Attachment 2

Technical Specifications Changes

DESIGN PRESSURE AND TEMPERATURE

5.2.2 The reactor containment building is designed and shall be maintained for a maximum internal pressure of 45 psig and a temperature of 280°F.

5.3 REACTOR CORE

FUEL ASSEMBLIES

5.3.1 The reactor core shall contain 157 fuel assemblies with each fuel assembly containing 264 fuel rods clad with Zircaloy-4. Each fuel rod shall have a nominal active fuel length of 144 inches. The initial core loading shall have a maximum enrichment of 3.2 weight percent U-235. Reload fuel shall be similar in physical design to the initial core loading and shall have a maximum enrichment of 4.3 weight percent U-235. Limited substitutions of zirconium alloy or stainless steel 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 designs that have been analyzed with applicable NRC staff-approved codes and methods, and shown by tests or analyses to comply with all fuel safety design bases.

CONTROL ROD ASSEMBLIES

5.3.2 The reactor core shall contain 48 full length control rod assemblies. The full length control rod assemblies shall contain a nominal 142 inches of absorber material. The nominal values of absorber material shall be 80 percent silver, 15 percent indium and 5 percent cadmium. All control rods shall be clad with stainless steel tubing.

5.4 REACTOR COOLANT SYSTEM

DESIGN PRESSURE AND TEMPERATURE

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

5.3 REACTOR CORE

FUEL ASSEMBLIES

5.3.1 The reactor core shall contain 157 fuel assemblies with each fuel assembly containing 264 fuel rods clad with Zircaloy-4. Each fuel rod shall have a nominal active fuel length of 144 inches. The initial core loading shall have a maximum enrichment of 3.2 weight percent U-235. Reload fuel shall be similar in physical design to the initial core loading and shall have a maximum enrichment of 4.3 weight percent U-235. Limited substitutions of zirconium alloy or stainless steel 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 designs that have been analyzed with applicable NRC staff-approved codes and methods, and shown by tests or analyses to comply with all fuel safety design bases.

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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 2485 psig, and

c. For a temperature of 650°F, except for the pressurizer which is 680°F.

VOLUME

5.4.2 The total water and steam volume of the reactor coolant system is approximately 10,000 cubic feet at nominal operating conditions.

Attachment 3

Significant Hazards Consideration

SIGNIFICANT HAZARDS CONSIDERATION

On occasion, failure of individual fuel rods within the assemblies of the core may occur. These fuel rod failures may occur during routine operation of the plant or during movement of fuel assemblies. The current practice at the North Anna Power Station is to not reload fuel assemblies which are known to contain failed fuel rods, as the cladding defects of such rods allow fission products to be released to the primary coolant. However, by replacing failed fuel rods with solid filler rods made from stainless steel or zirconium alloy, fuel assemblies which have been prematurely discharged because of the presence of the failed rods can safely be reused.

Because the Design Features section of the Technical Specifications currently precludes the use of fuel assemblies containing solid filler rods, changes to the Design Features section of the Technical Specifications are being requested. The changes would allow the use of solid stainless steel or zirconium alloy filler rods in place of fuel rods which are known to be failed, and also remove the current fuel rod uranium weight limit of 1780 grams.

The Technical Specifications changes were reviewed against the criteria of 10 CFR 50.92, and it has been concluded that the changes do not pose a significant hazards consideration. Specifically, the operation of North Anna Power Station in accordance with the Technical Specifications changes will not:

1. Involve a significant increase in the probability or consequence of an accident previously evaluated. All North Anna fuel assemblies will continue to meet the same fuel assembly and fuel rod design bases as the current fuel assemblies. In addition, the 10 CFR 50.46 criteria (acceptance criteria for emergency core cooling systems) will continue to be satisfied for all fuel assemblies. Neither the use of reconstituted fuel assemblies nor the removal of the fuel rod uranium weight limit will result in a change to the North Anna Units 1 and 2 reload design and safety analysis limits. Since the dose predictions in the safety analyses are not sensitive to the presence of solid stainless steel or zirconium alloy filler rods in the fuel assemblies, or to variations in individual fuel rod uranium weights, the radiological consequences of accidents previously evaluated in the safety analyses remain valid. Therefore, neither the probability of occurrence nor the consequences of any accident previously evaluated is significantly increased.

2. Create the possibility of a new or different kind of accident from any previously identified, since all North Anna Units 1 and 2 fuel assemblies will continue to satisfy the same design bases used for previous fuel regions. Since the original design criteria are being met, initiators for any new accident have not been introduced. All design and performance criteria will continue to be met for both the use of reconstituted assemblies containing solid stainless steel or zirconium alloy filler rods, and for removal of the individual rod uranium weight limit. No new single failure mechanisms have been created, and the use of this fuel does not involve any alteration to plant equipment or procedures which would introduce any new or unique

operational modes or accident precursors. Therefore, the possibility for a new or different kind of accident from any accident previously evaluated is not created.

3. Involve a significant reduction in a margin of safety. The North Anna Units 1 and 2 reload design and safety analysis limits are unchanged either by the removal of the individual fuel rod uranium weight limit, or by the use of fuel assemblies containing solid stainless steel or zirconium alloy filler rods. The use of all fuel assemblies will continue to be limited by the normal core operating conditions defined in the Technical Specifications. Reconstituted fuel assemblies will be specifically evaluated for each cycle reload core in which they are inserted using approved reload design methods and approved fuel rod design models and methods. This will include consideration of the core physics analysis peaking factors and core average linear heat rate effects, as well as evaluation of the impact on safety and LOCA analyses, and on core thermal hydraulics (DNB). The 10 CFR 50.46 criteria will continue to be applied each cycle and analyses or evaluations will be performed each cycle to confirm that 10 CFR 50.46 will be met. Therefore, the margin of safety as defined in the Bases to the Technical Specifications is not significantly reduced.

We conclude that the activities associated with the proposed Technical Specifications changes satisfy the no significance hazards consideration of 10 CFR 50.92 and, accordingly, a no significant hazards consideration finding is justified.