

# CoPS *SH&E Report*

Council on Practices & Standards (CoPS)

Volume 1, Number 3

## ASSE Kuwait Chapter to Hold Conference

ASSE's Kuwait Chapter will hold its fourth International Professional Development Conference and Exhibition, titled "Sustainable Business Excellence through HSE," from April 2-4, 2007 in Kuwait.

This event will address the safety, health and environmental (SH&E) discipline as well as loss prevention. SH&E professionals and international experts will present papers, while students, researchers and young professionals will give poster sessions.

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## 2007 Academic Forum to Follow New Format

The Academics Practice Specialty will hold its annual Academic Forum on Wednesday, June 27, 2007 from 7:45 a.m.-4:15 p.m. at the ASSE's annual Professional Development Conference (PDC) in Orlando, Florida.

While previous forums had adhered to a lecture/presentation format, the 2007 forum will take a different approach. The program will include the following:

### Morning Sessions

- Assessment of Student Learning: Direct and Indirect Methods that Work—Charles W. McGlothlin, Jr., Ph.D., P.E., Oakland University
- Recruiting Safety and Health Professionals—Tracey Cekada, DSc, Indiana University of Pennsylvania
- How to Enlist the Real World of Occupational Safety, Health and Environment to Enhance Academic Preparation—Lawrence A. Mauerman, MAS, PE, CSP, Southeastern Louisiana University
- An Analysis of Ergonomic-Related Injuries in Nursing Homes: A Case Study—Renee Hawatmeh, Occupational Safety & Health Student, Oakland University
- Preparing the Next Generation of Air Safety Investigators—Anthony T. Brickhouse, MAS, Embry-Riddle Aeronautical University
- TSDS As an Educational Tool for Non-S&H Majors—Magdy Akladios, University of Houston-Clear Lake
- Improve School Safety and Security by Reviewing Lessons Learned from "Active Shooter" Table Top Exercises—Larry Holloway, CSP, MEP, LGH Safety Services

### Keynote Luncheon Speaker

Retired U.S. Air Force Brigadier General Orin L. Godsey will speak during the lunch hour on academic leadership in the SH&E profession and on the need to prepare students to be future SH&E leaders.

### Afternoon Roundtable Discussions

Paul Specht, CSP, PhD., will give an update on the Accreditation Board for Engineering and Technology (ABET).

*CoPS SH&E Report* is published quarterly by the American Society of Safety Engineers' (ASSE) Council on Practices & Standards (CoPS).

Tim Fisher ..... Director, Practices & Standards  
Rennie Heath ..... Manager, Practice Specialties  
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For information on submitting content to *CoPS SH&E Report*, e-mail [jcappello@asse.org](mailto:jcappello@asse.org).



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A series of roundtable discussions will be conducted to encourage networking and information exchange among forum attendees. Participating colleges and universities will give informal 15-minute presentations about their safety and health programs, facilities and future faculty openings. Attendees will rotate tables every 15 minutes. These discussions will continue until attendees have seen as many presentations as they wish.

### Eligibility & Pricing

Eligible attendees include full-time academicians and/or members of the Academics Practice Specialty.

Registration fees for full-time academicians are as follows:

<b>Early (before April 2, 2007):</b>	\$395
<b>Regular (from April 3-May 18, 2007):</b>	\$495
<b>Onsite (after May 19, 2007):</b>	\$550

Mark Friend, Ed.D., CSP, Academics Forum Chair, believes that the 2007 forum “will give attendees the opportunity to learn what research and development activities are occurring at sister institutions.” Friend also looks forward to General Godsey’s keynote presentation. “The U.S. Air Force and the aviation community in general have had a tremendous impact on the field of safety,” he adds.

Jim Smith, Vice President of the Council on Practices and Standards (CoPS), feels that the new approach of the 2007 Forum will “increase educational program delivery” and “draw greater participation from our academic leaders who are so vital to the safety profession.” “Networking and sharing ideas among so many academic leaders will be an extremely useful part of the forum,” says Smith.

Wayne Jones, Ed.D., Administrator of the Academics Practice Specialty, also praises the new roundtable approach. “The afternoon session will add excitement to an already exciting and informative forum. All occupational safety academics should plan to participate in this event. ASSE’s student activities taskforce has held roundtable discussions for years with great results, and I anticipate an equally enjoyable and interesting outcome for the 2007 Academics Forum,” Jones says.

For more information on the 2007 Academic Forum, contact Mark Friend at [mark.friend@erau.edu](mailto:mark.friend@erau.edu) or Rennie Heath at [rheath@asse.org](mailto:rheath@asse.org).

## New Ergonomics Branch Formed

ASSE’s CoPS announced the formation of a new Ergonomics Branch, which will be co-sponsored by the Industrial Hygiene and Engineering Practice Specialties.

Since many practice specialty members already work in ergonomics, the Industrial Hygiene and Engineering Practice Specialties felt that a dedicated Ergonomics Branch would be of great benefit to them. According to Jim Smith, Vice President of CoPS, the goal of the branch will be to create a “knowledge exchange platform to capture the membership’s body of knowledge and to develop a delivery system by which members will have easy access to this knowledge.” Smith adds that this knowledge network will “ultimately assist members in better performing their jobs and in protecting people, property and the environment.”

Eric Stager, Administrator of the Industrial Hygiene Practice Specialty, would like the Ergonomics Branch to expand its knowledge base to allow for the discussion and design of new, practical ways to reduce soft-tissue injuries.

Joel Haight, Administrator of the Engineering Practice Specialty, feels that the Ergonomics Branch is “long overdue” and looks forward to working with the Industrial Hygiene Practice Specialty in its development.

Both Smith and Stager believe that the new Ergonomics Branch will become a rich resource of technical information for members, and it will also give them the opportunity to network with each other and to share best ergonomics practices.

To support and promote the Ergonomics Branch, CoPS, ASSE staff and volunteers from the Industrial Hygiene and Engineering Practice Specialties will work together to inform the ASSE membership of the branch’s launch and will begin to develop the ergonomics body of knowledge.

Currently, the Industrial Hygiene and Engineering Practice Specialties are selecting branch officers, confirming the governance structure and finalizing a strategic plan. The Industrial Hygiene Practice Specialty held a teleconference call on December 15, 2006 to further discuss the strategic plan as well as the branch’s first newsletter.

For more information on the Ergonomics Branch, contact Rennie Heath at [rheath@asse.org](mailto:rheath@asse.org). ■

# We Asked... You Answered

*In the last issue of CoPS SH&E Report, we asked readers what event in their career made them decide to enter the SH&E profession. Responses are below...*

“My initial work experience predates the U.S. Occupational Safety and Health Administration (OSHA) and the U.S. Environmental Protection Agency (EPA). During that time, environmental and labor safety practices were somewhat ‘loose’ where I lived. I suffered a crushed foot injury because my supervisor would not listen to an employee concern and take appropriate action. The following year, my father died as a result of a factory explosion. To my knowledge, the cause was never officially determined. A few years later, OSHA and EPA were enacted.

My educational background was in business, but with environmental issues in the back of my mind, I sought employment in the health department. After obtaining further education, I took on a safety, health and environmental (SH&E) position and entered the field.”

*William Collesano, MS, CSP  
Director, Environmental Health & Safety  
New York Medical College*

“It was probably a fatality on a logging job I was working in 1977. I was the first responder, and I could not save the guy. The State Labor and Industries Compliance Officer investigated the accident the following workday, and I was pretty impressed by him and the job he performed. The seed was planted then.”

*Patrick Cruver, CSP  
Environmental Health & Safety  
Washington State University*


“When I was 16, I worked at a small diner where I cooked and served lunches to factory workers. On my way home from work one day, I saw a bad car wreck with a total of four injured people. One car had a six-year old girl, a 17-year-old girl and their pregnant mother. A guy in his 20s drove the car that hit them.

I had some first-aid experience but no training. I was able to help three of the people, but the pregnant woman was injured so badly that neither I nor the sheriff’s deputy who arrived first on the scene was able to help her. I later learned that she spent over a month in intensive care.

After that, I joined the Williamsburg Volunteer Fire Department, and I was a North Carolina Emergency Medical Technician before I graduated from high school. The various injuries and accidents I saw during that time left me open to suggestions. At our high school career day, the founder of the occupational safety and health program at North Carolina A&T State gave a presentation. He spoke of the need for people who want to prevent occupational injuries and illnesses. People who would need to be a little bit medical, a little bit engineering, a little bit business and a whole lot of persistent. I signed up and completed my degree in occupational safety and health in 1990. I have tried to keep people from getting hurt ever since.”

*Alan Davis, CSP  
Safety & Compliance Manager  
American Seafoods Company*

“The short answer is I got hired. The full answer is I was a volunteer firefighter in Lakewood, NY during my early college years at Jamestown Community College. My mentor was a graduate of the School of Fire Protection at Oklahoma State University (OSU), and when I looked for a place to get my bachelor degree, OSU became the school of choice. I received a degree in fire protection and also a commission in the U.S. Navy. Following five years on active duty with a wife, one child and another on the way, the choice was to serve eight more years of sea duty or to find a job. I narrowed my choices to two



and opted to take a job in Eastman Kodak's Safety Department. I am now retired from both the Navy and Kodak (where I spent the last ten years as the Director of Industrial Safety at the company's largest plant in Rochester, New York). I still consult and am happy with my career choice. And I am still married to the same wonderful woman and have four terrific grandchildren."

*Lawrence "Chip" Dawson  
Dawson Associates  
Rochester Business Alliance Coordinating Consultant for HSE*

"In 1970, I was serving in the U.S. Air Force (USAF) as an Electronics Technician. I was assigned an additional duty as the Safety Coordinator for my unit. The base safety office offered me an opportunity to attend a nine-week, entry-level safety course presented at Lowry Air Force Base in Denver, Colorado. I attended that class and learned many things about occupational safety and health in the USAF.

In 1971, I had an opportunity to change from missile electronics to the safety office. With the intervention of some key individuals, that change was made. I stayed in the USAF (working in the safety office at six different locations) until April 1990 when I left. Since then, I have worked in aerospace twice and as a loss control consultant for a workers' compensation carrier. I currently work for the county in which I live."

*Christopher Gates, ARM  
Safety Specialist  
Risk Management/Safety  
County of San Bernardino*


"When I worked as a young firefighter for a small volunteer department in western Pennsylvania, my fire chief was a safety professional for a local facility that produced equipment for the armed forces and law enforcement. His insight and stories interested me.

When it came time to select a college, I chose one that had an established safety program—the Indiana University of Pennsylvania. The professors in the safety sciences program had a true passion for the field of safety, and I think that passion grew in me with every class I took. Upon completion of a co-op and internship, I knew that safety was the career for me. After working in the safety field for many years, I am still passionate about my job, and I am glad I decided to enter into the SH&E profession. As safety professionals, we can help ensure that our co-workers go home in the same, if not better, condition as when they walked through the door that morning or evening."

*Jeffrey Kozub  
Safety & Health Specialist  
Risk Management & Safety Department  
Auburn University*

"The decision to change my career to health and safety occurred about 20 years ago. I felt that my position as a clinical microbiologist was a dead-end position with no potential for advancement. I began searching for career choices that could use a strong science background and discovered industrial hygiene. I found several ads in the newspaper for industrial hygienists, so I researched the scope of work and the companies that generally hire them. Within a few months, I entered into graduate school and completed a master degree in industrial hygiene.

Several years into my career, I realized that if I were to remain valuable and marketable, I would need to expand my skills to include all areas of safety and industrial hygiene. I also felt that industrial hygienists seemed somewhat expendable to employers and that many would prefer to contract industrial hygienists, while safety was more integrated into daily operations. The transition was fairly simple because the two disciplines overlap. I began to change some of my annual training plans to include more safety-related classes and become more involved in safety on the job.



Even though I do perform many industrial hygiene activities on my job, I now consider myself a safety professional. The next step of the transition was to complete the Associate Safety Professional (ASP) and Certified Safety Professional (CSP) exams, which were very beneficial to my career.”

*Diane Krock, CSP, Grad IOSH, Executive Safety Manager  
Corporate Safety & Health Manager  
ANP Operations Company*

“I have worked in the occupational health and safety field for over 12 years now and have investigated more accidents than I can remember. One accident that will forever haunt me, however, occurred while I was still on Active Duty in the U.S. Navy. Assigned to USS FLINT (AE 32) as Engineer Officer (Chief Engineer), I was performing the duties of Command Duty Officer (CDO) on October 7, 1993 when I was informed that there had been a death onboard. One of the Deck Machinery Department’s Second Class Petty Officers (E-5) had been crushed to death by a cargo elevator. As Command Duty Officer, it fell to me to take charge of the scene and the initial investigation. I also stood guard over his body until it could be released from the elevator. Also, during that afternoon I was tasked— along with the Chaplain and a Medical Corpsman—with telling his wife that she was a widow.

During the post-accident investigation, it was revealed that the Preventive Maintenance card began with ‘First secure power to the elevator motors and tagout.’ The Petty Officer and his assistant must have thought that securing power and tagging out the elevator took too long to accomplish. So they took a shortcut. A shortcut that cost one man his life.

You may hear me joke that all accident reports should start out, ‘I was in a hurry and then...’ or ‘All safety rules are written in somebody’s blood,’ but it is true. We safety professionals try to discover all possible ways for someone to get hurt, but there is always something new. Employees who work in production areas can help prevent future injuries by noticing things that are not as safe as they should be, then notifying one of the Plant Safety Leaders or tracking me down and showing me. I promise that serious safety hazards will be corrected immediately and that non-threatening safety problems will be addressed as soon as possible.”

*Lawrence Miles, REM  
EHS Manager  
CRH North America, Inc.*

“It was while I was in the U.S. Navy and with my work as an aircraft mechanic. I was personally involved in investigating several airplane crashes and worked on the respective investigation teams. I found the work very interesting and extremely beneficial. By identifying the causes, we prevented future accidents.”

*George Pearson, CSP, ARM  
Corporate Health & Safety Manager  
SunCom Wireless  
ASSE Risk Management/Insurance Practice Specialty Administrator 2005-2007*

“My introduction to safety came from my involvement as a Systems Engineer writing contractual documents and procedures for a contract our company received for research and development for the Space Shuttle Contract in the mid-1970s. I was responsible for writing the quality, reliability and safety requirements for the contract proposal. As part of our submittal, our management determined that we would do pre-award surveys of subcontractors who bid on the contract.

I was selected to head the team that reviewed (audited) these companies. My primary training at this time was in quality systems, and I had worked with safety professionals to include in the requirements those items critical to safety. I was a member of the audit team that visited the various subcontractors (about 125 vendors) as part of their system reviews. About two years after we received the Solid Rocket Booster portion of the Space Shuttle Contract, the National Aeronautics and Space Administration (NASA) visited our site for a systems audit. I had to prepare and perform the audit. As part of the

audit, I recommended that our company develop an audit organization that would review safety requirements within our organization.

I was asked to be a part of this audit organization's development because I had developed the procedural requirements and had a lot of experience in the audit process. And for the last 30+ years, my career has been in safety. I have worked as a Safety Auditor, Supervisor, Manager and Work Center Engineer."

*Edwin "Brownie" Petersen, MA, CSHM  
Safety Engineer, ATK Launch Systems*

"I was working for Northwestern Bell in 1983 when the Bell System separated and formed seven regional companies. While working on warehousing methods and procedures, I needed to develop a narrow-isle lift truck training program. Since I could not find a video, I developed one and sent it to a safety engineering consulting firm in Chicago, Illinois for review. They really liked it and wanted to present it at the National Safety Council (NSC) Congress. I became active in the Trades and Services section of NSC, joined ASSE and really got into safety. Since then, I have earned a bachelor of science degree, the CSP designation and several other certifications specific to my field of expertise in safety. There is always something new to learn in this broad and often technical field."

*Ron Sinnwell*

"While working at a pulp and paper mill as a young high school graduate, I experienced several serious near hits and actual injuries. Not once did anyone within management or the safety department ever investigate the incidents or inquire as to my well being. I thought this was very strange and decided there must be a better way to address employee safety. Later as I entered the fall semester of my sophomore year at Texas A&M University, I discovered a new safety engineering program and registered to attend classes. The industrial experience coupled with the fine professors caused me to enter the SH&E profession."

*Mike Thompson, CSP  
BP America  
NA Gas Strategic Performance Unit  
Training—HSE*

"It was strictly chance. I answered a newspaper ad to be an industrial hygiene technician. I was struggling to work my way through college, and the ad specifically asked for people with college experience, but no degree was necessary. So I jumped at the chance to do something better than my \$4-an-hour midnight security job. At that time, I could not spell "industrial hygiene" let alone tell you what it was, but that job started me down a career path that has been both personally and financially rewarding. Twenty years later, it will hopefully continue to be rewarding (but I am keeping my options open)."

*Keith Trombley, CHMM, CIH, CSP*

## ***CoPS Wants to Know...***

How do you predict the SH&E profession will change during the next 10 years?  
What improvements or achievements do you foresee?  
How do you think these changes will affect you?

E-mail your responses to [jcappello@asse.org](mailto:jcappello@asse.org) by **February 16, 2007**.

Responses will be published in the next issue of *CoPS SH&E Report*.

# Updated Z359.1 Standard Improves Personal Fall Arrest System Safety

*Randy Wingfield is the President of Gravitec Systems, Inc. and the Chair of the Z359 Accredited Standards Committee (ASC) on Fall Protection and Related Systems.*

*The Z359 ASC is currently revising American National Standards Institute (ANSI) standard Z359.1, "Safety Requirements for Personal Fall Arrest Systems." In this interview, Wingfield gives an update of the standard's revision process and explains how the revised Z359.1 standard will positively affect companies.*

***You are the Chair of the Z359 Accredited Standards Committee (ASC) on Fall Protection and Related Systems. This committee is currently revising American National Standards Institute (ANSI) standard Z359.1, "Safety Requirements for Personal Fall Arrest Systems." What is the status of this standard's revision process thus far, and what changes will the revised standard include?***

The technical committee has voted on and approved the majority of the standard. It went for final limited public review in late 2006 for release in early 2007.

The Z359.1 standard originated in 1992. It underwent minor revisions in 1999, and it has remained unchanged since then.

Under the current revision, the standard's purpose has changed. While the existing standard focuses primarily on the design and testing of specific fall equipment items, the revised standard will include this information along with additional specifications for fall protection program development, fall hazard assessment, key person responsibility, training and program maintenance. The standard now also includes information on work-positioning systems and rescue systems, and it features new sections such as a comprehensive guide for the development of a Managed Fall Protection Program.

The revised standard is designed to be a "living document" that will change as industry and technology advance. It will offer those interested in fall protection a comprehensive document that will facilitate the generation of a new fall protection program or will augment an existing one.

***What are your duties as Chair of the Z359 ASC, and what is your role in the preparation and execution of the revised Z359.1 standard?***

## **Randy Wingfield**

Randy Wingfield is the Founder, President and Chief Executive Officer of Gravitec Systems, Inc., which has been at the forefront of fall protection technology, engineering, training and consulting for more than 20 years.

As the company's primary resource for forensic investigation of fall accidents, Wingfield presents expert opinions, depositions and testimony on the causes, mitigation and elimination of jobsite fall hazards and accidents.

Wingfield has been involved in the continuing development of national and international standards for fall protection equipment and training, and he is the President of the International Society for Fall Protection, President of the International Society of Fall Protection, Chair of the ANSI Z359 Committee, past Vice Chair of the Canadian Standards Association (CSA) Z259 committee and an ASSE member.



Committee and subcommittee meetings bring together many industry professionals who work with numerous topics in a short period of time. These meetings constitute a considerable expense to its membership in time and travel. Therefore, it is imperative that the Chair conduct the meetings in a manner that is consistent and efficient. New issues are raised at each session, and the Chair must facilitate the formation of subcommittees and working groups to address each topic. The Chair also works closely with the secretary and subcommittee chairs to assist with technical issues, set deadlines and obtain consensus within the subcommittees and committee.

***How is third-party certification of fall arrest and protection equipment performed? Why do you believe third-party certification is of value to safety professionals?***

Third-party certification of equipment requires that each item of equipment be tested and sent to an independent, unbiased outside testing organization to determine if the equipment meets the design and performance requirements given in the standard. Historically, ANSI has not required third-party testing for items of fall protection equipment. Therefore, manufacturers have performed their own testing and have attested to the equipment's compliance with the standard. Since the testing methods and standards may

allow some interpretation, combined with the variation in testing abilities from one manufacturer to another, the situation has resulted in inconsistencies. The lack of unbiased third-party testing has allowed items to be labeled as meeting the ANSI standard when, in fact, they do not.

Most of the large equipment manufacturers have conducted third-party certification for years because their product lines are sold in other countries or in specific industries that require it. This creates a market that can be very confusing for consumers because it is difficult to determine which items have been independently tested and which items have not. Third-party testing is beneficial, not only for safety professionals, but for the entire industry, as it standardizes testing and increases equipment quality. If an independent organization has tested equipment according to a set standard, consumer confidence will increase.

***You are the President of Gravitec Systems, Inc., which provides fall protection and rescue training, engineering and consulting services and equipment sales. How do you predict the revised Z359.1 standard will impact your company?***

Gravitec Systems, Inc. as well as other fall protection companies will benefit from a better-educated clientele. This standard provides access to information that was not previously available. The fall protection industry has lacked guidance on the development of a fall protection program, and this standard offers that guidance.

Many organizations have created some type of fall protection program. Unfortunately, it often does not have a coordinated approach. Equipment is purchased without training, policies are written without assessing risk, systems are designed without engineering support, and rescue planning has yet to become an industry standard. This revised standard will offer a “road map” for organizations to develop their own programs. A more informed consumer base will benefit our company, the industry and workers who are exposed to the risk.

***What measures will you take to ensure that state and federal governments recognize the revised Z359.1 standard? Do you anticipate any challenges?***

The Occupational Safety and Health Administration (OSHA) has participated in the development of the Z359.1 standard since its conception. Governing bodies recognize advancements in the industry, and recognition and acceptance of the standard by federal and state governments will occur over time.

***Do you believe that the revised Z359.1 standard should be recognized in other areas?***

The Z359.1 standard was not written with a specific industry in mind. We believe that the standard has something to offer every company or organization that encounters fall hazards. Even if the organization is not working at heights everyday, there are elements within this standard that would benefit everyone. For example, the construction industry could use the standard’s hazard assessment sections, and the communications industry could benefit from the training sections.

***What other projects does the Z359 ASC have in development?***

The Z359.1 Committee is proud of the commitment that everyone has given to the revision of this standard during the past four years. Although this standard is quite comprehensive, the committee plans to further develop information for engineered systems (horizontal lifelines), hardware compatibility, rope access and rescue. These issues are scheduled as future projects for the committee. ■

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Practice Specialty or Branch?**

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# NIOSH Face Report: Gas Well Drilling Floorhand Died When Struck by Hoisted Wellhead Equipment Stack

## Overview of Incident

A 56-year-old gas well drilling floorhand died on May 30, 2005 from chest trauma he received after being struck by a hoisted wellhead equipment stack that overturned. The stack was composed of a lower spool, a blowout preventer (BOP), an upper spool and a rotary head. The crew attempted to replace the lower spool at the time of incident. As the victim and a co-worker attempted to pry the lower spool loose, the 18,000-pound, top-heavy equipment overturned, pinning the victim to the ground and striking the co-worker. Other crewmembers immediately freed the victim and called for emergency response. Emergency medical services (EMS) arrived at the scene and transported the victim to the nearest hospital. He was then transported by helicopter to another hospital where he was pronounced dead in the emergency room.

Oklahoma Fatality Assessment and Control Evaluation (OKFACE) investigators concluded that to help prevent similar occurrences, employers should:

1. Ensure that employees do not position themselves under suspended loads.
2. Develop, implement and enforce a comprehensive safety and health program that includes safe operating procedures for lifting/hoisting operations and compliance monitoring.
3. Develop written contracts that establish the chain of command and safety responsibilities of prime and subcontractors.

## Introduction

A 56-year-old gas well drilling floorhand died on May 30, 2005 from chest trauma he received after being struck by a hoisted wellhead equipment stack that overturned. OKFACE investigators were notified of the incident, and an interview

with a company official was conducted on July 7, 2005. OKFACE investigators reviewed the death certificate and reports from the medical examiner and the Occupational Safety and Health Administration (OSHA).



*Drilling site where incident occurred.*

**Employer:** The victim was employed by an oil and gas drilling company. The company drilled well sites for oil and gas exploration companies on a contract basis. The company had been in business for five years and employed 85 full-time workers at the time of incident. The company had a written safety and health program, including written task-specific and machine-specific instructions for all tasks. The company had an active labor/management safety committee and a management safety and health committee. Written contracts existed

between the company and subcontractors that established safety responsibilities.

**Victim:** The 56-year-old male victim had worked for the oil and gas drilling company for six months. The victim was performing his usual work tasks in his usual work area at the time of the incident. He had 25 years of experience in oil and gas drilling operations.



*Wellhead stack involved in the incident.*

**Training:** Site crews conducted weekly safety meetings at all well sites, and the company safety officer conducted a safety meeting with all employees every two weeks. Company employees conducted task-specific, machine-specific and general safety training. Tool pushers (drilling machine operators) and forklift operators were required to complete operator certification training. In addition to hands-on training, equipment manuals, videos and formal classroom settings were used to train machine operators. Certified machine operators' proficiency and effects of training were measured through testing and demonstration. All training and safety meetings were documented and kept on file with the company.

**Incident Scene:** The incident occurred on a gas drill site where the company had operated for 21 days. The incident took place on the ground under the drill floor at a wellhead. The ground in the area was level but muddy and oily.

**Weather:** On the day of the incident, weather conditions were warm and sunny.

## Investigation

The incident involved a wellhead located below the drill floor. The wellhead equipment stack weighed approximately 18,000 pounds and was composed of four stacked components including a lower spool, a BOP, an upper spool and a rotating head. Under normal operations, wellhead components may be replaced or serviced several times throughout a drilling operation. The wellhead was being removed to replace the lower spool to accommodate a change from seven-inch to four-inch pipe during the drilling operation. The drilling company had nine employees working at the site at the time of the incident, including a tool pusher designated as the supervisor and two drilling crews of four men each.

Employees were wearing hardhats at the time of incident. One of the crews was nearing the end its shift, and the second was preparing to start. In addition, a representative (#1) was present from the company holding the property under an oil and gas lease, and another representative (#2) from a third company was onsite to deliver the lower spool replacement.

Written standard operating procedures and witness statements from employees indicated that the normal procedure for wellhead removal was to disassemble the wellhead starting from the top and to remove each component individually, rather than lift the assembled wellhead as one piece. Disassembly of the wellhead usually took two hours. On the day of the incident, the tool pusher was supervising operations but left the immediate area to get a drink of water and relinquished control of the wellhead removal to Representative #2 who acted as a third party onsite. Representative #2 directed the crew to lift the fully assembled wellhead stack as a single unit to save the time and work of disassembling it. Representative #2 directed employees to use a two-chain sling attached to two of the four lifting shackles located on the BOP. According to the

BOP manufacturer, all four lifting shackles should be used during lifting operations and are designed only to lift the BOP, not other ancillary equipment. The stack was top-heavy during the lifting operation because the lifting sling was attached to the BOP near the bottom of the wellhead assembly.

Witness statements indicated that the wellhead stack had been lifted several times, but the crew had difficulty loosening the lower spool from the BOP. During attempts to remove the lower spool, the lifted wellhead had tipped over without striking anyone. Representative #2 then directed that the two-chain sling be rotated 90° to attach to the other two lifting shackles of the BOP than the ones previously used. The points of attachment to the lifting shackles were changed to gain more clearance between the wellhead and the bottom of the overhead drill floor. The stack was lifted again while the victim and a co-worker used a hammer and crowbar to remove the lower spool. As the lower spool came off the bottom of the BOP, the wellhead tipped over toward the victim and co-worker, striking the co-worker and pinning the victim to the ground. Co-workers immediately freed the victim and called for emergency response.

Emergency medical services arrived at the scene within ten minutes and transported the victim to the nearest hospital. He was transported by helicopter to another hospital where he was pronounced dead a few hours later in the emergency room. The co-worker was not hospitalized and suffered primarily bruises, contusions and abrasions.

## Cause of Death

The medical examiner's report listed the cause of death as blunt trauma of the chest.

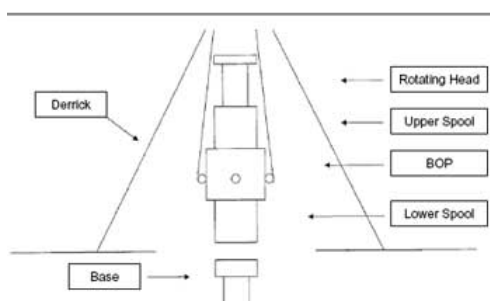
## Recommendations & Discussions

### Recommendation 1

Employers should ensure that employees do not position themselves under suspended loads.

### Discussion

The OSHA standards for materials handling and storage that address the use of lifting slings indicate that all employees should be kept clear of loads about to be lifted and of suspended loads. The areas below and adjacent to suspended loads should be controlled access zones.



*Diagram of wellhead stack involved in the incident.*

Employees should not occupy controlled access zones while a load is suspended. Employees should use tag lines or other means of remote control to steady and control elevated loads while allowing employees to maintain adequate clearance. Safe working load limits of tag lines should be considered when selecting tag line materials.

## Recommendation 2

Employers should develop, implement and enforce a written comprehensive safety and health program that includes safe operating procedures for lifting/hoisting operations and compliance monitoring.

### Discussion

Employers should develop comprehensive, written safety programs that incorporate safe operating procedures for lifting/hoisting operations. Employees should receive copies of the written program, and the material should be in the workers' language and literacy level. The program should include safe operating procedures related to the disassembly of wellheads before lifting and machinery limitations noted by manufacturers.

When written safe operating procedures are established, manufacturers' lifting guidelines should be followed. Safe operating procedures should not require employees to lift wellhead stacks as single units if doing so would exceed limitations or recommendations noted by wellhead component manufacturers.

Compliance of safe operating procedures should be enforced through random inspections, and corrective action through retraining should be provided as necessary. Tasks should only be directed by employers or their authorized representatives who are knowledgeable in safe operating procedures, and equipment manufacturers' instructions should always be followed.

## Recommendation 3

Employers should develop written contracts that establish the chain of command and safety responsibilities of prime and subcontractors.

### Discussion

Contracts should be written with language that addresses the responsibilities of prime contractors, subcontractors and third-party contractors. The site-controlling party should be identified in the contract, and a safety officer should be designated for the controlling party. The contract should clearly state the chain of command that employees from all parties should follow, and it should provide the safety officer with the authority to stop operations and to take corrective action to address potentially life-threatening hazards. The contract should be agreed upon and signed in advance of any work that is to be performed. The contracts should include safe work practices and procedures. Each party should have a system to ensure compliance by self-monitoring, monitoring by the other party or by an outside consultant or other unbiased party.

### References

OSHA, 29 CFR 1910.184, *Subpart N, Materials Handling and Storage, Slings*.

OSHA, Standard Interpretations, October 21, 1999, *Employee Hand Placement On and Around Suspended Crane Loads*, Standard Number: 1926.550(a)(19).

OSHA, *Oil and Gas Well Drilling and Servicing eTool*.

International Association of Drilling Contractors, Safety Alert 03-40, *Nylon Sling Failed While Positioning BOP Control POD*.

—Adapted from “Gas Well Drilling Floorhand Died When Struck by Hoisted Wellhead Equipment Stack,” NIOSH In-House Facility Assessment and Control Evaluation (FACE) Report 05OK040, October 11, 2006. ■



*Lifting shackle of blowout preventer (BOP).*

## News You Can Use

### ASME Partners with Two Groups on Global Training Program

The **American Society of Mechanical Engineers (ASME)** will partner with Alliance Safety Management Services Sdn Bhd in Malaysia and Abar Solutions Petroleum Consultancy Ltd. in Kuwait on the Global Management for Engineering and Technology (GMET) training program for engineers.

Alliance Safety Management and Abar Solutions will administer the GMET courses to trainees using the delivery format, instruction method and course materials developed by ASME.

GMET provides instruction and training on global corporate strategic planning and project management, cross-cultural teambuilding and other subjects designed to expand the knowledge and skill sets of engineers beyond the purely technical and into areas related to international business management and operations.

Consisting of four courses, GMET is delivered through a blended learning format that combines online course material, quizzes, case studies and discussion with a two-day online training program. Participants who complete the program receive a certificate of completion.

ASME will assist with schedules and will also offer to select and dispatch instructors, teaching assistants and interpreters for training sessions.

—Adapted from ASME news release, “ASME Enters Agreements with Two Groups on Global Training Program for Engineers,” October 24, 2006.

### ASTM International Publishes STP 1473, Beryllium: Sampling & Analysis

ASTM International has published *STP 1473, Beryllium: Sampling and Analysis*. This new technical publication includes nine peer-reviewed papers that provide the latest research on beryllium sample collection, preparation and measurement. It also identifies new areas of standards development within beryllium sampling and analytical procedures, and it addresses the following topics:

**Beryllium Disease: Exposure Monitoring and Standardization Issues**—An overview of beryllium disease and efforts to reduce worker exposures through improved monitoring methods and the development of standard methodologies. Papers discuss the industrial uses of

beryllium, the history of beryllium disease, occupational exposure monitoring and standardization of sampling and analytical methods.

***Beryllium Exposure Measurement and Reference Materials: National and International Perspectives***—Global efforts and progress in beryllium occupational monitoring as well as the development and characterization of beryllium reference materials. Applications of sampling and analytical methods to industrial hygiene chemistry and practice are highlighted, and needs for reference materials containing beryllium oxide are identified.

**Onsite Monitoring for Beryllium: Sampling and Analytical Aspects**—New portable analytical methods for determining trace beryllium in samples from air and surfaces, time qualitative and semi-quantitative methods and near real-time quantitative techniques for ultratrace beryllium analysis.

Dr. Kevin Ashley of the Centers for Disease Control/National Institute for Occupational Safety and Health (CDC/NIOSH) served as the editor of the volume.

—Adapted from ASTM International news release, “ASTM International Announces Publication of STP 1473, *Beryllium: Sampling and Analysis*,” December 2006.

### CSB Releases Findings from Investigation of Daytona Beach Wastewater Plant Explosion

The **U.S. Chemical Safety Board (CSB)** released preliminary findings regarding the January 2006 explosion that killed two municipal employees at the Bethune Point Wastewater Plant.

On January 11, 2006, two municipal workers died and another was seriously injured while using a cutting torch to remove a steel roof over a storage tank containing highly flammable methyl alcohol (methanol) at the plant, which the City of Daytona Beach owns and operates.

The torch used on the roof above ignited methanol vapors from the tank vent. The flame then flashed back into the storage tank and caused an explosion inside, which led to multiple piping failures and a large fire that engulfed the tank and workers.

CSB’s investigative team, led by Robert Hall, P.E., found that the City of Daytona Beach has no program to control hot work such as welding or high-temperature cutting at city facilities nor does the city require work plan reviews to evaluate the safety of non-routine tasks.

The team also determined that the storage tank did not comply with National Fire Protection Association (NFPA) Code 30, the Flammable and Combustible Liquids Code. The piping and valves attached to the tank were plastic (PVC) instead of steel, and they fractured after the initial explosion.

In addition, the tank's flame arrester, a safety device that prevents ignition inside a tank from an external fire, had not been inspected or cleaned since its installation in 1993. The flame arrester was constructed from aluminum, which is not recommended for methyl alcohol service, and by the time of the accident, the flame arrester was so badly corroded that it did not prevent flames from entering the tank.

The CSB investigative team found that since 2000, no Florida state laws or regulations exist to require municipalities to communicate chemical hazards to municipal employees. OSHA workplace safety standards do not cover Florida municipalities, and no state or federal oversight of public employee safety exists in Florida.

The CSB's final report and recommendations are expected to be released in early 2007.

*—Adapted from CSB news release, "CSB Releases Findings from Fatal Daytona Beach Wastewater Plant Explosion Investigation at Public Meeting; Cites Inadequate Engineering, Lack of Public Worker Safety Coverage," December 14, 2006.*

### **CPSC Announces Recall of Safety Switches**

The U.S. Consumer Product Safety Commission (CPSC), in cooperation with Square D Company of Palatine, Illinois, announced a voluntary recall of Square D's General Duty Safety Switches. Consumers should stop using recalled products immediately unless otherwise instructed.

The recall covers about 27,600 General Duty 30- and 60-ampere, 240-volt, 1-phase and 3-phase NEMA 3R safety switches. These switches are typically used to control the flow of electricity to outdoor motorized units that are hardwired to a household or business electrical system such as outdoor air conditioning and heating (HVAC) equipment. The switches contain "ON" and "OFF" positions. The "OFF" position is designed to cut the flow of electricity to an outdoor motorized unit to protect the person servicing it. However, the recalled safety switches can continue to supply electricity even after they are put in the "OFF" position. This poses a risk of electric shock or an electrocution hazard to consumers.

The recalled switches have the following date codes and catalog number printed on the bottom of the wiring label inside the front cover or on the bottom of the package label:

#### **Date Codes**

06371 through 06446 D211NRB

#### **Catalog Numbers**

D211NRBBP  
D211NRBCP  
D221NRB  
D221NRBCP  
D321NRB  
D321NRBCP  
DU221RB  
DU222RB  
DU321RB  
DU322RB

These switches were manufactured in Mexico and were sold at electrical distributors and retailers from September 2006 through November 2006 for \$120-\$300. Consumers should return the uninstalled safety switches to the retailer or distributor where purchased for a free replacement unit. Square D will replace installed safety switches free of charge. To date, no incidents or injuries have been reported.

*—Adapted from CPSC news release, "Square D Recalls Safety Switches Due to Shock or Electrocution Hazard," December 15, 2006.*

### **New Safety & Health Campaign Targets Small Businesses in Europe**

The European Agency for Safety and Health at Work has launched "The Healthy Workplace Initiative" (HWI) to provide employers and employees with easy access to information on improving their business environment by becoming healthier and more productive. The initiative addresses the specific needs of small- and medium-sized businesses through a series of 36 seminars across the 12 participating countries and a risk assessment guide.

HWI is part of an agency initiative to develop a preventive occupational safety and health (OSH) culture in Europe. It is designed to raise awareness of OSH essentials such as the need to conduct risk assessments, involve the workforce in prevention plans and share best practices.

The agency's risk assessment guide enables employers and employees to analyze and assess their work environment according to their specific needs. A checklist allows for quick and simple overview of the company's current situation and

provides advice and support for change and improvement of the work environment.

Thirty-six free seminars will be held in the ten most recent EU member states and in the two accession countries, Bulgaria and Romania. During these seminars, high-level professionals will explain how to make businesses stronger and more productive through the creation of a healthy workplace.

—Adapted from *European Agency for Safety and Health at Work news release, “New Safety and Health Campaign Targets Small Businesses in EU 10, Bulgaria and Romania,” September 4, 2006.*

### **FHWA Issues Final Rule Requiring High-Visibility Clothing for Workers**

On November 24, 2006, the **Federal Highway Administration (FHWA)** published a final rule requiring the use of high-visibility safety clothing for workers, emergency personnel and others in the right-of-way of federal-aid highways.

The rule requires the use of American National Standards Institute (ANSI)/International Safety Equipment Association (ISEA) standard 107-2004, “American National Standard for High-Visibility Safety Apparel and Headwear,” Class 2 or 3 high-visibility safety retroreflective apparel to lower the likelihood of fatalities or injuries to workers on foot in federal highway work zones.

The rule applies to “people on foot whose duties place them within the right-of-way of a federal-aid highway, such as highway construction and maintenance forces, survey crews, utility crews, responders to incidents within the highway right-of-way and law enforcement personnel when directing traffic, investigating crashes and handling lane closures, obstructed roadways and disasters within the right-of-way of a federal-aid highway.”

According to FHWA, more than 100 workers are killed and more than 20,000 workers are injured each year in the highway and street construction industry. The rule will help reduce these numbers.

Employers have until November 24, 2008 to become compliant. This time period will allow affected entities to replace existing garments if necessary.

—Adapted from *BNA, Inc. Occupational Safety & Health Reporter, Volume 36, Number 47*

### **Study Addresses Train Crew Work Schedules to Reduce Human Errors**

As part of an ongoing effort to target the highest risks and major causes of train accidents, the **Federal Railroad Administration (FRA)** will release a study that provides a strong scientific rationale for evaluating railroad employee work schedules to address worker fatigue.

Human factor errors are responsible for nearly 40% of all train accidents over the past five years. An FRA evaluation of the research findings confirms that fatigue plays a role in approximately one out of four of those accidents.

The research was to determine if a fatigue model can accurately and reliably predict an increased risk of human error that could contribute to the occurrence of a train accident. A mathematical model for detecting the point at which the risk of fatigue becomes hazardous could be part of a railroad’s fatigue management plan. The FRA expects this information will aid the railroad industry in improving crew scheduling practices in order to reduce that risk.

Under the study, researchers analyzed the 30-day work schedule histories of locomotive crews preceding approximately 1,400 train accidents and found a strong statistical correlation between the crew’s estimated level of alertness and the likelihood that they would be involved in an accident caused by human factors. In fact, the relationship is so strong that the level of fatigue associated with some work schedules was equivalent to being awake for 21 hours following an eight-hour sleep period the previous night. At this level, train accidents consistent with fatigue, such as failing to stop for red signals, were more likely to occur.

This fatigue study is an important part of the FRA’s National Rail Safety Action Plan, a comprehensive effort to target the major causes of railroad incidents.

—Adapted from *U.S. Department of Transportation (DOT) news release, “New Fatigue Study Findings Focus on Train Crew Work Schedules to Reduce Human Errors that Cause Train Accidents,” November 29, 2006.*

### **MSHA Makes New Emergency Mine Evacuation Rules Permanent**

The **Mine Safety and Health Administration (MSHA)** issued a final rule that requires mine operators to increase the availability of emergency breathing devices, provide improved training on the use of the devices, improve emergency evacuation and drill training, install lifelines for

emergency evacuation and require immediate notification of MSHA in the event of an accident.

Earlier in 2006, MSHA issued a rare emergency temporary standard (ETS) aimed at protecting miners by helping them to evacuate an underground mine in the event of an emergency. MSHA held public hearings on the ETS following its publication in the Federal Register. The process was completed with issuance of the new permanent rule.

Other requirements of the new rule include:

1. Additional self-contained self-rescue (SCSR) devices for persons in underground coal mines—in working places, on mantrips, in escapeways and where outby crews work or travel.
2. Submission of a revised training plan and a revised program of instruction for improved training on SCSRs. It includes a new requirement for annual SCSR expectations training (training in smoke or simulated smoke and breathing through a realistic training unit).
3. Improved quarterly emergency mine evacuation training, including a drill.
4. Installation of lifelines.
5. Additional multi-gas detectors to alert miners as to when to wear SCSRs.

One of the more significant results of the new rule is the establishment of only one telephone number for use in reporting mine accidents within 15 minutes after it is known an accident occurred. All mine operators, including operators of metal and non-metal mines, must call 1-800-746-1553 to report mining accidents within the required time limit.

—Adapted from U.S. Department of Labor (DOL) news release, “U.S. Labor Department’s MSHA Makes New Emergency Mine Evacuation Rules Permanent,” December 8, 2006.

### Surveys to Address Usage & Availability of PPE for Women

A government study is expected to determine the use by and availability of personal protective equipment (PPE) for women in the workforce.

The study will consist of two surveys, one geared toward women in firefighting services and one addressing women in other industries that require PPE. The **National Institute for Occupational Safety and Health (NIOSH)** will produce the surveys to determine how well PPE fits women and how available it is.

The study is in the very early planning stages, but developmental work on the surveys should begin within the year.

MSHA and the U.S. Occupational Safety and Health Administration (OSHA) both have interests in the surveys and study.

MSHA has partnered with the Centers for Disease Control and Prevention on the survey effort. Some years ago, the agency began to research PPE for women and learned that little PPE is available in women’s sizes, as the majority of PPE is designed for men. Women working in mining, fire, security, military and healthcare usually must modify their PPE equipment to make it fit.

The results of the NIOSH surveys could show if PPE is available for women but is not easy to obtain or if it is available and employers just do not buy women’s sizes. If the surveys show that employers just do not buy women’s sizes, the underlying reason could be price. Employers may receive discounts for buying PPE in bulk, so if they buy large quantities of large sizes, they may not order equipment in smaller sizes.

PPE designed for average-sized men may pose hazards to women. Women wearing loose or ill-fitting protective clothing can become entangled in machinery and risk amputation or death. Protective factors for respirators, work gloves and boots are also reduced if they do not fit properly.

Safety equipment manufacturers say that as more women enter nontraditional fields, the need for properly fitting PPE increases. Some companies have expanded their product lines to include women’s sizes, but the market is still limited.

—Adapted from BNA, Inc. *Occupational Safety & Health Reporter*, Volume 36, Number 38

### OSHA Says General Duty Clause Protects for Flavorings-Related Lung Disease

According to OSHA, the general duty clause of the Occupational Safety and Health Act, as well as standards for personal protective equipment, air contaminants and hazard communication, offers protection to workers exposed to potentially harmful flavoring agents.

OSHA cites the general duty clause (Section 5(a)(1) of the OSH Act), PPE standards (29 CFR 1910, Subpart I) and toxic

and hazardous substances standards (29 CFR 1910, Subpart Z).

NIOSH discovered the first cases of potentially fatal “popcorn lung” at a Gilster-Mary Lee Corporation microwave popcorn plant in Jasper, Missouri in 2002. At least one popcorn worker has died from the disease bronchiolitis obliterans, and several workers have received damage awards against flavoring manufacturers for exposure-related injuries.

At the time of the plant investigation, OSHA said that the that the flavoring used at the plant did not fall within OSHA’s jurisdiction because there were no Permissible Exposure Limits for the food blend chemicals used at the factory.

NIOSH suspects the chemical diacetyl, which imparts a butter-like flavor, for the workers’ development of bronchiolitis obliterans. Animal studies have shown that exposure to butter flavoring vapors, including diacetyl, can cause severe airway injury, but OSHA says that the causal relationship between diacetyl exposure and development of bronchiolitis obliterans is not firmly established.

OSHA also notes that workers who use or manufacture other flavorings have developed similar health problems.

—Adapted from BNA, Inc. *Occupational Safety & Health Reporter*, Volume 36, Number 38

### **OSHA Awards More than \$10 Million in Grants for S&H Training Programs**

OSHA awarded more than \$10 million in Susan Harwood Training Grants to 57 non-profit organizations for safety and health training and educational programs.

The Susan Harwood Grants support the development of training materials and the provision of safety programs to educate Hispanic and other limited-English-proficient employees, hard-to-reach employees, employers in small businesses and employees in high-hazard industries and industries with high fatality rates.

OSHA awarded \$6.9 million in Targeted Topic Training Grants, which support training to educate employees on construction hazards, general-industry hazards and other safety and health topic areas such as disaster response and recovery, working with hexavalent chromium and workplace emergency planning.

Approximately \$3.3 million was used to fund renewal grants for recipients of last year’s Institutional Competency Building Grants, which were used to help non-profit organizations expand their safety and health training and education to assist employees on an ongoing basis.

The training grants are named in honor of the late Susan Harwood, a former director of the Office of Risk Assessment in OSHA’s health standards directorate, who died in 1996. During her 17-year tenure with the agency, Harwood helped develop OSHA standards to protect workers exposed to bloodborne pathogens, cotton dust, benzene, formaldehyde, asbestos and lead in construction.

—Adapted from U.S. Department of Labor (DOL) news release, “U.S. Department of Labor Awards More than \$10 Million in Grants for Safety and Health Training Programs,” September 29, 2006.

### **America’s Traffic Congestion Worsens**

The U.S. Secretary of Transportation said that travel on American highways climbed to an all-time high in 2005.

According to the newly released “Highway Statistics 2005,” an annual compilation of data reported to the FHWA by all U.S. states and territories, Americans drove nearly three trillion miles on American highways in 2005. This figure—2,989,807,000,000 vehicle miles traveled—represents a 27.4-billion-mile increase over travel in 2004 and nearly 25% more than in 1995.

In 2005, 241.2 million vehicles were registered in the U.S., including 6.2 million motorcycles—the most ever recorded in both categories.

—Adapted from U.S. Department of Transportation (DOT) news release, “Highway Traffic Up in 2005: New Data Reveals America’s Traffic Congestion Getting Worse,” December 11, 2006. ■

## Links

### ASME Partners with Two Groups on Global Training Program

[http://www.asme.org/NewsPublicPolicy/PressReleases/Enters\\_Agreements\\_Two\\_Groups\\_2.cfm](http://www.asme.org/NewsPublicPolicy/PressReleases/Enters_Agreements_Two_Groups_2.cfm)

### ASTM International Publishes STP 1473, Beryllium: Sampling & Analysis

<http://69.7.224.88/viewnews.aspx?newsID=998>

### CSB Releases Findings from Investigation of Daytona Beach Wastewater Plant Explosion

[http://www.csb.gov/index.cfm?folder=news\\_releases&page=news&NEWS\\_ID=330](http://www.csb.gov/index.cfm?folder=news_releases&page=news&NEWS_ID=330)

### CPSC Announces Recall of Safety Switches

<http://www.cpsc.gov/cpscpub/prerel/prhtml07/07062.html>

### New Safety & Health Campaign Targets Small Businesses in Europe

[http://osha.europa.eu/press\\_room/HWI\\_Launch\\_2006-06-30](http://osha.europa.eu/press_room/HWI_Launch_2006-06-30)

### Study Addresses Train Crew Work Schedules to Reduce Human Errors

<http://www.dot.gov/affairs/fra1806.htm>

### MSHA Makes New Emergency Mine Evacuation Rules Permanent

<http://www.dol.gov/opa/media/press/msha/msha20062056.htm>

### OSHA Awards More than \$10 Million in Grants for S&H Training Programs

<http://www.dol.gov/opa/media/press/osha/osha20061695.htm>

### America's Traffic Congestion Worsens

<http://www.dot.gov/affairs/fhwa1406.htm>

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# Standards Update

## American Society of Agricultural and Biological Engineers (ASABE)

### Revision to ASABE Safety Chain Standard Completed

The Power and Machinery division of the ASABE has completed a revision to “Equipment for Agriculture—Safety Chain for Towed Equipment” (ANSI/ASAE S338.4 (FEB 03)).

The revision, ANSI/ASAE S338.5 (MAY2006), “Field Equipment for Agriculture—Safety Chain for Towed Equipment,” addresses the use of heavier towed equipment. New chain categories have been created for towed equipment weighing up to 356 kN (80,000 lbs) GVW, and guidance for equipment weighing more than 356 kN GVW has been included. The revision allows alternative methods for auxiliary attaching, provided that system strength criteria are met.

—Adapted from ASABE news release, “Revision Completed on Safety Chain Standard,” September 13, 2006.

## American Society for Quality (ASQ)

### ASQ Standard to be Revised

ASQ’s “Guidelines for Quality, Environmental and Occupational Health and Safety Management Systems Auditing—U.S. Version with Supplemental Guidance Added” (BSR/ISO/ASQ QE 19011S-200x) will be revised. While the original scope of “Guidelines on Quality and/or Environmental Management Systems Auditing” (ISO 19011:2002) included guidance on auditing of quality and environmental management systems, it did not address auditing of occupational safety and health management systems. The United States Technical Advisory Groups (TAGs) to ISO/TC 176 and ISO/TC 207 have determined that the standard does not fully meet the needs of the U.S. auditing communities in this area.

## American Society of Safety Engineers (ASSE)

### ASSE Standard to be Revised

Based on the consensus of the Z490 Accredited Standard Committee (ASC) and the ASSE membership, ASSE plans to

revise its standard, “Criteria for Accepted Practices in Safety, Health and Environmental Training” (BSR Z490.1-200x). This standard establishes criteria for SH&E training programs, including development, delivery, evaluation and program management.

### ANSI Approves A10.6 Standard

On September 11, 2006, ANSI approved the revised standard, “Safety Requirements for Demolition for Construction and Demolition Operations” (ANSI/ASSE A10.6-2006).

This standard, which applies to the demolition of buildings and other structures, provides minimum requirements to protect and safeguard employees and the public and to prevent property damage that may occur during demolition operations.

Regulatory bodies and administrative agencies may use this standard as a guide in the formation of laws and regulations, and demolition contractors or those who perform demolition work may also incorporate it into their operations.

The A10.6 standard is designed to be complete in and of itself, except that any device, equipment or activity incidental to demolition operations shall be conducted, installed, inspected, maintained and operated in accordance with requirements in the American National Standards for Safety in Construction and Demolition Operations A10 Series, other ANSI standards as listed in Section 2 of the A10.6 standard and in other appropriate standards.

The standard includes the following Table of Contents:

1. General.
2. Referenced Standards.
3. Definitions.
4. Preparatory Operations.
5. General Protection.
6. Public and Other Ground-Level Protection.
7. Catch Platforms and Scaffolding.
8. Warning Devices.
9. Fire Protection and Control.
10. Facilities Arrangements.
11. Flame Cutting and Related Operations.
12. Tank or Vessel Removal.
13. Removal of Steel and Special Construction Buildings.
14. Machine Demolition.
15. Blasting Operations.
16. Appendix—Survey of the Jobsite.

It is important to note that the A10.6 standard complements the newly reaffirmed ANSI A10.7-1998 standard, “Commercial

Explosives and Blasting Agents—Safety Requirements for Transportation, Storage, Handling and Use.”

Currently, OSHA, NIOSH and state, municipal and government agencies recognize the A10.6-1990 (R1998) standard, but ANSI and the ASSE will work together to promote the revised standard among these agencies and others.

The A10.6 Subgroup will review the standard one final time before it is published.

For more information, contact Tim Fisher at [tfisher@asse.org](mailto:tfisher@asse.org).

## Association for Manufacturing Technology (AMT)

### AMT Standards Nationally Adopted

AMT’s standard, “Safety of Machinery—Basic Concepts, General Principles for Design—Part 1: Basic Terminology and Methodology” (BSR/ISO 12100-1-200x), has been nationally adopted. This standard defines the basic terminology and methodology used in achieving safety of machinery. The provisions in the standard are intended for designers, and it should be noted that the standard does not address damage to domestic animals, property or the environment.

AMT’s standard, “Safety of Machinery—Basic Concepts, General Principles for Design—Part 2: Technical Principles” (BSR/ISO 12100-2-200x), has also been nationally adopted. This standard defines technical principles to help designers achieve safety in the design of machinery. ISO 12100-2 is intended to be used together with ISO 12100-1 when considering solutions to specific problems. The two parts of ISO 12100 can be used independently of other documents or as a basis for the preparation of other Type A, B or C standards. This standard also does not address damage to domestic animals, property or the environment.

### AMT Standard to be Revised

To provide increased efficiency of development and enhance usability of its series of B11 standards, AMT will revise its “General Requirements for the Safety of Machine Tools” (BSR B11.GR-200x). The requirements of this standard apply to new, modified or rebuilt machine tool systems that are used to shape or form metal or other material by cutting, impact, pressure, electrical techniques or a combination of these processes. The revised standard is expected to be of interest to machine tool users and suppliers.

## AMT/ANSI Technical Report Proposed

AMT and the American National Standards Institute (ANSI) have proposed a new Technical Report under the auspices of the ANSI B11 Accredited Standards Committee on Machine Tool Safety that would provide guidance on the practical application of safety and lean manufacturing principles to machinery and manufacturing systems for improving performance, safety and quality by reducing injury and waste.

This technical report, “Designing for Safety and Lean Manufacturing: A Guide on Integrating Safety and Lean Manufacturing Principles in the Use of Machinery” (ANSI B11.TR7-2006), would offer guidelines to assist machine tool users in minimizing waste and risk associated with machinery and manufacturing systems, including individual and integrated tools and auxiliary components.

## International Safety Equipment Association (ISEA)

### ISEA Standards to be Revised

To reflect state-of-the art technology, test methods and user considerations, the ISEA will revise its standard, “Emergency Eyewash and Shower Equipment,” (ANSI/ISEA Z358.1). This standard establishes minimum performance and use requirements for eyewash and shower equipment for the emergency treatment of the eyes or body of a person who has been exposed to injurious materials.

It addresses the following types of equipment:

- Emergency shower
- Eyewash equipment
- Eye/face wash equipment
- Handheld drench hoses
- Combination shower and eyewash or eye/face wash equipment

The revised standard is expected to be of interest to producers and users of such equipment, including chemical, manufacturing, construction and medical facilities.

ISEA will also revise its standard, “Industrial Head Protection” (BSR/ISEA Z89.1-200x). This standard establishes minimum performance requirements for protective helmets that reduce the forces of impact and penetration and that may provide electric shock protection.

The standard outlines:

- Types and classes
- Testing and performance requirements for protective helmets
- Recommended safety requirements for authorities that wish to establish regulations or codes for the use of protective helmets

The updated standard is expected to be of interest to safety equipment manufacturers, distributors and users as well as the construction, utility and manufacturing industries.

In addition, ISEA will revise its standard, “Minimum Requirements for Workplace First-Aid Kits” (BSR/ISEA Z308.1-200x). This standard establishes minimum performance requirements for first-aid kits and their contents, which are intended for use in various work environments. Since each work environment is unique, it is expected that the required products will be supplemented with additional products and quantities based on the consultation and recommendation of a person competent in first aid and knowledgeable of the hazards found in the particular work environment.

### **ISEA Standard to be Revised & Redesignated**

ISEA plans to revise and redesignate its standard “Occupational and Educational Personal Eye and Face Protection Devices” (BSR/ISEA Z878.1-200x) to reflect state-of-the-art technology, testing methods and use applications. This standard specifies criteria related to the description, general requirements, testing, marking, selection, care and use of protectors to minimize or prevent injuries from such hazards as impact, non-ionizing radiation and chemical-type injuries in occupational and educational environments, including but not limited to machinery operations, material welding and cutting, chemical handling and assembly operations.

The updated standard is expected to be of interest to those in the manufacturing, agricultural and chemical industries as well as to those in assembly operations, trade and educational environments.

## **Laser Institute of America (LIA)**

### **LIA Standard Under Revision**

LIA’s standard, “Safe Use of Lasers” (BSR Z136.1-200x), is under revision. This standard gives recommendations for the safe use of lasers and laser systems that operate at wavelengths between 180 nm and 1 mm.

### **LIA to Develop Two New Standards**

LIA’s proposed new standard, “Safe Use of Lasers in Research, Development and Testing” (BSR Z136.8-200x), will provide reasonable and adequate guidance for the safe use of lasers and laser systems employed in all research, development and testing applications.

The standard gives recommendations for the safe use of lasers and laser systems in research, development and testing that operate at wavelengths between 0.18 mm and 1 mm.

The new standard is expected to be of interest to universities, national laboratories and commercial, military and medical research facilities.

LIA’s proposed new standard, “Safe Use of Lasers in Manufacturing Environments” (BSR Z136.9-200x), will provide reasonable and adequate guidance for the safe use of lasers and laser systems employed in all manufacturing environments.

The standard gives recommendations for the safe use of lasers and laser systems in manufacturing that operate at wavelengths between 0.18 mm and 1 mm.

The new standard is expected to be of interest to laser and laser system manufacturers as well as to automation and assembly-line integrators (third-party integrators).

## **Material Handling Industry (MHI)**

### **MHI Standard Under Revision**

MHI’s standard, “Safety Requirements for Industrial Scissors Lifts” (BSR MH29.1-200x) is under revision. Industrial scissors lifts raise and lower materials and include stationary or movable lifts to position, feed, transfer and load and unload materials. Revisions include a new section on operator responsibilities and modification of values related to the indicator bars in the section on platform protection.

# National Fire Protection Association (NFPA)

## NFPA Standards Under Revision

NFPA's "Standard for Fire Safety and Emergency Symbols" (BSR/NFPA 170-200x) is currently under revision. This standard presents symbols used for fire safety, emergency and associated hazards.

NFPA's "Fire Safety Standard for Powered Industrial Trucks Including Type Designations, Areas of Use, Conversions, Maintenance and Operations" (BSR/NFPA 505-200x) is also under revision. This standard applies to fork trucks, tractors, platform lift trucks, motorized hand trucks and other specialized industrial trucks powered by electric motors or internal combustion engines.

## Outcome of NFPA 101 Report on Proposals Meeting

*The NFPA 101 Means of Egress Technical Committee met from October 31-November 1, 2006. Below is committee member Steven Di Pilla's account of the meeting.*

### Key Proposals Voted Accept

**Note:** This meeting was a Report on Proposals (ROP), not a final round, which is the Report on Comments (ROC). The meeting covered proposed changes to NFPA 101, Means of Egress and corresponding changes in the same section of NFPA 5000, Building Construction and Safety Code. About 200 public and committee proposals were to be addressed.

*The following is a brief listing of key proposals that were voted as affirmative and will now proceed to the next step in the process. Identical (corresponding) proposals to revise NFPA 5000 were also accepted.*

**Balanced Egress Capacity** (New Means of Egress Only)—When there is more than one exit, no single exit may account for more than 50% of the required egress capacity. This was always assumed but never codified before.

**Roof Signage**—Require signage that reads NO ROOF ACCESS when there is no roof access. Previously, signage allowed both NO ROOF ACCESS and ROOF ACCESS, which created confusion. Signage is primarily intended for fire department information.

**Rule for Exit Remoteness**—Clarifies the rules for remoteness of exit access and exit discharge as well as exits (doors). The proposal included illustrations, as this can be an intricate specification.

**Occupant Use of Elevators Prior to Elevator Recall (Phase One)**—New section seems to place significant requirements on the use of elevators in the alarm/preliminary situation.

**Require Signage in Exit Enclosures**—When the enclosure is long and more complex, require occupant direction while inside the enclosure.

**Staging Evacuations** (Extensive Appendix Note)—Provides detailed guidance on preparing and conducting evaluations. Hopefully, the task group can clean up this section during the public comment period.

**Basement/Attic/Stories**—Extensive list of changes (about 150 pages) to clarify the definitions and use of these terms, which are intended to sort out the inconsistencies of these and related terms in the code. When stories relate to the height of the building, basements do not count. When stories are used inside the building to determine stair and other requirements, basements do count. Proposals were also submitted to all occupancy chapters to align terminology and use.

**Minimum Width of Exit Passageway** (New Construction Only)—With respect to the minimum width of any exit passageway into which an exit stair discharges or which serves as a horizontal transfer within an exit stair system:

- The minimum width of the exit passageway shall be not less than two-thirds of the width of the exit stair
- Where stairs are credited with egress capacity in accordance with 7.3.3.1(b), the exit passageway width shall be sized to accommodate the same capacity as the stair with such capacity determined by use of the capacity factors in Table 7.3.3.1

**Supplemental Escape Device/System**—ASSE successfully opposed these provisions during the last cycle because there was no consensus standard against which to evaluate them. Since that time, the ASTM standards are in their final stages of completion. Two have been balloted and have one and two outstanding negatives respectively to resolve. The NFPA language requires compliance with ASTM standards. While work is still needed, the provision was allowed to advance (in principle) but was returned to the task group for further work. Even though this narrowly passed, it may not receive the required two-third affirmative vote on letter ballot. Several committee members asserted that this provision be moved to an appendix, while others believed that it should be included in Chapter 4.

## Key Proposals Voted Reject

### Widen New Stairs to 56" (instead of 44") for High Rise

**Based on Capacity**—Although this was a rejected proposal, it was a close vote, and it may still pass when letter-balloted. Some committee members argued cost (a 21% increase in the cost of the construction of stairs and reduced usable space in the building) instead of focusing on statistics that showed:

- The U.S. population is larger and slower (due to physical condition)
- There is insufficient room for the fire department with a significant amount of large/heavy equipment to ascend the stairs at the same time as occupants descend the stairs

**Photoluminescent Markings**—All but one of the many proposals submitted were rejected as evaluated by a committee task group formed to assess all proposals related to this subject. I asked why ASTM E12 did not take up these proposals, but I did not receive a direct answer.

### Status of Proposals Submitted on Behalf of ASSE

Changes to the following sections/paragraphs were accepted/rejected or designated as pending:

#### Accepted

7.2.2.4.5

7.3.3

7.9.3.1.1(1)

7.10.8.5

#### Rejected

7.2.1.4.2(2)

7.5.1.3.1

7.10.1.2

#### Pending

16.7.5

## Underwriters Laboratories, Inc. (UL)

### UL Standards Nationally Adopted

UL's "Standard for Safety for Low-Voltage Switchgear and Controlgear—Part 1: General Rules" (BSR/UL 60947-1-200x), has been nationally adopted. This standard harmonizes, as much as practicable, all rules and requirements of a general nature applicable to low-voltage switchgear and controlgear in order to obtain uniformity of requirements and tests throughout the corresponding range of equipment and to avoid the need for testing to different standards.

UL's "Standard for Safety for Low-Voltage Switchgear and Controlgear—Part 4-1: Contactors and Motor-Starters—Electromechanical Contactors and Motor-Starters" (BSR/UL 60947-4-1-200x) has also been nationally adopted. This standard harmonizes as much as practicable, all rules and requirements applicable to contactors and motor-starters in order to obtain uniformity of requirements and tests throughout the corresponding range of equipment and to avoid the need for testing to different standards. This standard is intended to be used in conjunction with the Standard for Safety for Low-Voltage Switchgear and Controlgear—Part 1: General Rules (UL 60947-1), where applicable.

### UL Standards Under Revision

UL's standard, "Hand-Held Motor-Operated Electric Tools—Safety—Part 2-1: Particular Requirements for Drills and Impact Drills" (BSR/UL 60745-2-1-200x), is under revision. Proposed changes to the standard include alignment of the wording of Clauses 17.2, 19.101, 23, 23.2, 23.2DV, Figures 101, 102 and 103 and the Bibliography with the corresponding wording of IEC 60745-2-1.

UL's standard, "Hand-Held Motor-Operated Electric Tools—Safety—Part 2-2: Particular Requirements for Screwdrivers and Impact Wrenches" (BSR/UL 60745-2-2-200x), is under revision. Proposed changes to the standard include alignment of the wording of Clauses 3.101 and 17.2 and the Bibliography with the corresponding wording of IEC 60745-2-2.

UL's standard, "Hand-Held Motor-Operated Electric Tools—Safety—Part 2-4: Particular Requirements for Sanders and Polishers Other Than Disk-Type" (BSR/UL 60745-2-4-200x), is under revision. Proposed changes to the standard include alignment of the wording of Clauses 3.103, 3.106 and 17.2 with the corresponding wording of IEC 60745-2-4.

UL's standard, "Hand-Held Motor-Operated Electric Tools—Safety—Part 2-8: Particular Requirements for Shears and Nibblers" (BSR/UL 60745-2-8-200x), is under revision. Proposed changes to the standard include alignment of the wording of Clauses 8.1 and 24.4 and the Bibliography with the corresponding wording of IEC 60745-2-8.

UL's standard, "Hand-Held Motor-Operated Electric Tools—Safety—Part 2-9: Particular Requirements for Tappers" (BSR/UL 60745-2-9-200x), is under revision. Proposed changes to the standard include alignment of the wording of Clause 8.1 and the Bibliography with the corresponding wording of IEC 60745-2-9.

UL's standard, "Hand-Held Motor-Operated Electric Tools—Safety—Part 2-14: Particular Requirements for Planers" (BSR/UL 60745-2-14-200x), is under revision. Proposed changes to the standard include alignment of the wording of Clauses 3, 21.18 and the Bibliography with the corresponding wording of IEC 60745-2-14.

UL's standard, "Hand-Held Motor-Operated Electric Tools—Safety—Part 2-17: Particular Requirements for Routers and Trimmers" (BSR/UL 60745-2-17-200x), is under revision. Proposed changes to the standard include alignment of the wording of Clauses 12.4 and 19.1, Figure 101 and the Bibliography with the corresponding wording of IEC 60745-2-17.

—All adapted from *ANSI Standards Action, Volume 37, Numbers 30, 31, 32, 34, 37, 39, 40, 44, 45* ■

## 2007 Technical Audio Conference Call Schedule

### January 17, 2007

**Title:** The OSHA Hexavalent Chromium Standard: Requirements of the Standard & the Impact on SH&E Professionals

**Speaker:** David O'Connor

### January 31, 2007

**Title:** Managing OSHA Compliance

**Speaker:** Adele Abrams

### February 14, 2007

**Title:** Z10-2005 Occupational Health & Safety Management Systems

**Speakers:** Craig Schroll & Jim Smith

### March 21, 2007

**Title:** GHS: Global Harmonization of Labeling & Classification of Chemicals

**Speakers:** Jennifer Silk & Mary Frances Lowe

### April 18, 2007

**Title:** ARC-Related Electrical Safety

**Speaker:** John Kolak

### May 16, 2007

**Title:** Roles, Responsibilities & Activities of Managers & Supervisors for Maximizing Safety & Health Performance

**Speaker:** Sam Gualardo

### August 15, 2007

**Title:** Training—"Begin at the Beginning"

**Speaker:** Jonathan Klane

### September 19, 2007

**Title:** Safety in the Balance: Strategies & Skills for Preventing Slips, Trips & Falls

**Speaker:** Robert Pater

The July, October November and December calls have yet to be confirmed.

*For more information or to register, contact ASSE's Customer Service Department at (847) 699-2929.*

## Rules & Regulations

### Mine Safety & Health Administration (MSHA)

30 CFR Parts 3, 48, 50 and 75  
RIN 1219-AB46

#### MSHA Issues Final Rule to Revise ETS

MSHA has issued a final rule to revise the ETS, which addresses standards in the Code of Federal Regulations (CFR), Title 30, Parts 48, 50 and 75. The final rule includes requirements for increased availability and storage of SCSRs, improved emergency evacuation drills and SCSR device training and the installation and maintenance of lifelines in underground coal mines. In addition, the final rule requires immediate accident notification applicable to all mines. The requirements provide an improved, integrated approach to emergency evacuation training and emergency preparedness. This final rule does not reduce protections afforded miners under existing standards.

### Nuclear Regulatory Commission (NRC)

10 CFR Parts 19, 20 and 50  
RIN 3150-AH40

#### NRC to Amend Regulations

The NRC proposes to amend its regulations related to the reporting of annual dose to workers, the definition of the total effective dose equivalent (TEDE), the labeling of certain containers holding licensed material and the determination of cumulative occupational radiation dose.

The proposed rule would limit the routine reporting of annual doses to workers to those whose annual dose exceeds a specific dose threshold or who request a report. The proposed rule would also amend the definition of TEDE to be consistent with current NRC policy and would modify the labeling requirements for certain containers holding licensed material within posted areas in nuclear power facilities. Finally, the proposed rule would remove the requirement that licensees attempt to obtain cumulative exposure records for workers unless these individuals are authorized to receive a planned special exposure.

These revisions would reduce the administrative and information collection burdens on NRC and Agreement State licensees without affecting the level of protection to either

the safety and health of workers and the public or the environment.

### Occupational Safety & Health Administration (OSHA)

29 CFR Part 1915  
[Docket No. S-051A]  
RIN 1218-AC16

#### OSHA Updates Standard for Fire Protection in Shipyard Employment

On September 15, 2004, OSHA promulgated a new fire protection rule for shipyard employment that incorporates Reference 19 NFPA standards. Ten of those NFPA standards have been updated by NFPA since the fire protection rule was proposed, and an additional NFPA standard has been updated since the final rule was published. In this direct final rule, OSHA is replacing the references to those eleven NFPA standards by adding the most recent versions.

### OSHA

29 CFR Part 1910  
[Docket No. H054A]  
RIN 1218-AB45

#### OSHA Makes Minor Amendment to Hexavalent Chromium Rule

OSHA will make a minor amendment to its final rule governing occupational exposure to hexavalent chromium in general industry, which was promulgated on February 28, 2006. This amendment implements a settlement agreement entered into among OSHA, the Surface Finishing Industry Council (SFIC), Public Citizen Health Research Group (HRG) and the United Steel, Paper and Forestry, Rubber, Manufacturing, Energy, Allied Industrial and Service Workers International Union on October 25, 2006 to resolve SFIC's legal challenge to the standard.

### Pipeline & Hazardous Materials Safety Administration (PHMSA)

[Docket No. PHMSA-04-19856]

#### PHMSA Advisory Emphasizes Safe Locating Excavation Practices

PHMSA has issued an advisory to emphasize the importance of safe locating excavation practices near underground pipelines. PHMSA pipeline safety regulations require pipeline operators to implement damage prevention

programs to protect underground pipelines during construction-related excavation. In addition, PHMSA recommends that pipeline operators excavating in areas populated with other pipelines and utilities follow all consensus best practices and guidelines developed by the Common Ground Alliance.

Recent serious incidents especially reinforce the importance of accurately locating and marking pipelines and highlight an urgent need for pipeline operators to review how they implement their damage prevention programs to prevent further accidents caused by construction-related damage. ■

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## Links

### MSHA—MSHA Issues Final Rule to Revise ETS

<http://a257.g.akamaitech.net/7/257/2422/01jan20061800/edocket.access.gpo.gov/2006/06-9608.htm>

### NRC—NRC to Amend Regulations

<http://a257.g.akamaitech.net/7/257/2422/01jan20061800/edocket.access.gpo.gov/2006/E6-15502.htm>

### OSHA—OSHA Updates Standard for Fire Protection in Shipyard Employment

<http://a257.g.akamaitech.net/7/257/2422/01jan20061800/edocket.access.gpo.gov/2006/E6-17124.htm>

### OSHA—OSHA Makes Minor Amendment to Hexavalent Chromium Rule

<http://a257.g.akamaitech.net/7/257/2422/01jan20061800/edocket.access.gpo.gov/2006/06-8971.htm>

### PHMSA—PHMSA Advisory Emphasizes Safe Locating Excavation Practices

<http://a257.g.akamaitech.net/7/257/2422/01jan20061800/edocket.access.gpo.gov/2006/06-9354.htm>

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Safety 2007!*

