☢ Radiation Review ☢

UW - Madison Safety Department **Radiation Safety Program**

103 N. Lake St. **262-8769** **January 1996**

CORD and the CORD Fee

Obviously any mention of money may catch your eye. We hope you review the rest of the articles in this newsletter as diligently.

As most of you know, CORD is a 128 Fund activity. Statutes require that CORD charge for services and that they maintain an adequate cash reserve (or on-hand cash balance) to cover 2 months worth of salaries and fringes. CORD charges a fee of $23 per order. This fee pays the salaries and fringes (fringes are about 40% of salary) of the 5.3 people associated with CORD. We estimate CORD's income by assuming we will receive 8000 orders per year.

Anticipating reprogramming costs, the Radiation Safety Committee approved a fee increase from $21 to $23 per order in July 1993. Reprogramming was estimated to cost between $30,000 and $50,000. This increase produced an average monthly on-hand cash balance of $90,000. Before contracting for the reprogramming, we reviewed the old CORD program and decided that rather than reprogram, we could tweak the program in-house to make it more functional at no cost to you. The high cash balance accumulated we would use as a cushion because CORD is losing money. In 1993 - 1994, there were 8020 orders and CORD made about $3900. In 1994 - 1995, there were 7662 orders and CORD lost about $29,500. For 1995 - 1996, CORD will probably process about 7400 orders and will lose about $35,000. Our ultimate solution is to reduce staffing. One CORD employee retires in July. We will not recruit to fill that vacancy. At that point our cash balance should be at 2 months salaries plus fringes.

However, CORD spends between $60,000 and $90,000 a month for radioactive materials. As long as we have a positive cash balance, the state pays us 4% interest. If we have to borrow money from the state we pay 7% interest. If our cash balance is too low, we will pay interest instead of earning interest, driving us deeper into debt. Our solution: **Beginning 1 January CORD will bill twice a month**. This should insure that our monthly cash balance stays above $45,000 so we will not go into the red. This also allows us to hold the line on the CORD fee. Please alert your administrative / financial people of this change.

Safety Moving – Again

The Safety Department is scheduled to move around 15 March to 30 North Murray, the Stores building near Park and Regent Street. We will continue to maintain our Annex in Rm 19, Biochemistry for your convenience. Our move is necessary to make way for the Kohl Center construction.

Rad Materials Use Off-Campus

Although you may not think so now, before you know it Spring will be upon us. With the new season there is often the germination of new research projects. The NRC generally restricts use of radioactive materials under the purview of the UW's license to the integral campus of the UW-Madison. Off-campus use, as well as other exotic uses, must first be approved by the regional office of the NRC. This process usually takes from 4 - 6 months. If you are looking to do research at Arlington Farms, Wisconsin Rapids, or any place in between, contact Radiation Safety as soon as possible and we may be able to obtain NRC approval for your application so you can begin in 1996.

Training

Radiation Safety for Radiation Worker training will be held at 12:30 in Biochem Rm 1B on 3, 12, and 17 January. Thereafter, training will be in Union South at the dates and times listed in the table on page 4. I personally enjoyed having the classes in BioChem and want to thank Dr. DeLuca, Bambi Wilson, and the Biochemistry Department for being so supportive of our needs.

Transportation

While use of radioactive materials at UW facilities on and off campus is governed by terms and conditions of our NRC license, moving radioactive materials, regardless of their physical form, is governed by the Department of Transportation (DOT). One goal of the DOT is to reduce the risk that an accident involving radioactive material will result in an exposure to either emergency responders, to members of the general public, or to the environment.

Specific rules apply to transporting certain materials. While transportation of radioactive materials is discussed in Chapter 10 of the Radiation Safety for Radiation Workers (RSRW) training manual and in Section XV of the University Radiation Safety Regulations (URSR), a few points must be reemphasized.

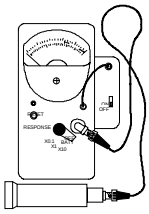
1. Packaging. Unless you are transporting "excepted" materials, that is material quantities not exceeding activities found in 49 CFR 173.423, Table 7, you need to use a proper package. If you are required to place a diamond-shaped radioactive label (I, II, or III) on a package, the package must be certified and you must have the certificate on file before you send the package off campus. The Safety Department has some certificates on file for certain types of Amersham and DuPont boxes. If you desire to use your own box, we can provide guidance in performing the tests. Using an uncertified package when one is required could result in the DOT leveling a fine against the University.
2. Training. Persons involved in transporting and signing for material must be trained and approved by the Radiation Safety office. Reviewing Chapter 10, RSRW and completing the associated test initially qualifies a person to transport or have material transported. Each trained person must receive re-training every two years. Contact Ralph North, 262-1524 if you have questions.
3. Surveys. Packages with diamond-shaped radioactive labels (I, II, or III) (i.e., Type A packages) must be surveyed when they are received by a lab. For example, if you use a soil moisture probe in the field, each day that you bring it back to campus or put it in storage on-site, you must use a survey meter to measure the radiation exposure on contact and at 1 meter and log in these results. Packages of normal form radioactive material must also be surveyed for contamination upon receipt.
4. Licenses. If you are going to transport a package with a Radioactive III label, you must have a Commercial Drivers License (CDL) or you must ship it via a commercial carrier.

Mixed Waste

Waste that the EPA defines as hazardous and which is contaminated with radioactive materials is called mixed waste. For short lived isotopes (e.g., P-32, I-125, etc.) the Safety Department holds this mixed waste for decay and then processes it according to it's EPA component. Longer lived material poses a difficulty. For example, liquid mixed waste can be disposed of via a licensed and permitted incinerator for approximately $400 per gallon. The same waste, with no radioactive component would cost about $20 per gallon to dispose. The goal of this news item is to reduce our disposal costs (since they come from your overhead monies).

The most important tool we have for managing waste in general, and radioactive waste in particular, is source reduction or waste minimization. This means reducing the volume of waste from each laboratory that is generated as radioactive waste. At the cost of a little extra work and a little extra bookkeeping, the savings in money and environmental impact can be significant. We ask each laboratory to inspect their own program and determine ways to reduce the amount of radioactive waste generated. Following are some simple suggestions to reduce your waste. Please call Ralph at
2-1524 if you have any questions or suggestions.

1. If at all possible, do not mix your liquid chemical waste with radioactive liquid waste and do not empty liquid scintillation cocktail wastes in mixed waste containers.
2. If you are using minute amounts of uranium for electron microscopy, wash it down the drain with an excess of water after each use. Please don't collect the waste in large containers.
3. Solutions of less than 20% methanol and a few others in water generated by HPLC work can go directly to the sanitary sewer providing you remain within the activity limits set forth in the University Radiation Safety Regulations. Flush with an excess of water to ensure that these chemicals don't remain in the traps. Report the quantity of radioactive material disposed in the bottom right corner of the pumpkin colored "Radioactive Waste Disposal Form" and record the activity disposed in your "hot" sink log. In general, the greater degree to which you can separate chemical constituents, the easier they are to dispose. Also, since the chemical characteristics of radioactive chemicals are the same as those of their non-radioactive counterparts, use the "Disposal Guide" prepared by the Chemical Safety Program as a guide as to what can be flushed down the sanitary sewer. Call a Safety Department Chemist if you have questions. Also, keep in mind your 2 milli-curie per year combined limit for disposal to the sanitary sewer. Refer to URSR section XIX for more information.
4. When using gamma emitters or high energy beta (e.g., P-32) emitters, use your meter to determine what is contaminated and what is normal trash. If there is no contamination, remove or deface all "RADIOACTIVE" tape and stickers and discard in the trash.
5. Periodically review your protocols to determine if a more soluble or more biodegradable or perhaps even nonradioactive alternative can be used without affecting results.



Meters

The NRC requires that all radiation survey meters be calibrated annually. Radiation Safety will perform that task for free and will perform minor repairs for the cost of materials (billed through CORD). We currently place a calibration sticker on each meter indicating its response to 3 beta energies (160 keV, 300 keV, and 1700 keV). Additionally, we will provide you with a certificate of calibration for your files.

1996 Radiation Worker Training Schedule

Training is held at Union South. Refer to "Today in the Union" for location. All training starts at 12:30 p.m. Call Safety at 2-8769 a few days before to confirm date and time.

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
25	2	5	3	1	5	3	6	5	3	4	4
	8	13	10	9	11	11	12	13	11	12	12
	14	21	18	17	17	19	20	19	17	20	20
	20	29	26	23	25	25	28	25	23	26	27
	26			29		31			29		

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