

**DESIGN FEATURES**

**5.3 REACTOR CORE**

**FUEL ASSEMBLIES**

5.3.1 The reactor core shall contain 764 fuel assemblies. Each assembly consists of a matrix of Zircaloy clad fuel rods with an initial composition of non-enriched or slightly enriched uranium dioxide as fuel material and water rods or water channels. Limited substitutions of Zirconium alloy filler rods for fuel rods, in accordance with NRC-approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those fuel designs that have been analyzed with applicable NRC staff-approved codes and methods, and shown by test or analyses to comply with all fuel safety design bases. A limited number of lead use assemblies that have not completed representative testing may be placed in non-limiting core regions. Reload fuel shall have a maximum lattice average enrichment of 4.5 weight percent U-235.

**CONTROL ROD ASSEMBLIES**

5.3.2 The reactor core shall contain 185 cruciform shaped control rod assemblies. The control material shall be boron carbide powder (B<sub>4</sub>C), and/or Hafnium metal. The control rod shall have a nominal axial absorber length of 143 inches. Control rod assemblies shall be limited to those control rod designs approved by the NRC for use in BWRs.

**5.4 REACTOR COOLANT SYSTEM**

**DESIGN PRESSURE AND TEMPERATURE**

5.4.1 The reactor coolant system is designed and shall be maintained:

- a. In accordance with the code requirements specified in Section 5.2 of the FSAR, with allowance for normal degradation pursuant to the applicable Surveillance Requirements,
- b. For a pressure of:
  - 1. 1250 psig on the suction side of the recirculation pumps.
  - 2. 1500 psig from the recirculation pump discharge to the jet pumps.
- c. For a temperature of 575°F.

**VOLUME**

5.4.2 The total water and steam volume of the reactor vessel and recirculation system is approximately 22,400 cubic feet at a nominal T<sub>sat</sub> of 532°F.

ATRIUM™-10 fuel is only allowed in the reactor core in OPERATIONAL CONDITION 5. The design bases applicable to ATRIUM™-10 fuel are those which are applicable to OPERATIONAL CONDITION 5.

SUSQUEHANNA - UNIT 2

(S) 3, 4, AND 5-6

Amendment No. 136

(S) 3, 4, AND



11/11/11

11/11/11