

# ABSTRACT

This Final Safety Evaluation Report<sup>1</sup> (FSER) documents the U.S. Nuclear Regulatory Commission (NRC) staff's technical review of the combined license (COL) application submitted by South Texas Project Nuclear Operating Company (STPNOC), and later assumed by Nuclear Innovation North America LLC<sup>2</sup> (NINA, or the applicant) for the South Texas Project Units 3 and 4 (STP 3 and 4). The FSER also documents the NRC staff's technical review of the exemptions for which the applicant has requested approval.

By letter dated September 20, 2007, STPNOC, acting on behalf of itself and the proposed owners, submitted its application to the NRC for two Advanced Boiling Water Reactors (ABWRs) pursuant to the requirements of Sections 103 and 185b. of the Atomic Energy Act of 1954, as amended (AEA). STPNOC requested licenses under Title 10 of the *Code of Federal Regulations* (10 CFR) Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants," and the associated material licenses under 10 CFR Part 30, "Rules of General Applicability to Domestic Licensing of Byproduct Material"; 10 CFR Part 40, "Domestic Licensing of Source Material"; and 10 CFR Part 70, "Domestic Licensing of Special Nuclear Material." The STP 3 and 4 reactors and will be located on the existing South Texas Project Electric Generating Station site in Matagorda County, Texas.

On January 24, 2011, NINA became the lead applicant for the STP 3 and 4 COL application, with STPNOC remaining as the operator. As such, NINA assumed responsibility for design, construction, and licensing prior to operation of STP 3 and 4. STPNOC would be the licensed operator for the STP 3 and 4, as it currently is for the existing STP Units 1 and 2. The owners of STP 3 and 4 would be NINA Texas 3 LLC, NINA Texas 4 LLC, and the City of San Antonio, Texas, acting by and through the City Public Service Board.

The STP 3 and 4 COL application incorporates by reference the ABWR certified design, as documented in Appendix A, "Design Certification Rule for the U.S. Advanced Boiling Water Reactor," to 10 CFR Part 52. The STP 3 and 4 COL application also incorporates by reference the STP Nuclear Operating Company amendment to the design certification rule for the U.S. ABWR, "ABWR STP Aircraft Impact Assessment (AIA) Amendment," Revision 3, dated September 2010.

This FSER presents the results of the staff's review of information submitted in conjunction with the COL application. In Appendix A to this FSER, the staff has identified certain license conditions and inspections, tests, analyses, and acceptance criteria that the staff recommends be imposed should COLs be issued to the applicant.

The staff's review<sup>3</sup> of the application, as documented in this FSER, supports the following findings with respect to the safety aspects of the COL application: 1) the applicable standards

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<sup>1</sup> This FSER documents the NRC staff's position on all safety issues associated with the combined license application. The Advisory Committee on Reactor Safeguards (ACRS) independently reviewed those aspects of the application that concern safety, as well as the advanced SER without open items (an earlier version of this document), and provided the results of its review to the Commission in a report dated February 5, 2015. That report is included as Appendix F to this FSER.

<sup>2</sup> By letter dated January 24, 2011, the applicant informed the NRC staff that effective January 26, 2011, NINA became the lead applicant for STP 3 and 4, with STPNOC remaining as the operator.

<sup>3</sup> An environmental review of the COL was also performed, and its evaluation and conclusions are documented in NUREG-1937, "Environmental Impact Statement for Combined Licenses (COLs) for

and requirements of the AEA and Commission regulations have been met; 2) required notifications to other agencies or bodies have been duly made; 3) there is reasonable assurance that the facilities will be constructed and will operate in conformity with the licenses, the provisions of the AEA, and the Commission's regulations; 4) the applicant is technically and financially qualified to engage in the activities authorized; and 5) issuance of the licenses will not be inimical to the common defense and security or to the health and safety of the public.