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Department of Occupational and Environmental Safety NEWSLETTER

September-October 1999 CASE WESTERN RESERVE UNIVERSITY VOL. 8 NO.7

Y2K: Are You Ready?

We all know the threat: that on January 1, 2000, some computer chips may mistakenly read the binary year 00 as 1900 — and electronic havoc may ensue. But whether overblown hype or apocalyptic prophecy, DOES wants to make sure that you are prepared for any Y2K-related safety dangers.

Can a simple computer "bug" really affect issues of safety in the laboratory? In a July 1999 letter to its members, the Chemical Safety Board cites a 'real-life' example that would give anyone pause:

• Researchers at PCMH found that an H_2S analyzer would have operated incorrectly in the year 2000, which would have meant that the H_2S system would not have been able to detect potentially lethal atmospheres. A 5-min. exposure to 800ppm can result in death.

It is important to note that the Y2K problem poses a safety danger only indirectly -- through parallel matters of detection, containment, and response. Nonetheless, the possible dangers clearly outweigh a quick dismissal. To guard against any possible malfunctions (catastrophic or not), OSHA instructs workers to identify the following types of Y2K-susceptible equipment:

- controllers / storage tank monitors
- security systems
- robots
- air monitoring devices
- heating and air conditioning
- generators

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Moving Violations

If you are a) moving your lab or b) leaving your lab, remember that you **must** notify DOES.

• If the move is **internal** (within the same building), notify us two weeks in advance.

• If the move is **external** (across the street or across the world), you must let us know at least **3 weeks** in advance.

Once you call, we will inform your PI of the next steps and will furnish him or her with the necessary forms. Remember that violations, even if only across the street, are subject to **massive** DOT fines. Be smart, safe, and courteous -- please keep us apprised.

In This Issue:

What a WASTE!

The disposal of hazardous waste is re-asserting itself as a major political, environmental, and economic hot topic. But the best way to avoid fattening existing fills, underground storage tanks, and radioactive barges is to exercise simple discipline in your labs to help reduce and recycle hazardous materials.

Pre-Experiment Reduction

1)Pre-weigh all chemicals for any teaching labs to avoid spills by (and on) students.
2)Carry out experiments (when possible) in microscale.
3)Purchase only what is needed. Do not order greater quantities to take advantage of volume cost discounts. Disposal costs for hazardous materials will more than make up the difference. CWRU's chemical store does sell chemicals in smaller quantities at bulk prices to help facilitate waste minimization.

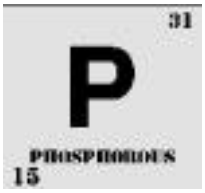
Post-Experiment Reduction

1)Use only fresh solvent for a final rinse -- use spent solvent for an inital cleaning.
2)If possible, **destroy** wastes as part of the last step of the experiment, but **only** if the result is **non-**regulated material (call us x2907 if you're not sure). Some techniques to dispose of waste include ox-reduction or precipitation and solid filtration.
3)Label **all** containers with the proper information, even if the solutions within are harmless.
If a container is not labeled, it is classified "unknown" and goes through a costly and rigorous process of disposal which can easily be avoided.

Recycling Materials

Safety Services has a distillation unit that can recycle many solvents destined for waste to near-pure form. We can reclaim acetone, xylene, and ethanol, among others. Call us at x2907 for details.

ATTENTION: New Changes in Lead Packaging for Phosphorous-32



New DOT standards aimed at reducing unnecessary (and expensive) lead packaging have resulted in a new, less-hazardous means of transporting shipments of Phosphorous-32 of under 1mCi in volume. NEN is now offering a new system called NENSure which uses no lead but still meets all DOT and NRC standards for safe transport. To choose this type of packaging when ordering your ^{32}P, select products with the "BLU" prefix from the catalog. Lead packaging will still be available to those of you who might prefer it, but **a $3.00 surcharge per lead container will now be assessed on your order.** All ^{32}P sizes greater than 1mCi will continue to be shipped in lead in accordance with DOT regulations without surcharge. If you have questions, contact NEN directly at 1-800-551-2121.

Upcoming Training Sessions

Radiation (x2906)

•**New Training:** Oct.22(1-4),Nov, 15(2-3),30(10-11)
•**Retraining:** Oct.19(2-3),28(10-11)
•**X-ray Training:** call office to set up training session

Chemical (x2907)

•**OSHA Lab Standard:** Mondays 1-3 (Service Building Conference Room)

Bloodborne Pathogen (x2907)

•**New Training:** Mondays 3-4 (Service Building Conference Room) Nov,10(10-11)
•**Retraining:** (Service Building Conference Room) Nov.23(2-3)

Don't forget: rad re-training is now also ONLINE at our website: **www.does.cwru.edu**.

As always, call us for upcoming dates and times.

Test Your Safety I.Q.

Time to test your knowledge and amaze your co-workers. Circle the correct answer.

1. Which procedure for storing chemicals would be considered prudent practice and be included in a good lab safety plan?

A. Compressed gas cylinders can be stored anywhere in the lab if chained.
B. Flammables are stored in cabinets that are vented into the laboratory.
C. Incompatible chemicals are segregated for storage.
D. Chemicals are stored alphabetically in a secure storeroom.

2. A material is classed as a teratogen if it is capable of causing:

A. cancer
B. birth defects
C. poisoning
D. heart failure

3. Which Congressional Act provided the primary regulation of hazardous waste?

A. Clean Air Act (CAA)
B. Clean Water Act (CWA)
C. Toxic Substances Control Act (TSCA)
D. Resource Conservation and Recovery Act (RCRA)

4. A laboratory waste minimization plan:

A. should be reviewed on a regular basis, no matter how originally well-written.
B. only involves reducing the amount and/or toxicity of waste produced.
C. does not have to save money or time or improve safety to be accepted.
D. forbids researchers from producing highly toxic or difficult to dispose of wastes.

5. To use a fire extinguisher properly:

A. read the directions after you notice a fire but before you use the extinguisher.
B. follow the directions you have read, remembered, and practiced in advance.
C. aim the extinguisher at the fire and pull the trigger.
D. call 911 and follow their directions.

(Answers on bottom of pg. 5)

HOT TIPS

Pregnant Radiation Workers

Expecting a new junior lab assistant? Any pregnant radiation worker who plans to continue working with radioisotope during the pregnancy should inform the Radiation Safety Office and her supervisor in writing of her pregnancy and the estimated date of conception as soon as the pregnancy is known. This declaration lowers the permissible dose limits from 500 mRem per year to 500 mRem for the entire gestation period.

Upon declaration, the worker will receive a fetal badge to be worn at the waist in addition to her quarterly badge. The embryo/fetus dose limit after declaring pregnancy is approximately 50 mRem per month. Fetal badges are exchanged monthly by the Radiation Safety Office.

Declaring one's pregnancy is voluntary; however, it is strongly encouraged. Receiving a fetal badge in addition to your whole body badge is also voluntary, but it more accurately reflects the fetal dose. Otherwise, your highest badge reading is automatically assigned to the fetus. Even if you choose not to wear a fetal badge in addition to your body badge, notify us of your pregnancy so we can monitor your quarterly badge in accordance with fetal/embryo exposure limits.

Contact the Radiation Safety Office (x2906) if you have any questions or would like a current copy of the NRC Regulatory Guide 8.13, "Instructions Concerning Prenatal Radiation Exposure."

TELL US HOW YOU FEEL...

Be sure and notify us (through your PI) of any new medical condition which might be related to a workplace spill or contaminant -- even if it is only a *possibility*. DOES, in collaboration with the PI, will then authorize medical monitoring through the University Health Service. Refer to your DOES Safety Manual for further details.

(continued from p.1)

Once this equipment has been located, you should:

- check every system for time-sensitive logic controls
- evaluate to determine whether the chips can handle the change
- fix or replace the equipment in question

A general rule is this: **if there's a chip, the bug can hit**. You can often check if a computer chip will be able to handle Y2K simply by changing the date in its OS and observing what happens. If continuity gaps or freezing occurs, check with your system administrator — most problems can be fixed by simple software patching. If not, contact the service representative for the device(s) in question and ask for further directions — they will probably be expecting you. Check the "Links to Safety" box on pg. 5 for more resources available to you for determining specific compliancies. Officially, most facilities (CWRU, UH, and related affiliates) claim to already be "mostly" Y2K-compliant, but this does not mean you shouldn't make sure that your own lab is, too — especially if safety is a concern. In fact, even puiblicly-compliant CWRU is starting its Winter semester a full two weeks later than usual to accommodate any Y2K problems which might arise. The problem is simply too unpredictable to be completely sure about.

Another potentially damaging effect of Y2K concerns the possible loss of critical experimental data. If you are unsure (or paranoid) about a power outage or break in service wiping out your valuable research, ease your fears by backing up your necessary computer files onto floppy disk, ZIP, or CD-ROM. Call 368-HELP (or check www.cwru.edu/cwrubackup/) for more information on CWRU's archival services. In fact, you can even duplicate your entire desktop to the network. Contact David Dominish (dxd4) at Computer Services to see if you are eligible for this service (which does require a nominal fee).

Let us know of any possible breaches in safety you discover and/or solve and in the next newsletter, we can run some of your approaches and concerns. Hopefully, this danger will prove to be negligible and we can all bring in the new year with balloons and champagne instead of fire extinguishers and Hazmat teams. But it doesn't hurt to be ready -- just in case.

Your Comments Welcome!

Do you have a specific safety issue that you think might be good for our newsletter? Do you have a question that you want our readers to read and think about? Or maybe you just drew a hilarious cartoon and are itching for your big break? Write in and let us know -- we will run your comments/questions in a future issue. Next issue, we will have a comprehensive questionnaire for you to fill out, and your comments now can help formulate these vital questions.

Sharing is Good!

Don't forget to post and/or pass around the DOES Newsletter so that everyone in your lab can read it. Don't keep safety to yourself!

A Halloween Horror Story

The story goes like this: a somewhat-lazy researcher neglected to lock a storage refrigerator he was using. One dark and stormy night, he opened it up and searched through the chemicals. Suddenly, an ampoule stored within the refrigerator door exploded, spraying its unknown contents in all directions. Can you guess what happened? Can you identify the culprit? Since the refrigerator **was not locked**, the researcher had left it slightly open — just the tiniest crack — the last time he used it. Having been initially sealed at a relatively low temperature, the ampoule warmed up in the open door, causing pressure to build up inside it — until it violently exploded. People never saw the researcher again, but they say he haunts the halls of negligent labs who don't conform to regulatory standards and lock their refrigerators. Could he be haunting you?

Halloween Safety Reminder

Remember that there is no food or drink allowed in the laboratory -- this goes for Halloween candy, too! Costumes can also be an enormous hazard -- do you really want to be wearing a full-size gorilla costume when it catches fire? So remind your co-workers, students, and visitors and keep this otherwise scary holiday a safe one.

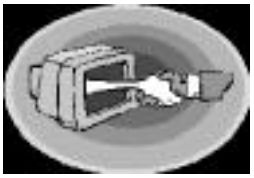
SAFETY QUIZ ANSWERS:

ANSWERS: D, B, C, A, B.

KEY:
- 5/5 Ruling Champion of All Things Safe
- 4/5 Still Reaching for the Stars
- 3/5 Safe Lite
- 2/5 English Major
- 1/5 Mildly Burned and Scarred
- 0/5 Um...better read your safety manual.

Remember -- this is only a test, but your results should be an indication of how confident you feel when it comes to matters of safety. If you scored any less than a perfect 5, consult your DOES Safety Manual.

Links to Safety



The amount of Y2K information available on the Web can be quite overwhelming, but here are a few sites worthy of your attention:

www.cwru.edu/president/audit/y2k/y2k.htm: CWRU has comprehensive archives and links to other Y2K-related information on the Web — a little daunting, but this should be your first stop.

www.osha.gov/year2k/: OSHA's Y2K mini-site delineates guidelines for different environments.

www.nrc.gov: Official site contains articles and FAQs related to rad waste compliancy issues.

www.chemsafety.gov/y2k: The CSB's coverage of Y2K includes updated scenarios and a handbook for checmical workers.

www.y2k.gov: The U.S. Government's official clearinghouse for all Y2K information. All of the information here may also be accessed through a voice menu at 1-888-USA-4-Y2K.

www.bugnetwork.com: An interactive conference site dedicated to the Y2K bug.

www.everything2000.com: If you're just plain interested in the whole 2000 phenomenon.

www.does.cwru.edu: Last (but not least)! No Y2K info, but remember that we have online manuals, past newsletters, and up-to-date info all for your perusal.

So check these sites out for pertinent information which might specifically affect you. And if the person looking over your shoulder accuses you of using valuable work time to surf the Internet, just turn and say: "Better safe than sorry!"

Are You a New PI?

Any Primary Investigator new to CWRU should call the Department of Occupational and Environmental Safety (368-2907) to receive a copy of the CWRU Chemical Safety Manual and to find out when upcoming sessions of the OSHA Lab Standard Training Sessions will take place. Attendance at one of these sessions is required under OSHA standards. Also required is the creation of a Chemical Hygiene Plan. Most labs have used the CWRU Chemical Safety Manual (written by DOES and available through our office) to put together their CHP. We will always post dates of upcoming sessions in the newsletter.

NEXT ISSUE:

The DOES newsletter reader questionnaire.

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