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MFN 07-044
January 26, 2007

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: **Submittal of ABWR Licensing Topical Report (LTR) Synopsis and Table of Contents**

Reference: ABWR Licensing Topical Report schedule presented to NRC Staff on December 14, 2006

During the NRC public meeting on December 14, 2006, GE and STP identified plans to submit fifteen (15) Licensing Topical Reports (LTRs) regarding the ABWR certified design. The NRC Project Manager for South Texas Project (STP) Units 3&4 requested a synopsis and table of contents for each of the LTRs identified in order to plan for allocation of the resources needed to perform the LTR reviews.

The attachment provides a synopsis and the anticipated Table of Contents, as well as a proposed review schedule for each LTR. NRC approval of these pre-application review results is important to assuring project resources are aligned with NRC expectations.

The decision-making process for submittal of LTRs remains focused on standardization of the US ABWR design certification information and increased details for site specific issues. Additional LTRs are under consideration. GE will submit the LTRs linked to the certified design; site specific LTRs will be submitted by STP. The US ABWR LTRs will be submitted in 2007.

T010
Add: G. F. Wunder

If you have any questions about the information provided here, or during the course of your reviews, please contact me at 408-925-1822.

Sincerely,

S. J. Stark

Steven J. Stark
Project Manager, ABWR Licensing

Enclosure: Synopsis of LTRs and Table of Contents

cc:

SJ Stark	GE (San Jose w/ enclosure)
GB Stramback	GE (San Jose w/o enclosure)
GF Wunder	NRC (w/ enclosure)
MA McBurnett	STP (w/ enclosure)

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Attachment to MFN 07-044
January 26, 2007

Title of LTR	Submit to NRC	Synopsis of LTR	Items to be included in Table of Contents (Planned)	RAIs (if needed)	Draft Safety Evaluation	LTR Approval Needed By:
Alternate RCIC Pumps	12/29/06 (12/20/06) actual	This LTR is generated to obtain NRC approval of a generic change in the design certification for the U.S. ABWR certified design, in accordance with planned revisions to 10 CFR 52.63. The design change involves replacement of certain portions of the Reactor Core Isolation Cooling turbine and pump system design with an integrated alternate turbine-pump system design. Operating experience is examined. Qualification information for the proposed changes are documented. The safety basis for the proposed change is examined. The alternate design will result in improvements in performance and reliability of the system. These proposed changes are to both Tier 1 and Tier 2 of the ABWR Design Control Document, Revision 4. These proposed changes were developed during performance of first-of-a-kind-engineering for the ABWR.	Description of Certified Design Description of Proposed Departure Justification for Departure Qualification Information Description of The TWL Type Alternate Design Operating Experience Nuclear Safety Review Consistency with ABWR Design Control Document (DCD) Descriptions of DCD Markup	06/29/07	09/28/07	12/29/07

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Plant Procedures Development Plan	01/31/07 (01/19/07) actual	This LTR prescribes and guides the conduct of procedure development for the US ABWR. Regulatory requirements are identified. This implementation plan meets the requirements of ABWR Design Control Document/Tier 2 sections 13.5.3.1 through 13.5.3.4. The scope of the procedures covered in this Implementation Plan includes the following categories: Administrative Procedures, Maintenance and Other Procedures, Plant Operating Procedures, Emergency Operating Procedures (EOP). Types of procedures in each category are specified. The generic processes for development of procedures are described. Links to TMI Action Items are specified. Verification and validation requirements are identified.	Reference Documents Supporting Documents Codes and Standards Regulation and Regulatory Requirements Implementation Plan Administrative Procedures Development Maintenance and Other Procedures Development Plant Operating Procedures Development Emergency Operating Procedures Development Additional Requirements Procedures Included in Scope of Plan Administrative Procedures Maintenance and Other Procedures Procedures for Radiation Control Integrated Operating Procedures System Operating Procedures Alarm (Anunciator) Response Procedures Abnormal Operating Procedures Surveillance Test Procedures Emergency Operating Procedures	07/31/07	10/30/07	01/29/08

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Startup Administrative Manual	02/28/07	This LTR is provided to respond to a COL Information Item required per subsection 14.2.13.2 of the DCD. A startup administrative manual defining various administrative controls to be in place during the initial plant test program is required per 14.2.13.2 items (5) – (9). The purpose of this document is to provide a written outline of methods and practices for administering the Initial Test Program for the ABWR. This manual establishes methods for controlling the start of testing, for performing tests, for preparing and modifying approved procedures, for identifying and correcting test exceptions, and for reviewing and approving test results.	Purpose and Scope Applicable Documents Supporting and Supplemental Documents Codes and Standards Regulations and Regulatory Requirements Startup Organization and Responsibilities Initial Test Program Planning -Scheduling Test Plateaus Test Sequence Startup Test Program Planning Startup Test Program Scheduling Conduct of Testing Distributions and Control of Procedures Adherence to Procedures Use of Procedures Performance of Pre-op and Startup Tests Test Procedure and Test Control Content of Test Procedures Preparation, Initial Review, and Approval Procedure Modifications Test Results Review and Acceptance	08/29/07	11/28/07	02/27/08

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ABWR Safety Related I&C Architecture	04/02/07	This LTR will define and justify departures from Tier 1 DCD I&C architecture. Evolution of digital technology has made certain DCD criteria obsolete. Safety features and objectives of the certified design will not be reduced. The safety basis will be provided. These changes are generic and will be the basis for an amendment to the DCD. Three basic changes will be discussed: -Integration of features and functions that are now described as being the "Essential Multiplexing System" into the SSLC Architecture. This system will no longer be described as a separate system. -Replace certain hardware descriptions with functional descriptions. Certain nomenclature and figures used in the current DCD material state and/or imply the use of separate hardware components for functions that that do not necessarily need to be in separate hardware components. -Clarify the application of ESF channels within safety divisions; how prevention of inadvertent ECCS injections and depressurization is accomplished in the event of single processor failures.	Background/Reason for Change General Scope of Changes Detailed Discussion of Each Change Integration of Essential Multiplexing System into the SSLC Architecture Replacement of Hardware Descriptions with Functional Descriptions Clarification of Application of ESF Channels within Safety Divisions Discussion of Associated Tier 2 Changes Failure Mode / Effect and Reliability Impact Impact on Plant Operation and Maintenance Impact of Implemented Design on SSAR Chapter 15 Safety Analyses Safety Impact of Implemented Design Acronym Glossary	10/01/07	01/02/08	04/02/08

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APRM Oscillation Monitoring Logic (OPRM)	04/02/07	This LTR is provided to respond to a COL Information Item required per subsection 7.6.3.1 of the DCD. The BWROG Stability Solution Option III is applied to the OPRM design. These changes will deviate from the certified design. The major changes are: (1) the time constant of the Butterworth signal filter is changed; (2) the Backup Stability Protection regions are established for operation when OPRM is inoperative; (3) the Period-Based Detection Algorithm settings (cut-off frequency, period tolerance, maximum period, and minimum period) are modified to resolve the unexpected Confirmation Count reset concern; (4) an Option III Trip enabled region will be added and the "Region III" in the original DCD is eliminated, (5) an OPRM Inoperative trip is separated from the APRM Inoperative trip; and (6) the OPRM 2/4 trip logic is performed separately from other APRM trips. The OPRM LTR will revise the STP DCD Section 7.6.1.1.2.2, including any text, tables, figures, appendices, and data that are necessary for NRC review per NEDO-32465-A.	Description Of the Design Justification for Departure Qualification Information Operating Experience Nuclear Safety Review Consistency with ABWR DCD Descriptions of DCD Markups Figures LPRM Assignment to OPRM Channels OPRM Logic Appendix ABWR DCD Significant Tier 2 Changes	10/01/07	01/02/08	04/02/08

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Vibration Assessment Program	04/19/07	The ABWR DCD Subsection 3.9.2.4 and COL Information Item 3.27 are the bases for this LTR. This LTR will provide the results of the vibration assessment program for the ABWR prototype internals, a requirement for the first ABWR COL applicant. These results will include the information specified in Regulatory Guide 1.20. NRC review and approval of the above information on the first COL applicant's docket will complete the vibration assessment program requirements for prototype reactor internals. Furthermore, the first COL applicant will provide the information on the schedules in accordance with the applicable portions of position C.3 of Regulatory Guide 1.20 for non-prototype internals. Subsequent COL applicants need only provide the information on the schedules in accordance with the applicable portions of position C.3 of Regulatory Guide 1.20 for non-prototype internals.	Summary And Conclusions Test Description Component Selections Sensor Locations Test Conditions Data Reduction Methods Time History Analysis Frequency Analysis Data Evaluation Methods Finite Element Models Stress Evaluation Results And Discussion In-Core Monitor Guide Tubes In-Core Monitor Housings Control Rod Guide Tubes And Cr Drive Housings Core Flooder Sparger Core Flooder Coupling And Thermal Ring Shroud Steam Dryer Pressure Sensors Summary Of Component Maximum Stresses Appendix Unbalanced, Steady State Pumping Configurations	10/18/07	01/17/08	04/17/08

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Materials and Surveillance Capsule	04/19/07	This LTR will respond to FSAR COL Information Item - 5.5 (FSAR 5.3.4.2) – RPV Material Surveillance Program. Two reports are necessary. The initial report will identify: 1) the specific materials in each surveillance capsule, 2) the capsule lead factors 3) the withdrawal schedule for each surveillance capsule, 4) the neutron fluence to be received by each capsule at the time of its withdrawal, and 5) the vessel end-of-life peak neutron fluence. See Subsection 5.3.1.6.4. The ABWR DCD is the basis for this requirement. The initial report will provide estimated values of lead factors, capsule and RPV peak EOL fluence data. Existing ABWR operating experience data will be identified. The final report will be prepared following completion of the fuel and core design and fluence analysis.	Codes and Standards Description of Plan Surveillance Capsule Withdrawal Schedule RPV Material Surveillance Program Surveillance Test Specimens Location of Installed Specimen Fluence and Lead Factors Operation of Reactor Normal Heating & Temperature Change Rate Minimum RPV Temperature	10/18/07	01/17/08	04/17/08

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Common Equipment and Structures	04/19/07	The LTR will describe the STP two unit ABWR site layout and design of structures and systems in relationship to the certified design, and building footprints. Shared structures and systems including Radwaste building and equipment, firewater pump house and equipment, and the circulating water intake and discharge structures and equipment will be described. The amendment will indicate that the common systems are only applicable to a 2-unit plant, and that the existing DCD (Revision 4) continues to apply to a 1-unit plant.	Certified Design Layout Description of Buildings Proposed Changes Common Radwaste Building and Equipment Common Firewater Pump House Equipment Common Circulating Water Intake and Discharge Structure and Equipment DCD Markups Nuclear Safety Review	10/18/07	01/17/08	04/17/08

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Startup Test Specifications	04/30/07	This LTR responds to a COL Information Item per 14.2.13.1 and 14.2.13.2 of the DCD. A "scoping document" covering the initial startup test program is required, 14.2.13.2 item (1), will include "other testing" as needed per 14.2.13.1. This LTR examines the Startup Test Phase in three parts: 1) initial fuel loading and open vessel testing; 2) testing during nuclear heatup to rated temperature and pressure (approximately 5% of rated power); and 3) power ascension tests from 5 to100 % of rated power. The Startup Test Program evaluates safety concerns and performance warranties. The tests listed represent the minimum startup tests required to be performed. Required tests and operating conditions are defined. The test purpose, a brief discussion of the test methods and philosophy, and the test criteria for each test are included. A list of signals (process parameters) that are to be available during each specified test is included. LTR will be based on SRP 14.2.	Specification Scope Power-Flow Operating Map Startup Test Conditions Startup Test Sequence Test Criteria Definitions Applicable Documents Supporting and Supplemental Documents Codes and Standards Regulations and Regulatory Requirements General Design Basis Individual Test Requirements Startup Test Signal List (LTR = ~150 pages)	10/29/07	02/01/08	04/28/08

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Plant Medium Voltage Electrical System	05/18/07	This LTR will define certain departures from Tier 2 DCD material in Chapter 8 related to the medium voltage electrical distribution system. Specifically, it covers the change from a single 6.9kV to a dual 13.8kV/4.16kV system. This change is necessary to make practical use of commercially available equipment, which was not possible with the single 6.9kV conceptual design described in the DCD. No Tier 1 or Tier 2* material is affected by this change.	Description Of Certified Design Description Of Proposed Departure Justification for Departure Nuclear Safety Review Descriptions of DCD Markup	11/16/07	02/15/08	05/16/08
Alternate Hydrogen Control	05/18/07	This LTR is generated to obtain US Nuclear Regulatory Commission approval of a generic change in the design certification for the U.S. ABWR design, in accordance with planned revisions to 10 CFR 52.63. The design change involves deletion of the hydrogen recombiner equipment from the ABWR design. The nuclear safety basis for the proposed change will be established. The proposed changes will be an amendment request or generic LTR applicable to both Tier 1 and Tier 2 of the ABWR DCD Revision 4, US NRC Docket #52-001.	Description Of Certified Design Description Of Proposed Departure Justification for Departure Nuclear Safety Review Descriptions of DCD Markup	11/16/07	02/15/08	05/16/08

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Life Cycle Management Program	05/18/07	This LTR is provided to respond to a COL Information Item required per subsection 1.2.3.1 of the DCD. The design life for STP is 60 years. The license for the STP plant is initially for 40 years. STP may apply for license renewal for an additional 20 years in accordance with the License Renewal Rule 10 CFR 54. GE intends to develop a design life plan (also known as "life cycle management (LCM)" plan) that includes a design life classification system, condition monitoring and plant environmental monitoring system. The design life plan will identify the information that STP will need to submit a license renewal application to extend the license by 20 years. The LCM plan is to define an integrated program to optimize plant performance, managing aging, and controlling the lifetime of the STP plant and its systems, structures and components. STP will develop life cycle management program during plant operation.	Plant Design Life Plan Design Life Classification System Condition Monitoring Environmental Monitoring System Aging Management Plan Life Cycle Management Program Development Plan	11/16/07	02/15/08	05/16/08

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Pre-Operational Test Specifications	06/01/07	This LTR will respond to a COL Information Item required per subsections 14.2.13.1 and 14.2.13.2 of the DCD. A "scoping document" covering the preoperational test program is required, 14.2.13.2 items (1) – (3), which will also includes "other testing" as needed per 14.2.13.1. The Initial Test Program is composed of phases categorized as Construction, Preoperational, and Startup Tests. This specification deals with the requirements for the Preoperational Test phase. In general, Preoperational tests are those tests normally conducted prior to fuel loading to demonstrate the capability of plant systems to meet performance requirements. The requirements in this specification represent the minimum tests required to be performed during the Preoperational Test Program.	Applicable Documents Supporting and Supplemental Documents Codes and Standards Regulations and Regulatory Requirements Preoperational Test Sequence Test Criteria Definitions Test Specification Definitions General Design Basis Compliance with Water Quality and Environmental Requirements Appendix Preoperational Test Specifications (LTR = ~ 1500 pages)	12/03/07	03/03/08	06/02/08

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Meteorological Measurements Program	06/04/07	This LTR will provide the site-specific response for COL License Information: "2.3.2.8 Onsite Meteorological Measurements Program." This item specifically requests, "COL applicants will provide the onsite meteorological measurements program." The LTR will provide the information for the STP Units 3 and 4 COLA FSAR section on the onsite meteorological measurements program, including any text, tables, figures, appendices, and data that is necessary for the NRC to review and conclude acceptability of the program. The LTR will be structured to support the areas of review and acceptance criteria provided in Standard Review Plan (SRP) 2.3.3. The content of the LTR will support an evaluation of the program against the guidance of the SRP revision mandated by the regulations in effect at the time of the STPEGS Units 3 and 4 COLA submittal.	Onsite Meteorological Measurements Program General Program Description Pre-Operational and Operational Programs Instrument Siting Sensors Recording of Sensor Output Information Collection and Displays for Emergency Preparedness Instrument Surveillance Data Acquisition and Reduction Special Considerations for Complex Terrain Standard Review Plan Evaluation	12/03/07	03/03/08	06/02/08

Title of LTR	Submit to NRC	Synopsis of LTR	Items to be included in Table of Contents (Planned)	RAIs (if needed)	Draft Safety Evaluation	LTR Approval Needed By:
Ultimate Heat Sink (UHS) Design	08/17/07	The ABWR Ultimate Heat Sink (UHS) removes the heat load of the Reactor Service Water (RSW) System during normal, shutdown, and emergency operating modes. The UHS is not within the ABWR certified design and portions of the RSW System that are outside the Control Building are also not within the certified design. DCD Tier 1, Section 4.1 provides the interface requirements for the UHS and Section 2.11.9 provides the design description and interface requirements for RSW System. DCD Tier 2, Section 9.2.5 describes a Spray Pond as the conceptual design for UHS. The Spray Pond concept is not practical on a site-specific basis for the STP Units 3&4 because of the ambient conditions and RSW System design basis cold water temperature requirement. Therefore, the conceptual design information in Tier 2, Section 9.2.5 will be replaced with information describing the use of Mechanical Draft Cooling Towers with a Storage Basin as the UHS for STPEGS Units 3 and 4. (Continued)	Safety Design Bases Power Generation Design Bases Codes and Standards General System Description Component Description System Operation System Performance Meteorological Criteria Safety Evaluation Inspection and Testing Requirements Instrumentation Requirements Standard Review Plan Evaluation Tables: Ultimate Heat Sink Process Parameters Ultimate Heat Sink Heat Loads Ultimate Heat Sink Design LOCA Case Ultimate Heat Sink Performance Ultimate Heat Sink Equipment Data	02/19/08	05/20/08	08/19/08

		The mechanical draft cooling towers for each unit will be designed in three mechanically and electrically separated divisions to *remove heat from the RSW System.* The cooling towers will have a common basin. The UHS design will be in conformance with Standard Review Plan (SRP) Section 9.2.5. The UHS LTR will provide any text, tables, figures, appendices, and data that are necessary for the NRC to review and conclude acceptability of the UHS design. The LTR will be structured to support the areas of review and acceptance criteria provided in SRP Section 9.2.5. The content of the LTR will support an evaluation of the UHS design against the guidance of the SRP revision mandated by the regulations in effect at the time of the COLA submittal.	*Figures:* Location Plan and General Arrangement Plan View UHS Cooling Tower and Basin Section Views - UHS Cooling Tower Reactor Service Water System Flow Diagram			