Jefferson Lab
Thomas Jefferson National Accelerator Facility
Exploring the Nature of Matter

September 30, 2009

Mr. James A. Turi, Manager
Thomas Jefferson Site Office
12000 Jefferson Avenue, Suite 14
Newport News, Virginia 23606

Dear Mr. Turi:

Subject: Annual Integrated Safety Management (ISM) Expectations and Declaration

Section I.100 (e) of the contract between DOE and Jefferson Science Associates for the operations of Thomas Jefferson National Accelerator Facility (TJNAF) requires an annual effectiveness review of TJNAF's Integrated Safety Management System (ISMS). The review is attached for your information. The review was based upon the numerous assessments conducted throughout the past 12 months.

Based upon our past and continued success in meeting the safety and health measures established in the PEMP, the FY2008 ES&H score JSA received from you, and the results of this effectiveness review, we have concluded that the TJNAF ISM system is effective and only minor, administrative changes to the TJNAF ISM Program Description are needed at this time.

We continue to monitor and measure our ISM implementation through a variety of means including PEMP measures, issues management, and work observation tracking and trending. JLab remains committed to ISM implementation and in FY10 we expect to:

- continue our implementation of the actions in response to the June 2008 DOE-HSS review;
- continue reinforcement of ISM principles and core functions with our employees and management; and
- continued monitoring of the performance of our construction safety program.

Sincerely,

COO

Hugh Montgomery
JSA President and Laboratory Director

Enclosures:
(A) Jefferson Laboratory 2009 Integrated Safety Management System Effectiveness Review (MSA-2010-01)
(B) Independent Assessment Report; Integrated Safety Management System Effectiveness Review (IA-2009-09)

cc w/ enclosure:

Michael Dallas
Mary Logue

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INDEPENDENT ASSESSMENT REPORT

ASSESSMENT TITLE	INTEGRATED SAFETY MANAGEMENT SYSTEM EFFECTIVENESS REVIEW
ASSESSMENT NO.	IA-2009-09 **DATE** September 22, 2009

Purpose & Scope:

Purpose

As part of the continuous improvement effort, Jefferson Lab annually conducts an effectiveness review on our Integrated Safety Management (ISM) system. A review team (referred to hereafter as "team") was formed to review and determine the extent and effectiveness of the integration of safety, health, and environmental protection into all management and work practices.

Scope

The ISM System Program Description (Appendix 1), section 6.2 describes the factors to consider during this review including but not limited to:

- Mission or operational changes
- Organizational changes
- ES&H trends
- Assessment results
- Lessons learned
- Safety measures and goals
- Best practices

Falling under the category of best practices, the effectiveness review also evaluated the existing system against two additional benchmarks by incorporating relevant criteria into the lines of inquiry:

- The National Safety Council's Robert W. Campbell Award criteria.
- Current findings and guidance provided by the Energy Facilities Contractors Group/Department of Energy (EFCOG/DOE) Safety Culture Task Force.

Assessment Team

The team consisted of Adam Cohen (Princeton Plasma Physics Laboratory), Suzanne Broussard (DOE Strategic Petroleum Reserve, DynMcDermott Petroleum Operations Company), and Bill Rainey (Jefferson Science Associates).

Summary of Assessment:

(A) Prior to arriving at JLab, the team reviewed the following records:

- TJNAF ISMS Program Description
- Independent Oversight Inspection of ES&H Programs at TJNAF (Final Report)
- Independent Oversight Inspection of ES&H Programs at TJNAF HSS, Corrective Action Plan
- Management Self Assessment Report on TJNAF Construction Safety
- TJSO Assessment of Hall A Work Planning and Control
- TJSO Assessment of Hall A Work Planning and Control

(B) Upon arrival, the team received focused briefings, presenting information on the programs and results associated with the following:

- ISM Trends – ESH&Q related trending information with an emphasis placed on the Lab's response to leading and lagging indicators.
- Assessment Results – Information on the number, types, results, and program improvements resulting from assessments conducted in 2009.
- Corporate Operating Experience – Performance of the system used to identify, share, and benefit from internal and external lessons learned.
- Safety Measures and Goals – How goals are established and current performance against ISM related goals.
- ISM Areas of Emphasis – Specific areas that received significant investment in 2009:
    - Fire Protection
    - Material Handling and Rigging
    - Safety Assessment Document and Accelerator Safety Envelope
    - Un-reviewed Safety Issue Program
    - Event Investigations
    - Issues Management Program
    - Training and Qualification Analysis

(C) The team then interviewed staff (See roster - Attachment A), and evaluated a sample of activities including:

- Planning meeting and work activities at the Free Electron Laser facility
- Engineering Department work activities in the north LINAC Service Building
- Experimental Nuclear Physics work activities in Halls B and C, and work planning and control activities in Hall A
- Test Lab work activities
- Operations activities at the MCC

Results:
The team's overall conclusion is that the ISMS is in place and operating effectively. This conclusion is based on the following key results:

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

The team identified 0 Findings, 6 Opportunities for Improvement, and 7 Noteworthy Practices.

Opportunities for Improvement

1. The value of the ISMS should be a constant communication stream (LOI 1.0).
2. Presentation by QACI staff revealed numerous executed and planned reviews, perhaps too many (LOI 2.8).
3. Interviews with employees regarding proper incident/event reporting processes indicated confusion (LOI 2.15).
4. Continued focus to attaining more consistency between the tools and methods used to plan the work, assess the potential hazards, and communicated with affected workers and organizations should occur (LOI 2.26).
5. Opportunity exists to raise awareness on typical industrial hazards (slips, trips, congestion) (LOI 2.31).
6. Given the ramp-up in construction activities, an area for attention appears to be clarification of the ESH standards and requirements as they apply to construction subs specifically where those standards and requirements differ from normal lab procedure (LOI 2.32).

Noteworthy Practices

1. Student and teacher outreach programs are impressive (LOI 1.9).
2. The EJTA tool demonstrated to the team is a best management practice (LOI 2.5).
3. Work Planning, Control, and Authorization flowchart and supporting processes demonstrate an established and well-understood program (LOI 2.25).
4. The practice of posting THA identification numbers on the work schedule at Hall A is noteworthy (LOI 2.28).
5. The use of the electronic work planning tools (ATLis, FEList, etc.) demonstrates an integrated, effective work planning and communication system (LOI 2.29).
6. The laminated drawings in Hall C, allowing for visual communications between workers through real-time mark ups, is a noteworthy practice (LOI 2.30).
7. MCC safety minute often includes off the job safety topics (LOI 2.40).

Approval:

Performed by:		**Date**	September 22, 2009
	Lead Assessor		
Reviewed:		**Date**	9/30/09
	Manager, Quality Assurance & Continuous Improvement		
Reviewed:		**Date**	9/30/09
	Associate Director, ESH&Q		
Approved:		**Date**	9/30/09
	Chief Operating Officer		
Approved:		**Date**	9/30/09
	Director, Jefferson Laboratory		

Line	Criteria/Lines of Inquiry	Met	Partially Met	Not Met	JLab Compliance Description
1.0	**Leadership** Leadership has inspired, built, and upholds a penetrating culture which nurtures positive ESH behaviors and practices.	X			Interviews with staff at all organizational levels, observations of work planning processes, work practices, safety committee activities, etc. reflect a strong safety culture. A single manager appeared focused on maintaining the status quo as opposed to continuous improvement and commented on some of the "formal" aspects of the program added little value. The value of the ISMS should be a constant communication stream (OF 1).
1.1	Strategy, goals, and priorities are established.	X			Strategy and goals are established through strategic and annual work planning processes. ESH activities are uniquely identified during annual work planning.
1.2	Leadership incorporates ES&H considerations when making operational (experimental reviews, SAD), and mission (12 GeV Upgrade, budgetary) decisions.	X			ESH activities are uniquely identified during annual work planning activities. ESH evaluation and mitigation is built-in to both the FEL and Physics experimental review processes, procurements, purchases. An example of proactive ES&H planning by management is the obvious ESH emphasis on the Hall D project.
1.3	Expectations and accountabilities are clearly established.	X			DOE expectations for JSA ESH performance are established through PEMP metrics. These metrics are supported by actionable goals which are assigned to organizations.
1.4	Leadership visibly demonstrates its commitment to EHS goals to other management, employees, users, DOE, and the public.	X			Records reflect that management conducts walk-throughs and safety observations in sufficient frequency. ISM training was provided to all staff in 2008 directly by the Chief Operations Officer. The Lab Director has also published lab-wide articles on ESH topics, regularly attends ESH committee and other safety meetings. Emphasis to combat potential 'under reporting" and slips trips and fall have had documented success.
1.5	Management practices are aligned with the stated ideals.	X			See above

Line	Criteria/Lines of Inquiry	Met	Partially Met	Not Met	JLab Compliance Description
1.6	Standards and requirements for leadership are comparable to those at other employee levels.	X			Leadership is provided with training that details ESH standards and requirements in the same manner as all other employees. Communication of leadership expectations were well demonstrated through observed actions and interviews with management at various levels.
1.7	Fluidity/transparency of communication as regards the corporate culture.	X			Multiple examples of two-way communication were observed including the Workers Safety Committee. All staff indicated a willingness to communicate ESH concerns up, down, and laterally and indicated that they believed the communications were welcome. The consistency of the ISM message exhibited from the top to the bottom of the Accelerator Operations organization is a good example.
1.8	Leadership is encouraged at all employee levels.	X			Employees at all levels are actively engaged in the planning and execution of their work. A significant portion of the lab community is involved in worker committees, or accepts ESH leadership roles such as serving as a Safety Warden. Leadership training is available and encouraged. All interviewees feel empowered to stop work and offer suggestions.
1.9	JLab is an important element of the communality in which it operates – on a local, regional, national, global level.	X			JLab's ESH staff routinely interfaces with their counterparts at other labs through routine calls and meetings. The Lab provides resources for ESH and operational reviews to other Labs, other agencies, and international organizations. Locally, Lab staff participate in environmental improvement initiatives, emergency planning activities, etc. Student and teacher outreach programs are impressive. (NP 1)

Line	Criteria/Lines of Inquiry	Met	Partially Met	Not Met	JLab Compliance Description
2.0	**ISMS**				
	Executive management demonstrates a strong, genuine, continuous and personnel commitment to ISMS elements.	X			Records reflect that management conducts walk-throughs and safety observations in sufficient frequency. ISM training was provided to all staff in 2008 directly by the Chief Operations Officer. The Lab Director has also published lab-wide articles on ESH topics, regularly attends ESH committee and other safety meetings.
2.1	Clearly stated policy	X			Lab's ESH&Q Policy, signed by the Director, is clear and visible throughout the Lab.
2.2	Defined goals & objectives	X			ISMS Guiding Principles and Goals are outlined in the ISMS Program Description and linked directly to the Lab's operating framework. This information was presented in all-hands ISMS training in 2008 and a variety of group-specific briefings during 2009.
2.3	Performance measurement system	X			The performance measurement system includes a specific Goal for the efficient and effective implementation of integrated safety, health and environment management. The Lab reports on this goal quarterly and is rated on the performance against this goal twice per year.
2.4	Visible senior management participation in field.	X			Records reflect that management conducts walk-throughs and safety observations in sufficient frequency. Routine work planning meetings are attended by senior management. Lab Director, Site Manager and COO all participated in a voluntary accelerator workspace cleanup initiative.

Line	Criteria/Lines of Inquiry	Met	Partially Met	Not Met	JLab Compliance Description
2.5	ES&H Training	X			Team members completed a sampling of ES&H training prior to coming to JLab and found it informative and appropriate. Training content needs to be continuously monitored and updated. The EJTA tool demonstrated to the team is a best management practice (NP 2).
2.6	Clear expectations and accountability.	X			Expectations for safe work planning, control of hazards, and involvement in the lessons learned program were demonstrated through the work planning and control diagram, THAs, and electronic work planning tools. The expectation and accountability for the individual, co-workers, and visitors was apparent during site visits and stop work authority and event reporting expectations seemed well entrenched.
2.7	Sufficient resources to achieve program objectives.	X			The budgeting process includes a focus on ES&H activities. All organizations provide some resources aimed at Lab-wide ESH performance by assigning Division Safety Officers, ESH Committee members, and Safety Wardens. One senior manager expressed concerns that loss of resources to 12GeV project has the potential to overtax remaining staff. Overall, management system appears to be capable of identifying real or perceived inadequate resources and making informed decisions.

2.8	Periodic reviews of the system.	X			Records indicate that the Lab has made significant investment in the ISMS over the past several years including numerous reviews of system components. Presentation by QACI staff revealed numerous executed and planned reviews, perhaps too many. (OFI 2)
2.9	ES&H Performance recognized as a key indicator of organizational excellence.	X			DOE expectations for JSA ESH performance are established through PEMP metrics. These metrics are supported by actionable goals which are assigned to organizations.
2.10	Staff recruitment, selection, retention, and development.	X			Appears healthy as indicated by long employee retention time, very qualified individuals, and opportunities for advancement are available for example the hiring of the Hall D work coordinator in-house. Recent hires of ESH&Q AD, trending analyst, and Safety Warden Coordinator indicates good decision-making.
	High level of communication to facilitate effective EHS management				
2.11	Manager to employees	X			INSIGHT, ESH Committees, planning meetings, all demonstrate good manager to employee communications
2.12	Employees to managers	X			INSIGHT, ESH Committees, planning meetings, all demonstrate good manager to employee communications
2.13	Evidence of teamwork and mutual respect.	X			This was obvious to the outside observer.

2.14	Questioning attitude	X			All staff interviewed believed they could raise issues to any level of Lab leadership. Lab leadership confirms that this is the norm and productive. One worker commented "we are always looking for a better way to do things."
2.15	Reporting of errors and problems is encouraged with effective resolution of problems.	X			The issues management system, the significant use of the Corrective Action Tracking System, the use of the Corporate Operating System, and discussions observed during work planning meetings all demonstrates that problems are identified and brought to resolution in an effective manner. Interviews with employees regarding proper incident/event reporting processes indicated confusion. (OFI 3)
2.16	Accurate recordkeeping and documentation.	X			Electronic work planning entries, task hazard analysis, lift plans that were reviewed were accurate. Questions and answers indicated that documents and records were available to those who needed them.
2.17	Open communication and fostering an environment free from retribution.	X			All staff interviewed believed they could raise issues to any level of Lab leadership. Lab leadership confirms that this is the norm and productive.
	Assessments, audits, evaluations, and continuous improvement				
2.18	Performance monitoring accomplished through multiple teams.	X			Presentation by QACI staff revealed numerous executed and planned reviews, perhaps too many.
2.19	Operational experience is reviewed as part of the reviews.	X			OE program is operating as designed and JLab is a full participant when sharing lessons outside.

2.20	Objective evaluation of compliance with policies and procedures, quality & effectiveness of implementation.	X			2008 effort to develop implementation plans with new contract requirements was thorough. QACI presentation demonstrated a thorough program leading to informed decision making by senior management.
2.21	Assessments conducted at all levels of organization and include individuals with assessment experience and necessary technical competencies.	X			Presentation by QACI staff revealed numerous executed and planned reviews, perhaps too many. Our experience with the planning and execution of this assessment indicated a rigorous and value added process.
	Risk Reduction and assessment				
2.22	Risk-informed, conservative decision making.	X			All levels participated in risk informed decision making.
2.23	Continuous process of identification, hazard analysis, implementation, and re-evaluation.	X			Presentation by QACI staff revealed numerous executed and planned reviews, perhaps too many.
2.24	Ongoing recognition, evaluation, and control or elimination of workplace hazards.	X			Clearly demonstrated through the experimental hall's work planning.
2.25	Establish hazard analysis process	X			Work Planning, Control, and Authorization flowchart and supporting processes demonstrate an established and well-understood program. (NP 3)
2.26	Implementing control measures	X			Workers agreed that hazards are well understood and controlled. Risk evaluations conducted both pre and post mitigation in the Halls is a good example. Appropriate use of PPE was observed, evidence of design safety, safe lifts, and safe maintenance activities by the Engineering Department. Continued focus to attaining more consistency between the

					tools and methods used to plan the work, assess the potential hazards, and communicated with affected workers and organizations should occur. (OFI 4)
2.27	Employee participation in work planning & controls.	X			This was observed.
2.28	Employees are aware of hazards and controls.	X			This was observed. The practice of posting THA identification numbers on the work schedule at Hall A is noteworthy. (NP 4) The Lift Plans in Hall B were also considered outstanding. One outlier to otherwise good practices was the presence of a child in a Test Lab workspace. Judging from the reaction of the employee present, the child was not authorized to be there. Policies regarding visitors in the Test Lab should be reviewed to assure they are adequate and well communicated.
	Prevention through design & engineering				
2.29	Hazards are addressed in planning and design stages, involving ESH professionals and others.	X			The use of the electronic work planning tools (ATLis, FEList, etc.) demonstrates an integrated, effective work planning and communication system. (NP 5)
2.30	Workplace designs reflect optimum physical and psychological compatibility between employee and the process.	X			Given the unique challenges faced within the workspaces observed (Halls, Test Lab, access buildings) design is appropriate. MCC appears to be a very well designed workspace. The laminated drawings in Hall C, allowing for visual communications between workers through real-time mark ups, is a noteworthy practice. (NP 6)
	Operational EHS programs				
2.31	Programs are regulatory complaint and may even go beyond.	X			Programs appear to meet this requirement. Opportunity exists to raise awareness on typical industrial hazards (slips, trips, congestion). (OFI 5)

2.32	Programs include hazards faced by subcontractors, vendors, users, and public.	X			This was observed. Given the ramp-up in construction activities, an area for attention appears to be clarification of the ESH standards and requirements as they apply to construction subs specifically where those standards and requirements differ from normal lab procedure. (OFI 6)
2.33	Potential emergencies are planned appropriately.	X			Review of the emergency management plan indicates a functional system.
	Workforce Empowerment				
2.34	Open communication and fostering an environment free from retribution.	X			All staff interviewed believed they could raise issues to any level of Lab leadership. Lab leadership confirms that this is the norm and productive. One worker commented "we are always looking for a better way to do things."
2.35	Employees at all levels demonstrate a personal commitment to everyone's safety.	X			This was observed. Students in the FEL noted that they felt safe given their training and the fact that the whole staff looked out for each other.
2.36	Employee participation in work planning & control.	X			Work Planning, Control, and Authorization flowchart and supporting processes demonstrate an established and well-understood program.
	Workforce Competency				
2.37	High quality training is planned and implemented to assure a systematic and prescribed process is applied in a constant manner.	X			Team members completed a sampling of ES&H training prior to coming to JLab and found it informative and appropriate. The EJTA tool demonstrated to the team is a best management practice.

2.38	Records of training show that competencies have been developed.	X			Records review indicated a comprehensive training program, training expiration is tracked, there is an active workers training committee.
2.39	Employee competencies provide a competitive advantage for the organization.	X			Team members' professional opinion would support this statement. Physics and operational staff are clearly best of class.
	ES&H Off the Job				
2.40	Evidence of Off the Job safety is emphasized with employees, subcontractors and users.	X			This was observed or reported – MCC safety minute often includes off the job safety topics. (NP 7) OE program transmittals included lessons learned from an off the job lightning strike.
3.0	**Performance Measures & Information Management**				
	Consistent Use of Performance Measures				
3.1	Measures are well-grounded, sound, and supportable and generate actionable items that will improve the JLab's program if implemented.	X			Improvements to PEMP metrics, focused more on measuring management system performance, should continue. Actionable items are identified, tracked and attained.
3.2	Performance measures are a combination of pre-active and re-active measures.	X			This was observed
3.3	Reporting measures are in place to collect information.	X			This was observed
3.4	Data is used to drive improvements	X			This was observed

4.0	**ES&H Results**				
	Continuous performance improvement or sustained excellence				
4.1	Use of leading ES&H indicators	X			Observations showed an ongoing effort to identify and utilize relevant leading indicators.
4.2	User of lagging indicators	X			This was observed
4.3	Environmental performance seeks to manage resource and waste.	X			This was observed.
4.4	ES&H has positively affected others outside the organization, such as workers families, the community, the industry.	X			JLab's ESH staff routinely interfaces with their counterparts at other labs through routine calls and meetings. The Lab provides resources for ESH reviews to other Labs, other agencies, and international organizations. Locally, Lab staff participates in environmental improvement initiatives, emergency planning activities, etc. Student and teacher outreach programs are impressive.