

## Got OSHA Compliance?

**I**s your company in compliance with OSHA's General Duty Clause (GDC)? The GDC states that a workplace must be free from recognized hazards that are likely to cause death or serious physical harm. If an employee is injured, or a hazardous situation goes unresolved, the employer may be given a citation under this clause. Additionally, citations have been issued under the GDC for failure to provide proper training concerning the hazards or potential hazards present in a particular work environment.

OSHA's GDC outlines training and documentation requirements which are applicable to all businesses. It is up to each business to determine the manner in which this requirement is met, as long as the appropriate training topics are covered and the training is documented.



All employees should be aware of the hazards present in their particular workplace, and should know how to properly protect themselves from these hazards. Failure to train employees in the acceptable means of preventing recognized hazards can, and does, result in citations.

An excellent way to ensure that your employees are receiving the training that they need is through Tracer ES&T's Online Compliance Training & Employee Management Tool. This service allows employees to take courses online to satisfy the training requirements of the GDC. A multiple choice test is given at the end of each course, and upon passing the test, each employee is given a certificate which serves to document the completion of

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that particular training topic. Each course is typically 50 minutes in duration. Management of the system is simple and flexible.

A wide variety of safety related topics are available in both English and Spanish. Some examples of courses offered include: Confined Space Entry, Driving Safety, General First Aid, Back Injury Prevention, Emergency Preparedness, Hearing Conservation, Eye Safety, Forklift Safety, Hand & Power Tool Safety, Fall Protection, Incident Investigation, Lock-Out/Tag-Out, Respiratory Protection, and Welding Safety. Human resources topics include Workplace Violence, Sexual Harassment, Workplace Diversity, Workplace Stress, Health & Well-

ness, and Diet & Nutrition. A specific set of courses can be designated for each employee, and deadlines for completion of each course can be set as well. Additionally, customized courses can be added which incorporate company policies and procedures. For a complete listing of courses offered, refer to the course catalog on our website ([www.tracer-est.com](http://www.tracer-est.com)).

A demo of the online compliance training, including sample certificates, is available on our website. For more information, contact your designated Tracer ES&T Project Representative.

### Key Service Area Contacts

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Jake Tilley	(760) 744-9611 x102
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**Risk Group Update  
Anhydrous Ammonia Theft**

**A**nhydrous ammonia is a colorless, liquified gas under pressure. It can be recognized by its pungent odor, usually at concentrations above 5 ppm. The main uses are in agriculture, where it is applied to soil as a source of nitrogen, and in industry for refrigeration in cold storage and processing facilities. Ammonia is generally safe provided handling, operating, and maintenance procedures are followed; however, anhydrous ammonia is a toxic material.

Unfortunately, anhydrous ammonia also has another increasingly common use. It is used \* as a key ingredient in the illegal production of methamphetamines (meth). Illegal drug makers steal anhydrous ammonia from areas where it is stored and used. Anhydrous ammonia can be as inexpensive as \$200/ton for agricultural purposes, but can sell for as much as \$300/gallon on the black market when obtained illegally. The anhydrous ammonia method for making meth is not the primary method of production in Colorado or California. However, this method seems to be on the increase. It appears to be the method of choice in the Midwest where the anhydrous ammonia is readily available.



Thieves typically use small, makeshift containers to collect, store and transport ammonia. Buckets and coolers with duct taped lids, gas cans, and common 20-pound barbecue grill propane tanks have been used to contain the ammonia. The thieves often use garden hoses or inner tubes connected to the container and ammonia tank to complete this dangerous transfer.

A number of ammonia thefts have resulted in accidental chemical releases. These releases occurred when valves were left open as ammonia was siphoned off, locks were sawed or broken, or when the makeshift containers described above failed causing spills or leaks. Below are a couple examples in more detail.

- April 1997 - More than 2,000 pounds of anhydrous ammonia were released from a refrigerated warehouse. A fence was cut to gain entry into the facility and the anhydrous ammonia was removed through a valve on an oil separator. The valve was left open. Fortunately, the release was mitigated by a rain storm that knocked down

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Do you have questions about an article appearing in Tracer ES&Times? Call us at (760) 744-9611.

***TRI Compliance Reminder!***

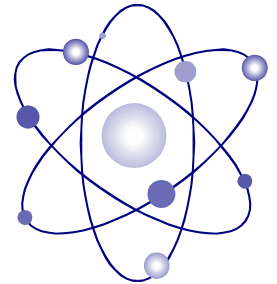
***For applicable sites, start getting your data together for your Toxic Release Inventory (TRI) reports for CY2005 - due July 1, 2006.***



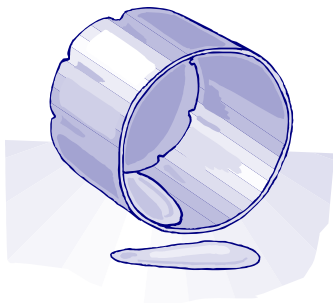
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the anhydrous ammonia vapor as it was being released to the outside air. The warehouse owner replaced the fence, installed a valve lock on the oil separator valve, and requested enhanced police surveillance following the incident.

- February 2000 - Approximately 1,000 pounds of anhydrous ammonia were released when someone intentionally opened a valve in the middle of the night at a fertilizer dealer in Missouri. The ammonia release caused 300 residents to be evacuated from their homes and two persons reported respiratory irritation problems. Ammonia theft has been almost a weekly occurrence at this facility.



Owners and operators of facilities using, storing or transporting anhydrous ammonia can take preventative steps to minimize the chance of ammonia theft. Here are a few guidelines:



- Educate your employees about the theft problem.
- Store ammonia tanks in well lit areas.
- Know your inventory to quickly identify missing chemicals.
- Visually inspect tanks each morning.
- Consider installing valve locks or fencing, especially for unattended tanks.

Major chemical accidents cannot be prevented through regulatory requirements alone. Understanding the fundamental root causes, and integrating learned knowledge regarding those causes into safe operations is also required. It is important that facilities, emergency responders, and the public review this information and take appropriate steps to minimize the risk. ✓

### **Tracer ES&T's Senior Consultants**

**T**his issue of the newsletter will introduce our Senior Consultants. We are fortunate to be able to provide our clients the combination of knowledge and experience that these consultants bring to our company.

#### **Bob DeVillez**

Bob is a senior consultant at Tracer ES&T. His responsibilities include conducting Process Hazard Analysis studies and mechanical integrity in-

spectations for ammonia refrigeration systems. Bob brings to Tracer ES&T 45 years of experience in the operation and design of industrial refrigeration systems and meat processing facilities. Bob served as a Chief Engineer at Pacific Cold Storage (now owned and operated by Versacold Holdings Corporation) for 10 years and then as the Vice President of Engineering / General Manager for new projects for 27 years.

#### **Lynn Teuscher**

Lynn has been involved in theoretical and experimental aspects of pollutant transport and dispersion in the envi-

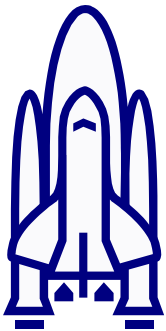
ronment for over 25 years. During this time he has been involved both with regulatory air quality models as well as the development of proprietary dispersion models. In addition, Lynn is Tracer ES&T's primary Process Hazard Analysis Team Leader. He has been involved in facilitating these technical analyses for over 10 years with particular emphasis relating to ammonia refrigeration and water/wastewater treatment plants.



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Previously, he has lead research efforts designed to characterize the combustion of hazardous waste compounds in industrial incinerators. He has had extensive experience in the development and application of tracer technology to measure dispersion and transport of pollutants in the environment. As a Senior Consultant for Tracer ES&T, Lynn is active in the development of pollutant detection systems for tracer applications. This includes detection systems for studying contaminants in the atmosphere, groundwater, surface reservoirs, and process streams.



Lynn is well regarded in the area of numerical analysis. His most recent efforts consisted of the development of a family of models which predicted the vaporization and dispersion of JP4 jet fuels in the atmosphere and the modeling of fire suppression systems for aircraft fires for the Air Force. He also has worked extensively in modeling the dispersion of chemical vapors associated with large releases in the atmosphere, including hydrocarbons, chlorine, ammonia, and hydrogen.

Prior to joining Tracer ES&T, Lynn was Chief Scientist of the La Jolla, California office of Energy Resources Company, Inc. He provided technical review and consulting on all projects conducted by that office. These projects covered the broad areas of air quality impact assessment, dispersion of dense gases in the atmosphere, risk and hazard studies, and tracer studies. Lynn lead a program to develop numerical models to predict the conse-

quences associated with the loss of hydrocarbon product from storage tanks, and pipelines. These models predicted gaseous dispersion in the atmosphere, overpressures associated with detonation of gaseous clouds, and radiation fluxes associated with burning clouds, jets and pool fires. The models have been extensively used in the United States, Europe, and the Middle East in the development of risk analyses, and in the investigation of accidents.

**Steve Kerrin**

Steve is a Senior Consultant with Tracer ES&T, responsible for new technology development. He participates in a broad spectrum of projects. Possessing more than 25 years of experience in numerous technical areas, his primary expertise lies in integration of electronics, analytical chemistry, microprocessor technology, and applied engineering in solution of unique customer requirements.

Steve's expertise in tracer science encompasses air, water, and particulate methods. He was responsible for the design and fabrication of the first dedicated field-portable gas chromatograph for tracer studies and chlorofluorocarbon monitoring. He also developed the first high throughput gas chromatograph for analyzing tracer field samples. Additionally, he designed and built the first realtime perfluorocarbon instrumentation in the U.S. Recent development efforts have resulted in laboratory instrumentation to rapidly analyze field samples for perfluorocarbon tracers to the  $10^{-15}$  concentration level.

In applying gaseous tracer science to solution of other problems, he has developed instrumentation and techniques for use in determining leaks in

closed systems, remaining life and integrity of activated carbon filtration systems. Specialized instrumentation



was developed for testing protective garments and personnel shelters for chemical warfare protection systems. He has also used multiple tracers in the characterization of sub-surface reservoir flow patterns in enhanced oil recovery.

Steve has also developed and demonstrated methods for tagging particulate material to aid in characterization of fugitive dust emissions. A recent effort has yielded a tracer for use in open water for characterization of flow from outfalls.

Steve has authored or co-authored numerous papers in the areas of analytical chemistry and tracer science. ✓



## SPCC Regulatory Update

**T**he United States Environmental Protection Agency (EPA) is proposing several changes to the Spill Prevention, Control, and Countermeasure (SPCC) regulation which will reduce the regulatory burden for many facilities. Key changes proposed include:



1. extending the deadline from February 16, 2006 to October 31, 2007 for facilities to revise and implement an SPCC plan that complies with the latest requirements;
2. allowing small facilities (e.g. storing less than 10,000 gallons of oil) to self-certify their plans;
3. allowing certain types of oil filled equipment to have an alternative to the current secondary containment requirement;

4. exempting certain motive power containers;

5. exempting airport mobile refuelers from the specifically sized secondary containment requirements for bulk containers;

6. revising requirements for animal fats and vegetable oils; and,

7. establishing a separate extension of the compliance dates for farms.

Also, the EPA has published the "SPCC Guidance for Regional Inspectors". Although the guidance is not legally binding, facilities can use the document to gain insight into how the EPA will enforce the regulation. Topics covered include:

- Applicability
- Environmental Equivalence
- Secondary Containment and Impracticability Determinations
- Oil/Water Separators
- Facility Diagrams
- Inspections, Evaluation, and Testing
- Sample plans
- Sample inspection checklists



For more details, please visit <http://www.epa.gov/oilspill/index.htm> or call Mr. Greg Hauser at (760) 744-9611 x106.√

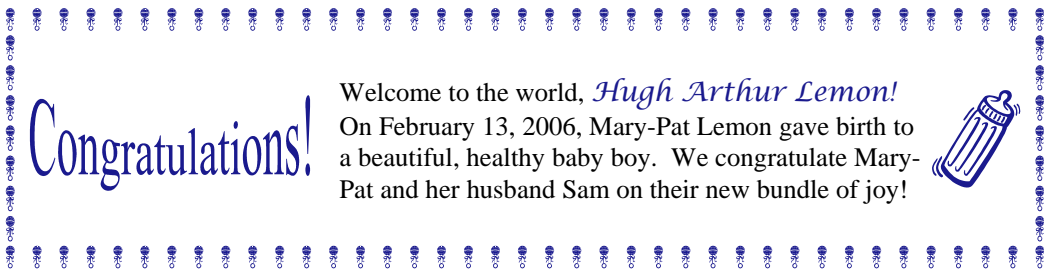

### **ATTENTION!**

**Tracer ES&T will have a booth (#600) at the International Institute of Ammonia Refrigeration (IIAR) 2006 Ammonia Conference & Exhibition in Reno, Nevada, March 19 - 22, 2006 (see [www.iiar.org](http://www.iiar.org) for more information).** √

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**Congratulations!**
  
 Welcome to the world, *Hugh Arthur Lemon!*  
 On February 13, 2006, Mary-Pat Lemon gave birth to a beautiful, healthy baby boy. We congratulate Mary-Pat and her husband Sam on their new bundle of joy!
 


  
**Tracer ES&T Anniversaries**

23 Years	<b>Tom Rappolt</b>	<b>(03/03/83)</b>
6 Years	<b>Adrienne Tober</b>	<b>(04/17/00)</b>
5 Years	<b>Mary-Pat Lemon</b>	<b>(04/03/01)</b>
3 Years	<b>Alicia Walker</b>	<b>(04/21/03)</b>
1 Year	<b>Lesley Evans</b>	<b>(03/07/05)</b>
1 Year	<b>Jackie Musgrove</b>	<b>(04/07/05)</b>

Some of the Tracer ES&T staff have been together through several name changes: Tracer Technologies, Team Environmental Services, and now, Tracer ES&T. Our staff is the foundation for this company and we appreciate their effort and dedication.