

VIRGINIA ELECTRIC AND POWER COMPANY  
RICHMOND, VIRGINIA 23261

August 20, 2007

10CFR50.90

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

Serial No. 07-0488A  
NLOS/GDM R0  
Docket Nos. 50-280  
50-281  
License Nos. DPR-32  
DPR-37

**VIRGINIA ELECTRIC AND POWER COMPANY**  
**SURRY POWER STATION UNITS 1 AND 2**  
**PROPOSED LICENSE AMENDMENT REQUEST**  
**CONTROL ROOM HABITABILITY**  
**SUPPLEMENTAL RESPONSE**

By letter dated July 13, 2007 (Serial No. 07-0488), Virginia Electric and Power Company (Dominion) requested amendments in the form of changes to the Surry Power Station Units 1 and 2 Technical Specifications (TS) related to Main Control Room/Emergency Switchgear Room (MCR/ESGR) envelope habitability. The changes were submitted consistent with the NRC-approved Industry/Technical Specification Task Force (TSTF) Traveler TSTF-448, Revision 3, *Control Room Habitability* (TSTF-448). Additional conforming TS and Bases changes were also proposed to facilitate incorporation of the TSTF-448 revisions into Surry's custom TS format. As part of the conforming changes, Dominion added the term "recently" prior to the words "irradiated fuel" in TS 3.10, as well as the definition of "recently irradiated fuel" in the TS 3.10 Basis.

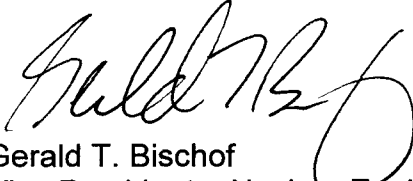
In an August 7, 2007 conference call, the NRC informed Dominion that the addition of the term "recently" as a proposed change in the license amendment request (LAR) was inappropriate since the word was contained in brackets in TSTF-448, and consequently could only be included in the Surry TS if the NRC had previously approved its incorporation separate from TSTF-448. Since this was not the case for Surry's TS, the NRC requested that the term be removed from the license amendment request. Therefore, the affected pages included in Dominion's July 13, 2007 submittal have been revised to delete the word "recently" prior to the words "irradiated fuel" in TS 3.10, as well as the definition of "recently irradiated fuel" in the TS 3.10 Basis.

Please replace the affected pages included in our initial submittal with the replacement pages provided in the attachment as directed therein. Dominion has reviewed the changes to the proposed licensed amendment discussed herein and has determined

that the no significant hazards consideration and the environmental assessment included in the original LAR are not affected.

If you have any questions or require additional information, please contact Mr. Gary D. Miller at (804) 273-2771.

Sincerely,



Gerald T. Bischof  
Vice President – Nuclear Engineering

Commitments made in this letter: None

Attachment

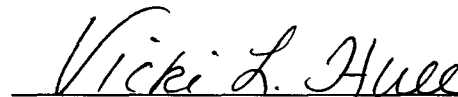
Replacement Pages for Dominion's July 13, 2007 Proposed License Amendment Request Associated with Control Room Habitability

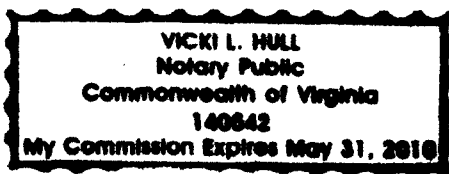
COMMONWEALTH OF VIRGINIA     )  
   )  
COUNTY OF HENRICO             )

The foregoing document was acknowledged before me, in and for the County and Commonwealth aforesaid, today by Gerald T. Bischof, who is Vice President – Nuclear Engineering, of Virginia Electric and Power Company. He has affirmed before me that he is duly authorized to execute and file the foregoing document in behalf of that Company, and that the statements in the document are true to the best of his knowledge and belief.

Acknowledged before me this 20<sup>TH</sup> day of August, 2007.

My Commission Expires: May 31, 2010.

  
Notary Public



cc: U.S. Nuclear Regulatory Commission  
Region II  
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**ATTACHMENT**

**Replacement Pages for Dominion's July 13, 2007 Proposed License Amendment  
Request Associated with Control Room Habitability**

**Virginia Electric and Power Company  
(Dominion)  
Surry Power Station Units 1 and 2**

**ATTACHMENT**

**Instructions for License Amendment Request Replacement Pages**

<b>DELETE (from July 13, 2007 Letter)</b>	<b>SUBSTITUTE (Revised pages attached)</b>
In Attachment 1 - Description and Assessment <ul style="list-style-type: none"><li>• Page 2 of 5</li><li>• Attachment A, page 1 of 3</li></ul>	In Attachment 1 - Description and Assessment <ul style="list-style-type: none"><li>• Page 2 of 5</li><li>• Attachment A, page 1 of 3</li></ul>
In Attachment 2 – Proposed Technical Specifications Pages (Marked-up)  TS 3.10-1 TS 3.10-4 TS 3.10-4a TS 3.10-5 TS 3.10-6 INSERT 4 INSERT 5	In Attachment 2 – Proposed Technical Specifications Pages (Marked-up)  ----- TS 3.10-4 TS 3.10-4a ----- TS 3.10-6 INSERT 4 INSERT 5
In Attachment 3 – Proposed Technical Specifications Pages (Typed)  TS 3.10-1 TS 3.10-5 TS 3.10-6 TS 3.10-8 TS 3.10-9	In Attachment 3 – Proposed Technical Specifications Pages (Typed)  ----- TS 3.10-5 TS 3.10-6 TS 3.10-8 TS 3.10-9

**Replacement Pages for Attachment 1 to Dominion's July 13, 2007  
License Amendment Request**

**Description and Assessment**

use the NUREG-1431 STS defined terms, such as, CONDITION, REQUIRED ACTION and COMPLETION TIME or their associated table format. The Surry TS typically use a more narrative format. However, the intent of the CLIIP wording has been maintained in the proposed TS change and has been used verbatim to the extent possible. In addition, the Surry TS format separates Limiting Conditions for Operation (LCOs) and Action Statements (ASs) from Surveillance Requirements (SRs) by placing them in different TS sections (i.e., Sections 3 and 4, respectively). Also, the MCR/ESGR EVS requirements during REFUELING OPERATIONS and when moving irradiated fuel are only included in TS 3.10, *Refueling*, rather than in the MCR/ESGR EVS TS, which only addresses operating conditions above COLD SHUTDOWN. TS 3.19, *Main Control Room Bottled Air System*, is also being revised to reflect the TSTF-448 TS requirements associated with an inoperable MCR/ESGR envelope boundary, as this system works in conjunction with the MCR/ESGR EVS as part of the MCR/ESGR Emergency Habitability System (EHS) to maintain protection of the MCR/ESGR envelope occupants from radiological, hazardous chemical and smoke hazards.

Additionally, Surry TS do not use the ITS MODE terminology convention for reactor operating conditions. Surry TS use specific definitions for each operating condition instead, e.g., POWER OPERATION, HOT SHUTDOWN, INTERMEDIATE SHUTDOWN, REACTOR CRITICAL, COLD SHUTDOWN and REFUELING SHUTDOWN. While not identical, the reactor operating MODEs specified in the CLIIP are generally consistent with the defined REACTOR OPERATION conditions used in the Surry TS and the license amendment request.

The minor variations and/or deviations from the specific wording/format provided in the CLIIP do not change the meaning, intent or applicability of the CLIIP. A table summarizing the minor variations and/or deviations from the TS changes described in TSTF-448 is provided in Attachment A for reference.

### **2.3 License Condition Regarding Initial Performance of New Surveillance and Assessment Requirements**

Dominion proposes the following as a license condition to support implementation of the proposed TS changes:

*Upon implementation of Amendment No. xxx adopting TSTF-448, Revision 3, the determination of Main Control Room/Emergency Switchgear Room (MCR/ESGR) envelope unfiltered air inleakage as required by TS SR 4.18 in accordance with TS 6.4.R.3.a, the assessment of MCR/ESGR envelope habitability as required by Specification 6.4.R.3.b, and the measurement of MCR/ESGR envelope pressure as required by Specification 6.4.R.4, shall be considered met. Following implementation:*

- (a) The first performance of SR 4.18, in accordance with Specification 6.4.R.3.a, shall be within the specified frequency of 6 years plus the 18-month allowance of SR 4.0.2, as measured from January 18, 2004, the date of the most recent successful tracer gas test, as stated in the April 22, 2004 letter response to Generic Letter*

**Attachment A**

<b>STS Section</b>	<b>Surry TS Section</b>	<b>Variation from Improved STS and/or the TSTF-448 Wording for Surry Power Station Units 1 and 2 Custom TS</b>
	<b>Table of Contents</b>	The Surry Technical Specifications (TS) Table of Contents has been revised to reflect the new TS sections 3.21, <i>Main Control Room/Emergency Switchgear Room (MCR/ESGR) Emergency Ventilation System (EVS)</i> and 4.18, <i>Main Control Room/Emergency Switchgear Room (MCR/ESGR) Emergency Ventilation System (EVS) Testing</i> , as well as the revised TS 3.23 section title, <i>Main Control Room (MCR) and Emergency Switchgear Room (ESGR) Air Conditioning System</i> , which is being revised for terminology consistency.
<b>LCO 3.7.10 ACTION B</b>	<b>3.19.B.3 and 5</b>	<ul style="list-style-type: none"> <li>• The TSTF-448 TS requirements for an inoperable control room envelope (CRE) are being included in TS 3.19, <i>Main Control Room Bottled Air System</i>, for consistency with new TS 3.21 (see below), since TS 3.19 currently contains an 8-hours to HOT SHUTDOWN requirement for an inoperable CRE. The term "control room envelope (CRE)" has been changed to the term "Main Control Room/Emergency Switchgear Room (MCR/ESGR) envelope" or "MCR/ESGR envelope" for consistency with Surry's system terminology.</li> <li>• The applicability statement for the Main Control Room Bottled Air System has also been revised to note that the TS applies whenever either unit is above COLD SHUTDOWN, since the system requirements during Refueling and the movement of irradiated fuel are included in TS 3.10, <i>Refueling</i>.</li> </ul>
<b>LCO 3.7.10 ACTIONS D and E</b>	<b>3.10</b>	The revised MCR/ESGR EVS TS requirements during refueling and during the movement of irradiated fuel have been incorporated into Surry TS 3.10, <i>Refueling</i> , for consistency with the current Surry TS, which keeps all of the TS requirements associated with refueling and movement of irradiated fuel in the same TS section. MCR Bottled Air System requirements during the movement of irradiated fuel that currently reside in TS 3.10 have also been revised to reflect the revised TS requirements for an inoperable MCR/ESGR envelope boundary.



**Replacement Pages for Attachment 2 to Dominion's July 13, 2007  
License Amendment Request**

**Proposed Technical Specifications Pages (Marked-up)**

10. A spent fuel cask or heavy loads exceeding 110 percent of the weight of a fuel assembly (not including fuel handling tool) shall not be moved over spent fuel, and only one spent fuel assembly will be handled at one time over the reactor or the spent fuel pit.

This restriction does not apply to the movement of the transfer canal door.

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11. Two trains of the control and relay room emergency ventilation system shall be OPERABLE. With one train inoperable for any reason, demonstrate the other train is OPERABLE by performing the test in Specification 4.20.A.1. With both trains inoperable, comply with Specification 3.10.C.
12. Two trains of the control room bottled air system shall be OPERABLE. With one train inoperable for any reason, restore the inoperable train to OPERABLE status within 7 days or comply with Specification 3.10.C. With two trains inoperable, comply with Specification 3.10.C.
13. Three chillers shall be OPERABLE in accordance with the power supply requirements of Specification 3.23.C. With one of the required OPERABLE chillers inoperable or not powered as required by Specification 3.23.C.1, return the inoperable chiller to OPERABLE status within 7 days or comply with Specification 3.10.C. With two of the required OPERABLE chillers inoperable or not powered as required by Specification 3.23.C.1, comply with Specification 3.10.C.
14. Eight air handling units (AHUs) shall be OPERABLE in accordance with the operability requirements of Specification 3.23.C. With two AHUs inoperable on the shutdown unit, ensure that one AHU is OPERABLE in each unit's main control room and emergency switchgear room, and restore an inoperable AHU to OPERABLE status within 7 days, or comply with Specification 3.10.C. With more than two AHUs inoperable, comply with Specification 3.10.C.

- B. During irradiated fuel movement in the Fuel Building the following conditions are satisfied:

1. The fuel pit bridge area monitor and the ventilation vent stack 2 particulate and gas monitors shall be OPERABLE and continuously monitored to identify the occurrence of a fuel handling accident.
2. A spent fuel cask or heavy loads exceeding 110 percent of the weight of a fuel assembly (not including fuel handling tool) shall not be moved over spent fuel, and only one spent fuel assembly will be handled at one time over the reactor or the spent fuel pit.

This restriction does not apply to the movement of the transfer canal door.

3. A spent fuel cask shall not be moved into the Fuel Building unless the Cask Impact Pads are in place on the bottom of the spent fuel pool.

INSERT

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4. Two trains of the control and relay room emergency ventilation system shall be OPERABLE. With one train inoperable for any reason, demonstrate the other train is OPERABLE by performing the test in Specification 4.20.A.1. With both trains inoperable, comply with Specification 3.10.C.
5. Two trains of the control room bottled air system shall be OPERABLE. With one train inoperable for any reason, restore the inoperable train to OPERABLE status within 7 days or comply with Specification 3.10.C. With two trains inoperable, comply with Specification 3.10.C.
6. Three chillers shall be OPERABLE in accordance with the power supply requirements of Specification 3.23.C. With one of the required OPERABLE chillers inoperable or not powered as required by Specification 3.23.C.1, return the inoperable chiller to OPERABLE status within 7 days or comply with Specification 3.10.C. With two of the required OPERABLE chillers inoperable or not powered as required by Specification 3.23.C.1, comply with Specification 3.10.C.
7. Eight air handling units (AHUs) shall be OPERABLE in accordance with the operability requirements of Specification 3.23.C. With two AHUs inoperable on either unit, ensure that one AHU is OPERABLE in each unit's main control room and emergency switchgear room, and restore an inoperable AHU to OPERABLE status within 7 days, or comply with Specification 3.10.C. With more than two AHUs inoperable on a unit, comply with Specification 3.10.C.
- C. If any one of the specified limiting conditions for refueling is not met, REFUELING OPERATIONS or irradiated fuel movement in the Fuel Building shall cease and irradiated fuel shall be placed in a safe position, work shall be initiated to correct the conditions so that the specified limit is met, and no operations which increase the reactivity of the core shall be made.
- D. After initial fuel loading and after each core refueling operation and prior to reactor operation at greater than 75% of rated power, the movable incore detector system shall be utilized to verify proper power distribution.
- E. The requirements of 3.0.1 are not applicable.

Containment penetrations that terminate in the Auxiliary Building or Safeguards and provide direct access from containment atmosphere to outside atmosphere must be isolated or capable of being closed by at least one barrier during REFUELING OPERATIONS. The other containment penetrations that provide direct access from containment atmosphere to outside atmosphere must be isolated by at least one barrier during REFUELING OPERATIONS. Isolation may be achieved by an OPERABLE isolation valve, a closed valve, a blind flange, or by an equivalent isolation method. Equivalent isolation methods must be evaluated and may include use of a material that can provide a temporary, atmospheric pressure ventilation barrier.

For the personnel airlock, equipment access hatch, and other penetrations, 'capable of being closed' means the openings are able to be closed; they do not have to be sealed or meet the leakage criteria of TS 4.4. Station procedures exist that ensure in the event of a fuel handling accident, that the open personnel airlock and other penetrations can and will be closed. Closure of the equipment hatch will be accomplished in accordance with station procedures and as allowed by dose rates in containment. The radiological analysis of the fuel handling accident does not take credit for closure of the personnel airlock, equipment access hatch or other penetrations.

The fuel building ventilation exhaust and containment ventilation purge exhaust may be diverted through charcoal filters whenever refueling is in progress. However, there is no requirement for filtration since the Fuel Handling Accident analysis takes no credit for these filters. At least one flow path is required for cooling and mixing the coolant contained in the reactor vessel so as to maintain a uniform boron concentration and to remove residual heat.

~~The requirements in this specification for the control and relay room emergency ventilation system, control room bottled air system, and the main control room and emergency switchgear room air conditioning system (chillers and air handling units) apply to the shutdown unit. If any of the specified limiting conditions is not met, the requirements appropriately suspend activities that could result in a release of radioactivity that might require isolation of the control room envelope and place irradiated fuel in a safe position without delay and in a controlled manner. The requirements applicable to the operating unit are contained in Specifications 3.19 and 3.23.~~

*Handwritten notes:* (MCR) Main Control Room/Emergency Switchgear Room (MCR/ESGR) EVS (MCR) (ESGR) 3.21

INSERT  
4

**INSERT 4 (TS 3.10 Bases)**

During REFUELING OPERATIONS and during the movement of irradiated fuel assemblies, the MCR/ESGR EVS and the MCR Bottled Air System must be operable to ensure that the MCR/ESGR envelope will remain habitable during and following a Design Basis Accident.

Specifically, during REFUELING OPERATIONS and during movement of irradiated fuel assemblies, the MCR/ESGR EVS and the MCR Bottled Air System must be OPERABLE to respond to the release from a fuel handling accident.

## **INSERT 5 (TS 3.10 Bases)**

### **3.10.A.11 and 12 and 3.10.B.4 and 5**

When one MCR/ESGR EVS or MCR Bottled Air System train is inoperable, for reasons other than an inoperable MCR/ESGR envelope boundary, action must be taken to restore OPERABLE status within 7 days. In this condition, the remaining required OPERABLE MCR/ESGR EVS or MCR Bottled Air System train is adequate to perform the MCR/ESGR envelope occupant protection function. However, the overall reliability is reduced because a failure in the OPERABLE MCR/ESGR EVS or MCR Bottled Air System train could result in loss of MCR/ESGR EVS or MCR Bottled Air System function. The 7 day Allowed Outage Time is based on the low probability of a DBA occurring during this time period, and ability of the remaining train to provide the required capability.

During REFUELING OPERATIONS or during movement of irradiated fuel assemblies, if the required inoperable MCR/ESGR EVS or MCR Bottled Air System train cannot be restored to OPERABLE status within the required Allowed Outage Time, or two required MCR/ESGR EVS or MCR Bottled Air System trains are inoperable or with one or more required MCR/ESGR EVS or MCR Bottled Air System trains inoperable due to an inoperable MCR/ESGR envelope boundary, action must be taken to suspend activities that could result in a release of radioactivity that might require isolation of the MCR/ESGR envelope. This places the unit in a condition that minimizes the accident risk. This does not preclude the movement of fuel to a safe position.

**Replacement Pages for Attachment 3 to Dominion's July 13, 2007  
License Amendment Request**

**Proposed Technical Specifications Pages (Typed)**

B. During irradiated fuel movement in the Fuel Building the following conditions are satisfied:

1. The fuel pit bridge area monitor and the ventilation vent stack 2 particulate and gas monitors shall be OPERABLE and continuously monitored to identify the occurrence of a fuel handling accident.
2. A spent fuel cask or heavy loads exceeding 110 percent of the weight of a fuel assembly (not including fuel handling tool) shall not be moved over spent fuel, and only one spent fuel assembly will be handled at one time over the reactor or the spent fuel pit.

This restriction does not apply to the movement of the transfer canal door.

3. A spent fuel cask shall not be moved into the Fuel Building unless the Cask Impact Pads are in place on the bottom of the spent fuel pool.
4. Two MCR/ESGR EVS trains shall be OPERABLE.
  - a. With one required train inoperable for reasons other than an inoperable MCR/ESGR envelope boundary, restore the inoperable train to OPERABLE status within 7 days. If the inoperable train is not returned to OPERABLE status within 7 days, comply with Specification 3.10.C.
  - b. If two required trains are inoperable or one or more required trains are inoperable due to an inoperable MCR/ESGR envelope boundary, comply with Specification 3.10.C.
5. Two Main Control Room Bottled Air System trains shall be OPERABLE.
  - a. With one train inoperable for reasons other than an inoperable MCR/ESGR envelope boundary, restore the inoperable train to OPERABLE status within 7 days. If the inoperable train is not returned to OPERABLE status within 7 days, comply with Specification 3.10.C.
  - b. If two trains are inoperable or one or more trains are inoperable due to an inoperable MCR/ESGR envelope boundary, comply with Specification 3.10.C.
6. Three chillers shall be OPERABLE in accordance with the power supply requirements of Specification 3.23.C. With one of the required OPERABLE chillers inoperable or not powered as required by Specification 3.23.C.1, return the inoperable chiller to OPERABLE status within 7 days or comply with Specification 3.10.C. With two of the required OPERABLE chillers inoperable or not powered as required by Specification 3.23.C.1, comply with Specification 3.10.C.



7. Eight air handling units (AHUs) shall be OPERABLE in accordance with the operability requirements of Specification 3.23.C. With two AHUs inoperable on either unit, ensure that one AHU is OPERABLE in each unit's main control room and emergency switchgear room, and restore an inoperable AHU to OPERABLE status within 7 days, or comply with Specification 3.10.C. With more than two AHUs inoperable on a unit, comply with Specification 3.10.C.
- C. If any one of the specified limiting conditions for refueling is not met, REFUELING OPERATIONS or irradiated fuel movement in the Fuel Building shall cease and irradiated fuel shall be placed in a safe position, work shall be initiated to correct the conditions so that the specified limit is met, and no operations which increase the reactivity of the core shall be made.
- D. After initial fuel loading and after each core refueling operation and prior to reactor operation at greater than 75% of rated power, the movable incore detector system shall be utilized to verify proper power distribution.
- E. The requirements of 3.0.1 are not applicable.

Basis

Detailed instructions, the above specified precautions, and the design of the fuel handling equipment, which incorporates built-in interlocks and safety features, provide assurance that an accident, which would result in a hazard to public health and safety, will not occur during unit REFUELING OPERATIONS or irradiated fuel movement in the Fuel Building. When no change is being made in core geometry, one neutron detector is sufficient to monitor the core and permits maintenance of the out-of-function instrumentation. Continuous monitoring of radiation levels and neutron flux provides immediate indication of an unsafe condition.

Potential escape paths for fission product radioactivity within containment are required to be closed or capable of closure to prevent the release to the environment. However, since there is no potential for significant containment pressurization during refueling, the Appendix J leakage criteria and tests are not applicable.

The containment equipment access hatch, which is part of the containment pressure boundary, provides a means for moving large equipment and components into and out of the containment. During REFUELING OPERATIONS, the equipment hatch must be capable of being closed.

The requirements in this specification for the Main Control Room/Emergency Switchgear Room (MCR/ESGR) Emergency Ventilation System (EVS), Main Control Room (MCR) Bottled Air System, and the MCR and ESGR Air Conditioning System (chillers and air handling units) apply to the shutdown unit. If any of the specified limiting conditions is not met, the requirements appropriately suspend activities that could result in a release of radioactivity that might require isolation of the MCR/ESGR envelope and place irradiated fuel in a safe position without delay and in a controlled manner. The requirements applicable to the operating unit are contained in Specifications 3.19, 3.21, and 3.23.

During REFUELING OPERATIONS and during the movement of irradiated fuel assemblies, the MCR/ESGR EVS and the MCR Bottled Air System must be operable to ensure that the MCR/ESGR envelope will remain habitable during and following a Design Basis Accident.

Specifically, during REFUELING OPERATIONS and during movement of irradiated fuel assemblies, the MCR/ESGR EVS and the MCR Bottled Air System must be OPERABLE to respond to the release from a fuel handling accident.

#### 3.10.A.7 and 8

During refueling, the reactor refueling water cavity is filled with approximately 220,000 gal of water borated to at least 2,300 ppm boron. The boron concentration of this water, established by Specification 3.10.A.7, is sufficient to maintain the reactor subcritical by at least 5%  $\Delta k/k$  in the COLD SHUTDOWN condition with all control rod assemblies inserted. This includes a 1%  $\Delta k/k$  and a 50 ppm boron concentration allowance for uncertainty. This concentration is also sufficient to maintain the core subcritical with no control rod assemblies inserted into the reactor. Checks are performed during the reload design and safety analysis process to ensure the K-effective is equal to or less than 0.95 for each core. Periodic checks of refueling water boron concentration assure the proper shutdown margin. Specification 3.10.A.8 allows the Control Room Operator to inform the manipulator operator of any impending unsafe condition detected from the main control board indicators during fuel movement.

3.10.A.11 and 12 and 3.10.B.4 and 5

When one MCR/ESGR EVS or MCR Bottled Air System train is inoperable, for reasons other than an inoperable MCR/ESGR envelope boundary, action must be taken to restore OPERABLE status within 7 days. In this condition, the remaining required OPERABLE MCR/ESGR EVS or MCR Bottled Air System train is adequate to perform the MCR/ESGR envelope occupant protection function. However, the overall reliability is reduced because a failure in the OPERABLE MCR/ESGR EVS or MCR Bottled Air System train could result in loss of MCR/ESGR EVS or MCR Bottled Air System function. The 7 day Allowed Outage Time is based on the low probability of a DBA occurring during this time period, and ability of the remaining train to provide the required capability.

During REFUELING OPERATIONS or during movement of irradiated fuel assemblies, if the required inoperable MCR/ESGR EVS or MCR Bottled Air System train cannot be restored to OPERABLE status within the required Allowed Outage Time, or two required MCR/ESGR EVS or MCR Bottled Air System trains are inoperable or with one or more required MCR/ESGR EVS or MCR Bottled Air System trains inoperable due to an inoperable MCR/ESGR envelope boundary, action must be taken to suspend activities that could result in a release of radioactivity that might require isolation of the MCR/ESGR envelope. This places the unit in a condition that minimizes the accident risk. This does not preclude the movement of fuel to a safe position.

In addition to the above safeguards, interlocks are used during refueling to assure safe handling of the fuel assemblies. An excess weight interlock is provided on the lifting hoist to prevent movement of more than one fuel assembly at a time. The spent fuel transfer mechanism can accommodate only one fuel assembly at a time.

Upon each completion of core loading and installation of the reactor vessel head, specific mechanical and electrical tests will be performed prior to initial criticality.

The fuel handling accident has been analyzed based on the methodology outlined in Regulatory Guide 1.183. The analysis assumes 100% release of the gap activity from the assembly with maximum gap activity after a 100-hour decay period following operation at 2605 MWt.

Detailed procedures and checks insure that fuel assemblies are loaded in the proper locations in the core. As an additional check, the movable incore detector system will be used to verify proper power distribution. This system is capable of revealing any assembly enrichment error or loading error which could cause power shapes to be peaked in excess of design value.