United States Government **Department of Energy**
Oak Ridge Office

memorandum

DATE:

REPLY TO
ATTN OF: SE-30:Monroe

SUBJECT: **OAK RIDGE OFFICE FISCAL YEAR 2006 INTEGRATED SAFETY MANAGEMENT SYSTEM DECLARATION SUBMITTAL**

TO: Raymond L. Orbach, Under Secretary for Science, SC-1, FORS
James A. Rispoli, Assistant Secretary for Environmental Management, EM-1, FORS
Dennis R. Spurgeon, Assistant Secretary for Nuclear Energy, Science and Technology, NE-1, FORS

In accordance with the Department of Energy (DOE) Implementation Plan to Defense Nuclear Facilities Safety Board Recommendation 2004-1, I am submitting this declaration of Integrated Safety Management System (ISMS) implementation. The Oak Ridge Office (ORO) implements the ISMS through the ORO Management System Description (MSD) and its wing documents, the ORO ISMS Description, the ORO Functions, Responsibilities, and Authorities Manual (FRAM), and the ORO Quality Assurance Program (QAP), plus line organization procedures. These documents are reviewed and revised, as needed, to reflect changes in the programs and organizations.

For fiscal year 2006, ORO has determined that ORO and its contractors have defined and well documented ISMS in place, along with people trained to carry out these functions. What we have observed is that the execution and implementation of these programs need further improvement (See Attachment 1 for the Science report and Attachment 2 for the Environmental Management report). The other ORO contractors have had good results in the implementation of their environmental, safety, and health programs.

For Total Recordable Case (TRC) and Days Away, Restricted, and Transferred (DART) through the third fiscal quarter 2006, the Federal workforce has had no TRC or DART cases. The trend lines for the TRC and DART rates for the two major contractors (Bechtel Jacobs Company, LLC (BJC) and UT-Battelle, LLC) have been improving. Through the third quarter of fiscal year 2006, the TRC rate for BJC is 1.8 and the DART case rate is 0.8. The Office of Environmental Management (EM) calendar year goals are 1.35 and 0.54 respectively. For UT-Battelle, the TRC rate is 1.7 and the DART case rate is 0.4. The Office of Science (SC) fiscal year goals are 0.91 and 0.38 respectively.

As a result of a significant injury (worker fall in the K-25 Building) in January 2006, BJC initiated a review by senior field services and safety professionals. A total of 49 work packages were reviewed, and the last 48 personnel injury incidents were also reviewed. These reviews identified several areas of concern. This is further discussed in Attachment 2.

In fiscal year 2006, ORO has had approximately 76 environmental, safety, and health related reviews, assessments, and accident investigations performed by internal and external organizations on the Federal organizations and the contractors. From May through September 2006, ORO performed a review of the Corrective Action Management Programs (CAMPs) in ORO organizations and our major contractors. Also in this time period, we performed a review of the ORO oversight programs. In September 2005, an independent review of our ISMS program was performed. To prepare for our ISMS declaration, I directed that an effectiveness review be performed of the actions related to the findings and observations and a status of the strengths from this independent ISMS review. These reviews found that:

- Although most of the corrective actions associated with the findings and observations from the 2005 ISMS review were closed effectively, there are still some that have not been closed.
- The ORO contractor oversight programs are defined, documented, implemented, and staffed with personnel with the necessary expertise to conduct oversight activities.
- Usage of the Oak Ridge issues tracking system (ORION) continues to improve.
- Closure of corrective actions in ORION and the contractors CAMPs, need improvement. Actions have been taken to improve the use of ORION including the development of a user's manual.

ORO will continue to conduct self-assessments and assessments of its contractors to improve the implementation of the ISM programs.

Please contact me at (865) 576-4444, or Larry Kelly, of my staff, at (865) 576-0891, if you have any questions.

Gerald G. Boyd
Manager

Attachment

cc w/attachment:
G. J. Malosh, SC-3, FORS
I. R. Triay, EM-1, FORS
L. L. Gunter, NE-60, FORS
R. J. Brown, M-3, ORO
SE-30:HMonroe:576-9439:bgattis:576-0891:9/28/06:n/se30/Monroe/FY08 ISMS Declaration Submittal File Code_____

Rtg.Symbol & Init/Sig.
SE-30 Monroe
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SE-30 Smyth
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NS-50 Clark
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FM-70 Penry
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OS-20 Thress
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AD-40 Wilken
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SC-10 Moore
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Rtg.Symbol & Init/Sig.
EM-90 McCracken
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M-3 Brown
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Date

Attachment 1

Science Programs
ISMS Declarations

Attachment 1

ORO-Science Programs

Following the comprehensive self and independent assessments of Integrated Safety Management during FY 2006, Assistant Manager for Science (AMS) focused a substantial effort on implementing needed corrective actions and recommended improvements. In particular, oversight at the Spallation Neutron Source, which was noted to be informal during FY 2005, was improved by development of a documented oversight plan. Facility Representative coverage of SNS was initiated in mid-FY 2006.

Corrective actions have also been made in the use of the ORION issue and corrective action management system. Specifically, AMS staff has increased their level of familiarity with ORION and have substantially increased their level of usage for documentation of walkthroughs. A self-assessment was conducted in September 2006 to evaluate staff usage and to identify areas for improvement.

AMS has also made improvements in use of performance indicators and trending. AMS staff analyzed the data in ORION to develop an overall assessment of contractor performance with respect to issue cause and type of issue (i.e., functional area). This analysis was reported on two occasions during FY 2006 and used to justify Performance Evaluation Plan scores, which are, in turn, used for fee determinations.

AMS staff also continued to enhance their Integrated Assessment Program (IAP) during FY 2006. IAP assessments include formal assessments of contractor operations. Improvements include an increase in the IAP level of effort and enhancement of the assessment planning process. The number of assessments performed increased from seven during FY 2005 to fifteen during FY 2006. Efforts were also initiated to enhance the three year planning process for assessments to ensure that all DOE Order-required assessments are conducted on time, and a strategic and prioritized approach is applied to assessing the various functional elements of Environment, Safety, Health, and Quality.

AMS staff worked in a coordinated manner with ORO counterparts to enhance the overall ORO ISM program. Specifically, two AMS staff worked with the Assistant Manager for Environment, Safety, and Health (AMESH) to develop the requirements for an ORION system enhancement and assisted in software development. This effort supported ORO in meeting their timeline for the enhancement release, i.e. ORION Version 3. AMS also assisted AMESH in completing two ORO wide assessments of ISM feedback. These feedback efforts included an assessment of contractor and DOE ORO corrective action management programs and an assessment of the ORO Oversight Program.

Attachment 2

Environmental Management Programs
ISMS Declarations

Oak Ridge Operations Environmental Management
Fiscal Year 2006 Integrated Safety Management System Declaration

Oak Ridge Operations (ORO) Environmental Management's (EM) Integrated Safety Management System (ISMS) is being effectively implemented. Processes are in place to identify issues and track corrective actions to completion. Federal oversight continues to be improved through the use of a fully staffed Facility Representatives program, a mature assessment program, and Safety System Oversight Engineers. In addition, we have established integrated project teams in which Federal Project Directors meet weekly with Facility Representatives and Program Managers to establish oversight priorities.

The major areas of focus during Fiscal Year (FY) 2007 continue to be work control, radiological protection, and waste management and transportation. Although improvements were made in these functional areas during FY 2006, continued focus will be maintained to ensure that the programs continue to mature and that field implementation is enhanced

Our Performance Objectives will be established consistent with the Department of Energy (DOE) Corporate Safety Performance metrics being established by the Office of Health, Safety and Security. Our primary goal is to continue a positive safety metric performance trend and continued progress toward zero accident/ incident performance for all of our contractors and subcontractors.

Specific information is provided below that addresses our contractors performance and the criteria you requested in your July 13, 2006, memorandum.

Bechtel Jacobs Company LLC
FY 2006 ISMS Declaration

Criteria 1) An overall judgment as to the effectiveness of your Integrated Safety Management (ISM) implementation. If the judgment is that ISMS is effectively implemented, provide justification/discussion for your decision based on how ISMS has provided the worker with a safe work process. If you conclude ISMS is not effective or requires strengthening, identify the actions planned by Department of Energy (DOE) and/or the contractor(s).

The Bechtel Jacobs Company LLC (BJC) ISMS is being effectively implemented. This is demonstrated by the fact that the DART rate through July 2006 is lower than it has been at the end of any of the past four years. Also, in July 2006, BJC completed over 3.3 million hours worked without a lost workday case. BJC has continued to strengthen the ISMS as described in item 4.

During FY 2006, the DOE/ORO initiated a Type B investigation due to a serious injury at BJC. The Type B team concluded that "the BJC K-25 and K-27 Buildings Decontamination and Decommissioning (D&D) Project (Project) failed to follow its work control process and allowed informality in the execution of its Integrated Safety Management Program." As a result of the Type B investigation and BJC's internal investigation of the incident, BJC identified 48 corrective actions and 62 implementing actions to strengthen the BJC ISMS. These actions

involved strengthening programmatic areas and have been implemented on all BJC projects, not just the project that was involved in the incident. The Effectiveness Reviews (ERs) conducted since the closure of the corrective actions confirm that the improvements are being effectively implemented in the field.

Criteria 2) Significant events and/or accidents (e.g., Occurrence Reporting and Processing System [ORPS] events) that have occurred since the last declaration. Investigation results and identification of programmatic or systemic implementation problems with your ISMS. The corrective actions taken and their effectiveness.

BJC issued 57 occurrence reports during the first eleven months of FY 2006. There were 18 Category 4 occurrences, 25 Category 3 occurrences, 13 Category 2 occurrences and 1 Operational Emergency. All occurrence report issues are tracked in I/CATS. A causal analysis is performed for each occurrence above Category 4 and actions to prevent recurrence are identified and implemented. Per the BJC Issues Management process, corrective actions are identified and implemented by the line organization and verification and validation is performed by the Quality Assurance organization.

As a result of a significant injury (worker fall in the K-25 Building) in January 2006, BJC initiated a work package review by senior field Services and safety professionals. A total of 49 work packages were reviewed and the last 48 personnel injury incidents occurring at BJC were also reviewed. This was a formal review that utilized work control and ISMS lines of inquiry. The review identified the following areas of concern:

- Revision consistency
- Hold points
- Roles and responsibilities
- Lessons Learned
- Craft involvement
- Approval sequence
- Supervision involvement
- Inadequate characterization data
- Training inconsistencies
- Work Package (WP) content—too much information
- Scope—WP coverage
- Safety Task Analysis Risk Reduction Talk (STARRT) Card
- Choice of work package type
- Radiological Work Permit (RWP) not included
- Package closure
- Ownership of package

Immediate compensatory actions and management directions were initiated and major changes to the work control process were incorporated into the revised work control procedure.

During FY 2006, the DOE/ORO initiated a Type B investigation due to a serious injury at BJC. Analysis by the Type B team "revealed deficiencies in work planning and control, engineering design, job supervision and safety oversight." As a result of the Type B investigation and BJC's internal investigation of the incident, BJC identified 48 corrective actions and 62 implementing actions to strengthen the BJC ISMS. These actions involved strengthening programmatic areas and have been implemented on all BJC projects, not just the project that was involved in the incident.

BJC conducted extensive work control training to ensure that the work control enhancements were properly understood and implemented. Over 2150 BJC and subcontractor personnel participated in the work control training. These work control enhancements and associated training have significantly strengthened the BJC ISMS. The ERs conducted since closure of the corrective actions confirm that the improvements are being effectively implemented in the field.

Criteria 3) Recurring events (e.g., ORPS) that have been identified since the last declaration. The ISMS programmatic or system implementation issues identified through required quarterly analysis. The corrective actions taken and their effectiveness.

In accordance with DOE G 231.1-1, *Occurrence Reporting and Performance Analysis Guide,* BJC conducted a quarterly Performance Analysis of ORPS events during FY 2006. Results of the performance analysis were reviewed with BJC senior management and submitted to DOE/ORO. There were no recurring ORPS events identified during FY 2006.

Criteria 4) Changes made to the ISMS since the last declaration and a determination of effectiveness of the changes.

<u>Environmental Management System</u>

During FY 2006, BJC completed the implementation of a formal Environmental Management System (EMS) which was fully integrated with the BJC ISMS. Although BJC had always integrated EMS into the ISMS, a formal documentation of the BJC EMS was included in the ISMS Description to fulfill all requirements under Executive Order 13148, *Greening the Government through Leadership in Environmental Management;* and DOE Order O 450.1, *Environmental Protection Program*.

All ISMS training has been updated to include EMS elements, and an Environmental Compliance and Protection Awareness Handbook (BJC/OR-2181) has been distributed for use by all BJC employees to raise the general awareness of EMS and environmental considerations in the workplace.

To meet the requirement in Executive Order 13148 and DOE Order 450.1, BJC confirmed the implementation of all EMS elements in an EMS declaration letter to DOE/ORO dated December 14, 2005.

Work Control Process Improvements

During FY 2006, BJC-FS-1001, *Work Control Process,* was rewritten and the changes implemented in the field by mid-July. To ensure understanding and proper implementation of the revised process, BJC required BJC and subcontractor workers, supervisors, managers and project support personnel to receive formal work control training. This training included the major Human Performance topics of error reduction, defense management, human performance tools, and hazard analysis. Major work control improvements include:

- Team approach to work package development
- Worker involvement in work package development
- Supervisor and worker walkdowns of field conditions
- Elimination of red-line changes in the field
- Establishment of project work package review team
- Establishment of work control lead

Revised STARRT Card

The STARRT card has been revised to incorporate Critical Steps and Human Performance elements. Other modifications to the STARRT card were made to make it a more useful, worker-friendly tool. Worker groups were involved in recommending improvements to the STARRT card. In addition, all supervisors and workers are receiving refresher sessions on the purpose and use of the STARRT card.

Human Performance Improvement

During FY 2006, BJC began incorporating Human Performance Improvement (HPI) elements into various ISMS processes. Over 100 BJC managers and workers participated in the eight-hour HPI Fundamentals course conducted by DOE Headquarters personnel. In addition, HPI elements were included in the Work Control training and the Project Review Committee procedures (BJC-GM-2001 and BJC-GM-2002). Also, as mentioned above, the STARRT card was revised to incorporate error precursors and other HPI elements.

Fall Protection

The BJC fall protection program was strengthened by adding an administrative weight limit, above which personal fall arrest system will not be used and an administrative action weight level that will initiate an increased frequency of verification of weight. In addition, the weight of all qualified workers was verified and the qualifications pulled for workers that exceeded the administrative weight limit.

Criteria 5) Significant lessons learned identified through your analysis of events and assessments since the last declaration. The actions taken and their effectiveness in addressing the lessons.

Lessons Learned are identified and communicated, as appropriate, to all affected employees, subcontractors, and BJC organizations. The Lessons Learned Program, as described in procedure BJC-PQ-1240, *Lessons Learned Program*, is an integral part of the BJC ISMS. During FY 2006, BJC Oak Ridge generated 70 Lessons Learned that were shared throughout the DOE Complex via the DOE Lessons Learned Listserver. In addition, 255 Lessons Learned from other DOE facilities were distributed to BJC Projects for applicability review.

Lessons Learned are used by all BJC projects to facilitate the safe, effective performance of work activities. The updated Work Control process implemented during FY 2006 requires the use of Lessons Learned during the work planning process. The training stressed the importance and value of the use of Lessons Learned.

Criteria 6) Progress towards the FY 2006 Performance Objectives, Measures and Commitments (POMCs) and its influence on establishing the FY 2007 POMCs. You should discuss site and contractor performance against FY 2006 POMCs.

During FY 2006, BJC provided ISMS performance metric information to DOE/ORO. The reporting includes metrics on the following areas: environmental protection, industrial safety and health, radiation protection, nuclear safety, fire protection, authorization basis, security, and transportation management. This trend information is provided to DOE on a monthly basis.

A review of the July 2006 ISMS Performance Metrics report shows the following:

- The Calendar Year (CY) 2006 total recordable case rate of 1.90 for BJC and subcontractors is higher than the BJC CY 2005 rate of 1.50. There was a significant increase in injuries in January 2006 that was the main contributor to the overall rate increase. The rate has reduced significantly since January.
- The CY 2006 lost workday case rate (DART) of 0.59 for BJC and subcontractors is lower than the CY 2005 rate of 0.61. This indicates that the severity of injuries during 2006 has remained the same as the previous year. Also, the DART is lower than the year-end rates for the past four years.
- There have been two environmental Notices of Violation in CY 2006 as compared to three in CY 2005.
- There have been nine personal radiological contamination cases during the first seven months of CY 2006 as compared to ten during CY 2005.
- The CY 2006 average measurable radiation dose (one quarter--total effective dose equivalent) for BJC and subcontractors is 15.1 mrem as compared to 21.5 for CY 2005.
- The CY 2006 quarterly average (one quarter) collective radiation dose for BJC and subcontractors is 0.8 mrem as compared to 1.95 mrem for CY 2005.

Criteria 7) Effectiveness of DOE line management oversight of contractor and subcontractor activities and any planned improvements.

DOE Criteria--Does not apply to contractor

Criteria 8) Federal Employee Occupational Safety and Health (FEOSH) activities, including annual audit results and improvement actions taken.

DOE Criteria--Does not apply to contractor

Criteria 9) Implementation of ISM core functions for new design /construction and major facility modification projects. Describe the contractor's process for assuring rigorous and timely integration of the safety in design process consistent with the Deputy Secretary's memorandum of December 5, 2005. How effectively has the contractor implemented their process and what is your DOE Office's involvement in ensuring their important ISM function is applied to these and for overseeing these new projects?

All BJC activities are included in the scope of the BJC ISMS and are conducted in compliance with ISMS requirements. All phases of work, from design to demolition, are included in the BJC ISMS.

New designs for or modifications to Systems, Structures or Components (SSC) require the development of Design Criteria (BJC-DE-1016) to incorporate into one document all the criteria of the interested stake holders. Included in the source documents for the Design Criteria Document (DCD) are the safety basis documents. If it is a new SSC a Preliminary Hazard Assessment (PHA) will be developed and from that assessment the SSC category will be determined. If the design is for a category 2 or 3 SSC a Preliminary Documented Safety Analysis (PDSA) will be prepared and will be input to the DCD. If the design is a modification to an existing SSC, an Unreviewed Safety Question Determination (USQD) or Unreviewed Change Determination (UCD) will be prepared and may derive criteria that will be input to the DCD. Other input important to safety for the SSC DCD include Client Requirements (DOE Orders such as 420.1b), Federal, State and local codes and regulations, Industry Standards, Design Standards and Guides, Lessons Learned, etc. The DCD once approved then becomes the basis for the design output documents such as engineering drawings and specifications. The design output documents then become input documents for the construction work package (BJC-FS-1001). The work package is prepared for the construction crews to provide for them the criteria and requirements to be met to safely and accurately install the new or modification to the SSC.

Criteria 10) Describe trial or special safety improvement initiatives planned or underway intended to positively impact safety performance. Discuss achieved or expected results from those initiatives.

BJC will continue to pay special attention to implementation of the work control process and to incorporate HPI elements into work planning, execution and feedback activities. Worker

involvement will also continue to be a focus area. Mentoring of work control leads is currently being conducted. Management assessments of work control will be conducted each month and the results reviewed by the BJC Work Control Subject Matter Expert.

Criteria 11) Evidence of flow down of requirements from DOE to the contractor as well as to subcontractors (especially quality assurance and safety). Describe the method of DOE and contractor oversight of the flow down of requirements, and how DOE and the contractor ensure proper implementation of the flow down requirements (including to the subcontractor). Present objective evidence.

Under its contract, BJC manages the performance of a significant portion of its scope through competitively awarded subcontracts. These subcontractors function within the BJC ISMS structure, while performing work in accordance with specific subcontract scope, requirements, and terms. The BJC process for management of subcontracted work includes proforma management (standard terms and conditions), subcontract formation and selection, and subcontract administration.

Requirements flow down from the BJC prime contract to various types of BJC documents, such as policies, program documents, plans, procedures and instructions, subcontract Proforma documents and subcontracts. The process for managing the change process to BJC's set of subcontract Proforma documents is governed by procedure BJC-PR-1002, *Processing Proforma Documents*. This procedure documents the process for making changes to the set of subcontract Proforma documents. The objective of the procedure is to ensure the currency and accuracy of subcontract flow downs.

Configuration Control is maintained through the Subcontract Proforma Document Reporting and Tracking (SPDRT) database. The SPDRT database was designed to provide an electronic "real time" database to capture and track data in order to comply with BJC Procurement procedure BJC-PR-1002. The SPDRT database is designed to:

- Record all subcontract Proforma documents incorporated into a subcontract except Exhibit L, Mandatory Contractor Procedures. Mandatory Procedures are posted on the BJC website and each subcontractor is responsible for complying with the current revision of a Mandatory Procedure when performing work covered by that procedure.
- Record actions to revise subcontract Proforma documents by the Proforma Change Control Board (PCCB)
- Track PCCB approved revisions to Proforma documents for incorporation into existing subcontracts
- track progress of specific subcontract modifications to incorporate approved revisions against the established 90-day target in procedure BJC-PR-1002.

The Subcontract Formation Team develops a preliminary safety and health applicability matrix and Environmental Compliance and Protection (EC&P) applicability matrix for inclusion in each request for proposal that clearly specifies the ES&H and EC&P requirements for the subcontract. These matrices are based on the BJC Worker Safety and Health Program Description (BJC/OR-1745) and the BJC Environmental Compliance and Protection Program Description

(BJC-OR-1747). The team also works with Procurement to develop specific subcontract language applicable to the work scope. BJC-PR-1407, *Formation, Processing and Control of RFPs* and the Procurement Handbook Volume 2 describe this process. Requirements flowdown is through Proforma as listed:

- Exhibit A – General Conditions
- Exhibit B – Special Conditions
- Exhibit C – Quantities, Prices, Data
- Exhibit D – Scope of Work
- Exhibit E – Technical Specifications
- Exhibit F – Drawing List and Drawings
- Exhibit G – Environmental Compliance & Protection, Radiation Protection, Worker Safety & Health
- Exhibit H – Workforce Transition Requirements
- Exhibit I – Subcontractor Submittal Requirements Summary
- Exhibit J – Wage Determination
- Exhibit K – Quality Assurance Requirements
- Exhibit L – Mandatory Contractor Procedures

The successful offeror is required to submit a detailed description of the subcontractor's plans for conducting the work. These plans include methods for performing the work in accordance with the applicable BJC prime contract Environment, Safety and Health (ES&H) requirements that are flowed down through the applicability matrix.

Subcontractors must utilize a hazard assessment process where job steps, hazards and applicable controls are captured in the job instructions of the work control package. These controls include engineering controls, administrative controls, and personal protective equipment to be used to mitigate or preclude identified hazards. Subcontractors ensure that all aspects of the proposed controls are adequate to protect workers, other site personnel, the public, and the environment from the consequences of normal operations, accidents, or releases to the environment.

Activity sequences, prerequisites, and hold points related to ES&H must be documented in the work plan. Based on hazards identified, the subcontractor defines the appropriate engineering and administrative controls, and personal protective equipment that will be implemented. If site conditions change, work is suspended or stopped, hazards are reviewed and if needed, the existing ES&H controls are discontinued or modified to adapt to changed site and hazardous conditions. Controls are also established in the facility safety basis or other work-controlling documents to ensure that site personnel, the public, and the environment are protected from unacceptable consequences due to accidents. All aspects of the proposed controls must be adequate to protect workers, other site personnel, the public, and the environment from the consequences of normal operations, accidents, or releases to the environment.

Subcontractors will not be allowed to mobilize until acceptable programs have been reviewed by BJC in accordance with BJC-FS-1012, *Subcontract Coordinator Requirements* and Exhibit I, Subcontractor Submittal Requirement Summary.

Managers of Projects and Functional Managers plan and perform oversight of subcontractors. The types and frequency of subcontractor oversight assessment activities are selected using a graded approach that is based upon the complexity, hazards, and risks associated with project activities.

Assessment activities for subcontractor work may include any or all of the following: Readiness evaluations, Subcontract Coordinator reviews, ES&H Representative assessments, Quality Engineer oversight of implementation of the quality program, management walk-downs, field oversight, surveillances, technical reviews, document reviews, observations, independent assessments, management assessments, Subject Matter Expert assessments, and other subcontractor oversight assessment activities deemed to be appropriate. In addition, during FY 2006 ERs were conducted in the area of work control and fall protection to ensure implementation of requirements by all BJC projects, including work performed by subcontractors.

Foster Wheeler Environmental Corporation
FY 2006 ISMS Declaration

During FY 2006, the Foster Wheeler Environmental Corporation (FWENC) continued operations at the Transuranic Waste Processing Center (TWPC), formerly referred to as the TRU Project. Readiness preparation and subsequent contractor, DOE/ORO, and DOE Headquarters Operational Readiness Reviews (ORRs) and other reviews included assessments and determinations of ISMS program adequacy and effectiveness. Contact Handled (CH) waste processing was initiated on December 19, 2005.

As of September 11, 2006, the TWPC has received 119 drums and 16 boxes (boxes equal to 39.5 cubic meters or 198 55-gallon drum equivalents) from the Nuclear Fuel Services waste stream. All of this waste has been repackaged. Additionally, approximately 71 cubic meters (355 55-gallon drum equivalents) of contract waste has been received. This waste is currently repackaged or awaiting repackaging. To date, 62 TRU drums have been returned to DOE for interim storage and 4 Connex boxes have been shipped with low level waste to the Nevada Test Site for disposal. Work continues in the box breakdown area and glovebox as applicable to the waste container type. Equipment is operational and functioning to design expectations. Total dose received since December 2005, is approximately 300 mrem.

The ISMS program is described in the Safety Management System Description which was revised in October 2005 to reflect organization changes and the CH-related processing and readiness improvements. During FY 2006 the TWPC had three Occurrence Reporting and Processing System (ORPS) reportable incidents. There were no recurring or systemic implementation problems with the ISMS Program. An active lessons learned process is in place that reviews and distributes industry and DOE experience. There were no significant ISMS Program lessons learned as a result of TWPC activities during FY 2006.

The ISMS Program implementation was reviewed as part the Independent Oversight Environment, Safety and Health (ES&H) Inspection of the Environmental Management (EM) Program during June 2006. The review identified ISMS strengths including direct day-to-day

management involvement and methods of feedback and post job critique. The review also identified weaknesses in that improvements were needed in formal assessments, elements of Resource Conservation and Recovery Act (RCRA) training, rigor of hazards analysis and industrial hygiene programs.

ORO conducted an audit of the TWPC Corrective Action Management Program (CAMP) in August 2006, reviewing the adequacy of corrective action closure of external assessment issues. The review concluded that the TWPC CAMP was a fully matured operational system that is supported by well trained, qualified individuals who are committed to the systematic identification of issues and the necessary corrective action in a timely manner.

The TWPC ISMS Program and the DOE/ORO ISMS Program are adequately defined and implemented. Appropriate safety culture and performance at TWPC has been evident, demonstrated, maintained and both internally and externally evaluated during FY 2006. Since initiation of construction and throughout operations to date, only one lost work day incident has been experienced (April 2002). Through the end of August 2006, TWPC has worked over 900,000 labor hours and 1612 days without a lost time incident.

At the end of FY 2006, negotiations were in progress to finalize a change in contract to expand the scope of waste to be processed. This contract change will also expand safety-related program requirements and result in upgrades and improvements during FY 2007.

Isotek Systems, LLC
FY 2006 ISMS Declaration

The contract to process the U-233 inventory was awarded to Isotek Systems, LLC (Isotek). The contract identifies three phases which includes: 1) design, 2) construction and operation, and 3) safe shutdown. The project is still in the design phase which and does not require an approved ISMS. Phase II of the contract requires submittal as the operating contractor. However, Isotek has implemented the criteria as follows:

Criteria 9) Implementation of ISM core functions for new design/construction and major facility modification projects. Describe the contractor's process for assuring rigorous and timely integration of the safety in design process consistent with the Deputy Secretary's memorandum of December 5, 2005. How effectively has the contractor implemented their process and what is your Department of Energy (DOE) Office's involvement in ensuring this important ISM function is applied to these and for overseeing these new projects?

Isotek Systems, LLC, has implemented procedure ISO-ENG-015, *Integrated Review of the Final Design Documentation* that describes the Project's process for assuring rigorous and timely integration of the safety in design process. This procedure identifies the reviews required to ensure that Environment, Safety and Health (ES&H) criteria established by radiation safety, nuclear safety, safety analysis, occupational safety, fire prevention, environmental protection, quality, security and nuclear material controls and accountability have been adequately addressed by the design documentation.

ES&H design criteria were established contractually between DOE and Isotek resulting in the initial set of Work Smart Standards (WSS) and List B requirements that were published within the Project as ISO-ESH-001 in May 2004. Currently, Isotek is working to RCN-01 of the WSS and List B requirements. The Project published ES&H design expectations in January 2004 IS-001-03, *Environmental, Safety & Health Design Expectations*. The design expectations were published in advance of the negotiated WSS and List B requirements in order to provide the Project's designers a preliminary perspective on what would be required to obtain final design approval by ES&H. Once WSS and List B requirements were published in May 2004, the ES&H design expectations contained within IS-001-03 have become supplemental to and interpretive of the WSS and List B requirements.

Throughout preliminary design, ES&H has been consulted to provide guidance on discipline-specific issues. In addition, at key design milestones, such as 30%, 60%, and 90% design gateways, ES&H has been included in the design review. As a result of DOE's transfer of program responsibility from the Office of Nuclear Energy to the Office of Environmental Management, DOE has provided guidance on specific project that resets the design of those aspects to 30%. It is expected that ES&H will continue to participate in design review as those designs evolve.

Comments resulting from design review by each ES&H discipline have been prepared, where appropriate, and submitted in accordance with ISO-ENG-015. Those comments have captured in a comment resolution tracking system that will track resolution to closure.

Criteria 11) Evidence of flow down of requirements from DOE to the contractor as well as to subcontractors (especially quality assurance and safety). Describe the method of DOE and contractor oversight of the flow down of requirements, and how DOE and the contractor ensure proper implementation of the flow down requirements (including to the subcontractor). Present objective evidence.

Flow down of quality assurance and safety requirements from DOE is achieved through the WSS and List B requirements contractually negotiated between DOE and Isotek as part of DOE Contract No. DE-AC05-04OR22860.

Isotek flows down ES&H requirements from Isotek to subcontractors through subcontract Exhibit G, *Subcontractor ES&H Requirements*. Exhibit G is tailored for each subcontract depending upon the scope of work to be performed by the subcontractor.

Isotek flows down the project quality requirements from Isotek to subcontractors through subcontract requirements to comply with 10 CFR 830, Subpart A, *Quality Assurance Requirements* and DOE Order 414.1 C, *Quality Assurance*. In addition, subcontractors are required to comply with the Isotek *Project Quality Assurance Plan* (PQAP). Isotek's Quality Assurance group also performs subcontractor independent assessments for those subcontractors providing quality or safety related items or services.

After subcontract award, supplier performance is monitored for quality and safety to ensure that acceptable items and services are produced. This is performed through a combination of surveillances, inspections and independent assessments in accordance with the Isotek PQAP. Since facility transition between UT-Battelle and Isotek has not yet occurred, DOE and contractor oversight of the flow down of requirements has not yet been implemented.

FY 2007 ISM PERFORMANCE EXPECTATIONS
(Objectives, Measures, Commitments)

	ELEMENT[i]	EXPECTATION	DELIVERABLE
ISM-A01	INTEGRATED SAFETY MANAGEMENT PROGRAM	A01-1 Demonstrate continued improvement in Integrated Safety Management (ISM) programs and activities.	A01-1.1 On an annual basis, review and update, for DOE approval, the safety performance objectives, performance measures, and commitments (DEAR 970.5223-1(e) "Integration of environment, safety, and health into work planning and execution").
ISM-A02	MANAGE AND PERFORM WORK IN A SAFE AND COMPLIANT MANNER BASED ON THE BJC INTEGRATED SAFETY MANAGEMENT SYSTEM	A02-1 Demonstrate key work activities defined by DOE ORO EM Performance Based Objectives are performed safely and in a manner that demonstrates protection for employees, the public, and the environment.	A02-1.1 Defined DOE-ORO EM Performance Based Objectives shall demonstrate safe performance of work activities through safety indicators. Status of Integrated Safety Performance will be evaluated on a monthly basis using performance trends/analysis annunciator panel in the following emphasis areas ➢ Safety ➢ Radiation Safety ➢ Environmental Protection ➢ Nuclear and Criticality Safety ➢ Security ➢ Packaging & Transportation Safety ➢ Work Control ➢ Event Notification Submit trend annunciator panel report to DOE-ORO EM by the 15th of each month.
ISM-A03	ES&H PERFORMANCE METRICS	A03-1 Identify, analyze, and report performance for key ES&H leading and lagging program metrics. Attain a favorable performance trend relative to applicable ES&H benchmarks.	A03-1.1 Provide a report to DOE ORO EM by the 15th of each month on the following metrics: *Lagging Indicators-* • OSHA Total Recordable Case (TRC) Rate for BJC and subcontractors* • Lost Workday Case (LWC) Rate for BJC and subcontractors* • Reportable Occurrences of Releases to the Environment* • NPDES Permit Nonconformances* • Environmental Notices of Violation* • Average Measurable Radiation Dose (TEDE)*

FY 2007 ISM PERFORMANCE EXPECTATIONS
(Objectives, Measures, Commitments)

	ELEMENT[i]	EXPECTATION	DELIVERABLE
			• Collective Radiation Dose (CEDE)* • Number of Anomalous Condition Reports (ACRs) by Severity Level • Average Age of Open ACRs • As Found USQs • TSR Violations • Packaging & Transportation Performance • Incidents of Security Concern • Summary of Event Notifications • Work Control Issues per Active Work Package *Leading Indicator* • Near Miss Events* • Personal Radiological Contamination Events • "I Care/We Care" Safety Issues • Safety Permit Violations • RWP violations • Environmental Noncompliances • Work Control Packages with Issues from PRC Review **These metrics shall include both Bechtel Jacobs Company LLC and Subcontractor performance where appropriate and will generally be reported on a cumulative calendar year basis. Selected metrics will be reported on a fiscal year basis.**

[i]The performance indicators are DOE-ORO ISM Expectations for Bechtel Jacobs Company LLC. Although these are not intended to be applied with respect to invoking the Contract Conditional Payment of Fee clause, they represent elements of DOE-ORO's commitment to communicate focused areas for achieving excellence in contractor ISM performance and constitute a focused set of FY 2007 Objectives, Measures, and Commitments [DEAR 970.5223-1(e)] pertinent to BJC making continued improvements in integrated safety management.

BECHTEL JACOBS COMPANY LLC
PERFORMANCE TRENDS/ANALYSES SUMMARY

		Aug	Sept	Oct
SAFETY	OSHA Total Recordable Case (TRC) Rate for Bechtel Jacobs Company LLC and Subcontractors			
	Lost Workday Case (LWC) Rate for Bechtel Jacobs Company LLC and Subcontractors			
	Safety Permit/Procedure Violations			
	Near Miss Events for Bechtel Jacobs Company LLC and Subcontractors			
	I Care/We Care Safety Issues Average Number of Days Open			
RADIATION SAFETY	Average Measurable Radiation Dose (TEDE) for Bechtel Jacobs Company LLC and Subcontractors			
	Collective Radiation Dose for Bechtel Jacobs Company LLC and Subcontractors			
	Personal Radiological Contamination			
	Radiological Work Permit Violation Rate			
ENVIRONMENTAL PROTECTION	Reportable Occurrences of Releases to the Environment for Bechtel Jacobs Company LLC and Subcontractors			
	National Pollution Discharge Elimination System (NPDES) Permit Nonconformances for Bechtel Jacobs company LLC and Subcontractors			
	Environmental Notices of Violation			
	Environmental Noncompliances for Bechtel Jacobs Company LLC and Subcontractors			
NUCLEAR & CRITICALITY SAFETY	Anomalous Condition Reports (ACRs) by Severity Level			
	Anomalous Condition Reports (ACRs) - Average Number of Days Open			
	Safety Basis & Control Violations per Month			
	Positive As-Found Unreviewed Safety Questions (USQs)			
WORK CONTROL	Work Control Packages with Issues from PRC Review			
	Work Control Issues per Active Work Packages			
SECURITY	Incidents of Security Concern			
PACKAGING & TRANSPORTATION SAFETY	Packaging and Transportation Performance			
EVENT NOTIFICATIONS	Summary of Event Notifications			

⇧ Improving Trend

⇨ Stable Trend

⇩ Declining Trend

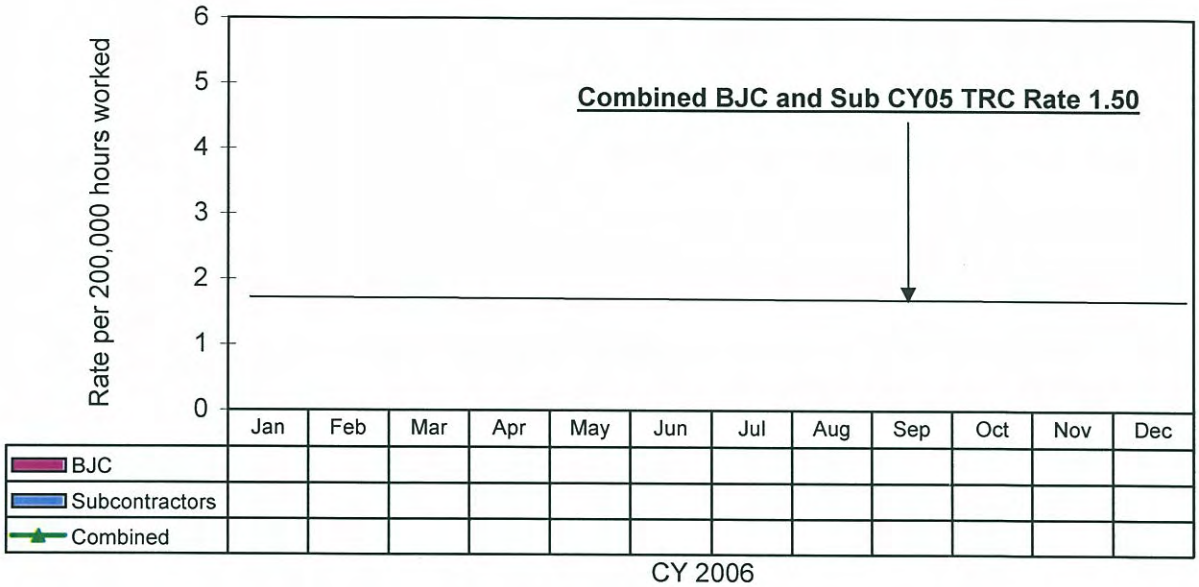
Indicator (Lagging)

OSHA Total Recordable Case (TRC) Rate for Bechtel Jacobs Company LLC and Subcontractors

Definition

Work-related injury or illness cases that are recordable under OSHA standards. The OSHA recordable injury/illness rate is the number of recordable injury or illness cases times 200,000 hours divided by actual hours worked. It also includes days away from work (lost workday cases) and days of restricted work activity cases.

Total Recordable Case (TRC) Rates
for Bechtel Jacobs Company and Subcontractors
(Cumulative)



Trend

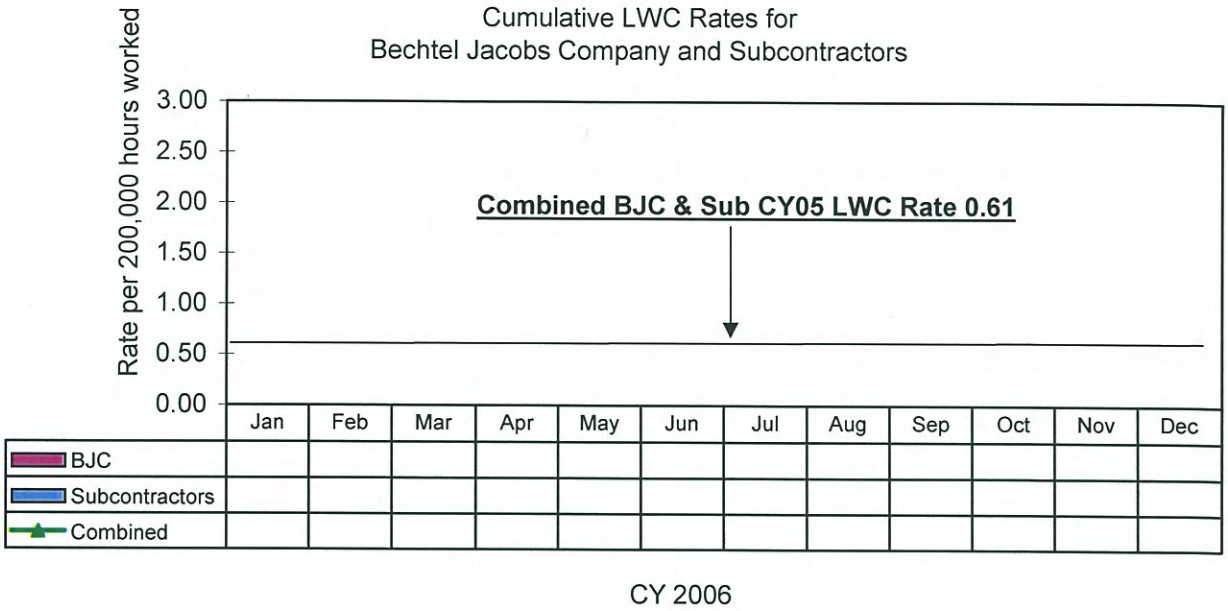
Key Observations & Additional Analysis

Indicator (Lagging)

Lost Workday Case (LWC) Rate for Bechtel Jacobs Company LLC and Subcontractors

Definition

Work-related injury or illness that involves days away from work or days of restricted work activity, or both. The Lost Workday Case (LWC) rate is the number of lost workday cases times 200,000 divided by actual hours worked.



Trend

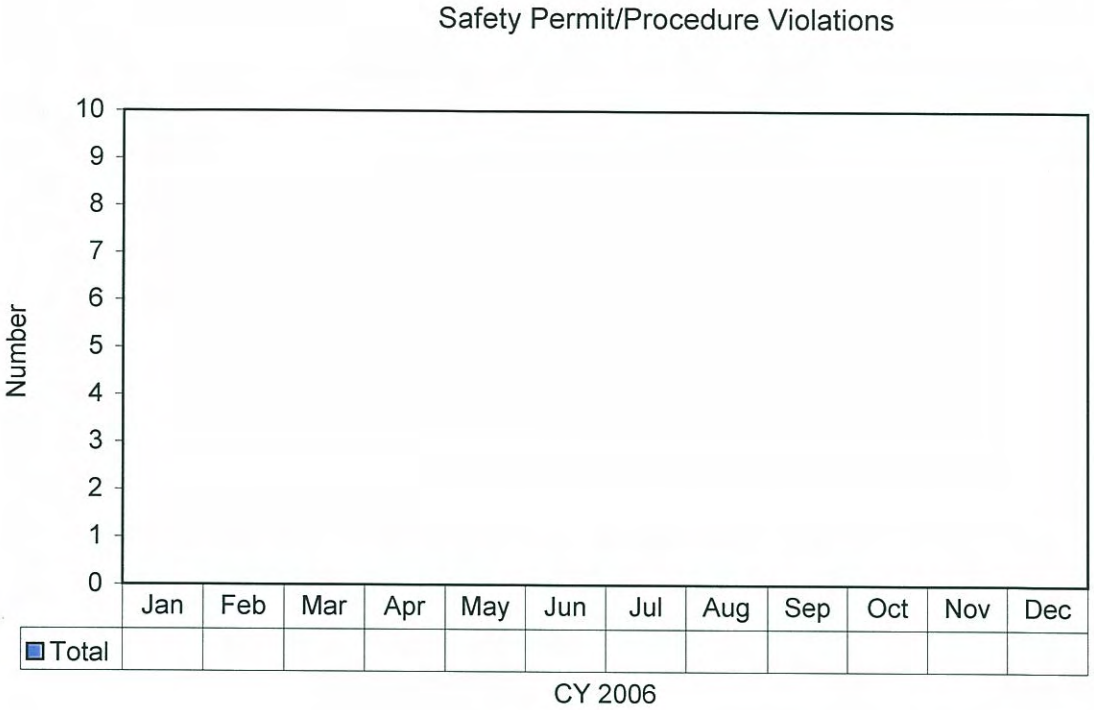
Key Observations & Additional Analysis

Indicator (Leading)

Safety Permit/Procedure Violations

Definition

The number of hot work, lockout/tagout, excavation/penetration, hoisting and rigging, and confined space permit/procedure violations experienced by Bechtel Jacobs Company LLC and Subcontractors.



Trend

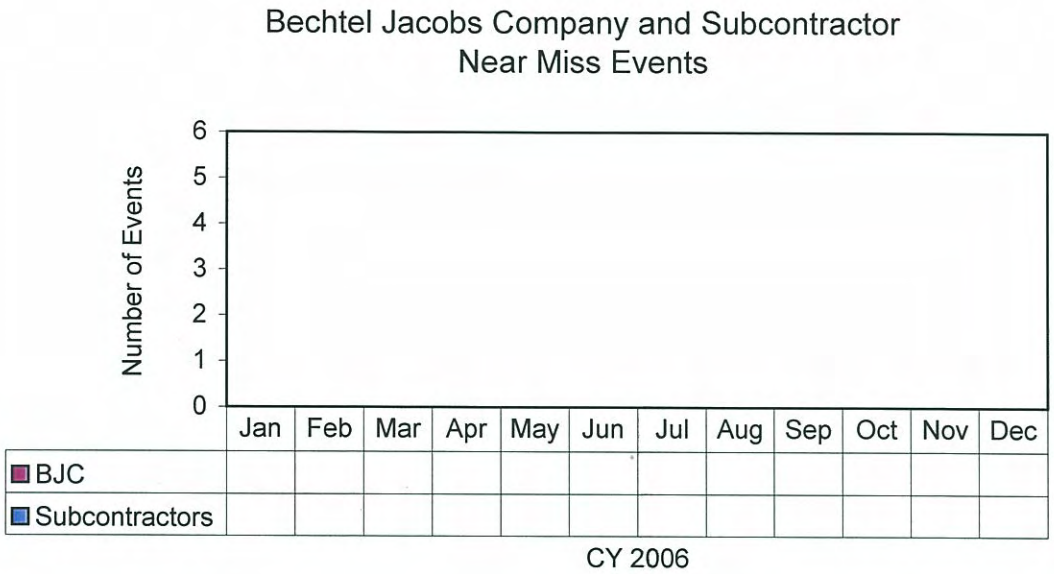
Key Observations & Additional Analysis

Indicator (Leading)

Near Miss Events for Bechtel Jacobs Company LLC and Subcontractors

Definition

Narrowly avoided conditions that have the potential for adversely affecting personal safety, the environment, or safety equipment. A near-miss condition occurs when the single last remaining barrier prevents an unwanted condition, and ensuing events cannot be foreseen or adequately controlled. Near miss events in this metric are those that meet the reporting criteria in the DOE Occurrence Reporting Order DOE M 231.1-2.



Trend

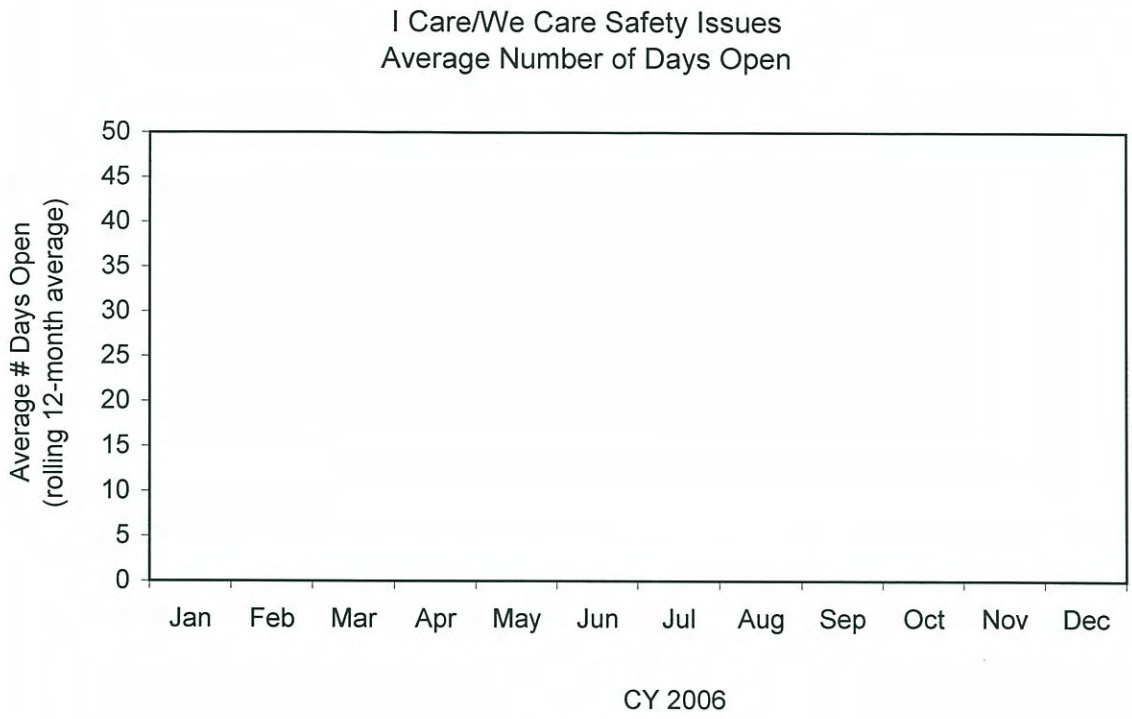
Key Observations & Additional Analysis

Indicator (Leading)

I Care/We Care Safety Issues Average Number of Days Open

Definition

The average (rolling 12-month average) number of days open for safety-related issues submitted through the I Care/We Care Program. Each month is a rolling 12-month average for the month indicated and the preceding 11 months.



Trend

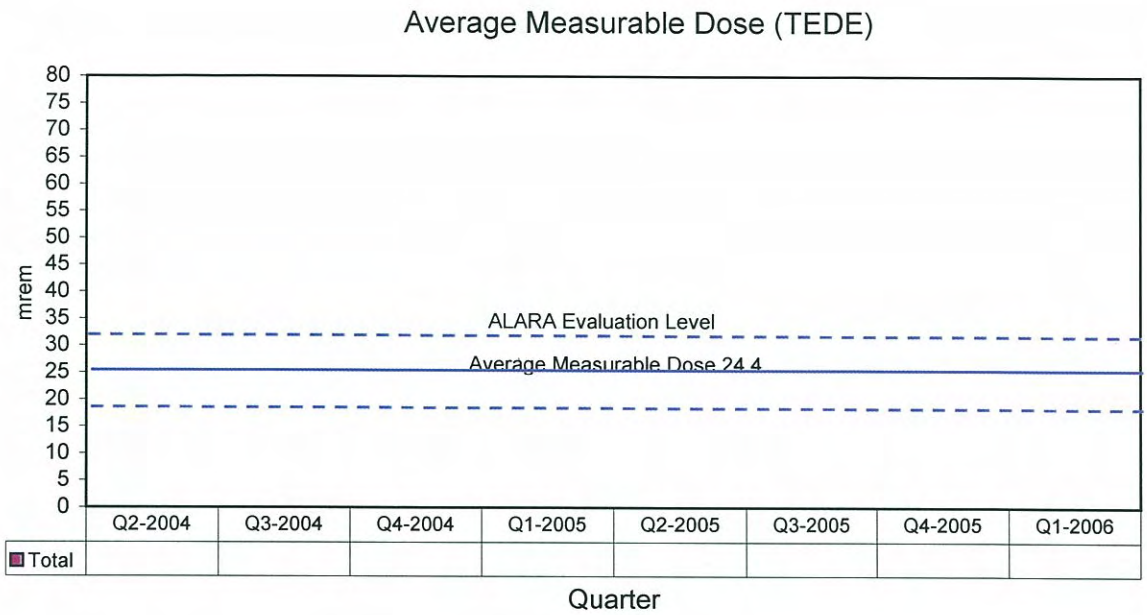
Key Observations & Additional Analysis

Indicator (Lagging)

Average Measurable Radiation Dose [Total Effective Dose Equivalent (TEDE)] for Bechtel Jacobs Company LLC and Subcontractors

Definition

The average dose to workers with measurable results; calculated by summing Thermoluminescent Dosimeter (TLD) dose results accumulated on a quarterly basis and then dividing that number by the number of workers who had measurable (non-zero) dose.



Trend

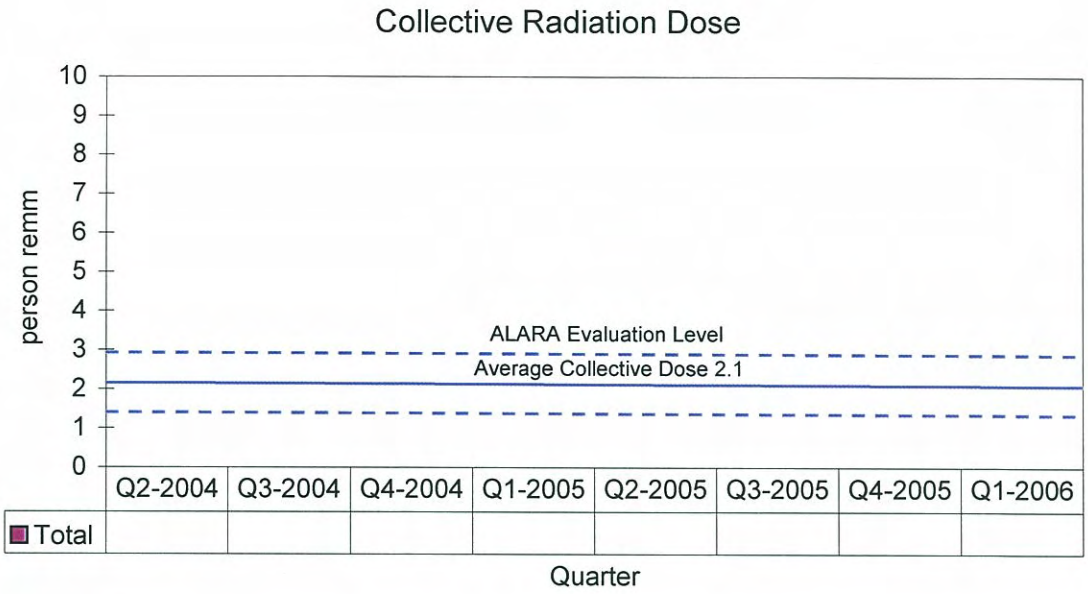
Key Observations & Additional Analysis

Indicator (Lagging)

Collective Radiation Dose for Bechtel Jacobs Company LLC and Subcontractors

Definition

The combined total external dose to all workers (based on TLD results); calculated by summing all deep dose equivalent data for each worker on a quarterly basis.



Trend

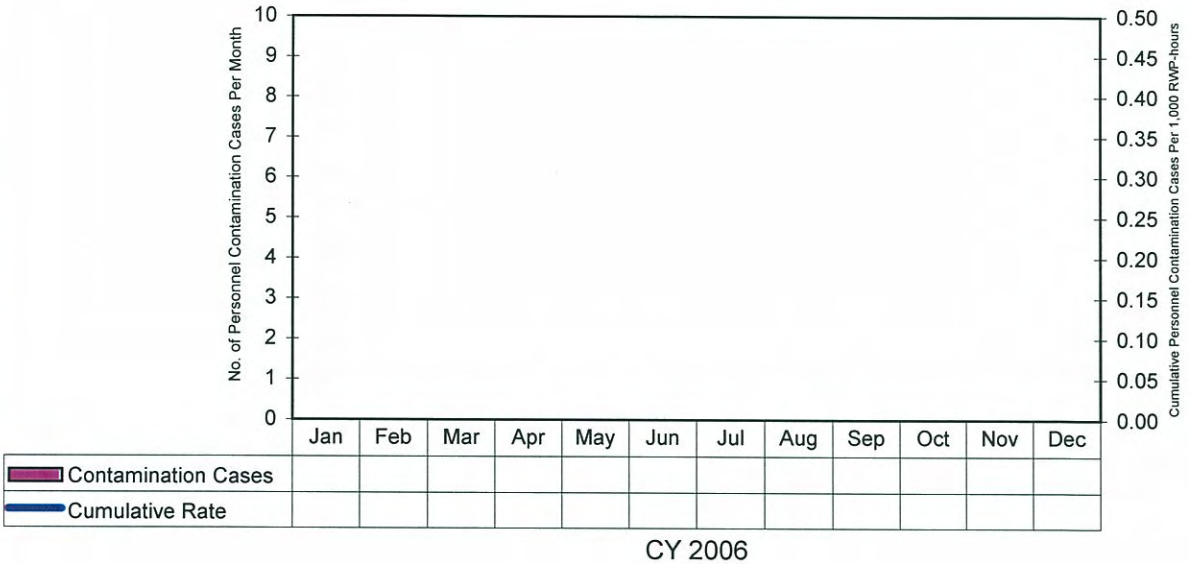
Key Observations & Additional Analysis

Indicator (Leading)

Personal Radiological Contamination

Definition

Personal contamination incidents are recorded when an individual is identified with radioactive material on skin or personal clothing. The incidents are expressed as a rate per 1,000 radiation hours worked. Radiological worker hours are equivalent to hours performing work under a radiological work permit (RWP).



Trend

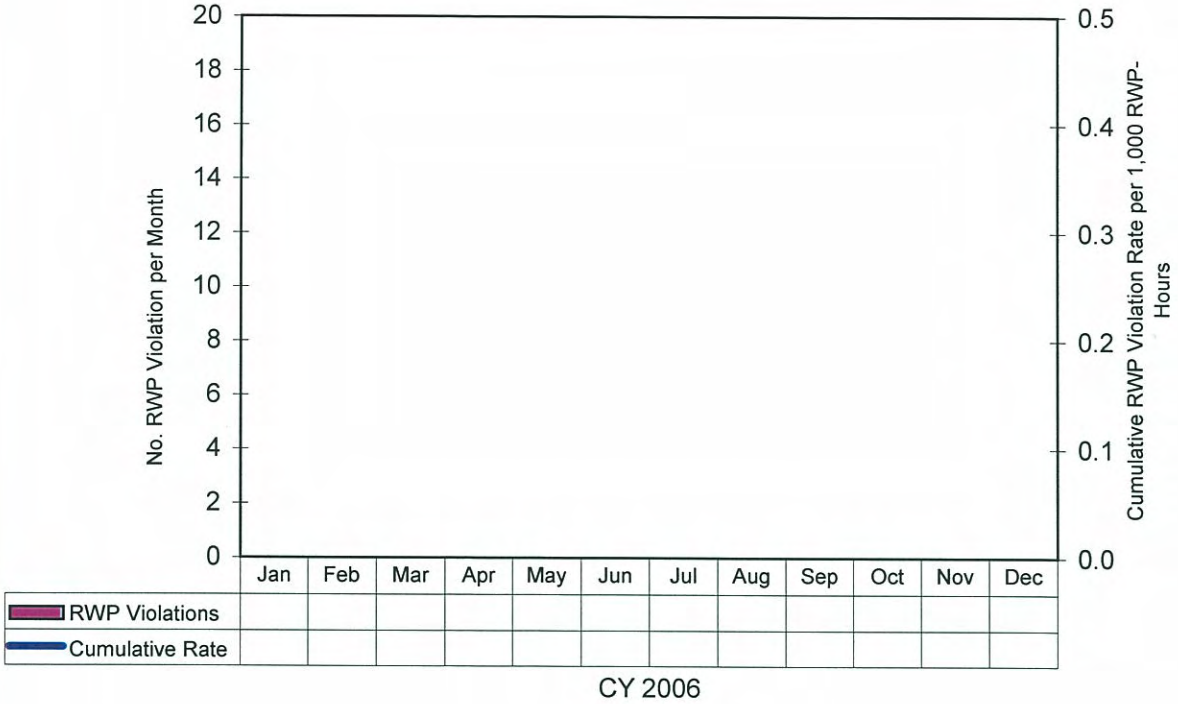
Key Observations & Additional Analysis

Indicator (Leading)

Radiological Work Permit Violation Rate

Definition

The number of radiological work permit (RWP) violations experienced by Bechtel Jacobs Company and Subcontractors expressed as a rate per 1,000 radiation worker hours. Radiological worker hours are equivalent to hours performing work under a radiological work permit.



Trend

Key Observations & Additional Analysis

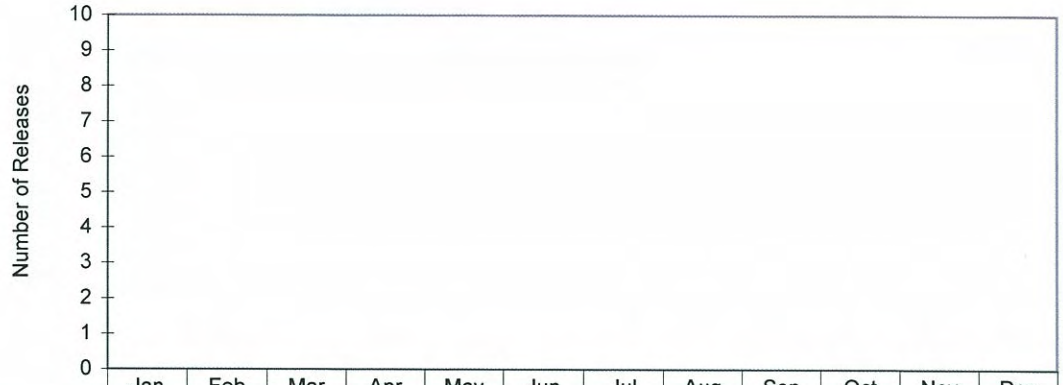
Indicator (Lagging)

Reportable Occurrences of Releases to the Environment for Bechtel Jacobs Company LLC and Subcontractors

Definition

Any release or exceedance of radionuclides, hazardous substances, or regulated waste streams that are reportable to federal, state, or local agencies/authorities.

Reportable Occurrences of Releases to the Environment



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Total												
Cumulative												

CY 2006

Trend

Key Observations & Additional Analysis

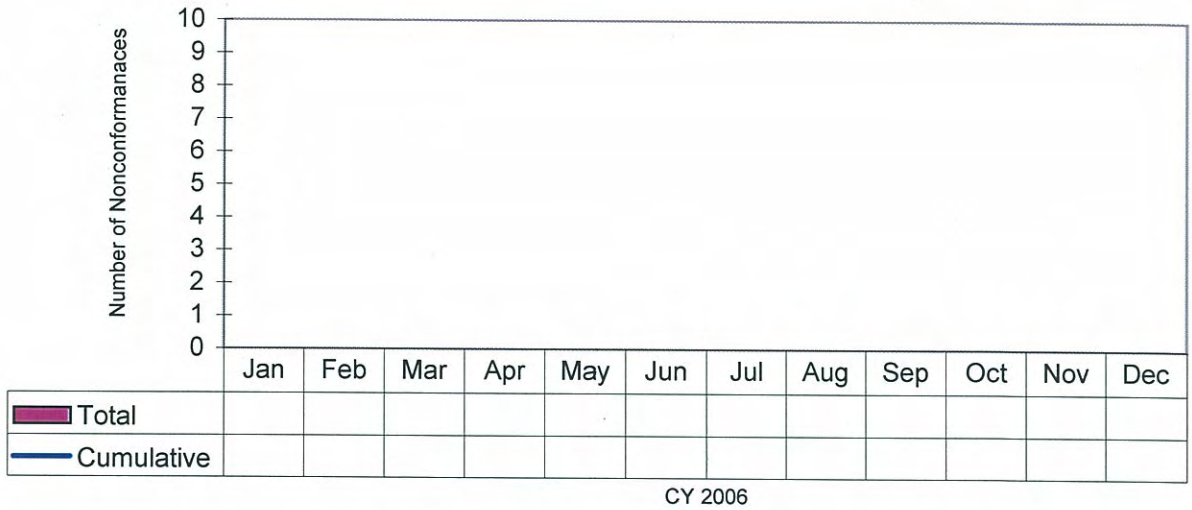
Indicator (Lagging)

National Pollution Discharge Elimination System (NPDES) Permit Nonconformances for Bechtel Jacobs Company LLC and Subcontractors

Definition

Exceedance of release levels specified in water permits and unpermitted discharges from an outfall.

NPDES Nonconformances



Trend

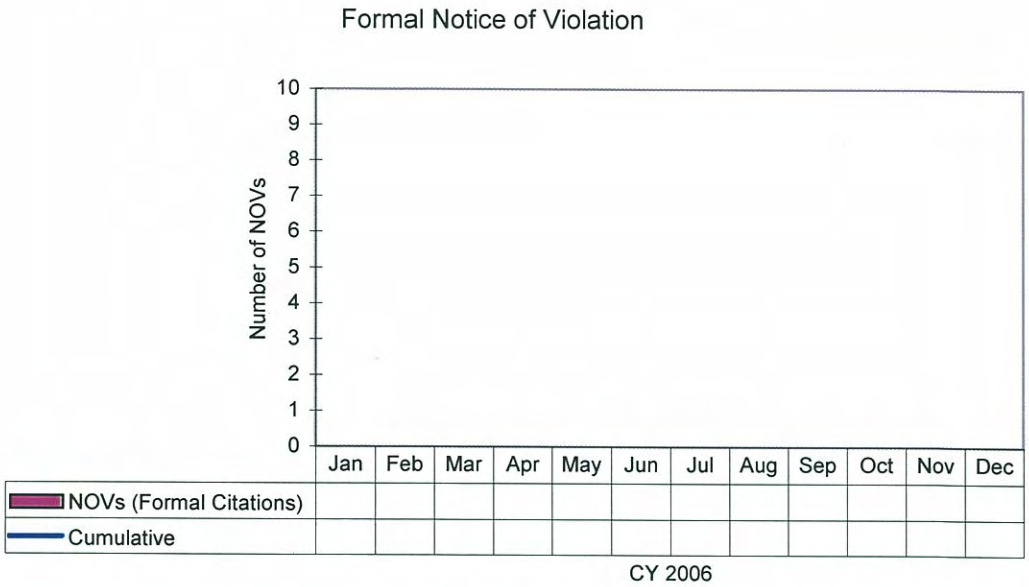
Key Observations & Additional Analysis

Indicator (Lagging)

Environmental Notices of Violation

Definition

A formal written citation from a federal, state, or other regulatory authority informing DOE-ORO, Bechtel Jacobs Company, or one of its subcontractors that there has been a violation of a law, regulation, standard, or other specified requirement. A formal notice of violation provides formal notice of enforcement action from the authorized enforcement authority at the regulatory agency in accordance with applicable laws and regulations and due process requirements. This definition is consistent with the terminology of relevant DOE Orders.



Trend

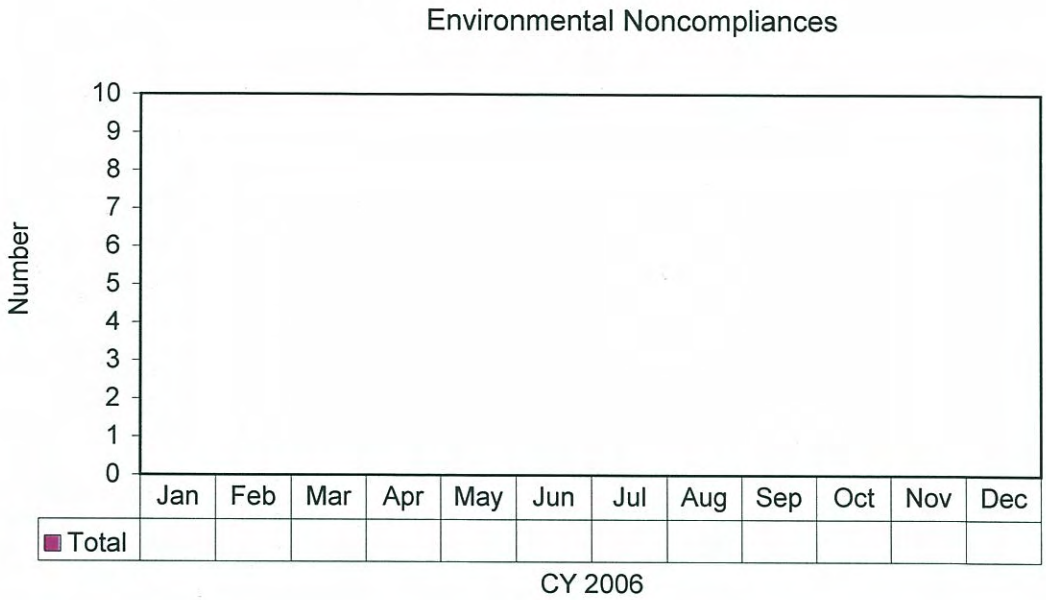
Key Observations & Additional Analysis

Indicator (Leading)

Environmental Noncompliances for Bechtel Jacobs Company LLC and Subcontractors

Definition

Issues or actions considered nonconformances with environmental regulatory requirements as identified in I/CATS.



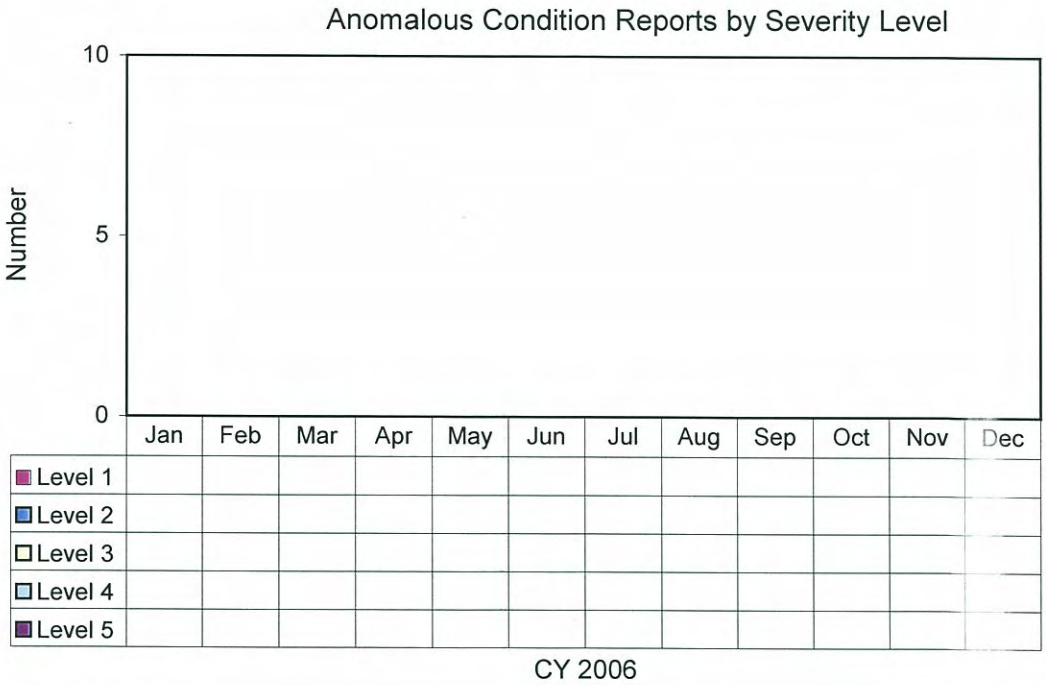
Trend

Key Observations & Additional Analysis

Indicator (Lagging) Definition

Anomalous Condition Reports (ACRs) by Severity Level

Number of new Nuclear Criticality Safety Anomalous Condition Reports.
Level 1—An unplanned nuclear criticality resulting in actual or potential facility damage.
Level 2—Violation of the double contingency criticality specifications, such that no valid controls are available to prevent a criticality accident.
Level 3—Violation of an NCS requirement or infraction of procedures, such that only one credible, unlikely, independent, and concurrent change in process conditions could result in a criticality.
Level 4—Violation of an NCS requirement or infraction of procedures that does not violate the double contingency principle.
Level 5—Administrative errors, changes in facility conditions, such as rainwater in-leakage, or other abnormal conditions that do not impact the double contingency principle, but warrant review by NCS.



Trend

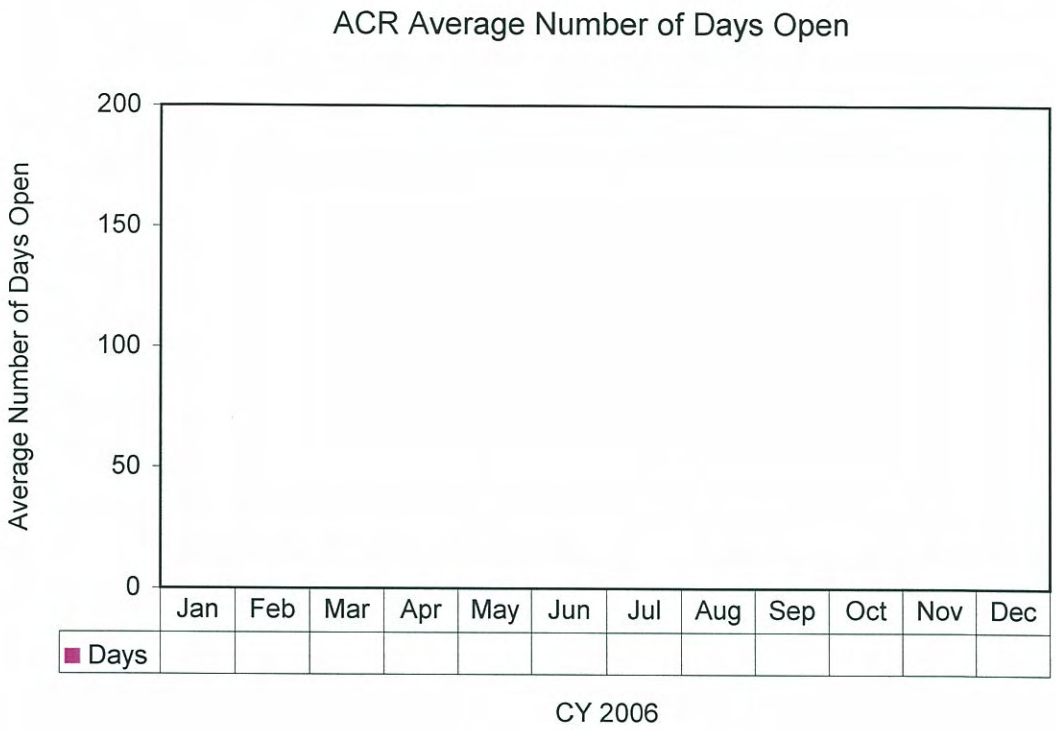
Key Observations & Additional Analysis

Indicator (Lagging)

Anomalous Condition Reports (ACRs) - Average Number of Days Open

Definition

The average number of days that ACRs are open. This will be a 12 month cumulative running average.



Trend

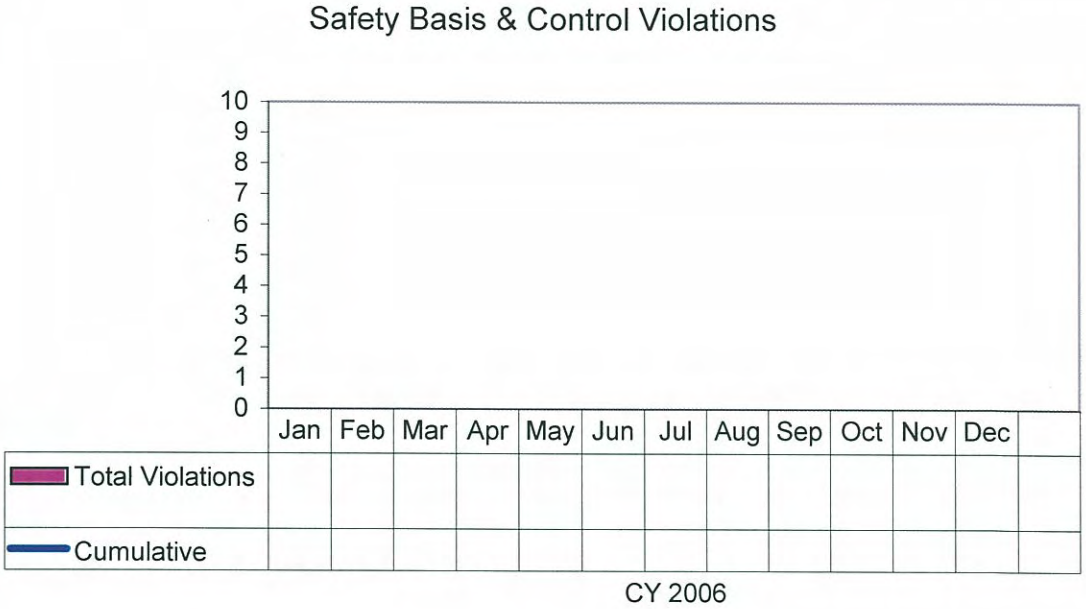
Key Observations & Additional Analysis

Indicator (Lagging) Definition

Safety Basis and Control Violations per Month

Violations of a safety basis or control occur as a result of the following five circumstances:

1. Failure to complete limited conditions for operation (LCO) required actions within the required completion time.
2. Failure to perform a surveillance within the required frequency.
3. Failure to comply with an administrative control (AC).
4. A failure to comply with a control specified in a Safety Evaluation Report (SER) or a Justification for Continued Operation (JCO).
5. A failure to comply with other defined safety basis document requirements.



Trend

Key Observations & Additional Analysis

Indicator (Lagging)

Positive As-Found Unreviewed Safety Questions (USQs)

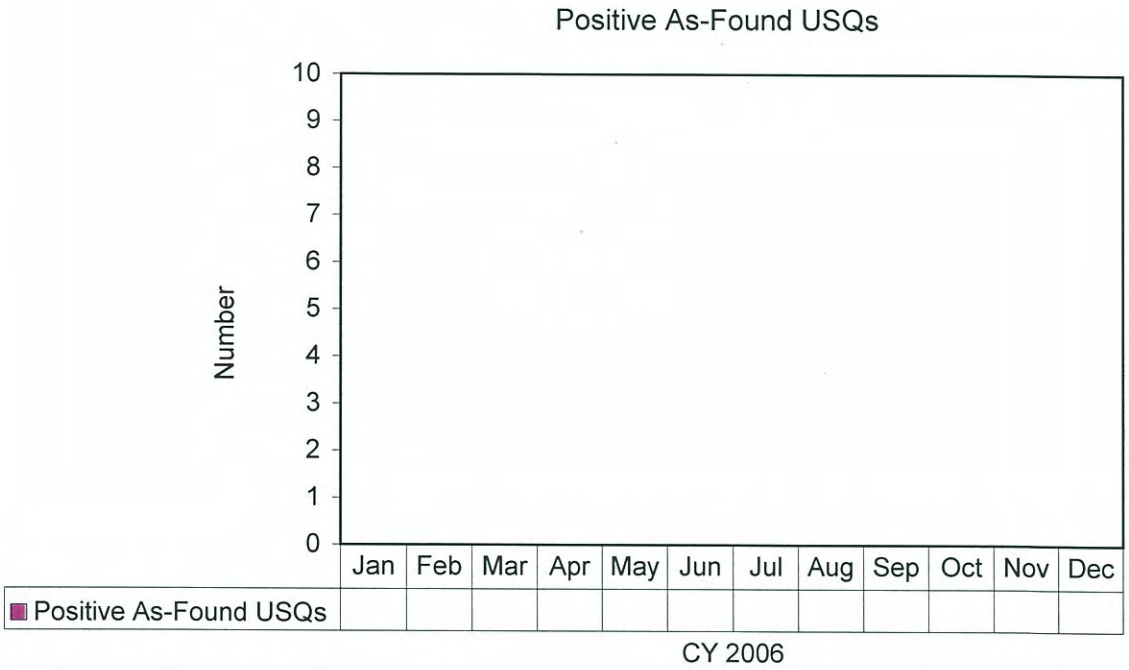
Definition

The number of "Positive As-Found Unreviewed Safety Questions" meeting the following criteria per BJC Procedure NS-1001:

Analytical errors, omissions, inadequacies, or inconsistencies between the facility physical configuration and the safety basis documentation that have the potential for calling into question information relied upon for authorization of operations

and/or

Inadequacy in the safety analyses, discovery of new information, operating events, or other issues that question the validity of the safety analyses, which support the safety basis documentation.



Trend

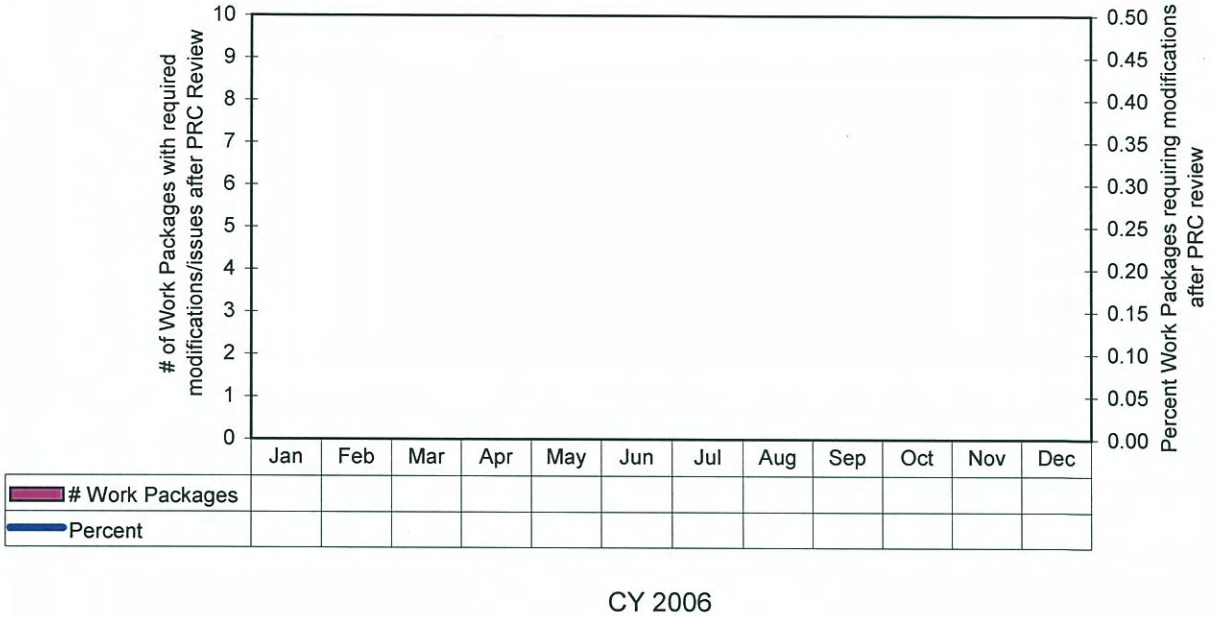
Key Observations & Additional Analysis

Indicator (Leading)

Work Control Packages with Issues from PRC Review

Definition

The Project Review Committee (PRC) focuses on integrated elements of planning, preparation, and conduct to enhance the safety and compliance of work. The PRC selects activities for review based on risk and consequence. This metric tracks the number of work packages with PRC required modifications / issues remaining after the PRC review.



Trend

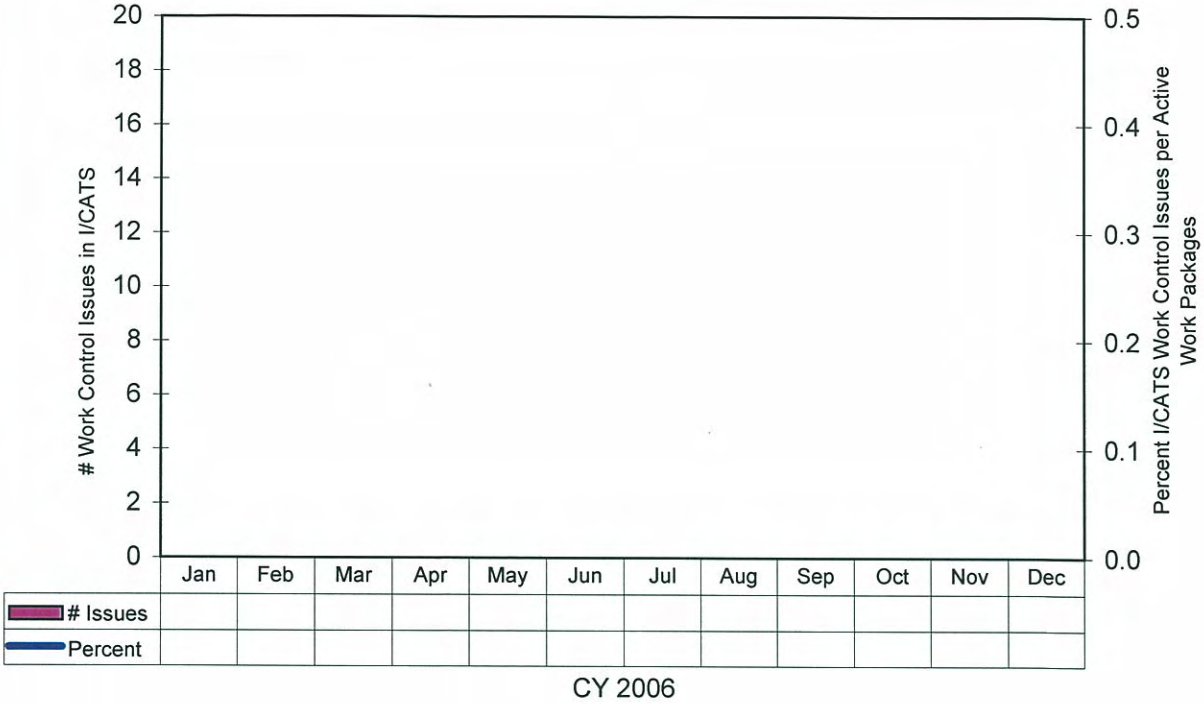
Key Observations & Additional Analysis

Indicator (Lagging)

Work Control Issues per Active Work Package

Definition

Issues associated with the implementation of BJC-FS-1001, *Work Control Process,* which are identified through assessments and other oversight processes are tracked in I/CATS. This metric will track the number of work control issues that are identified each month.



Trend

Key Observations & Additional Analysis

Indicator (Lagging)

Incidents of Security Concern

Definition

Incidents of security concern are events that, at the time of occurrence, have yet to be determined to be a violation of law, but are of such concern to the Safeguards and Security Program as to warrant immediate review, inquiry, and subsequent assessment and reporting. Criteria for this metric are established by DOE Order 470.1, *Safeguards and Security Program*, and DOE Notice 471.3, *Reporting Incidents of Security Concern*.

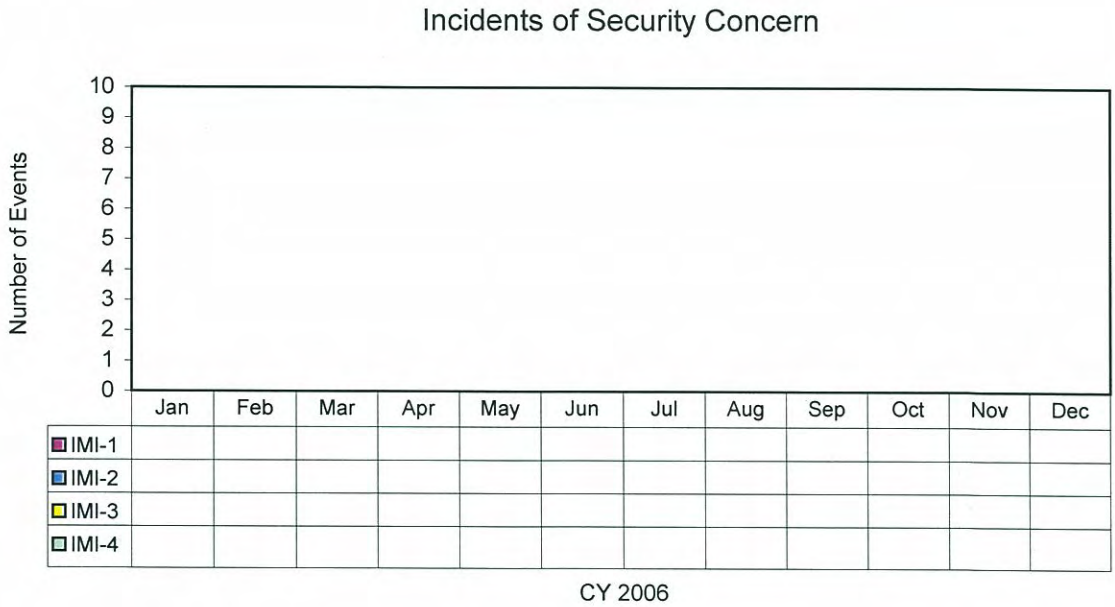
The four levels of Incidents of Security Concern designated by Impact Measurement Index (IMI) levels are the following:

IMI-1 -- Incidents that pose an immediate danger or short-term threat to national security interests and/or critical DOE assets; potentially create a serious security situation; or create high visibility media interest.

IMI-2 -- Incidents that pose a near- or long-term threat to national security interests and/or critical DOE assets or that potentially create a crisis or dangerous situation.

IMI-3 -- Incidents that could pose long-term threats to DOE security interests or that potentially degrade the overall effectiveness of the Department's protection program.

IMI-4 -- Incidents that, in combination and over time, could pose a long-term threat to DOE security interests by adversely impacting the level of security awareness and program responsiveness necessary to protect the Department's security interests.



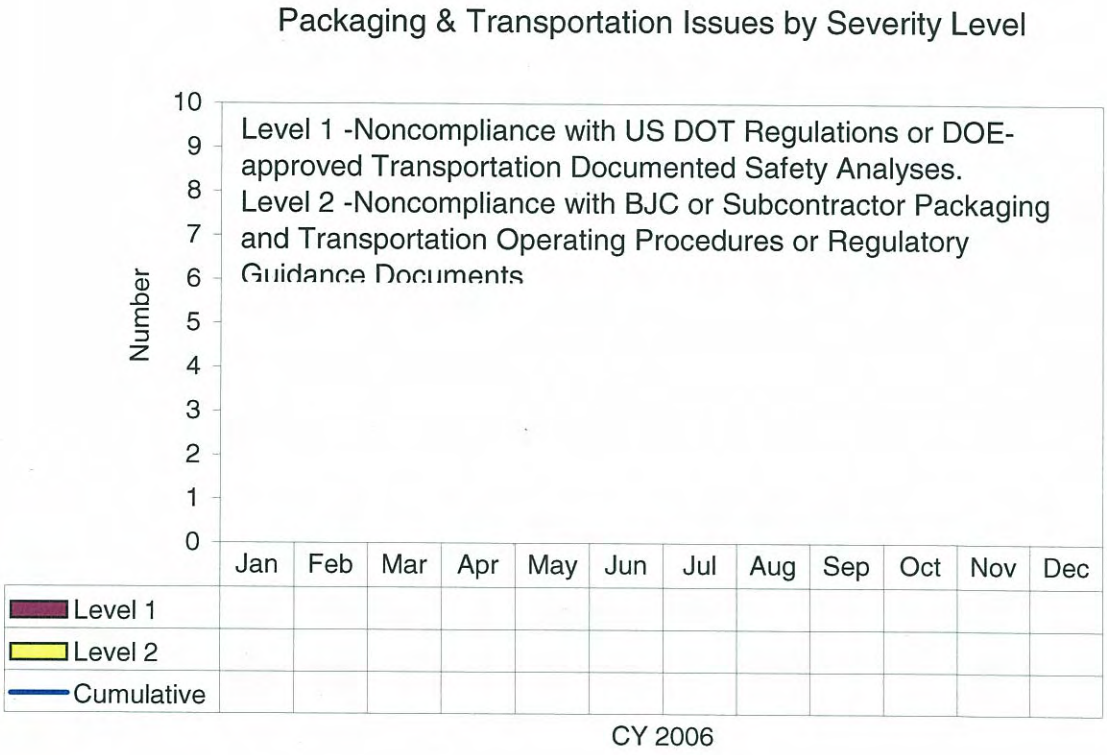
Trend

Key Observations and Additional Analysis

Indicator (Lagging) Definition

Packaging and Transportation Performance at Bechtel Jacobs Company Projects

The number of packaging and transportation issues per month by severity level. This indicator reflects new packaging and transportation issues identified during the current month and active open issues as found in the Bechtel Jacobs Company ICATS database.



Trend

Key Observations and Additional Analysis

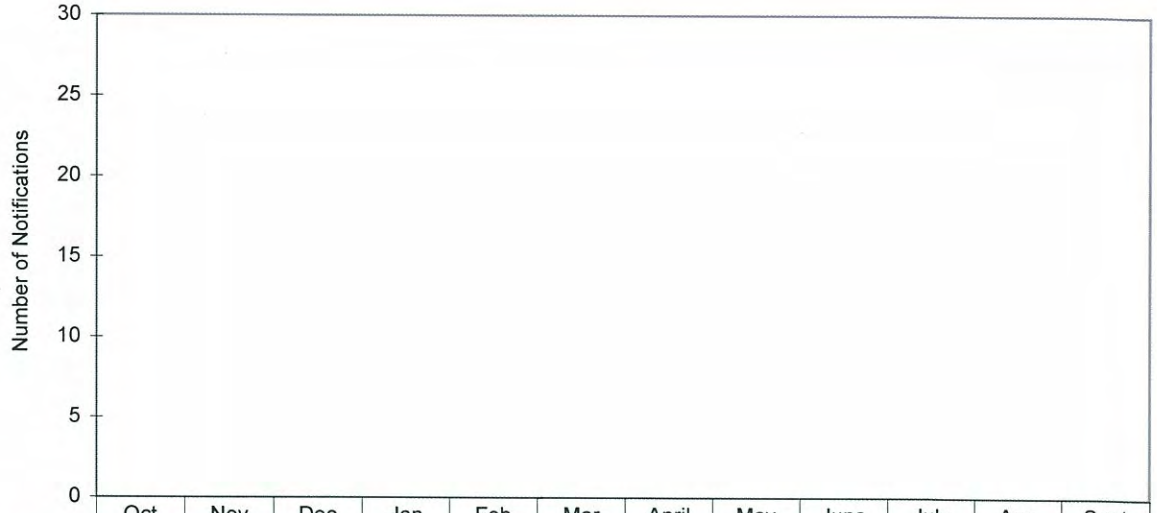
Indicator (Lagging)

Event Notifications for Bechtel Jacobs Company LLC

Definition

The number of Event Notifications meeting EM-DOE-HQ criteria per BJC-GM-563. The criteria includes:
Any activiation of an Emergency Operations Center at the ALERT level or higher;
Any radiological or chemical release (above legal limits) to the environment;
Any security incident that involves potential loss of control or compromise of classigied or nuclear material;
An on-the-job injury where an employee is taken to the hospital for something other than observation;
Any type of transportation incident / accident;
Any radiological skin / internal contamination of workers, general employees, or the public;
A violation of lockout/tagout controls where there are no credible barriers left between the worker and the energy source, regardless of whether or not there was an injury;
Any intentional violation of a criticality safety operating limit;
Any highly visible situation that is ongoing;
Any fires (unplanned or uncontrolled) on site or near the ORR or unexpected fire / chemical reaction at Oak Ridge facilities;
Any situation in which BJC senior management determines that there is a reason to suspect potential problems or believes warrants attention or notification of EM-DOE-HQ.

Event Notifications to DOE-ORO



	Oct	Nov	Dec	Jan	Feb	Mar	April	May	June	July	Aug	Sept
Total												
Cumulative												

FY 2006

Trend

Key Observations & Additional Analysis