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Senior Vice President

June 17, 1996

the southern electric system
LCV-0826

Docket Nos. 50-424
50-425

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555

Ladies and Gentlemen:

VOGTLE ELECTRIC GENERATING PLANT
REQUEST FOR TECHNICAL SPECIFICATIONS CHANGES
ZIRLO™ CLAD FUEL RODS

In accordance with the provisions of 10 CFR 50.90 and 10 CFR 50.92, Georgia Power Company (GPC) proposes to amend the Vogtle Electric Generating Plant (VEGP) Units 1 and 2 Technical Specifications, Appendix A to Operating Licenses NPF-68 and NPF-81. The proposed change to Technical Specification section 5.3.1 allows the use of fuel assemblies containing fuel rods clad with ZIRLO™.

The use of this cladding has previously been reviewed and accepted by the NRC on a generic basis through the review and approval of WCAP 12610-P-A and the appropriate revisions to 10 CFR 50.46 and 50.44, which was the basis of the NRC staff's previous approval for the use of ZIRLO™ clad fuel rods at other nuclear plants. This WCAP serves as a reference core design report for a fuel assembly design using ZIRLO™ clad fuel rods. It presents the information necessary to support the licensing basis for the use of fuel assemblies containing ZIRLO™ clad fuel rods for fuel reload regions. It includes mechanical, nuclear, thermal-hydraulic, accident and radiological evaluations. It also includes appendices to document ZIRLO™ material properties, support fuel rod performance, and provide LOCA models and evaluations. WCAP-12610-P-A was approved in NRC Safety Evaluations issued on July 1, 1991 and October 9, 1991. These Safety Evaluations approved the use of VANTAGE+ fuel design, i.e., ZIRLO™ clad fuel and found it acceptable for up to a rod-average burnup level of 60,000 MWD/MTU. Therefore, the proposed change to the VEGP Technical Specifications is an administrative change indicating the expected use of fuel cladding at VEGP which has already been generically accepted by the NRC.

This change has been incorporated into the Improved Technical Specifications (ITS) currently under review by the NRC. Originally it was anticipated that the ITS would be approved on a schedule that would allow the use of ZIRLO™ cladding by the fall of 1996. The approval of the ITS has been delayed for an unrelated reason; therefore, Georgia Power is requesting this specific change to the current Technical Specifications be approved prior to the first anticipated use of the new cladding at VEGP. Fuel assemblies containing fuel rods clad with ZIRLO™ will be utilized in VEGP Unit 2, beginning with Cycle 6, which is scheduled for startup in the Fall of 1996. Therefore, Georgia Power Company requests approval of this Technical Specification revision by August 15, 1996.

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Enclosure 1 provides a description of the proposed change and the basis for the change. Enclosure 2 provides the basis for a determination that the proposed change does not involve significant hazards considerations. Enclosure 3 provides instructions for incorporating the proposed change into the Technical Specifications. Enclosure 4 provides a conclusion concerning an environmental assessment of the proposed change.

In accordance with 10 CFR 50.91, the designated state official will be sent a copy of this letter and the enclosures.

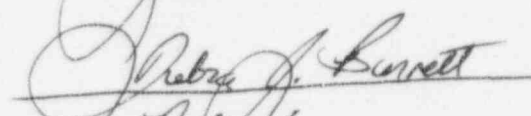
Mr. J. D. Woodard states that he is a Senior Vice President of Georgia Power Company and is authorized to execute this oath on behalf of Georgia Power Company and that, to the best of his knowledge and belief, the facts set forth in this letter and enclosures are true.

GEORGIA POWER COMPANY

By:


J. D. Woodard

Sworn to and subscribed before me this 17th day of June, 1996.


Notary
MY COMMISSION EXPIRES
9-14-98

JDW/HWM/gmb
Enclosures

cc: Georgia Power Company
Mr. J. B. Beasley, Jr.
Mr. M. Sheibani
NORMS

U. S. Nuclear Regulatory Commission
Mr. S. D. Ebner, Regional Administrator
Mr. L. L. Wheeler, Licensing Project Manager, NRR
Mr. C. R. Ogle, Senior Resident Inspector, Vogtle

State of Georgia
J. D. Tanner, Commissioner, Department of Natural Resources

ENCLOSURE 1

VOGTLE ELECTRIC GENERATING PLANT REQUEST TO REVISE TECHNICAL SPECIFICATION ZIRLO™ FUEL CLADDING

BASIS FOR PROPOSED CHANGE

Proposed Change

The Vogtle Units 1 and 2 Technical Specifications, Design Features section 5.3.1 has the following text:

"The core shall contain 193 fuel assemblies with each fuel assembly containing 264 fuel rods clad with Zircaloy-4 except for two fuel assemblies which may each contain up to twelve (12) fuel rods clad with ZIRLO™. Each fuel rod shall have a nominal active fuel length of 144 inches. The initial core loading shall have a maximum enrichment not to exceed 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 not to exceed 4.55 weight percent U-235."

In order to allow for the insertion of fuel assemblies clad with ZIRLO™ into Vogtle reload core designs, the following revision to Technical Specifications Design Features section 5.3.1 is proposed:

"The core shall contain 193 fuel assemblies with each fuel assembly containing 264 fuel rods clad with Zircaloy-4 *or* ZIRLO™ ~~except for two fuel assemblies which may each contain up to twelve (12) fuel rods clad with ZIRLO™~~. Each fuel rod shall have a nominal active fuel length of 144 inches. The initial core loading shall have a maximum enrichment not to exceed 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 not to exceed 4.55 weight percent U-235."

Basis

In order to implement a long-term fuel management strategy planned by Georgia Power Company (GPC) for the Vogtle Electric Generating Plant (VEGP) Units 1 and 2, Westinghouse VANTAGE-5 fuel assemblies, each containing fuel rods clad with the advanced zirconium alloy cladding material ZIRLO™, will be utilized in future VEGP reload core designs. The use of this cladding has previously been reviewed and accepted by the NRC on a generic basis through the review and approval of WCAP 12610-P-A and the revisions to 10 CFR 50.46 and 50.44. The NRC has approved the use of this type of cladding at other nuclear plants.

The use of ZIRLO™ cladding for VEGP does not require the application of any new methodology that has not already been reviewed and approved by the NRC. Currently the Technical Specifications for VEGP allow the use of two lead test assemblies with fuel rods using this type of cladding. Each specific fuel cycle design will continue to be evaluated using NRC approved methods and design criteria.

ENCLOSURE 1 (continued)

BASIS FOR PROPOSED CHANGE

This change has been incorporated into the Improved Technical Specifications (ITS) currently under review by the NRC. Originally it was anticipated that the ITS would be approved on a schedule that would allow the use of ZIRLOTM cladding by the fall of 1996. The approval of the ITS is currently delayed for an unrelated reason; therefore, Georgia Power is requesting this specific change to the current Technical Specifications be approved prior to the first anticipated use of the new cladding at VEGP. Fuel assemblies containing fuel rods clad with ZIRLOTM will be utilized in VEGP Unit 2, beginning with Cycle 6, which is scheduled for startup in the Fall of 1996.

ENCLOSURE 2

VOGTLE ELECTRIC GENERATING PLANT REQUEST TO REVISE TECHNICAL SPECIFICATION ZIRLO™ FUEL CLADDING

10 CFR 50.92 EVALUATION

Pursuant to 10 CFR 50.92, Georgia Power Company (GPC) has evaluated the attached proposed amendment and has determined that operation of the facility in accordance with the revised Technical Specifications will not involve significant hazards consideration. The basis for this determination is as follows.

Analysis

The use of this cladding has previously been reviewed and accepted by the NRC on a generic basis through the review and approval of WCAP 12610-P-A and the appropriate revisions to 10 CFR 50.46 and 50.44, which was the basis of the NRC staff's previous approval for the use of ZIRLO™ clad fuel rods at other nuclear plants. This WCAP serves as a reference core design report for a fuel assembly design using ZIRLO™ clad fuel rods. It presents the information necessary to support the licensing basis for the use of fuel assemblies containing ZIRLO™ clad fuel rods for fuel reload regions. It includes mechanical, nuclear, thermal-hydraulic, accident and radiological evaluations. It also includes appendices to document ZIRLO™ material properties, support fuel rod performance, and provide LOCA models and evaluations. WCAP-12610-P-A was approved in NRC Safety Evaluations issued on July 1, 1991 and October 9, 1991. These Safety Evaluations approved the use of VANTAGE+ fuel design, i.e., ZIRLO™ clad fuel and found it acceptable for up to a rod-average burnup level of 60,000 MWD/MTU. Therefore, the proposed change to the VEGP Technical Specifications is an administrative change indicating the expected use of fuel cladding at VEGP which has already been generically accepted by the NRC.

Summary

Based on the information discussed above, the following conclusions can be reached with respect to 10 CFR 50.92.

The proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated because:

The methodologies used in the accident analyses remain unchanged. The proposed change does not change or alter the design assumptions for the systems or components used to mitigate the consequences of an accident. Use of ZIRLO™ fuel cladding does not adversely affect fuel performance or impact nuclear design methodology. Therefore, accident analysis results are not significantly impacted.

The operating limits will not be changed and the analysis methods to demonstrate operation within the limits will remain in accordance with NRC-approved methodologies. Other than the changes to the fuel assemblies cladding, there are no physical changes to the plant associated with this Technical Specification change. A safety analysis will continue to be performed for each specific reload cycle to demonstrate compliance with all fuel safety design bases.

ENCLOSURE 2 (continued)

10 CFR 50.92 EVALUATION

The 10 CFR 50.46 criteria are applied to the ZIRLOTM clad fuel rods. The use of these fuel assemblies will not result in a change to the reload design and safety analysis limits. Since the original design criteria are met, the ZIRLOTM clad fuel rods will not be an initiator for any new accident. The clad material is similar in chemical composition and has similar physical and mechanical properties as Zircaloy-4. Thus, the cladding integrity is maintained and the structural integrity of the fuel assembly is not affected. ZIRLOTM cladding improves corrosion performance and dimensional stability. Since the dose predictions in the safety analyses are not sensitive to the fuel rod cladding material used, the radiological consequences of accidents previously evaluated in the safety analysis remain valid.

The proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated because:

The possibility for a new or different kind of accident from any accident previously evaluated is not created since the fuel assemblies containing ZIRLOTM clad fuel rods will satisfy the same design bases as that currently used for Zircaloy-4 clad fuel assemblies. All design and performance criteria will continue to be met and no new single failure mechanisms have been defined. In addition, the use of ZIRLOTM fuel assemblies does not involve any alterations to plant equipment or procedures which would introduce any new or unique operational mode or accident precursor. Therefore, the possibility for a new or different kind of accident from any accident previously evaluated is not created.

The proposed change does not involve a significant reduction in a margin of safety because:

The margin of safety is not significantly reduced since the ZIRLOTM clad fuel assemblies will not change the reload design and safety analysis limits. Their use will take into consideration the normal core operating conditions allowed for in the Technical Specifications. Each specific cycle's reload core will continue to be specifically evaluated using NRC approved reload design methods and approved fuel rod design models. This will include consideration of the core physics analysis peaking factor and core average linear heat rate effects.

Conclusion

Based upon the preceding analysis, GPC has determined that the proposed change to the Technical Specification Design Features section 5.3.1 meets the requirements of 10 CFR 50.92 (c) and does not involve a significant hazards consideration.