



**Department of Energy**  
Washington, DC 20585

April 3, 2009

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Mr. Peter Kelly  
Vice President  
Western Allied Mechanical, Inc.  
1180 O'Brien Drive  
Menlo Park, California 94025

WEA-2009-03

Dear Mr. Kelly:

This letter refers to the Department of Energy's (DOE) Office of Health, Safety and Security's Office of Enforcement investigation into the facts and circumstances associated with the September 13, 2007, polyvinyl chloride (PVC) pipe explosion that occurred in Sector 30 of the linear accelerator facility at the SLAC National Accelerator Laboratory (SLAC). The results of the on-site investigation were provided to you in an Investigation Report dated July 23, 2008. An enforcement conference was held on September 18, 2008, with you and members of your staff to discuss the report's findings. A summary of the conference is enclosed.

Based on our evaluation of the evidence in this matter, including information presented during the enforcement conference, DOE has concluded that violations of 10 C.F.R. Part 851, *Worker Safety and Health Program*, by Western Allied Mechanical, Inc. (Western Allied), have occurred.

DOE views this event as highly significant in that the explosion could have resulted in fatalities or severe injuries far exceeding the temporary hearing loss reported by one worker. These consequences were averted only by circumstance and timing. Moreover, DOE is particularly concerned that Western Allied did not acknowledge responsibility for any of the deficiencies that caused or contributed to this event or the alleged violations identified in the Investigation Report. Although Western Allied was operating as a second-tier subcontractor to the DOE prime contractor, your company was responsible for completing the scope of work that was awarded to you by Pacific Underground Construction, Inc., and for doing so safely in accordance with 10 C.F.R. Part 851 requirements. This included responsibility for identifying and controlling foreseeable hazards to protect workers from injury or illness. DOE recognizes that the SLAC Safety and Operational Reliability Improvements project was not well-designed by the prime contractor to eliminate or reduce project hazards. DOE further recognizes that SLAC

personnel retained approval authority over safety-related documentation submitted by Western Allied pursuant to SLAC's general terms and conditions for fixed price construction subcontracts. However, neither of these factors negated your responsibility to develop and implement the provisions of a job safety analysis and hot work permit to ensure that the work would be performed safely and in accordance with all applicable requirements. These factors also did not relieve your company of its responsibility to stop work if you believed that the work had not been adequately planned.

DOE commends your efforts to reach out to the local unions and local mechanical contractors community to share lessons learned from this event. DOE also views your efforts to improve product labeling and increase awareness among manufacturers and distributors of plastic piping and piping solvents about the potential hazards associated with working with mixed materials as a positive and important initiative. DOE is concerned, however, that your corrective actions focused solely on knowledge-based hazard controls such as training and did not include institutional controls, such as procedures. DOE found that you have not revised your "Oxyfuel Cutting and Welding Safety Rules" since the explosion to preclude welding on pipes that have not been verified as being free of substances that could explode, ignite, or produce toxic vapors. Furthermore, it was apparent to DOE during the enforcement conference that these safety rules are not routinely used by your employees to ensure that welding will be conducted safely. As a result, your actions do not provide assurance that welders in your employ will be aware of these potential hazards and consistently take action to ensure that these hazards are not present before welding.

DOE is also troubled by Western Allied's lack of familiarity with National Fire Protection Association (NFPA) 51B, *Standard for Fire Prevention During Welding, Cutting, and Other Hot Work*, and American National Standards Institute (ANSI) Z49.1, *Safety in Welding, Cutting, and Allied Processes*. These standards provide evidence that the industry sector applicable to Western Allied recognizes the significance of welding and cutting-related hazards and feasible means to abate these hazards. Similar hazard controls and precautions are provided in the State of California's Workplace Injury and Illness Prevention Model Program for high hazard employers, presumably based on Occupational Safety and Health Administration regulations and NFPA standards. The Office of Enforcement notes that Western Allied's safety rules also do not address some important hazard controls identified in the model program for welding, cutting, and brazing.

Based on the self-disclosing nature of the violations following the pipe explosion and the lack of effective corrective actions taken to preclude recurrence of this type of event or the violations, DOE has determined that no mitigation is warranted. Further, DOE could have chosen to cite Western Allied for multiple violations of 10 C.F.R. Part 851 as reflected in the enclosed Preliminary Notice of Violation (PNOV). However, DOE has elected to group the violations into one Severity Level I violation and reduce the base civil penalty amount in consideration of the size of your company and the role of other contractors in contributing to the circumstances that allowed these violations to occur. The resulting proposed civil penalty is \$56,000.

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)(2), this PNOV will constitute a final order. After reviewing your response to the PNOV, including any proposed additional corrective actions entered into DOE's Noncompliance Tracking System, DOE will determine whether further action is necessary to ensure compliance with DOE worker safety and health requirements. DOE will continue to monitor the completion of corrective actions until these matters are resolved.

Sincerely,



John S. Boulden III  
Acting Director  
Office of Enforcement  
Office of Health, Safety and Security

Enclosure

cc: Patricia Dehmer, SC-1  
Paul Golan, SSO  
Richard Azzaro, DNFSB

**Enclosure**

**Preliminary Notice of Violation**

Western Allied Mechanical, Inc.  
SLAC National Accelerator Laboratory

WEA-2009-03

As a result of the Department of Energy's (DOE) investigation into the facts and circumstances associated with the polyvinyl chloride (PVC) pipe explosion that occurred in Sector 30 of the linear accelerator facility at the SLAC National Accelerator Laboratory (SLAC) on September 13, 2007, multiple violations of DOE worker safety and health requirements by Western Allied Mechanical, Inc. (Western Allied) were identified.

The violations involved deficiencies in construction safety, fire protection, and adherence to general requirements and procedures. Although multiple violations were identified, DOE elected to group the violations into one Severity Level I violation. DOE further chose to reduce the base civil penalty for this violation in consideration of the size of your company and the role of other parties in contributing to the conditions that allowed the violations to occur. The proposed civil penalty is \$56,000.

In accordance with 10 C.F.R. Part 851, Appendix B, *General Statement of Enforcement Policy*, the grouped violation is outlined below with the noncompliances organized by safety area.

**VIOLATION**

**I. Construction Safety**

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 which at a minimum, include provisions for...construction safety” and that “[c]ontractors must comply with the applicable standards and provisions in Appendix A of this part, entitled ‘Worker Safety and Health Functional Areas’.”

Appendix A, Section 1, *Construction Safety*, states that “[f]or each separately definable construction activity (e.g., excavations, foundations, structural steel, roofing), the

construction contractor must: [p]repare and have approved by the construction manager an activity hazard analysis prior to commencement of affected work. Such analyses must: [i]dentify foreseeable hazards and planned protective measures...” It further states that the construction contractor must “[e]nsure workers are aware of foreseeable hazards and the protective measures described within the activity analysis prior to beginning work on the affected activity.”

Appendix A, section 1(d) states that “[t]he construction contractor must prepare a written construction project safety and health plan to implement the requirements of this section and obtain approval of the plan by the construction manager prior to commencement of any work covered by the plan. In the plan, the contractor must designate the individual(s) responsible for on-site implementation of the plan, specify qualifications for those individuals, and provide a list of those project activities for which subsequent hazard analyses are to be performed.”

Contrary to these requirements, Western Allied failed to develop a construction project safety and health plan and activity hazard analysis to effectively implement the requirements of appendix A, section 1. The site-specific safety plan (SSSP) and job safety analysis (JSA) prepared by Western Allied did not adequately identify and assess the hazards associated with the piping replacement work being conducted in Sector 30 or establish controls necessary to eliminate or abate those hazards to protect workers. Specific examples are listed below:

- A. The “Sub Contractor Site Specific Health & Safety Plan Form” for the “SLAC Underground Utilities Upgrade” project that was prepared by Western Allied as its SSSP did not identify any project activities for which subsequent hazard analyses would be performed. The form contained only generic information regarding the scope of work to be performed by Western Allied and the associated hazards and hazard controls that would be implemented relative to the work. The form also did not specify the qualifications of the individual designated as responsible for oversight and implementation of daily operations conducted under the plan.
- B. The JSA prepared by Western Allied for the piping replacement work, “CTW Piping Replacement – Sectors 21 thru 30,” dated September 4, 2007, did not identify foreseeable hazards and appropriate protective measures associated with the work to be performed.
  - The JSA identified “solvents & cements” as potential hazards and “PVC solvent/cement” as a hazardous material that would be used at the job site. However, the JSA failed to identify the following properties and precautions for use of those materials as identified on (1) the material safety data sheet (MSDS) for IPS Weld-On solvent cement for PVC plastic pipe, dated April 2007; (2) the MSDS for IPS Weld-On adhesive primer for plastic, dated June 2007; and (3) the IPS Weld-On PVC 2711 plastic pipe cement product label:

- A flammability rating of 3
  - Keep away from heat, sparks, open flame, and other sources of ignition
  - Vapors may ignite explosively
  - Use with adequate ventilation.
- The JSA listed “cutting and torching of bolts” as a phase of work/job step and “static electricity and sparks” as potential hazards. The analysis failed to consider the potentially explosive conditions created by the combination of ignitable vapors from the PVC primer and cement, an enclosed space (i.e., sealed piping system), and the application of heat to the carbon steel piping attached to the PVC piping. The work documents and SSSP for the project did not identify the need to install a pressure gauge in the piping system so that required pressure testing could be performed. The JSA did not identify the task of cutting into and welding on the newly installed carbon steel piping to install a pressure gauge.

## II. Fire Protection

Title 10 C.F.R. § 851.23, *Safety and health standards*, requires compliance with 29 C.F.R. Part 1926, *Safety and Health Regulations for Construction*. Section 1926.352(i) states that “[d]rums, containers, or hollow structures which have contained toxic or flammable substances shall, before welding, cutting, or heating is undertaken on them, either be filled with water or thoroughly cleaned of such substances and ventilated and tested.”

Section 1910.1200(h)(1) of 29 C.F.R. Part 1910, *Occupational Safety and Health Standards*, which is adopted by Part 1926, states that “[e]mployers shall provide employees with effective information and training on hazardous chemicals in their work area at the time of their initial assignment, and whenever a new physical or health hazard the employees have not previously been trained about is introduced into their work area.”

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 which at a minimum, include provisions for ...fire protection” and that “[c]ontractors must comply with the applicable standards and provisions in Appendix A of this part, entitled ‘Worker Safety and Health Functional Areas’.” Appendix A, Section 2, *Fire Protection*, states that “[c]ontractors must implement a comprehensive fire safety and emergency response program to protect workers commensurate with the nature of the work that is performed,” and that “[a]n acceptable fire protection program ... includes meeting applicable building codes and National Fire Protection Association [NFPA] codes and standards.”

National Fire Protection Association (NFPA) 51B, *Standard for Fire Prevention During Welding, Cutting, and Other Hot Work*, 2003 edition, establishes the following provisions:

- Section 4.1.6 states that “[m]anagement shall ensure that all individuals involved in the hot work operations, including contractors, are familiar with the provisions of [NFPA 51B].”
- Section 4.1.6.2 states that “[i]ndividuals involved in hot work operations shall have an awareness of the inherent risks involved...”
- Section 5.1.1 states that “[h]ot work shall be permitted only in areas that are or have been made fire safe.”
- Section 5.2(4) states that “[h]ot work shall not be permitted...[i]n the presence of uncleaned or improperly prepared drums, tanks, or other containers and equipment that have previously contained materials that could develop explosive atmospheres.”

Section 1.1.2 of NFPA 51B requires compliance with American National Standards Institute (ANSI) Z49.1, *Safety in Welding, Cutting, and Allied Processes*. ANSI Z49.1, 2005 edition, establishes the following provisions:

- Section 3.2.1.2 states that “[m]anagement shall assure that hazards and safety precautions are communicated to and understood by workers prior to the start of work.”
- Section 3.2.1.3 states that “[m]anagement shall designate approved areas, and establish procedures for safe welding and cutting” and “[m]anagement shall assure that the individual is aware of the hazards involved and familiar with the provisions of [ANSI Z49.1].”
- Section 3.2.3.1 states that “[w]elders shall understand the hazards of the operation to be performed and the procedures being used to control hazardous conditions.”
- Section 3.2.3.3 states that “[w]elders shall cut or weld only where all safety precautions have been met.”
- Section 6.4 states that “[w]elding or cutting work shall not be started until the container has been prepared for hot work.”

Contrary to these requirements, Western Allied failed to implement appropriate welding and cutting fire safety control measures during the replacement of the old transite piping system in Sector 30 of the linear accelerator facility and failed to provide adequate safety hazard training and information to its employees. Specific examples are listed below:

- A. Western Allied failed to ensure employee protection from flammable and explosion hazards through work control measures such as purging or cleaning the pipes and monitoring for vapor buildup to verify the absence of a potentially explosive atmosphere. Western Allied employees completed the assembly of a PVC pipe configuration inside a trench outside Sector 30 of the linear accelerator facility using

IPS Weld-On adhesive primer and solvent cement for PVC plastic pipe. The PVC pipe segment was connected to a cooling water main and an eight-inch carbon steel pipe using flanged connections and the segment was blanked in preparation for testing. Inside the Sector 30 mechanical alcove, a company welder subsequently initiated cutting operations on the carbon steel pipe to prepare the pipe for installation of a pressure gauge without recognizing the flammable and explosive hazards of trapped ignitable vapors inside the closed-pipe system.

- B. Western Allied did not establish procedures to ensure that welding and cutting would be performed safely. Western Allied provided Stanford University with a set of safety rules for different types of welding (e.g., “Oxyfuel Cutting and Welding Safety Rules”) as part of the required safety documentation for review and approval. The rules did not identify any requirements or precautions relating to the need to ensure that, before performing hot work, containers and equipment are free from substances that could explode, ignite, or produce toxic vapors.
- C. Western Allied employees did not receive effective training on the physical hazards associated with performing hot work on piping systems containing potentially explosive vapors or the implementation of appropriate hazard controls. Western Allied also did not ensure that its employees were trained in the provisions of NFPA 51B and ANSI Z49.1. Western Allied employees interviewed during the Office of Enforcement’s investigation were not familiar with these standards or the requirements contained therein.
- D. Western Allied failed to ensure that its employees were properly informed of the potential hazards and protective measures associated with replacing the old transite piping system with a combination of carbon steel and PVC piping, and the assembly of a PVC pipe system using PVC primer and cement. Western Allied employees have performed pipefitting work with carbon steel at SLAC previously. The welder performing the hot work on September 13, 2007, however, had no experience working with a piping configuration comprised of different materials (ductile iron, PVC, and steel) such as the one used in the underground utilities upgrade in Sector 30 of the linear accelerator facility. The welder did not consider the potential flammable and explosion hazards associated with the use of the primer and cement in a closed-pipe system based on a review of the applicable MSDSs and product labels before welding.

### III. General Requirements

Title 10 C.F.R. § 851.10, *General requirements*, states that “the contractor must: [e]nsure that work is performed in accordance with: (i) [a]ll applicable requirements of [Part 851]; and (ii) [w]ith [sic] the worker safety and health program for that workplace.”

The *SLAC Worker Safety and Health Program Description* (SLAC-I-720-0A21B-001-R000), dated February 2007, is applicable to all subcontractors at SLAC except those hired directly by DOE. That program description incorporates by reference the latest



version of Chapter 42, *Subcontractor Construction Safety*, of the *SLAC Environment, Safety, and Health Manual*. The following refers to requirements in chapter 42 dated June 1, 2007.

- Section 5.1.2.4 states that “[s]ubcontractors are required to submit a site-specific safety plan (SSSP)” and that “[t]he SSSP is intended to provide specific information on the hazards, contact people, and emergency response for a particular project.” This section further states that “[t]he SSSP must describe the work to be performed, outline the hazards anticipated to be encountered with each task, and the specific mitigation.” The SSSP must also “[d]escribe the system used to ensure that personnel will comply with safe and healthy work practices including [s]afety indoctrination and safety meetings, [w]orker training in hazard recognition, [d]isciplinary policy, and [d]escribe the system used to communicate with personnel, including notification of hazards.” This section also states that “[s]ubcontractor employees must be trained in the contents of the SSSP and the training documented.”
- Section 5.1.2.5 states that “JSAs must be prepared and reviewed at the start of any on-site work and any new phase or task and will be reviewed daily.”
- Section 5.1.3.3 requires that “subcontractors must perform daily inspections of activities and work sites relevant to the work being performed that day to ensure that the subcontractor is working within identified controls and has effectively controlled identified hazards...” This section further states that “[a]ll inspections, findings, and corrective measures must be documented and be available for review...” and that “[t]he daily inspection records must be kept at the job site.” This section also states that “[t]he subcontractor’s competent person will conduct regular inspections of the work place and maintain a log certifying compliance with accepted safe work conditions.”

Contrary to these requirements, Western Allied failed to perform work in accordance with SLAC’s approved worker safety and health program and associated implementing procedures. Specific examples are listed below:

- A. Western Allied did not document the results of safety inspections for the work performed in Sector 30 of the linear accelerator facility and Western Allied’s competent person did not maintain a log certifying compliance with project safety and health requirements. There is no evidence to indicate that Western Allied’s competent person conducted regular inspections of the workplace.
- B. Western Allied’s SSSP did not address the task of fabricating a new piping system using mixed materials, usage of PVC adhesive primer and cement in assembling the piping, or identify the hazards associated with those activities and materials. The SSSP also did not describe the system that would be used by Western Allied to ensure worker compliance with safe and healthy work practices.

- C. There is no documentation of training for Western Allied employees on the SSSP applicable to their work.
- D. The JSA applicable to the utilities upgrade work performed by Western Allied did not identify the task of installing a pressure gauge in the carbon steel pipe. Although this task was reportedly discussed during a tailgate meeting on the day of the explosion, Western Allied did not prepare a new JSA or modify the existing JSA to reflect this new task.

Collectively, these violations constitute a Severity Level I violation. As explained in 10 C.F.R. 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.”

Proposed Civil Penalty - \$56,000

## **REPLY**

Pursuant to the provisions of 10 C.F.R. § 851.42, Western Allied is hereby obligated, within 30 calendar days of receipt of this Preliminary Notice of Violation (PNOV), to submit a written reply. Please send such 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 should also be sent to the Under Secretary for Science and the Manager of the SLAC Site Office. This reply should be clearly marked as a “Reply to the Preliminary Notice of Violation” and must include the following for each violation: (1) any facts, explanations and arguments that support a denial that the violation has occurred as alleged; (2) any extenuating circumstances or other reason why the proposed remedy should not be imposed or should be mitigated; and (3) a discussion of the relevant authorities that support the position asserted, including rulings, regulations, interpretations, and previous decisions issued by DOE. Copies of all relevant documents shall 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.

Pursuant to 10 C.F.R. § 851.42(d), if Western Allied does not submit a written reply within 30 calendar days of receipt of this PNOV, Western Allied relinquishes any right to appeal any matter in this Notice and this PNOV will constitute a final order. If Western

Allied agrees to comply with the proposed remedy and waives any right to contest the PNOV, the penalty of \$56,000 must be paid within 30 calendar days after receipt of this PNOV by check, draft, or money order payable to the Treasurer of the United States (Account 891099) and mailed to the Acting Director, Office of Enforcement, Attention: Office of the Docketing Clerk, at the above address. In such cases, this PNOV will constitute a final order upon the filing of the reply. Western Allied may be required to post a copy of this PNOV in accordance with 10 C.F.R. § 851.42(e).



John S. Boulden III  
Acting Director  
Office of Enforcement  
Office of Health, Safety and Security

Washington, DC  
this 3<sup>rd</sup> day of April 2009

**Western Allied Mechanical, Inc.**  
**SLAC National Accelerator Laboratory Polyvinyl Chloride Pipe Explosion**

**Enforcement Conference Summary**

On September 18, 2008, the Department of Energy's (DOE) Office of Health, Safety and Security's Office of Enforcement held an enforcement conference with Western Allied Mechanical, Inc. (Western Allied) representatives at the SLAC National Accelerator Laboratory (SLAC) in Menlo Park, California. The conference was held to discuss potential violations identified in the Office of Enforcement Investigation Report issued to Western Allied on July 23, 2008, involving the September 13, 2007, polyvinyl chloride (PVC) pipe explosion that occurred at SLAC.

Ms. Martha Thompson, Acting Director, Office of Enforcement, presided over the conference. Following introductions by DOE and Western Allied representatives in attendance, Ms. Thompson provided an overview of the conference's purpose and objectives.

Mr. Peter Kelly, Western Allied Vice-President, opened Western Allied's discussion by suggesting a review of the Investigation Report's content. Mr. Kelly pointed out that the introductory section of the report incorrectly stated that the PVC piping was attached to the carbon steel piping using PVC solvent. Mr. Kelly stated that the PVC and carbon steel pipes were mechanically coupled and that the PVC primer and cement were used in a different part of the system to couple sections of PVC piping together. DOE acknowledged that the Investigation Report is inaccurate in this regard.

Mr. Kelly then stated that Western Allied's Site-Specific Safety Plan (SSSP) was submitted to SLAC well in advance of the work to be performed and before the effective date of 10 C.F.R. Part 851, thereby making it difficult to anticipate potential hazards. He indicated that his company was asked to perform a task that was not reflected on the contract documents and that Western Allied made every effort to perform their work in accordance within SLAC's controls. He added that the SSSP was approved by SLAC and identified the use of flammable materials and welding, and that the welding activity that caused the explosion was discussed with the SLAC University Technical Representative before it was performed. He also indicated that the pressure gauge would have been installed before the piping was installed if the need for a gauge had been reflected on the project documents.

Mr. Kelly contended that new piping was being installed and therefore it could not be considered unclean or contaminated. Ms. Kathy McCarty, Director, Office of Worker Safety and Health Enforcement, responded that the Occupational Safety and Health

Administration requirement was not limited to new materials and that the intent of the National Fire Protection Association (NFPA) standard was to ensure that hot work would not be performed on equipment that previously contained a substance that could create an explosive atmosphere.

Mr. Kelly stated that Western Allied conducts quarterly safety meetings and annual hazard communication training for its employees; that the unions do not concentrate on NFPA standards during training for welders; and that no one could have anticipated that the piping contained residual vapors from the PVC cement.

Mr. Eddie Patterson, Western Allied's Project Manager, noted that daily inspection reports in the form of daily logs were kept and that the SLAC University Technical Representative maintained a daily log of the status of the project along with any violations noted and corrective actions. Western Allied also referred to the fact that each worker, including the University Technical Representative, signs the job safety analysis (JSA) on a daily basis. Office of Enforcement staff replied that the construction safety section of 10 C.F.R. Part 851 contains specific requirements for inspections by the construction contractor's designated representative and that the staff was not provided any documents that constituted inspection records. The Office of Enforcement also pointed out that worker signatures on the JSAs are a form of hazard communication and do not suffice for meeting regulatory requirements to conduct inspections.

Mr. Kelly stated that the JSA was updated during the morning before the explosion to reflect the task of installing the pressure gauge. The Office of Enforcement later confirmed, consistent with its Investigation Report, that the JSA was revised only after the explosion occurred.

Mr. Chad Kruckewitt, Piping Superintendent, indicated that contrary to the Investigation Report, a "Supervisor's Accident Investigation Report" was completed according to requirements. Western Allied provided a copy of this report to the Office of Enforcement at the conclusion of the enforcement conference.

Mr. Kelly discussed Western Allied's response to the event on several occasions. He described the company's efforts to reach out to the local mechanical contractors community to share information about the hazards of "stored energy." He and Mr. Kruckewitt provided that Western Allied has been working with piping manufacturers and vendors, and the manufacturers of solvents and PVC glue, to provide better product labeling and to get the word out to these companies and a number of union chapters about the hazards associated with working with mixed materials. Mr. Kelly acknowledged the severity of the PVC pipe explosion and encouraged DOE to improve the efficacy of its lessons learned program as a means to avoid similar events within the contractor community.

Mr. Richard Day, Enforcement Officer, inquired about actions Western Allied has taken to prevent a recurrence of this type of incident. Mr. Kelly replied that this has been addressed through staff training and outreach efforts. Ms. McCarty summarized the Office of Enforcement deliberation process. Ms. Thompson then adjourned the conference.

**Western Allied Mechanical, Inc.  
SLAC National Accelerator Laboratory Polyvinyl Chloride Pipe Explosion**

**Enforcement Conference List of Attendees**

**September 18, 2008**

DOE – Office of Enforcement

Martha Thompson, Acting Director  
Kathy McCarty, Director, Office of Worker Safety and Health Enforcement  
Leslie Bermudez, Enforcement Officer  
Richard Day, Enforcement Officer  
Raul Bhat, Legal Advisor

DOE – SLAC Site Office

Paul Golan, Manager  
Thomas Rizzi, Safety Team Lead  
Donald Wilhelm, Safety Engineer

SLAC National Accelerator Laboratory

Craig Ferguson, Director, Environment, Safety and Health Division

Western Allied Mechanical, Inc.

Peter Kelly, Vice President  
Eddie Patterson, Project Manager  
Chad Kruckewitt, Piping Superintendent  
Cyrus Patel, Construction Foreman  
Lisa Reid, Office Manager  
Jean Bulatao, Former Office Manager

Other

Victor Torreno, Local 104 Representative, Sheet Metal Workers International  
Association