



Department of Energy
National Nuclear Security Administration
Washington DC 20585

June 1, 2010

OFFICE OF THE ADMINISTRATOR

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Dr. Thomas O. Hunter
President and Laboratories Director
Sandia National Laboratories
P.O. Box 5800, MS 0101
Albuquerque, New Mexico 87185-0101

WEA-2010-03

Dear Dr. Hunter:

This letter refers to a U.S. Department of Energy (DOE) investigation into the facts and circumstances associated with the inadvertent ignition of a rocket motor at the 10,000-foot sled track facility at Sandia National Laboratories/New Mexico site on October 9, 2008. The results of the investigation were provided to Sandia Corporation (Sandia) in an Investigation Report dated December 2, 2009. An enforcement conference was held on February 4, 2010, with members of your staff to discuss the report's findings and Sandia's corrective action plan. A summary of the enforcement conference is included at the end of the enclosure.

Based on an evaluation of the evidence in this matter, including information presented during the enforcement conference, the National Nuclear Security Administration (NNSA) has concluded that violations of 10 C.F.R. Part 851, *Worker Safety and Health Program*, by Sandia have occurred. Accordingly, I am issuing the enclosed Preliminary Notice of Violation (PNOV) with three Severity Level I violations and one Severity Level II violation. NNSA has elected to handle this matter through a performance incentive decrement pursuant to the contract between NNSA and Sandia in accordance with 10 C.F.R. § 851.5(b). Therefore, no civil penalty is proposed for the violations identified in this PNOV in accordance with 10 C.F.R. § 851.5(c).

The investigation determined that Sandia did not implement essential elements of its explosives safety program at the sled track facility consistent with Part 851 requirements. Sandia failed to identify and assess explosives safety hazards, implement proper controls, train workers, and develop adequate work procedures for test operations at the sled track. NNSA acknowledges Sandia's initial response to suspend all energetic materials operations on site and subsequent causal analysis to thoroughly understand the factors that contributed to the sled track event. Sandia developed a corrective action plan that addressed the violations identified in the PNOV and their contributing causes.



Pursuant to 10 C.F.R. § 851.42, *Preliminary Notice of Violation*, you are obligated to submit a written reply within 30 calendar days of receipt of the enclosed PNOV, and to follow the instructions specified in the PNOV when preparing your response. If no reply is submitted within 30 days, in accordance with 10 C.F.R. § 851.42(d), you relinquish any right to appeal any matter in the PNOV, and the PNOV will constitute a final order. After reviewing your response to the PNOV, including any additional corrective actions entered into DOE's Noncompliance Tracking System, NNSA will determine whether further action is necessary to ensure compliance with worker safety and health requirements. NNSA will continue to monitor the completion of corrective actions until these matters are fully resolved.

Sincerely,

A handwritten signature in black ink that reads "T. P. D'Agostino". The signature is written in a cursive style with a large initial "T" and "P".

Thomas P. D'Agostino
Administrator

Enclosure

cc: Steve Ward, Sandia Corporation
Richard Azzaro, DNFSB

Preliminary Notice of Violation

Sandia Corporation
Sandia National Laboratories

WEA-2010-03

As a result of a U.S. Department of Energy's (DOE) investigation into the facts and circumstances associated with the inadvertent ignition of a rocket motor that occurred at the Sandia National Laboratories/New Mexico Sled Track Test Site on October 9, 2008, multiple violations of DOE worker safety and health requirements by Sandia Corporation (Sandia) were identified. The event occurred during a series of tests designed to evaluate thermal batteries upon impact with a target. The thermal batteries were part of a test package that was accelerated along a sled track using a rocket motor as the propellant. The premature ignition of the rocket motor resulted in serious injuries to one worker. The violations involved deficiencies in explosives hazard identification and assessment, hazard prevention and abatement, training and information, and adherence to procedures.

The violations have been determined to be three Severity Level I violations and one Severity Level II violation. NNSA has elected to handle this matter through a performance incentive decrement pursuant to contract DE-AC04-94-AL-85000 between NNSA and Sandia in accordance with 10 C.F.R. § 851.5(b). This decrement serves as the remedy for these violations in lieu of a civil penalty. In accordance with 10 C.F.R. 851.42(b), and Part 851, Appendix B, *General Statement of Enforcement Policy*, the violations are listed below. Sandia may be required to post a copy of this Preliminary Notice of Violation (PNOV) in accordance with 10 C.F.R. § 851.42(e).

VIOLATIONS

I. Explosives Hazard Identification and Assessment

Title 10 C.F.R. § 851.24, *Functional areas*, states that “[c]ontractors must have a structured approach to their worker safety and health program” and that in implementing the structured approach, “contractors must comply with the applicable standards and provisions in Appendix A of [Part 851], *Worker Safety and Health Functional Areas*.” Appendix A, Section 3, *Explosives Safety*, at paragraph (a) states that “[c]ontractors responsible for the use of explosives materials must establish and implement a comprehensive explosives safety program.” In accordance with paragraph (b) of the same section, “[c]ontractors must comply with the policy and requirements specified in the DOE Manual 440.1-1A, *DOE Explosives Safety Manual, Contractor Requirements*

Document (Attachment 2), January 9, 2006.” Relevant sections of attachment 2 of the DOE manual are cited below.

The *DOE Explosives Safety Manual, Attachment 2, Contractor Requirements Document (CRD), Chapter II, Operational Safety, section 6.0, at paragraph (b)* states that electro-explosive devices may be subject to “unintentional initiation by many forms of direct or induced stray electrical energy,” from other systems by various methods such as “sneak ground circuits; defective components or wiring; [and] errors in design, modification or maintenance.”

The *DOE Explosives Safety Manual, Attachment 2, Contractor Requirements Document, chapter II, section 13.2.1, at paragraph (a)*, states that “[p]roposed testing programs shall be examined for all foreseeable hazards involved in the test,” and that “[t]his shall be done with knowledge of the construction and operation of all standard and nonstandard equipment to be used, as well as the type of explosives involved.” Section 13.2.1, at paragraph (b), further states that “[t]ests that are unique in their application or pose obvious hazards shall adhere to the requirements contained in Chapter VII, [*Operating Procedures*] section 2.1,” which states at paragraph (a), “[b]efore starting any operation involving explosives, a hazard analysis shall be undertaken to identify any abnormal problems that will require special training, equipment or procedures to safeguard personnel conducting the operation.”

The *DOE Explosives Safety Manual, Attachment 2, Contractor Requirements Document, chapter II, section 13.3.2, at paragraph (a)* states that “test setup work should be done before receipt of explosives.” Subparagraph (4) states that “[w]hen possible, all diagnostic equipment shall be set up, checked, and tested in a dry run.” Section 13.3.3, at paragraph (a), states that “[w]henever pin switches and other non-initiating circuits are checked (such as for charging current or leakage) and are in contact with or in close proximity to explosives, the check should be performed remotely.”

Title 10 C.F.R. § 851.21, *Hazard identification and assessment*, at paragraph (a), states that “[c]ontractors must establish procedures to identify existing and potential workplace hazards and assess the risk of associated workers injury and illness.” These procedures “must include methods to: (1) [a]ssess worker exposure to chemical, physical, biological, or safety workplace hazards through appropriate workplace monitoring; . . . (5) [e]valuate operations, procedures, and facilities to identify workplace hazards; [and] (6) [p]erform routine job activity-level hazard analyses.” In accordance with subsection (c) of the same section, contractors “must perform [these activities] initially to obtain baseline information and as often thereafter as necessary to ensure compliance with [the requirements of 10 C.F.R. Part 851, Subpart C].”

Title 10 C.F.R. § 851.23, at paragraph (a), requires contractors to comply with NFPA 70, *National Electrical Code*, 2005 Edition. NFPA 70, paragraph 110.2, *Approval*, states that “[t]he conductors and equipment required or permitted by [NFPA 70] shall be acceptable only if approved.” Paragraph 110.3, *Examination, Identification, Installation, and Use of*

Equipment, states that “[l]isted or labeled equipment shall be installed and used in accordance with any instructions included in the listing or labeling.”

Contrary to these requirements, Sandia failed to identify existing and potential explosives hazards associated with the rocket motor and thermal battery test package and assess the risk of worker exposure to these hazards. Specific examples are listed below:

- A. Sandia did not evaluate the specific configuration of the components used in the test series involving the rocket motor, thermal battery, on-board digital recorder, trackside panel, grounding straps, and electrical cabling to identify possible energy sources that could inadvertently ignite the rocket’s propellant. Sandia had developed multiple hazard analyses and work control documents to address hazards associated with sled track complex operations and the thermal battery test series being conducted at the 10,000-foot sled track. However, Sandia’s safety assessment, explosives hazard analysis, primary hazard screen, integrated work plan, and thermal battery rocket sled testing operating procedure did not consider the electrical configuration of the test package and associated equipment and cabling to ensure it was properly designed and evaluated before test operations. The analyses and procedures did not incorporate a detailed diagram of the electrical configuration of the complete system for conducting the rocket sled tests. In addition, Sandia did not evaluate sources of stray energy, such as transients and other forms of induced energy that could be imposed on circuits connected to a low energy initiator.
- B. Sandia did not formally re-evaluate the electrical configuration of the test setup when an external trigger for the recording device (HiCapPen) was substituted for an accelerometer.
- C. Sandia did not evaluate manufacturer safety-significant warnings about conditions that cause arcing, ionization and burning in the Micro-D Metal Shell (MDM) connector. The manufacturer indicated that voltages could be transmitted via exposed metal parts of the connector body and thus provide a potential electrical path. The potential for a short to occur during the application of the light emitting diode (LED) to the female end of the MDM connector attached to the metal body of the test package was not identified or evaluated in either the integrated work plan (IWP) or OP12349-A, *MC4152 Thermal Battery Rocket Sled Testing* (dated September 12, 2008).
- D. Sandia did not evaluate the available safety and operating information contained in the U.S. Navy’s technical manual for the Zuni rocket system, NAVAIR 11-75A-92 (revision 1, dated March 1, 2008) and incorporate it into the rocket sled test configuration. The manual provides detailed descriptions and drawings of the electrical configuration of the rocket motor igniter, rocket launcher, and test equipment to ensure design considerations adequately address inadvertent ignition of the rocket motor and other foreseeable hazards.

- E. Sandia did not assess the sled track side panels as a potential contributor to stray or induced energy before the start of testing, particularly in light of the degraded condition of the panels from a lack of regular maintenance. During a pre-operational check, 30 volts were passed through the track side panel, but only 15 volts were detected on the output side. When this unexpected reading was obtained, the input leads were switched, and the correct voltage (30 volts) was detected on the output side of the panel. This change masked the inadvertent ground that was present in the panel that would have been evident if the panel had been evaluated before adding wiring associated with test operations. In addition, the track side panel used for the thermal battery test had been modified (cover plate was cut along the upper edge) after sustaining physical damage. It was not evaluated before being placed back into service to ensure safe electrical operation as originally designed.
- F. Sandia did not conduct preliminary evaluations of the test setup and check non-initiating circuits from a remote location before attaching the rocket motor to the test unit on the sled track. After the rocket motor was connected to the sled and test package, a laptop computer was brought in proximity to the test unit and rocket motor and connected to the recording device to set a 5-minute delay. Subsequently, an LED was inserted manually into the MDM connector on the test package. Sandia did not conduct a dry-run of the complete test setup before incorporating explosives.

Collectively, these deficiencies constitute a Severity Level I violation. As explained in Part 851, appendix B, section VI(b)(1), “[a] Severity Level I violation is a serious violation. A serious violation shall be deemed to exist in a place of employment if there is a potential that death or serious physical harm could result from a condition which exists, or from one or more practices, means, methods, operations, or processes which have been adopted or are in use, in such place of employment.”

II. Explosives Hazard Prevention and Abatement

Title 10 C.F.R. § 851.24, *Functional areas*, requires that “[c]ontractors must have a structured approach to their worker safety and health program” and that in implementing the structured approach, “[c]ontractors must comply with the applicable standards and provisions in appendix A of [Part 851], *Worker Safety and Health Functional Areas*.” Appendix A, section 3, *Explosives Safety*, states that “[c]ontractors responsible for the use of explosive materials must establish and implement a comprehensive explosives safety program” and at paragraph (b) of the same section, states that “[c]ontractors must comply with the policy and requirements specified in the DOE Manual 440.1-1A, *DOE Explosives Safety Manual*, Contractor Requirements Document (attachment 2), January 9, 2006.” Sandia has documented its explosives safety program in Corporate Process Requirement No.: CPR400.1.1.31/MN471011, *Sandia Explosives Safety Manual* (revision dated November 9, 2007).

The *DOE Explosives Safety Manual*, Attachment 2, *Contractor Requirements Document*, chapter II, *Operational Safety*, section 7.1, at paragraph (a) states that “[p]ositive steps must be taken to control or eliminate static electricity in areas where materials that are

ignitable by static spark discharge are processed or handled.” Section 7.2, at paragraph (a), states that “[w]ires used as static ground conductors should be at least No. 10 [American Wire Gauge] AWG or equivalent.” Section 7.3, at paragraph (a), states that “[g]rounding systems shall be tested for electrical resistance and continuity after installation has been completed and, in the case of active equipment, at intervals to be locally determined.” Section 7.4, at paragraph (b), states that “[c]onductive wristbands may be substituted for conductive mats and footwear at fixed, grounded, or bonded workstations or outdoor locations.” Section 7.5, at paragraph (a)(5), states that “[c]onductive wristbands shall not exceed a resistance between the wearer and ground or bonding point of 1,200,000 ohms. This resistance shall be measured with a suitably calibrated ohmmeter.” CRD chapter II, section 8.7, at paragraph (a), states that “[r]equirements for outdoor test areas shall be contained in the specific test procedures.” CRD chapter II, section 13.3.5, at paragraph (a)(4), states that “[t]est units containing low-firing-current actuators or detonators shall be clearly marked.”

The *DOE Explosives Safety Manual*, Chapter VII, *Operating Procedures*, section 2.8.2, at paragraph (d), states that operating procedures “should consist of sequential directions written or pictured in clear, concise steps that describe how to perform a particular operation.”

The *Sandia Explosives Safety Manual*, Chapter II, *Operational Safety*, section 7.1S, at paragraph (b)(3), states “[u]se tools that are nonsparking (nonferrous metal) and unpainted.” Section 7.4S, at paragraph (a), states that “[u]se of wristbands during all operations involving static-sensitive explosive materials is mandatory.” Section 7.4S, at paragraph (c)(2), states that “[w]ristbands without resistors should be visually inspected prior to each use and conductivity verified to be less than 1,200,000 ohms at least once per year” and that “[v]erification shall be recorded.”

Title 10 C.F.R. § 851.22, *Hazard prevention and abatement*, at paragraph (a), requires contractors to “establish and implement a hazard prevention and abatement process to ensure that all identified and potential hazards are prevented or abated in a timely manner.” Under this subsection, “(1) [f]or hazards identified...during the development of procedures, controls must be incorporated in the appropriate...procedure” and “(2) [f]or existing hazards identified in the workplace, contractors must:... (iii) [p]rotect workers from dangerous safety and health conditions.” Paragraph (b) states that contractors must “select hazard controls based on the following hierarchy: (1) [e]limination or substitution of the hazards where feasible and appropriate; (2) [e]ngineering controls where feasible and appropriate; (3) [w]ork practices and administrative controls that limit worker exposures; and (4) [p]ersonal protective equipment.” Paragraph (c) states that “[c]ontractors must address hazards when selecting or purchasing equipment, products, and services.”

Contrary to these requirements, Sandia failed to establish effective procedures to control or eliminate static electricity and safely perform operations with explosive materials during testing activities at the sled track facility. Specific examples are listed below:

- A. Sandia procedures did not establish controls for all of the identified hazards (e.g., static electricity, electrical shorts, and overheated or leaking batteries) and did not clearly correlate control measures with the hazards. The *Rocket Sled Track Complex Safety Assessment* and IWP 1737, *MC4152 Thermal Battery Rocket Sled Testing*, (dated August 15, 2008) identified procedures as the primary mechanism to prevent inadvertent detonation or ignition of the rocket motors. Chapter 21, *Technical Work Documents*, of the *Sandia Environment, Safety and Health (ES&H) Manual* (Corporate Process Requirement No.: CPR400.1.1, dated December 14, 2007), identifies a procedure as the required technical work document (TWD) for activities involving explosives. Chapter 21 further states that the TWD must communicate and document control measures implemented for each hazard identified, and it requires managers to ensure that work control measures are clearly assigned to their associated activity-level hazards identified within the TWD. However, the sled track procedures did not identify which, if any, steps must be performed in series and which can be performed in parallel, and lacked sufficient detail on how to perform explosives operations to ensure that hazards are controlled effectively. Specific procedural deficiencies include the following:
1. Sandia procedure OP12349-A did not contain the electrical configuration of the test setup and associated circuitry or sufficient electrical requirements for conducting tests safely in outdoor areas.
 2. OP12349-A and OP1143-D, *Assembly/Disassembly Procedures for Replacement of Igniter in Zuni Rocket Motors (202B)* (dated June 30, 2008) identified radios and cell phones near explosives as a hazard, but neither procedure identified specific controls to prevent or abate this hazard. Further, OP12349-A did not provide a mechanism to execute verbal communications between the console operator in building 6741 and the arming and firing technicians working outdoors.
 3. OP12349-A did not provide acceptance criteria for required measurements of electrical resistance in the test package; did not contain test limits for ambient wind conditions; lacked limitations and controls for addressing potentially hazardous atmospheric lightning conditions; and did not provide procedural requirements for wrist straps or other hazard controls to be used by instrumentation personnel.
 4. OP1033-G, *Buildings 6736, 6743, and 9832, Rocket Assembly Buildings* (dated August 4, 2008) does not provide concise, sequential steps for the various tasks performed in the buildings and does not specify when to implement or functionally verify hazard controls during operations. The procedure does not specify how to prepare the various rocket motors covered by the procedure for testing. Several tasks that are performed on the rocket motors, such as removing the shipping plug, electromagnetic radiation (EMR) barrier assembly, shielding band and fins; modifying the lead wire and drilling holes for the ground and lead wires; and mating the rocket to a sled, are not addressed in the procedure.

5. OP1143-D does not contain steps to remove the two primary physical safety features of the rocket motor: the shielding band assembly and the EMR barrier assembly. This procedure also makes an incorrect reference to the lead wire being shorted to the rocket case and lacks specific controls for removing rockets from their containers. Section 5.4 incorrectly refers to the contact band assembly as a grounding band; does not contain steps pertaining to reinstalling the shielding band assembly or EMR barrier assembly; and does not specify how to electrically isolate the lead wire attached to the new igniter.
- B. Sandia did not implement static electricity controls during operations involving the rocket motors. Sandia did not ensure proper use of wristbands, proper grounding of equipment or testing of equipment grounds. Specific deficiencies associated with the implementation of these controls include the following:
1. An Arming and Firing Technician used a ferrous screwdriver to install the LED after the rocket motor had been installed on the sled, contrary to general static electricity control provisions.
 2. Sandia did not ensure workers donned wristbands, a mandatory static electricity control while handling or performing operations on the rocket motor. The arming and firing technicians used wristbands when they shorted and grounded the rocket motor but did not wear wrist straps while offloading the rocket motor from the transport vehicle or loading the rocket motor onto the sled body.
 3. Sandia did not conduct an appropriate functional check of wrist bands used at the sled track to ensure continuity with electrical ground.
 4. Sandia did not establish requirements for, or reliably perform periodic testing of, the grounding systems at the sled track and building 6743.
 5. Sandia used 20 American Wire Gauge (AWG) grounding wire in the igniter pigtail, which was smaller in diameter than the required 10 AWG.
 6. Sandia did not mark the rocket motor to indicate it contained a low-firing current actuator.

Collectively, these deficiencies constitute a Severity Level I violation.

III. Training and Information

Title 10 C.F.R. § 851.25, *Training and information*, at paragraph (a), requires that “[c]ontractors must develop and implement a worker safety and health training and information program to ensure that all workers exposed or potentially exposed to hazards are provided with the training and information on that hazard in order to perform their duties in a safe and healthful manner.”

The *DOE Explosives Safety Manual*, Attachment 2, *Contractor Requirements Document*, Chapter V, *Training*, section 1.0, at paragraph (a), requires that “[p]ersonnel shall be properly trained before they are assigned to explosives operations.” This paragraph also requires that “[t]he training for explosives work, which serves to assist in conducting work safely and developing safety awareness, shall ensure that personnel: . . . (2) [d]efine and understand the potential hazards involved, (3) [l]earn correct skills to perform tasks safely, . . . [and] (5) [r]ead and understand the appropriate operating procedures.” Section 2.0, at paragraph (a), requires that “[t]he supervisor shall be responsible for: (1) [d]etermining the required training for personnel, . . . (4) [p]roviding on-the-job training, [and] (5) [c]ontinually updating worker training.”

The *Sandia Explosives Safety Manual*, Chapter V, *Training*, section 2.0S, at paragraph (a), states that “[s]upervisor shall be responsible for: . . . “(4) [d]etermining appropriate job-specific OJT [“On The Job Training” (OJT)] explosive training, (5) [p]roviding job-specific OJT explosive training to be completed by the individual, [and] (6) [d]ocumenting completion of job-specific explosives training.”

Chapter 11, *ES&H Training*, December 14, 2007, of the *Sandia Environment, Safety and Health (ES&H) Manual* (Corporate Process Requirement No.: CPR400.1.1), requires managers to “[i]mplement line-managed classroom courses and [o]n-[t]he-[j]ob training where safety or program-critical procedures are performed on the job” and “[e]nsur[e] that the minimum documentation requirements for all line-managed training are met.” Chapter 21, *Technical Work Documents (TWD)*, December 14, 2007, states that “[a]uthorized users are required to read the TWD and confirm their status as an authorized user by signing the TWD or by an equivalent process.”

Contrary to these requirements, Sandia failed to implement an explosives safety training program that ensured that workers understood and could implement the safety-related work practices and operational procedures involving explosives materials at the sled track facility. Specific examples are listed below:

- A. Sandia did not establish and implement requirements for providing on-the-job training (OJT) for workers involved in explosives operations at the sled track facility. Training records for these workers did not identify OJT requirements, learning objectives, or evidence that required skills were satisfactorily demonstrated.
- B. Sandia did not implement mechanisms for ensuring that workers at the sled track facility were familiar with the information necessary to conduct work safely. Training records for workers did not reflect completion of required training elements, including review of test facility operating procedures and primary hazard screens.
- C. Sandia did not ensure that individuals involved in sled track facility operations were adequately trained in methods to identify and control hazards and conduct operations in accordance with procedures. Interviews with sled track personnel performing rocket sled track testing operations provided evidence of inconsistent awareness of requirements for implementing critical hazard controls, which indicated that training

was inadequate. The workers did not demonstrate the ability to define and understand the potential hazards involved in order to perform tasks safely. In addition, an instrumentation technician involved in the sled track test series had not completed his biennial explosive safety refresher training since 1994.

Collectively, these deficiencies constitute a Severity Level I violation.

IV. General Requirements

Title 10 C.F.R. § 851.10, *General Requirements*, at paragraph (a), states that “[w]ith respect to a covered workplace for which a contractor is responsible, the contractor must: . . . (2) [e]nsure that work is performed in accordance with: (i) [a]ll applicable requirements of [10 C.F.R. Part 851]; and (ii) [w]ith the worker safety and health program for that workplace.” The Sandia National Laboratories *10 C.F.R. 851 Worker Safety and Health Program Plan*, PG470246, Revision 1, dated May 20, 2008, incorporates the Sandia ES&H Manual as an implementing requirements document. Chapter 21, *Technical Work Documents (TWD)*, states that “[o]nly authorized users of a TWD are permitted to perform work covered by a TWD,” and that “[a]uthorized users are required to read the TWD and confirm their status as an authorized user by signing the TWD or by an equivalent process.”

Contrary to these requirements, Sandia failed to ensure workers complied with corporate work planning and control procedures that implement the requirements of its DOE-approved worker safety and health program. These deficiencies resulted from a lack of adherence to conduct of operations principles that are required by the Sandia ES&H Manual for work activities incorporating explosives. Specific examples are listed below:

- A. Sandia did not document authorization of an arming and firing technician and instrumentation personnel who performed explosives operations on the day of the event as required by the Sandia *ES&H Manual*. These workers did not confirm their status as authorized users by signing the TWD governing the rocket sled test series.
- B. Sandia did not ensure that members of the workforce implemented the requirements of OP12349-A. The procedure contained checklists and, for certain steps, indicated the individual (designated by a position code) responsible for completing the step. The procedure also identified that a checkmark is required for certain steps indicating task completion.
 1. Required pretest meetings were not conducted prior to the third and fourth tests in the test series that were conducted on October 9, 2008.
 2. The checklist for test three contained checkmarks made by the console operator but not other personnel required to complete steps in the procedure. Not all of the steps required to be performed by the console operator were marked complete and a few steps in the hold/abort section of the procedure were erroneously marked.

3. The checklist for test four contained only checkmarks made by the console operator and not all steps to be completed by the console operator before the accident were checked. The checklist was not used by other personnel during test setup; instead, operations were performed from memory. The electrical resistance measurements were not recorded on the checklist as required.
4. Step 5.7.26 states that instrumentation personnel shall arm the HiCapPen and install the LED arm-indicator connector. For test four, this task was performed by an arming and firing technician instead of instrumentation personnel.

Collectively, these deficiencies constitute a Severity Level II violation. As explained in Part 851, appendix B, section VI(b)(2), “[a] Severity Level II violation is an other-than-serious violation. An other-than-serious violation occurs where the most serious injury or illness that would potentially result from a hazardous condition cannot reasonably be predicted to cause death or serious physical harm to employees but does have a direct relationship to their safety and health.”

REPLY

Pursuant to the provisions of 10 C.F.R. § 851.42, Sandia is hereby obligated, within 30 calendar days of receipt of this PNOV, to submit a written reply. The reply should be clearly marked as a “Reply to the Preliminary Notice of Violation.”

If Sandia elects not to contest any aspect of this PNOV, including the alleged violations contained herein, the reply should state that Sandia waives any right to contest this PNOV. In such cases, this PNOV will constitute a final order upon the filing of the reply.

Title 10 C.F.R. § 851.42(c) provides that a reply must contain a statement of all relevant facts pertaining to the violations alleged in this PNOV. If Sandia disagrees with any aspect of this PNOV, then as applicable and in accordance with 10 C.F.R. § 851.42(c)(1), the reply must: “(i) [s]tate any facts, explanations and arguments that support a denial of the alleged violation; . . . [and] (iii) [d]iscuss the relevant authorities that support the position asserted, including rulings, regulations, interpretations, and previous decisions issued by DOE.” In addition, 10 C.F.R. § 851.42(c)(2) requires that “[c]opies of all relevant documents must be submitted with the reply.”

Corrective actions that have been or will be taken to avoid further violations should be delineated with target and completion dates in DOE’s Noncompliance Tracking System.

Please send the appropriate reply by overnight carrier to the following address:

Director, Office of Enforcement
Attention: Office of the Docketing Clerk
U.S. Department of Energy
19901 Germantown Road
Germantown, MD 20874-1290

Copies of the reply should also be sent to the Manager of the Sandia Site Office and to my office.

If Sandia does not submit a written reply within 30 calendar days of receipt of this PNOV, then pursuant to 10 C.F.R. § 851.42(d), Sandia relinquishes any right to appeal any matter in this PNOV and this PNOV, including the proposed remedy, will constitute a final order.

A handwritten signature in black ink, appearing to read "T. P. D'Agostino". The signature is written in a cursive style with a large initial "T" and "P".

Thomas P. D'Agostino
Administrator

National Nuclear Security Administration

Washington, DC
this 1st day of July 2010