



GE Energy

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MFN 06-053

Docket No. 52-010

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U.S. Nuclear Regulatory Commission  
Document Control Desk  
Washington, D.C. 20555-0001

**Subject:** Reply to Notice of Nonconformance NRC Inspection Report  
05200010/2005-201, dated January 11, 2006.

The purpose of this document is to provide a response to the subject Inspection Report (Reference 1). Attachment #1 addresses the Nonconformances identified in section 1.1 of the subject Inspection Report. Attachment # 2 addresses the Unresolved Items identified in section 1.2 of the subject Inspection Report. Each Attachment provides a description of actions to correct the identified findings, a description of actions to prevent recurrence, and the completion dates of all corrective actions and preventive measures.

We will continue to work toward completion of the required actions and provide you with periodic updates upon request.

If you have any questions, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'David Hinds'.

David H. Hinds,  
Manager, ESBWR

DO68  
IEO1

**Reference:**

1. MFN 06-031, Letter from U.S. Nuclear Regulatory Commission to David H. Hinds, *NRC Inspection Report 05200010/2005-201 and Notice of Nonconformance*, January 11, 2006

**Attachments:**

1. GE Response to INSPECTION REPORT 05200010/2005-201 – Nonconformance
2. GE Response to INSPECTION REPORT 05200010/2005-201 – Unresolved Items

**cc:** WD Beckner USNRC (w/o enclosures)  
AE Cabbage USNRC (with enclosures)  
LA Dudes USNRC (w/o enclosures)  
RP McIntyre USNRC (with enclosures)  
GB Stramback GE/San Jose (with enclosures)

Attachment #1

GE Response to INSPECTION REPORT 05200010/2005-201 - Nonconformance

**Nonconformance 05200010/2005-201-01**

GENE did not implement the ESBWR design control process as required by the GENE QA program. This is evidenced by the following examples: (1) a letter was not prepared documenting the revised completion date of the ESBWR Design Control Document (DCD) verification when the schedule was not met; (2) the work plan/detailed schedule for the ESBWR project was not maintained or updated; and (3) design and verification documentation was not complete prior to ESBWR DCD design verification. This issue has been identified as Nonconformance 05200010/2005-201-01.

Response: CAR 40517 identifies the actions to address Nonconformance 05200010/2005-201-01.

**CAR 40517**

- Corrective Action #1:** Issue a letter from David Hinds to U.S. Nuclear Regulatory Commission to document the revised completion date of the DCD verification.
- Action Completion:** Letter was sent to the U.S. Nuclear Regulatory Commission on November 22 to document the revised completion date of the DCD verification. The document identification is MFN 05-139.
- Completion Date:** November 22, 2005
- Corrective Action #2:** Revise the Work Plan for ESBWR Licensing and Construction to document customer or internally initiated changes.
- Due Date:** March 24, 2006
- Corrective Action #3:** Create a Phase II Project schedule.
- Due Date:** February 24, 2006
- Corrective Action #4:** Ensure appropriate supporting documents are listed for the ICS system design specification.
- Due Date:** June 23, 2006
- Preventive Action #1:** Review this CAR with all ESBWR design engineers to stress the importance of referencing appropriate supporting documentation and review the verification process.
- Due Date:** February 24, 2006

**Nonconformance 05200010/2005-201-02**

External supplier audits performed by the GENE Nuclear Quality Assurance (NQA) Quality System group for three suppliers of engineering services for ESBWR design activities (Black and Veatch Corporation; Empresarios Agrupados Internacional, S.A.; and Shimizu Corporation), did not identify and audit/document against the appropriate QA program requirements (American National Standards Institute/ American Society of

Mechanical Engineers [ANSI/ASME] NQA-1-1983), consistent with the Chapter 17 of the ESBWR DCD and the NEDO-11209-04A topical report. Additionally, GENE did not document the completion of either the Corrective/Preventive Actions identification or the Response/Closure portions of the GENE CARs for the findings identified during the Quality System audits at ESBWR team participants: Black and Veatch Corporation; Empresarios Agrupados Internacional, S.A.; and Shimizu Corporation.

Response: CAR 40518 identifies the actions to address Nonconformance 05200010/2005-201-02.

**CAR 40518**

**Corrective Action #1:** Assure EA, Shimizu and B&V quality programs being applied to the ESBWR Project meet the requirements of NQA-1 1983 Edition.

**Action Completion:** Empresarios Agrupados (EA) was audited in May 2005. EA has only one quality program that they apply to both Lungmen and the ESBWR Project. EA's quality program meets the requirements of NQA-1 1983 Edition. This has been established by the annual audits performed for the Lungmen Project.

Shimizu was audited in June 2005. Shimizu applied the approved Lungmen quality program to the ESBWR work. Shimizu's Lungmen quality program meets the requirements of NQA-1 1986 Edition. GE accepts the 1986 Edition as being equivalent to NQA-1 1983 Edition.

Black & Veatch (B&V) was audited in September 2005. B&V's quality program has been evaluated to the requirements of ANSI N45.2 1971 Edition plus daughter standards, NQA-1 1983 Edition and NQA-1 1986 Edition based on audit performed for the Services organization and the Lungmen Project.

**Completion Date:** January 27, 2006

**Corrective Action #2:** Request responses to Corrective Action Requests from EA, Shimizu and B&V. Assure closure schedule has been established.

**Action Completion:** EA response to the Corrective Action Request (CAR) from the audit in May 2005 was late at the time of the NRC inspection. A follow-up e-mail was sent to EA and they indicated they had completed their response, but had failed to forward the responses to GE. We now have their response dated November 21, 2005. The CAR response has been accepted. The actions are now complete and the CAR is being evaluated for closure.

Shimizu responded to the Corrective Action Requests issued as a result of the June 2005 audit on 8/30/2005, but none of

the CARs had been closed at the time of the NRC inspection. The CARs still have not been closed because some of the actions are not complete. Scheduled closure dates have been established for these actions. The CARs will be verified during the 2006 supplier audit scheduled for March 2006. During the audit, implementation of the corrective/preventive actions will be verified.

B&V had not responded to the Corrective Action Requests resulting from the audit at the time of the NRC inspection. B&V responded to the CARs on December 14, 2005. All of the responses have been accepted and B&V has submitted five of the CARs for closure acceptance and the remaining two CARs still have open actions that need to be completed. They have established closure dates for these actions.

**Completion Date:** January 27, 2006

**Preventive Action #1:** Assure new CTS Version 4 system provides adequate notification of Supplier due dates for response and closure documentation.

**Action Completion:** CTS Version 4 is now active (since September 2005) and all supplier CARs are being entered into this system. CTS Version 4 allows the CAR forms to be transmitted to the supplier for response and closure. The suppliers' response and closure statements are imported into CTS. The acceptance of each action is tracked in CTS. The due date for response is established by CTS and the supplier provides the action completion dates. CTS sends e-mails to the Lead Auditor and Process Owner (organization for which the supplier audit was performed) when the responses or corrective/preventive action completions are due. This allows the Lead Auditor the opportunity to contact the supplier before the actions are due. Notifications are issued periodically by CTS until the actions are complete. CTS Version 4 will greatly assist in having supplier responses and action completion submitted on time.

**Completion Date:** January 27, 2006

**Nonconformance 05200010/2005-201-03**

GENE has not been documenting and maintaining training records in a centralized training database as required by the GENE QA program.

**Response:** CAR 40519 identifies the actions to address Nonconformance 05200010/2005-201-03.

**CAR 40519**

**Corrective Action #1**

Update GENE Training Database for full ESBWR team roster and requirements.

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Due Date: March 10, 2006

Corrective Action # 2 Notify ESBWR staff to update training requirements with a 30-day commitment to complete training.

Due Date: March 10, 2006

Corrective Action # 3 Review ESBWR staff training records in the GENE Training Database to ensure staff has completed all required training per CA#1 & CA#2.

Due Date: April 14, 2006

Preventive Action # 1 Review with ESBWR staff the requirements of EOP 75-5.00, Quality and Technical Training.

Due Date: March 31, 2006

**Nonconformance 05200010/2005-201-04**

GENE did not perform internal self-audits of the ESBWR program as required by the GENE QA program. The 2005 schedule of internal audits did not reflect the ESBWR program, and discussions with the representatives from the General Electric (GE) Quality Systems and Services (QS&S) Group, who has corporate responsibility for internal self-assessments of various line organizations including the ESBWR program, indicated that none were planned or scheduled for the remainder of the year.

Response: CAR 40520 identifies the actions to address Nonconformance 05200010/2005-201-04.

CAR 40520

Corrective Action #1 Include ESBWR self-audit in 2006 QS&S Audit Schedule to be completed in the first quarter of 2006.

Action Completion: ESBWR was included in the 2006 QS&S Audit Schedule to be completed in the first quarter of 2006.

Completion Date: January 30, 2006

Corrective Action #2 Perform ESBWR self-audit.

Due Date: March 31, 2006

**Nonconformance 05200010/2005-201-05**

GENE did not complete the acceptance reviews associated with several ESBWR CARs within the 30-day period as required by the GENE QA program. Additionally GENE did not complete the implementation of corrective actions associated with a number of ESBWR-related CARs within the documented due dates or complete those corrective actions after the assigned due dates.

Response: CAR 40521 identifies the actions to address Nonconformance 05200010/2005-201-05.

CAR 40521

**Corrective Action #1**

Assign resources directly accountable for CAR performance:  
Assign ESBWR Engineering Responsible Engineer to track  
CAR process and actions and drive timely closure by ESBWR  
Engineering.

**Due Date:**

February 13, 2006

**Corrective Action #2**

Assign resources directly accountable for CAR performance:  
Assign one or more ESBWR QA Engineer(s) to track CAR  
process and actions and drive timely closure by ESBWR-  
related staff.

**Due Date:**

February 28, 2006

**Preventive Action #1**

Communicate to ESBWR Engineering team the individuals  
assigned to CAR performance initiative and remind staff to  
seek their support as needed to maintain CAR timeliness.

**Due Date:**

February 28, 2006

**Preventive Action #2**

Establish a regular CAR status meeting for the Manager,  
ESBWR Engineering, with the CAR Responsible Engineer as  
organizer, to manage CAR activities.

**Action Completion:**

A regular meeting to discuss status of ESBWR CARs has  
been established with the Manager, ESBWR Engineering.

**Completion Date:**

February 3, 2006

## Attachment #2

## GE Response to INSPECTION REPORT 05200010/2005-201 – Unresolved Items

**Unresolved Item 05200010/2005-201-01** - During the review of Chapter 17 of the ESBWR DCD, the NRC inspectors noted that it does not include an "Introduction" section that describes what the ESBWR QA program is based upon and how it will be implemented by GENE and its various domestic and international participants. The NRC inspectors noted that this information was included in the SBWR design certification submittal and was documented in SBWR Standard Safety Analysis Report (SSAR) 25A5113, Revision A. The NRC inspectors were unable to review or verify the activities associated with the transition from the SBWR to ESBWR design, particularly as it relates to the qualification test activities that were performed for the SBWR design in the mid-1990s and are being used to support the ESBWR design certification application. GENE is requested to provide appropriate documentation in a DCD Chapter 17 "Introduction" section describing the details of QA program and commitments, and background information regarding the transition from the SBWR to ESBWR design.

Response: CAR 40522 identifies actions to address Unresolved Item 05200010/2005-201-01.

## CAR-40522

## Corrective Action #1

For Revision 1 of the DCD, add to Chapter 17 an introduction outlining the basic responsibilities under the project QA system.

## Action Completion:

Section 17.0 Introduction and Table 17.0-1 were added to Revision 1 of 26A6642BW and issued.

## Completion Date:

February 6, 2006

## Corrective Action #2

Prepare a revision to the DCD providing a description of the design transition from the SBWR to the ESBWR and the use of the SBWR Test Program. (Note that a formal DCD revision may not coincide with the availability of this material, thus a preliminary copy of the section revision will be separately supplied if needed. The section revision will be included in a subsequent revision of the DCD.)

## Due Date:

June 30, 2006

**Unresolved Item 05200010/2005-201-02** - The NRC inspectors discussed with GENE personnel how best to recapture the design and test control implementation inspection documentation issued by the NRC staff for the SBWR design certification qualification testing activities cited above. To adequately document this design and test control implementation inspection documentation in Chapter 21 of the ESBWR Final Safety Evaluation Report (FSER), the NRC staff will need to recapture all of the NRC inspection reports, GENE responses to inspection findings, and NRC replies to the GENE responses. During the inspection at Wilmington, the NRC was told that these inspection records are located in the GE salt mine storage archives. The NRC staff will need GENE to recapture this documentation for FSER Chapter 21 purposes.



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Response: CAR 40523 identifies actions to address Unresolved Item 05200010/2005-201-02.

**CAR-40523**

**Corrective Action #1**

Assign an engineer to locate SBWR Design Record Files (DRF) and to arrange their transfer into the Electronic DRF (eDRF) database.

**Action Completion:**

An employee has been assigned the primary responsibility for locating and transferring SBWR DRFs into eDRF and to create reference tables for QA-related information subsequently located.

**Completion Date:**

January 26, 2006

**Corrective Action #2**

Locate and transfer SBWR DRFs to eDRF. Inspect DRFs loaded into database and build a reference to located quality-related records.

**Due Date:**

September 29, 2006