Department of Energy
Thomas Jefferson Site Office
12000 Jefferson Avenue
Newport News, Virginia 23606

May 18, 2007

Dr. Christoph W. Leemann
President and Laboratory Director
Jefferson Science Associates, LLC
Thomas Jefferson National Accelerator Facility
12000 Jefferson Avenue
Newport News, VA 23606

Dear Dr. Leemann:

The attached Management Assessment report covers the Site Office's evaluation of the TJNAF Environmental, Safety, and Health Oversight Program, conducted March 20 through March 22, 2007. The Laboratory is requested to submit to the Site Office a corrective action plan by June 30, 2007, identifying each Observation, and the corresponding disposition or proposed course of action.

Based on the results of this report, which evaluated critical components of the Laboratory's self-assessment program and Integrated Safety Management System (ISMS), and other considerations, the Site Office has reviewed the timing for conducting the Comprehensive ISMS Assessment that was scheduled to occur in the 4th Quarter of FY 2007. The Laboratory should now plan on the Department conducting a Comprehensive ISMS Assessment during the 3rd Quarter of FY 2008. This arrangement is contingent upon the Lab sustaining its efforts in performing critical self evaluations of the ISMS program, and tracking corrective actions to timely resolution.

If there are questions pertaining to this report, please contact Steve Neilson, Scott Mallette, or me. We are committed to improving the quality of these reviews, and we encourage the Lab to provide feedback on ways that the Site Office can improve the efficiency and utility of these assessments.

Sincerely,

James A. Turi

James A. Turi, Manager
Thomas Jefferson Site Office

Enclosure

cc w/encl:
T. Thomas
C. Ferguson
M. Dallas
B. Lenzer

SJN:Oversight Rpt Ltr:5/11/07:620

Thomas Jefferson Site Office Management Assessment of the Thomas Jefferson National Accelerator Facility Environment, Safety, and Health Oversight Program

FINAL REPORT

May 2007

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Report Approval

Scott Davis, Team Member
Oak Ridge Office

5/9/07
Date

Steve Neilson, Team Member
Thomas Jefferson Site Office

5/9/07
Date

Randy Smyth, Team Lead
Oak Ridge Office

5/9/07
Date

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Acronyms, Abbreviations, and Definitions

CAIRS	Computerized Accident/Incident Reporting System
CATS	Corrective Action Tracking System
CFR	Code of Federal Regulations
CRAD	Criteria and Review Approach Document
DEAR	DOE Acquisition Regulation
DOE	U.S. Department of Energy
ES&H	Environment, Safety, and Health
ESH&Q	Environment, Safety, Health, and Quality
FEL	Free Electron Laser
HF	Hydrofluoric Acid
IA	Independent Assessment
IAS	Integrated Assessment Schedule
ISM DEAR Clause	48 CFR 970.5223-1, *Integration of Environment, Safety, and Health into Work Planning & Execution*
ISMS	Integrated Safety Management System
JSA	Jefferson Science Associates, LLC
NP	Noteworthy Practice
OBS	Observation
OFI	Opportunity for Improvement
ORO	Oak Ridge Office
ORPS	Occurrence Reporting and Processing System
PAAA	Price Anderson Amendments Act
PEMP	Performance Evaluation and Measurement Plan
QAP	Quality Assurance Plan
R2s	Roles and Responsibilities
SELLS	Society for the Effective Lessons Learned Sharing
SSAC	Senior Safety Advisory Committee
SURA	Southeastern Universities Research Association
TJNAF	Thomas Jefferson National Accelerator Facility or Jefferson Lab (also referred to as JLab)
TJSO	Thomas Jefferson Site Office, DOE Office of Science

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Executive Summary

The U.S. Department of Energy (DOE) Thomas Jefferson Site Office (TJSO) conducted a high-level management assessment of the Thomas Jefferson National Accelerator Facility (TJNAF) or Jefferson Lab (also referred to as JLab) Environment, Safety, and Health (ES&H) Oversight Program as requested by the DOE TJSO Manager. The management assessment was performed with the assistance of the DOE Oak Ridge Office (ORO). The objective of the assessment was to verify that TJNAF has mature and sufficient management systems and controls for performing viable ES&H oversight consistent with DOE's policies and regulations. This assessment was conducted on March 20 through March 22, 2007.

DOE Policy 450.4, *Safety Management System Policy*, requires that an Integrated Safety Management System be institutionalized by each major DOE prime contractor. The purpose of such a system is to ensure that work is conducted efficiently and in a manner that ensures protection of the worker, the public, the environment, and the facility. The assessment was conducted in accordance with the DOE guidance provided in DOE Guide 450.4-1B, *Integrated Safety Management System Guide*, Volumes 1 and 2, dated March 2001.

The review team found that TJNAF has generally established an ES&H oversight program that helps to ensure work is performed in a safe manner. The TJNAF ISMS provides for self-assessments, line management, and independent assessments. Assessments and other oversight activities, to include feedback and improvement, are documented in accordance with site plans and procedures and were found to address operational performance activities. Oversight program documentation, as reviewed, provided evidence that issues were identified, documented, and tracked in a manner sufficient to ensure disposition. Based on the limited amount of time for this assessment, the team tested the occurrence reporting process, recordkeeping, and trending of site data and events to determine if these processes were sufficient to support safe operations. The team found that TJNAF is implementing an oversight program consistent with their requirements, as defined in TJNAF command media. However, several observations were made that should help improve TJNAF programs and should help provide greater protection to the worker. For example, it was not apparent that the Integrated Assessment Schedule was sufficiently comprehensive to include representative project and program activities, major Environment, Safety, Health, and Quality (ESH&Q) programmatic elements (e.g., safety basis, maintenance, training and qualification, emergency preparedness, fire protection, chemical safety programs, etc.), and site incident/trending of data. The review team had some difficulty in verifying some performance metrics (walkthroughs) and divisional participation in these metrics, as required by the FY 2007 Performance Evaluation and Measurement Plan (PEMP). Also, corrective action guidance should be improved to allow for cross referencing source documents to actions.

An informal, but apparently effective, lessons learned program is in place; and the use of lessons learned and quantitative measures to monitor and promote further ES&H performance are considered to be in place and maturing. Price-Anderson Amendments Act activities were not reviewed in detail due to time constraints during this assessment. Six of the seven objectives reviewed were met.

This management assessment was performed by three senior technical personnel over the course of two days. During the assessment, several interviews were conducted; numerous documents were reviewed;

and meetings were attended to assess the adequacy of feedback and communication. The team's review identified five observations, which are summarized as follows:

Noteworthy Practices

None were identified.

Opportunities for Improvement

None were identified.

Observations

MA-02.1-OBS.1 It is not apparent from the Integrated Assessment Schedule that a comprehensive and representative cross-section of project and program activities is scheduled for assessment.

MA-02.1-OBS.2 It is not evident that a representative cross section of key safety management program areas is part of assessment activities over time (e.g., safety basis, maintenance, training and qualification, emergency preparedness, fire protection, chemical safety programs, etc.).

MA-02.1-OBS.3 The FY 2007 PEMP requirement for completion of 10 percent walkthroughs by the end of the first quarter and progress toward the second quarter's goal of 20 percent could not be verified.

MA-05.2-OBS.4 TJNAF should amend the Corrective Action Tracking System guidance and practices to include identification of the source document.

MA-07.3-OBS.5 The Laboratory has established a system to monitor a PEMP measure addressing the oversight of work activities (versus specific work spaces); however, the disparity in divisional participation and intended "transparency" between divisions of this measure does not appear to be managed or enforced.

Thomas Jefferson Site Office Management Assessment of the Thomas Jefferson National Accelerator Facility Environment, Safety, and Health Oversight Program

1.0 INTRODUCTION

The U.S. Department of Energy (DOE) Thomas Jefferson Site Office (TJSO) conducted a management assessment of the Thomas Jefferson National Accelerator Facility (TJNAF or Jefferson Lab, also referred to as JLab) Environment, Safety and Health (ES&H) Oversight Program on March 20-22, 2007. The objective of the assessment was to verify that TJNAF has mature and sufficient management systems and controls for performing viable ES&H oversight consistent with DOE's policies and regulations.

The DOE TJSO represents DOE in conducting business with the Jefferson Science Associates, LLC (JSA), and others at the Thomas Jefferson National Accelerator Facility located in Newport News, Virginia. The TJSO is located at Jefferson Lab and reports to the Chief Operating Officer, Office of Science, with ES&H technical support from the ORO located in Oak Ridge, Tennessee. The primary DOE research sponsor for Jefferson Lab is the Office of Nuclear Physics, Office of Science, located at DOE Headquarters in Washington, D.C. Jefferson Lab is managed and operated for DOE by the Jefferson Science Associates, LLC. JSA is a Southeastern Universities Research Association (SURA)/Computer Sciences Corporation limited liability corporation created specifically to manage and operate Jefferson Lab.

DOE Policy 450.4, *Safety Management System Policy*, requires that an Integrated Safety Management System (ISMS) be institutionalized by each major DOE prime contractor. The purpose of such a system is to ensure that work is conducted efficiently and in a manner that ensures protection of the worker, the public, the environment, and the facility. An integral part of the ISMS includes oversight activities as described in DOE Order 414.1C, *Quality Assurance*, and DOE Policy 226.1, *Department of Energy Oversight Policy.*

2.0 PURPOSE AND SCOPE

This assessment was conducted to evaluate if TJNAF is satisfactorily defining and implementing an oversight program at the site, facility, and activity level. This assessment was accomplished by reviewing documents and interviewing personnel.

The scope of the TJNAF assessment addressed the oversight program, its adequacy, implementation effectiveness, issue identification and disposition, and data tracking and trending. The scope included a review of TJNAF's management and organization, roles and responsibilities, and assessment priorities as they relate to oversight and the quality of the Lab's self-assessment program, including assessments of subcontractors where appropriate.

The purpose of the review was to evaluate whether TJNAF:

- ES&H oversight needs are identified and effectively prioritized;
- ES&H oversight is scheduled, completed, and documented using formal and standard practices;

- ES&H oversight is technically rigorous and of adequate depth to appropriately evaluate operations and performance, and
- issues noted during ES&H oversight are tracked to resolution and evaluated for cause to eliminate recurrence of similar problems.

The specific scope elements of the review included the following:

- Evaluation of the planning and prioritization system which determines the level and scope of oversight and involvement needed and the types and frequency of oversight for various activities.

- Evaluation of the program for the quality of line manager assessments of ES&H aspects of work performance, including management assessments and self-assessments.

- Evaluation of the TJNAF independent oversight program, including scope, frequency, and assessment implementation approach.

- Evaluation of the integration of TJNAF's oversight program and the ES&H oversight programs of subcontractors.

- Evaluation of oversight efforts in specific ES&H areas (e.g., fire protection, environmental protection, industrial safety, industrial hygiene, and radiological protection) to ensure that these oversight programs have adequate coverage of projects, adequate depth and frequency, adequate formality and documentation, and adequate summarization and feedback.

- Evaluation of the TJNAF corrective action program, including issues verification of actions and determinations of effectiveness.

- Evaluation of the TJNAF issues management program and the methods for issues analysis and feedback.

- Evaluation of the mechanism that TJNAF uses to obtain feedback on the implementation of their ES&H oversight program.

3.0 OVERALL APPROACH

The approach for this assessment was principally a high-level evaluation of management systems, processes, activities, and documentation of TJNAF's ES&H oversight/assessment activities established to ensure proper operational awareness and improvements.

The management assessment included the following activities:

- Information Evaluation - Procedures, records of completed work, and available documentation supporting oversight activities were reviewed.

- Interviews - The adequacy of program definition, understanding, and execution were reviewed by conducting interviews of a cross-section of the personnel performing and/or responsible for oversight.

- Activity Observation – As opportunities are presented, the team attended meetings to assess the adequacy of feedback and communication.

3.1 Development of the Review Plan and CRADs

The Team Leader provided each team member a copy of the Review Plan which was developed based on DOE Policy 450.4, *Safety Management System Policy*, the Integrated Safety Management DOE Acquisition Regulation (DEAR) Clause 970.5223-1, *Integration of environment, safety, and health into work planning and execution,* and DOE Guide 450.4-1B, *Integrated Safety Management System Guide*, Volumes 1 and 2. The Review Plan was developed considering TJNAF's management organizational structure and lessons learned from other DOE ISMS reviews and verifications.

This ISMS review was conducted using Criteria and Review Approach Documents (CRADs). The CRADs are based on the performance objectives and criteria developed from DOE Guide 450.4-1B and DOE Handbook 3027-99, *Integrated Safety Management Systems (ISMS) Verification, Team Leader's Handbook.* During the review, the team members completed their evaluation of the criteria in the individual CRADs that support conclusions as to whether the individual objectives were met. The record of the evaluation is included in the "ISMS Review Form" (see Appendix B) for each objective in the CRADs and documents the basis for the conclusions reached concerning the objective.

The team's findings are categorized using the following criteria:

Noteworthy Practice (NP) – A practice that exceeds the normal performance expectations and should be considered for sharing with the rest of the DOE complex.

Opportunity for Improvement (OFI) – Noncompliance with regulatory, contractual, or procedural requirements.

Observation (OBS) – A comment on TJNAF's performance or facility/condition/activity observed that may require resolution or further investigation but which does not link directly to a law, regulation, contract requirement, or contractor procedure requirement. An observation can also be a recommendation regarding implementation of a best management practice.

Closure of all findings (OFIs and OBSs) will be tracked and documented evidence of resolution maintained in accordance with TJSO's procedures.

All OFIs and OBSs identified during the evaluation are clearly identified on the "ISMS Review Form."

The Review Plan and CRADs were approved by the TJSO Manager prior to commencement of the fieldwork portion of the assessment.

3.2 Selection of the Team

Subsequent to selection and appointment of the Team Leader by the TJSO Manager, the Team Leader identified the necessary functional areas and expertise needed for the review and prospective, qualified team members. To the extent practical, line and support personnel from the TJSO and ORO were used to staff the team.

The Team Leader developed the review schedule, scope, expected level of effort required of the team members, and a prospective team roster. A list of required reading materials was prepared, and documentation was provided to each team member.

Interaction among the team members was necessary to ensure an adequate understanding of the TJSO Manager's expectations, the TJNAF oversight program, and the plan and strategy for the assessment. The review began on Tuesday, March 20, 2007, with an entrance conference with key TJNAF personnel; a close-out briefing with TJNAF and the TJSO Manager was held on Thursday, March 22, 2007. The Team Roster is provided in Appendix D of this assessment. The assessment was supported by both TJSO and DOE ORO staff.

3.3 Preliminary Activities

The team participated in several meetings/conference calls prior to the start of this assessment and accomplished the following:

- Finalized the CRADs and the Review Plan,
- Identified some of the TJSO interview candidates and activities to observe during the fieldwork portion of the review,
- Determined which team members would support the lines of inquiry in the CRADs, and
- Performed some preliminary document reviews.

The TJSO provided the team members a large number of documents electronically in advance of the assessment. These documents included TJNAF organization charts, standard operating procedures, and other relevant documents.

3.4 Fieldwork Activities

Fieldwork activities began on March 20, 2007, and lasted approximately two days. The team observed field activities, interviewed selected TJNAF personnel, and reviewed documents. The team held an entrance meeting with TJNAF management. During the period of on-site work, the team held daily meetings to review and discuss observations and issues from the day's activities and identify areas requiring follow-up. Both strengths and weaknesses were noted. Where there were program or performance weaknesses identified, the team noted these as an OFI or OBS. Five OBSs were verified and validated with TJNAF as they were identified throughout the course of the assessment and through a factual accuracy process.

At the conclusion of the review, the Team Leader conducted a close-out briefing with the TJSO Manager as well as TJNAF management and staff. The briefing included the basis for the team's evaluation of the status of TJNAF's implementation of its ES&H oversight program.

4.0 ASSESSMENT OF TJNAF'S ISMS PROGRAM

Objective: TJSO Management – MA.01

DOE contractors must establish a comprehensive and integrated contractor assurance system in accordance with quality assurance requirements (as stated in 10 Code of Federal Regulations [CFR] Part 830, Subpart A, or other applicable regulations), applicable DOE directives, and contract terms and conditions. A contractor's assurance process must encompass all of the various activities designed to—

1. identify deficiencies and opportunities for improvement,
2. report deficiencies to the responsible managers and authorities, and
3. implement effective corrective actions.

Objective: TJSO Management – MA.02

A rigorous and credible assessment program is the cornerstone of effective, efficient management of programs such as environment, safety, and health. TJNAF will be responsible for developing, implementing, and performing comprehensive assessments of all facilities, systems, and organizational elements, including subcontractors, on a recurring basis. The scope and frequency of assessments must be specified in site plans and program documents (e.g., the quality assurance program) and must meet or exceed the requirements of applicable DOE directives. External peers or subject matter experts may be utilized to support assessment activities.

Objective: TJSO Management – MA.03

Formal programs will be established and effectively implemented to identify issues and report, analyze, and address operational events, accidents, and injuries.

Objective: TJSO Management – MA.04

In addition to structured assessments, DOE contractors will establish and implement processes to solicit feedback from workers and work activities.

Objective: TJSO Management – MA.05

Contractors must ensure that a comprehensive, structured issues management system is in place. This system must provide for the timely and effective resolution of deficiencies, and be an integral part of the effective contractor assurance system.

Objective: TJSO Management – MA.06

Formal programs must be established to communicate lessons learned during work activities, process reviews, and event analyses to potential users and applied to future work activities. Contractors must identify, apply, and exchange lessons learned with the rest of the DOE complex. Contractors must review and apply lessons learned identified by other DOE organizations and external sources to prevent similar occurrences.

Objective: TJSO Management – MA.07

Contractors must identify, monitor, and analyze data measuring the performance of facilities, programs, and organizations. The data must be used to demonstrate performance improvement or deterioration relative to identified goals.

4.1 Noteworthy Practices

None were identified.

4.2 Opportunities for Improvement

None were identified

4.3 Observations

MA-02.1-OBS.1 It is not apparent from the Integrated Assessment Schedule that a comprehensive and representative cross-section of project and program activities is scheduled for assessment.

MA-02.1-OBS.2 It is not evident that a representative cross section of key safety management program areas is part of assessment activities over time (e.g., safety basis, maintenance, training and qualification, emergency preparedness, fire protection, chemical safety programs, etc.).

MA-02.1-OBS.3 The FY 2007 Performance Evaluation and Measurement Plan (PEMP) requirement for completion of 10 percent walkthroughs by the end of the first quarter and progress toward the second quarter's goal of 20 percent could not be verified.

MA-05.2-OBS.4 TJNAF should amend the Corrective Action Tracking System guidance and practices to include identification of the source document.

MA-07.3-OBS.5 The Laboratory has established a system to monitor a PEMP measure addressing the oversight of work activities (versus specific work spaces); however, the disparity in divisional participation and intended "transparency" between divisions of this measure does not appear to be managed or enforced.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The review team found that TJNAF has generally established an ES&H oversight program that helps to ensure work is performed in a safe manner. The TJNAF ISMS provides for self-assessments, line management, and independent assessments. Assessments and other oversight activities, to include feedback and improvement, are documented in accordance with site plans and procedures and were found to generally address operational performance activities. The program continues to mature. Senior management attention would be anticipated to sustain this positive momentum. Oversight program documentation, as reviewed, provided evidence that issues were identified, documented, tracked, and trended in a manner sufficient to ensure disposition. Based on the limited amount of time for this assessment, the team tested the occurrence reporting process, recordkeeping, and

trending of site data and events to determine if these processes were sufficient to support safe operations. The team found that TJNAF is implementing an oversight program consistent with its requirements, as defined in TJNAF command media. However, several observations were made that should help improve TJNAF programs and should help provide greater protection to the worker. For example, it was not apparent that the Integrated Assessment Schedule was comprehensive and included all representative project and program activities, major ES&H programmatic elements (e.g., safety basis, maintenance, training and qualification, emergency preparedness, fire protection, chemical safety programs, etc.), and site incident/trending data. The review team had some difficulty in verifying some performance metrics (walkthroughs) and divisional participation in these walkthroughs, as required by the FY 2007 Performance Evaluation and Measurement Plan. Also, corrective action guidance and practices should be improved to allow for cross referencing source documents to actions.

An informal, but effective, lessons learned program is in place; and the use of lessons learned and quantitative measures to monitor and promote further ES&H performance are considered to be in place and maturing. Price-Anderson Amendments Act activities were not reviewed in detail due to time constraints during this assessment. Six of the seven objectives reviewed, were met.

A TJNAF corrective action plan will be developed to address each OFI and OBS, and a follow-up review will be conducted by TJSO to verify and validate that corrective actions are completed and effective.

6.0 LESSONS LEARNED

The following lessons learned were identified by team members:

- Additional time was needed to prepare and read contractor documents prior to the beginning of the assessment. Prior web access to the internal JLab procedures and documents would have been value added.
- An advanced site visit which included a site tour, badging, training, etc., would have benefited the team.
- The time allocated for this review did not allow sufficient time to do an in-depth evaluation of the contractor's programs.

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Appendix A – Summary of Opportunities for Improvement, Observations, and Noteworthy Practices

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Summary of Opportunities for Improvement, Observations, and Noteworthy Practices

CRAD	Identifier	Description
TJSO MA.1		
This objective was met. ***Criterion:*** ***MA.1.1*** ***MA.1.2*** ***MA.1.3*** ***MA.1.4*** ***MA.1.5***	No OFIs, OBSs, or NPs were identified for MA.1.	
TJSO MA.2		
This objective was not met. ***Criterion:*** ***MA.2.1*** ***MA.2.2***	**MA-02.1-OBS.1**	It is not apparent from the Integrated Assessment Schedule that a comprehensive and representative cross-section of project and program activities is scheduled for assessment.
	MA-02.1-OBS.2	It is not evident that a representative cross section of key safety management program areas is part of assessment activities over time (e.g., safety basis, maintenance, training and qualification, emergency preparedness, fire protection, chemical safety programs, etc.).
	MA-02.1-OBS.3	The FY 2007 PEMP requirement for completion of 10 percent walkthroughs by the end of the first quarter and progress toward the second quarter's goal of 20 percent could not be verified.
TJSO MA.3		
This objective was met. ***Criterion:*** ***MA.3.1*** ***MA.3.2*** ***MA.3.3***	No OFIs, OBSs, or NPs were identified for MA.3.	

CRAD	Identifier	Description
TJSO MA.4		
This objective was met. ***Criterion:*** ***MA.4.1***	No OFIs, OBSs, or NPs were identified for MA.4.	
TJSO MA.5		
This objective was met. ***Criterion:*** ***MA.5.1*** ***MA.5.2*** ***MA.5.3*** ***MA.5.4***	**MA-05.2-OBS.4**	TJNAF should amend the CATS guidance and practices to include identification of the source document.
TJSO MA.6		
This objective was met. ***Criterion:*** ***MA.6.1*** ***MA.6.2*** ***MA.6.3*** ***MA.6.4***	No OFIs, OBSs, or NPs were identified for MA.6.	
TJSO MA.7		
This objective was met. ***Criterion:*** ***MA.7.1*** ***MA.7.2*** ***MA.7.3*** ***MA.7.4***	**MA-07.3-OBS.5**	The Laboratory has established a system to monitor a PEMP measure addressing the oversight of work activities (versus specific work spaces); however, the disparity in divisional participation and intended "transparency" between divisions of this measure does not appear to be managed or enforced.

Appendix B – Review Forms

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Management Assessment of the TJNAF
ES&H Oversight Program

Functional Area:	Objective ID: MA-01
Management – Assurance Program	Date: March 2007

OBJECTIVE

TJSO-MA-01 – DOE contractors must establish a comprehensive and integrated contractor assurance system in accordance with quality assurance requirements (as stated in 10 CFR Part 830, Subpart A, or other applicable regulations), applicable DOE directives, and contract terms and conditions. A contractor's assurance process must encompass all of the various activities designed to—

1. identify deficiencies and opportunities for improvement,
2. report deficiencies to the responsible managers and authorities, and
3. implement effective corrective actions.

Record Review

See Appendix C for a list of documents reviewed.

Interviews Conducted

TJNAF President and Laboratory Director
TJNAF Chief Operating Officer
TJNAF Chief Scientist
TJNAF 12GeV Project Director
TJNAF Accelerator Operations Manager
TJNAF Deputy Group Leader, Accelerator Operations Division
TJNAF Environment, Safety, Health, and Quality (ESH&Q) Division Associate Director
TJNAF ESH&Q Reporting Manager
TJNAF Quality Assurance and Continuous Improvement Manager

Observations of Work Activities

The review team attended a working session with Thomas Jefferson National Accelerator Facility ESH&Q management and staff. The session was to facilitate a review of the contractor's assurance system, including issues management and corrective actions.

Criteria and Discussion of Results

MA-01.1 Assurance activities must encompass environment, safety, and health and must include:

- assessments (including self-assessments, management assessments, and internal independent assessments as defined by laws, regulations, and DOE directives such as quality assurance program requirements) and other structured operational awareness activities (e.g., management walkthroughs);
- incident/event reporting processes, including accident investigations;

- worker feedback mechanisms;
- issues management, including causal analysis, identification of corrective actions and recurrence controls, corrective action tracking and monitoring, closure of corrective actions and verification of effectiveness, and trend analysis;
- lessons-learned programs; and
- performance indicators/measures.

Discussion of Results

The Thomas Jefferson National Accelerator Facility is operated by Jefferson Science Associates for DOE. TJSO provides DOE oversight of the TJNAF. As the operating contractor, TJNAF has established an assurance program with a variety of programs, plans, and procedures which address oversight and operational performance activities. TJNAF recently began evaluating and implementing the requirements of DOE Order 226.1, the DOE directive on oversight. TJNAF has developed an assurance program that includes assessments, reporting, and issues management; and the assurance program is evaluated to meet the requirements of DOE Order 226.1.

In a letter from Leemann to Turi, dated August 2006, TJNAF transmitted its gap analysis on four program areas indicating that no gaps were found in these areas. Action plans were reviewed; and corrective actions were identified, logged, and tracked in TJNAF's Corrective Action Tracking System. TJNAF should continue to develop and mature its assurance system, and current activities coupled with sustained momentum should ensure success.

MA-01.2 The TJNAF assurance system data must be documented and readily available to DOE. Results of assurance processes must be periodically analyzed, compiled, and reported to DOE in support of the formal contract evaluation.

Discussion of Results

The TJNAF assurance system is documented in plans, procedures, and reports. Several assessments have been conducted over the last six months. These assessments indicate the assurance system is in place; data is analyzed; and reports to TJNAF senior management and to DOE are being provided. DOE interacts with TJNAF on issues management and a CATS trending e-mail (March 14, 2007) was presented and reviewed as evidence that communications exist between organizations. The trend data, with primary and secondary cause codes, was analyzed and indicated issues were trending toward adequacy of procedures and training. While this was a recent trend analysis, it was unclear as to how, or if, trending results would be used to determine future assessments. The trending aspect of CATS is a relatively new use of the system since the system just recently has a "statistically significant" amount of data that can be used for trending purposes.

MA-01.3 TJNAF will establish processes for corporate audits, third-party certifications, or external reviews by experts in designing and implementing the TJNAF's assurance system.

Discussion of Results

TJNAF has established a process for conducting independent and external reviews by outside experts, as needed. Independent assessments (IAs) and surveillances of TJNAF operations are proceduralized in IA Procedure Rev. 2.2, dated November 30, 2006. Issues

and associated corrective actions from IAs in Fiscal Years 2005 and 2006 were reviewed with TJNAF ESH&Q staff. Using CATS, the TJNAF staff had some difficulty retrieving specific assessment correction actions. A more detailed description can be found in MA-05.

MA-01.4 Program effectiveness can be certified by third parties to provide management with assurance that program elements meet national standards and reviewers' expectations. Although third-party certification can complement internal assurance systems, it is not a substitute for rigorous internal assurance system processes.

Discussion of Results

The TJNAF Assurance Program includes reviews by third parties, and these reviews are provided to TJNAF management. Interviews with senior TJNAF management representatives indicate that this process has been used and will continue to be used in those areas where TJNAF lacks expertise, needs additional resources, or where a truly independent and objective review is preferred. The most recent example of this type of effort was found in the TJNAF Senior Safety Advisory Committee (SSAC) Executive-Level Independent Assessment of the JLab Integrated Safety Management System, dated November 2006. Use of external, third party reviewers provides an excellent avenue for different eyes to look at internal processes. The subject assessment was a very good approach and a good document. Approximately 12 elements were partially met, and one was not met. A drill down of this assessment was not conducted based on the timeframe; however, many of the items referenced in the assessment should continue to be a primary focus area and should be addressed proactively and tracked regularly to ensure actions are completed and that such actions are effective.

MA-01.5 TJNAF must monitor and evaluate all work performed under their contracts, including the work of subcontractors.

Discussion of Results

TJNAF monitors the work being conducted under the existing contract through ESH&Q manual guidance, subcontractor safety plans, job site visits, and assessments. The ESH&Q Manual Chapter 3420 addresses procured services and construction work control requirements. Subcontracting Officer's Technical Representatives oversight of subcontractors is adequate based on CATS data. Subcontractor safety plans were reviewed as part of the IA-2006-02 Subcontractor Health and Safety Performance and were found to be adequate. Field verification of Subcontracting Officer's Technical Representatives activities and subcontractor safety plans were not performed during this assessment.

Conclusion

TJNAF has established an assurance program with a variety of programs, plans, and procedures which address oversight and operational performance activities. The TJNAF assurance system issues management and CATS trending were recently analyzed and indicated issues were trending toward potentially inadequate procedures and training. Using CATS, the TJNAF staff had some difficulty retrieving specific assessment correction actions. The recent TJNAF Senior Safety Advisory Committee, *Independent Assessment of Integrated Safety Management System*, dated November 2006, demonstrated (1) the use of external, third party reviewers and (2) a good approach and documentation of an independent

assessment program. Overall, the TJNAF Assurance Program is progressing and generally performing satisfactorily. As the program and its elements continue to mature, TJNAF should be able to more effectively monitor its performance and report to DOE appropriately.

The objective has been met.

Opportunities for Improvement, Observations, and Noteworthy Practices

None were identified.

Reviewed by:	Approved by:
Scott Davis, Team Member	Randy Smyth, Team Leader

Management Assessment of the TJNAF
ES&H Oversight Program

Functional Area:	Objective ID: MA-02
Management – Assessments	Date: March 2007

OBJECTIVE

TJSO-MA-02 -- A rigorous and credible assessment program is the cornerstone of effective, efficient management of programs such as environment, safety, and health. TJNAF will be responsible for developing, implementing, and performing comprehensive assessments of all facilities, systems, and organizational elements, including subcontractors, on a recurring basis. The scope and frequency of assessments must be specified in site plans and program documents (e.g., the quality assurance program) and must meet or exceed the requirements of applicable DOE directives. External peers or subject matter experts may be utilized to support assessment activities.

Record Review

See Appendix C for a list of documents reviewed.

Interviews Conducted

TJNAF President and Laboratory Director
TJNAF Chief Operating Officer
TJNAF Chief Scientist
TJNAF 12GeV Project Director
TJNAF Accelerator Operations Manager
TJNAF Deputy Group Leader, Accelerator Operations Division
TJNAF ESH&Q Division Associate Director
TJNAF ESH&Q Reporting Manager
TJNAF Quality Assurance and Continuous Improvement Manager

Observations of Work Activities

The review team attended a TJNAF ESH&Q management and staff working session. The working session used to facilitate a review of the contractor's assurance system, including issues management and corrective actions.

Criteria and Discussion of Results

MA-02.1 Self-assessment is used to evaluate performance at all levels periodically and to determine the effectiveness of policies, requirements, and standards, and the implementation status.

- Management self-assessments (also called management assessments) are performed by TJNAF management and are developed (scope and review criteria) based on the nature of the facility/activity being assessed and the hazards and risks to be controlled.
- Self-assessments, which focus on hands-on work and the implementation of administrative processes, involve workers, supervisors, and managers to encourage identification and resolution of deficiencies at the lowest level practicable (e.g., workplace inspections and post-job reviews).

- Support organizations will perform self-assessments of their performance and the adequacy of their processes.
- TJNAF, at all levels, will assess the implementation and adequacy of its processes, including analysis of the collective results of lower-level self-assessments.
- Self-assessment results will be documented commensurate with the significance of and risks associated with activities being evaluated. Deficiencies will be accurately described and documented for evaluation and correction using formal issues management processes.

Discussion of Results

Currently, TJSO and TJNAF create a joint Integrated Assessment Schedule (IAS). This is considered a favorable practice and should be continued because it facilitates communications, maximizes areas evaluated, and utilizes resources effectively. In addition, each organization executes its own assessment program and utilizes internal and external resources appropriately. The current version of the IAS was dated March 17, 2007. TJNAF should continue to develop and maintain a rigorous and credible assessment program. TJNAF is responsible for developing, implementing, and performing assessments of all its facilities, systems, and organizational elements.

Due to the relatively recent populations of "statistically significant" CATS data, primary and secondary cause codes and similar trending information should be considered as input for decisions on assessments scopes/topics.

In the Annual Performance Plan between TJNAF and DOE, several performance measures are identified. Specifically identified walkthroughs constitute a major goal, and each division is required to accomplish a number of walkthrough each quarter. The performance plan has a requirement for completion of 10 percent walkthroughs of groups within the four major divisions by the end of the first quarter. The review team could not verify that the first quarter's goals, or progress toward the second quarter's, were accomplished.

While a variety of major programmatic areas are covered in the IAS for 2006 and 2007, it was not apparent that a comprehensive and representative cross-section of project and programmatic areas and activities were scheduled for review. For example, assessment activities should include safety basis, maintenance, training and qualification, emergency preparedness, fire protection, chemical safety programs, etc.

MA-02.2 Internal independent assessments will be performed by TJNAF organizations, or personnel that have authority and independence from line management, to support unbiased evaluations.

- The assessments will be formally planned and scheduled based on the risk, hazards, and the complexity of the processes and activities to be evaluated.
- Independent evaluators will be appropriately trained and qualified and have knowledge of the areas assessed.
- Reviewers will be dedicated TJNAF staff, members of external organizations, or both.
- Although independent assessments are applied to individual activities and processes, they will typically focus on entire facilities or projects and programs and management processes that are used by multiple organizations.

- Internal independent assessments will concentrate on performance and observation of work activities and the results of process implementation.

Discussion of Results

Independent assessments are conducted by internal TJNAF organizations and external personnel that have expertise in the area of interest (i.e., Perot Systems Government Services). IAs were conducted for Fiscal Years 2005 and 2006. Results of these assessments were put into the TJNAF CATS and analyzed for trends. Reviewers were found to be trained, knowledgeable, or experienced in the field being reviewed. Training records for individual reviewers were not reviewed during this assessment. Personnel qualifications were reviewed based on the biographies provided. The IAs reviewed were for work control, welding, feedback and improvement, and flowdown to subcontractors. The IAs were focused on work activities and performance. The Performance Evaluation Management Plan is a good management tool for assisting both TJSO and TJNAF in meeting contract performance metrics.

Conclusion

While a variety of positive and effective activities were identified, the objective has not been met in all areas.

Opportunities for Improvement

None were identified.

Observations

MA-02.1-OBS.1 It is not apparent from the Integrated Assessment Schedule that a comprehensive and representative cross-section of project and program activities is scheduled for assessment.

MA-02.1-OBS.2 It is not evident that a representative cross section of key safety management program areas is part of assessment activities over time (e.g., safety basis, maintenance, training and qualification, emergency preparedness, fire protection, chemical safety programs, etc.).

MA-02.1-OBS.3 The FY 2007 PEMP requirement for completion of 10 percent walkthroughs by the end of the first quarter and progress toward the second quarter's goal of 20 percent could not be verified.

Noteworthy Practices

None were identified.

Reviewed by:	Approved by:
Scott Davis, Team Member	Randy Smyth, Team Leader

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Management Assessment of the TJNAF
ES&H Oversight Program

Functional Area:	Objective ID: MA-03
Management – Event Reporting	Date: March 2007

OBJECTIVE

TJSO-MA-03 – Formal programs will be established and effectively implemented to identify issues and report, analyze, and address operational events, accidents, and injuries.

Record Review

See Appendix C for a list of documents reviewed.

Interviews Conducted

TJNAF President and Laboratory Director
TJNAF Chief Operating Officer
TJNAF Chief Scientist
TJNAF 12GeV Project Director
TJNAF Accelerator Operations Manager
TJNAF Deputy Group Leader, Accelerator Operations Division
TJNAF ESH&Q Division Associate Director
TJNAF ESH&Q Reporting Manager
TJNAF Quality Assurance and Continuous Improvement Manager

Observations of Work Activities

The review team attended a working session with TJNAF ESH&Q management and staff. Session was to facilitate a review of the contractor's assurance system, including issues management and corrective actions.

Criteria and Discussion of Results

MA-03.1 Reportable occurrences that meet Occurrence Reporting and Processing System (ORPS) thresholds and associated corrective actions will be evaluated, documented, and reported as required by the DOE directive.

Discussion of Results

Occurrence reporting and recordkeeping requirements are defined in the ESH&Q Manual. Manual Chapter 5300 provides guidance on how to investigate, analyze, document, and report occurrences. Occurrence information is put into a computerized occurrence reporting and tracking system that is used by TJNAF personnel and then shared by all DOE facilities.

Reportable occurrences for 2006 were reviewed, and documentation supporting occurrence reporting was found to be acceptable. For example, the Incident

Investigation Worksheet (5200-T1) for the January 8, 2007, Subcontractor Injury was reviewed and found to be adequate. The event was investigated and documented in accordance with site procedures. Causal factors were identified; a root cause was provided; and follow-up actions were described. Based on our limited access to the CATS system, the follow-up actions could not be verified.

The Notable Event Worksheet for the Free Electron Laser (FEL) Sweep Event was also reviewed to confirm that occurrences are being properly documented and reported. This event/occurrence was also found to be in accordance with site procedures.

MA-03.2 For activities covered by the Price-Anderson Amendments Act (PAAA), nuclear and worker safety and health issues (e.g., noncompliance) meeting DOE reporting thresholds should be self-reported through the DOE-wide Noncompliance Tracking System to mitigate the severity level of the violation and potential financial penalties.

Discussion of Results

Activities reviewed covered by the PAAA were limited because of the short time duration available during this review. This area should be reviewed in more detail as part of the ongoing Integrated Support Center support provided to the TJSO. From the reviews conducted on the CATS and the events reviewed for trending, management, and self-assessments, TJNAF is adequately performing its reporting responsibilities. Guidance provided in the ESH&Q Manual on reporting allows the site to assign significance levels to events and couples these events to reporting thresholds.

Appendix 5300-T4, *Worker Radiation Protection Rulemaking (10 CFR 835) Reporting*, provides additional guidance on reporting events that meet the criteria contained in 10 CFR 820 under the PAAA. Roles and responsibilities for the Jefferson Lab ESH&Q Reporting Manager to serve as the Lab's PAAA Coordinator are also defined.

MA-03.3 Trending analysis of events, accidents, and injuries is performed in accordance with structured/formal processes.

Discussion of Results

Trending of site events, accidents, and injuries is performed in accordance with the formal CATS as defined in the site's ESH&Q Manual. Implementation of CATS is provided in site procedure, *Issues Management*, Revision 1.6, dated November 30, 2005. Roles and responsibilities are delineated, and trend analysis is performed by the Quality Assurance/Continuous Improvement Department Manager. A trending report or analysis was requested and provided to the team. The objective evidence indicates that the site has limited data in the system to help with trending; however, over time, this will improve. Additional trending discussion is provided in MA-05.

Conclusion

Occurrence reporting, recordkeeping, and trending of site events, such as accidents and injuries, are performed in accordance with requirements as defined in the TJNAF ESH&Q Manual. PAAA activities were not reviewed in detail due to the limited amount of time available during this review; however, TJNAF has a documented, formal process for conducting occurrence reporting and performing appropriate notifications.

The objective has been met.

Opportunities for Improvement, Observations, and Noteworthy Practices

None were identified.

Reviewed by:	Approved by:
Scott Davis, Team Member	Randy Smyth, Team Leader

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Management Assessment of the TJNAF
ES&H Oversight Program

Functional Area:	Objective ID: MA-04
Management – Worker Feedback	Date: March 2007

OBJECTIVE

TJSO-MA-04 – In addition to structured assessments, DOE contractors will establish and implement processes to solicit feedback from workers and work activities.

Record Review

See Appendix C for a list of documents reviewed.

Interviews Conducted

TJNAF President and Laboratory Director
TJNAF Chief Operating Officer
TJNAF Chief Scientist
TJNAF 12GeV Project Director
TJNAF Accelerator Operations Manager
TJNAF Deputy Group Leader, Accelerator Operations Division
TJNAF ESH&Q Division Associate Director
TJNAF ESH&Q Reporting Manager
TJNAF Quality Assurance and Continuous Improvement Manager

Observations of Work Activities

The review team attended a meeting with the ESH&Q senior management to discuss the CATS and trending issues and have ES&H staff walk through the computer processes.

Criteria and Discussion of Results

MA-04.1 Common feedback mechanisms are described in site plans/program documents and include the following:

- employee concerns program,
- telephone or intranet "hotline" processes for reporting concerns or questions,
- pre-job briefs,
- job hazard walk-downs by workers prior to work,
- post-job reviews,
- employee suggestion forms,
- safety meetings, and
- employee participation in committees and working groups.

Discussion of Results

Reviewed the TJNAF ESH&Q Manual, *Table of Contents*, to locate applicable committees and determine if their responsibilities were defined. Manual Chapter 2240 describes the various committees at Jefferson Lab and provides a general description of their roles and responsibilities. The Worker Safety Committee is included in this manual chapter and adequately provides for employee representation, participation, feedback, and improvement by allowing the chairman of the Worker's Safety Committee to brief the Director's Safety Council on a quarterly basis.

Minutes from the Worker's Safety Committee Meetings were reviewed to determine if feedback and improvement processes were being implemented. The December 6, 2006, minutes stated the following:

> **Topics for Director's Safety Council, Communication**
>
> An underlying communication theme has become evident regarding employee concerns being brought before the Worker's Safety Committee. The committee is researching resolution pathways and feels that there should be an alternative to this communication deficit.

The communication theme in question could not be determined. The March 7, 2007, Worker's Safety Committee Meeting minutes were reviewed; however, the minutes did not reflect that the theme or that employee concerns process had been addressed. Issues identified in the Worker's Safety Committee Meeting minutes to subsequent meeting minutes should be documented to ensure that safety issues are not missed or overlooked. The TJNAF committee personnel should ensure minutes clearly articulate the issue and resolution.

TJSO and TJNAF developed a continuing improvement action plan to address DNFSB Recommendation 2004-1. This action plan addressed work control and feedback and improvement issues and called out these areas for assessment in 2006. These assessments were reviewed and found to adequately address these functional areas. Issues identified during these assessments were tracked within the contractor's CATS and described in the February 10, 2006, memorandum.

Interviews with Jefferson Lab management representatives indicated that an Employee Hotline was implemented. The hotline had not seen much activity since its inception, and TJNAF representatives attribute this to their existing employee concerns and feedback mechanisms. The review team selected an *Independent Assessment Report for Feedback and Improvement* (IA-2006-05), dated August 30, 2006, to randomly evaluate the use of CATS for tracking and disposition of issues identified in the report. Difficulties in being able to trace issues with the specific resolution were encountered; this situation was corrected on the spot by linking the source document to the issues logged in the tracking system.

Conclusion

TJNAF has formal processes and associated council/committee charters to solicit feedback from workers and work activities to address the criteria.

The objective has been met.

Opportunities for Improvement, Observations, and Noteworthy Practices

None were identified.

Reviewed by:	Approved by:
Scott Davis, Team Member	Randy Smyth, Team Leader

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Management Assessment of the TJNAF
ES&H Oversight Program

Functional Area:	Objective ID: MA-05
Management – Issues Management	Date: March 2007

OBJECTIVE

TJSO-MA-05 – Contractors must ensure that a comprehensive, structured issues management system is in place. This system must provide for the timely and effective resolution of deficiencies, and be an integral part of effective contractor assurance system.

Record Review

See Appendix C for a list of documents reviewed.

Interviews Conducted

TJNAF President and Laboratory Director
TJNAF Chief Operating Officer
TJNAF Chief Scientist
TJNAF 12GeV Project Director
TJNAF Accelerator Operations Manager
TJNAF Deputy Group Leader, Accelerator Operations Division
TJNAF ESH&Q Division Associate Director
TJNAF ESH&Q Reporting Manager
TJNAF Quality Assurance and Continuous Improvement Manager

Observations of Work Activities

The review team attended a meeting with the ESH&Q senior management to discuss the CATS and trending issues and have ES&H staff walk through the computer processes.

Criteria and Discussion of Results

MA-05.1 Program and performance deficiencies, regardless of their source, must be captured in a system or systems that provide for effective analysis, resolution, and tracking. Issues management must include structured processes for—

- determining the risk, significance, and priority of deficiencies;
- evaluating the scope and extent of the condition or deficiency (e.g., applicability to other equipment, activities, facilities, or organizations);
- determining event report ability under applicable requirements (e.g., PAAA, ORPS, security incident reporting);
- identifying root causes (applied to all items using a graded approach based on risk);
- identifying and documenting suitable corrective actions and recurrence controls (trending analysis), based on analyses, to correct the conditions and prevent recurrence;

- identifying individuals/organizations responsible for implementing corrective actions;
- establishing appropriate milestones for completion of corrective actions, including consideration of significance and risk;
- tracking progress toward milestones such that responsible individuals and managers can ensure timely completion of actions and resolution of issues;
- verifying that corrective actions are complete;
- validating that corrective actions are effectively implemented and accomplish their intended purposes, using a graded approach based on risk; and
- ensuring that individuals and organizations are accountable for performing their assigned responsibilities.

Discussion of Results

TJNAF has developed and implemented a CATS that supports the overall TJNAF assurance system. The CATS was reviewed with TJNAF ES&H staff to facilitate the review, cover the majority of the system attributes, and challenge the system at a report and issue level. During the review and subsequent discussions, we confirmed that CATS is an integral part of the contractor assurance system. The CATS allows for tracking, trending, assignment of risk and significance levels, assists in the validation and verification of actions, and provides for the appropriate levels of approval.

Roles and responsibilities (R2s) are defined in ESH&Q Manual Chapter 5400. Also, PAAA Coordinator responsibilities and ESH&Q Reporting Manager responsibilities are defined in Chapter 5400. R2s for the Occurrence Reporting and Recordkeeping programs are defined in Chapter 5300.

TJNAF has an approved Quality Assurance Plan (QAP) and Section 3 provides guidance on analyzing data for continuous improvement. The guidance in the QAP is general in nature and can be applied across all aspects of the Lab to include issues management. Issues Management is currently managed in the ESH&Q organization. The Issues Management Procedure, Revision 1.6, dated November 30, 2005, was reviewed and found to adequately describe the system as explained by ES&H staff. R2s are provided, general requirements and activities are explained, and other aspects of the tracking and trending process are discussed.

In a letter from the JSA President to the TJSO Manager, dated August 25, 2006, no gaps were found in the issues management category by the TJNAF review process.

MA-05.2 Issues management will provide a process for rapidly determining the impact of identified weaknesses and taking timely action to address conditions of immediate concern. For such conditions, interim corrective actions (e.g., stopping work, shutting down activities, or revising a procedure) are to be taken as soon as a condition is identified and without waiting until a formal report is issued.

Discussion of Results

During our meeting with ES&H staff and demonstration of the CATS, the review team provided several assessments and "issues" to the system operator in order to challenge the system. Three of the four assessments could not be readily found. With some back door manipulations (keyword searches and associations), two of the assessments were found. However, the 835 Independent Assessment could not be found and was later entered into CATS. While the majority of issues could be retrieved, this example gave us pause as to other assessments that may not have been entered and tracked. As we continued to review the trending functions, the ES&H staff was able to isolate the system problem with a link field not used for identifying the source or assessment document. It is recommended that TJNAF ES&H amend CATS guidance to require use of the field for identification of the source document (e.g., specific assessment/audit). This field is currently discretionary. The inconsistent use of this field makes it inordinately difficult to tie an issue back to the specific assessment/audit.

MA-05.3 Processes for analyzing deficiencies, individually and collectively, must be established to enable the identification of programmatic or systemic issues. Process products will be used by management to monitor progress in addressing known systemic issues and to optimize the allocation of assessment resources.

Discussion of Results

The CATS as reviewed has provisions for trending via primary and secondary cause codes, action tracking, timeliness, etc. The Notable Event Worksheet for the FEL sweep incident was reviewed and tracked through the CATS. The event was available in CATS; cause codes were assigned; and actions were identified. The event was also available on the lessons learned page. While this was a significant personnel safety issue, the TJNAF effort to investigate, document, track, and follow up on actions is notable. Due to the recent nature of this event, it could not be determined if future assessment planning would include operational procedures such as facility sweeps.

Time and resource constraints (system access) did not allow the team to determine if the CATS system provides a systemic analysis for issues. Trending is available and a preliminary trending report was provided.

Interviews with TJNAF senior management representatives indicated TJNAF is conducting an "Extent of Condition" review based on the SLAC Office of Assurance report. This effort will help TJNAF to further define any systemic issues within the contractor's assurance program. This activity is logged in TJNAF CATS.

MA-05.4 Sites must have effective processes for communicating issues up the management chain to senior management, using a graded approach that considers hazards and risks. The processes must provide sufficient technical basis to allow managers to make informed decisions and must include provisions for communicating and documenting dissenting opinions. Processes for resolving disputes about oversight findings and other significant issues must be implemented. The processes must include provisions for independent technical reviews of significant issues.

Discussion of Results

TJNAF has developed several processes for communicating issues to site personnel and up the management chain to senior management. The Worker Safety Committee helps to communicate issues to the workers. The chairman of the Worker Safety Committee briefs the Director's Safety Council on a quarterly basis. TJNAF management indicated the Worker Safety Committee Chairman is invited to attend these monthly meetings as well. Minutes from the Worker Safety Committee were reviewed and found to have sufficient technical information for TJNAF management to be aware of the issues and make decisions on additional work or approve corrective actions.

Trending information from CATS has recently been initiated since an appropriate level of data has been input, and the information now exists to perform this function. The first such report was provided to the Director's Safety Council meeting last month.

Conclusion

The TJNAF issue management system and associated assurance program elements are being revised, updated, and implemented. As these systems and processes mature, TJSO will see improved operations, trending options, and better issues management. The assurance program elements and related performance metrics are being captured in CATS. CATS is still being updated; and as more information is placed into the system, it will provide for more effective analysis, resolution, and tracking of commitments and issues. CATS represents the "Issues Management System" and includes capabilities to track identified weaknesses, aids in assigning responsibilities, and provides some measures for analyzing issues both individually and collectively and can report out on the functional, programmatic, or systemic areas needing or being worked. This reporting function is used for communicating issues to senior management and uses a type of graded approach (significance level) that considers hazards and risks. One area within the system that could be improved would be to link the source document to the issue in order for personnel to research the issue for a better understanding of the basis for the action.

The objective has been met.

Opportunities for Improvement

None were identified.

Observations

MA-05.2-OBS.4 TJNAF should amend the CATS guidance and practices to include identification of the source document.

Noteworthy Practices

None were identified.

Reviewed by:	Approved by:
Scott Davis, Team Member	Randy Smyth, Team Leader

Management Assessment of the TJNAF
ES&H Oversight Program

Functional Area:	Objective ID: MA-06
Management – Lessons Learned	Date: March 2007

OBJECTIVE

TJSO-MA-06 – Formal programs must be established to communicate lessons learned during work activities, process reviews, and event analyses to potential users and applied to future work activities. Contractors must identify, apply, and exchange lessons learned with the rest of the DOE complex. Contractors must review and apply lessons learned identified by other DOE organizations and external sources to prevent similar occurrences.

Record Review

See Appendix C for a list of documents reviewed.

Interviews Conducted

TJNAF ESH&Q Reporting Manager
TJNAF Mechanical Fabrication Team Leader, Engineering Division
TJNAF Technician, Vacuum Group

Observations of Work Activities

No work activities were observed at the time of this review.

Criteria and Discussion of Results

MA-06.1 An effective lessons learned program, utilizing lessons learned from both inside and outside TJNAF's organization, is implemented to continuously improve performance and safety complements the issues management program.

Discussion of Results

A contract modification was made on November 1, 2006, incorporating DOE Order 210.2, *Corporate Operating Experience Order*, into the DOE/JSA contract. At this time, there is no formal, documented lessons learned program consistent with this directive. The Laboratory does not have the full level of staffing that has been projected to cover these responsibilities; however, the Lab's implementation plan, submitted as a result of the contract modification, allows until December 2007 to achieve full compliance with the directive. The budget's Continuing Resolution was identified as hindering the acquisition of the additional 0.5 full-time equivalent necessary to satisfy the responsibilities identified in DOE Order 210.2. The Laboratory's ES&H Reporting Manager has been tasked with monitoring and disseminating internal and external lessons learned for the Laboratory. This individual receives ES&H information from line supervision through responsibilities identified in the JLab ESH&Q Manual (such as Notable Event Records [Chapter 5300, T-3] and Quarterly EH&S Walkthrough

Inspection Reports [Chapter 5100]). The EH&S Reporting Manager is also responsible for submitting all Computerized Accident/Incident Reporting System (CAIRS) and ORPS information for the Lab, analyzing and transmitting quarterly trend analysis in accordance with DOE Manual 231.1-2, and shares the responsibility for 24-7 monitoring of environmental and safety reporting. This person is also a member of the Society for the Effective Lessons Learned Sharing (SELLS), which exchanges lessons learned information across various industry and governmental agencies.

The Lab routinely distributes accident and injury event descriptions, including lessons learned aspects from these events through the locally circulated, electronic Weekly Briefs publication, and through operations meetings, such as the Scheduled Accelerator Down de-briefing sessions. Examples were provided where informal lessons learned information is externally shared with other DOE laboratories and private academic peers, covering aspects that included both operational efficiency and safety systems. The Laboratory generates approximately one notable event report per month, which is readily accessible through the Lab's website under "Lesson Learned." Of the 15 individual notable event reports issued in 2006, four did not contain any identifiable lessons learned information. Upon discussion with the EH&S Reporting Manager, it was estimated that over the past 12 months, approximately five JLab developed lessons learned were formally shared externally, including best management practices. As a result of an ORPS reportable near-miss event that occurred at the FEL facility in December 2006, the Lab organized and held a lessons learned video conference on January 25, 2007, presenting the event causal analysis findings and near-term and long-term corrective actions. This forum also included solicitation of feedback from off-site participants.

To determine if lessons learned information was being effectively communicated within the Lab, the review team solicited information on a specific event (Notable Event Report #A-06-1024R1 – NEW, dated October 24, 2006) from two crane operators that are assigned to work locations separate from the event and who have different line management reporting chains. Both individuals were able to provide specific details on the Toolbox—Crane Incident that occurred in the test lab, without prompting. These individuals were able to describe both the lift configuration problem (high center of gravity, and two-piece toolbox lifted together vs. separately) and the fact that the person who was engaged in the dropped load had not rigged this article with sufficient regularity.

Evidence was sought to determine if examples exist of previous lessons learned information being effectively applied to generate positive outcomes, or less adverse outcomes, from subsequent activities. Therefore, the Lab's lessons learned/notable events reports entries were scanned for duplicate or similar events. A Notable Event Worksheet was generated on April 7, 2006, detailing poor emergency medical care awareness by the local hospital for a suspected hydrofluoric acid (HF) exposure. A similar suspected HF exposure occurred on March 2, 2007, (not yet recorded in notable events records) which noted an adequate sense of urgency provided by the off-site healthcare provider, coupled with the fact that the Lab sent an industrial hygiene staff member with the individual to ensure proper attention was given to this chemical agent that has fatal toxic potential. In both cases, 2006 and 2007, there were no life threatening exposures to HF. The contingency response plans were carried out and given priority medical and managerial attention.

Conclusion

TJNAF has an informal, but effective, lessons learned program fitting the scope and complexity of the operations performed at this facility.

The objective has been met.

Opportunities for Improvement, Observations, and Noteworthy Practices

None were identified.

Reviewed by:	Approved by:
Steve Neilson, Team Member	Randy Smyth, Team Leader

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Management Assessment of the TJNAF
ES&H Oversight Program

Functional Area:	Objective ID: MA-07
Management – Performance Measures	Date: March 2007

OBJECTIVE

TJSO-MA-07 – Contractors must identify, monitor, and analyze data measuring the performance of facilities, programs, and organizations. The data must be used to demonstrate performance improvement or deterioration relative to identified goals.

Record Review

See Appendix C for a list of documents reviewed.

Interviews Conducted

TJNAF ESH&Q Reporting Manager

Observations of Work Activities

No work activities were observed at the time of this review.

Criteria and Discussion of Results

MA-07.1 Using a program to analyze and correlate data, TJNAF must suggest further improvements and identify good practices and lessons learned.

Discussion of Results

While the Laboratory has historically reviewed "event" information to satisfy the DOE occurrence reporting requirements for quarterly trend information, these efforts were largely a qualitative exercise. The Laboratory has recently installed a feature into the CATS system to allow trending analysis to be conducted on issues entered into the system. This system uses a list of causal descriptors (words/categories) to classify causal factors that might help identify what part of the ISMS or general management program might be at fault. By initiating a query of the various causal factor descriptors, the relative number of "hits" within any one bin can be segregated by division, location, etc., for comparison and further evaluation. A retrospective analysis of the CATS data has been conducted, and this information has been shared with the TJSO. The web-based system allows convenient site-level access and features drill-down capability of graphical information (i.e., CATS entry closure status).

To help ensure consistency is maintained in the results furnished by the trending analysis system, the Lab has provided classroom training for department managers and supervisors to help ensure the causal analyses classifications are applied in a uniform manner.

At present, there is no process to help standardize the analysis of trend information to ascertain when the trends become sufficient to trip thresholds for corrective action within the Lab, or for outside reporting (i.e., ORPS).

MA-07.2 To accomplish these objectives, TJNAF must establish programs that identify, gather, verify, analyze, trend, disseminate, and make use of performance indicators.

Discussion of Results

The web-based lessons learned and CATS systems allow convenient access by Lab management and supervision to specific events and the maturing causal identifier trending information. There is evidence to support that the Lab is disseminating this information both to line-level supervisors and to Laboratory senior management for consideration. Lessons learned dissemination has been confirmed through various routine Lab specific publications and through routine planning and management meetings. Upon review of the FY 2007 Integrated Assessment Schedule, the table includes some Laboratory directed assessments that identify the assessment was driven by previous events or perceived vulnerabilities (i.e. Procurement Process Assessment, Second Quarter).

Another example of the retrospective application of past performance monitoring is in the Lab's Comprehensive Safety Strategy update recently conducted. This effort evaluated the impact and completion of ES&H initiatives that were prompted in December 2004 in response to a concerning number of reportable worker injuries and events prior to that time.

MA-07.3 Performance indicator data must be considered in allocating resources, establishing goals, identifying performance trends, identifying potential problems, and applying lessons learned and good practices.

Discussion of Results

For both the FY 2006 and FY 2007 rating periods, the Laboratory and TJSO have negotiated specific PEMP measures to establish expectations on sharing lessons learned and prompting the use of causal analysis techniques to evaluate events beyond just reportable worker injuries. These examples include FY 2007 Measures 5.1.3 and 5.3.1. Also, within PEMP Measure 5.1.3, expectations are established to incorporate pre- and post-task reviews for significant radiological work activities. This initiative provides a mechanism to stimulate lessons learned and process improvement by providing an incentive for the assessment of work execution against work planning.

Upon conclusion of the last rating period, the Laboratory furnished TJSO with an evidence binder for PEMP Section 5.0, segregated by the respective measures. This process helps both the Laboratory and TJSO substantiate ratings applied. The measures have also included elements to promote "transparency" between divisions within the Laboratory and TJSO by stipulating that oversight of work activities (PEMP 5.2.1) are captured in a centralized document management system.

Based upon a review of the ES&H Log entries since the start of the current calendar year, there is evidence the Laboratory is not adequately monitoring the use of these electronic

logs of work activity oversight, as identified in FY 2007 PEMP Measure 5.2.1. There is insufficient and unequal contributions to this oversight log by divisions; specifically, there are a disproportionately low number of evaluations being logged in for activities performed under the cognizance of Physics and Facilities Management.

The Laboratory is monitoring first-aid events and similar indicators (i.e., DuPont STOP observations) that are not captured in either the PEMP process or through the DOE CAIRS system threshold. It was agreed by both the Lab and TJSO that including such information in the PEMP would likely lead to events and injury information being suppressed, since there is the potential for a monetary consequence of prompt and full disclosure. There is evidence to support the Lab's interest in extracting the status of programmatic functions from these precursor and lower level activities to assess.

In addition to improving the chronological sequencing of oversight activities between organizations, the Integrated Assessment Schedule development process facilitates discussions between the Lab and TJSO on perceived ESH&Q priorities. This process has allowed reallocation of assessments to tailor the number and type to meet the mutual interests of the Lab and TJSO.

MA-07.4 Quantitative performance indicators/measures also may be considered in evaluating performance and establishing oversight priorities. However, quantitative performance measures provide only a partial indication of system effectiveness and must be considered in combination with other appraisal and operational awareness results.

Discussion of Results

Evaluation of this element is considered to be sufficiently covered in MA-07.3.

Conclusion

The use of lessons learned and quantitative measures to monitor and promote further ES&H performance are considered to be in place and maturing.

The objective has been met.

Opportunities for Improvement

None were identified.

Observations

MA-07.3-OBS.5 The Laboratory has established a system to monitor a PEMP measure addressing the oversight of work activities (versus specific work spaces); however, the disparity in divisional participation and intended "transparency" between divisions of this measure does not appear to be managed or enforced.

Noteworthy Practices

None were identified.

Reviewed by:	Approved by:
Steve Neilson, Team Member	Randy Smyth, Team Leader

Appendix C – Documents Reviewed

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Appendix C
Documents Reviewed

- *Facility Final Safety Assessment Document,* Rev. 5, Amendment 1, 2002 FEL Operations and Safety Envelopes
- Contractor Performance Evaluation and Measurement Plan, June 1, 2006-September 30, 2006, *Management and Operations of the Thomas Jefferson National Accelerator Facility (TJNAF)*
- Jefferson Laboratory Procedure, *Independent Assessment Procedure*, Rev. 2.2, November 30, 2006
- Jefferson Laboratory Procedure, *Management Self-Assessments,* Rev 3.1, November 23, 2005
- *Thomas Jefferson National Accelerator Facility Senior Safety Advisory Committee (SSAC) Executive-Level Independent Assessment of Integrated Safety Management System,* September 2005
- *Facility Hazard Surveillance of JLab Facilities*, May 2006
- JSA Letter from Christoph Leemann, President and Lab Director, to Mr. Jim Turi, Site Manager, TJNAF Site Office, subject: *JSA Acceptance of SURA ESH&Q Documents Letter dated May 16, 2006*, dated August 30, 2006
- FY 2007 Integrated Assessment Schedule, dated October 31, 2006
- Thomas Jefferson National Accelerator Facility, Contract No. DE-AC05-06OR-23177, Contract Management Plan, June 2006
- *Environmental Management System Management Audit Report, August 1-5, 2005*, August 16, 2005
- *Final Report, Assistance Visit Control of Hazardous Energy-Lockout/Tagout and Fall Protection at Thomas Jefferson National Accelerator Facility, August 28-31, 2006,* dated November 8, 2006
- *Final Report, Surveillance of the Thomas Jefferson National Accelerator Facility Radiation Protection Program*
- *Thomas Jefferson Site Office Assessment Schedule (10-24-05), FY 2006,* October 24, 2005
- *FY 2006 Physics Division Management Self Assessment Schedule,* Rev 0, dated November 18, 2005
- MSA Assessment Plan (Blank Form), Rev. 3.1, no date
- *Final Report, Surveillance of the Thomas Jefferson National Accelerator Facility Laser Safety Program,* September 2005
- *Final Report, Surveillance of the Thomas Jefferson National Accelerator Facility Rigging and Material Handling Activities,* August 2005
- *Integrated EH&S FY 06 Assessment Schedule, Rev. 3,* dated May 25, 2006
- *FY 2006 EH&S Division Management Self Assessment Schedule,* Rev. 0, dated November 20, 2005
- Independent Assessment Plan (Blank Form), Rev. 2.1, no date
- *Thomas Jefferson National Accelerator Facility Senior Safety Advisory Committee (SSAC) Executive-Level Independent Assessment of Integrated Safety Management System,* November 2006
- Jefferson Lab ESH&Q Manual, Table of Contents, Rev. January 19, 2007
- Thomas Jefferson National Accelerator Facility, 2002 FEL Operations and Safety Envelopes, no date

- *Thomas Jefferson National Accelerator Facility Final Safety Assessment Document,* Rev. 5, November 2002
- MSA Logbook, no date
- *Assessment of Work Management/Work Control-Accelerator Division,* no date
- *Assessment of Work Management and Control-Facilities Management Department,* no date
- Assessment #IA-05-01, *Report of the Independent Assessment of the Welding Program at the Thomas Jefferson National Accelerator Facility,* January 27, 2006
- Independent Assessment Report, IA-2006-01, *10 CFR 835 Subparts H & I,* March 15, 2006,
- Independent Assessment Report, IA-2006-02, *Subcontractor Health and Safety Performance,* March 31, 2006
- Independent Assessment Report, IA-2006-04, *10 CFR 835 Subpart L,* August 25, 2006
- *Independent Assessment of Earned Value Management Systems (EVMS) at Thomas Jefferson National Accelerator Facility, Final Report, Assessment Completed August 14-18, 2006,* August 30, 2006
- Independent Assessment Report, IA-2006-05, *2006 Annual Evaluation of the Environmental Management System for Continued Performance Improvement,* no date
- Independent Assessment Report, IA-2006-07, *JLab Integrated Safety Management System,* November 2006
- Independent Assessment Report, IA-2006-05, *Feedback and Improvement,* August 30, 2006
- MSA Assessment Plan, *Electrical Safety for Subcontractors,* May 1, 2006
- Assessment No. 06-005, Jefferson Lab, Safety Division, Performance Assurance, *Lock Out Tag Out Program,* March 29, 2006
- Assessment No. MSA-06-012, MSA Assessment Plan, *Work Planning and Execution,* September 27, 2006
- Assessment No. MSA-06-017, MSA Assessment Plan, *End Station Refrigerator Charcoal Vessel Installation,* September 14, 2006
- Assessment No. MSA-06-002, MSA Assessment Plan, *Effectiveness of Jefferson Lab Lock Tag & Try (LTT) Procedures for Jefferson Lab Staff, Physics Department, Date Conducted February 1-March 15, 2006,* April 7, 2006
- Assessment No. 06-006, *LO/TO,* March 23, 2006
- Assessment No. MSA-06-014, MSA Report, *Work Planning and Execution of Cryomodule IL06 Removal,* September 26, 2006
- Assessment No. MSA-06-003, MSA Assessment Plan, *Assessment of how qualifications for electrical/electronic worker are determined and recorded,* March 2006
- Assessment No. 06-007, Management Assessment Report, *Accelerator Division Self Assessment of the Jefferson Lab LO/TO Program,* March 30, 2006
- Assessment No. MSA-06-015, MSA Report, *Work Planning and Execution Review of the HKS Experiment Installation,* September 27, 2006
- Assessment No. MSA-06-004, MSA Report, *2006 Portable and Fixed Instrumentation Internal Audit,* April 28, 2006
- Assessment No. MSA-06-009, MSA Assessment Plan, *Assessment of JLab Electrical Safety Program,* June 9, 2006
- Assessment No. MSA-2006-13, Management Self Assessment, *Work Planning and Execution,* September 22, 2006

- Jefferson Lab, SA/QA Group, Office of Assessment, *Independent Assessment Report of the Application of EH&S Standards Within Physics Division's Computer Center (CC) and the Detector (DE) and Electronic Media (EM) Groups,* March 2005
- Jefferson Laboratory Accelerator Division, Management Self Assessment, *Laser Safety Program-Operations and Performance,* no date
- *Management Assessment EH&S Manual Administration,* October 3, 2005
- Jefferson Lab, SA/QA Group, Office of Assessment, *Independent Assessment Report, Application of EH&S Standards within the Administration Division's Procurement and Staff Services Department (PSS), Human Resources Department (HR), and EH&S/Risk Management*
- JSA Memorandum from Christoph W. Leemann, JSA President & Laboratory Director, to James A. Turi, TJNAF Site Office Manager, subject: *JSA Acceptance of SURA ESH&Q Documents*, dated May 16, 2006
- Printout, Notable Events, 2006 Notable Event/Incident Investigation Worksheets, printed March 21, 2007
- Appendix 5200-T1 Incident Investigation Worksheet, from injury of February 14, 2007
- Corrective Actions Tracking System, Event IA-2006-118-13, January 19, 2007
- Corrective Actions Tracking System, Event IA-2006-118-14, January 19, 2007
- *FY 07 JSA Performance Review, October-December 2006,* dated January 24, 2007
- Jefferson Lab ESH&Q Manual – Rev. 8.7, Chapter 2210, *EH&S Responsibilities of Individuals—Rev. March 16, 2005*, from ESH&Q Manual website, Manual dated September 7, 2006
- Jefferson Lab ESH&Q Manual – Rev. 8.7, Chapter 2210-R1, *Current EH&S Staff Assignments—Rev. June 16, 2006,* from ESH&Q Manual Main Page website, Manual dated September 7, 2006
- Jefferson Lab ESH&Q Manual – Rev. 8.7, Chapter 2240, *Jefferson Lab EH&S Committees—Rev. August 17, 2006,* from ESH&Q Manual Main Page website, Manual dated September 7, 2006
- Jefferson Lab ESH&Q Manual – Rev. 8.7, Chapter 2320, *External EH&S Review—Rev. August 1, 2003,* from ESH&Q Manual Main Page website, Manual dated September 7, 2006
- Jefferson Lab ESH&Q Manual – Rev. 8.7, Appendix 2410-T2, *TJNAF Work Smart Standards Set—Rev. April 21, 2006,* from ESH&Q Manual Main Page website, Manual dated September 7, 2006
- Jefferson Lab ESH&Q Manual – Rev. 8.7, Appendix 3120-H, *Checklist for Experiment Preparation—Rev. December 16, 2005 (Hazard Identification Checklist),* from ESH&Q Manual Main Page website, Manual dated September 7, 2006
- Jefferson Lab ESH&Q Manual – Rev. 8.7, Appendix 3210-T1, *Introduction to Workplace Hazards—Rev. November 16, 2001,* from ESH&Q Manual Main Page website, Manual dated September 7, 2006
- Jefferson Lab ESH&Q Manual – Rev. 8.7, Appendix 3210-T2, *Hazard Identification Worksheet—Rev. August 1, 2003,* from ESH&Q Manual Main Page website, Manual dated September 7, 2006
- Jefferson Lab ESH&Q Manual – Rev. 8.7, Appendix 3210-T3, *Task Hazard Analysis Worksheet—Rev. November 16, 2001,* from ESH&Q Manual Main Page website, Manual dated September 7, 2006
- Jefferson Lab ESH&Q Manual – Rev. 8.7, Chapter 3220, *Major Potential Hazards at Jefferson Lab—Communication of Hazards to Employees and Users—Rev. March 1, 2006,* from ESH&Q Manual Main Page website, Manual dated September 7, 2006

- Jefferson Lab ESH&Q Manual – Rev. 8.7, Chapter 3420, *ESH&Q Aspects of Procured Services and Construction—Rev. October 1, 2002,* from ESH&Q Manual Main Page website, Manual dated September 7, 2006
- Jefferson Lab ESH&Q Manual – Rev. 8.7, Chapter 3420, *ESH&Q Aspects of Procured Services and Construction—Rev. October 1, 2002, Subcontract Management Procedures,* from ESH&Q Manual Main Page website, Manual dated September 7, 2006
- Jefferson Lab ESH&Q Manual – Rev. 8.7, Chapter 3620, *EH&S Aspects of Self-Assessment—Rev. August 17, 2006,* from ESH&Q Manual Main Page website, Manual dated September 7, 2006
- Revision 1.6, *Issues Management Procedure,* November 30, 2006
- Jefferson Lab ESH&Q Manual – Rev. 8.7, Chapter 5100, *Internal Inspections—Rev. August 17, 2006,* from ESH&Q Manual Main Page website, Manual dated September 7, 2006
- Jefferson Lab ESH&Q Manual – Rev. 8.7, Chapter 5100, *Internal Inspections—Rev. August 17, 2006, Qualifications,* from ESH&Q Manual Main Page website, Manual dated September 7, 2006
- Jefferson Lab ESH&Q Manual – Rev. 8.7, Chapter 5100, *Internal Inspections—Rev. August 17, 2006, Responsibilities,* from ESH&Q Manual Main Page website, Manual dated September 7, 2006
- Jefferson Lab ESH&Q Manual – Rev. 8.7, Chapter 5300, *Occurrence Reporting—Rev. September 8, 2004,* from ESH&Q Manual Main Page website, Manual dated September 7, 2006
- Jefferson Lab ESH&Q Manual – Rev. 8.7, Appendix 5400-T1, *Summary of EH&S Documentation Requirements—Rev. September 19, 2005,* from ESH&Q Manual Main Page website, Manual dated September 7, 2006
- *Jefferson Lab Quality Assurance Program Manual,* Revision 6, October 2005
- Jefferson Lab ESH&Q Manual, 5200-T1, *Incident Investigation Work Sheet,* Rev. June 30, 1998
- DOE Letter from Ingrid A. C. Kolb, Director, Office of Management, to Linton F. Brooks, et al., subject: *Modifications to Implementation Expectations for DOE Order 226.1 "Implementation of Department of Energy Oversight Policy,"* July 27, 2006
- Draft, Unsigned, JSA Letter from Christoph Leemann, Director, to Jim Turi, Site Manager, TJNAF Site Office, subject: *Completion of Gap Analysis Required by DOE Order 226.1*, no date
- JSA Letter from Christoph Leemann, President and Lab Director, to Jim Turi, Site Manager, TJNAF Site Office, subject: *Completion of Gap Analysis required by DOE Order 226.1,* Enclosures transmitted ES&H, Emergency Management, Cyber Security and Safeguards & Security Gap Analyses, dated August 25, 2006
- Jefferson Lab Minutes of Meeting, Meeting No. 06-07, *Jefferson Lab Worker Safety Committee,* dated December 6, 2006
- Gap Analysis of Emergency Management Relative to Requirements of Order 226.1
- Gap Analysis of Current Cyber Security Systems Relative to Requirements of Order 226.1
- Gap Analysis of Security & Safeguards Relative to Requirements of Order 226.1
- Jefferson Lab Minutes of Meeting, Meeting No. 10, *Jefferson Lab Worker Safety Committee,* dated March 7, 2007
- DOE unsigned memorandum from James A. Turi, Site Manager, Thomas Jefferson Site Office, to Robert H. Lagdon, Jr., Chief of Nuclear Safety, Office of the Under Secretary, subject: *Action Plans for Defense Nuclear Safety Board Recommendation 2004-1, Commitments 23 and 25,* February 10, 2006

- JSA Letter from Christoph Leemann, President and Lab Director, to James Turi, Site Manager, TJNAF Site Office, subject: *Completion of Gap Analysis required by DOE Order 226.1*, dated August 25, 2006
- Notable Event Worksheet, no date
- Jefferson Lab Letter from Michael Dallas, Chief Operating Officer, to James Turi, Manager, TJSO, no subject (transmittal of FY 2007 Integrated Assessment Schedule of both JSA and DOE Assessments, Audits, and Surveillances), dated November 15, 2006
- *Jefferson Laboratory Quality Assurance Plan,* January 11, 2007
- Plan for Addressing QAP Gaps, Excel Spreadsheet
- CATS Graph, Total Issues Based on Cause Code, Example taken from website
- *JLab Weekly Briefs – A Message from Kandice Carter,* March 14, 2007
- *JLab Weekly Briefs – A Message from Kandice Carter,* March 21, 2007
- Contractor's Lessons Learned website listings, 2001 through 2006, (www.jlab.org/div_dept/dir_off/oa/notable/archieve06.html). Documents reviewed included 16 Notable Event reports issued in 2006 (15 of which were separate events)
- DOE letter from James Turi, Manager, TJSO, to Michael Dallas, Chief Operating Officer, TJNAF, subject: *Modification M006 Implementation Plans*, dated November 1, 2006
- E-mail from Steve Neilson to Jim Turi, TJSO Site Office Manager, subject: *Potential HF Exposure on 3/2/07*, dated March 2, 2007
- Contractor's 2005 Notable Event Report, *Suspected Personal Exposure to Hydrogen Fluoride (Hydrofluoric Acid) on 4/5/05*, submitted April 7, 2005
- E-mail from Steve Suhring, TJNAF Accelerator Operations Division, to Don Bruno (Brookhaven National Lab), subject: *Radiation Information*, dated May 21, 2003
- E-mail from Joe May, TJSO 12 GeV Federal Project Director, to Andrew Hutton, Associate Director for Accelerator Operations, subject: *Fire at BNL AGS*, dated November 9, 2004
- Activity Calendar Record for Steve Neilson, TJSO Safety and Health Specialist, for January 25, 2007
- E-mail from Jim Turi, TJSO Site Office Manager, to TJSO Staff, subject: *Laser Safety Video Setup 1/25/07*, dated January 12, 2007
- *JLab Weekly Briefs*, Electronic Publication, dated March 14, 2007
- Contractor Performance Evaluation and Measurement Plan, October 1, 2006-September 30, 2007, *Management and Operations of the Thomas Jefferson National Accelerator Facility (TJNAF),* September 22, 2006
- E-mail from Bruce Lenzer to Steve Neilson, subject: *CATS Trends,* dated March 14, 2007
- Printout, EHSLOG Summary Record from January 1, 2007, to March 23, 2007, and individual records between January 29, 2007, and February 9, 2007
- Printout, March 13, 2007, SELLS Conference Call Minutes
- E-mail and corresponding attachments, from C. Ferguson, JSA Associate Director for ESH&Q, to S. Neilson, TJSO, subject: *Safety Improvement Strategy*, dated February 21, 2007

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Appendix D – Team Roster

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Team Roster
TJSO Management Assessment of the TJNAF Oversight Program
March 2007

Name	Organization	Team Position	CRADs
Randall Smyth	DOE ORO	Team Leader	All
Scott Davis	DOE ORO	CRAD Support	MA.1 MA.2 MA.3 MA.4 MA.5
Steve Neilson	DOE TJSO	CRAD Support	MA.6 MA.7
Sheila Thornton	DOE ORO	Coordinator/Editor	

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