



Department of Energy

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SUMMARY OF THE INDEPENDENT ASSESSMENT OF THE BECHTEL SAIC COMPANY, LLC (BSC), ENGINEERING DESIGN CONTROL PROCESS

Reference: Ltr, Williams to Director, DHLWRS, dtd 7/7/06 (Response to NRC's Request for Design Control Commitment)

In January 2006, the U.S. Nuclear Regulatory Commission (NRC) requested a commitment from the U.S. Department of Energy (DOE) to implement the design control process specified in the Quality Assurance Requirements and Description (QARD) to the design following the Critical Decision-1 down-select of a preferred option. As discussed in the referenced letter, DOE responded that corrective actions were underway and that an independent DOE assessment to verify the effective implementation of the BSC design control procedures was planned.

A DOE design control process independent assessment (IA-OCE-2007-001) was performed to verify the effectiveness and implementation of the BSC design control procedures. This assessment was a follow-on evaluation of the BSC design control process from the DOE Readiness Review completed in May 2006 (BSC-RR-06-01, dated June 2006). The May 2006 DOE Readiness Review did not verify procedural implementation because new procedures had just been implemented at the time of the readiness review and DOE management had issued a suspension of BSC's approval authority for the issuance of quality-affecting engineering products. The design control process independent assessment was specifically scheduled after the suspension of work was lifted to allow sufficient procedure implementation to occur for engineering products to be issued and available for review.

The independent assessment team conducted a performance-based assessment of the design control process execution and resultant products. A review of selected previous condition reports was conducted and the effectiveness of the corrective actions to prevent recurrence of the cited conditions was assessed. Documents reviewed included BSC procedures and various design products such as drawings, calculations, specifications, and reports. These design products were chosen because they were issued from October 2006 through January 2007, after the DOE lifted the suspension of approval authority and BSC began issuing quality-affecting products.

The independent assessment activities were conducted from January 22 to February 7, 2007. A Closeout Briefing Meeting with BSC was held February 13, 2007. DOE conducted a factual

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accuracy review with BSC during the week of February 26, 2007, to confirm the preliminary results.

The assessment found no significant programmatic discrepancies with the implementation of the BSC design control process. The process and procedures were found to be adequate and provide general basic direction for the design control activity. Several instances of lack of clarity in procedures were identified. The products reviewed were prepared using the governing procedures. Records for products were prepared, and linkages with other products were available but not consistently documented. Although there were several instances of "inattention to detail" in following the exact procedural requirements and issues with references, the product quality was acceptable overall. Opportunities for procedure clarification were identified in several instances.

Individual issues which resulted in condition reports requiring corrective actions and opportunities for improvement were identified and were categorized into seven programmatic design control categories, e.g., Design Process, Design Control & Configuration Management, Transparency, Traceability, Requirements Flowdown, Training, and General Quality. The identified issues were sorted by "Condition" (e.g., Conditions Adverse to Quality) and "Opportunities for Improvement." To avoid potential duplication of issues with existing Condition Reports (CR), references were included to existing CRs that identified assessment issues. The Corrective Action Program system review resulted in 11 Conditions Adverse to Quality and 13 Opportunities for Improvement.

The individual issues were also separated into three general subjects: (1) inattention to detail, (2) inadequate references to requirements and inputs in engineering documents, and (3) procedure improvements. Most of the identified issues were found on drawings rather than the other products, e.g., calculations and specifications. Identification of design inputs within drawings was not consistently transparent to the reviewers. Classification of important-to-safety structures, systems, components used the existing *Basis of Design for the TAD Canister-Based Repository Design Concept* when the classification had not yet been established by the preclosure safety analysis. However, existing CRs cover this condition and new ones were not necessary.

Good work practices were identified and included (1) the use of InfoWorks (a tracking database for design products) and the Document Input Reference System to document the relationship between design products and their inputs and outputs, and (2) the use of Desktop Information documents which provide management expectations and promote the development of consistent products without excessive procedural complexity.

Conclusion:

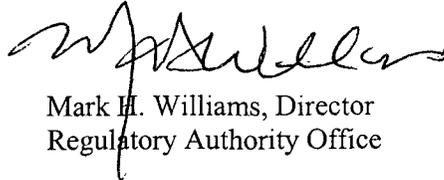
As indicated above, this assessment found no significant programmatic discrepancies with the implementation of the BSC design control process.

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There are no new regulatory commitments in this letter. If you have any questions, please contact Kirk D. Lachman at (702) 794-5096, or e-mail kirk_lachman@ymp.gov, or April V. Gil at (702) 794-5578 or e-mail april_gil@ymp.gov.



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