3. This renewed license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations: 10 CFR Part 20, Section 30.34 of 10 CFR Part 30, Section 40.41 of 10 CFR Part 40, Sections 50.54 and 50.59 of 10 CFR Part 50, and Section 70.32 of 10 CFR Part 70; and is subject to all applicable provisions of the Act and the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified below:

A. Maximum Power Level

The licensee is authorized to operate the facility at steady state reactor core power levels not in excess of 2546 megawatts (thermal).

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 252 are hereby incorporated in the renewed license. The licensee shall operate the facility in accordance with the Technical Specifications.

C. Reports

The licensee shall make certain reports in accordance with the requirements of the Technical Specifications.

D. Records

The licensee shall keep facility operating records in accordance with the requirements of the Technical Specifications.

E. Deleted by Amendment 65

F. Deleted by Amendment 71

G. Deleted by Amendment 227

H. Deleted by Amendment 227

I. Fire Protection

The licensee shall implement and maintain in effect the provisions of the approved fire protection program as described in the Updated Final Safety Analysis Report and as approved in the SER dated September 19, 1979, (and Supplements dated May 29, 1980, October 9, 1980, December 18, 1980, February 13, 1981, December 4, 1981, April 27, 1982, November 18, 1982, January 17, 1984, February 25, 1988, and

E. Pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

3. This renewed license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations: 10 CFR Part 20, Section 30.34 of 10 CFR Part 30, Section 40.41 of 10 CFR Part 40, Sections 50.54 and 50.59 of 10 CFR Part 50, and Section 70.32 of 10 CFR Part 70; and is subject to all applicable provisions of the Act and the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified below:

A. Maximum Power Level

The licensee is authorized to operate the facility at steady state reactor core power levels not in excess of 2546 megawatts (thermal).

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 251 are hereby incorporated in this renewed license. The licensee shall operate the facility in accordance with the Technical Specifications.

C. Reports

The licensee shall make certain reports in accordance with the requirements of the Technical Specifications.

D. Records

The licensee shall keep facility operating records in accordance with the requirements of the Technical Specifications.

E. Deleted by Amendment 54

F. Deleted by Amendment 59 and Amendment 65

G. Deleted by Amendment 227

H. Deleted by Amendment 227

3.23 MAIN CONTROL ROOM AND EMERGENCY SWITCHGEAR ROOM VENTILATION AND AIR CONDITIONING SYSTEMS

Applicability

Applies to the Main Control Room (MCR) and Emergency Switchgear Room (ESGR) Air Conditioning System and Emergency Ventilation System.

Objective

To specify requirements to ensure the proper function of the Main Control Room and Emergency Switchgear Room Air Conditioning System and Emergency Ventilation System.

Specification

A. Both trains of the Main Control Room and Emergency Switchgear Room Emergency Ventilation System shall be OPERABLE whenever either unit is above COLD SHUTDOWN.

B. With one train of the Main Control Room and Emergency Switchgear Room Emergency Ventilation System inoperable for any reason, return the inoperable train to an OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 6 hours and in COLD SHUTDOWN within the following 48 hours.

C. The Main Control Room and Emergency Switchgear Room Air Conditioning System shall be OPERABLE as delineated in the following:

1. Chiller Refrigeration Units

   a. Three main control room and emergency switchgear room chillers must be OPERABLE whenever either unit is above COLD SHUTDOWN.

   b. The three OPERABLE chillers are required to be powered from three of the four emergency buses with one of those chillers capable of being powered from the fourth emergency bus.

   c. If one of the OPERABLE chillers becomes inoperable or is not powered as required by Specification 3.23.C.1.b, return an inoperable chiller to OPERABLE status within seven (7) days or bring both units to HOT SHUTDOWN within the next six (6) hours and be in COLD SHUTDOWN within the following 30 hours.

   d. If two of the OPERABLE chillers become inoperable or are not powered as required by Specification 3.23.C.1.b, return an inoperable chiller to OPERABLE status within one (1) hour or bring both units to HOT SHUTDOWN within the next six (6) hours and be in COLD SHUTDOWN within the following 30 hours.

2. Air Handling Units (AHUs)

   a. Unit 1 air handling units, 1-VS-AC-1, 1-VS-AC-2, 1-VS-AC-6, and 1-VS-AC-7, must be OPERABLE whenever Unit 1 is above COLD SHUTDOWN.

      1. If either any single Unit 1 AHU or two Unit 1 AHUs on the same chilled water loop (1-VS-AC-1 and 1-VS-AC-7 or 1-VS-AC-2 and 1-VS-AC-6) become inoperable, restore operability of the one inoperable AHU or two inoperable AHUs within seven (7) days or bring Unit 1 to HOT SHUTDOWN within the next six (6) hours and be in COLD SHUTDOWN within the following 30 hours.

      2. If two Unit 1 AHUs on different chilled water loops and in different air conditioning zones (1-VS-AC-1 and 1-VS-AC-6 or 1-VS-AC-2 and 1-VS-AC-7) become inoperable, restore operability of the two inoperable AHUs within seven (7) days or bring Unit 1 to HOT SHUTDOWN within the next six (6) hours and be in COLD SHUTDOWN within the following 30 hours.

      3. If two Unit 1 AHUs in the same air conditioning zone (1-VS-AC-1 and 1-VS-AC-2 or 1-VS-AC-6 and 1-VS-AC-7) become inoperable, restore operability of at least one Unit 1 AHU in each air conditioning zone (1-VS-AC-1 or 1-VS-AC-2 and 1-VS-AC-6 or 1-VS-AC-7) within one (1) hour or bring Unit 1 to HOT SHUTDOWN within the next six (6) hours and be in COLD SHUTDOWN within the following 30 hours.

      4. If more than two Unit 1 AHUs become inoperable, restore operability of at least one Unit 1 AHU in each air conditioning zone (1-VS-AC-1 or 1-VS-AC-2 and 1-VS-AC-6 or 1-VS-AC-7) within one (1) hour or bring Unit 1 to HOT SHUTDOWN within the next six (6) hours and be in COLD SHUTDOWN within the following 30 hours.

   b. Unit 2 air handling units, 2-VS-AC-8, 2-VS-AC-9, 2-VS-AC-6, and 2-VS-AC-7 must be OPERABLE whenever Unit 2 is above COLD SHUTDOWN.

      1. If either any single Unit 2 AHU or two Unit 2 AHUs on the same chilled water loop (2-VS-AC-7 and 2-VS-AC-9 or 2-VS-AC-6 and 2-VS-AC-8) become inoperable, restore operability of the one inoperable AHU or two inoperable AHUs within seven (7) days or bring Unit 2 to HOT SHUTDOWN within the next six (6) hours and be in COLD SHUTDOWN within the following 30 hours.

2. If two Unit 2 AHUs on different chilled water loops and in different air conditioning zones (2-VS-AC-7 and 2-VS-AC-8 or 2-VS-AC-6 and 2-VS-AC-9) become inoperable, restore operability of the two inoperable AHUs within seven (7) days or bring Unit 2 to HOT SHUTDOWN within the next six (6) hours and be in COLD SHUTDOWN within the following 30 hours.

3. If two Unit 2 AHUs in the same air conditioning zone (2-VS-AC-8 and 2-VS-AC-9 or 2-VS-AC-6 and 2-VS-AC-7) become inoperable, restore operability of at least one Unit 2 AHU in each air conditioning zone (2-VS-AC-8 or 2-VS-AC-9 and 2-VS-AC-6 or 2-VS-AC-7) within one (1) hour or bring Unit 2 to HOT SHUTDOWN within the next six (6) hours and be in COLD SHUTDOWN within the following 30 hours.

4. If more than two Unit 2 AHUs become inoperable, restore operability of at least one Unit 2 AHU in each air conditioning zone (2-VS-AC-8 or 2-VS-AC-9 and 2-VS-AC-6 or 2-VS-AC-7) within one (1) hour or bring Unit 2 to HOT SHUTDOWN within the next six (6) hours and be in COLD SHUTDOWN within the following 30 hours.

c. Both Unit 1 AHUs or both Unit 2 AHUs powered from the respective H buses (1-VS-AC-1 and 1-VS-AC-7 or 2-VS-AC-6 and 2-VS-AC-8) must be OPERABLE whenever both units are above COLD SHUTDOWN.

1. If one or two AHUs on each unit powered from an H bus is inoperable, restore operability of the inoperable AHU(s) on one unit within one (1) hour or bring both units to HOT SHUTDOWN within the next six (6) hours and be in COLD SHUTDOWN within the next 30 hours.

Basis

When the supply of compressed bottled air is depleted, the Main Control Room (MCR) and Emergency Switchgear Room (ESGR) Emergency Ventilation System is manually started to continue to maintain the control room pressure at the design positive pressure so that leakage is outleakage. One train of the main control room emergency ventilation consists of one fan powered from an independent emergency power source.

The MCR and ESGR Emergency Ventilation System is designed to filter the intake air to the control room pressure envelope during a loss of coolant accident. The control room pressure envelope consists of the control room complex (including the control room, control room annex area, Units 1 and 2 air conditioning equipment rooms, and Units 1 and 2 computer rooms), Units 1 and 2 emergency switchgear rooms, Unit 1 relay room, and Unit 2 relay room (including Mechanical Equipment Room 3 (MER-3)).

High efficiency particulate air (HEPA) filters are installed before the charcoal adsorbers to prevent clogging of the iodine adsorbers. The charcoal adsorbers are installed to reduce the potential intake of radio-iodine to the control room.

If the system is found to be inoperable, there is no immediate threat to the control room, and reactor operation may continue for a limited period of time while repairs are being made. If the system cannot be repaired within the specified time, procedures are initiated to establish conditions for which the filter system is not required.

The MCR and ESGR Air Conditioning System (ACS) cools the control room pressure envelope. From an ACS perspective, the envelope consists of four zones: 1) the Unit 1 side of the control room (including the Unit 1 air conditioning equipment and computer rooms), 2) the Unit 2 side of the control room (including the annex area, the Unit 2 air conditioning equipment and computer rooms), 3) the Unit 1 ESGR and relay room (referred to as the Unit 1 ESGR), and 4) the Unit 2 ESGR and relay room (including MER-3), referred to as the Unit 2 ESGR. The design basis of the MCR and ESGR ACS is to maintain the control room pressure envelope temperature within the equipment design limits for 30 days of continuous occupancy after a design basis accident (DBA). The ACS includes five chillers (1-VS-E-4A, 4B, 4C, 4D, and 4E). Chillers 4A, 4B, and 4C are located in MER-3, in the Unit 2 ESGR. Chillers 4D and 4E are located in MER-5, in the Unit 2 Turbine Building. The chillers supply chilled water to eight air handling units (AHUs), arranged in two independent and redundant chilled water loops. Each chilled water loop provides redundant 100% heat removal capacity per unit. Each loop contains four AHUs (one AHU in each unit's air conditioning zones), the necessary power supplies, the associated valves, piping (from the supply header to return header), instrumentation, and controls. Each AHU has 100% capacity for cooling its zone.

The combination of five chillers and two chilled water loops affords considerable flexibility in meeting the cooling requirements. Two chillers are powered from single emergency buses (1-VS-E-4C from 2H, 1-VS-E-4E from 1H). The remaining three chillers can be powered from either of two emergency buses (1-VS-E-4A from 1J or 2J, 1-VS-E-4B from 1J or 2H, and 1-VS-E-4D from 1H or 2J). The AHUs are powered from the four emergency buses in pairs. For example, the Unit 1 MCR and ESGR AHUs 1-VS-AC-1 and 1-VS-AC-7 are powered from the 1H bus; the redundant Unit 1 MCR and ESGR AHUs 1-VS-AC-2 and 1-VS-AC-6 are powered from the 1J bus. Control of the ACS is by manual action.

The chillers are procedurally aligned by power supply to meet TS 3.23.C.1.b, and the AHU pairs are normally aligned to match the power supplies of the OPERABLE chillers. For example, chiller 1-VS-E-4E and AHUs 1-VS-AC-1 and 1-VS-AC-7 are powered from the 1H emergency bus. However, due to the number of emergency diesel generators (EDGs) and the chiller/AHU piping layout, only one chiller and AHU pair can be powered from each emergency bus at a time. Also, if chilled water is needed in both chilled water loops, two chillers must be operated. Only one chiller can be operated on each chilled water loop at a time, and the 4D and 4E chillers cannot be operated simultaneously. The combinations of OPERABLE chillers/AHUs allowed by procedure ensure that sufficient cooling capacity is available during a DBA with a coincident loss of offsite power (LOOP) and single failure of an EDG, a chiller, or an AHU.

Acceptable operating alignments include one chiller supplying one chilled water loop with four operating AHUs, or two chillers supplying two chilled water loops with two AHUs operating on each loop. In either case, one AHU must be operated in the MCR and ESGR air conditioning zones of each unit. During normal operation, and accident scenarios with a LOOP and single failure of an EDG, one chiller providing chilled water to one chilled water loop with four operating AHUs is sufficient to maintain the MCR and ESGR air temperature within normal limits. In the event of a DBA with all mitigation equipment operating (i.e., higher heat loads due to offsite power available and no single failures), two chillers and two chilled water loops, with one operating AHU in each unit's MCR and ESGR, are necessary to maintain temperatures within normal limits; with one chiller, one chilled water loop, and four operating AHUs, temperatures will be maintained within the equipment design limits.

The MCR and ESGR ACS is considered to be OPERABLE when the individual components necessary to cool the MCR and ESGR envelope are OPERABLE. The operability requirements for the chillers and AHUs are separate but interdependent. The required chillers are considered OPERABLE when required chilled water and service water flowpaths, required power supplies, and controls are OPERABLE. A chiller does not have to be in operation to be considered OPERABLE. An AHU is OPERABLE when the associated chilled water flowpath, fan, motor, dampers, as well as associated ductwork and controls, are OPERABLE.

The Technical Specifications require the operability of the ACS components. Due to the redundancy and diversity of components, the inoperability of one active component does not render the ACS incapable of performing its function. This allows increased flexibility in unit operations under circumstances when more than one ACS component is inoperable. Similarly, the inoperability of two different components, each in a different loop or powered from a different power supply, does not necessarily result in a loss of function for the ACS. However, due to the emergency power design (three EDGs and four emergency buses), realignment of the swing or shared EDG is required in certain instances of inoperable AHUs and is directed by procedure.

The requirements and action statements for the AHUs powered from an H emergency bus eliminate the potential for complex operator actions in certain instances of two inoperable AHUs. The swing EDG can supply either J bus, but not both. With an AHU powered from the H bus inoperable on each unit, a DBA with a LOOP and no single failure would result in one air conditioning zone with no AHU available. In this case, in order to ensure power is available to an AHU in each air conditioning zone, operators would have to procedurally realign the swing diesel and cross-connect emergency buses. By prohibiting the simultaneous inoperability of an H-bus powered AHU on each unit, cross-connect of the emergency buses will not be necessary. Realignment of the swing diesel is still required, and procedures direct the operators to realign the swing EDG (from the MCR) as necessary to ensure that there is an operating AHU in the MCR and ESGR air conditioning zones of each unit.

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.

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.

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.

5. Two service water flow paths to the charging pump service water subsystem are OPERABLE.

6. Two service water flow paths to the recirculation spray subsystems are OPERABLE.

7. Two service water flow paths to the main control room and emergency switchgear room air conditioning subsystems are OPERABLE.

B. The requirements of Specification 3.14.A.4 may be modified to allow one Emergency Service Water pump to remain inoperable for a period not to exceed 7 days. If this pump is not OPERABLE in 7 days, then place both units in HOT SHUTDOWN within the next 6 hours and COLD SHUTDOWN within the next 30 hours.

The requirements of 3.14.A.4 may be modified to have two Emergency Service Water pumps OPERABLE with one unit in COLD SHUTDOWN with combined Spent Fuel pit and shutdown unit decay heat loads of 25 million BTU/HR or less. One of the two remaining pumps may be inoperable for a period not to exceed 7 days. If this pump is not OPERABLE in 7 days, then place the operating unit in HOT SHUTDOWN within the next 6 hours and COLD SHUTDOWN within the next 30 hours.

C. The requirements of Specifications 3.14.A.5, 3.14.A.6, and 3.14.A.7 may be modified to allow unit operation with only one OPERABLE flow path to the charging pump service water subsystem, the recirculation spray subsystems, and to the main control and emergency switchgear rooms air conditioning condensers. If the affected systems are not restored to the requirements of Specifications 3.14.A.5, 3.14.A.6, and 3.14.A.7 within 24 hours,

the reactor shall be placed in HOT SHUTDOWN. If the requirements of Specifications 3.14.A.5, 3.14.A.6, and 3.14.A.7 are not met within an additional 48 hours, the reactor shall be placed in COLD SHUTDOWN.

Basis

The Circulating and Service Water Systems are designed for the removal of heat resulting from the operation of various systems and components of either or both of the units. Untreated water, supplied from the James River and stored in the high level intake canal is circulated by gravity through the recirculation spray coolers and the bearing cooling water heat exchangers and to the charging pumps lubricating oil cooler service water pumps which supply service water to the charging pump lube oil coolers.

In addition, the Circulating and Service Water Systems supply cooling water to the component cooling water heat exchangers and to the main control and emergency switchgear rooms air conditioning condensers. The Component Cooling heat exchangers are used during normal plant operations to cool various station components and when in shutdown to remove residual heat from the reactor. Component Cooling is not required on the accident unit during a loss-of-coolant accident. If the loss-of-coolant accident is coincident with a loss of off-site power, the nonaccident unit will be maintained at HOT SHUTDOWN with the ability to reach COLD SHUTDOWN.

The long term Service Water requirement for a loss-of-coolant accident in one unit with simultaneous loss-of-station power and the second unit being brought to HOT SHUTDOWN is greater than 15,000 gpm. Additional Service Water is necessary to bring the nonaccident unit to COLD SHUTDOWN. Three diesel driven Emergency Service Water pumps with a design capacity of 15,000 gpm each, are provided to supply water to the High Level Intake canal during a loss-of-station power incident. Thus, considering the single active failure of one pump, three Emergency Service Water pumps are required to be OPERABLE. The allowed outage time of 7 days provides operational flexibility to allow for repairs up to and