

August 31, 2007

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

**Reference: Assistance Visit Electrical Safety –
NFPA 70E Assessment at TJNAF –
06/18-20/07**

Dear Mr. Turi:

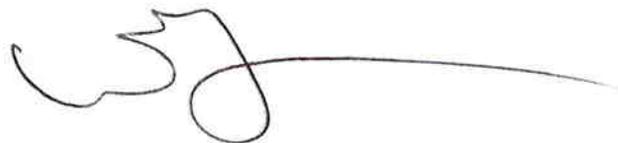
Enclosed please find the Thomas Jefferson National Accelerator Facility (TJNAF) Corrective Action Plan (CAP) for all the findings identified in the above referenced report. This CAP is provided per your request dated August 1, 2007 and includes the minimum requirements:

- Identification of each Finding/Observation
- Brief Description of the Actions taken or planned
- Name of the Responsible Party
- Projected Date of Closure

Each corrective action has been entered into the Automated Quality Information System - Corrective Action Tracking System (AQIS-CATS) with responsibilities and due dates as shown in the plan. The identification hyperlink for each action also appears in the corrective action description.

Please contact Todd Kujawa, ESH&Q Electrical Safety Engineer at extension 7006 for further details.

Sincerely,



Craig R. Ferguson
Associate Director – ESH&Q

Enclosure

cc: w/encl: Christoph W. Leemann
Michael Dallas
Todd Kujawa

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Corrective Action Plan For DOE Assistance Visit – Electrical Safety – NFPA 70E Assessment at TJNAF

ISSUE ID #	Observation	Corrective Action	Person Responsible	Expected Completion Date	CATS Tracking #
03.1-FIND-1	Electrical insulated gloves are not being tested in accordance with regulatory requirements.	Email sent to the Division Safety Officers (DSO) stating the requirements and making them responsible for reviewing these requirements with divisional / departmental supervisors, SOTRs, staff, and subcontractors who perform or supervise electrical work.	C. Ferguson	6/20/2007 (complete)	NA
		Notification that these actions, by the DSOs, have been taken were provided back to Electrical Safety (Todd Kujawa).	T. Kujawa	7/16/2007 (complete)	NA
		Training module SAF603N, NFPA 70E Electrical Safety, was revised to include these requirements.	*T. Kujawa B. Ullman	7/13/2007 (complete)	MOA-2007-28-01
		ESH&Q chapter 6620, Personal Protective Equipment, is being revised to include these requirements.	*M. Bailey T. Kujawa	10/1/2007	MOA-2007-29-01

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ISSUE ID #	Observation	Corrective Action	Person Responsible	Expected Completion Date	CATS Tracking #
03.1-FIND-1 (continued)		A centralized rubber insulating glove distribution is being developed to allow for a single point contact of issuing gloves for use and collecting gloves for testing. The first site wide change out of gloves is to take place in October of 2007 and the second in April 2008; this same pattern is to be followed in the years to follow.	*T. Kujawa T. Briggs	4/1/2008	MOA-2007-33-01
03.1-FIND-2	Clothing worn by personnel during energized electrical work underneath flame resistant (FR) arc-rated apparel is not always 100 percent natural fiber, and FR rated apparel available for energized electrical work does not always include pants or bibs to cover the employee below the waist.	Email sent to the Division Safety Officers (DSO) stating the requirements and making them responsible for reviewing these requirements with divisional / departmental supervisors, SOTRs, staff, and subcontractors who perform or supervise electrical work.	C. Ferguson	6/20/2007 (complete)	NA
		Notification that these actions, by the DSOs, have been taken were provided back to Electrical Safety (Todd Kujawa).	T. Kujawa	7/16/2007 (complete)	NA

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ISSUE ID #	Observation	Corrective Action	Person Responsible	Expected Completion Date	CATS Tracking #
03.1-FIND-2 (continued)		Training module SAF603N, NFPA 70E Electrical Safety, was revised to include these requirements.	*T. Kujawa B. Ullman	7/13/2007 (complete)	MOA-2007-31-01
		ESH&Q chapter 6620, Personal Protective Equipment, is being revised to include these requirements.	*M. Bailey T. Kujawa P. Hunt	10/1/2007	MOA-2007-32-01
03.1-FIND-3	Voltage testing is not being performed using the appropriate category meter for the circuits and equipment to which they are attached.	Email sent to the Division Safety Officers (DSO) stating the requirements and making them responsible for reviewing these requirements with divisional / departmental supervisors, SOTRs, staff, and subcontractors who perform or supervise electrical work.	C. Ferguson	6/20/2007 (complete)	NA
		Notification that these actions, by the DSOs, have been taken were provided back to Electrical Safety (Todd Kujawa). Meters that were being used on an electrical system outside of its category rating were replaced with the appropriate rated meter for use.	*T. Kujawa	7/16/2007 (complete)	MOA-2007-34-01

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ISSUE ID #	Observation	Corrective Action	Person Responsible	Expected Completion Date	CATS Tracking #
03.1-FIND-4	Voltage verification is not being performed when initiating lock out/tag out on a system that has been locked out under administrative configuration control.	Meeting with the subcontractors that were following this protocol and made them aware of Jefferson Labs policy on lockout/tagout and also referred them to the ESH&Q chapter 6110 Lock, Tag, and Try. Diminished the myth that a personal lock and tag could not be left on overnight and/or while the employee was away from the work involved in the lockout.	*T. Kujawa	6/21/2007 (complete)	MOA-2007-35-01
03.1-FIND-5	The 600 volt draw out circuit breakers is being opened to provide electrical protection; however, the breakers are not being racked out and no other electrical isolation device is being opened.	Manual retrieved for the draw out circuit breaker referenced within the finding. Manufactures operation of the circuit breaker were being implemented correctly.	*T. Kujawa	6/22/2007 (complete)	MOA-2007-36-01
		Electrical Safety Committee (ESC) members gathered at the monthly meeting to discuss the racking out of circuit breakers. Diminished the myth that the DOE disallowed the racking out of circuit breakers. Current policy is that Facilities Management will be the responsible persons for racking out circuit breakers.	*T. Kujawa ESC members	7/11/2007 (complete)	MOA-2007-36-01

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ISSUE ID #	Observation	Corrective Action	Person Responsible	Expected Completion Date	CATS Tracking #
03.1-FIND-06	JLab employees and subcontractors are performing work under protection (Hold Order) provided by Virginia Power Company which is not a JLab recognized employee protection system.	JLab has contacted the local power utility and received their Switching Order Form. We will use that form and have worked under it in the past. In the future, we will appoint a JLab employee to be responsible for signing the form to clear the tag and re-energized the system once work is complete. An SOP will be developed that describes this alternative to our regular LTT policy.	*P. Powers	11/1/2007	<u>MOA-2007-37-01</u>

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ISSUE ID #	Observation	Corrective Action	Person Responsible	Expected Completion Date	CATS Tracking #
03.1-FIND-07	TJNAF electrical training programs do not specifically address all of the training requirements as stated in the regulatory codes and regulations needed for qualified electrical workers.	Three certifications for "Qualified Electrical Worker" (QEW) will be established and tracked in the training database. They will be designated QEW Mode 1, QEW Mode 2, and QEW Mode 3 and will relate to the hazard level for jobs at JLab that require a QEW. These jobs will be identified by the Electrical Safety Engineer with help from managers and supervisors of electrical workers and then assigned one of the three certifications. All three certifications will include four basic courses: SAF104 Lock, Tag, and Try; SAF603A Basic Electrical Safety, SAF603N NFPA-70E Electrical Safety, and SAF105 CPR/AED. These will be prerequisites for equipment-specific training and will not alone award any certification.	*T. Kujawa B. Ullman	4/1/2008	MOA-2007-38-01

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ISSUE ID #	Observation	Corrective Action	Person Responsible	Expected Completion Date	CATS Tracking #
03.1-FIND-08	Unqualified electrical workers and other individuals have not been trained to recognize the electrical hazards associated with the work they perform.	Training module SAF100, EH&S Orientation, will be revised to include these requirements. The training for SOTRs will be reviewed to ensure these requirements are stated within the SOTR's EH&S responsibilities. All SOTRs, currently listed by procurement, will be made aware (reminded) of this requirement and their responsibility towards implementation and compliance.	*T. Kujawa B. Ullman	10/1/2007	MOA-2007-39-01
03.1-FIND-09	During battery maintenance activities, not all specifically designed personal protective equipment (PPE) is being worn for this type of hazard.	Task Hazard Analysis is to be developed and followed by the subcontractors doing battery maintenance/work for JLAB. This Task Hazard Analysis will be included in the subcontractors' safety plan.	*P. Powers T. Kujawa	10/1/2007	MOA-2007-40-01
03.2-OBS-01	The Mechanical Resources, Inc. subcontract (effective May 25, 2007) does not require implementation of the JLab lock out/tag out procedure and does not require that employees have NFPA 70-E training prior to performing electrical work.	The Mechanical Resources, Inc. subcontract (effective May 25, 2007) has been modified to include these two observations	*T. Kujawa M. Torres	6/22/2007 (complete)	MOA-2007-41-01

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ISSUE ID #	Observation	Corrective Action	Person Responsible	Expected Completion Date	CATS Tracking #
03.2-OBS-02	TJNAF has not completed the calculations for shock and arc flash hazard analysis and labeling of site equipment (as identified in the 2005 Office of Science Energized Electrical Work Review); and the recommendation to formalize implementation of NFPA 70-E requirements as a project with milestones, deliverables and a schedule has also not been implemented.	Continue with the arc flash labeling of permanently connected equipment. 120/208 volt equipment below the arc flash threshold will not receive calculated labels.	*P. Powers R. Williams T. Kujawa	Halls, VARC, CEBAF Center, EEL: Oct 07 FEL: Dec 07 CHL, North and South Access Bldgs, ESR, Service Bldg 1: June 08 ARC Service Bldgs, Bldgs 85, 87, 89: Dec 08	MOA-2007-42-01

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ISSUE ID #	Observation	Corrective Action	Person Responsible	Expected Completion Date	CATS Tracking #
03.2-OBS-03	Voltage verification is not being performed until after the locks/tags are being applied to the isolation device which may not be the safest location for employees to perform voltage verification.	It has been added into the instructor led Lock, Tag & Try class that in some situations it would be practical to verify a de-energized state before applying a lock/tag.	*T. Kujawa	7/9/2007 complete	MOA-2007-46-01
		ESH&Q chapter 6110, Lock, Tag & Try is being revised to provide guidance if an employee comes across this particular situation.	*M. Bailey T. Kujawa	10/1/2007	MOA-2007-43-01
03.2-OBS-04	Some equipment is being obtained by JLab that is not approved by a Nationally Recognized Testing Lab and the equipment is not being reviewed and approved by the contractor to ensure an effective level of safety, and that accepted codes and regulations are met, and the equipment and material is being installed in a manner that is inconsistent with its listing and labeling.	A formalized review process will be developed and implemented to assure that non-NRTL equipment has been approved for its intended use. This formal review process will be approved by the ESC members before implementation across the lab.	*T. Kujawa ESC members	12/31/2007	MOA-2007-44-01
		Develop an Authority Having Jurisdiction (AHJ) draft policy for approving an installation, materials used in an installation, and enforcement / interpretations of compliance with relevant codes / standards / requirements.	T. Kujawa	8/24/2007 (complete)	

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ISSUE ID #	Observation	Corrective Action	Person Responsible	Expected Completion Date	CATS Tracking #
03.2-OBS-04 (continued)		This policy is to be approved by the ESC members and revised accordingly within the ESH&Q manual chapter 6200 Jefferson Lab's Electrical Safety Program.	*T. Kujawa ESC members M. Bailey	11/1/2007	MOA-2007-45-01

Note: The (*) symbol next to 'Person Responsible' signifies who the CATS item is addressed to.