PROPOSED TECHNICAL SPECIFICATION CHANGES

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5.3 REACTOR

Specification

5.3.1 Reactor Core

5.3.1.1 The reactor core contains approximately 93 metric tons of slightly enriched uranium dioxide pellets. The pellets are encapsulated in Zircaloy-4 tubing to form fuel rods. The reactor core is made up of 177 fuel assemblies. Each fuel assembly is fabricated with 208 fuel rods. (1,2) Starting with Batch 11, a reconstitutable fuel assembly design is implemented. This design allows the replacement of up to 208 fuel rods in the assembly. For Cycle 10 operation only, fuel assembly NJ0539 will contain one stainless steel filler rod in place of one fuel rod.

5.3.1.2 The reactor core approximates a right circular cylinder with an equivalent diameter of 128.9 inches and an active height of 144 inches. The active fuel length is approximately 142 inches.[2]

5.3.1.3 The average enrichment of the initial core is a nominal 2.62 weight percent of U-235. Three fuel enrichments are used in the initial core. The highest enrichment is less than 3.5 weight percent U-235.

5.3.1.4 There are 60 full-length control rod assemblies (CRA) and 8 axial power shaping rod assemblies (APSRA) distributed in the reactor core as shown in FSAR Figure 3-60. The full-length CRA contain a 134-inch length of silver-indium-cadminum alloy clad with stainless steel. Each APSRA contains a 63-inch length of Inconel-600 alloy.(3)

5.3.1.5 The core has 68 burnable poison spider assemblies with similar dimensions as the full-length control rods. The cladding is Zircaloy-4 filled with alumina-boron and placed in the core as shown in FSAR Figure 3-2.

5.3.1.6 Reload fuel shall conform to the design and evaluation described in FSAR and shall not exceed an enrichment of 4.1 weight percent of U-235.

5.3.2 Reactor Coolant System

5.3.2.1 The reactor coolant system is designed and constructed in accordance with code requirements.[4]

5.4 NEW AND SPENT FUEL STORAGE FACILITIES

Applicability

Applies to storage facilities for new and spent fuel assemblies.

Objective

To assure that both new and spent fuel assemblies will be stored in such a manner that an inadvertent criticality could not occur.

Specification

5.4.1 New Fuel Storage

1. New fuel assemblies may be stored in the Fresh Fuel Storage Rack (FFSR). The FFSR consists of a nine by eight array of storage cells on nominal center to center distance of 21 inches in both directions. Ten interior storage cells, as shown in Figure 5.4-1, are precluded from use and will be physically blocked prior to any storage in the fresh fuel rack. This configuration is sufficient to maintain a K_{eff} of less than 0.98 with optimum moderation and 0.95 under normal conditions, based on fuel with an enrichment of 4.1 weight percent U-235.

2. New fuel may also be stored in the spent fuel pool or in its shipping containers.

5.4.2 Spent Fuel Storage

1. The spent fuel racks are designed and shall be maintained so that the calculated effective multiplication factor is no greater than 0.95 (including all known uncertainties) when the pool is flooded with unborated water.

2. The spent fuel pool and the new fuel pool racks are designed as seismic Class I equipment.

REFERENCES

FSAR, Section 9.6

FIGURE 5.4-1 ANO FFSR LOADING PATTERN

<----- NORTH

		NO			NO		
			NO	NO			
			NO	NO			
			NO	NO			
		NO			NO		

"NO" Indicates a location in which fuel loading is prohibited.

ATTACHMENT 1

CRITICALITY ANALYSIS OF ANO-1
FRESH FUEL RACK