

5.0 DESIGN FEATURES

5.1 Site

- A. The reactor center line is located at approximately 850,810 feet North and 2,038,920 feet East as determined on the Minnesota State Grid, South Zone. The nearest site boundary is approximately 1630 feet S 30° W of the reactor center line and the exclusion area is defined by the minimum fenced area shown in FSAR Figure 2.2.2a. Due to the prevailing wind pattern, the direction of maximum integrated dosage is SSE. The southern property line generally follows the northern boundary of the right-of-way for the Burlington Northern Railway. More details on the current property lines can be found in USAR Figure 2.2-1.

5.2 Reactor

- A. The reactor core shall consist of not more than 484 fuel assemblies.
- B. The reactor core shall contain 121 cruciform-shaped control rods.

5.3 Reactor Vessel

- A. The pressure vessel shall be designed for a pressure of 1250 psig and a temperature of 575°F. The coolant recirculation system shall be designed for a pressure of 1148 psig on suction side of pump and 1248 psig at pump discharge. The applicable design codes shall be as described in Sections 4.2.3 and 4.3.1 of the Monticello Final Safety Analysis Report.

5.4 Containment

- A. The primary containment shall be of the pressure suppression type having a drywell and an absorption chamber constructed of steel. The drywell shall have a volume of approximately 134,200 ft³ and is designed to conform to ASME Boiler and Pressure Vessel Code Section III Class B for an internal pressure of 56 psig at 281°F and an external pressure of 2 psig at 281°F. The absorption chamber shall have a total volume of approximately 176,250 ft³.

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