

4.0 DESIGN FEATURES

4.1 Site Location

The site for the Clinton Power Station is located in Harp Township, DeWitt County, approximately six miles east of the city of Clinton in east-central Illinois. The exclusion area boundary shall have a radius of 975 meters from the Standby Gas Treatment System vent.

4.2 Reactor Core

4.2.1 Fuel Assemblies

The reactor shall contain 624 fuel assemblies. Each assembly shall consist of a matrix of Zircaloy or ZIRLO clad fuel rods with an initial composition of natural or slightly enriched uranium dioxide (UO_2) as fuel material, and water rod(s). Limited substitutions of zirconium alloy or stainless steel filler rods for fuel rods, in accordance with 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 tests or analyses to comply with all safety design bases. A limited number of lead test assemblies that have not completed representative testing may be placed in nonlimiting core regions.

4.2.2 Control Rod Assemblies

The reactor core shall contain 145 cruciform shaped control rod assemblies. The control material shall be boron carbide or hafnium metal, or both.

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