcritical condition with K_{eff} less than 0.95. Further, K_{eff} will not exceed 0.98 with the same type of fuel assuming optimum (aqueous foam) moderation.

In accordance with the acceptance criteria of Chapter 9.1.2 (Spent Fuel Storage) of the NRC Standard Review Plan, the Westinghouse analyses demonstrate that the center-to-center spacing between fuel assemblies and any strong, fixed neutron absorbers in the storage racks are sufficient to maintain the array, when loaded with fuel assemblies with a maximum nominal enrichment of 4.95 weight percent U-235, and flooded with pure water, in a subcritical condition with K_{eff} less than 0.95. In order to achieve acceptable results, Westinghouse has determined that fuel assemblies with nominal enrichments above 3.95 weight percent U-235 and with burnups less than 5,550 MWD/MTU must be stored in the spent fuel storage racks in a three-out-of-four configuration with one symmetric location of each 2 x 2 array vacant. This storage restriction will be implemented with plant procedures.

It should also be pointed out that one fuel assembly, with an enrichment larger than 4.55 weight percent U-235, would have a K_{eff} larger than 0.95 when out of the poisoned racks and with 0 ppm of boron in the spent fuel pool. However, with 2400 ppm of boron, the K_{eff} of that fuel assembly would be less than 0.95. The ppm of boron concentration in the spent fuel pool will be maintained above 2400 ppm by measurement, as required by new proposed T/S 3.9.15.

Thermal-Hydraulic Considerations

The Cook Nuclear Plant Updated FSAR discusses analyses performed to demonstrate the adequacy of the spent fuel pool cooling system to remove decay heat, and also an assessment of the time it would take to reach bulk boiling in the event all spent fuel pool cooling is lost. The most recent analysis of this type was performed by ANF in support of use of assemblies capable of 50,000 MWD/MTU exposure. The analyses were documented in ANF Report No. ANF-88-09. This analysis was submitted in our letter AEP:NRC:1071 dated August 19, 1988, and supported the Amendments 118 (Unit 1) and 104 (Unit 2) T/S changes. (The analyses were modified slightly as documented in Rev. 1 to ANF-88-09 to correct an error in determining the pool heat load. The revision resulted in a change in the time to reach bulk boiling from 8.6 hours to 5.5 hours.) The Unit 2 Vantage 5 assemblies are intended for use up to an average discharge burnup of only 48,000 MWD/MTU. Also, the Unit 2 power level remains the same at 3411 MWt. Therefore, spent fuel pool cooling analyses documented in ANF-88-09, Rev. 1, will bound the Vantage 5 assemblies and no new analyses are being submitted.

10 CFR 50.92 Significant Hazards Consideration Analysis

Per 10 CFR 50.92, a proposed amendment to an operating license will not involve a significant hazards consideration if the proposed amendment satisfies the following three criteria:

1) Does not involve a significant increase in the probability or consequences of an accident previously analyzed,

2) Does not create the possibility of a new or different kind of accident from any accident previously analyzed or evaluated, or

3) Does not involve a significant reduction in a margin of safety.

Criterion 1

Westinghouse has performed analyses that demonstrate the acceptability of the proposed changes with regard to criticality. The analyses demonstrate that fuel stored in both the new fuel storage vault and the spent fuel pool will remain subcritical under design basis conditions. However, accidents or incidents can take place which would increase reactivity such as dropping a fuel assembly between the rack and pool wall or inadvertently placing a fuel assembly in a rack location that should be vacant. For those conditions, the double contingency principle of ANSI N16.1-1975 can be applied. That principle states that one is not required to assume two unlikely, independent concurrent events to ensure protection against criticality. Thus, the presence of greater than or equal to 2400 ppm of soluble boron in the spent fuel pool can be assumed as a realistic initial condition, since not assuming it would be a second unlikely event. The reactivity of the fuel stored in the spent fuel pool would be decreased by about 0.25 delta-K, with approximately 2000 ppm of boron; that is, for an accident or an incident resulting in an increase of reactivity, K_{eff} would remain less than or equal to 0.95 due to the effect of the dissolved boron. In addition, paragraph 2.3 of the SER related to Amendments 118 and 104 for Cook Nuclear Plant Units 1 and 2, respectively, states that "the reactivity reduction due to the required pool boration of 2400 ppm of boron more than offsets the potential reactivity increases from postulated fuel mishandling accidents." It is concluded that the proposed license conditions and T/S changes should not involve a significant increase in the probability or consequences of a previously analyzed accident, nor should they involve a significant reduction in a margin of safety.

Criterion 2

The Westinghouse analyses demonstrate continued acceptability of the spent fuel pool and the new fuel storage vault regarding criticality. The proposed license conditions and T/S changes will not result in physical changes to the plant (other than to the fuel assemblies, which were the subject of the Westinghouse analyses). Therefore, we believe the proposed license conditions and T/S changes will not create the possibility of a new or different kind of accident from any previously 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 in the probability of occurrence or in the consequences of a previously analyzed accident, but the results of which are within limits established as acceptable. The Westinghouse analyses demonstrate acceptable results from a criticality perspective using the acceptance criteria of the NRC Standard Review Plan. Therefore, we believe the example cited is applicable and that the proposed license conditions and T/S changes do not involve a significant hazards consideration as defined in 10 CFR 50.92.

ATTACHMENT 3 TO AEP:NRC:1071F

PROPOSED LICENSE CONDITIONS AND T/S PAGES

Amendment No. 31

2.C(4) The licensee may proceed with and is required to complete the modifications identified in Table 1 of the Fire Protection Safety Evaluation Report for the Donald C. Cook Nuclear Plant dated June 4, 1979. These modifications shall be completed in accordance with the dates contained in Table 1 of that SER or Supplements thereto. Administrative controls for fire protection as described in the licensee's submittals dated January 31, 1977 and October 27, 1977 shall be implemented and maintained.

(5) Spent Fuel Pool Storage

Amendment No.

The licensee is authorized to store D. C. Cook, Unit 1 and Unit 2 fuel assemblies, new or irradiated in any combination up to a total of 2050 fuel assemblies in the shared spent fuel pool at the Donald C. Cook Nuclear Plant subject to the following conditions:

Fuel stored in the spent fuel pool shall not have an enrichment greater than 4.95% Uranium-235, or the reactivity equivalent thereof.

(6) Deleted by Amendment 80.

*2.D Physical Protection

Amendment No. 122

The licensee shall fully implement and maintain in effect all provisions of the Commission-approved physical security, guard training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The plans, which contain Safeguards Information protected under 10 CFR 73.21, are entitled: "Donald C. Cook Nuclear Plant Security Plan," with revisions submitted through July 21, 1988; "Donald C. Cook Nuclear Plant Training and Qualification Plan," with revisions submitted through December 18, 1986; and "Donald C. Cook Nuclear Plant Safeguards Contingency Plan," with revisions submitted through June 10, 1988. Changes made in accordance with 10 CFR 73.55 shall be implemented in accordance with the schedule set forth therein.

STORAGE POOL BORON CONCENTRATION*

LIMITING CONDITION FOR OPERATION

3.9.15 A boron concentration of greater than or equal to to 2,400 ppm shall be maintained in the fuel storage pool.

APPLICABILITY: Whenever fuel assemblies with enrichment greater than 3.95 weight percent U-235 and with burnup less than 5,550 MWD/MTU are in the fuel storage pool.

ACTION:

With the requirements of the specification not satisfied, suspend all movement of fuel assemblies in the fuel storage pool and restore the boron concentration to within its limit prior to resuming fuel movement. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.15 The boron concentration in the fuel storage pool shall be determined to be at least at its minimum required at least once per 7 days when fuel assemblies with enrichment greater than 3.95 weight percent U-235 and with burnup less than 5,550 MWD/MTU are in the fuel storage pool.

*Shared system with Cook Nuclear Plant - Unit 2

3/4.9.13 SPENT FUEL CASK MOVEMENT

The limitations of this specification ensure that, during insertion or removal of spent fuel casks from the spent fuel pool, fuel cask movement will be contrained to the path and lift height assumed in the Cask Drop Protection System safety analysis. Restricting the spent fuel cask movement within these requirements provides protection for the spent fuel pool and stored fuel from the effects of a fuel cask drop accident.

3/4.9.14 SPENT FUEL CASK DROP PROTECTION SYSTEM

The limitations on the use of spent fuel casks weighing in excess of 110 tons (nominal) provide assurance that the spent fuel pool would not be damaged by a dropped fuel cask since this weight is consistent with the assumptions used in the safety analysis for the performance of the Cask Drop Protection System.

3/4.9.15 STORAGE POOL BORON CONCENTRATION

The limitation on the fuel storage pool boron concentration of 2,400 ppm provides assurance that the K_{eff} would be below 0.95 in the unlikely event of fuel misloading.

DESIGN FEATURES

a. In accordance with the code requirements specified in Section 4.1.6 of the FSAR, with allowance for normal degradation pursuant to the applicable Surveillance Requirements,

b. For a pressure of 2485 psig, and

c. For a temperature of 650°F, except for the pressurizer which is 680°F.

VOLUME

5.4.2 The total contained volume of the reactor coolant system is 12,612 ± 100 cubic feet at a nominal T_{avg} of 70°F.

5.5 EMERGENCY CORE COOLING SYSTEMS

5.5.1 The emergency core cooling systems are designed and shall be maintained in accordance with the original design provisions contained in Section 6.2 of the FSAR with allowance for normal degradation pursuant to the applicable Surveillance Requirements.

5.6 FUEL STORAGE

CRITICALITY - SPENT FUEL

5.6.1.1: The spent fuel storage racks are designed and shall be maintained with:

a. A k_{eff} equivalent to less than 0.95 when flooded with unborated water,

b. A nominal 10.5 inch center-to-center distance between fuel assemblies placed in the storage racks.

c. 1. A separate region within the spent fuel storage racks (defined as Region 1) shall be established for storage of Westinghouse fuel with nominal enrichment above 3.95 weight percent U-235 and with burnup less than 5,550 MWD/MTU. In Region 1, fuel shall be stored in a three-out-of-four cell configuration with one symmetric cell location of each 2 x 2 cell array vacant.

2. The boundary between the Region 1 mentioned above and the rest of the spent fuel storage racks (defined as Region 2) shall be such that the three-out-of-four storage requirement shall be carried into Region 2 by, at least, one row as shown in Figure 5.6-1.

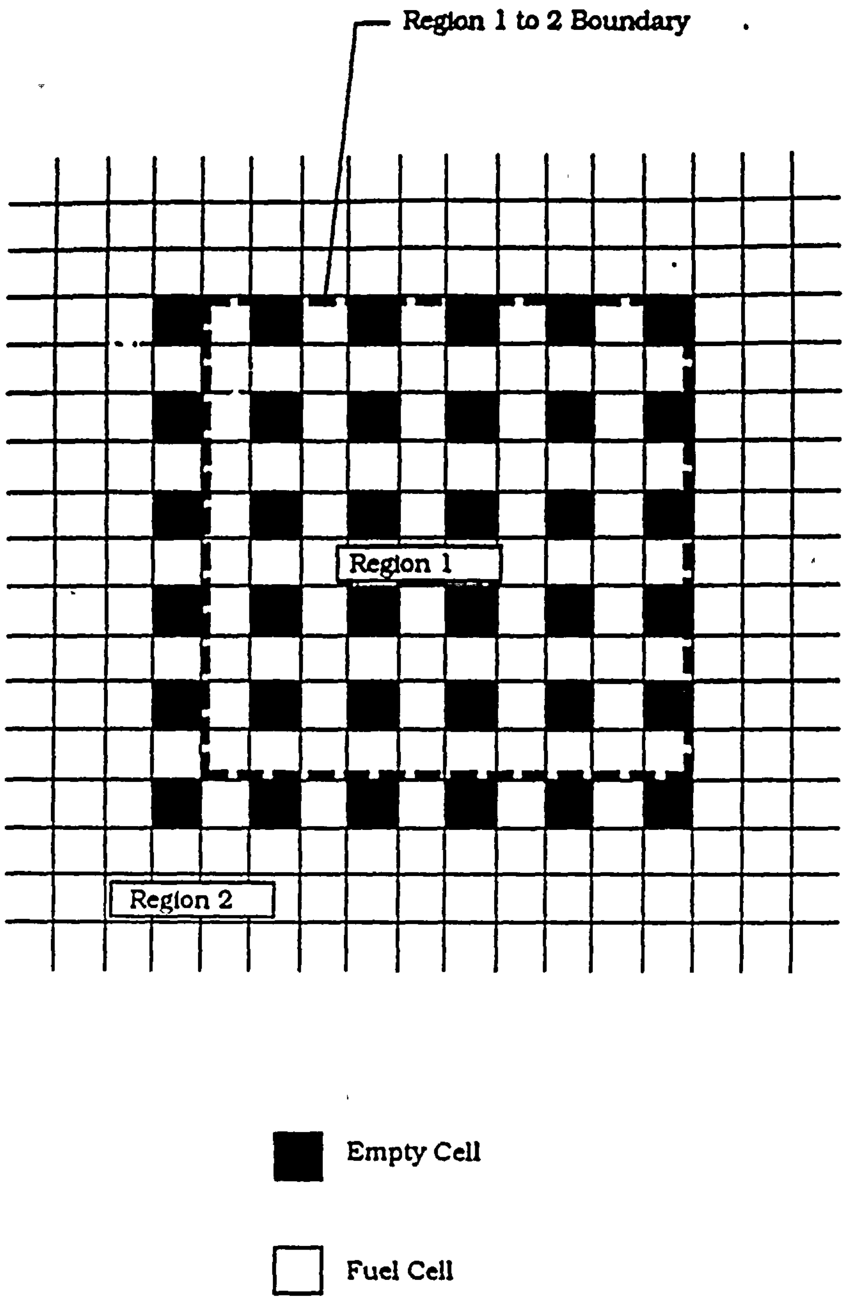

Figure 5.6-1: Donald C. Cook Nuclear Plant Schematic for Fuel Storage Racks Interface Boundary Between Regions 1 and 2

DESIGN FEATURES

5.6.1.2: Fuel stored in the spent fuel storage racks shall have a maximum nominal fuel assembly enrichment as follows:

Description		Maximum Nominal Fuel Assembly Enrichment Wt. % ^{235}U
1) Westinghouse	15 x 15 STD 15 x 15 OFA	4.95
2) Exxon/ANF	15 x 15	3.50
3) Westinghouse	17 x 17 STD 17 x 17 OFA 17 x 17 V5	4.95
4) Exxon/ANF	17 x 17	4.23

CRITICALITY-NEW FUEL

5.6.2.1 The new fuel pit storage racks are designed and shall be maintained with a nominal 21 inch center-to-center distance between new fuel assemblies such that k_{eff} will not exceed 0.98 when fuel assemblies are placed in the pit and aqueous foam moderation is assumed.

5.6.2.2 Fuel stored in the new fuel storage racks shall have a maximum nominal fuel assembly enrichment as follows;

Description		Maximum Nominal Fuel Assembly Enrichment Wt. % ^{235}U
1) Westinghouse	15 x 15 STD 15 x 15 OFA	4.55
2) Exxon/ANF	15 x 15	3.50
3) Westinghouse	17 x 17 STD 17 x 17 OFA 17 x 17 V5	4.55
4) Exxon/ANF	17 x 17	4.23

DRAINAGE

5.6.3 The spent fuel storage pool is designed and shall be maintained to prevent inadvertent draining of the pool below elevation 629'4".

DESIGN FEATURES

CAPACITY

5.6.4 The fuel storage pool is designed and shall be maintained with a storage capacity limited to no more than 2050 fuel assemblies.

5.7 SEISMIC CLASSIFICATION

5.7.1 Those structures, systems and components identified as Category I Items in the FSAR shall be designed and maintained to the original design provisions contained in the FSAR with allowance for normal degradation pursuant to the applicant Surveillance Requirements.

5.8 METEOROLOGICAL TOWER LOCATION

5.8.1 The meteorological tower shall be located as shown in Figure 5.1-1.

5.9 COMPONENT CYCLIC OR TRANSIENT LIMIT

5.9.1 The components identified in Table 5.9-1 are designed and shall be maintained within the cyclic or transient limits of Table 5.9-1.

(l) Deleted by Amendment 63.

(m) Deleted by Amendment 19.

(n) Deleted by Amendment 28.

(o) Fire Protection

Amendment No. 12

The licensee may proceed with and is required to complete the modifications identified in Table 1 of the Fire Protection Safety Evaluation Report for the Donald C. Cook Nuclear Plant dated June 4, 1979. These modifications shall be completed in accordance with the dates contained in Table 1 of that SER or Supplements thereto. Administrative controls for fire protection as described in the licensee's submittals dated January 31, 1977 and October 27, 1977 shall be implemented and maintained.

Amendment No.

(p) Deleted by Amendment

(q) Deleted by Amendment 2.

(r) Deleted by Amendment 68.

(s) Spent Fuel Pool Storage

Amendment No.

The licensee is authorized to store D. C. Cook, Unit 1 and Unit 2 fuel assemblies, new or irradiated in any combination, up to a total of 2050 fuel assemblies in the shared spent fuel pool at the Donald C. Cook Nuclear Plant subject to the following conditions:

Fuel stored in the spent fuel pool shall not have an enrichment greater than 4.95% Uranium-235, or the reactivity equivalent thereof.

*Amendment 3 deleted Paragraph (s), Amendment 13 added a new Paragraph (s).

(t) Deleted by Amendment 63.

2.C.(7) Secondary Water Chemistry Monitoring Program

The licensee shall implement a secondary water chemistry monitoring program to inhibit steam generator tube degradation. This program shall be described in the station chemistry manual and shall include:

1. Identification of a sampling schedule for the critical parameters and control points for these parameters;

2. Identification of the procedures used to measure the values of the critical parameters;

3. Identification of process sampling points;

Amendment No. 18

4. Procedure for the recording and management of data;

5. Procedures defining corrective actions for off control point chemistry conditions; and

6. A procedure identifying (a) the authority responsible for the interpretation of the data, and (b) the sequence and timing of administrative events required to initiate corrective actions.

STORAGE POOL BORON CONCENTRATION*

LIMITING CONDITION FOR OPERATION

3.9.15 A boron concentration of greater than or equal to to 2,400 ppm shall be maintained in the fuel storage pool.

APPLICABILITY: Whenever fuel assemblies with enrichment greater than 3.95 weight percent U-235 and with burnup less than 5,550 MWD/MTU are in the fuel storage pool.

ACTION:

With the requirements of the specification not satisfied, suspend all movement of fuel assemblies in the fuel storage pool and resotre the boron concentration to within its limit prior to resuming fuel movement. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.15 The boron concentration in the fuel storage pool shall be determined to be at least at its minimum required at least once per 7 days when fuel assemblies with enrichment greater than 3.95 weight percent U-235 and with burnup less than 5,550 MWD/MTU are in the fuel storage pool.

*Shared system with Cook Nuclear Plant - Unit 1

Should the doors become blocked or stuck open while under administrative control, Technical Specification requirements will not be considered to be violated provided the Action Statement requirements of Specification 3.9.12 are expeditiously followed, i.e., movement of fuel within the storage pool or crane operation with loads over the pool is expeditiously suspended.

3/4.9.13 SPENT FUEL CASK MOVEMENT

The limitations of this specification ensure that, during insertion or removal of spent fuel casks from the spent fuel pool, fuel cask movement will be constrained to the path and lift height assumed in the Cask Drop Protection System safety analysis. Restricting the spent fuel cask movement within these requirements provides protection for the spent fuel pool and stored fuel from the effects of a fuel cask drop accident.

3/4.9.14 SPENT FUEL CASK DROP PROTECTION SYSTEM

The limitations on the use of spent fuel casks weighing in excess of 110 tons (nominal) provide assurance that the spent fuel pool would not be damaged by a dropped fuel cask since this weight is consistent with the assumptions used in the safety analysis for the performance of the Cask Drop Protection System.

3/4.9.15 STORAGE POOL BORON CONCENTRATION

The limitation on the fuel storage pool boron concentration of 2,400 ppm provides assurance that the K_{eff} would be below 0.95 in the unlikely event of fuel misloading.

5.3 REACTOR CORE

FUEL ASSEMBLIES

5.3.1 The reactor core shall contain 193 fuel assemblies with each fuel assembly containing 264 fuel rods clad with Zircaloy-4. Each fuel rod shall have a nominal active fuel length of 144 inches. The initial core loading shall have a maximum enrichment of 3.3 weight percent U-235. Reload fuel shall be similar in physical design to the initial core loading and may be enriched up to 4.95 weight percent U-235.

CONTROL ROD ASSEMBLIES

5.3.2 The reactor core shall contain 53 full length and no part length control rod assemblies. The full length control rod assemblies shall contain a nominal 142 inches of absorber material. The nominal values of absorber material shall be 80 percent silver, 15 percent indium and 5 percent cadmium. All control rods shall be clad with stainless steel tubing.

5.4 REACTOR COOLANT SYSTEM

DESIGN PRESSURE AND TEMPERATURE

5.4.1 The reactor coolant system is designed and shall be maintained:

a. In accordance with the code requirements specified in Section 4.1.6 of the FSAR, with allowance for normal degradation pursuant to the applicable Surveillance Requirements.

b. For a pressure of 2485 psig, and

c. For a temperature of 650°F, except for the pressurizer which is 680°F.

VOLUME

5.4.2 The total water and steam volume of the reactor coolant system is 12,612 ± 100 cubic feet as a nominal T_{avg} of 70°F.

5.5 METEOROLOGICAL TOWER LOCATION

5.5.1 The meteorological tower shall be located as shown on Figure 5.1-1.

5.6 FUEL STORAGE

CRITICALITY - SPENT FUEL

5.6.1.1 The spent fuel storage racks are designed and shall be maintained with:

a. A K_{eff} equivalent to less than 0.95 when flooded with unborated water,

b. A nominal 10.5-inch center-to-center distance between fuel assemblies, placed in the storage racks.

c. 1. A separate region within the spent fuel storage racks (defined as Region 1) shall be established for storage of Westinghouse fuel with nominal enrichment above 3.95 weight percent U-235 and with burnup less than 5,550 MWD/MTU. In Region 1, fuel shall be stored in a three-out-of-four cell configuration with one symmetric cell location of each 2 x 2 cell array vacant.

2. The boundary between the Region 1 mentioned above and the rest of the spent fuel storage racks (defined as Region 2) shall be such that the three-out-of-four storage requirement shall be carried into Region 2 by, at least, one row as shown in Figure 5.6-1.

5.6.1.2 Fuel stored in the spent fuel storage racks shall have a maximum nominal fuel assembly enrichment as follows:

Description		Maximum Nominal Fuel Assembly Enrichment Wt. % ^{235}U
1) Westinghouse	15 x 15 STD 15 x 15 OFA	4.95
2) Exxon/ANF	15 x 15	3.50
3) Westinghouse	17 x 17 STD 17 x 17 OFA 17 x 17 V5	4.95
4) Exxon/ANF	17 x 17	4.23

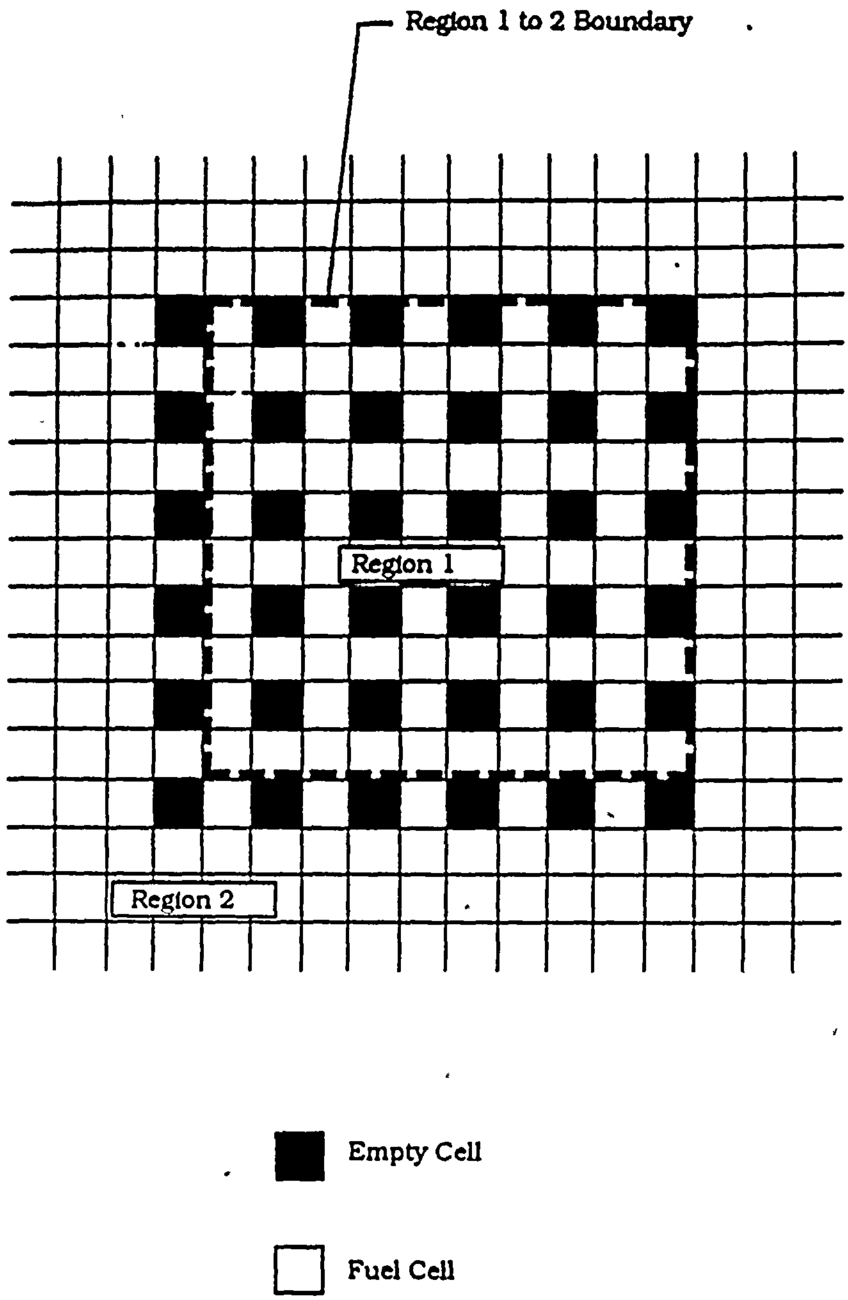

Figure 5.6-1: Donald C. Cook Nuclear Plant Schematic for Fuel Storage Racks Interface Boundary Between Regions 1 and 2

CRITICALITY-NEW FUEL

5.6.2.1 The new fuel pit storage racks are designed and shall be maintained with a nominal 21 inch center-to-center distance between new fuel assemblies such that K_{eff} will not exceed 0.98 when fuel assemblies are placed in the pit and aqueous foam moderation is assumed.

5.6.2.2 Fuel stored in the new fuel storage racks shall have a maximum nominal fuel assembly enrichment as follows;

Description		Maximum Nominal Fuel Assembly Enrichment Wt. % ^{235}U
1) Westinghouse	15 x 15 STD 15 x 15 OFA	4.55
2) Exxon/ANF	15 x 15	3.50
3) Westinghouse	17 x 17 STD 17 x 17 OFA 17 x 17 V5	4.55
4) Exxon/ANF	17 x 17	4.23

DRAINAGE

5.6.3 The spent fuel storage pool is designed and shall be maintained to prevent inadvertent draining of the pool below elevation 629'4".

CAPACITY

5.6.4 The spent fuel storage pool is designed and shall be maintained with a storage capacity limited to no more than 2050 fuel assemblies.

5.7 COMPONENT CYCLIC OR TRANSIENT LIMIT

5.7.1 The components identified in Table 5.7-1 are designed and shall be maintained within the cyclic or transient limits of Table 5.7-1.