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Docket No. 50-29

MAR 4 1964

Yankee Atomic Electric Company
441 Stuart Street
Boston 16, Massachusetts

Attention: Mr. Roger J. Coe
Vice President

Gentlemen:

In your letter of February 11, 1964, you submitted proposed revised pages for the Technical Specifications of License No. DPR-3 which incorporated changes authorized by Changes No. 30, 36, and 50, dated January 24, September 13, and December 24, 1963. We have reviewed the revised pages and agree that they accurately represent the aforesaid changes in the Technical Specifications for the Yankee reactor. Accordingly, we are issuing the enclosed revision of Appendix A to License No. DPR-3.

Sincerely yours,

Original signed
by R. Lowenstein

Director
Division of Licensing and Regulation

Enclosure:
As stated above

OFFICE ▶	DL&R	OGC	DL&R	DL&R	DL&R	
SURNAME ▶	NGaske:slr		RVBryan	EGCase	RLowenstein	
DATE ▶	3/4/64		3/5/64		3/4/64	

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APPENDIX A

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YANKEE ATOMIC ELECTRIC COMPANY

Technical Specifications

A. SITE

The reactor shall be located on the property owned by Yankee in Rowe, Mass. The site includes the property owned by Yankee and New England Power Company as shown on the map on page 300:2 of the license application.

No part of the site shall be sold or leased without the prior approval of the Commission. No structure shall be located on the site without the prior approval of the Commission except structures owned by Yankee or New England Power Company and used in their utility operation and except railroad facilities owned and used by the Hoosac Tunnel and Wilmington Railroad Company.

B. DESIGN SPECIFICATIONS

1. The following sections of the license application are considered to be design specifications of the reactor and are incorporated herein in their entirety:

101 Core Mechanical Design
201 Main Coolant System
202 Pressure Control and Relief System
203 Charging and Volume Control System
204 Chemical Shutdown System
210 Shutdown Cooling System
212 Safety Injection System
230 Reactor Vessel

2. The pressures and temperatures used as a basis for design, materials of construction, general arrangements of the systems and their components, weights, volumes, dimensions and tolerances, methods of fabrication and applicable codes, tests and inspection procedures which appear in the following sections of the license application (excluding drawings) are considered to be design specifications of the reactor and are incorporated by reference herein:

102 Core Thermal and Hydraulic Design
103 Core Nuclear Design
106 Reactor Coolant Chemistry
107 Core Instrumentation
205 Purification System
207 Corrosion Control System -- Primary Plant
209 Radioactive Waste Disposal System
213 Reactor Control System
214 Nuclear Instrumentation System
215 Radiation Monitoring System
218 Fuel Handling System

224 Compressed Air Systems
231 Vapor Containment
232 Radiation Shielding
235 Architectural Features

Physical arrangements of structures and equipment will be as described in Section 200 of the license application. Mechanical equipment and systems will be interconnected as shown in the Fundamental Flow Diagram included in that section.

Electrical equipment and systems which provide station auxiliary power supply will be as described in Section 226 of the license application and will be interconnected as shown in the 2400 volt one-line diagram and the 480 volt one-line diagram, sheets 1, 2 and 3, included in that section.

The ventilation system for the control room area, radiochemical laboratory, decontamination cubicle, fuel transfer pit house, and other potentially contaminated portions of the Turbine Generator, Service, Primary Auxiliary, and Waste Disposal Buildings shall be in accordance with the description contained in Section 228 of Part B of the license application.

C. PERFORMANCE SPECIFICATIONS

Calculated values of operating variables such as pressures, temperatures, flows, heat fluxes, reactivity coefficients and on-site radiation levels under steady state and transient conditions which are stated in the sections of the license application listed in Paragraph B, above, are considered to be performance specifications of the reactor and are incorporated by reference herein. Yankee shall not operate the facility under circumstances where there is a substantial variance between the foregoing performance specifications and the corresponding values determined by operation of the facility.

The performance and function of the systems described in the following sections of the license application shall be substantially as described; however, the details of individual components and their arrangement as described in each of these sections may be altered by Yankee at its own discretion provided that such an alteration would not violate some other provision of these Technical Specifications:

206 Component Cooling System
208 Sampling System
211 Vent and Drain System, Primary Plant
216 Vapor Container Atmosphere Control Systems
219 Main and Auxiliary Steam System
220 Condensate and Feed Water System
221 Circulating Water System
222 Water Supply System

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D. OPERATING PROCEDURES AND RESTRICTIONS

1. Operating Procedures

The reactor will at all times be operated in accordance with generally accepted standards of safe operating procedures, subject to the operating restrictions set forth below. All operations will be conducted in accordance with written procedures and under the direct and personal supervision of technically qualified and designated personnel.

The Objective, Conditions and Precautions set forth in the individual instructions contained in the following sections of the license application will be observed:

504 Normal Plant Operation Instructions
505 Emergency Instructions
506 Plant Maintenance Instructions

2. Operating Limits

a. Reactivity

(1) During core loading the fuel assemblies, control rods and shim rods will be loaded one by one in water sufficiently borated to render the fully loaded core sub-critical at room temperature, by a calculated margin of at least 7% $\triangle$ K/K.

(2) During the refueling operation a record will be made of the neutron count rate before and after any change in core geometry. If a significant unexpected increase in the count rate occurs on any one channel or if an unexpected increase in the count rate by a factor of two on two of the three channels occurs after addition of a new fuel assembly or removal of a control rod, the fuel loading operation will be suspended until the situation can be reviewed by plant technical supervisory personnel. In order to establish the shutdown margin of the core, a single control rod will be withdrawn periodically using the manipulator crane and regulated by a plot of control rod position vs. inverse count rate multiplication. Using the inverse count rate data obtained in this manner, the shutdown margin will be calculated. If these calculations indicate that there will be less than 5% $\triangle$ K/K shutdown with all control rods inserted in the fully loaded core, the boron concentration will be increased to provide the required 5% $\triangle$ K/K shutdown margin.

(3) At all times when the reactor is at operating temperature sufficient boric acid shall be present in the main coolant system so that full insertion of all control rods

shall render the reactor not less than 4% △ K/K sub-critical or, if the maximum worth rod were withdrawn, not less than 2.0% △ K/K sub-critical.

(4) Sufficient boric acid will be added to the main coolant system prior to cold shutdown to maintain the cold core with all control rods inserted at least 5% △ K/K sub-critical. This will be done before the temperature of the main coolant system has been reduced to a point where full insertion of all control rods would no longer render the reactor 2% △ K/K sub-critical without the presence of boric acid.

(5) The maximum reactivity insertion rate due either to withdrawal of the highest worth control rod group or to reduction of boric acid concentration in the main coolant system through dilution will not exceed 1.5×10^{-4} △ K/K per second.

(6) Whenever the reactor is shut down, before any operation which might result in a change of reactivity, a control rod group shall be withdrawn to a height sufficient to provide a reactivity worth of 1% for emergency shutdown capability. If for any reason this is not practical, the main coolant system shall be borated to provide 5% △ K/K cold shutdown margin with all control rods inserted.

(7) The reactor will be scrammed automatically below 15 MW electric by a high startup rate signal set at a maximum of 5.2 decades/minute.

(8) The Commission shall be immediately notified should an unexplained reactivity change greater than 0.8% △ K/K take place at any time subsequent to the first week of full power operation. This reporting requirement shall be in effect only when the boron concentration in the primary system exceeds 80 ppm and within one week after a reduction to a boron concentration of less than 80 ppm.

b. Power Level

(1) The steady state power level of the reactor will not exceed rated power of 600 MW thermal.

(2) The reactor will be scrammed automatically by a high neutron flux level signal, set at not more than 108% of rated power as defined in (1) above.

(3) During operation with one loop of the four main coolant loops isolated from the system, the steady state thermal power level of the reactor will not exceed 450 MW thermal.