

**Thomas Jefferson Site Office  
Annual Assessment Report**

**Fiscal Year 2009**



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**November 1, 2009**

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## 1.0 INTRODUCTION

The purpose of this Thomas Jefferson Site Office (TJSO) Annual Assessment Report (AAR) is to provide an assessment of Site Office performance against each of the goals and objectives established for fiscal year (FY) 2009. Any FY 2009 major areas of concern and associated corrective actions are included as well as noteworthy accomplishments, and challenges anticipated for FY 2010.

## 2.0 CONDUCT OF BUSINESS

The TJSO provides the Department of Energy and the SC on-site presence at the Thomas Jefferson National Accelerator Facility (Jefferson Lab). The TJSO is a DOE line management organization reporting to the Office of Science Deputy Director for Operations (DDFO, SC-3). The TJSO is responsible and accountable for the management of the Jefferson Lab contract and oversight of the operational and management performance.

The Jefferson Lab prime contract was awarded in FY 2006 to Jefferson Science Associates, LLC (JSA). JSA is jointly owned by Southeastern Universities Research Association (SURA) and Computer Science Corporation (CSC). TJSO manages this contract through the efforts of a variety of subject matter experts in the office and support provided through the SC Integrated Service Center complex. These efforts are described in four core program management functions:

- Setting Expectations: Establishing and communicating expectations requirements to guide contractor planning and conduct of work activities;
- Monitoring Performance: Monitoring contractor operations, work activities and deliverables to ensure that the Department and contract expectations and requirements are being met;
- Facilitating Performance: Maintaining ongoing DOE federal employee activities required for efficient contractor performance, including providing support and guidance; and
- Providing Feedback: Developing and communicating performance results from monitoring processes to the contractor to improve performance.

One of the key expectations of the Office of Science is that each Site Office develops a “Sense of the Laboratory.” “Sense” means an awareness and appreciation of Laboratory performance, programs, operations, and conditions. “Awareness” implies diligence and has been characterized as the Department’s “eyes and ears” in the same way as it has been used in the operational awareness program. Operational awareness is the collection of information through a physical presence (the “eyes”) and an active and effective communication (the “ears”) by DOE. “Appreciation” implies a sufficient level of understanding to be able to reach informed and workable decisions concerning the effective and efficient operation of the Laboratory.

Appreciation entails building and maintaining a broad, general knowledge base of Laboratory performance, programs, operations, and conditions. The “Sense of the Laboratory” must be

actively maintained because of the dynamic nature of Laboratory programs, operations, conditions, and associated Laboratory performance and plans.

The Site Office supports the Nuclear Physics (NP) Program as an on-site program representative and provides assistance with specific program liaison and management functions as required. Program liaison and management includes becoming familiar with program activities occurring at the site, including scope, schedule and cost; and obtaining an understanding of program relationships, site resources and capabilities necessary to support program activities. This function supports the identification of potential site issues and/or concerns that may affect the ability to complete program requirements.

Section 3.0 provides a summary assessment of FY 2009 results and FY 2010 challenges. Attachment A provides a performance assessment for each FY 2009 measure and target.

Attachment B is the FY 2009 Annual Integrated Safety Management Declaration and Effectiveness Review Summary Report.

### **3.0 FY 2009 SUMMARY ASSESSMENT AND FY 2010 CHALLENGES**

In summary, the Site Office achieved nearly all the targets established for FY 2009. The FY 2010 TJSO Annual Performance Plan (APP) objectives, measures, and targets were established based upon an assessment of performance and progress achieved during FY 2009, any new programmatic needs, and DDFO guidance, goals, and objectives.

Noteworthy accomplishments in FY 2009 include:

- Effective implementation of six ARRA funded projects (\$87M).
- Development and implementation of the first of TJSO Technical Qualification Program.
- Development and implementation of TJSO Corrective Action Plan in response to the 2008 HSS ISM inspection.
- Conducting a TJSO partnering survey of SC and TJNAF stakeholders.
- Effective TJSO stewardship/oversight of JLab operations, which contributed to the high safety and business operational performance.
- Providing substantial support to SC corporate initiatives, including project/program reviews (17), SCMS, Cost of Doing Business, Mission Readiness, and contract reform.
- Construction project baselines being met.
- Positioning TJSO to meet DOE's new performance-based federal contract stewardship model.

Looking ahead, the TJSO FY 2010 Annual Performance Plan builds on FY 2009 performance and incorporates the DDFO'S FY 2010 goals. There are four critical challenges:

- Meeting TJSO and TJNAF corrective actions identified in response to the June 2009 HSS inspection.
- Ensuring the success of the 12 GeV Upgrade Project as well as the Technology and Engineering Development Facility Project.
- Implementing the Department's and SC's corporate initiatives (e.g., Contractor Assurance System (CAS), ES&H and S&S reform initiatives, Department/contractor relationships).
- Enhancing TJSO operational awareness/stewardship/oversight program, in particular, incorporating an increased reliance on CAS and risk-based decision making in site office activities.

**ATTACHMENT A - FY 2009 KEY OBJECTIVES, PERFORMANCE MEASURES, TARGETS, AND RESULTS**

**Table 1 – TJSO FY 2009 Performance Assessment**

<b>TJSO Functional Area</b>	<b>Objective Number</b>	<b>Objective</b>	<b>Measure</b>	<b>SC FY 2009 Performance Goals &amp; Objectives- DDFO Crosswalk (Ref. September 22, 2008 memo from G. Malosh to Distribution)</b>	<b>Target</b>	<b>Assessment</b>
Contract Management	1.1	Establish FY 2009 contractor performance objectives for the TJNAF contract.	Complete TJNAF contract Appendix B performance metrics for FY 2009.	Evaluate our Contractors Fairly.	10/1/08	Completed. Incorporated in the JSA contract on October 1, 2008.
Contract Management	1.2	Perform an FY 2008 end-of-year assessment of TJNAF contractor performance.	Complete a final evaluation report that meets contract requirements.	Evaluate our Contractors Fairly.	1/31/09	Completed. Issued February 4, 2009.

<b>TJSO Functional Area</b>	<b>Objective Number</b>	<b>Objective</b>	<b>Measure</b>	<b>SC FY 2009 Performance Goals &amp; Objectives-DDFO Crosswalk (Ref. September 22, 2008 memo from G. Malosh to Distribution)</b>	<b>Target</b>	<b>Assessment</b>
Contract Management	1.3	Perform a FY 2009 mid-year assessment of TJNAF contractor performance and provide feedback.	Complete a mid-year performance assessment and feedback to the TJNAF contractor.	Evaluate our Contractors Fairly.	5/15/09	Completed. Mid-year feedback transmitted on May 29, 2009.
Contract Management	1.4	Establish FY 2010 contractor performance objectives for the TJNAF contract.	Complete TJNAF contract Appendix B performance metrics for FY 2010.	Evaluate our Contractors Fairly.	9/30/09	Completed. HQ approved on October 20, 2009, and incorporated in JSA contract on October 27, 2009 (effective October 1, 2009).
Program and Project Management, and Federal Stewardship	2.1	Ensure the TJNAF safety program continues to improve and achieves its "best in class" safety goals.	Review the TJNAF safety program and provide expectations and guidance concerning improvements in the safety program that could contribute to achieving "best in class" goals; and provide oversight of performance in achieving goals and take action as needed.	Help our Laboratories be Successful: Improve contractor assurance system; Gain a better understanding of contractor safety performance and drive improvement.	9/30/09	Completed. High expectations were established in the PEMP, which facilitated strong performance by the Lab, as exemplified by strong safety culture, and meeting or exceeding DART, TRC, and PEMP goals.

TJSO Functional Area	Objective Number	Objective	Measure	SC FY 2009 Performance Goals & Objectives- DDFO Crosswalk (Ref. September 22, 2008 memo from G. Malosh to Distribution)	Target	Assessment
Program and Project Management, and Federal Stewardship	2.2	Maintain oversight of TJNAF closure of HSS ES&H findings from June 2008 ES&H inspection, and provide guidance as appropriate.	Review and approve TJNAF CAP.  Conduct oversight and effectiveness reviews of CAP actions, as appropriate.	Help our Laboratories be Successful: Gain a better understanding of contractor safety performance and drive improvement.	10/31/08  9/30/09	Completed. TJSO and SC-3 approved on October 23, 2008.  Completed. DOE CATS closure evidence posted ahead or on-time for all HSS findings. Monthly status meetings held with the lab, and site office conducts advance review and comment resolution with the lab. Effectiveness reviews scheduled for 1QFY10, 2QFY10 and 3QFY10.
Program and Project Management, and Federal Stewardship	2.3	Maintain effective levels of oversight and cognizance of JLab activities to maintain a "Sense of the Laboratory" to assist in ensuring an effective oversight and feedback mechanism.	Involve every staff member in the development of the TJSO Operational Awareness Plan and the annual assessment schedule.	Help our Laboratories be Successful: Gain a better understanding of contractor safety performance and drive improvement.	9/30/09	Completed. The TJSO staff monitored the conduct and performance of major program activities as well as work activities, accidents, mishaps, and lab planning efforts.

TJSO Functional Area	Objective Number	Objective	Measure	SC FY 2009 Performance Goals & Objectives- DDFO Crosswalk (Ref. September 22, 2008 memo from G. Malosh to Distribution)	Target	Assessment
Program and Project Management, and Federal Stewardship	2.4	Ensure TJNAF programs and projects are conducted using sound management practices.	Maintain awareness and oversight of DOE program/project requirements to ensure 12 GeV Upgrade, TEDF, and other projects are in compliance with DOE guidance and orders, and take corrective actions as appropriate.	Help our Laboratories be Successful.	9/30/09	Completed. Projects are being implemented in accordance with DOE management practices.

TJSO Functional Area	Objective Number	Objective	Measure	SC FY 2009 Performance Goals & Objectives- DDFO Crosswalk (Ref. September 22, 2008 memo from G. Malosh to Distribution)	Target	Assessment
Program and Project Management, and Federal Stewardship	2.5	Ensure that line item and GPP project baselines are successfully achieved.	Provide oversight and evaluate the status of ongoing TJNAF projects, in particular the 12 GeV Upgrade and TEDF projects. Take management actions that ensure that projects successfully achieve their baselines. The level of required TJSO management and involvement will be tailored to the size and scope of the project, and deviation from baselines. Support Critical Decision approval process.	Improve our Laboratories: Sustain the investment in Laboratory infrastructure through continued SLI progress.	9/30/09	Completed. Projects met baselines. Utilities and Infrastructure Modernization Project achieved CD-0. 12 GeV Upgrade Project and Technology and Engineering Development Facility both received favorable Independent Project Reviews. Facilitated development and approval of TEDF Contractor Management/ General Contractor Acquisition Plan, and laboratory issuance of RFP.
Program and Project Management, and Federal Stewardship	2.6	Ensure TJNAF site planning and infrastructure supports mission accomplishment.	Approve the Infrastructure portion of the Annual Laboratory Plan and implement the Mission Readiness concept.	Improve our Laboratories: Implement the Mission Readiness Model.	9/30/09	Completed. Infrastructure portion of plan approved by TJSO, and peer review of JLab mission readiness implementation scheduled for May 2010.

TJSO Functional Area	Objective Number	Objective	Measure	SC FY 2009 Performance Goals & Objectives- DDFO Crosswalk (Ref. September 22, 2008 memo from G. Malosh to Distribution)	Target	Assessment
Program and Project Management, and Federal Stewardship	2.7	Improve TJNAF operating efficiency (i.e., understand and control the cost of doing business).	Identify process and methods to track and address reducing the cost of doing business at the laboratory. Work with TJNAF management to take appropriate action to manage and reduce costs.	Improve our Laboratories: Understand and control/ reduce the cost of doing business.	9/30/09	Completed Lab and Site Office management meet twice a year (April and November) to analyze Cost of Doing Business items such as major cost drivers, indirect cost trends, and operational efficiencies;and to identify and implement opportunities for efficiencies.
Program and Project Management, and Federal Stewardship	2.8	Ensure TJNAF manages and reduces utility/ energy consumption, in accordance with DOE Directives and Executive Order 13423.	Approve Executable Plan establishing site-specific goals.  Monitor progress towards goals.	Improve our Laboratories: Hold Labs accountable for meeting EO goals.	12/31/08  9/30/09	Completed. The Executable Plan was approved on 12/23/08.  Completed. Progress monitored through monthly reports and periodic meetings. Lab on track to meet goals.

TJSO Functional Area	Objective Number	Objective	Measure	SC FY 2009 Performance Goals & Objectives- DDFO Crosswalk (Ref. September 22, 2008 memo from G. Malosh to Distribution)	Target	Assessment
Program and Project Management, and Federal Stewardship	2.9	Conduct reviews, evaluations, and assessments of the contractor in programmatic and operational areas to ensure the adequacy of the contractor's management and administrative systems to manage the program work. This includes the areas of ES&H, Safeguards and Security, and Project Management Systems. Coordinate DOE and external reviews, evaluations, and inspections of the Laboratory.	As needed.		9/30/09	Partially completed. There were 13 TJSO assessments completed during FY 2009. Seven assessments were canceled and two were delayed until FY 2010 due to changing priorities.

<b>TJSO Functional Area</b>	<b>Objective Number</b>	<b>Objective</b>	<b>Measure</b>	<b>SC FY 2009 Performance Goals &amp; Objectives-DDFO Crosswalk (Ref. September 22, 2008 memo from G. Malosh to Distribution)</b>	<b>Target</b>	<b>Assessment</b>
TJSO Internal Operations (includes measures common to all areas)	3.1	Prepare the FY 2009 TJSO Annual Performance Plan.	Issue the FY 2009 Annual Performance Plan, incorporating DDFO Goals and Objectives.		10/15/08	Completed. APP issued on October 10, 2008.
TJSO Internal Operations (includes measures common to all areas)	3.2	Conduct an assessment of FY 2008 performance against performance plan.	Issue the FY 2008 Annual Assessment Report.		11/15/08	Completed. ARR issued on November 14, 2008.
TJSO Internal Operations (includes measures common to all areas)	3.3	Prepare FY 2009 TJSO staff performance plans consistent with TJSO FY 2009 APP objectives & measures, and DOE and SC expectations.	Performance plans signed.	Improve our Operations: Human Resources.	12/31/08	Completed. The last performance plan was signed on 12/23/09.
TJSO Internal Operations (includes measures common to all areas)	3.4	Develop a FY 2011 Program Direction budget request and justification.	Prepare budget submittal per HQ guidance.	Improve our Operation: Budget and Finance.	6/30/09	Completed. Budget with justification submitted on February 25, 2009.

TJSO Functional Area	Objective Number	Objective	Measure	SC FY 2009 Performance Goals & Objectives- DDFO Crosswalk (Ref. September 22, 2008 memo from G. Malosh to Distribution)	Target	Assessment
TJSO Internal Operations (includes measures common to all areas)	3.5	Ensure adequate training and development so that the TJSO staff has the required skills to perform their assignments and to be prepared for the future.	<p>Implement TJSO Technical Qualification Program (TQP) for identified positions.</p> <p>Complete IDPs in accordance with DOE guidance. TJSO management and staff jointly review IDPs for career and skills development. Look for ad-hoc opportunities during the year for staff developmental assignments.</p>	Improve our Operation: Human Resources.	<p>9/30/09</p> <p>9/30/09</p>	<p>Completed. Most qual cards are expected to be completed by the end of FY 2010.</p> <p>Partially met. TJSO staff attended conferences and training opportunities, and served on 17 ad-hoc, non-TJSO/TJNAF project/program reviews. All site office PDs were updated. Not all employee IDPs were updated.</p>
TJSO Internal Operations (includes measures common to all areas)	3.6	Establish and maintain effective TJSO management systems and procedures that are consistent with SCMS procedures and field office roles, responsibilities, authorities, and accountabilities.	Prepare and update SOPPs as needed and conduct training, as appropriate. Provide suggestions on improving and streamlining SCMS as identified.	Improve our Operations: Complete full implementation of SCMS.	<p>9/30/09</p> <p>12/31/08</p>	<p>Completed. SOPPs updated and training conducted.</p> <p>Completed. Independent SC survey of TJSO implementation of SCMS resulted in positive evaluation.</p>

<b>TJSO Functional Area</b>	<b>Objective Number</b>	<b>Objective</b>	<b>Measure</b>	<b>SC FY 2009 Performance Goals &amp; Objectives- DDFO Crosswalk (Ref. September 22, 2008 memo from G. Malosh to Distribution)</b>	<b>Target</b>	<b>Assessment</b>
TJSO Internal Operations (includes measures common to all areas)	3.7	Develop and implement TJSO Corrective Action Plan in response to the June 2008 HSS ES&H inspection.	Plan is developed and implemented on schedule. Conduct progress and effectiveness reviews, as appropriate.		10/31/08	Completed. TJSO CAP approved on October 23, 2008. DOE CATS closure evidence posted ahead or on time for all HSS findings. TJSO Operational Awareness Program Plan updated to include Effectiveness Reviews and Extent of Condition Review provisions.
TJSO Internal Operations (includes measures common to all areas)	3.8	Conduct TJSO self-assessments.	Close all remaining corrective actions from TJSO FY 2007 Self Assessment.		9/30/09	Completed. All corrective actions were closed by December 2008.
TJSO Internal Operations (includes measures common to all areas)	3.9	Support DOE and SC corporate needs and initiatives.	Support as needed, including participation in non-TJ program and project reviews, and commenting on draft SCMS procedures and engagement on other One SC Re-engineering activities.	Improve our Operations: Support development and implementation of SCMS.	9/30/09	Completed. TJSO Personnel participated in 17 non-TJSO/TJNAF review (e.g., project, SCMS) activities.

## **ATTACHMENT B – FY 2009 ANNUAL INTEGRATED SAFETY MANAGEMENT DECLARATION AND EFFECTIVENESS REVIEW SUMMARY REPORT**

### **1.0 Executive Summary**

In accordance with DOE M 450.4-1, *Integrated Safety Management System (ISMS) Manual*, the Thomas Jefferson Site Office (TJSO) conducted an Integrated Safety Management (ISM) annual effectiveness review of TJSO and Jefferson Science Associates, LLC (JSA) for the Thomas Jefferson National Accelerator Facility (TJNAF). The objective of the review was to provide a “snapshot” evaluation of the overall effectiveness of ISMS implementation.

In summary, the review indicates that Jefferson Science Associates (JSA) and the Thomas Jefferson Site Office (TJSO) are executing an effective ISM Program. Areas of high importance and significant change during FY 2009 include:

- Dramatic increase in 12 GeV Upgrade Project construction activities; preparation for Technology Engineering and Development Facility construction and renovation activities; and ARRA site infrastructure improvement projects;
- Development and implementation of Corrective Action Plans (CAPs) stemming from a 2008 HS-64 health and safety review of TJSO and JSA; and
- Issuance and implementation of a major revision to the Accelerator Safety Envelope.

Areas for improvement remain in each organization; however, there were no implementation gaps or breakdowns that indicate the ISMS programs are not satisfactory.

### **2.0 Introduction/Background**

The effectiveness reviews were conducted using assessment reports of TJSO and JSA, including self-assessments and external assessments related to ISMS. As such, it represents a “look-back” of all events, assessments, operational awareness activities, and trends. This summary report includes two attachments:

- Attachment 1 contains TJSO’s ISM effectiveness review of JSA.
- Attachment 2 contains the ISM effectiveness review of TJSO.

The FY 2009 JSA ISM effectiveness review was submitted to TJSO in the letter H. Montgomery to J. A. Turi, “Annual Integrated Safety Management (ISM) Expectations and Declarations,” dated September 30, 2009. The JSA review concluded that the TJNAF ISM system is effective, based in part by the conclusion of an independent assessment team convened in late 2009: “The team’s overall conclusion is that the ISMS is in place and operating effectively. This conclusion is based on the following key results:

- Lab leadership has inspired, built, and upholds a penetrating culture, which nurtures positive ES&H behaviors and practices;
- Management demonstrates a strong, genuine, continuous and personal commitment to ISMS elements;
- The workforce believe that the Lab is a safe place to work and they are responsible for their safety and those around them;
- Performance is being measured and trended consistently and leading to system improvements;
- Mission and operational changes are being properly evaluated and addressed within the ISMS.”

Future opportunities for improvement were identified by JSA:

- Planned trend analysis program improvements will include more targeted analysis for high risk activities, similar to efforts with hand and finger injuries, as well as deeper penetration of trending information to the supervisory workforce;
- Establishing metrics to measure the extent to which lessons learned are benefiting work planning activities;
- Continued development of the Employee Job Task Analysis process to facilitate employee-supervisor interaction to analyze position-specific hazards and establish and track required training;
- Clarification and communication of the issues reporting mechanism(s) and establishing an agreed timeline regarding incident related communication with TJSO; and
- EMS improvements will continue to be a focus area, with an emphasis on refining the revised processes, establishing and implementing appropriate improvement targets, communicating key EMS information to staff, users, and contractors, and improved integration of EMS elements into existing ISMS programs.

The next JSA declaration and effectiveness review is to be submitted no later than August 31, 2010. The next JSA ISM Program Description, if an update is warranted, is due to TJSO by December 31, 2010. Except as noted above, TJSO’s expectations regarding annual ISM deliverables have been conveyed to JSA via J. Turi to C. Leemann letter, subj: “Annual Integrated Safety Management (ISM) Expectations and Approval of Jefferson Laboratory ISM Program Description (PD),” dated March 27, 2008.

### 3.0 Integrated Safety Management Declaration

TJISO concludes that ISM is being effectively implemented by JSA at Thomas Jefferson National Accelerator Facility (TJNAF); areas needing improvement have been identified and are being addressed. The areas needing improvement are summarized at a high level in the following “Conclusions” section and discussed in greater detail in Attachment 1.

TJISO has reached an overall conclusion that ISM is effectively implemented within the Site Office; areas needing improvement have been identified and are being addressed. The areas needing improvement are summarized at a high level in the following “Conclusions” section and discussed in greater detail in Attachment 2.

### 4.0 Conclusions

**4.1 JSA:** ISM is being effectively implemented by JSA at TJNAF. Vulnerabilities identified in FY 2008 that have been deemed to be progressing to adequate performance include:

- JSA training requirements and implementation is undergoing a wholesale process change with the rollout of a new automated job task analysis program.
- High performing aspects of the Laboratory’s ISM program includes an active Operating Experience program that routinely contributes to the DOE lessons learned system.

Areas warranting improvement include the following:

- Transparency of Operations and Contractor Assurance System
- Material Handling Program\*
- Accelerator Safety
  - Non-conservative determinations concerning Accelerator Safety Envelope (ASE) violations and Unreviewed Safety Issues (USIs)
  - Reliability of the Personnel Safety System (i.e., safety interlocks, sweep process, etc.)
  - Progress on the actions required from the TJISO SAD-ASE approval letter
  - Verification of implementation of the ASE
- Management of Pressure Vessel Inspection Records
- Fire protection

- Event investigation and reporting program (HSS programmatic Finding)\*
- Assessments program (HSS programmatic Finding)\*
- Issues management program (HSS programmatic Finding)\*

\*Effectiveness reviews scheduled for FY 2010 should validate closure of these deficiencies associated with the 2008 ES&H review by HSS.

**4.2 TJSO:** ISM is being effectively implemented by TJSO. Areas warranting improvement include the following:

- Issues follow-up
- Conduct of effectiveness reviews

## ATTACHMENT 1

### TJSO EVALUATION OF JSA PERFORMANCE AND ISM SYSTEM EFFECTIVENESS

The Lab's performance in safety, as measured through the lagging indicators of Total Recordable Case Rate (TRC), and Days-Away Restricted Duty (DART), was considered exceptionally good, based on comparison to both DOE goals and general industry performance. The PEMP goals for the TRC rate and DART rate were 0.65 and 0.25, respectively. There were three workplace injury events, inclusive of all workers, during FY 2009, and all were TRC cases. There were no DART cases during FY 2009, which is an exceptional accomplishment worthy of recognition.

The contractor's FY 2009 effectiveness review report identified that ISM is effective at JLab. The contractor identified ISM strengths such as consolidation of the Lab's work planning/control/authorization process with activity hazard analyses, issues management, event investigation & reporting, forklift operations, EMS, the assessments program, and safety metrics. The contractor has identified and scheduled the following opportunities for improvement: targeted trend analysis for high risk activities, establishing metrics to measure the extent lessons learned are benefiting work-planning activities, continued development of the Employee Job Task Analysis process, issues reporting mechanism(s), and EMS improvements.

#### 1. EVALUATION OF CONTRACTOR WORK PLANNING, CONTROL & EXECUTION:

**FY 2009 off-normal events:** A non-inclusive list of off-normal events, most of which were minor and non-DOE reportable, are itemized below. The following were deemed worthy to mention in this report, as they required ORPS reporting, or were otherwise significant or indicated programmatic weaknesses:

- 10-1-08 – Test Lab electropolish system PLC valve controller error.
- 10-6-08 – Unreviewed Safety Issue. Discovery of Personnel Safety System (PSS) interlock jumper (was not removed after maintenance evolution).
- 10-9-08 – Free Electron Laser (FEL) vault access inconsistency as noted by Personnel Safety System (PSS) operator.
- 1-5-09 – Subcontractor hand burn in kitchen.
- 2-2-09 – Employee fall from ladder on slope – work not suspended, scene not preserved.
- 2-10-09 – Hall C beamline configuration control – ORPS negative but classification not timely.
- 3-19-09 – Injector gun ground lead failure.
- 4-1-09 – Excavated energized legacy electric line in old trailer city lot.
- 4-9-09 – Fire, cigarette butt can at CEBAF Center dock.
- 5-7-09 – Unauthorized access into radiation area by users without dosimetry – no internal notification to JLab ES&H reporting manager.
- 6-19-2009 - FEL left unattended while in Controlled Access.
- 5-8-09 – Unauthorized access into FEL vault by employee and guest without dosimetry.

- 7-24-2009 – Accelerator Safety Envelope (ASE) violation. FEL Waveguide PSS interlock inoperable.
- 8-20-09 – ASE violation. Personnel Entry to BSY and Dropping of PSS. Deficient PSS sweep procedure.

**Material Handling:** JSA developed and began executing corrective actions to address a material handling Finding issued during an FY08 HS-64 health and safety inspection detailing numerous issues with the JSA forklift program. All corrective action commitments associated with the 2008 HSS ES&H review are on-track and the effectiveness review will be completed in FY 2010.

**Accelerator Safety:**

- ASE violations: TJSO approved the first major revision to the accelerator’s Safety Assessment Document and Accelerator Safety Envelope (SAD-ASE) on April 14, 2009. Since then TJSO has identified that certain events were either ASE violations or USIs. After the third mis-categorization, TJSO met with ES&H and Accelerator Division personnel to convey concerns over JSA being non-conservative in their determination of ASE violations (i.e., determining whether events and as-found conditions were USIs or ASE violations). Since then, accelerator operations personnel have demonstrated conservative judgment in two recent occurrences, although timely DOE notification is still a problem (i.e., ASE violation of digging permit procedural error). The expectation is that the Laboratory will be able to successfully address both areas in FY 2010.
- Reliability of the Personnel Safety System. The hazards analysis located in the Safety Assessment Document credits the PSS with keeping the probability of many accidents in the “extremely low” category, meaning an accident should occur on average every 10,000 to one million years. However, twice this year both independent channels of safety interlocks at different locations have failed due to loss of configuration control. In one of the events, the only barrier preventing workers from potentially receiving RF burns was an announcement heard by workers that beam was about to enter the North LINAC, where they were working on an open RF waveguide. As discussed below, TJSO recognizes the need for protecting the accelerators’ credited controls, and has mandated configuration management of such in the April 14, 2009 SAD-ASE approval letter. TJSO anticipates progress by JSA in this area in FY 2010, as this is an area of concern.
- Progress on the actions required from the TJSO SAD-ASE approval letter. Eight actions were requested via the DOE SAD-ASE approval letter dated April 14, 2009. The actions were given a three-year lead-time because many require substantial effort (e.g., establishing configuration management for the credited controls). The site office’s expectation is that by the end of FY 2010, the laboratory will have developed a preliminary path forward, including a schedule and corporate-level tracking of actions.

- Verification of implementation of the ASE: Reviews were scheduled twice in FY 2009 that would have reviewed whether the revised ASE was adequately implemented. The reviews were to verify that ASE flow down procedures were updated as needed, personnel trained, and credited controls (both administrative and engineered) were in place, effective, and maintained. As of this date, JSA/TJSO re-scheduling has not occurred. Concerns mentioned elsewhere in this section indicate the value of conducting such a review in FY 2010.

**Management of Pressure Vessel Inspection Records.** Select stationary compressed gas storage tanks were found to lack pressure vessel inspection records, as required via local policy and 10 CFR 851.

**Environmental Management System (EMS).** As a result of a review and audit in FY 2009, TJSO has determined that the EMS is adequately integrated into the JSA ISMS Description.

- A joint assessment of the functional area of environmental authorizations was conducted by TJSO and JSA in the first quarter of FY 2009. The assessment focused on management, compliance, and oversight by the contractor and the site office. A significant finding was that the roles and responsibilities of the EMS were hard to differentiate and track.
- In the third quarter of FY 2009, TJSO participated in a validation audit of the TJNAF Environmental Management System. The audit was conducted to assess performance of the activities required by the EMS and to validate that the EMS continued to be implemented as required by the International Organization for Standardization (ISO) 14001, *Environmental Management System Requirements*. In addition, the audit assessed the implementation of Executive Order Requirements that are flowed down to DOE Order 450.1A, *Environmental Protection Program*, and DOE Order 430.2B, *Departmental Energy, Renewable Energy and Transportation Management*. The EMS audit found no major non-conformances. An aggressive corrective action plan was approved and implemented.

**Fire protection.** On June 30, 2009, TJSO granted extensions to all of the remaining corrective actions stemming from a March 2008 DOE Fire Protection assessment. Although extensions have been granted due to JLab resource loading issues, timely closure of these actions is still an area of concern.

**Work planning tools.** Continued use of work planning tools was evident, thereby promoting a more unified process of integrating hazard evaluation and ES&H support in work activities. There were repeat instances where it was communicated that Scheduled Accelerator Down (SAD) work activities would not be approved without having a corresponding electronic work plan (e.g., AtLis entry). Such work controls are expected to promote both worker safety, but also overall efficiency.

**Trending:** Through the Laboratory's quarterly trend analysis efforts, JSA determined that an excessive number of hand and finger injuries comprised the overall number of injuries

being recorded (both reportable and non-reportable). JSA's conclusion is consistent with TJSO's FY 2008 ISM Effectiveness review trending analysis on this matter. Resultantly, JSA sent out several different notices through different forums, alerting the general laboratory population to focus on prevention of hand and finger injuries through better work planning and use of PPE. The Site Office believes the JSA trend analysis and notification approach was appropriate.

The information below was extracted from Site Office assessment records in ORION. Site Office assessment activities and findings (issues) during FY 2008 and FY 2009 are furnished for relative comparison.

- Functional Areas evaluated that were found to have seemingly healthy programs:
  - Project Management (58 walkthroughs with 1 P-3 issue)\*
  - [2008 Project Management performance = 36 walkthroughs with 1 issue]
  - Safeguards and Security/ISSM (5 walkthroughs with 0 issues)
  - [2008 S&S performance = 35 walkthroughs with 0 issues]
  - Conduct of Operations (10 walkthroughs with 2 P-3 issues)

\*Does not include nineteen issues identified during a fire protection design review of TEDF project (30% design) and 12 GEV project (100% design) in August 2009.

- Functional Areas evaluated that were found to have largest number of Findings (none of these are considered significant at this time):
  - Industrial Safety (25 P-2s, 31 P-3s, 5 proficiencies)
  - Industrial Hygiene (5 P-2s, 26 P-3s, 3 proficiencies)
  - Environmental (2 P-2s, 18 P-3s, 7 proficiencies)
- While there was a relative up-tick in the number of IH/Laser Safety findings (FY 2008 = 0, FY 2009 = 6), there were no trends identified which are deemed significant enough to prompt "for cause" reviews in 2010.

The following table graphically illustrates those functional areas that have received the most TJSO Findings identified during walkthroughs. No conclusions have yet been drawn from the data.

## Most Frequent Walkthrough Findings–Functional Sub-Areas Drilldown: FY 2007-FY 2009



## 2. EVALUATION OF JSA'S CONTRACTOR ASSURANCE SYSTEM (CAS):

**Summary:** Overall performance of JSA's Contractor Assurance System in FY 2009 is acceptable. Incremental improvements have been seen in aspects that support the CAS such as assessment planning. Upon reviewing the Lab's self-assessment of a QA procedure implementation, the Site Office found the assessment process to be executed in accordance with internal protocol, performed by qualified personnel, and the disposition of issues were processed in a manner considered commensurate with the significance. It is considered important that the Lab continue to promote awareness of its assessment procedures to sustain the use of qualified assessors, and ensure consistency and value-added outcome from these assessment activities. While the overall state of the Lab's CAS is deemed adequate, there were events and conditions where CAS performance did not meet expectations, and merit discussion and consideration for future improvement. These discrepancies have been documented in CAS performance during the rating period, and feedback has been systematically provided to the Lab when identified. JSA trending analysis is discussed in section 1. The Office of Science and contractors are evaluating improvements to CAS; accordingly, it is anticipated that TJSO and JSA will be collaborating in FY 2010 in revising the TJNAF CAS process.

In FY 2008, an HS-64 health and safety inspection provided an in depth analysis of CAS at TJNAF. As a result of this review, most CAS efforts in FY 2009 were focused on addressing three large, programmatic in nature, Findings and their causes.

**Transparency of CAS/Operations:** CAS transparency is an area warranting continued attention. Specific examples encountered during the year include: not being invited to a critique, pre-critiquing an event (holding an internal meeting prior to the fact-finding critique), and delays in conducting a critique. DOE notification and invitation to timely critiques is a basic expectation that DOE has of contractors, as TJSO is charged with ensuring events are thoroughly analyzed, the correct causes are identified, and appropriate corrective actions are assigned.

### **Event investigation and reporting.**

- FY 2008 HSS Finding D-4: "TJNAF has not established sufficient processes nor implemented a fully effective event investigation and reporting program that rigorously identifies, investigates, reports, and prevents the recurrence of ES&H-related events and injuries..."

In FY 2009, benchmarking and subsequent corrective actions were generated. Draft procedures are in the review and approval process, to be followed by implementation and, lastly, an effectiveness review. TJSO has reviewed with comment all deliverables to date. All TJSO comments have been addressed and the effectiveness review is scheduled for FY 2010.

- Key JSA staff attended on-site ORPS and CAIRS training organized by TJSO. The training focused on classifying and reporting injuries and events, and obtaining practical experience in conducting query and sort routines within these DOE databases, thereby improving JSA's ability to monitor or detect trends.
- Causal Analysis and Corrective Action Plan (CAP) Development: Causal analysis is maturing and warrants continued attention. At least one instance arose during FY 2009 that warranted the Site Office to reject the Laboratory's initial CAP, as the plan lacked adequate interim control measures and contained unsupportable suspense dates to close some actions. Causals and CAPs may be improved by discussing the matters with the Site Office before official submissions. There were four DOE formal assessments last year, and TJSO was invited to only one of the Laboratory's subsequent causal analysis reviews.

### **Assessments Program.**

- FY08 HSS Finding D-2: "The JSA assessment program is not fully effective to provide sufficient frequency, scope, and rigor and assurance of the adequacy of safety programs..." All identified corrective action commitments associated with finding D-2 are on track, and the effectiveness review is scheduled for FY 2010.

### **Issues management.**

- FY 2008 HSS Finding D-3: "The TJNAF issues management program is not fully effective in ensuring that ES&H-related events, injuries, conditions, and program and performance deficiencies are rigorously categorized, analyzed, and corrected, and recurrence controls are established..." In FY 2009, benchmarking and subsequent corrective actions were generated. Draft procedures are in the review and approval process, to be followed by implementation and lastly an effectiveness review. TJSO has reviewed with comment all deliverables to date. All TJSO comments have been addressed and the effectiveness review is scheduled for FY 2010.
- During the fiscal year, the Site Office provided direction to the Laboratory that TJSO closure concurrence would be necessary for P-1 and P-2 findings issued to the Laboratory by the Site Office. This action was taken due to isolated, but repeat instances when the Laboratory prematurely closed-out actions or changed the terms of closure. The Site Office has still encountered instances where the closure of CATS findings by the Laboratory is not supported by objective evidence. This is an area warranting continued attention. The Site Office will continue to monitor the Laboratory's performance on closing corrective actions in a manner commensurate with the significance of the issue.

The Site Office is appreciative of the Laboratory's efforts to automate notifications when corrective actions are ready for TJSO closure verification. It is important that feedback be provided to the Site Office on the closure verification process to ensure our mutual interests are being met.

- At least one example was found in Laboratory's Safety Observation system that indicated lack of follow-up to a "Stop Work" situation for an immediately dangerous condition. Had the event been properly reported and processed, it would have required a Notable Event Investigation, ORPS classification, causal analysis, corrective action plan, etc. Background: TJSO reviewed a random sample of entries in the Safety Observation System and noted a Stop Work condition that was initiated by a Jefferson Laboratory employee for subcontractor work. The unsafe act was identified after work activities had been initiated, and described a Lock-out/Tag-out non-compliance in the midst of an open, energized electrical panel. While the field intervention taken by the observer was prudent, Stop Work events such as this are clearly outside the intended scope of the Safety Observation System, as defined in the protocol document that accompanies the on-line portal to the Safety Observation System. Stop Work events are to be processed using the instruction in Chapter 3330 of the Laboratory's ES&H Manual, and trigger follow up such as causal analysis review, corrective action plans, and screening for DOE Occurrence Reporting. Based on this instance, the Laboratory should consider refreshing the awareness of personnel using the Safety Observation System, so users understand its scope and limitations; furthermore, personnel screening these entries should be sensitized to look for events and actions that warrant additional hazard mitigation and reporting consideration.

**Lessons Learned Program.** Considerable contributions were made by JSA to the DOE-wide Lessons Learned/Operating Experience database and leadership was demonstrated during DOE's monthly Operating Experience Coordinator's forum. While the utilization of lessons learned information in work planning, which is the ultimate goal, still has room for maturation, there are clear indications that progress is being made to address the challenges of linking different electronic systems to this end.

The Laboratory's contributions to the DOE-wide Lessons Learned/Operating Experience database has greatly surpassed the PEMP benchmarks, and the recent volume of Lessons Learned submissions to DOE's Lessons Learned database (9 items) rivals that of most large, multi-program sites. Jefferson Laboratory's representation within DOE's Operating Experience community is likewise remarkable and demonstrates leadership among peers. Jefferson Laboratory has become a reliable source of information for the group, often initiating questions and relevant discussions that would otherwise go unaddressed. DOE HS-32, which serves as the focal point for the DOE Lessons Learned system and facilitates exchanges among the OPEX Coordinator community, has repeatedly voiced appreciation for Jefferson Laboratory's contributions, and often directs inquiries from other program offices to consult with the Jefferson Laboratory OPEX Coordinator for ideas and examples of OPEX best practice. This is a source of great credit to the Laboratory, and is fully appreciated by the Department.

**3. EVALUATION OF THE ISM PERFORMANCE BY CONTRACTOR AGAINST THE FY 2009 PERFORMANCE EVALUATION MANAGEMENT PLAN (PEMP):**

The balance of safety related performance tied to specific PEMP measures was likewise good, as reflected by the fact that there were no significant environmental releases or injuries.

**4. EVALUATION OF THE CONTRACTOR ISMS DESCRIPTION:**

JSA has not indicated the need for any further changes other than administrative. TJSO has reviewed the JSA ISMS Description and no significant opportunities for improvement were noted.

**ATTACHMENT 2**  
**TJJO SELF EVALUATION OF PERFORMANCE AND ISM SYSTEM**  
**EFFECTIVENESS SUMMARY**

TJJO expended significant effort in the following areas during FY 2009: 1) Performing oversight to ensure the Findings from a FY08 HS-64 health and safety inspection are adequately addressed (ongoing), 2) construction oversight, and 3) providing technical support and oversight of the first major revision to the Safety Assessment Document-Accelerator Safety Envelope (SAD-ASE). These efforts are discussed below.

**1. EVALUATION OF THE FIELD WORK PLANNING AND CONTROL PROCESS**  
*(pertaining to site office conduct of work):*

- EMS and QA:
  - The TJJO Procedure 4.9 is the ISMS System Program Description and was revised December 15, 2008. The Environmental Management System and Quality Assurance Plan are both included within the scope of the description.
  - The Site Office has annual approval authority/responsibility for the TJNAF EMS program, which is administered by JSA.
- FEOSH: Unannounced inspections were conducted and included individual interviews with each staff member. Two safety related events were noted involving TJJO staff or support contractors (below reporting threshold):
  - TJJO administrative support contractor stung by a bee while eating lunch outdoors. No proposed long-term or short-term actions other than general awareness.
  - TJJO staff member experienced minor back strain when attempting to move an office chair that unexpectedly separated.
  - The only other open FEOSH item is a long-term corrective action to eliminate the need for a condensate catch pan in a TJJO staff member's office.
- TJJO direct support service contractors: TJJO effectively implemented the requirements of 10CFR851 in the operations of the four TJJO contractors who perform services in support of JLab operations. No personal injuries were sustained by contractor employees or others as a result of TJJO support service contractor operations. Members of TJJO observed support service contractor operations approximately monthly, and few safety related issues were noted. When noted, contractor employees were advised and notices sent to the contractor's corporate officers. This program was periodically discussed at monthly meetings held with contractor representatives, the COR, and the Contracting Officer. Due to the dynamic nature of the construction work occurring at TJNAF, frequent communications, both

formally and informally, with TJSO direct support grounds-keeping contractors has been taking place.

- TJSO training: Significant progress on completion of technical qualification cards occurred in FY 2009, with completion by all expected in FY 2010. A qualification card needs to be developed for the new accelerator operations position that was filled in FY 2009.
- TJSO oversight staffing: TJSO has filled a technical position with a focus on oversight of accelerator operations and project management.
- TJSO internal processes:
  - All procedures were reviewed and revised accordingly to ensure alignment with SCMS. This effort included a detailed crosswalk that was performed earlier in FY 2009. An independent team from SC also assessed SCMS familiarity during the fiscal year, acknowledging TJSO's level of familiarity and local support process.
- The site office Continuity of Operations (COOP) Plan underwent major revision. The TJSO COOP Plan required extensive discussion with SC headquarters and NA-40, since TJNAF screens out of COOP applicability via Order DOE O 150.1, Continuity Programs.
  - Oversight procedures underwent minor changes to address an HS-64 Finding that the site office was not performing effectiveness reviews.
  - A TJSO self-assessment of EMS was conducted in FY 2009, with results indicating that oversight frequency and adequacy were in line with Office of Science management procedures in the area of environmental authorizations.
- TJSO issues management: Last year's ISM effectiveness review identified that there was an opportunity for improvement regarding TJSO follow-up on previously identified issues.
  - TJSO benchmarked other sites and incorporated a practice from the Y-12 Site Office in which the contractor is not permitted to close out DOE-identified findings without concurrence from the site office. This is managed via the contractor's electronic issues tracking system. TJSO and JSA have agreed upon a protocol requiring timely TJSO review prior to contractor closure. The JSA/TJSO process is not yet mature and continues to be evaluated for progress.
  - Lack of conducting effectiveness reviews, as identified in the 2008 HSS ES&H assessment. The expectation is that by successfully completing the scheduled FY 2010 effectiveness reviews, TJSO will be able to validate closure of this deficiency.

- Issues follow-up. TJSO is still struggling with factoring in sufficient time and resources for verifying issues identified during Site Office assessment activities are adequately closed-out. Approximately 60% of P-2 Findings identified during FY 2009 remain open. This vulnerability has remained largely unchanged since FY 2008.

## **2. EVALUATION OF FIELD ASSURANCE SYSTEM REGARDING ISM PERFORMANCE** (conducted throughout the year):

Operational awareness (i.e., day-to-day oversight): A new Contractor Assurance System (CAS) evaluation form was created and integrated with ORION, to facilitate the assembly of CAS information in making adequacy determinations. A CAS evaluation summary for FY 2009 is located in a separate section below. The TJSO Operational Awareness Program Plan was alignment with DOE's Quality Assurance Directive (O 414.1C), specifically to incorporate effectiveness reviews and extent of condition review provisions. Training was held with the Site Office staff to ensure the aforementioned content revisions were properly conveyed.

Formal assessments: Working to the JLab/TJSO integrated assessment schedule, the following was scheduled and/or completed in FY 2009:

- Total number of assessments scheduled: 44
- Number of assessments fully completed: 21
- Number of assessments cancelled: 9
- Assessments in-progress: 5
- Assessments not started or indeterminate: 8

In FY 2008, TJSO closed out remaining site office Findings from a 2008 ORO Fire Protection assessment of JSA and of TJSO. As a result, the Fire Protection Authority Having Jurisdiction (AHJ) has been formalized, including delegating certain non-Federal AHJ responsibilities to the contractor (i.e., day-to-day AHJ responsibilities). In addition, in response to another Finding, recurring TJSO assessment schedules for fire protection assessments have been set up in the ORION database.

Another focus area included TJSO oversight and assistance of the first major revision to the TJNAF SAD-ASE since facility commissioning. After three detailed TJSO/ORO reviews and significant partnering, TJSO approved the document on April 14, 2009. A continuing focus area for FY 2009 and for FY 2010 is ensuring proper rigor is applied to the ASEs credited controls.

**Trend Analysis, TJSO Oversight:** The information below was extracted from the Site Office's assessment records in ORION. Site Office assessment activities and findings (issues) during FY 2008 and FY 2009 are furnished for relative comparison. An analysis of trends between quarters within a fiscal year has been deemed impractical.

- Assessment figures:
  - Number of Walkthrough entries in FY 2009 = 175 [FY08 = 187]
  - Number of Walkthrough issues in FY 2009 = 127 [FY08 = 164]
  - Formal Assessments of Lab in FY 2009 = 26 [FY08 = 18]
  - Focused Walkthroughs of Lab in FY 2009 = 3
  - Number of Assessment issues in FY 2009 = 51 [FY08 = 102]
  
- Walkthrough Issue Breakdown:
  - P-3s = 92 [FY08 = 205] (equiv. to opportunity for improvement)
  - P-2s = 35 [FY08 = 67] (non-compliances)
  - P-1s = 0 [FY08 = 0] (equiv. to Stop Work)
  - Proficiencies = 18 [FY08 = 31]
  
- P-2s still OPEN in the system = 21 (percent open = 60%)
  
- Average number of issues per walkthrough in FY 2009 = 0.72 [FY08=0.87]

**3. RESULTS OF FIELD ISM-RELATED PERFORMANCE AGAINST THE FY 2009 SAFETY OBJECTIVES, MEASURES, AND COMMITMENTS:**

See PEMP discussion in Attachment 1.

**4. ANNUAL EVALUATION THE FIELD ISMS DESCRIPTION:**

The TJSO ISM System Description was last revised December 19, 2008. No changes are expected at this time.

**5. ANNUAL EVALUATION OF THE FIELD FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES MANUAL (FRAM):**

The TJSO FRAM was revised in May 2008 to address a new staff hire and responsibilities. The next accuracy and adequacy review will be conducted in May 2010, and the FRAM will be updated to reflect TJSO staffing changes and changes in assignment of duties.