353.

A SAFETY RECOGNITION PROGRAM THAT WORKS! LOCKHEED MARTIN AERONAUTICS—PALMDALE'S SAFTE PROGRAM. S. Marshall, Lockheed Martin Aeronautics, Palmdale, CA.

In 1996, Lockheed Martin Aeronautics in Palmdale, California, faced rising injury and worker's compensation rates. In light of new, aggressive corporate injury reduction goals, we determined there was a need for increased employee involvement using behavioral safety concepts. In 1997 we began the Safety Awards For Team Excellence (SAFTE) program. The program's purpose was to improve workplace safety, health, and the environment by encouraging teams to reduce workplace accidents, integrate best work practices into daily work, identify hazards, correct hazards before causing harm, and maintain/promote environmental compliance. The program uses small teams of employees competing during 6-month award periods. The program is successful. Since its 1997 inception, SAFTE teams have averaged 42% lower OSHA recordable and 71% lower lost time injuries than eligible participant counterparts. The program also was an important factor in our successful Cal/OSHA VPP certification and recertification process largely because of VPP's emphasis on employee-management communication. The most significant SAFTE program benefit is the fact that employees work together not just to identify issues but to correct them. This is different than typical "rates only" recognition programs. The abstract summarizes how the SAFTE program works and details how employees: (1) identify potential issues, (2) implement suggested improvements, (3) present improvements to peers and management, and (4) communicate successes throughout the site. The abstract goal is to highlight successful SAFTE program tools and showcase many examples of SAFTE team improvements.

354.

IMPROVING SAFETY IN UNIVERSITY WOOD AND METAL SHOPS. A. Howerton, D. Grote Adams, Safex Inc., Westerville, OH.

Large universities face many of the same health and safety challenges as manufacturers. Identifying hazards, minimizing accidents, reducing workers' compensation costs, and minimizing lost work days are important aspects of a safety program. A large university employing more than 31,000 staff identified wood and machine shops as areas in which insufficient hazard identification existed.

To identify the routine operating hazards in the various engineering, technology, and agricultural shops, a multi-step program was implemented. The program was comprised of (1) reviewing accident records, (2) conducting facility surveys of individual shops, and (3) preparing a report of findings and recommendations.

A search of the accident records was conducted for the period of January 1999 to June 2003. All results were reviewed to identify injury causes and to determine any correlation with shop deficiencies observed during the shop surveys. The reports had been incorporated into a database by university personnel prior to being queried for all shop-related accidents.

The shop surveys were conducted by a team of two health and safety professionals: one university representative and a consultant. The purpose of the surveys was to determine workplace deficiencies relative to the current Occupational Safety and Health Administration General Industry Standards, Agriculture Standards, where applicable, and various consensus industry standards.

The safety inspections included programmatic components such as hazard communication, hazardous energy control, personal protective equipment, and respiratory protection, but a primary focus was given to machine guarding of both metal and wood working equipment. Additional consideration was given to electrical components, chemical and compressed gas storage, and the presence and condition of safety items.

A report summarizing the accident records, observed shop deficiencies, and corrective actions recommended to correct unsafe work conditions or practices was prepared. This information was used to help determine the priority of future university health and safety efforts.

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THE DEVELOPMENT OF A SAFETY SUBCOMMITTEE TO FOCUS ON REDUCTION OF AIRBORNE CERAMIC FIBER. P. Snodgrass, G. Drumm, Unifrax Corporation, Niagara Falls, NY.

At the Unifrax Facility in Tonawanda, New York, above average airborne fiber concentrations were identified during the production of a type of refractory ceramic fiber (RCF) paper. The facility manufactures many types of RCF paper and products with the majority of task exposures well below the RCF industry recommended exposure guideline (REG) of 0.5 f/cc. The RCF industry developed a comprehensive Product Stewardship Program, which requires quarterly industrial hygiene monitoring. High fiber counts were identified during routine sampling of this task. To address this situation as well as deal with other fiber issues, an Airborne Fiber Reduction Safety Subcommittee was formed and has become an integral part of the overall safety program at the Tonawanda facility. The committee is comprised of a number of key employees; Vice President of Engineering, Plant Manager, Health and Safety Engineer, Production Manager, Mechanical Engineer, and Production Personnel have successfully reduced the exposures below the REG. In addition, exposures throughout the plant at different tasks were reduced with a variety of techniques involving administrative and engineering controls.

356.

ADDING VALUE TO THE COMPANY'S CORPORATE BUSINESS PLAN THROUGH THE ENVIRONMENTAL, HEALTH, AND SAFETY (EH&S) MANAGEMENT SYSTEM AND THE OPERATING EXCELLENCE PLAN. A. Attias, Petrolera Ameriven S.A., Barcelona, Venezuela.

The Corporate Business Plan (CBP) establishes and outlines the company's strategies to achieve its corporate vision. This presentation shows the experience of an oil company after implementing a CBP that was guided, in all its phases, by the company's environmental, health, and safety (EH&S) policy.

To guarantee that the EH&S policy served as a guide, the policy needed to be supported by a well-structured EH&S management system (EH&S MS). This EH&S MS, with 17 elements, was discussed and approved by the company's management team, and consequently implemented following a plan. This plan is called the Operating Excellence Plan. This is a yearly operational plan that contents the different tactical objectives for each of the EH&S MS elements needed to achieve the goals established by the management team and the CBP.

The EH&S MS implementation has been audited every year and the deviations found were used to correct and modify the EH&S MS to improve next year's Operating Excellence Plan. This experience shows that the Operating Excellence Plan adds value to the CBP and can be used as a tool to guarantee that the CBP is implemented following the EH&S policy and the EH&S MS.

357.

AN INTRODUCTION TO THE NIOSH FOLLOW-BACK PROGRAM: AN EVALUATION TOOL FOR HEALTH HAZARD EVALUATIONS. E. Snyder, R. Sollberger, L. Tapp, NIOSH, Cincinnati, OH.

National Institute for Occupational Safety and Health (NIOSH) investigators conduct on-site evaluations in response to health hazard evaluation (HHE) requests and provide recommendations to address identified hazards. In 1999, NIOSH began an effort to evaluate the effectiveness of HHEs in improving worker health and safety which includes both process and outcome evaluation components. Data are gathered through a series of questionnaires distributed at randomly selected work sites to assess whether the HHE effort resolved identified problems. Obtaining information through questionnaires, however, has limitations. Because NIOSH relies on reports from various people at the facility, the potential exists for conflicting information to be given. Beginning in 2003, on-site follow-back evaluations were conducted to provide NIOSH a direct method for gathering the information needed to determine if improvements have occurred since the issuance of the HHE report and to validate the

information obtained by questionnaire. To the extent possible, the on-site follow-back survey replicates the methodology used during the initial evaluation, including process and facility observation, employee interviews, and review of exposure and health records. By documenting what worked and what did not, NIOSH hopes to produce practical information for improving the HHE program and informing other interested parties. This information then becomes a valuable resource for others who play a role in preventing occupational diseases, including unions and the medical community.

To date, three on-site follow-back evaluations have been completed. Results from these evaluations indicate that NIOSH recommendations were implemented to various degrees. Examples of specific findings from the selected follow-back evaluations include expedited purchasing of new equipment at a metropolitan sewer district, improvement of engineering controls at a neon sign facility, and general increased exposure awareness at all facilities. The follow-back program will continue to evaluate HHE recommendations to validate questionnaire responses and monitor changes in workplace exposures.

358.

NIOSH HISPANIC OUTREACH PROGRAM. M. Rodriguez, M. Kawamoto, NIOSH, Cincinnati, OH.

Hispanics are now the largest minority population in the U.S. and it is expected that the Hispanic population will double by 2020. Hispanics are overrepresented in the most hazardous industries: construction, agriculture, food processing, and apparel manufacturing. These industries have numerous occupational hazards with associated chronic effects. The major obstacle faced by employers and occupational safety and health professionals is a language barrier since many of the Hispanic employees do not speak English.

NIOSH has begun various efforts to inform Hispanic workers about health hazards in the workplace. NIOSH has developed a toll-free information number with English and Spanish response options, a website with information and publications in Spanish and links to other Spanish language websites, and the Health Hazard Evaluation (HHE) Program's information pamphlet and request form have been made available in Spanish. NIOSH is exploring Hispanic outreach through radio and television by incorporating health-related plots into programs. The NIOSH Hazard Evaluation and Technical Assistance Branch has developed a pilot project on Hispanic outreach in Cincinnati, Ohio. The objective of this project is to increase awareness about the occupational safety and health issues and resources, particularly the NIOSH HHE program. The outreach strategy involves the participation of local and state government agencies and community-based organizations. Through a coordinated effort, these groups will provide Hispanic workers in the Cincinnati area with information about how to get help on work-related issues.

Hispanic outreach efforts are receiving national attention. NIOSH, OSHA, EPA, and many state and city governments have implemented some form of Hispanic outreach activities. The task is complex, but providing information and access to occupational safety and health services is the first step toward reducing the number of work-related fatalities and preventing work-related illnesses among Hispanic workers.

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HEALTH, SAFETY, AND ENVIRONMENTAL MANAGEMENT CHALLENGES IN START-UP OF LARGE MULTI-DISCIPLINARY RESEARCH BUILDINGS. R. Furr, L. Gibbs, Y. Kim, L. Teng, Stanford University, Stanford, CA.

At Stanford University, the recent construction and development of two large multi-disciplinary research buildings has provided EH&S the opportunity to address safety and compliance problems before they become entrenched. This presentation discusses the steps taken, challenges encountered, and lessons learned in ensuring the safe relocation and start-up of research laboratories in those buildings. Issues covered include the role of an institutional laboratory design guide, large scale chemical transportation and handling, effective managing of unwanted chemicals, tracking of chemical inventory migrations, ensuring good ergonomic setups, and post move follow-up. Differences in ensuring a safe laboratory operation in the traditional laboratory setting versus open, shared laboratory spaces are outlined and the challenges encountered, along with solutions provided, are discussed. Conclusions are drawn as to the importance of building governance in the open laboratory setting and the need for early programmatic planning and involvement by EH&S professionals.

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PRODUCTIVITY AND ERGONOMICS IN A FORENSIC TOXICOLOGY DRUG TESTING LABORATORY. S. Chervak, U.S. Army CHPPM, Aberdeen Proving Ground, MD; A. Yeager, Tripler Army Medical Center, Tripler AMC, HI.

A disproportionately large number of workers at an Army toxicology laboratory were reporting symptoms of cumulative trauma disorders (CTDs).The purpose of the evaluation was to determine whether the current workstation designs could be improved to eliminate discomfort, promote efficiency, and prevent CTDs. After an analysis of the specimen processing procedures, it was determined that most of the laboratory workers' complaints were associated with the preparation segment of the procedure.

The procedure associated with the preparation segment of the process involved the worker removing the lid of the specimen jar, pouring a small amount of the specimen into a test tube, replacing the specimen jar lid, and labeling both the specimen jar and the test tube. The task was very repetitive since the specimen laboratory processed up to 3500 specimens per day. The task was also very labor intensive because each specimen sample needs to be individually prepared. The toxicology laboratory had experimented with mechanized lid removal systems, but these systems were not feasible due to the decrease in productivity that resulted.

The authors developed a prototype lid removal device that uses a battery-operated screwdriver and fixture to remove the lid tops mechanically. The device eliminates the repetitive motion and force associated with removing and installing the specimen jar lid. A fixture was also developed that suspends the lid removal device above the workstation. The fixture eliminates the forces associated with holding the lid removal device as well as any awkward postures associated with reaching for the lid removal device. The implementation of the lid removal device was so effective in increasing productivity rates and reducing complaints of CTDs that four more devices have been built and are currently being implemented.

361.

GENERATION OF TOXIC GASES FROM REACTION OF GUANIDINE ISOTHIOCYANATE-CONTAINING REAGENTS WITH BLEACH. S. Paik, X. Wu, Abbott Laboratories, North Chicago, IL; J. Park, Seoul National University, Seoul, Republic of Korea.

Guanidine isothiocyanate (GITC) is commonly used in nucleic acid testing (NAT) applications in clinical laboratories as an agent for denaturing proteins and lysing cells or microorganisms. Bleach, with 5% sodium hypochlorite (NaClO) in solution, is often used as a disinfectant and decontamination agent in such laboratories. During cleanup procedures for spilled GITC-containing reagents or treatment of GITC-containing wastes, if bleach is applied, workers in the vicinity of the area may potentially be exposed to toxic gases. This study examined several gases released from the reaction between NaClO and GITC and addressed concerns regarding the safe handling of GITC-containing reagents. A test chamber was constructed to collect the gases with selected adsorbent tubes, using OSHA- and NIOSH-validated methods. To sample the air as completely as possible, the glass chamber was sealed air-tight with three outlets on the top, one for adding bleach into the reagent solution, one for collecting the resultant gases, and the third one for introducing diluent air. By attaching a Tedlar bag at the tip of the

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