



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

STONE & WEBSTER ENGINEERING CORPORATION

DOCKET NO. STN 50-495

STANDARD SAFETY ANALYSIS REPORT FOR

SWESSAR-P1 BALANCE-OF-PLANT STANDARD DESIGN

AND ITS RELATIONSHIP TO THE RESAR-41 STANDARD DESIGN

PRELIMINARY DESIGN APPROVAL (PDA)

Preliminary Design Approval No. PDA-4

Amendment No. 3

- (1) Stone & Webster Engineering Corporation has submitted to the Nuclear Regulatory Commission's (NRC) staff for its review a proposed standardized preliminary design for major portions of a nuclear power reactor facility of the type described in 10 CFR 50.22. The preliminary design is described in Stone & Webster Engineering Corporation Standard Safety Analysis Report, SWESSAR-P1, along with 25 amendments thereto (hereinafter collectively referred to as SWESSAR-P1).
- (2) SWESSAR-P1 contains preliminary design information in accordance with 10 CFR Part 50, Appendix O, paragraph 3, for the balance-of-plant portion of a pressurized water reactor nuclear power plant, which encompasses:
 - (a) The major structures, including the containment, annulus building (which also functions as a partial secondary containment), the control building, diesel generator building, and the fuel building;
 - (b) An optional full secondary containment enclosure with and without internal atmospheric mixing;
 - (c) The major balance-of-plant systems, including the containment spray system, fire protection system, ventilation and air conditioning systems, liquid and gaseous radwaste systems, reactor plant service and component cooling water systems, main and auxiliary feedwater systems, turbine system with the associated steam and power conversion systems, and the associated electric power and controls for the preceding; and
 - (d) Related systems and features.

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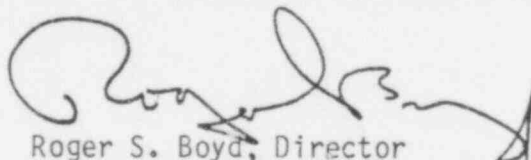
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The SWESSAR-P1 balance-of-plant design is designed to operate at a nuclear steam supply system (NSSS) core thermal power of 3800 megawatts. The SWESSAR-P1 design does not include a nuclear steam supply system design but the application incorporates by reference a number of standard pressurized water reactor nuclear steam supply system designs.

- (3) The SWESSAR-P1 reference design and its relationship to the RESAR-41 standard nuclear steam supply system design has been reviewed by the NRC staff and by the Advisory Committee on Reactor Safeguards. The RESAR-41 design was submitted by the Westinghouse Electric Corporation in the form of an application for a Preliminary Design Approval from the Commission for the RESAR-41 standard nuclear steam supply system design. The results of the NRC staff evaluation of the SWESSAR-P1/RESAR-41 standard balance-of-plant design are presented in the Safety Evaluation Report, NUREG-0049, dated May 1976. (The results of the NRC staff evaluation of the RESAR-41 reference design are presented in the Safety Evaluation Report, NUREG-75/103, dated December 1975.) The Advisory Committee on Reactor Safeguards' comments are set forth in its letter of February 11, 1976 (Appendix D to the Safety Evaluation Report).
- (4) Based on its review and the findings set forth in Section 19 of the Safety Evaluation Report, the NRC staff has concluded that subject to the conditions set forth herein, the information provided in SWESSAR-P1 with respect to major portions of the preliminary balance-of-plant design encompassed by SWESSAR-P1, as described in paragraph 2 above, complies with the requirements of 10 CFR Part 50, Appendix O, and is acceptable for incorporation by reference in applications for construction permits which also reference the RESAR-41 design. In accordance with 10 CFR Part 50, Appendix O, subject to the conditions set forth herein and in Appendix O, the approved design shall be utilized and relied upon by the staff and the Advisory Committee on Reactor Safeguards in their review of any individual facility license application which incorporates by reference the approved design, unless there exists significant new information which substantially affects the determination set forth in this Preliminary Design Approval or other good cause.
- (5) The SWESSAR-P1 reference design, subject to the conditions set forth herein, is acceptable for incorporation as a reference design for the balance-of-plant portion of construction permit applications which also incorporate by reference the RESAR-41 design as the preliminary design for the nuclear steam supply system; provided that (a) the design of the remainder of the plant which interfaces with the approved SWESSAR-P1 design conforms to the safety-related interface requirements set forth in SWESSAR-P1 and in the Safety Evaluation Report (see Table 1-1 therein), and (b) the additional information needed to complete the assessment of SWESSAR-P1/RESAR-41 interfaces is provided in the construction permit application (see Table 1-2 in the Safety Evaluation Report).

- (6) This Preliminary Design Approval is applicable to those systems and design features of the SWESSAR-P1 design combination described and evaluated in Sections 1 through 19 of the Safety Evaluation Report (NUREG-0049); those systems and design features described and evaluated in Appendix A of the Safety Evaluation Report (these systems and features are not within the scope defined for a standard balance-of-plant) are not included in this Preliminary Design Approval.
- (7) This Preliminary Design Approval is subject to the satisfactory and timely submission of further information concerning the matter of anticipated transients without scram as it may relate to the SWESSAR-P1 balance-of-plant design.
- (8) This Preliminary Design Approval and all applications for construction permits incorporating it by reference are subject to all applicable provisions of the Atomic Energy Act of 1954, as amended, and the rules and regulations and Orders of the Commission now or hereafter in effect.
- (9) This Preliminary Design Approval does not constitute a commitment to issue a permit or license or in any way affect the authority of the Commission, Atomic Safety and Licensing Appeal Board, Atomic Safety and Licensing Boards, and other presiding officers in any proceeding under Subpart G of 10 CFR Part 2.
- (10) This Preliminary Design Approval is effective as its date of issuance and shall expire on August 18, 1979, unless earlier superseded by the issuance of a Final Design Approval for the SWESSAR-P1 reference design in combination with the RESAR-41 design or extended by the NRC staff. This expiration of this Preliminary Design Approval on August 18, 1979, shall not affect the use of this Preliminary Design Approval for reference in any construction permit application docketed prior to such date.

FOR THE NUCLEAR REGULATORY COMMISSION



Roger S. Boyd, Director
Division of Project Management
Office of Nuclear Reactor Regulation

Date of Issuance: June 1, 1979