



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

ARKANSAS POWER & LIGHT COMPANY

DOCKET NO. 50-313

ARKANSAS NUCLEAR ONE - UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 15
License No. DPR-51

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Arkansas Power & Light Company (the licensee) dated August 13, 1976, 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, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment.
3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Original Signed by:
Dennis L. Ziemann

Dennis L. Ziemann, Chief
Operating Reactors Branch #2
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: OCT 1 1976

ATTACHMENT TO LICENSE AMENDMENT NO. 15

FACILITY OPERATING LICENSE NO. DPR-51

DOCKET NO. 50-313

Replace existing pages 56, 57, 100 and 100a of the Technical Specifications contained in Appendix A to the license with the attached revised pages bearing the same numbers. Insert new page 57a. The changed areas on the revised pages are reflected by a marginal line. Also, pages 55 and 58 are enclosed as a matter of convenience in updating the Technical Specifications. There are no changes on these pages.

The selected shutdown conditions are based on the type of activities that are being carried out and will preclude criticality in any occurrence.

The reactor building is designed for an internal pressure of 59 psig and an external pressure 3.0 psi greater than the internal pressure. The design external pressure of 3.0 psi corresponds to a margin of 0.5 psi above the differential pressure that could be developed if the building is sealed with an internal temperature of 110°F and the building is subsequently cooled to an internal temperature of less than 50°F.

When reactor building integrity is established, the limits of 10 CFR 100 will not be exceeded should the maximum hypothetical accident occur.

References

FSAR, Section 5

3.7 Auxiliary Electrical Systems

Applicability

Applies to the auxiliary electrical power systems.

Objectives

To specify conditions of operation for plant station power necessary to ensure safe reactor operation and combined availability of the engineered safety features.

Specifications

- 3.7.1 The reactor shall not be heated or maintained above 200°F unless the following conditions are met (except as permitted by Paragraph 3.7.2):
- A. Any one of the following combinations of power sources operable:
 - 1. Startup transformer No. 1 and Startup Transformer No. 2.
 - 2. Startup transformer No. 2 and Unit Auxiliary Transformer provided that the latter one is connected to the 22KV line from the switchyard rather than to the generator bus.
 - B. All 4160 V switchgear, 480 V load centers and 480 V motor control centers in both of the ESAS distribution systems are operable and are being powered from either one of the two startup transformers or the unit auxiliary transformer.
 - C. Both diesel generator sets are operable each with:
 - 1. a separate day tank containing a minimum of 160 gallons of fuel,
 - 2. a separate emergency storage tank containing a minimum of 138" inches (20,000 gallons) of fuel,
 - 3. a separate fuel transfer pump, and
 - 4. a separate starting air compressor.
 - D. Both station batteries are operable and each is capable of supplying power to the 125V d-c distribution system. At least 2 of the 3 battery chargers are operable.
 - E. At least 2 of 3 d-c control power sources to the 125V d-c switchyard distribution system are operable.

- 3.7.2 A. The specifications in 3.7.1 may be modified to allow one of the following conditions to exist after the reactor has been heated above 200°F. Except as indicated in the following conditions, if any of these conditions are not met, a hot shutdown shall be initiated within 12 hours. If the condition is not cleared within 24 hours, the reactor shall be brought to cold shutdown within an additional 24 hours.
- B. In the event that one of the offsite power sources specified in 3.7.1.A (1 or 2) is inoperable, reactor operation may continue for up to 24 hours if the availability of the diesel generators is immediately verified.
- C. Either one of the two diesel generators may be inoperable for up to 7 days in any month provided that during such 7 days the operability of the remaining diesel generator is demonstrated immediately and daily thereafter, there are no inoperable ESF components associated with the operable diesel generator, and provided that the two sources of off-site power specified in 3.7.1.A(1) or 3.7.1.A(2) are available.
- D. Any 4160V, 480V, or 120V switchgear, load center, motor control center, or distribution panel in one of the two ESF distribution systems may be inoperable for up to 8 hours, provided that the operability of the diesel generator associated with the operable ESF distribution system is demonstrated immediately and all of the components of the operable distribution system are operable. If the ESF distribution system is not returned to service at the end of the 8 hour period, specification 3.7.2A shall apply.
- E. Two station battery chargers may be inoperable for 8 hours, after which specification 3.7.2.A shall apply.
- F. One of the two station batteries and the associated distribution system may be inoperable for 8 hours provided that there are no inoperable safety related components associated with the remaining station battery which are redundant to the inoperable station battery and the operability of the diesel generator is verified immediately. If the battery is not returned to service at the end of the 8 hour period, specification 3.7.2.A shall apply.
- G. Two control power sources from the plant to the switchyard and the attendant distribution system may be inoperable for 8 hours, after which specification 3.7.2.A shall apply.
- 3.7.3 Any degradation beyond those conditions specified in 3.7.1 and 3.7.2 shall be cause to initiate a reportable occurrence report per, specifications 6.5 and 6.12.

Bases

The electrical system is designed to be electrically self-sufficient and provide adequate, reliable, power sources for all electrical equipment during startup, normal operation, safe shutdown and handling of all emergency situations. To prevent the concurrent loss of all auxiliary power, the various sources of power are independent of and isolated from each other.

In the event that the offsite power sources specified in 3.7.1.A (1 of 2) are inoperable, the required capacity of one emergency storage tank plus one day tank (20, 160 gallons) will be sufficient for not less than three and one-half days operation for one diesel generator loaded to full capacity. (ANO-1 FSAR 8.2.2.3) The underground emergency storage tanks are gravity fed from the bulk storage tank and are normally full, while the day tanks are fed from transfer pumps which are capable of being cross connected at their suction and discharges and automatically receive fuel oil when their inventory is less than 180 gallons. Thus, at least a seven day total diesel oil inventory is available on-site for emergency diesel generator operation during complete loss of electric power conditions.

Technical Specification 3.7.2 allows for the temporary modification of the specifications in 3.7.1 provided that backup system(s) are operable with safe reactor operation and combined availability of the engineered safety features ensured.

3.8 FUEL LOADING AND REFUELING

Applicability

Applies to fuel loading and refueling operations.

Objective

To assure that fuel loading, refueling and fuel handling operations are performed in a responsible manner.

Specification

- 3.8.1 Radiation levels in the reactor building refueling area shall be monitored by instrument RE-8017. Radiation levels in the spent fuel storage area shall be monitored by instrument RE-8009. If any of these instruments become inoperable, portable survey instrumentation, having the appropriate ranges and sensitivity to fully protect individuals involved in refueling operation, shall be used until the permanent instrumentation is returned to service.
- 3.8.2 Core subcritical neutron flux shall be continuously monitored by at least two neutron flux monitors, each with continuous indication available, whenever core geometry is being changed. When core geometry is not being changed, at least one neutron flux monitor shall be in service.
- 3.8.3 At least one decay heat removal pump and cooler and its cooling water supply shall be operable.
- 3.8.4 During reactor vessel head removal and while loading and unloading fuel from the reactor, the boron concentration shall be maintained at not less than that required for refueling shutdown.
- 3.8.5 Direct communications between the control room and the refueling personnel in the reactor building shall exist whenever changes in core geometry are taking place.
- 3.8.6 During the handling of irradiated fuel in the reactor building at least one door on the personnel and emergency hatches shall be closed. The equipment hatch cover shall be in place with a minimum of four bolts securing the cover to the sealing surfaces.
- 3.8.7 Isolation valves in lines containing automatic containment isolation valves shall be operable, or at least one shall be closed.
- 3.8.8 When two irradiated fuel assemblies are being moved simultaneously by the bridges within the fuel transfer canal, a minimum of 10 feet separation shall be maintained between the assemblies at all times.
- 3.8.9 If any of the above specified limiting conditions for fuel loading and refueling are not met, movement of fuel into the reactor core shall cease; action shall be initiated to correct the conditions so that the specified limits are met, and no operations which may increase the reactivity of the core shall be made.

4.6 AUXILIARY ELECTRICAL SYSTEM TESTS

Applicability

Applies to the periodic testing and surveillance requirements of the auxiliary electrical system to ensure it will respond promptly and properly when required.

Specification

4.6.1 Diesel Generators

1. Each diesel generator shall be manually started each month and demonstrated to be ready for loading within 15 seconds. The signal initiating the start of the diesel shall be varied from one test to another (start with handswitch at control room panel and at diesel local control panel) to verify all starting circuits are operable. The generator shall be synchronized from the control room and loaded to full rated load and allowed to run until diesel generator operating temperatures have stabilized.
2. A test shall be conducted during each refueling outage to demonstrate that the emergency power system is available to carry load within 15 seconds of a simulated ES signal of the safety features system coincident with the loss of offsite power. The diesel generator shall be fully loaded and run for one hour after operating temperatures have stabilized.
3. Each diesel generator shall be given an inspection at least every refueling outage following the manufacturer's recommendations for this class of standby service. The above tests will be considered satisfactory if all applicable equipment operates as designed.
4. The following shall be performed monthly:
 - a. The diesel generator starting air compressors shall be checked for operation and their ability to recharge the air receivers.
 - b. The diesel oil transfer pumps shall be checked for operability and their ability to transfer oil to the day tank.
 - c. The day tank fuel level shall be verified.
 - d. The emergency storage tank fuel level shall be verified.

- e. Diesel fuel from the emergency storage tank shall be sampled and found to be within acceptable limits specified in Table 1 of ASTM D975-68 when checked for viscosity, water, and sediment.
5. During each refueling outage, the capability of each starting air compressor to charge the air receivers from 0 to 225 psig within 2 hours shall be verified.

Also at each refueling outage, the capacity of each diesel oil transfer pump shall be verified to be at least 10 gpm.

4.6.2 Station Batteries and Switchyard Batteries

1. The voltage, temperature and specific gravity of a pilot cell in each bank and the overall battery voltage of each bank shall be measured and recorded daily.
2. Measurements shall be made quarterly of voltage of each cell to the nearest 0.01 volt of the specific gravity of each cell, and of the temperature of every fifth cell in each bank. The level of the electrolyte shall be checked and adjusted as required. All data, including the amount of water added to any cell, shall be recorded.
3. During each refueling outage, a performance discharge test shall be conducted in accordance with the manufacturer's instructions, for the purpose of determining battery capacity.
4. Any battery charger which has not been loaded while connected to its 125V d-c distribution system for at least 30 minutes during every quarter shall be tested and loaded while connected to its bus for 30 minutes. The third battery charger, which is capable of being connected to either of the two 125V d-c distribution systems, shall be loaded while connected to each bus for at least 30 minutes every quarter.

4.6.3 Emergency Lighting

The correct functioning of the emergency lighting system shall be verified at least once each year.