

Enclosure 3 Content

Office of Environmental Management - The activities performed to institutionalize the vital safety system assessments at each site.

National Nuclear Security Administration – Enclosure 1 contains the activities performed to institutionalize the vital safety system assessments at each site, including the dates of the last assessment and the schedule for performing the next assessment for each vital safety system.

Reporting requirements in the Defense Board Letter dated March 27, 2006:

- The current list of vital safety systems at each site, as well as the contractor systems engineer and Federal safety system oversight personnel assigned to each system.
- The status of training, qualification, and staffing of Federal safety system oversight personnel for vital safety systems at each site. For those sites that have completed the Safety System Oversight Assessment, submission of this assessment is acceptable if it represents the current status of the site.
- The activities performed to institutionalize the vital safety system assessments at each site, including the dates of the last assessment and the schedule for performing the next assessment for each vital safety system.

ACTIVITIES TO INSTITUTIONALIZE VITAL SAFETY SYSTEM ASSESSMENTS AT EM SITES

The Functions, Responsibilities and Authorities (FRA) document of the Office of Environmental Management (EM) requires field unit assessment of vital safety systems in Section 6.7, Line Management Oversight. The Chief Operating Officer, EM-3, has the lead for EM and verifies field office compliance through integrated safety assessments. The means by which each field site has implemented VSS assessments is summarized as follows:

Carlsbad Field Office

CBFO's *Safety System Oversight Program Final Assessment Report*, September 2005, concludes that the CBFO SSO Program is well implemented and effective.

The institutionalization of the vital safety systems assessments for WIPP was accomplished through the modification of WP 09, *Engineering Conduct of Operations* and WP 09-CN3025, *Annual System Walkdown/Requalification*. System Assessments are performed annually by the process formalized by WP 09-CN3025, and federal safety system oversight is accomplished in accordance with the CBFO SSO Program. Annual re-qualification requirements for contractor systems engineers are captured in WP 09. The dates of the latest assessment and the schedule for performing the next assessment for each vital safety system are listed in the attached Excel file. The CBFO federal participation in and oversight of WIPP vital safety systems assessments is accomplished through implementation of the CBFO SSO Program. Under CBFO's Program, the federal SSO personnel overseeing WIPP activities are currently fully trained and qualified in accordance with DOE/CBFO 02-32-19, Revision 1, *CBFO Technical Qualification Program Guide*, which provides direction for establishing and maintaining an effective Technical Qualification Program (TQP) for the technical positions of CBFO.

The WIPP site vital safety systems (VSS) are defined in Attachment 1, *Assessment Boundary for Vital Safety System Definition*, of WIPP Procedure (WP) 09-CN3025, *Annual System Walkdown/Requalification*. Additionally, DOE/WIPP-95-2065, Revision 9, *WIPP Contact Handled Documented Safety Analysis*, and associated technical safety requirements identify the safety class (SC) and safety significant (SS) structures, systems, and components (SSCs) for WIPP and associated controls credited in the safety analysis for accident prevention/mitigation. Those SC and SS SSCs are included in the attached listing of vital safety systems.

Office of River Protection

The Office of River Protection (ORP) has institutionalized the vital safety assessments through the ORP and the Tank Farm contractor's (CH2M HILL) VSS Assessment Assurance Program. The Waste Treatment Plant (WTP) does not yet have operational safety systems and the method to which the WTP is institutionalizing the process is being developed. For the Tank Farms, the ORP assessment program criteria is established in the Safety Oversight Program Plan, ORP 05-TED-073, and meets the requirements of the

Federal Technical Capability Manual DOE M 426.1-1A. Safety system assessments are determined by the Safety System Oversight (SSO) personnel based on mission need, feedback from management and facility representatives, SSO walkdowns and the contractor's System Health Reports. The safety system assessments are scheduled in the ORP Integrated Assessment Schedule for the following fiscal year.

The Tank Farm contractor has a formalized process "Conduct of System Engineering", TFC-FNG-FAC SUP-P-01, that is based on the requirements of DOF O 420 1A. The Cognizant System Engineer (CSE) is required to perform weekly routine walkdowns and quarterly comprehensive walkdowns on their safety systems. The engineering organization determines the yearly scheduled assessments that may include the safety systems.

Richland Operations Office

RL and the facility contractor have developed a VSS assessment process which utilizes contractor staff to perform a series of assessments with RL SSO personnel providing oversight and independent review. The process consists of a multiple tier approach requiring the contractor facility System Engineer (SE) to periodically walk down each system, and perform bi-annual assessments of each VSS evaluating the system functionality, configuration, operation, and reliability. The SE annually provides system status reports. The contractor's chief engineers also complete an annual overview assessment of the SEs and the VSSs.

Additionally, an independent contractor's team performs an independent VSS assessment which examines the systems and the effectiveness of the SE assessment process. The SSOs participate in this and evaluate the system, processes, and the contractor's oversight abilities. The schedule is determined by a priority ranking evaluation that takes into account months since last assessment, prior issues, system condition, changes in Documented Safety Analysis, and remaining system life.

SSOs perform independent system reviews of their assigned safety systems validating VSS reliability. The independent review may take the form of an assessment, surveillance or informal review documented in the Operational Awareness (OA) data base. Each system is reviewed on an annual basis. The review may be performed in conjunction with other assessments (i.e. contractor VSS review). These periodic SSO assessments are governed by the RL Integrated Management System (RIMS) and scheduled in advance in the RL Integrated Evaluation Plan.

Savannah River Operations Office

The Savannah River Site M&O contractor, Washington Savannah River company (WSRC) has institutionalized the functions and responsibilities for implementation of the cognizant system engineer program in four separate procedures in its Conduct of Engineering and Technical Support Procedure Manual (E7) as follows:

- Procedure 1.05, Technical Baseline Identification
- Procedure 1.10, Design Authority

- Procedure 3.04: SSC Performance Monitoring
- Procedure 3.48, Structural Integrity Program

Procedure 1.10 defines responsibilities associated with the system engineer function, including tracking system status, periodic walk downs, and system performance monitoring. Procedure 3.04 defines requirements for monitoring safety system performance, including guidelines for determining system monitoring needs, good practices for performance monitoring, content/format for monitoring documentation (system health reports). Procedure 3.48 provides similar guidance for monitoring the performance of passive safety systems.

Federal safety system oversight functions at the Savannah River Operations Office (SRO) are assigned to engineering personnel responsible for review and approval of Documented Safety Analyses and technical assessments at their assigned nuclear facilities. Facility engineers oversee implementation of the contractor cognizant system engineer program, review contractor-prepared system health reports, and validate contractor performance by performing walk downs of select safety systems. These facility engineers represent an efficient approach to deploy engineering personnel who were both knowledgeable of a facility's safety systems and accountable for oversight of their design, maintenance and operation. Where complex design or engineering discipline issues are encountered, facility engineers are augmented with expertise provided by subject matter experts. Application of a facility engineer concept, augmented where necessary with subject matter experts, provides a flexible means for management to balance the priority of safety system and safety basis oversight activities while maintaining the ability to assess emergent facility engineering issues. In 2004, SRO defined knowledge, skills and ability requirements associated with implementation of the SSO function. Qualification cards and related training were subsequently established, personnel assigned SSO responsibilities completed qualifications, and in November, 2005, Savannah River implementation of the SSO function was assessed by the FTCP with one identified finding. The finding was closed when SSO Qualification requirements were subsequently incorporated into the Technical Qualification Program described in Chapter 6 of SRM 300.1.1B.

Idaho Operations Office

DOE-Idaho has established a formal Vital Safety System (VSS) Assessment Program and institutionalized it through the issuance of a Program Description Document. The document is posted on the DOE-Idaho Intranet. This program applies to the vital safety systems at all Hazard Categories 1, 2, and 3 nuclear facilities at the Idaho National Laboratory (INL) site including those owned and managed by EM through our contractors. The program applies to all EM contractors.

The VSS Program at Idaho ensures that a sufficient number of qualified DOE-Idaho personnel are effectively overseeing contractor-managed VSSs. The assigned personnel provide accurate, objective feedback to ID line managers on the performance of VSS as delineated in applicable DOE directives and the associated effectiveness of contractor

work performance and practices, including the Cognizant System Engineer Program and fulfillment of the facility safety basis. VSS are identified and an assessment schedule is established. Each month the Assistant Manager reviews the schedule and status of completing the assessments. The SSO personnel must be qualified in accordance with the SSO Qualification Program, described in the ID Training Manual.

Oak Ridge Operations Office

The Bechtel-Jacobs System Engineering Program (SEP) is fully implemented per BJC/OR-1281, *System Engineer Program Description for Bechtel Jacobs Company*.

Other documents that aide in implementing the SEP include:

- BJC-DE-1012, *Preparation and Control of System Descriptions*.
- BJC-DE-1013, *Engineering Operability Evaluations*.
- BJC-DE-1014, *System Description Guidance Document*.
- BJC-DE-1015, *Update and Control of the Lists of Active Safety Systems (LASS) and Design Features (LDF)*.
- BJC/OR-1248, *BJC List of Active Safety Systems (LASS) and List of Design Features (LDF)*.
- BJC/OR-1552, *Configuration Management Program Description for Bechtel Jacobs Company*.

System Engineers are assigned for each system contained in the List of Active Safety Systems as documented in BJC/OR-1248. Many Active Safety Systems are also assigned Backup System Engineers. Training for System Engineers is implemented per BJC/OR-1088, *Bechtel Jacobs Nuclear and Radiological Facilities Qualification Standard*. Each System Engineer and Backup System Engineer has a Qualification Card documenting their certification as a System Engineer.

The TRU/Alpha Low Level Waste Treatment Project System Engineering Program (SEP) is fully implemented on the project in accordance with Document No. T-CM-FW-A-EG-008, *System Engineer Program Description*. Other project documents that provide guidance for the implementation of the SEP include:

- T-CM-FW-A-EG-004, *Safety Significant Structures, Systems, and Components*
- T-CM-FW-A-EG-009, *Crosswalk of DOE-STD-073 to Project Implementing Procedures*.

System Engineers are assigned in accordance with section 2.2 of the SEP Description for each system contained included in T-CM-FW-A-EG-004 based on qualifications and experience described in section 2.6 of the same document.

Two ORO-EM procedures govern the vital safety system assessment program at Oak Ridge:

- EM-2.2 "Safety System Oversight" requires that periodic assessments of the contractor's system engineer program be performed.

- EM-3.3 "Integrated Assessment Program" requires that all assessment schedules be integrated into one master Integrated Assessment Schedule (IAS) and that it be on a 36 month schedule.

The contractors keep copies of their assessments and the DOE assessments in their tracking system. All the findings and corrective actions are expected to be entered into their issues management system. DOE assessment findings and CA will also be entered into the Oak Ridge issues management system (known as ORION2).

File: VSS Program Summary EM Enclosure 2