July 19, 2004

Mr. James J. Sheppard
President and Chief Executive Officer
STP Nuclear Operating Company
South Texas Project Electric
Generating Station
P. O. Box 289
Wadsworth, TX 77483

SUBJECT: SOUTH TEXAS PROJECT, UNITS 1 AND 2 - ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT RELATED TO THE EXEMPTION FROM THE REQUIREMENTS OF TITLE 10 OF THE *CODE OF FEDERAL REGULATIONS* (10 CFR) PART 50, SECTION 50.44, SECTION 50.46 AND APPENDIX K (TAC NOS. MC3368 AND MC3369)

Dear Mr. Sheppard:

Enclosed is a copy of the Environmental Assessment and Finding of No Significant Impact related to your application for exemptions from the requirements of 10 CFR 50.44, 10 CFR 50.46, and Appendix K. The proposed exemptions would allow the use of eight lead test assemblies containing fuel rods, guide thimble tubes, and instrumentation tubes fabricated with Optimized ZIRLO™, a cladding material that contains a nominally lower tin content than the already approved ZIRLO™ material. This action is in response to your letter dated May 27, 2004.

The assessment is being forwarded to the Office of the Federal Register for publication.

Sincerely,

/RA/

David H. Jaffe, Senior Project Manager, Section 1
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-498 and 50-499

Enclosure: As stated

cc w/encl: See next page

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Dear Mr. Sheppard:

Enclosed is a copy of the Environmental Assessment and Finding of No Significant Impact related to your application for exemptions from the requirements of 10 CFR 50.44, 10 CFR 50.46, and Appendix K. The proposed exemptions would allow the use of eight lead test assemblies containing fuel rods, guide thimble tubes, and instrumentation tubes fabricated with Optimized ZIRLO™, a cladding material that contains a nominally lower tin content than the already approved ZIRLO™ material. This action is in response to your letter dated May 27, 2004.

The assessment is being forwarded to the Office of the Federal Register for publication.

Sincerely,
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David H. Jaffe, Senior Project Manager, Section 1
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UNITED STATES NUCLEAR REGULATORY COMMISSION

SOUTH TEXAS PROJECT NUCLEAR OPERATING COMPANY

DOCKET NOS. 50-498 AND 50-499

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION, UNIT NOS. 1 AND 2

ENVIRONMENTAL ASSESSMENT AND FINDING OF

NO SIGNIFICANT IMPACT

The U.S. Nuclear Regulatory Commission (NRC) is considering issuance of exemptions from Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Section 50.44, Section 50.46, and Appendix K, for Facility Operating License Nos. NPF-76 and NPF-80, issued to South Texas Project Nuclear Operating Company (the licensee), for operation of South Texas Project Electric Generating Station (STPEGS), Units 1 and 2, located in Matagorda County, Texas. Therefore, as required by 10 CFR 51.21, the NRC is issuing this environmental assessment and finding of no significant impact.

ENVIRONMENTAL ASSESSMENT

Identification of the Proposed Action:

The proposed action would exempt STPEGS, Units 1 and 2, from the requirements of 10 CFR Part 50, Section 50.44, Section 50.46 and Appendix K, to allow the use of up to eight Lead Test Assemblies (LTAs) fabricated with Optimized ZIRLO™, a cladding material that contains a nominally lower tin content than previously approved cladding materials.

The proposed action is in accordance with the licensee's application dated May 27, 2004.

The Need for the Proposed Action:

As the nuclear industry pursues longer operating cycles with increased fuel discharge burnups and more aggressive fuel management, the corrosion performance specifications for

the nuclear fuel cladding become more demanding. Industry data indicates that corrosion resistance improves for cladding with a lower tin content. The optimum tin level provides a reduced corrosion rate while maintaining the benefits of mechanical strengthening and resistance to accelerated corrosion from abnormal chemistry conditions. In addition, fuel rod internal pressures (resulting from the increased fuel duty, use of integral fuel burnable absorbers, and corrosion/temperature feedback effects) have become more limiting with respect to fuel rod design criteria. By reducing the associated corrosion buildup, and thus, minimizing temperature feedback effects, additional margin to fuel rod internal pressure design criteria is obtained.

As part of a program to address these issues, the Westinghouse Electric Company has developed an LTA program, in cooperation with the licensee, that includes a fuel cladding with a tin content lower than the currently licensed range for ZIRLO™. The NRC's regulations in 10 CFR Part 50, Section 50.44, Section 50.46, and Appendix K, make no provision for use of fuel rods clad in a material other than Zircalloy or ZIRLO™. The licensee has requested the use of up to eight LTAs with a tin composition that is less than that specified in the licensing basis for ZIRLO™, as defined in Westinghouse design specifications. Therefore, use of the LTAs calls for exemptions from 10 CFR Part 50, Section 50.44, Section 50.46, and Appendix K.

Environmental Impacts of the Proposed Action:

The NRC staff has completed its safety evaluation of the proposed action and concludes that the proposed exemptions would not increase the probability or consequences of accidents previously analyzed, and would not affect facility radiation levels or facility radiological effluents that may be released offsite. There is no significant increase in occupational or public radiation exposure. Therefore, there are no significant radiological environmental impacts associated with the proposed action. The details of the staff's safety evaluation will be provided in the exemption that will be issued as part of the letter to the licensee approving the exemption to the

regulation.

With regard to potential non-radiological impacts, the proposed action does not have a potential to affect any historic sites. It does not affect non-radiological plant effluents and has no other environmental impact. Therefore, there are no significant non-radiological environmental impacts associated with the proposed action.

Accordingly, the NRC staff concludes that there are no significant environmental impacts associated with the proposed action.

Environmental Impacts of the Alternatives to the Proposed Action:

As an alternative to the proposed action, the NRC staff considered denial of the proposed action (i.e., the "no-action" alternative). Denial of the application would result in no change in current environmental impacts. The environmental impacts of the proposed action and the alternative action are similar.

Alternative Use of Resources:

The action does not involve the use of any different resources than those previously considered in the "Final Environmental Statement related to the Operation of South Texas Project Units 1 and 2," NUREG-1171, dated August 1986.

Agencies and Persons Consulted:

On June 23, 2004, the staff consulted with the Texas State official, Mr. William Silva, Bureau of Radiation Control of the Texas Department of Health, regarding the environmental impact of the proposed action. The State official had no comments.

FINDING OF NO SIGNIFICANT IMPACT

On the basis of the environmental assessment, the NRC concludes that the proposed action will not have a significant effect on the quality of the human environment. Accordingly, the NRC has determined not to prepare an environmental impact statement for the proposed action.

For further details with respect to the proposed action, see the licensee's letter dated May 27, 2004. Documents may be examined, and/or copied for a fee, at the NRC's Public Document Room (PDR), located at One White Flint North, Public File Area O1 F21, 11555 Rockville Pike (first floor), Rockville, Maryland. Publicly available records will be accessible electronically from the Agencywide Documents Access and Management System (ADAMS) Public Electronic Reading Room on the internet at the NRC Web site, http://www.nrc.gov/reading-rm/adams.html. Persons who do not have access to ADAMS, or who encounter problems in accessing the documents located in ADAMS, should contact the NRC's PDR Reference staff by telephone at 1-800-397-4209 or 301-415-4737, or by e-mail to pdr@nrc.gov.

Dated at Rockville, Maryland, this 19th day of July 2004.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Robert A. Gramm, Chief, Section 1
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

South Texas Project, Units 1 & 2

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