UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

OMAHA PUBLIC POWER DISTRICT

DOCKET NO. 50-285

FORT CALHOUN STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 56
License No. DPR-40

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by the Omaha Public Power District (the licensee) dated November 17, 1980, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

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2. Accordingly, Facility Operating License No. DPR-40 is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B. of Facility Operating License No. DPR-40 is hereby amended to read as follows:

   B. Technical Specifications

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 56 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Robert A. Clark, Chief
Operating Reactors Branch #3
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: February 10, 1981

ATTACHMENT TO LICENSE AMENDMENT NO. 56

FACILITY OPERATING LICENSE NO. DPR-40

DOCKET NO. 50-285

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change.

Pages

2-1
2-2
2-2a
2-2b (added)
2-2c (added
2-37
6-1

2.0 LIMITING CONDITIONS FOR OPERATION

2.1 Reactor Coolant System

2.1.1 Operable Components

Applicability

Applies to the operable status of the reactor coolant system components.

Objective

To specify certain conditions of the reactor coolant system components.

Specifications

Limiting conditions for operation are as follows:

(1) Reactor Critical

All four (4) reactor coolant pumps shall be in operation.

Exceptions

The limitations of this specification may be suspended during the performance of physics tests provided the power level is $\leq 10^{-1}\%$ of rated power and the flow requirements of Table 1.1 No. 2 are met.

(2) Hot Shutdown or $300^{\circ}F \leq T_{cold} \leq 515^{\circ}F$

(a) The reactor coolant loops listed below shall be operable:

(i) Reactor coolant loop 1 and at least one associated reactor coolant pump.

(ii) Reactor coolant loop 2 and at least one associated reactor coolant pump.

(b) At least one of the above reactor coolant loops shall be in operation.

Exceptions

All reactor coolant pumps may be de-energized for up to one hour provided (1) no operations are permitted that would cause dilution of the reactor coolant system boron concentration, and (2) core outlet temperature is maintained at least 10°F below saturation temperature.

(c) If fewer than the above required reactor coolant pumps are operable, the required pumps shall be restored to operable status within 72 hours or the reactor shall be placed in cold shutdown within the next 12 hours.

(3) Cold Shutdown or $210^{o}F \leq T_{cold} \leq 300^{o}F$

(a) At least two (2) of the decay heat removal loops listed below shall be operable:

(i) Reactor coolant loop 1 and its associated steam generator and at least one associated reactor coolant pump.

(ii) Reactor coolant loop 2 and its associated steam generator and at least one associated reactor coolant pump.

(iii) One containment spray or LPSI pump, one shutdown cooling heat exchanger, and associated shutdown cooling piping.

(iv) One containment spray or LPSI pump, in addition to that in (iii) above, one shutdown cooling heat exchanger, in addition to that in (iii) above, and associated shutdown cooling piping.

(b) At least one (1) of the decay heat removal loops listed above shall be in operation.

(c) With no coolant loop in operation, suspend all operations involving a reduction in boron concentration of the Reactor Coolant System and initiate corrective action to return the required coolant loop to operation in 8 hours.

(4) Refueling Shutdown Condition

(a) At least one (1) shutdown cooling loop shall be in operation.

(b) When the water level above the top of the irradiated fuel assemblies seated within the reactor vessel is less than 15 feet, both shutdown cooling heat exchangers and at least two LPSI or containment spray pumps shall be operable.

Exceptions

All decay heat removal loops may be made inoperable for up to 8 hours provided (1) no operations are permitted that would cause dilution of the reactor coolant system boron concentration, (2) no refueling operations are taking place, and (3) all containment penetrations providing direct access from the containment atmosphere to the outside atmosphere are closed within 4 hours.

(5) At least one reactor coolant pump or one low pressure safety injection pump in the shutdown cooling mode shall be in operation whenever a change is being made in the boron concentration of the reactor coolant when fuel is in the reactor.

(6) Both steam generators shall be filled above the low steam generator water level trip set point and available to remove decay heat whenever the average temperature of the reactor coolant is above 300°F. Each steam generator shall be demonstrated operable by performance of the in-service inspection program specified in Section 3.3(2) prior to exceeding a reactor coolant temperature of 300°F.

(7) Maximum reactor coolant system hydrostatic test pressure shall be 3125 psia. A maximum of 10 cycles of 3125 psia hydrostatic tests are allowed.

(8) Reactor coolant system leak and hydrostatic tests shall be conducted within the limitations of Figures 2-1A and 2-1B.

(9) Maximum secondary hydrostatic test pressure shall not exceed 1250 psia. A minimum temperature of 82°F is required. Only 10 cycles are permitted.

(10) Maximum steam generator steam side leak test pressu shall not exceed 1000 psia. A minimum temperature of 82°F is required.

(11) A non-operating reactor coolant pump shall not be started unless at least one of the following conditions are met:

(a) A pressurizer steam space of 60% by volume or greater exists, or

(b) The steam generator secondary side temperature is less than 50°F above that of the reactor coolant system cold leg.

Basis

The plant is designed to operate with both reactor coolant loops and associated reactor coolant pumps in operation and maintain DNBR above 1.30 during all normal operations and anticipated transients.

In the hot shutdown mode, a single reactor coolant loop provides sufficient heat removal capability for removing decay heat; however, single failure considerations require that two loops be operable.

In the cold shutdown mode, a single reactor coolant loop or shutdown cooling loop provides sufficient heat removal capability for removing decay heat, but single failure considerations require that at least two loops be operable. Thus, if the reactor coolant loops are not operable, this specification requires two shutdown cooling pumps to be operable.

The requirement that at least one shutdown cooling loop be in operation during refueling ensures that: (1) sufficient cooling capacity is available to remove decay heat and maintain the water in the reactor pressure vessel below 210°F as required during the refueling mode, and (2) sufficient coolant circulation is maintained through the reactor core to minimize the effects of a boron dilution incident and prevent boron stratification.

The requirement to have two shutdown cooling pumps operable when there is less than 15 feet of water above the core ensures that a single failure of the operating shutdown cooling loop will not result in a complete loss of decay heat removal capability. With the reactor vessel head removed and 15 feet of water above the core, a large heat sink is available for core cooling; thus, in the event of a failure of the operating shutdown cooling loop, adequate time is provided to initiate emergency procedures to cool the core.

When reactor coolant boron concentration is being changed, the process must be uniform throughout the reactor coolant system volume to prevent stratification of reactor coolant at lower boron concentration which could result in a reactivity insertion. Sufficient mixing of the reactor coolant

is assured if one low pressure safety injection pump or one reactor coolant pump is in operation. The low pressure safety injection pump will circulate the reactor coolant system volume in less than 35 minutes when operated at rated capacity. The pressurizer volume is relatively inactive; therefore, it will tend to have a boron concentration higher than the rest of the reactor coolant system during a dilution operation. Administrative procedures will provide for use of pressurizer sprays to maintain a nominal spread between the boron concentration in the pressurizer and the reactor coolant system during the addition of boron.(1)

Both steam generators are required to be filled above the low steam generator water level trip set point whenever the temperature of the reactor coolant is greater than the design temperature of the shutdown cooling system to assure a redundant heat removal system for the reactor.

The design cyclic transients for the reactor system are given in FSAR Section 4.2.2. In addition, the steam generators are designed for additional conditions listed in FSAR Section 4.3.4. Flooded and pressurized conditions on the steam side assure minimum tube sheet temperature differential during leak testing. The minimum temperature for pressurizing the steam generator steam side is 70°F.

Formation of a 60% steam space ensures that the resulting pressure increase would not result in an overpressurization, should a reactor coolant pump be started when the steam generator secondary side temperature is greater than that of the RCS cold leg.

For the case in which no pressurizer steam space exists, limitation of the steam generator secondary side/RCS cold leg ΔT to 50°F ensures that a single low set point PORV would prevent an overpressurization due to actuation of a reactor coolant pump.

The exception to Specification 2.1.1(4) requiring all containment penetrations providing direct access from the containment to the outside atmosphere be closed within 4 hours requires that the equipment hatch be closed and held in place by a minimum of four bolts.

References

(1) FSAR Section 4.3.7

2.0 LIMITING CONDITIONS FOR OPERATION

2.8 Refueling Operations

Applicability

Applies to operating limitations during refueling operations.

Objective

To minimize the possibility of an accident occurring during refueling operations that could affect public health and safety.

Specifications

The following conditions shall be satisfied during any refueling operations:

(1) The equipment hatch and one door in the air lock shall [illegible] properly closed. In addition, all automatic containment isolation valves shall be operable or at least one valve in each line shall be closed.

(2) The five containment atmosphere and plant ventilation duct radiation monitors that initiate closure of the containment pressure relief, air sample, and purge system valves shall be tested and verified to be operable immediately prior to refueling operations. The five monitors shall employ one-out-of-five logic from separate contact outputs for VIAS.

(3) Radiation levels in the containment and spent fuel storage areas shall be monitored continuously.

(4) Whenever core geometry is being changed, neutron flux shall be continuously monitored by at least two source range neutron monitors, with each monitor providing continuous visual indication in the control room. When core geometry is not being changed, at least one source range neutron monitor shall be in service.

(5) At least one shutdown cooling pump and heat exchanger shall be in operation. However, the pump and heat exchanger may be removed from operation for up to one hour per 8 hour period during the performance of core alterations in the vicinity of the reactor coolant hot leg loops or during manipulation of a source.

(6) During reactor vessel head removal and while refueling operations are being performed in the reactor, the refueling boron concentration shall be maintained in the reactor coolant system and shall be checked by sampling on each shift.

6.0 INTERIM SPECIAL TECHNICAL SPECIFICATIONS

6.1 Limits on Reactor Coolant Pump Operation

DELETED