UNIVERSITY OF KENTUCKY

# State of the Environment

## 2003-04 Annual Report

***Prepared for the***

**Associate Vice President for Campus Services**

***Presented by the***

**Environmental Health & Safety Division**

**and**

**Committee on Safety and Environmental Health**

**September 2004**

EH&S Environmental Health & Safety

*UK Safety begins with YOU!*

# State of the Environment
# University of Kentucky

## 2003-04 Annual Report

Jointly submitted by the
Environmental Health & Safety Division
and the
Committee on Safety and Environmental Health
to
Ken Clevidence
Associate Vice President for Campus Services
on the
23rd day of September 2004
by

David Hibbard, Acting Director
Environmental Health & Safety
Division

Herb Strobel, Chair
Committee on Safety and
Environmental Health

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## Report of the Committee on Safety and Environmental Health

**(formerly known as the Committee on Environmental Health and Safety)**

# Report of the
# Environmental Health and Safety Division

***Environmental Health & Safety Main Office***

# Major Accomplishments

1. **Continued to expand web-based delivery of safety training**. In collaboration with the Physical Plant Division, EH&S added a new 15-Passenger Van Driver Safety Awareness Training course on the web. Online fire extinguisher and analytical x-ray training courses were also developed. Over the past three years, response to the online courses has been excellent, with more than a two-fold increase in the number of trainees using the online courses this year. Overall, EHS trained 24% more people than in 2002-03.

> ★ *EHS has trained over 46,200 people since 1994*

2. **Increased severe weather preparedness on campus.** EH&S worked with Tom Priddy, College of Agriculture Meteorologist, and Dion LeMieux of LFUCG's Division of Environmental and Emergency Management to get the University of Kentucky certified by the National Weather Service as a StormReady campus. Safe areas were identified in all campus buildings, and severe weather shelter signs and NOAA weather radios were placed in the most populated buildings. Storm-spotter training was provided for UK Police, PPD, and farm employees, and generic severe weather training was offered across campus. UK received its official StormReady certification at a ceremony held on October 15, 2003.


*New Shelter Signs Placed in UK Buildings*

3. **Improved safety in residence halls**. Developed and presented a training session for Residence Hall Directors and Resident Advisors to emphasize the role and responsibilities of Residence Life staff in fire prevention. Mrs. Gail Minger, mother of a student who perished in a fire at Murray State University, was the featured speaker.

*Mrs. Minger addressing Residence Life staff*

4. **Provided additional biosecurity resources.** UK is registered with the CDC as a Select Agent facility with several authorized users who have undergone security clearance. To aid compliance with Select Agent rules, EH&S developed a web-based Select Agents and Toxins program and provided training to all authorized users. In addition, a Select Agent training class was developed for UK Police and the Medical Center Physical Plant Division.

5. **Investigated asbestos in residence halls**. A comprehensive survey to identify asbestos-containing surfacing materials was conducted in all residence halls. The condition of each material was assessed as part of the survey and corrective measures were taken where needed. Additional awareness information for students was developed by Auxiliary Services and included in student handbooks.

*Boyd Hall*

6. **Reduced lead hazards in University housing**. In the second phase of a multi-year project, cleanup was performed to remove lead dust following identification of lead hazards in 14 rental housing units. Clearance testing conducted following completion of the project demonstrated that the hazard had been abated.

★ *1,890 lead hazard samples were taken this year*

7. **Improved decontamination of biohazardous waste**. A new campus-wide autoclave performance verification program was developed and implemented for research laboratories. Under the program, autoclaves were inventoried and SOPs developed for operation and performance testing. Three levels of performance testing are now required, with testing results and training records maintained for each unit. This effort constituted the first comprehensive effort to ensure proper use and performance of autoclaves.

*Autoclave Unit*

# Significant Projects

1. **OSHA Hazard Assessments**. Assessed operations within the Physical Plant Division, the College of Dentistry Denture Lab, the College of Medicine, and the Department of Art for exposures to chemicals and other environmental stressors. Airborne and physical hazards evaluated included asbestos, lead, formaldehyde, cadmium, chromium, toluene, mineral spirits, noise and numerous other organic and inorganic substances. Chemical overexposures were documented within College of Medicine and the Department of Art. Control measures are in progress.

*Noise Sampling*

2. **Radiation Monitoring Badges**. The capabilities of two database systems were evaluated for use in managing radiation badge monitoring records. The Landauer badge monitoring service was selected as being most compatible with EH&S' overall database structure and was implemented in early 2004. The electronic system will enable detailed and timely statistical reviews and reporting while controlling costs and exposures.


*Radiation Badges*

3. **Shipping Dangerous Goods**. As a customer service, EH&S began offering special packaging, labels, and assistance to labs making shipments covered by DOT/IATA requirements. Previously, labs were required to order these materials from outside vendors, an expensive and time-consuming process.

*Performance Packaging*

4. **Oil Spill Prevention**. Training programs in support of the University's four Spill Prevention, Control, & Countermeasure Plans were developed and provided to the Physical Plant Division, Medical Center Physical Plant Division, and Food Services. Additional training is needed for the College of Agriculture.

*Above Ground Storage Tank*

5. **Biological safety**. Provided training for all Institutional Biosafety Committee members regarding NIH regulations, research protocol registration requirements, and a variety of technical in-service topics. Also developed a streamlined application form for submitting research protocols for review as well as new checklists for targeted laboratory biosafety audits.

★ *75 laboratories were audited last year*

6. **Fire Safety**. Continued focus on safety in residence halls by conducting mid-semester spot inspections of each hall, and participating in Residence Life's orientation program for incoming freshmen and their parents. Following a fire, all janitorial areas were inspected and additional fire safety training provided to janitorial supervisors.

★ *Nearly 70 spot inspections were performed*

7. **Information Technology**. Enhanced utilization of EH&S' online databases by developing query tools and standard reports. Users can now generate customized reports and use new search functions to analyze data. Tools were also developed to automatically load training data into the database.

# Regulatory Activities

1. A Kentucky Labor Cabinet inspection occurred on December 19, 2003, in response to a contractor complaint of potential asbestos exposure while working in a Sanders-Brown Center on Aging mechanical room. No violations were documented.

2. EH&S prepared a compliance report detailing the safety performance of research laboratories at UK, titled "Laboratory Safety Inspections Summary Report, FY 2002-03." The report, which was submitted to the Provost, the Vice President for Research and the Vice President for Finance and Administration, identified 1,022 serious violations in a total of 1,521 lab inspections. A serious violation was defined as a condition that could result in death or serious physical harm or regulatory action against the University. David Watt, Associate Provost, and Del Collins, Associate VP for Research, sent letters to 82 researchers with four or more violations. Wendy Baldwin, Vice President for Research, asked the EH&S Committee to advise her on the use of safety committees to improve compliance. (A recommendation was approved March 24 and sent to Dr. Baldwin on April 19.) She will develop a policy for dealing with compliance issues in research labs.

3. On July 15, 2003, and April 22, 2004, personnel from the Kentucky Division of Waste Management conducted hazardous waste compliance inspections. The University's hazardous waste facility and related waste handling documents were reviewed, and the inspectors toured labs in the Sanders-Brown Center on Aging, the Thomas Hunt Morgan Biological Sciences Building (both in 2003), and the W.P. Garrigus Building (2004). Labeling and container violations were noted in six labs during the July 2003 inspection but were corrected within one day. No violations were recorded during the April 2004 inspection.

4. UK's Select Agent program was the subject of two inspections last year. An inspection by the Centers for Disease Control identified 11 deficiencies, all of which were corrected. A later inspection by the Inspector General's Office of the U.S. Department of Health and Human Services identified 7 deficiencies, all of which have been or will be corrected.

★ *Select Agent inspections lasted 33 person-days*

5. A Notice of Violation was received from the Kentucky Division for Air Quality following an inspection of the BBSRB construction site in March 2004. Two violations related to construction of a new boiler, emergency generator, and diesel fuel storage tank were recorded due to the University's failure to obtain permits prior to construction. Agency enforcement of the violations should occur in Fiscal Year 2004-05.

6. The University's broad medical and heliotherapy/gamma knife radioactive materials licenses were inspected in May 2004. No noncompliance findings were noted.

★ 73 radiation users had 100% compliance records last year

## Key Indicators for EH&S

*The numbers and costs below are provided to give an indication of the level of activity within EH&S units when conducting their day to day business.*

**Biosafety Office**

| | |
|---|---|
| Research protocols approved | 50 |
| Approved research protocols in database | 334 |
| Biosafety cabinet certifications reviewed | 270 |
| Laboratory audits | 75 |
| Biosafety investigations | 2 |
| Contact hours (total): | 567 |
| IBC Registrations | 515 |
| Biosafety | 580 |
| Training and presentations | 355 |

**Environmental Management**

| | |
|---|---|
| Asbestos and lead samples analyzed (cost) | 368 ($16,150) |
| Asbestos abatement projects | 110 |
| Asbestos abatement costs | $368,210 |
| Asbestos and lead awareness class attendees | 396 |
| SPCC Plan training attendees | 46 |
| Other environmental sampling (air, water, soil, etc.) | 2,571 |
| Groundwater Protection Plan inspections | 18 |
| Environmental remediation costs | $13,103 |
| | |
| Hazardous waste generators | 379 |
| Pounds of regulated waste shipped | 187,122 |
| Waste disposal cost (total UK) | $113,444 |
| Waste minimization cost savings | $31,240 |
| Waste containers picked up | 9,413 |
| Fluorescent bulbs recycled | 12,720 |
| Batteries recycled | 1,685 |
| Hazardous waste/IATA class attendees | 702 |
| Incidents/releases responded to | 28 |
| Glass bottles/good chemicals recycled | 2,387 |
| Mercury thermometers exchanged | 183 |

**Occupational Health and Safety**

| | |
|---|---|
| Research laboratories in the Chemical Hygiene database | 1,395 |
| Laboratories inspected | 903 |
| Fume hoods tested | 1,286 |
| Indoor air quality investigations | 27 |
| Industrial hygiene samples | 92 |
| Ergonomic assessments | 78 |
| Training class attendance (total): | 3,142 |
| Chemical Hygiene Plan/Laboratory Safety | 682 |
| Hazard Communication | 129 |
| PPE Hazard Assessment | 24 |
| Hot Work Permitting | 34 |
| Lockout/Tagout | 26 |
| Respiratory Protection | 113 |
| Bloodborne Pathogens | 268 |
| Ergonomics | 98 |
| 15 Passenger Van Driver Safety Awareness | 287 |
| New Employee Orientation (EH&S Section) | 1,259 |
| SuperVISION (EH&S Section) | 222 |

**Radiation Safety**

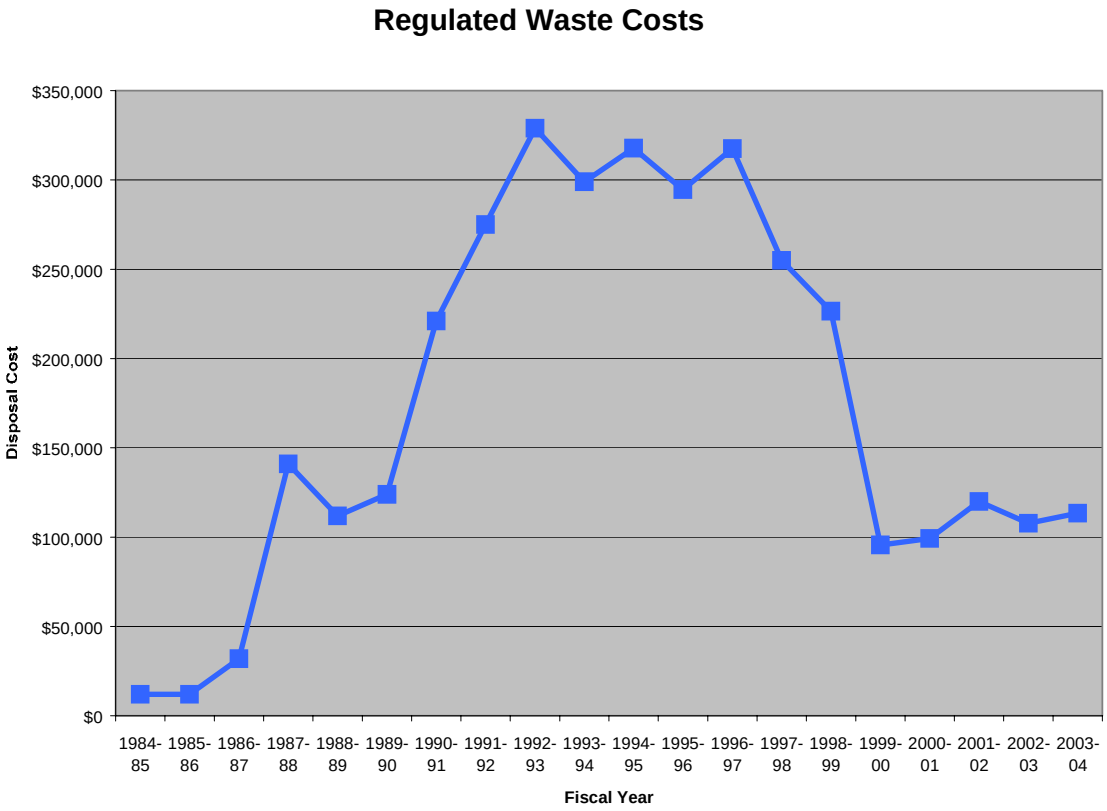
| | |
|---|---|
| Authorized users (laboratories) | 206 (320) |
| Radionuclide purchases, cost (millicuries) | $1,033,703 (169,896) |
| Radionuclide orders received | 1,689 |
| Radiation source inspections/surveys | 1,610 |
| Sealed source leak tests | 278 |
| Radiation instruments calibrated | 210 |
| Patient therapies (Brachytherapy) | 27 |
| Patient therapies (Thyroid) | 114 |
| Radiation safety class participants | 890 |
| Personnel monitoring – film badges, etc. | 9,931 |
| Level I ALARA reports | 70 |
| Level II ALARA reports | 30 |
| Waste disposal cost | $132,343 |
| Dry solid, long-lived, radioactive (cu. ft. shipped) | 180 |
| Dry solid, short-lived, decayed (cu. ft. disposed) | 150 |
| Liquid (cu. ft. shipped) | 99 |

**University Fire Marshal**

| | |
|---|---|
| Fire extinguishers inspected | 6,475 |
| Fire extinguishers serviced | 47 |
| New fire extinguishers purchased | 100 |
| Fire extinguisher/fire prevention training attendees | 3,209 |
| Fire alarms | 362 |
| Actual fires | 18 |
| Plan reviews of new construction/renovation projects | 186 |

# Hazardous Waste Cost Trend Report

## Total UK Regulated Waste Disposal

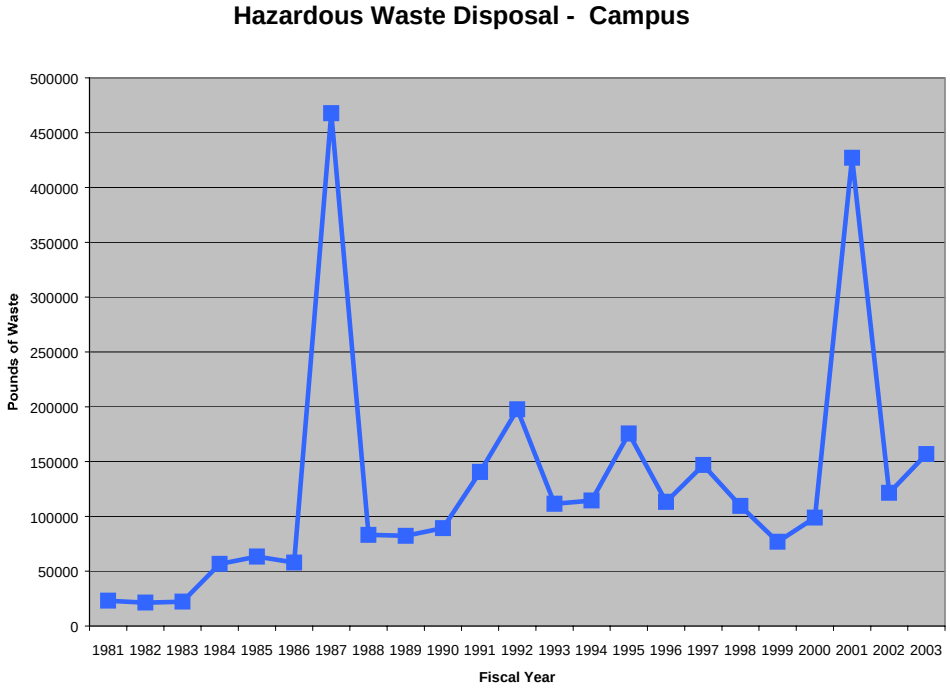



*Note: Figure for 2001-02 includes $15,392 for disposal of contaminated soil from Barker Hall.*

**Source: Year-ending FRS Account Statement for Environmental Management and Disposal of Wastes**

# Hazardous Waste Quantity Trend Report

## Hazardous Waste Disposal Per Calendar Year (in Pounds)

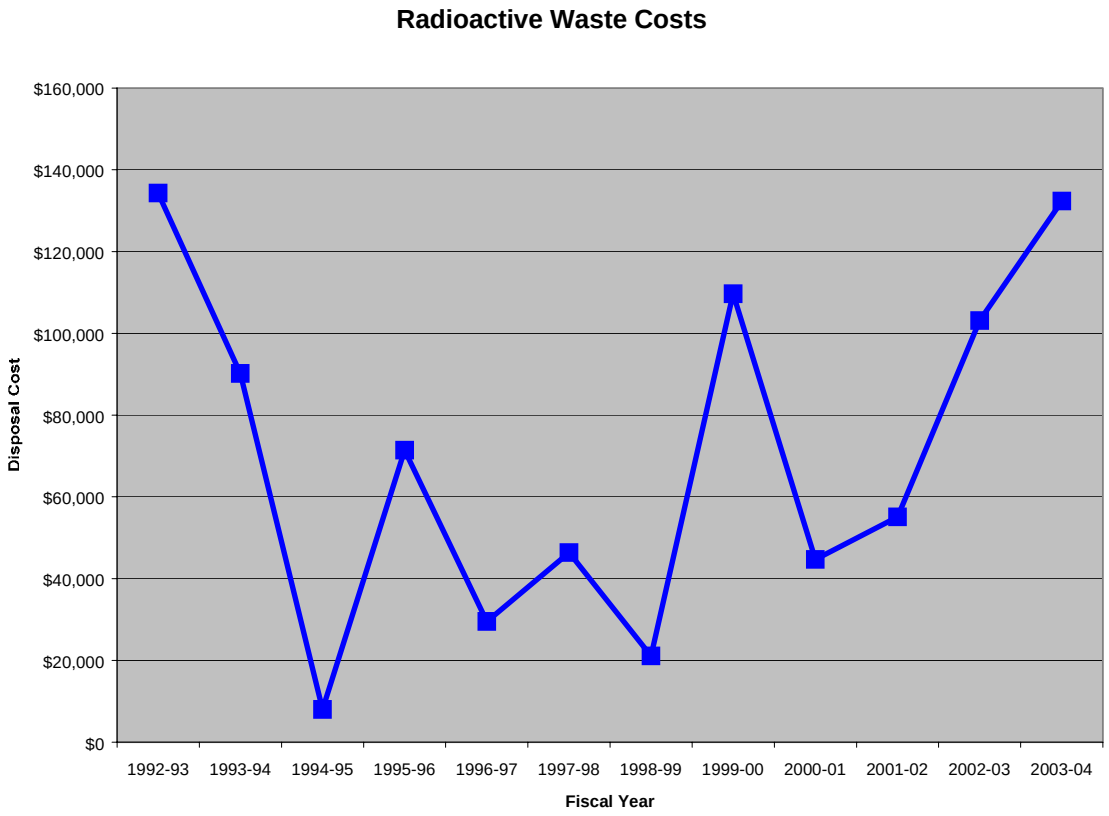



*Notes*

1. *Figure for 1987 includes 365,576 pounds of waste from the South Farm cleanup project*
2. *Figure for 1998 includes 16,847 pounds of waste from the South Farm cleanup project*
3. *Figure for 2001 includes 345,800 pounds of waste from the Barker Hall cleanup project*

**Source: Hazardous Waste Annual Reports filed with the Kentucky Natural Resources and Environmental Protection Cabinet**

# Radioactive Waste Cost Trend Report*

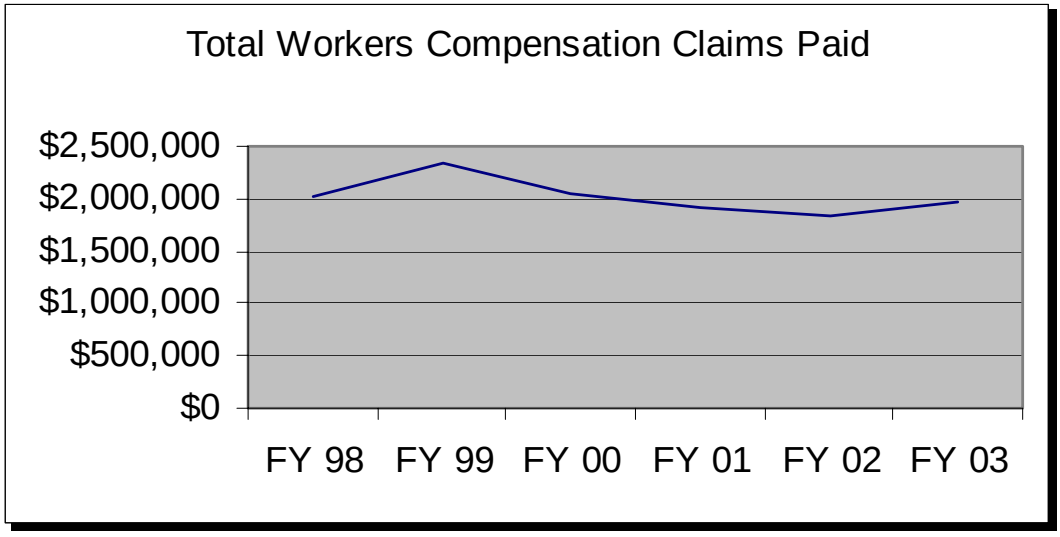


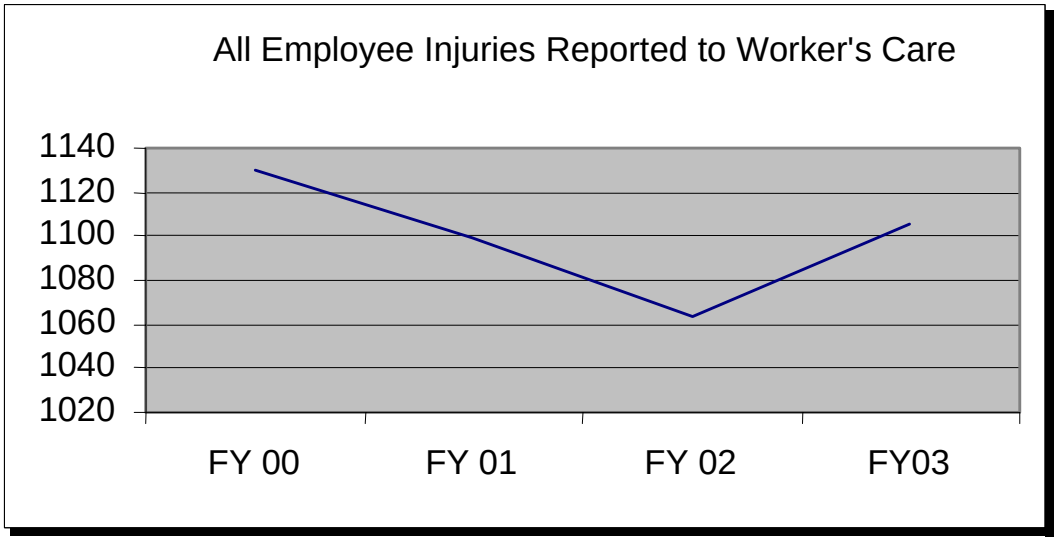

* *Excluding mixed radioactive-hazardous waste*

**Source: Year-ending FRS Account Statement for Radiation Safety Waste Disposal**

# Injury and Illness Trend Report

OHS tracks the occurrence of workplace-related injuries and illnesses at UK. Over a four year period, the data show that reported injuries have increased since FY 02. Total Workers Compensation (WC) claims paid has had minimal variance over a six year period. Over a four year period, the majority of injuries were classified as cut/puncture/laceration and sprain/strain. Major causes of injuries were attributed to needle sticks, slips/trips/falls, and lifting. Further analysis of the WC claim data has determined that musculoskeletal injuries/illnesses, e.g., strains, sprains, have consistently accounted for more than half of the total WC claims paid each year.



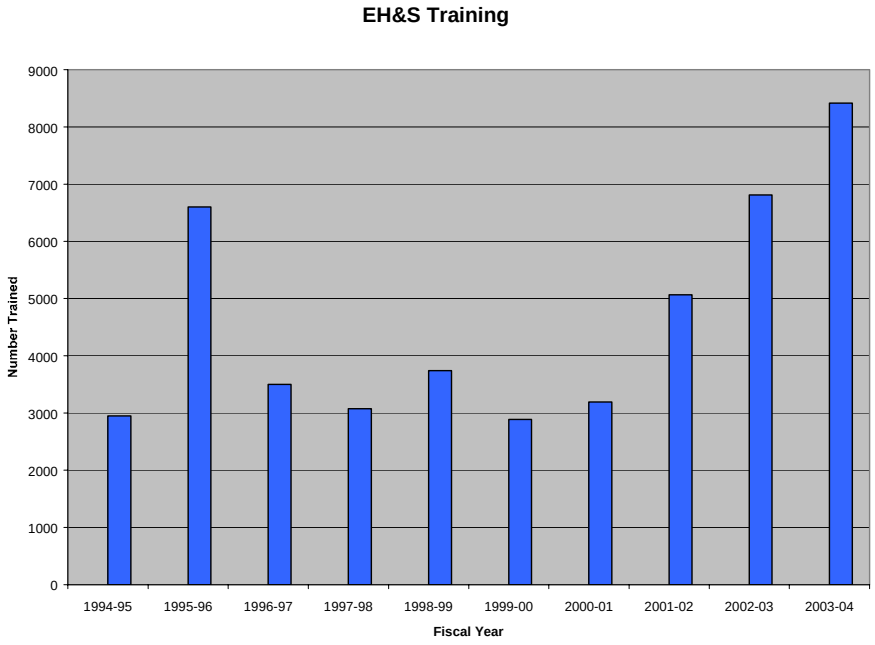



# Environmental Remediation Cost History

| | |
|---|---|
| Pristine, OH Superfund Settlement (1990) | $236,609 |
| Administration Building Lead Cleanup (1990) | $29,660 |
| Jet Fuel Release (1990 – 1994) | $63,500 |
| Agriculture Motor Pool UST Cleanup (1990 – 1997) | $22,866 |
| UST-related Remediation Projects (1990 – 2000) | $155,474 |
| Seymour, IN Superfund Settlement (1991) | $4,917 |
| Robinson Forest Cleanup (1994 – 1995) | $829,981 |
| Maxey Flats, KY Superfund Settlement (1995) | $124,320 |
| Barker Hall Firing Range Lead Cleanup (1995) | $15,590 |
| South Farm Tract A Soil Excavation (1996) | $37,152 |
| North Farm Chemical Disposal Sites Remediation (1996 – Present) | $313,241 |
| Carnahan House USTs Cleanup (1996 – 1997) | $50,973 |
| Reynolds #2 PCB Spill (1997) | $68,500 |
| PPD Pole Yard PCB Spill (1997) | $14,662 |
| Closure of Hazardous Waste Storage Facilities (1998) | $55,205 |
| Central Heating Plant USTs Cleanup (1998 – 2000) | $28,993 |
| Haggin Hall PCB Spill (1999) | $5,900 |
| Chemistry-Physics Mercury Remediation (1999 – Present) | $269,420 |
| Closure of College of Ag USTs (2000) | $84,297 |
| Barker Hall Firing Range Soil Removal (2000 – 2001) | $104,330 |
| Arboretum Hydraulic Oil Spill (2001) | $2,500 |
| Student Center PCB Spill (2001) | $1,200 |
| Reynolds #1 Oil Spill (2001) | $375 |
| CAER Diesel Spill (2001) | $1,600 |
| Maine Chance Farm Diesel Spill (2002) | $4,100 |
| Nutter Field house Oil Dumping (2002) | $1,835 |
| Main Building Mercury Release (2003) | $13,193 |
| Manhole E-408/University Hospital Cleanout (2003) | $9,810 |
| **Total** | **$2,550,203** |

# EH&S Training Efforts

| Fiscal Year | # Trained |
|---|---|
| 1994-95 | 2,950 |
| 1995-96 | 6,600 |
| 1996-97 | 3,500 |
| 1997-98 | 3,076 |
| 1998-99 | 3,742 |
| 1999-00 | 2,888 |
| 2000-01 | 3,193 |
| 2001-02 | 5,066 |
| 2002-03 | 6,810 |
| 2003-04 | 8,416 |
| **Total** | **46,241** |



## Cost of Enforcement Actions
## Since 1990

*The figures below include penalties imposed on the University as part of state and federal enforcement actions. They do not include the costs of corrective actions or environmental remediation.*

| | | |
|---|---|---|
| | **1990** | |
| US EPA | PCB violations, Lex Campus | $27,250 |
| US EPA | PCB violations, Med Center | $48,250 |
| | **1991** | |
| KY Div. of Water | Jet fuel release | $1,330 |
| | **1992** | |
| KY Div. of Waste Mgmt. | Hazardous waste violations | $20,000 |
| | **1993** | |
| KY Div. of Waste Mgmt. | Hazardous waste violations | $5,000 |
| | **1995** | |
| KY Labor Cabinet (KOSH) | Asbestos violation, Admin Building | $500 |
| KY Div. for Air Quality | Incinerator violation, Med Center | $5,000 |
| | **1996** | |
| KY Div. for Air Quality | Asbestos violation, Central Htg Plant | $12,500 |
| KY Labor Cabinet (KOSH) | OSHA violations, Central Htg Plant | $18,000 |
| US EPA | PCB violations, Lex Campus | $22,597* |
| | **1997** | |
| KY Div. of Waste Mgmt. | Hazardous waste violations | $25,000 |
| | **1998** | |
| KY Labor Cabinet (KOSH) | Asbestos violation, Taylor Ed Building | $5,625 |
| | **1999** | |
| KY Div. of Waste Mgmt. | UST violations, Med Center | $1,500 |
| | ***Total*** | **$192,552** |

* Includes a penalty payment of $3,600 and a Supplemental Environmental Project of $18,997 (for removal of a PCB transformer at Gillis Building).

# Report of the
# Biological Safety Department

**Biological Safety**
**Annual Report**
**Fiscal Year 2003 - 2004**

## MAJOR GOALS AND ACCOMPLISHMENTS

**Provided training for all Institutional Biosafety Committee (IBC) members regarding regulatory requirements and committee responsibilities**.

- Annual training on National Institute of Health (NIH) regulation requirements and IBC protocol registration process as mandated by the NIH.
- Continuing Education (in-service) trainings included:
    - Vaccinia vaccination programs for employees with potential for occupational exposure
    - Confidentiality/non-disclosure requirements for IBC members
    - Cell disruption procedures which eliminate aerosol formation
    - Exposure control plans for human gene transfer protocols, especially when recombinant adenovirus is used
    - Autoclave verification standards
    - Signage for plant research

**Developed a streamlined application form for submitting research protocols to the Biosafety Officer and/or Institutional Biosafety Committee**.

- A new IBC registration form was created to include:
    - General administrative information
    - Research protocol description
    - Specialized sections for:
        - Infectious agents
        - Recombinant DNA
        - Human gene transfer
        - Plant research and field trials
- Forms were made available on-line in both Word and PDF versions to accommodate different computer systems used by researchers across campus. Previously forms were sent electronically at the request of the investigator.
- The application process was amended to require applications to be filed electronically to facilitate timely processing by the Biological Safety Office.

**Developed targeted laboratory hazard/procedure hazard analysis for laboratory biosafety audits.**

Targeted checklists were created for:

- Biosafety Level 2
- Biosafety Level 2 Plant
- General Biosafety
- Transgenic Plants and Field Trials

These checklists are designed to ensure compliance with various federal guidelines and regulations per Centers for Disease Control (CDC), National Institutes of Health (NIH), and Occupational Health and Safety (OSHA), United States Department of Agriculture (USDA) and

to reflect industry/institutional best practices. Audit results are shared with the Principal Investigator (PI), supplemented with specific recommendations for correcting any deficiencies found during the audit. This audit is performed with every PI registering with the IBC. (Previously, audits and feedback to the investigator were not standardized.)

## SIGNIFICANT PROJECTS

**A campus-wide Autoclave Performance Verification Program was developed for autoclave facilities decontaminating biohazardous waste from research laboratories.**
Implementation of this program will allow the University of Kentucky to ensure and document that all autoclaved infectious/biohazardous materials are rendered noninfectious by the autoclaving process. Three levels of testing are required: with each load, monthly and yearly. Results of these performance tests, all maintenance and repairs, and training of personnel operating the autoclaves shall be documented.

As part of this program:

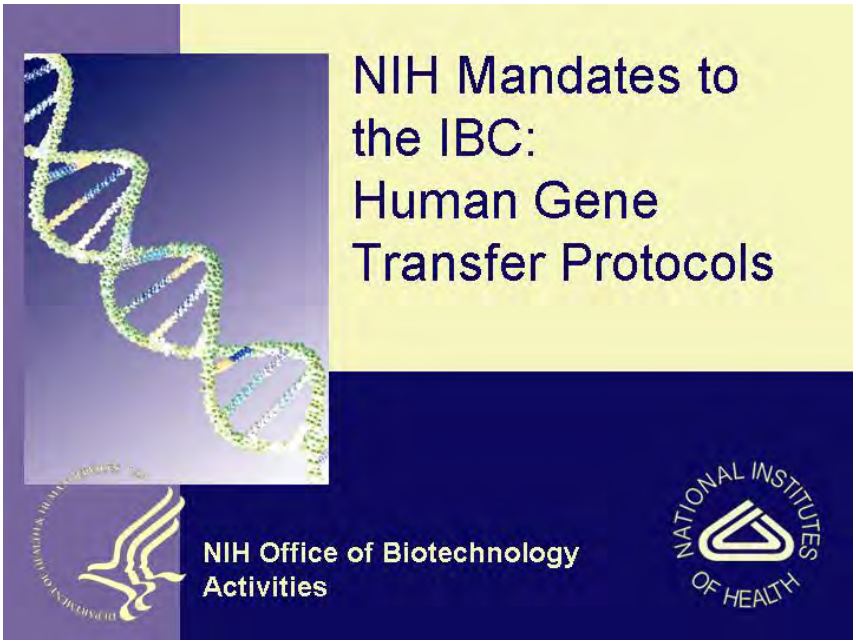
- The first campus wide inventory of large autoclaves processing biohazardous waste was conducted.
- Owners and operators of these autoclaves were identified.
- Standard Operating Procedures for operation and performance verification were developed and approved with the Institutional Biosafety Committee, Associate Vice President for Research, and autoclave operators.

Prior to this program, there was no campus-wide process and few departmental processes in place to ensure proper use and performance of the autoclaves.

**A new, proactive and expedited registration process for Human Gene Transfer clinical trials was developed for the IBC.**

This National Institute of Health (NIH) mandated approval process has been streamlined to reduce the paperwork burden both for the IBC reviewers and the Principal Investigator (PI). Targeted application forms and an Exposure Control Plan template were developed. These tools aid PIs and the IBC reviewers to:

- Identify all responsible units and personnel
- Define roles/responsibilities of units and personnel as they relate to the Human Gene Transfer Protocol
- Identify biosafety issues and solutions unique to each protocol.




## ADDITIONAL ACCOMPLISHMENTS AND EVENTS

Expanded staff with addition of Biological Safety Specialist, April 1, 2004

Conducted 75 laboratory biosafety audits.

Marcia Finucane participated as a member of the inspection team during USDA/APHIS inspection of transgenic field trials on Main Chance Farm.

Advised Veterinary Science Department on renovation of animal facilities and construction of new barn on Main Chance Farm.

Assisted the Office of the Inspector General in the Department of Health and Human Services auditors during their Select Agent Program audit.

Marcia Finucane participated as command center evaluator in the regional mock bioterrorism/disaster drill in the hospital

Monitored plans and progress of BBSRB construction.

In collaboration with the University of Kentucky Occupational Health and Safety Department (OHS), BSC information will be routinely collected with each inspection OHS performs and entered into the EH&S Master Database. This will be the first compilation of information describing BSCs across the entire campus and will include equipment not listed in the Capital Equipment Inventory (for example: due to depreciation).

## TRAININGS HOSTED, PRESENTED, SPONSORED, OR DEVELOPED

"Keeping the Genome in the Bottle: Reinforcing Biosafety Level 3 Procedures," a CDC Public Health Training Network Webcast followed by an audience participatory discussion. 26 attended.

Coordinated staff training for Human Gene Transfer clinical trial. (INGN 201, Gene Therapy Phase II Trial for Advanced Resectable Squamous Cell Carcinoma of the Oral Cavity and Oropharynx). 30 attended.

"Biosafety Cabinets," an in-service for EH&S staff. 25 attended.

"Biological Safety and the IBC Review Process" for Clinical Research Organization (UK CRO). 60 attended.

"Biological Safety in the Research Laboratory," an in-service for ASTeCC staff. 30 attended.

Individual training and consultations as requested by investigators (20 requests)

## PROFESSIONAL DEVELOPMENT ACTIVITIES

### Marcia Finucane, MS, Biological Safety Officer

Attended the following courses:

- Biosafety Program Management by the American Biological Safety Association)
- Biological Safety Cabinet Certification by the American Biological Safety Association)
- Advanced Disinfection by the American Biological Safety Association)
- Biological Safety Auditing by the American Biological Safety Association)
- Biosafety and Biosecurity in Laboratories (Centers for Disease Control)
- Weapons of Mass Destruction (University of Kentucky workshop)
- Therion Biologics Investigator's Meeting: (Phase III Gene Transfer Trial: Panvac-VF and pancreatic cancer)

American Society for Microbiology, Member

American Biological Safety Association, Member

Maintained registration as a medical technologist (MT) with the American Society for Clinical Pathology (ASCP)

Maintained registration as Certified Biological Safety Professional by the American Biological Safety Association

Maintained Specialist Microbiology (SM) by National Registry for Microbiologists/American Society for Microbiology (ASM)

**Kathy Sandford, MSPH, Biological Safety Specialist**

Completed course "Biosafety Level 3: Facility Design Considerations and Laboratory Operations" (American Biological Safety Association) 16 hours

American Biological Safety Association, Member

Kentucky Public Health Association, Member

**INSTITUTIONAL BIOSAFETY COMMITTEE (IBC)**
**SUMMARY OF ACTIONS FOR FY 2003-2004**

Full committee review and approval of 50 protocols including two Human Gene Transfer protocols.

The BSO reviewed and registered 20 protocols.

Completed annual training on NIH regulations and IBC approval process as mandated by the NIH and presented by the BSO.

Reviewed and approved campus-wide Autoclave Performance Verification Program.

Reviewed and approved confidentiality/ non-disclosure agreement at the advice of the University of Kentucky Office of the Legal Counsel. All members signed this agreement.

Reviewed and approved new registration forms for research with transgenic plants, or transgenic microorganisms and plants.

Reviewed and approved IBC registration process for Human Gene Transfer clinical trials.

Approved writable PDF versions of all IBC registration forms.

## Key Indicators for Biological Safety

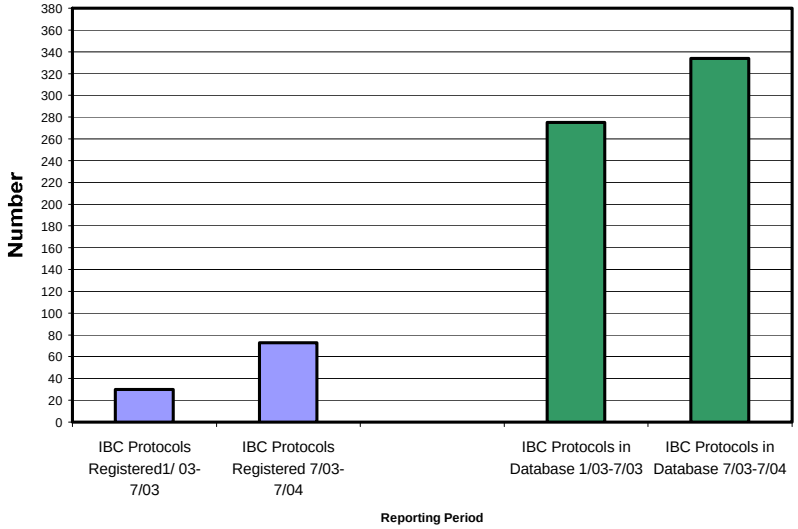
| I. Institutional Biosafety Committee | Total |
|---|---|
| IBC Protocols approved/registered: | 73 |
| • New | 50 |
| • Renewal or modification | 3 |
| • Registration only | 20 |
| Approved Protocols in Database | 334 |

| II. Biosafety | |
|---|---|
| Laboratory audits completed | 75 |
| Biological safety cabinet verification | |
| • BSC in inventory | 270 |
| • Verified current certification | 207 |
| • Expired certification | 63 |
| People trained by Biological Safety | 191 |
| New programs developed (Autoclave Verification) | 1 |

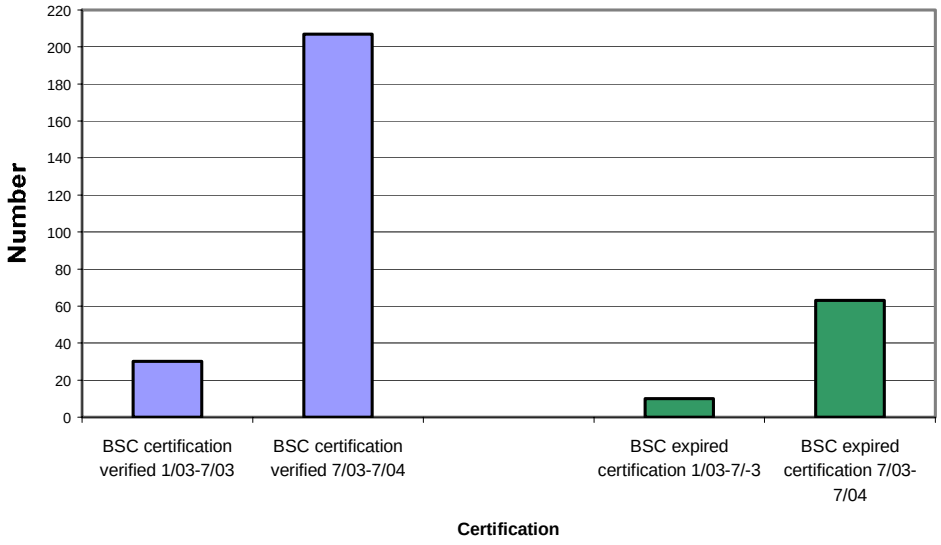
| III. Investigations | |
|---|---|
| Serious research irregularity investigated | 1 |
| Serious laboratory incidents investigated | 1 |

| IV. Contact hours | |
|---|---|
| With investigators or IBC Registrations | |
| • New protocol review/approval (10 hours/each) | 500 hours |
| • Modification/registration (5 hours/each) | 115 hours |
| On biosafety | |
| • Laboratory audits (2 hours/each) | 150 hours |
| • Modification per protocol (1 hour/each) | 30 hours |
| • Facility consultations | 100 hours |
| • Other consultations | 300 hours |
| Training Opportunities Presented | |
| • About IBC | 20 hours |
| • Biosafety topics | 24 hours |
| • Staff development coordinated by Biological Safety | 20 hours |
| Professional Development | |
| Training/Workshops/Courses Attended | 104 hours |

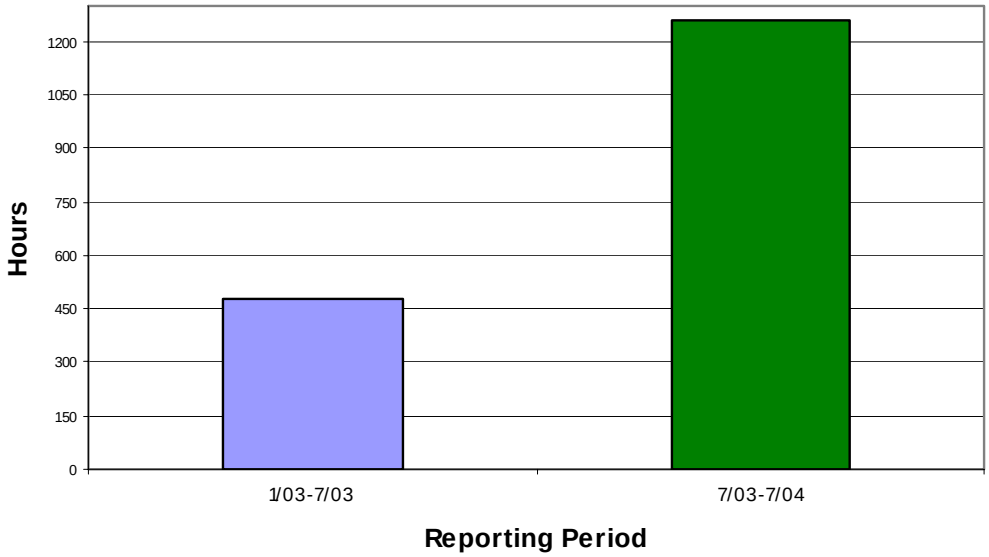
**Institutional Biosafety Committee**



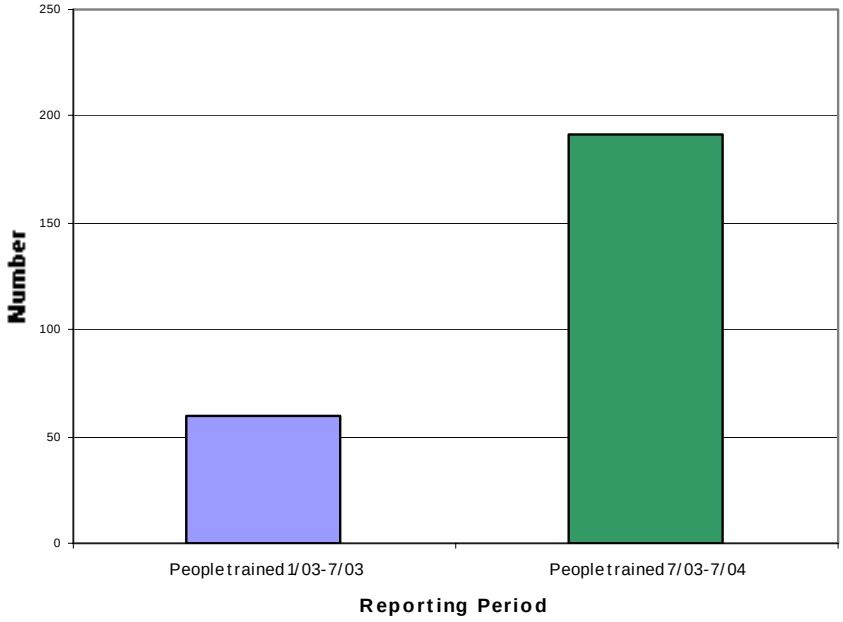

**Biological Safety Cabinets**



**Contact Hours with Faculty**




**Training by Biological Safety**



# Report of the
# Environmental Management Department

# ENVIRONMENTAL MANAGEMENT

## Annual Report

## FY 03-04

*Environmental Quality Management Center*

## Accomplishments and Major Events

1. In March 2004, the former departments of Environmental Protection and Hazardous Materials Management were merged to form Environmental Management. With the exception of the Select Agent program, all functions of the former departments were combined. Environmental Protection personnel relocated to the EQMC following the merger.

2. Following the departmental merger, all Environmental Management fact sheets (12) and web pages were edited, revised and updated to reflect the new department's organization and policies. Revisions were also made to the University's hazardous waste treatment, storage, and disposal permit and SARA Title III Tab Q reports.

3. On July 15, 2003 and April 22, 2004, personnel from the Kentucky Division of Waste Management conducted hazardous waste compliance inspections. The University's hazardous waste facility and related waste handling documents were reviewed. The inspectors toured labs in the Sanders-Brown Center on Aging, the Thomas Hunt Morgan Biological Sciences Building (both in 2003), and the W.P. Garrigus Building (2004). Labeling and container violations were noted in six labs during the July 2003 inspection but were corrected within one day. No violations were recorded during the 2004 inspection.

4. A comprehensive survey to identify asbestos-containing plaster and other surfacing materials was conducted in all residence halls. Corrective measures were taken at locations where damage or deterioration was observed. Additional awareness information for students was developed by Auxiliary Services and included in student handbooks.

5. In the second phase of a multi-year project, lead-based paint risk assessments were completed at the Shawneetown Apartments, Greg Page Apartments, and in Real Property housing. Cleanup was performed to remove lead dust following identification of lead hazards in 14 Real Property housing units. Clearance testing conducted following completion of the project demonstrated that the hazard had been abated. Work is continuing in College of Agriculture housing and should be completed by the end of Fiscal Year 2004-05.

6. As a customer service, Environmental Management began offering special packaging, labels, and assistance to labs making shipments covered by DOT/IATA requirements. Previously, labs were required to order these materials from outside vendors, an expensive and time-consuming process.

7. Training programs in support of the University's four Spill Prevention, Control, & Countermeasure Plans were developed and provided to the Physical Plant Division, Medical Center Physical Plant Division, and Food Services. Additional training is needed for the College of Agriculture.

8. The final phase of groundwater monitoring at a former chemical disposal site located on Spindletop Farm was completed in August 2003. The site was one of four identified on the North Farms and was the last of the four to have been investigated. Closure of the North Farms project has been requested and is anticipated in 2004-05.

9. In an ongoing effort to remove mercury contamination and achieve compliance with the University's wastewater discharge permit, the acid dilution pit at the Chemistry-Physics Building was cleaned out in March 2004. Monitoring conducted since that time indicated that mercury concentrations in the wastewater were largely in compliance. Additional monitoring data will be needed to verify that conclusion.

10. Emergency asbestos abatement projects were completed at Boyd Hall in August 2003, January 2004, and May 2004 following failure of asbestos-containing plaster ceiling. In each case, the affected area was isolated and a certified asbestos abatement contractor retained to clean up the fallen plaster and repair the damaged areas.

11. The mercury thermometer exchange program was expanded by advertising the program and meeting with departments to solicit their participation. Links and other information related to the program were placed on the Environmental Management web page, and the possibility of further expanding the program to include patient thermometers and blood pressure cuffs is being explored.

12. Monitoring conducted by the LFUCG's Division of Sanitary Sewers indicated that mercury and lead concentrations in the wastewater discharge from the Medical Center were above acceptable limits. Wastewater monitoring was conducted to determine the source(s) of the lead and mercury. Work is expected to continue in 2004-05.

13. At the recommendation of the University Fire Marshal, a switch was added to the EQMC's emergency exhaust system to override the fire alarm panel enabling the emergency exhaust to be activated during a fire alarm. The exhaust is needed to ventilate the building during a fire emergency should the fire department need to enter.

14. Environmental Management personnel responded to spills or releases of chemicals and other substances 28 times during Fiscal Year 2003-04. Spills occurred in laboratories, parking areas, dumpsters, roadways, and storage areas. In most cases, spilled materials were treated with neutralizing agents or absorbents and then cleaned up for proper disposal.

15. Improper disturbance and/or removal of known or presumed asbestos-containing materials took place at several locations (listed below). Both contractor and UK personnel were involved. Although the circumstances vary, in each case an investigation was performed and remedial measures including, but not limited to, cleanup, additional education, and awareness, were provided.

    - Maine Chance Farm (disturbance of floor tile and mastic)
    - Dimock Animal Pathology (disturbance of fume hood)
    - Research #3 (disturbance of floor tile, mastic, and thermal system insulation)

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**Other Activities**

1. Coordinated Phase I Environmental Site Assessment for Lexel Imaging Systems property.

2. Participated in helicopter rollover drill conducted by UK Aeromedicine.

3. Revised hazardous waste plan for Mechanical Engineering in support of DOE grant.

4. Inspected Louisville Metro Government Center space proposed for occupancy by the Jefferson County Cooperative Extension Service.

5. Negotiated an amendment to the asbestos price contract to adjust pricing on Prevailing Wage projects.

6. Conducted semiannual wastewater compliance monitoring in accordance with requirements of the University's wastewater discharge permit.

7. Updated UK's entries in EPA's PCB databases.

8. Implemented additional security measures at the EQMC to eliminate unauthorized, after-hours entry of the hazardous waste storage area by Physical Plant Division personnel.

9. Participated in the Bluegrass Emergency Response Team, a new state and federally funded team designed to respond to hazardous materials incidents in the region.

10. Monitored compliance of underground storage tank leak detection methods.

11. Conducted property visits for demolitions, property acquisitions, and at selected leased property locations.

12. Renewed the University's asbestos abatement certification.

13. Coordinated payment of underground storage tank registration fees.

14. Revised and updated the University's Groundwater Protection Plan.

15. Assisted LFUCG with the disposal of household hazardous waste.

## Key Indicators and Routine Functions

### 1. Hazardous Waste

- Hazardous waste generators – **379** locations
- Waste shipments – **187,122** pounds of regulated waste
- Waste disposal costs - **$113,444**
- Waste pickups – **9,413** containers (up 2,422 (35%) from last year)

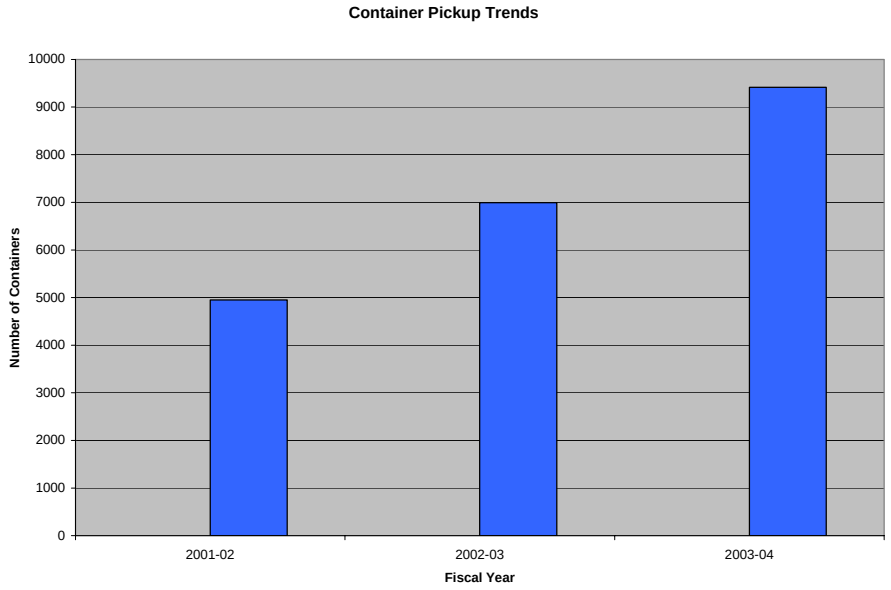



**Table 1**

**Total UK Regulated Waste Disposal**

| Fiscal Year | Disposal Cost ($) |
|---|---|
| 1996-97 | 317,591 |
| 1997-98 | 254,932 |
| 1998-99 | 226,506 |
| 1999-00 | 95,668 |
| 2000-01 | 99,226 |
| 2001-02 | 119,938 |
| 2002-03 | 107,809 |
| 2003-04 | 113,444 |

Note: Figure for 2001-02 includes $15,392 for disposal of contaminated soil from Barker Hall.

**Table 2**

**Hazardous Waste Disposal Per Calendar Year (in Pounds)**

| Calendar Year | Campus | CAER | North Farms | Animal Diagnostics |
|---|---|---|---|---|
| 1996 | 113,222 | 1,476 | | 2,701 |
| 1997 | 146,812 | 25,650 | 6,646 | 4,374 |
| 1998 | 109,558 | 2,085 | 7,776 | 5,084 |
| 1999 | 76,875 | 4,949 | 500 | 4,400 |
| 2000 | 98,926 | 3,434 | 1,900 | 4,401 |
| 2001 | 427,162[1] | 3,407 | | 4,551 |
| 2002 | 121,531 | 2,926 | 800 | 3,200 |
| 2003 | 156,795 | 1,301 | | 3,461 |

[1]*Includes 345,800 pounds of waste from the Barker Hall cleanup project*

## 2. Asbestos/Lead

- Over **117** projects
- Asbestos abatement – **110** projects totaling approximately **$368,210**
- Sampling for asbestos & lead-based paint – **368** samples (**$16,150** survey/testing cost)

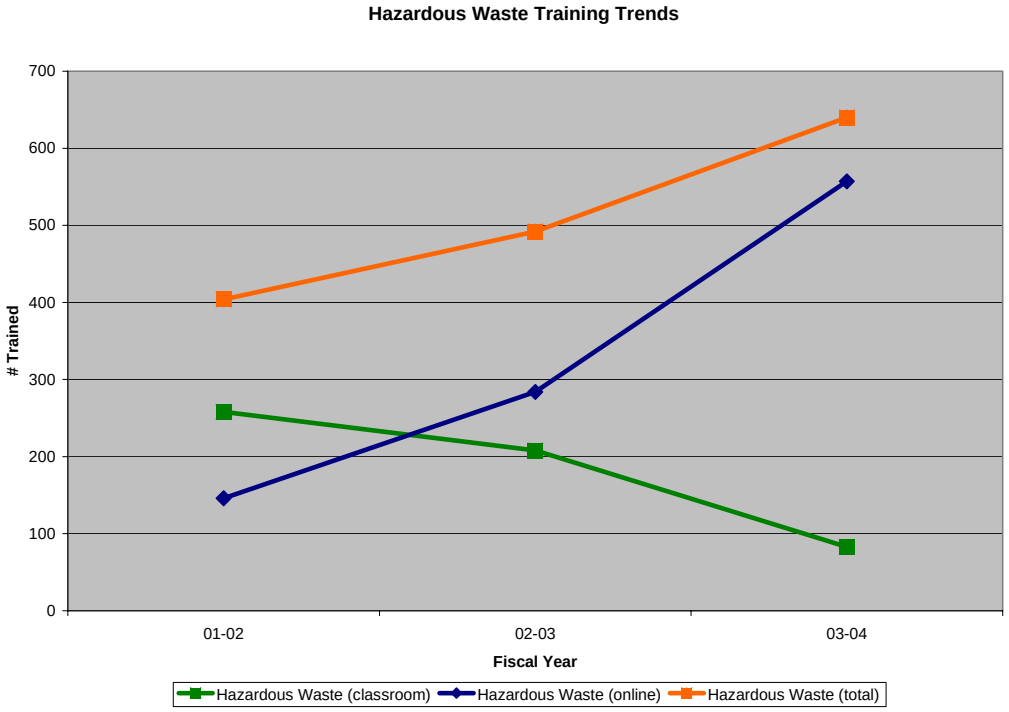
## 3. Environmental Protection

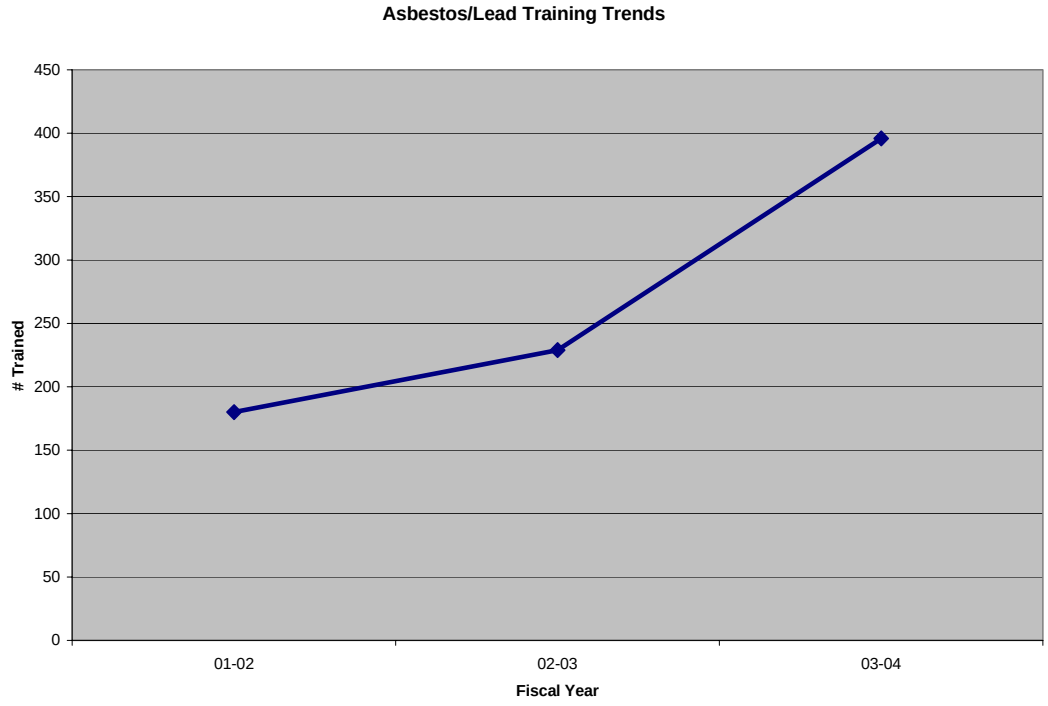
- Environmental sampling (air, radon, water, soil, waste, etc.) – **2,571** samples
- Groundwater Protection Plan inspections – **19** locations
- Environmental remediation costs - **$251,180**

## 4. Training

- Hazardous waste training – **640** attendees (up 30% from last year)
- DOT/IATA training – **62** attendees
- Asbestos awareness training – **396** attendees (up 73% from last year)
- SPCC training – **46** attendees

# Environmental Management Training Trends



## Waste Minimization

- **Waste Treatment**

| | |
|---|---|
| Acids / bases neutralized | 5,318 pounds |
| Oxidizers reduced | 185.5 pounds |
| Gas cylinders treated | 119 cylinders |
| **Total Savings** | **$27,785** |

- **Recycling**

| | |
|---|---|
| Fluorescent bulbs | 12,720 bulbs |
| Batteries | 6,420 pounds |
| Batteries – to UK community | 800 (est.) |
| Batteries – to off-site vendors | 885 |
| Glass bottles | 2,347 |
| Good chemicals | 40 |
| Thermometer exchanges | 183 |
| **Recycling Savings** | **$3,452*** |

** Cost savings not adjusted for overall recycling program costs*

**Laboratory Cleanouts**

| Date | Location / PI | Quantity |
|---|---|---|
| 7/30/03 | Ag North 105 (Stephens) | 143 items |
| 7/30/03 | Ag North 107 (Collins) | 168 items |
| 8/12/03 | Ag North 11 (Burton) | 251 items |
| 11/7/03 | HSLC 405 (Med Ctr. Photog.) | 120 gallons (approximate) |
| 1/29/04 & 3/25/04 | Pharmacy 164, 517, 519 (Crooks) | 579 items |
| 4/13/04 | VA (DeBeer) | 159 items |
| 6/15/04 | Garrigus Storeroom | 80 items |

**University Service and Professional Development**

Mike Blackard

- Staff Senate – Precinct 19 representative
- Maintained Commercial Drivers License with Hazardous Materials endorsement
- Maintained accreditation as a Senior Level Certified Hazardous Materials Manager
- Maintained accreditation as a Hazardous Waste Site Worker (29 CFR 1910.120)
- Attended course on Emergency Response to Terrorism: Basic Concepts
- Academy of Certified Hazardous Materials Managers – Member

Brian Butler

- Maintained accreditation as a Hazardous Waste Site Worker (29 CFR 1910.120)
- Attended Practical Compliance with EPA Regulations course offered by the Kentucky Chamber of Commerce
- Attended course on Emergency Response to Terrorism: Basic Concepts

Lee Faulkner

- Maintained accreditation as a Senior Level Certified Hazardous Materials Manager
- Maintained accreditation as a Hazardous Waste Site Worker (29 CFR 1910.120)

- Attended Practical Compliance with EPA Regulations course offered by the Kentucky Chamber of Commerce
- Academy of Certified Hazardous Materials Managers – Member

Tommy Taylor

- Maintained accreditation as an Asbestos Inspector / Management Planner
- Maintained accreditation as a Lead-based Paint Inspector / Risk Assessor
- Completed the second installment of the College Business Management Institute

Woody Bottom

- Maintained registration as a Professional Geologist authorized to practice in the Commonwealth of Kentucky
- Received Master of Public Health degree from Eastern Kentucky University
- Maintained accreditation as an Asbestos Inspector / Management Planner
- Maintained accreditation as a Lead-based Paint Inspector / Risk Assessor
- Renewed accreditation as a Hazardous Waste Site Worker (29 CFR 1910.120)
- Served on Chemical Safety, Environmental Health & Safety, & Hospital Environment of Care Committees
- Represented the University at meetings of the Royal Spring Water Supply Protection Committee
- Represented the University at meetings of the Greater Louisville, Inc. Working Group in conjunction with the Governor's Brownfields Task Force
- Attended the Kentucky Division of Waste Management's Brownfields Grant Workshop and Voluntary Environmental Remediation Program Workshop
- American Society of Testing and Materials – Member
- American Society of Safety Engineers – Member
- Environmental Information Association – Member

# Report of the
# Occupational Health and Safety Department

# Occupational Health & Safety Team
## Accomplishments/Events

**01JUL03 – 30JUN04**

1. Developed an online Ergonomic Workstation Checklist and Purchasing Guide for customer self-evaluation and correction of ergonomic hazards.

2. Developed an Office Ergonomics Training Module in educating on cause and prevention of musculoskeletal injuries/illnesses.

3. Developed a Back Safety Training Module in educating on cause and prevention of back related injuries.

4. Developed an online Agricultural and Farm Safety information section of departmental webpage.

5. Coordinated and led joint EHS inspection of Ag Extension Office proposed new work space located in Jefferson County.

6. Participated in joint EHS inspection of Camp Carlisle 4-H facility. Identified safety deficiencies and issued report.

7. Completed assessment and issued final report on faculty and student formaldehyde exposures within MS-203 (Gross Anatomy Laboratory).

8. Installed laboratory identifier placards for all laboratories within Chemistry/Physics Building Revised laboratory signage template and had posted to OHS web page.

9. Created a Diving Control Board to approve and provide guidance on all university diving activities.

10. Assisted the VA Medical Center in obtaining status as an approved research facility as recognized by the United States Army Medical Research and Materiel Command.

11. Developed and administered training to the Lexington Fire Department on maintenance and use of emergency response analytical equipment.

12. Scheduled and co-presented to building occupants an information sharing session on MDR#3 Building Safety Issues.

13. Provided onsite consultation to College of Medicine and local union contractors during RO Water Project. Resolved union health and safety concerns.

14. Initiated issuance of electronic laboratory inspection reports to individual faculty and staff. Reports previously disseminated only to departmental chairs. Decreased issuance time from point of violation documentation to delivery of reports to the selected customer.

15. Sustained an Eastern Kentucky University, College of Health Sciences undergraduate internship position within the department to provide for an additional resource for existing OHS Team projects and enhancement of OHS services provided to customers.

16. Industrial hygiene sampling conducted within PPD – Paint Shop, Grounds, Building Operators, and Plumbing; College of Dentistry, College of Medicine, and Department of Art. Airborne and physical hazards evaluated included asbestos, lead, noise, formaldehyde, as well as other numerous organic and inorganic stressors.

17. In conjunction with the IACUC's Animal Facilities Inspection Program, the OHS Team conducted occupational safety and health inspections of 93 spaces utilized by UK animal workers.

18. Entered into departmental database all historical fume hood survey data ranging back to 1998 allowing for efficiency trending analysis (4599 records)

19. Performed a total of 3 comprehensive ergonomic evaluations within DLAR, Regulatory Services and Nuclear Medicine.

20. Conducted comprehensive safety audit and PPE Hazard Assessment within Regulatory Services (2 depts.)

21. Revised EHS Laboratory Exit Checklist

22. Continued OHS comprehensive review and identification of safety deficiencies of all animal use protocols submitted to IACUC. Resulted in 9 individuals being identified and completing the required Chemical Hygiene Plan/Laboratory Safety class.

23. Continually provided guidance and OHS design oversight for all new construction/renovation projects involving the following areas: Ag Science North, Ag Greenhouse, BBSRB, Chemistry/Physics, CPST, CRMS, Forestry Building, Gluck Equine Research Center, KTDRC, Medical Science Building, MDR#3, and Mechanical Engineering Building.

24. Coordinated effort on providing EHS booth display at UK New Faculty Orientation in improving employee EHS awareness.

25. In support of the university's research function, OHS conducted 24 comprehensive laboratory inspections and EHS program reviews associated with DOD Grant Proposals

26. OHS continued to serve as the EH&S trainer for the EH&S orientation of all new employees and supervisors.

27. Conducted a total of 21 Indoor Air Quality Investigations in response to employee solicitations. These investigations involved 19 different buildings.

28. Continued issuance of standardized Worker's Compensation (WC) injury and illness trend reports to university sectors.

29. Conducted 14 investigations of significant incidents involving employee/student injury, fire, and/or chemical releases.

30. Expanded websites for UK General Safety and Chemical Safety Committees allowing for online voting and

31. Developed and presented a powered air purifying respirator (PAPR) training program specifically for the UK College of Medicine, Microbiology and Immunology Department

## Major Accomplishments

**1.** In collaboration with the Physical Plant Division Safety Office, OHS developed and implemented an online 15-Passenger Van Driver Safety Awareness Training course.

## Regulatory Activities

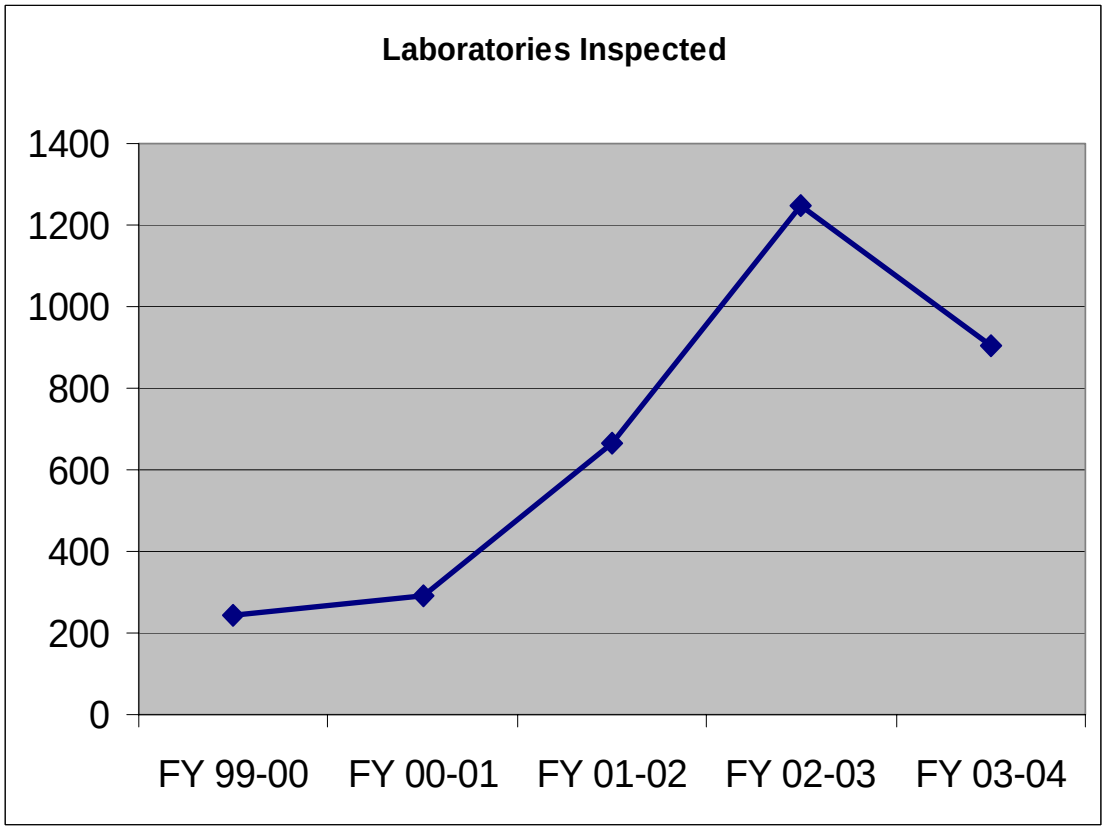
A state OSHA inspection occurred on December 19, 2003. The inspection was in response to a complaint alleging contractor asbestos exposure within a Sanders-Brown Research Center mechanical room. No violations documented.

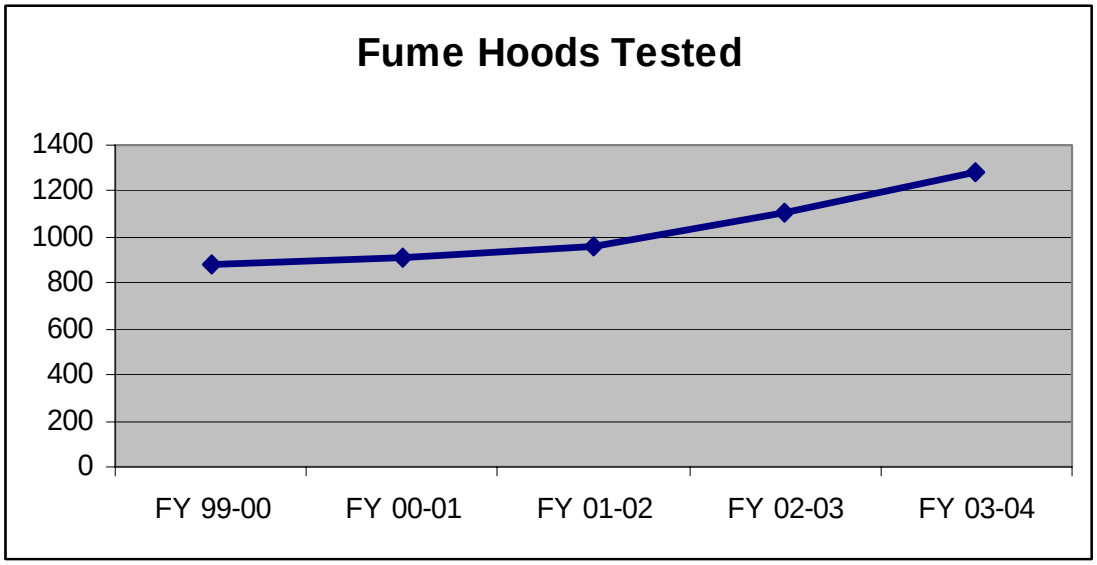
| | |
|---|---|
| Laboratories in the Chemical Hygiene database | 1,395 |
| Laboratories inspected | 903 |
| Laboratory Safety Survey Reports Issued to Chairs | 32 |
| Fume hoods tested | 1286 |
| IACUC Protocol Reviews | 269 |
| ▪ New Applications | (183) |
| ▪ Major Modifications | (86) |
| USAMRMC Grant Proposal Reviews | 22 |
| Indoor Air Quality investigations | 27 |
| Respirator Fit-tests | 113 |
| Industrial Hygiene samples | 92 |
| Ergonomic Office Assessments | 75 |
| Ergonomic Assessments (non-office) | 3 |

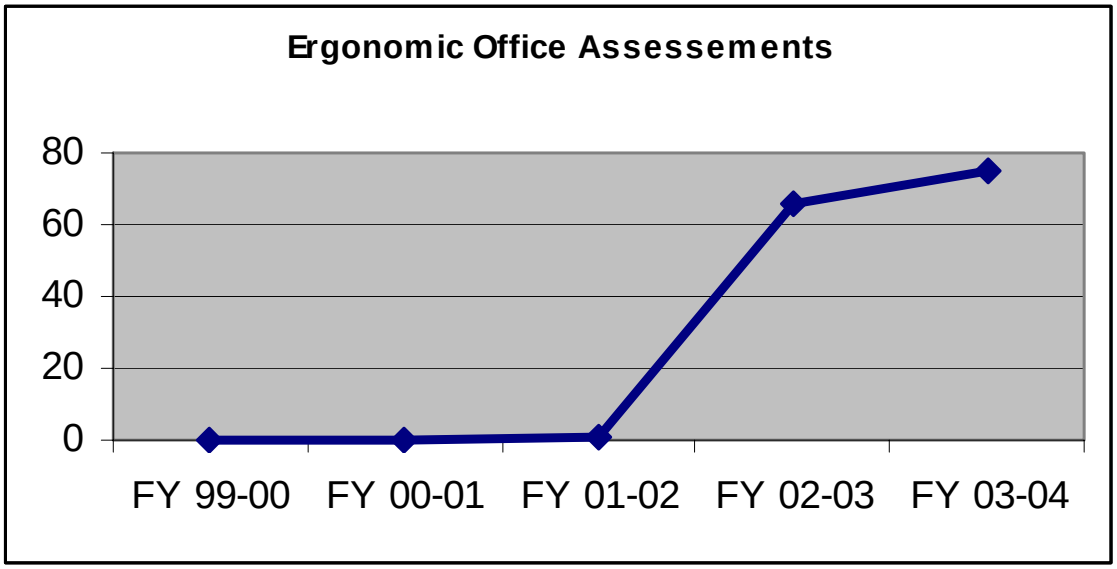
Training Class Attendance

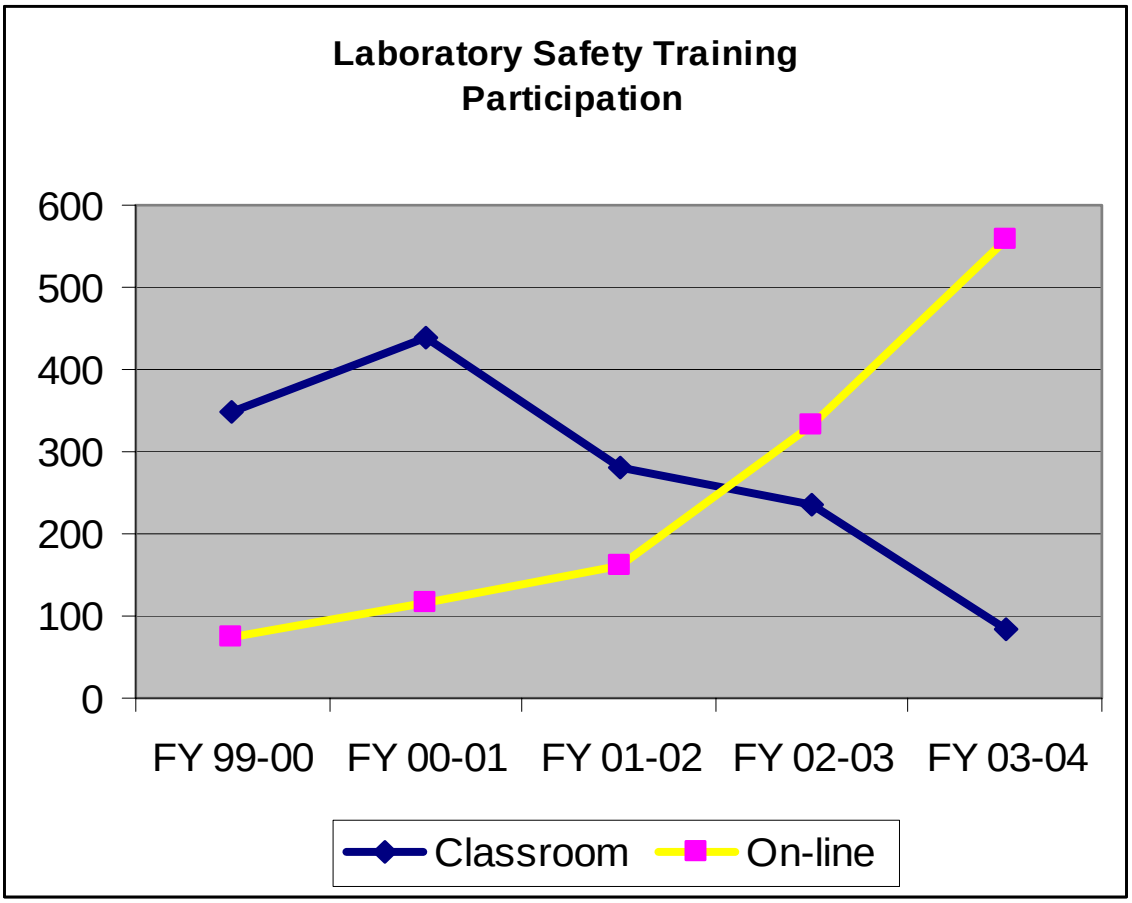
| | |
|---|---|
| Chemical Hygiene Plan/Laboratory Safety | 642 |
| ▪ Classroom Training | (83) |
| ▪ On-line Training | (559) |
| Laboratory Safety (specialized) | 40 |
| Hazard Communication | 129 |
| ▪ Classroom Training | (53) |
| ▪ On-line Training | (76) |
| Hazard Assessment for the Use of Personal Protective Equipment | 24 |
| Hot Work Permitting | 34 |
| Lockout/Tagout - Control of Hazardous Energy | 26 |
| Respiratory Protection | 113 |
| Bloodborne Pathogens (on-line) | 268 |
| Ergonomics | 98 |
| 15-Passenger Van Driver Safety Awareness | 287 |
| Straight Truck & Van Safe Driving Strategies | 31 |
| New Employee Orientation (EH&S Section) | 1259 |
| SuperVISION (EH&S Section) | 222 |

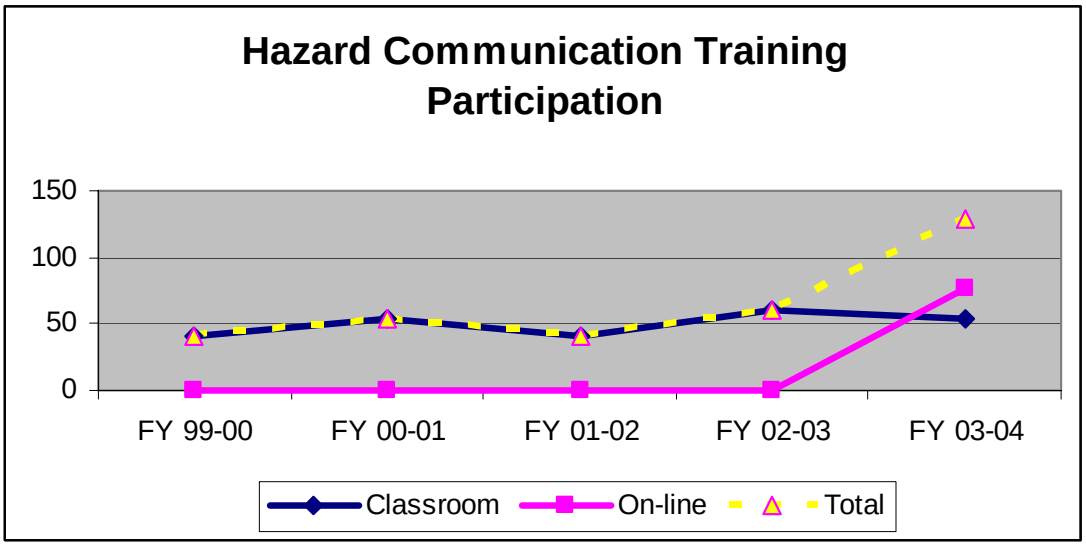
# Trends for Select Key Indicators

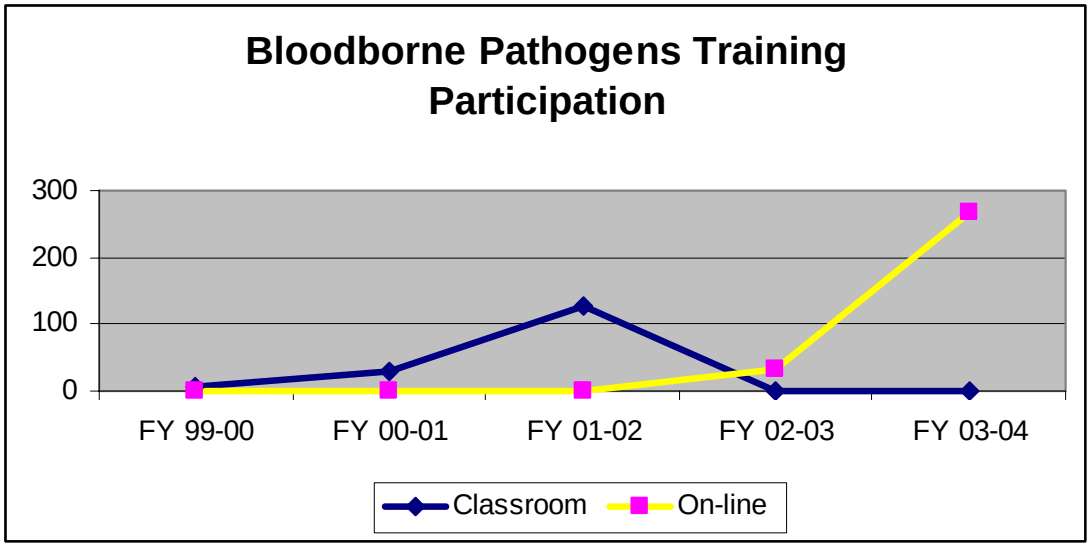



Ergonomic Office Assessements
80
60
40
20
0
FY 99-00
FY 00-01
FY 01-02
FY 02-03
FY 03-04


Laboratory Safety Training
Participation
600
500
400
300
200
100
0
FY 99-00
FY 00-01
FY 01-02
FY 02-03
FY 03-04
Classroom
On-line


Hazard Communication Training Participation
150
100
50
0
FY 99-00
FY 00-01
FY 01-02
FY 02-03
FY 03-04
Classroom
On-line
Total


Bloodborne Pathogens Training Participation
300
200
100
0
FY 99-00
FY 00-01
FY 01-02
FY 02-03
FY 03-04
Classroom
On-line

## Professional Development and Outreach Activities
### Occupational Health and Safety

### Lee Poore

- Obtained certification as a Certified Industrial Hygienist as recognized by the American Board of Industrial Hygiene
- Maintained certification as a Certified Chemical Hygiene Officer as recognized by the National Registry of Certified Chemists
- Attended the Toyota Women's Conference
- Attended the American Industrial Hygiene Conference and Exposition

  Professional Development Courses

  - Non-ionizing Radiation
  - Principles of Radiation Risk Assessment
  - Fundamentals of Chemical Protective Clothing
- Attended Laboratory Commissioning and Control course at the Eagleson Institute
- American Chemical Society – Member

### Bob Cadle

- Served as Secretary of the American Society of Safety Engineers – Bluegrass Chapter

### David Hibbard

- Completed two semesters of graduate course work in pursuit of Master of Public Health degree at Eastern Kentucky University.
- American Industrial Hygiene Association – Diplomate
- American Academy of Industrial Hygiene – Diplomate
- Maintained certification as a Certified Industrial Hygienist as recognized by the American Board of Industrial Hygiene

### David Acker

- Attended Comprehensive Review for Industrial Hygiene Professionals course through University of Cincinnati's College of Medicine.
- American Conference of Governmental Industrial Hygienists – Full Member.

## Angie Renick

- Attended The Laboratory Safety Institute's Two-Day Lab Safety Short Course

- Attended KY OSHA training courses:
  - Introduction to Ergonomics
  - Back Care Program
  - Indoor Air Quality
  - Overview of KY OSH Program

**Academic Participation for 2003-2004 School Year**

**Provided lectures, seminars, etc. in UK courses (contact hours)**

David Hibbard & Lee Poore
Chemistry: Seminar in Chemistry - Chemical Safety, CHE-772 (2 hours)

David Hibbard
Preventive Medicine and Environmental Health: Occupational/Environmental Health I, SPH-601 (1.0 hours)

Bob Cadle
Preventive Medicine and Environmental Health: Occupational/Environmental Health I, SPH-601 (1.0 hours)

Preventive Medicine and Environmental Health: Occupational/Environmental HealthI I, SPH-602 (1.5 hours)

David Acker
Preventive Medicine and Environmental Health: Industrial Hygiene Sampling, PM-661 (3.0 hours)

# Report of the
# Radiation Safety Department

**Radiation Safety**

| | | |
|---|---|---|
| Authorized users | | 206 |
| Authorized laboratories | | 320 |
| Radionuclide purchases, cost | | $1,033,703 |
| Radionuclide purchases, millicuries | | 169,896 |
| Radionuclide orders received | | 1,689 |
| Radiation Source inspections/surveys | | 1,610 |
| Laboratories | 1,412 | |
| X-ray machines | 130 | |
| Lasers | 68 | |
| Sealed source leak tests | | 278 |
| Patient therapies: | | |
| Brachytherapy | | 27 |
| Thyroid | | 114 |
| Radiation safety class participants | | 890 |
| Personnel monitoring: | | |
| Film badges, etc. used | | 9,931 |
| Level I ALARA reports | | 70 |
| Level II ALARA reports | | 30 |
| Waste disposal: | | |
| Dry solid, long-lived, radioactive (cu. ft. shipped) | | 179.90 |
| Dry solid, short-lived, decayed (cu. ft. disposed) | | 150.00 |
| Liquid (cu. Ft. incinerated) | | 99.30 |
| Waste disposal cost (actual total) | | $132,343 |
| Radiation instruments calibrated | | 210 |

# Radioactive Waste
# Cost and Quantity Trend Report

| Fiscal Year | Volume (cu. ft.)* | Cost** |
|---|---|---|
| 1992-93 | 953 | $134,300 |
| 1993-94 | 473 | 90,200 |
| 1994-95 | 180 | 8,000 |
| 1995-96 | 120 | 71,400 |
| 1996-97 | 90 | 29,500 |
| 1997-98 | 120 | 46,400 |
| 1998-99 | 315 | 21,100 |
| 1999-00 | 633 | 109,700 |
| 2000-01 | 390 | 44,700 |
| 2001-02 | 382 | 55,104 |
| 2002-03 | 556 | 103,000 |
| 2003-04 | 279 | 132,343 |

** Volume of dry solid radioactive waste only.*

*** Excluding mixed radioactive-hazardous waste.*

Source: Kentucky Radioactive Waste Annual Reports filed with the Kentucky Cabinet for Health Services (Calendar Year).

## Radiation Safety Inspections

The broad medical and teletherapy/gamma knife licenses were inspected in May 2004. No compliance findings were noted.

# Report of the
# Radiation Safety Department

**August 04, 2004**

**Radiation Safety Office**
**Annual Report to Environmental Health and Safety**
**Fiscal Year 2003-2004**

## Significant Occurrences

*This is a summary report on major incidents, agency actions, and other regulatory activity involving UK this fiscal year.*

### Regulatory Inspections

The broad medical and teletherapy / gamma knife licenses were inspected in May 2004. No compliance findings were noted.

### Radiological Incidents

- Radiation Safety Office, June 23, 3:30 P.M., Bob Wilson's program – An AU called to ask about an I-125 shipment that was overdue. Subsequent follow-up found that the package was apparently missing. A full investigation and search was promptly launched. The shipment of I-125 had been received by the Radiation Safety Office on June 18. It was processed, confirming it to be 100 microcuries of I-125, triiodothyronine. The package was taken to the lab on June 18 by the radiation health technician on package duty for June, but was returned to the Radiation Safety Office because the lab was locked and apparently vacant.

  On June 19, the package duty technician called in sick, and another technician was assigned package duty and advised of the undelivered package. The Radiation Safety Office shipping paper record shows the I-125 package was included for delivery to Room 109, Research Building 3, on June 19. The technician has said that he delivered the package to the lab. He also said it was possible he left the package where he removed the DOT labels. The required signature of receipt for the package was not obtained. With the labels removed, the greatest likelihood is that the package was put into the ordinary trash.

  It is concluded that the most probable fate of the package was incorporation into the ordinary waste stream and on to the sanitary landfill, that the I-125 container remained in the shipping box, and was never opened. In going directly to the ordinary trash channel, there is no significant probability that any individual could have received any radiation exposure or contamination. Once in the landfill, the I-125 will be completely sequestered from any contact. It will become essentially nonradioactive within 1.64 years.

- Dr. Swanson's lab, August 05, 2003 – A lab radiation worker found contamination on her hands after working with P-32 stock material. Radiation Safety Office staff responded and advised on skin decontamination. In about twenty minutes of hand washing, the radioactivity was removed. A urinalysis was conducted since there was direct skin involvement. The results indicated no detectable uptake of P-32.

- September 11, 2003, early evening, Second Floor Markey. A pool technician entered an I-131 patient's room and took vital signs. The technician proceeded taking vitals on

subsequent, non-radiation patients with the same equipment. Tomi Ross was called, and the RSO paged. There was no response as the RSO was on vacation. Ms Ross instructed the staff to secure the equipment for proper monitoring. Subsequent monitoring on September 12, by Mr. Schlenker and Ms. Ross found no contamination.

- A potential occupational overexposure occurred in Diagnostic Radiology in 2003. An x-ray technologist's badge received 5,687 mrem through November 2003. A report has been filed with the KY Radiation Health Branch. An argument was offered that, considering lead apron wear and Effective Dose Equivalent adjustment, no overexposure occurred.

- Trucking Incident, January 13, 2004 – A truck cargo shifted in Pikeville, with material falling onto a pallet of five Cs-137 nuclear gauges. The trucking company, Hazard Express, Lexington, returned the sealed trailer to Lexington for evaluation. The Bluegrass Emergency Response Team (BERT) was called. The Team requested assistance from UK. As BERT members, Mr. Schlenker and Mr. Wilson responded and did the radiological evaluation. Radiation levels were normal and there was no contamination or damage involved.

- February 19, 4:15 P.M., Mary Vore lab. A lab worker had spilled P-32 on her lab coat. Mr. Rawlings responded to the scene. The worker had removed and bagged the coat. A survey of the person's shirt and sleeves did not reveal any radioactivity. A survey of the bagged coat revealed about 0.05 mrem/hr. The coat was removed and placed in storage for decay.

- February 24, 11:30 A.M., Cardiac Cath Lab. While conducting an intravascular brachytherapy (IVB) procedure, the source train control wire jammed and would not retract. As per plan and preparation, the source control wire and attached source train was immediately removed from the patient and placed in the shielded "bail-out" box. The actual procedure had gone as planned and there was no impact on the patient. The entire apparatus was sent to NOVOSTE for evaluation. It was determined that a crimp had occurred in the guide catheter, causing the jam.

- April 06, 10:00 A.M., Nuclear Medicine Hot Lab. An I-131 contaminated radiation shield was being cleaned in the sink when water splashed onto the floor. Mr. Rich and Mr. Schlenker responded. The contamination was tracked around the Lab and picked up on shoes. Plastic-backed absorbent pads were placed on the floor initially to permit continued Lab use. Later all removable contamination was eliminated. Staff bioassay thyroid counts found no significant intake of I-131.

**Misadministrations**

- There were no patient misadministrations in FY 03-04.

## Radiation Safety Office Accomplishments

*The items listed below were completed as part of the Major Business Objectives for the EH&S Division in FY 2003-04:*

1. **Revise and update the principal investigator authorization process for the use of radiation sources. Implement a completely electronic system. Present revisions to the Radiation Safety Committee at its February 2004 meeting for review and action (RSO, IT).**

   Eight other universities were contacted and examples of process policies and forms or processes obtained. A draft process, including forms, example customer instructions and concepts was submitted to the Radiation safety Committee in February 2004. Revisions were requested. A revised draft was submitted to the Committee in May 2004. The Committee endorsed the concepts and intent but wanted further development before taking final action. These developments are continuing. Committee approval is required by internal procedure.

2. **Develop an electronic database for review of the radiation badge monitoring records**. **Develop an electronic badge review and reporting system. Present the first electronic report to the Radiation Safety Committee at its May 2004 meeting (RSO, IT).**

   The Landauer personnel monitoring service electronic system was selected as the best approach to an electronic database. Final training has been completed, but the system is in use.

3. **Develop an on-line analytical x-ray safety course for implementation by April 2004 (RSO, IT).**

   The on-line analytical x-ray course has been completed and is ready for implementation by IT.

4. Nineteen radiation monitoring groups covering 380 people were deleted from badge coverage due to having received no detectable exposure throughout 2001 and 2002.

5. A total of eleven plutonium and americium sources, three from Asbury, Berea and Morehead State, and eight from UK, were shipped to Los Alamos National Laboratory for possession by DOE.

6. Radiation Safety Office staff members became members of the regional Bluegrass Emergency Response Team (BERT) and active in its Equipment Committee. Consultation was provided on the selection and use of radiation monitoring equipment.

7. The Radiation Safety Office BERT members made a presentation of recommendations for the purchase of specific equipment to the Equipment Committee. BERT consequently approved the request and has ordered $21,000 of radiation equipment for use by the Radiation Safety Office.

8. A full-scale radiation emergency response exercise was conducted in November. The exercise included participation from UK Radiation Safety, Police and Hospital, as well as LFUCG Fire Department, EMS and the local commercial nuclear pharmacy.

9. Assistant Director Fred Rawlings provided radiation training for Lexington Fire Department Hazmat Personnel. Three, 3-Hour Basic Radiation Safety in Emergency Response classes were given. Sixty-six LFUCG FD members attended.

**10.** In January, a team from the Radiation Safety Office responded to a request for assistance from the Bluegrass Emergency Response Team (BERT). A radiation source shipping incident required attention at a Lexington trucking depot. There were no radiological complications and everyone learned from the experience of a real event.

**11.** February 4 and 5, six Radiation Safety Office staff members attended a two-day training course on Weapons of Mass Destruction (WMD). The course, "Emergency Response to Terrorism", was provided through the U.S. Department of Homeland Security.

**12.** The annual National Emission Standards for Hazardous Air Pollutants (NESHAP) report on radioactivity releases was completed. UK passed the standard for released radioactivity.

**13.** The broad medical and gamma knife / teletherapy licensed activities were inspected by the state regulatory agency, May 25 and 26. No citations were identified.

**14.** A high-activity tritium waste disposal shipment was made to NSSI, Houston, Texas, where the material will be recycled.

**15.** Participated in a June regional emergency response exercise in the Hospital.

**Academic Participation by Radiation Safety Office Staff**
**2003-04 Academic Year**

**1. Gave lectures, seminars, etc. in UK courses**

Fred Rawlings
Radiation Medicine: Radiation Protection,
RM/BIO 740 Mammalian Radiation Biology(1 hour) 12/4/03

**2. Taught undergraduate and graduate students as part of EH&S safety courses.**

Fred Rawlings
Basic and Initial Radiation Safety courses.
Staff technical in-service training classes.
Ancillary and Police staff in-service safety classes.

Bob Wilson
Occupational Health and Safety: Occupational and Environmental Health
PM 601 Radiation Dose Risk (1 hour)
Industrial Uses of Radiation (1 hour)

**3. Taught undergraduate and graduate students as part of EH&S safety courses.**

Gerald Schlenker
Laser Radiation Safety courses (standby for Basic, Initial and other training).
Initial and Refresher Radiation Safety classes for nursing staff.
Medical School Ph.D candidate Radiation Safety Orientation class.
Staff technical in-service training classes.

Ancillary and Security staff in-service safety classes.

Bob Wilson
Initial Radiation Safety classes.
Irradiator safety classes.
Hospital / Medical Center safety classes.

**4. Radiation Safety Office staff professional activities.**

William Garner, Gerald Schlenker, and Bob Wilson continued as members of the Blue Grass Chapter of the national Health Physics Society. Mr. Schlenker serves as a member of the Chapter's Executive Council and Mr. Wilson serves as its Secretary-Treasurer.

Mr. Ellis, Mr. Garner, Mr. Schlenker and Mr. Wilson attended the Fall 2003 Blue Grass Chapter meeting at Jewish Hospital, Louisville, KY.

## Key Indicators for Radiation Safety

*The numbers and costs below are provided to give an indication of the level of activity within EH&S units when conducting their day-to-day business.*

| | | |
|---|---|---|
| Authorized users | | 206 |
| Authorized laboratories | | 320 |
| Radionuclide purchases, cost | | $1,033,703 |
| Radionuclide purchases, millicuries | | 169,896 |
| Radionuclide orders received | | 1,689 |
| Laboratory inspections/surveys | | 1,610 |
| Laboratories | 1412 | |
| X-ray machines | 130 | |
| Lasers | 68 | |
| Sealed source leak tests | | 278 |
| Patient therapies: | | |
| Brachytherapy | | 27 |
| Thyroid | | 114 |
| Radiation safety class participants | | 890 |
| Personnel Monitoring | | |
| Film badges, etc. used | | 9,931 |
| ALARA reports, Level I | | 70 |
| Level II | | 30 |
| Radioactive waste disposal | | |
| Dry solid, long-lived (cu. ft. shipped) | | 179.90 |
| Dry solid, short-lived, decayed (cu. ft. disposed) | | 150.00 |
| Liquid (cu. ft. shipped) | | 99.30 |
| Waste disposal cost | | $132,343 |
| Radiation instruments calibrated | | 210 |

**Surveys**

Radiation Safety Office personnel periodically (at least quarterly) inspect the laboratories and facilities of Authorized Users to monitor the lab's radiation safety program. Radiation exposure rates and removable contamination levels are measured and record keeping systems reviewed during the surveys. The frequency of surveys is determined by the type of source, quantity of radioactive materials used, results of previous surveys, and general compliance with State regulations and University policies.

During FY 03-04 the Radiation Safety Office conducted one thousand four hundred and twelve (1412) AU facility surveys, in about three hundred and twenty (320) AU facilities. Eighty-nine percent (89.07 %) of the AUs were found to be in compliance. Seventy-three (73) Authorized Users (35%) earned an Outstanding Radiation safety Achievement Award from the Environmental Health & Safety Committee. These individuals did not receive a single safety variance throughout calendar year 2003.

The most frequently observed non-compliance item was lack of survey records (7.07 %). Such records are required to show that the Authorized User is controlling contamination and radiation exposure in his/her laboratory. The frequency depends on the amount of material used, but area surveys are typically conducted each month. This item has further decreased by 17 percent, but continues as a priority compliance action.

The second most common item of non-compliance is evidence of eating or drinking in the lab (2.53 %). The third item is radioactive materials not properly secured (1.07 %). These items are also identified for priority compliance action. The fourth item is radiation warning signs not posted (0.93 %).

Contamination was found in laboratories 0.40 percent of the time. The most frequently observed locations of contamination are laboratory benches, refrigerators, and laboratory equipment. Other less frequently observed locations of contamination, but significant for exposure, are desks, telephones and computers.

The most serious issue observed continues to be a lack of performance or documentation of area surveys. Compliance follow-up action continues to bring about significant improvements.

The revised survey form put into use three years ago continues to be useful for tracking trends on noncompliance issues for specific laboratories and for the overall situation.

Table 1

**Non-Compliance Issues Observed During FY 03-04**

| Item # | Occurrence | Percent | Violation |
|---|---|---|---|
| 01 | 2 | 0.27 | UK Notice to Employees not posted |
| 02 | 7 | 0.93 | Radioactive Materials sign not posted |
| 04 | 3 | 0.4 | Contamination in Laboratory Area |
| 07 | 3 | 0.4 | Emergency procedures not posted |
| 14 | 1 | 0.13 | Emergency #s on lab entrance not posted |
| 22 | 53 | 7.07 | Contamination Survey results not available |
| 23 | 4 | 0.53 | Appropriate survey meter not used or unavailable |
| 26 | 19 | 2.53 | Evidence of personnel eating and/or drinking in area designated for Radioactive use |
| 33 | 6 | 0.80 | Radionuclides improperly stored |
| 35 | 8 | 1.07 | Radionuclides not secured against unauthorized access or removal |
| 47 | 1 | 0.13 | Moving radioactive lab to another room without notifying RSO |
| 48 | 668 | 89.07 | No items on noncompliance |

**Authorizations**

To obtain authorization to procure and use radioactive material, a prospective Authorized User must complete an "Application for Authorization to Possess and Use Radioactive Material". The Radiation Safety Officer reviews the application, evaluating the facilities available, the training and experience of the applicant and staff for the proposed use, and the details of the work to be performed. After the review, including any necessary modifications, the application will be forwarded to the appropriate Radiation Safety Subcommittee (medical or campus) with a recommendation for approval or disapproval. The application must be approved by a two-thirds majority vote.

There were 206 Authorized Users with approximately 320 laboratories in FY 03-04. Table 2 provides locations for the most common AU facilities.

Table 2

**Authorized Users (AU) and Radioactive Material Laboratories***

| Location | Number of AUs | Number of Labs |
|---|---|---|
| Animal Pathology | 1 | 1 |
| Ag. Engineering | 0 | 0 |
| ASCN | 5 | 8 |
| ASTeCC | 2 | 4 |
| CAER | 1 | 2 |
| Chem-Physics | 6 | 13 |
| College of Health Science Bldg | 14 | 25 |
| Combs | 12 | 23 |
| Funkhouser | 1 | 1 |
| Garrigus | 5 | 7 |
| Gill Heart | 3 | 3 |
| Gluck | 4 | 6 |
| HSRB | 13 | 28 |
| Kastle Hall | 0 | 0 |
| KY Tobacco Research | 5 | 6 |
| Markey Cancer Center | 2 | 2 |
| Mining & Minerals | 0 | 0 |
| MRI | 2 | 3 |
| Pharmacy | 14 | 28 |
| Plant Science | 16 | 19 |
| Research #3 | 2 | 4 |
| Sanders Brown | 7 | 11 |
| Sloan | 1 | 1 |
| Small Animal Hospital | 0 | 0 |
| T.H. Morgan | 8 | 13 |
| T.P. Cooper | 0 | 0 |
| UKMC | 49 | 90 |
| Wenner Gren | 1 | 1 |
| **Total** | **174** | **299** |
| | | |

*This table does not include AU authorized for sealed sources.

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During FY 03-04, twelve (12) new AUs and ten (10) authorization amendments were approved. Thirteen (13) authorizations were terminated (by choice, leaving, etc.). Table 3 provides the number of new users, terminated authorizations, amendments and total users for the campus and Medical Center.

Authorized Users are required to submit 5-year renewal of their authorization upon request by the Radiation Safety Office. Ten (10) AUs received their 5-year authorization renewal. The five-year renewal program is caught up and on schedule.

Table 3
**Total and Changes in the Number of Authorizations for FY 03-04**

| | Medical Center | Campus |
|---|---|---|
| Total Users | 136 | 76 |
| New Users | 10 | 2 |
| Terminated | 11 | 2 |
| Amendments | 7 | 3 |
| 5 Yr Renewals | 6 | 4 |

**Radiation Safety Training**

The Radiation Safety Office provides radiation safety training for all registered radiation workers and principal investigators new to UK. This is done primarily through two regularly scheduled courses. Annual training is also done for ancillary staff, UK police, MC security, Markey nursing staff and others as needed.

The Basic Radiation Safety course is for radiation workers new to UK and especially for those with no previous radiation safety training or experience. This course is given monthly and lasts three (3) hours. Topics include rules and regulations, radiation safety at U.K., fundamentals of radiation safety, laboratory practices, waste management and emergency procedures. A short test is given at each session, with a passing grade of sixty percent. New radiation workers can be approved to start work promptly by taking the On-Site and Initial Training orientation provided on demand by the AU and the Radiation Safety Office. The Basic Course is, however, still required. Upon satisfactory completion, a certificate is awarded. The Basic Course must be completed within 4 month of beginning work.

The Advanced Radiation Safety Course is for faculty and staff new to UK but with previous training and experience. This course is available on line through the Environmental Health & Safety website. Topics cover lab or facility radiation safety management at UK. Quizzes are given, and certificates of completion awarded.

The Radiation Safety Office provided approximately one hundred and thirty-seven (137) radiation safety courses of all types in FY 03-04, with eight hundred and ninety (890) attendees.

Table 4

**Radiation Safety Training Attendance**

| Title | Number offered | Number of attendees |
|---|---|---|
| 1. Basic Radiation Safety | 12 | 128 |
| 2. Advanced Radiation Safety | On-Line | 63 |
| 3. UK Police | 4 | 21 |
| 4. Ancillary Staff | 9 | 440 |
| 5. Initial Training (prereq. For Basic) | 112 | 112 |
| 6. Nurses | 7 | 108 |
| 7. Laser | On-Line | 18 |
| **Total** | | **890** |

**Dosimetry**

Dosimetry (film badges, TLD, pocket dosimeters, Luxel, etc.) for individual who may be exposed to ionizing radiation is provided by the Radiation Safety Office. Any individual potentially exposed to gamma, beta x-rays, or neutrons and could receive an annual dose in excess of 10% of the limit must wear dosimetry. The standard monitoring device is a clip-on radiation body or ring badge bearing the individual assignee's name, date of the monitoring period and a unique identification number. The individual may be issued monthly or quarterly badges depending on the potential for exposure. Typically, individuals working in research operations use quarterly badges. Individuals working in Nuclear Medicine, Radiation Medicine, and Radiology typically use monthly badges.

The Radiation Safety Office issued 7211 monthly radiation badges and 2720 quarterly badges during FY 03-04. In addition, the Office issued 1063 ring badges, and 193 neutron badges. One hundred and eighty-nine (189) selected EDE calculations per year were performed. The cost for the badge service in FY 03-04 was $20,298, up 27%.

Table 5

**Dosimetry Issued in FY 03-04**

**Quarterly Badges**

| Type of dosimetry | Total Issued | Aver. per shipment |
|---|---|---|
| Whole Body | 2720 | 680 |
| Rings | 244 | 61 |
| Neutron | 179 | 45 |
| Area Monitor | 26 | 7 |
| Double Badges | 0 | 0 |

**Monthly Badges**

| Type of dosimetry | Total Issued | Aver. per shipment |
|---|---|---|
| Whole Body | 7211 | 601 |
| Rings | 819 | 68 |
| Double Badges | 189 | 16 |
| Neutron | 14 | 2 |
| EDE Calculations | 189 | -- |

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The maximum dose for an individual during a particular month can be found in Table 6 for each of the organs monitored, deep, lens of the eye, skin and extremities.

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Table 6

**Maximum Observed Monthly Radiation Exposures**

| Organ | Dose (mrem) | Department | Date |
|---|---|---|---|
| Deep | 526 | Diagnostic Radiology | 01/04 |
| Lens of the Eye | 1199 | Diagnostic Radiology | 08/03 |
| Skin (Shallow) | 1218 | Diagnostic Radiology | 09/03 |

Table 7

**Annual Whole Body Exposure for Selected Departments in mrem**

| Department | # Badged Personnel | Total Exposure | Average Exposure |
|---|---|---|---|
| Cath Lab | 35 | 3,067 | 88 |
| Nuclear Medicine | 9 | 981 | 109 |
| Radiation Medicine | 45 | 267 | 6 |
| Radiology/Techs and Radiology/Residents | 90 | 6,829 | 76 |

## ALARA Reviews

There are two notification levels for the ALARA program. Level I notifications involve a radiation worker receiving greater than 10 percent of the maximum allowable dose (prorated for a quarter exposure period). The recipient is notified in writing when their exposure meets this level's criteria. The notification requests that the worker review their work procedures in order to reduce exposure, if feasible.

Level II notifications involve a radiation worker receiving greater than 30 percent of the maximum allowable dose (prorated for a quarter exposure period). The recipient is notified when their exposure meets this level's criteria and is requested to complete an investigation form as to the probable cause and consideration of actions for reducing the probability of a recurrence.

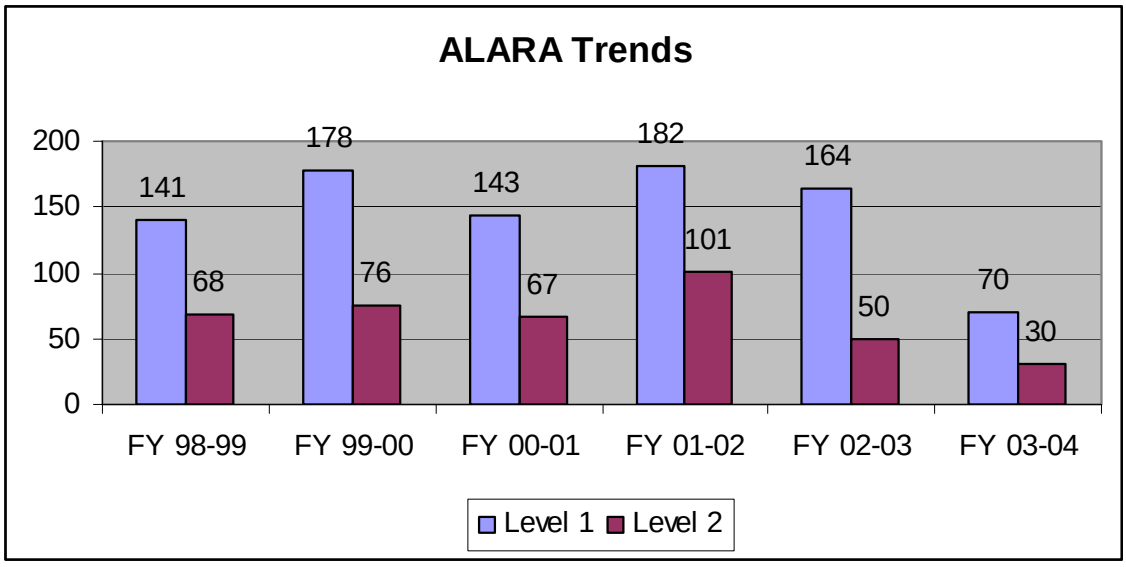
The ALARA notifications for FY 03-04 appear in Table 8 for each quarter. A trend graph is included. The number of ALARA Levels I and II notifications decreased significantly during the FY. The change in ALARA levels and the double badge program, with its EDE calculations, has helped with this. The use of the EDE calculation provides a more realistic representation of the individual’s dose through a comparison between the under lead apron badge reading with the outside apron badge reading.

Level I reports are down fifty-seven percent (57 %) and Level II reports are down forty percent (40 %) from last fiscal year.

Table 8

**ALARA Numbers for Each Quarter**

| Quarter | Level I | Level II |
|---|---|---|
| 3rd 03 | 3 | 3 |
| 4th 03 | 12 | 8 |
| 1st 04 | 35 | 7 |
| 2nd 04 | 20 | 12 |
| **Total for the Year** | **70** | **30** |




**Bioassays**

A thyroid scan is required on individuals who use certain quantities of I-125 and I-131 in both bound and volatile form. Thyroid scans or urinalysis is also done if there is skin contamination. Nuclear Medicine performs its own thyroid scans for staff directly involved in I-131 therapy administrations. The Radiation Safety Office conducted eleven (11) thyroid scans in FY 03-04. All results were less than 0.12 uCi body burdens, indicating no greater than 10% of the annual limit of uptake.

**Radioactive Material Purchases**

All radioactive material must be purchased and received through the Radiation Safety Office, with the exception of radiopharmaceuticals for Nuclear Medicine. The Radiation Safety Office purchased 41.011 curies of radioactive material (down 68%) at a total of $440,304 (down 33%) for Authorized Users in FY 03-04. The most commonly purchased radioisotopes were Ir-192, I-125, S-35, P-32, Sr-90 and H-3 (Table 9a).

Table 9a

**Quantity of Radioactive Material Ordered Through The Radiation Safety Office, FY 03-04**

| Isotope | Amount (mCi) | Isotope | Amount (mCi) |
|---|---|---|---|
| Al | 0.00003 | Ir-192 | 37054.2 |
| C-14 | 39.355 | Mn-54 | 0 |
| Ca-45 | 2.02572 | P-32 | 632.7029 |
| Cl-36 | 8.6768 | P-33 | 16.94761 |
| Co-57 | 0 | Pd-103 | 105.8342 |
| Cr-51 | 36.96067 | Rb-86 | 0 |
| Cs-137 | 50 | S-35 | 805.5546 |
| Ga-67 | 0 | Sr-89 | 0 |
| H-3 | 158.5738 | Sr-90 | 355.5569 |
| I-123 | 0 | Tc-99m | 0 |
| I-125 | 1739.991 | Tl-201 | 0 |
| In-111 | 5.26383 | Zn-65 | 0 |
| Total Cost $440, 304 | | TOTAL | 41,011.64 |

Table 9b

**Quantity of Radioactive Material Ordered Through Nuclear Medicine, FY 03-04**

| Isotope | Amount (mCi) | Isotope | Amount (mCi) |
|---|---|---|---|
| C-14 | 0.004 | In-111 | 184.459 |
| Co-57 | 0 | Sm-153 | 383 |
| Cr-51 | 3.825 | Tc-99m | 99130.3 |
| Ga-67 | 430.967 | Tl-201 | 254.091 |
| I-123 | 39.159 | | 0 |
| I-131 | 28457.72 | Totals | 128,883.53 |

Nuclear Medicine ordered 128,884 millicuries at a total of about $593,399, up 103%.

Table 9c indicates that as of June 30, 2004, the University had a total of 119,894.977 mCi of radioactive material on hand (not including sealed sources).

Table 9c

**Radioactive Material On-hand as of June 30, 2004**

| Radionuclide | Activity (mCi) | Radionuclide | Activity (mCi) |
|---|---|---|---|
| Al-26 | 0.004 | H-3 | 111,175.422 |
| Am-241 | 0.009 | I-123 | 0 |
| Ba-133 | 0.001 | I-125 | 140.234 |
| C-14 | 281.681 | Ir-192 | 7276.935 |
| Ca-45 | 0.289 | Mn-54 | 0.549 |
| Cd-109 | 0.028 | Na-22 | 0.112 |
| Cl-36 | 0.0001 | Ni-63 | 1.867 |
| Cm-244 | 136.359 | P-32 | 29.979 |
| Co-57 | 124.908 | P-33 | 2.623 |
| Co-60 | 7.257 | Pu-239 | 0.001 |
| Cr-51 | 3.562 | S-35 | 183.065 |
| Cs-137 | 529.670 | Sr-90 | 0.080 |
| Fe-55 | 0.321 | Tl-204 | 0.009 |
| Gd-153 | 0.0001 | Zn-65 | 0.012 |
| | | **Total** | **119,894.977** |

**Radioactive Waste**

The Radiation Safety Office conducted seven hundred and fifty-four (754) pickups of radioactive waste. Table 10 lists the radionuclides picked up and the total activity for each radionuclide for the fiscal year. The dry solid waste was either shipped out as long-lived radioactive waste or held in storage for at least ten (10) half-lives, surveyed, and disposed of as non-radioactive waste. H-3, C14 and S-35 were the most common long-lived radionuclides, with P-32, P-33 and I-125 the most common short-lived radionuclides. Mixed hazard waste is segregated by half-life, radionuclide and concentration. It is then either decayed until it is only a chemical waste or shipped as a mixed waste (mixed waste is not included in Table 10). During FY 03-04 the Radiation Safety Office shipped 6.03 cubic feet of animal waste.

Table 10

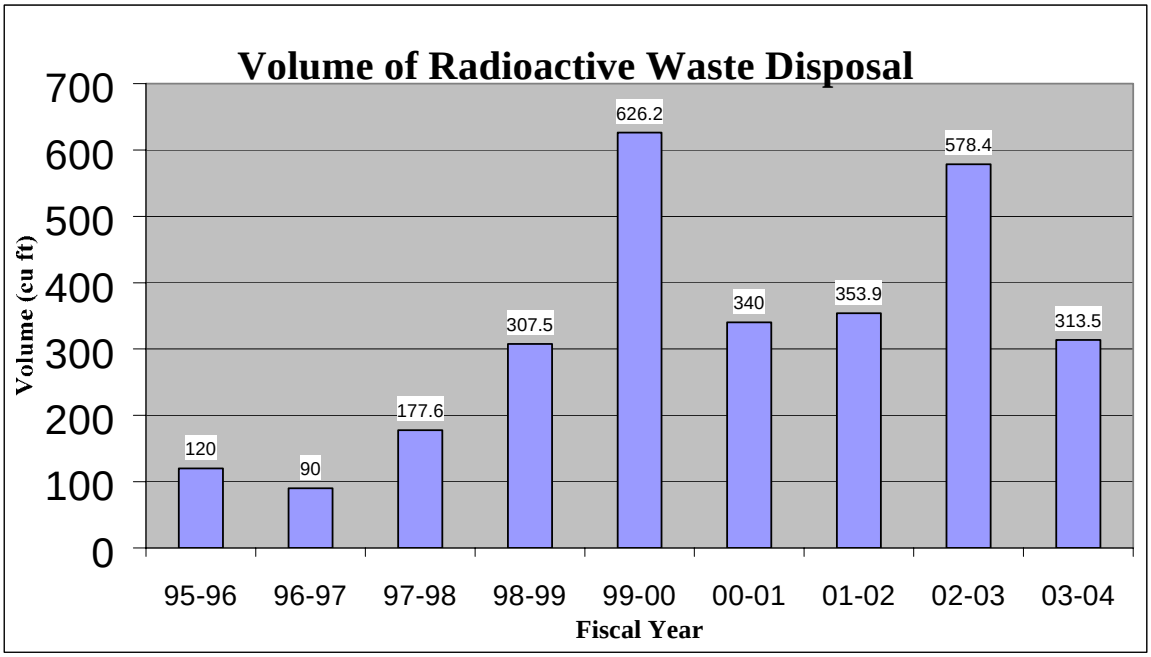
**Total Radioactive Waste Received by Radionuclide**

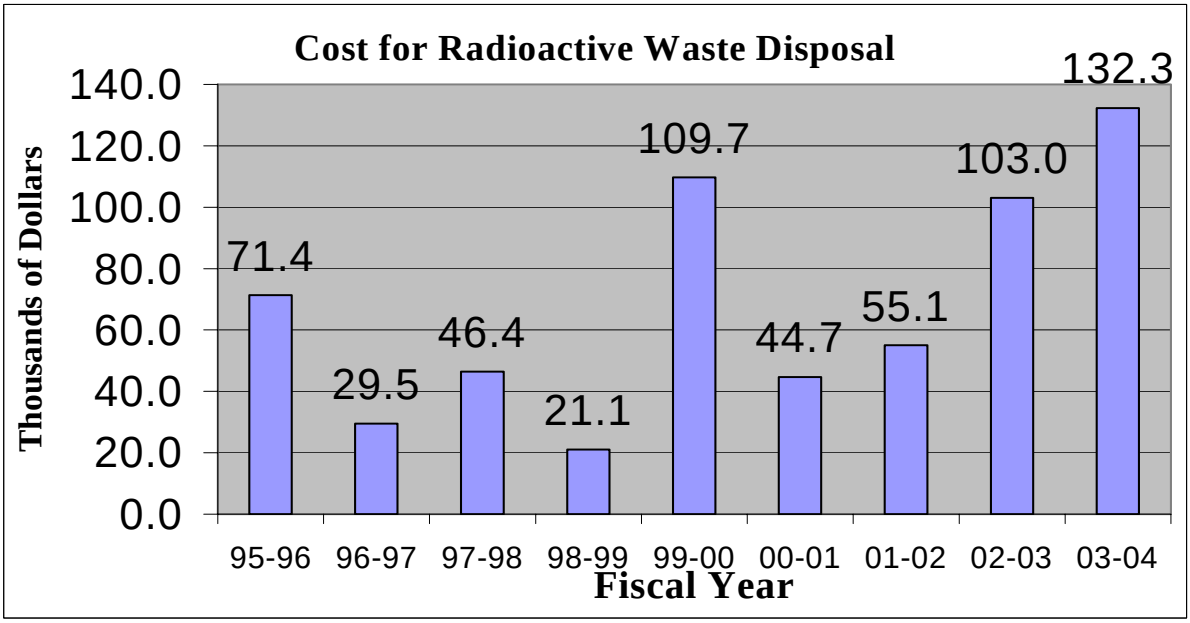
Activity in millicuries

| Isotope | Dry Solid Waste | Aqueous |
|---|---|---|
| Al-26 | 0.001 | 0 |
| C-14 | 6.067 | 6.141 |
| Ca-45 | 0.985 | 0.500 |
| Cr-51 | 1.222 | 1.100 |
| H-3 | 149.851 | 28.476 |
| I-125 | 118.801 | 19.531 |
| I-131 | 2202.400 | 0 |
| Mn-54 | 0.095 | 0 |
| P-32 | 190.757 | 60.849 |
| P-33 | 4.903 | 2.738 |
| Rb-86 | 1.000 | 0 |
| S-35 | 110.187 | 45.122 |
| Zn-65 | 0.800 | 0.380 |
| **Total** | **2787.069** | **164.837** |

The release of liquid aqueous radioactive waste to the municipal sewerage system was eliminated during FY 02-03. These wastes are now shipped for commercial incineration. This eliminates the possibility of non-aqueous wastes from being mistakenly, and unlawfully, released.

The annual Kentucky radioactive waste report was prepared and filed in Frankfort. The following graphs depict the total volume of waste generated and the associated disposal costs for the past ten years. In general, UK has been able to contain waste costs. However, fees are rising; special waste disposals occur and charges are being added such that the overall cost can be expected to increase.


Volume of Radioactive Waste Disposal
Volume (cu ft)
700
600
500
400
300
200
100
0
120
90
177.6
307.5
626.2
340
353.9
578.4
313.5
95-96
96-97
97-98
98-99
99-00
00-01
01-02
02-03
03-04
Fiscal Year


Cost for Radioactive Waste Disposal
Thousands of Dollars
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0.0
71.4
29.5
46.4
21.1
109.7
44.7
55.1
103.0
132.3
95-96
96-97
97-98
98-99
99-00
00-01
01-02
02-03
03-04
Fiscal Year

**Meter Calibrations**

Authorized Users working with radioactive material other than H-3, C-14 or S-35 are required to have a Geiger counter with an end window or pancake type detector in the laboratory. The Radiation Safety Office calibrates these survey instruments annually. The Authorized User must notify the Radiation Safety Office when he/she purchases a new Geiger counter. Two hundred and ten (210) meters were calibrated during FY 03-04.

**Patient Care Support**

The Radiation Safety Office provides radiation safety support for patient's receiving therapeutic radiopharmaceuticals (>33 mCi I-131), Cs-137 implants, Ir-192 implants and seed implants. Upon administration of radiopharmaceuticals or brachytherapy implants, the Radiation Safety Office performs and documents a multi-point radiation survey. This data is used to determine the allowed time hospital staff and visitors are allowed to be adjacent to the patient. The hospital staff and visitors are then instructed on the radiation safety precautions to be followed when in or around the room containing the radioactive patient. Patient care support increased by thirty percent (30 %) in FY 03-04.

Table 11

**Radiation Safety Services to Nuclear Medicine and Radiation Medicine**

| | |
|---|---|
| Brachytherapy Implants | 27 |
| Thyroid treatments | 114 |
| **Total** | **141** |

**Sealed Source Inventory and Leak Test**

The Radiation Safety Office performs all sealed source leak tests. All beta/gamma and neutron sealed sources (greater than 100 microcuries) were tested for leakage at intervals not to exceed six months. All sealed sources (greater than 10 microcuries) designed for the purpose of emitting alpha particles were tested at intervals not to exceed three months. Ni-63 foil sources (greater than 100 microcuries) were tested at intervals not to exceed six months. If a leak test reveals removable contamination greater than 0.005 microcuries, the source is removed from use and decontaminated, repaired or disposed of as radioactive waste. During FY 03-04, the Radiation Safety Office conducted two hundred and seventy-eight (278) leak tests (counting each therapy source individually). No activity greater than 0.005 microcuries was observed

**Lasers**

The Principal Investigator is responsible for safe use of lasers in his/her laboratory and to inform the Radiation Safety Office in the event of an accident. There are currently twenty (20) laser Authorized Users. All Class 3b and higher lasers must be registered with the Radiation Safety Office prior to use. During FY 03-04, sixty-eight (68) laser inspections were completed. Consultations and preregistration guidance were provided. A web based training program is available, allowing users to complete the laser safety training requirements on line. Eighteen (18) laser users have completed the online web based training during FY 03-04.

Bob Wilson, Director
UK Radiation Safety Office
August 04, 2004

# Report of the
# University Fire Marshal

ANNUAL ACTIVITIES
UNIVERSITY FIRE MARSHAL
2003-2004

TRAINING—(FIRE EXTINGUISHERS/FIRE PREVENTION)

>HRS Classes

- July 29th---12 people
- August 12th—6 people
- August 26th---12 people
- September 23rd---15 people
- October 21st---12 people
- November 26th---12 people
- December 10th---2 people
- January 20th---3 people
- February 20th---12 people
- April 13th---3 people
- May 11th---5 people
- June 16th---10 people

>Residence Hall Training:

- August 8th: --39 people: Hall Directors; this consisted of specialized training on the fire prevention polices of the resident halls and the directors' responsibilities.
- August 18th:--Combined Hall Directors and Resident Advisors fire prevention class (200 people). Mrs. Gail Minger was the featured speaker [See Special Projects for detailed information].
- August 18th:-- Specialized fire prevention training for the Resident Advisors (2 Classes). Total of 150 people.
- August 23rd: Kentucky Welcome for freshmen and their parents (Fire Prevention); 125 people; [See New Programs for details].
- Holmes Hall: September 17th; 33 people, included fire prevention
- Boyd Hall: October 6th, 26 people, included fire prevention
- Keeneland Hall: October 6th, 6 people, included fire prevention
- Jewell Hall: October 6th, 60 people, included fire prevention
- Donovan Hall: October 14th, 18 people, fire prevention
- Blazer Hall: October 14th, 36 people, fire prevention
- Spring semester new RA's: February 3rd, 20 people
- Haggin Hall: February 23rd: 37 people

>Residence Halls Janitorial (See New Programs)

- November 4th: 33 people
- November 5th: 25 people
- November 6th: 34 people

>Campus Janitorial (See New Programs)

- Supervisors: December 10th---19 people

>Greek Chapters Training

- Greek Women: 1800 people; fire prevention only: (this is a continuation of this program that began in 2002).
- Sigma Chi & Sigma Phi Epsilon: October 20th; 48 people: fire prevention and fire drill with smoke
- Sigma Alpha Epsilon: October 20th; 52 people; fire prevention
- Chi Omega Sorority: April 5th—65 people;
- Pi Kappa Fraternity: April 5th—23 people: Chapter does not have a house on campus. Discussed fire prevention ideas for off-campus housing,

> Integrated Biomedical Sciences: 35 people
>Heating and Cooling Plants; Medical Center and Campus: September 10th, 2 classes; 30 people
>Aging and Allied Health: September 11th; 23 people
>DLAR: September 25th: 30 people
>Greg Page Apartments occupants: September 25th; 33 people
>Student Affairs: October 6th; parade floats fire prevention; 40 people, (see NEW PROGRAMS)
>Hospital Clinic Labs (Sue Overman's area): lab fire prevention and fire extinguishers)—28 people.
>Agricultural Regulatory Services: April 27th—25 people
>Medical Science Fire Alarm Response Officers (FRO's)---June 16th, 4 people
>USDA (Ag. Sc. N.): June 16th, 8 people

EMERGENCY LIGHTING TESTS

- Bosomworth (HSRB)
- Commonwealth Stadium
- Old Fine Arts building
- Scovell Hall

EVACUATION TRAINING

- Mines and Minerals: evaluated fire drill for employees
- Anderson Engineering Tower: posted evacuation plans for the building and developed departmental emergency procedures.
- College of Social Work: discussed emergency procedures at their May monthly staff meeting,
- Hospital Staff: April 13th; discuss evacuation procedures with emphasis on how to move patients,

SPECIAL PROJECTS

- Bosomworth (HSRB): tested atrium's smoke removal system
- Conducted campus life safety/pre-attack tours of University buildings with the fire department,
- Assisted Tom Priddy in the College of Agricultural in coordination of the "Storm Readiness" program. The objective was to evaluate each University building for safe

areas during storms; designate the safe area with signage, and provide a weather alert radio in each building.

- Exit sign audit for the UK Hospital
- Fans appreciation activities—Commonwealth Stadium
- August 18: Combined training for the Residence Hall Directors and Resident Advisors. Mrs. Gail Minger, mother of Michael Minger who lost his life in a fire at Murray State University, was the featured speaker. She emphasized the importance of following fire prevention procedures that have been developed and strongly emphasized that the student is the most important part of the "fire prevention puzzle". The purpose of having Mrs. Minger was to hopefully have an impact upon HDs and RAs and to emphasize the importance of their role within the residence buildings. The Residence Life's administration was very impressed with Mrs. Minger's presentation and agreed that she had an impact on the students as to their responsibilities.
- Central Fire Alarm System: November 7, 2003: All systems, both FIRE ALARMS AND SECURITY SYSTEMS, have been removed from PPD's Delta System. This has been a three year project. All University Fire Alarm Systems now report onto the Central Fire Alarm System thus complying with the State's reporting requirement.
- Environmental Quality Management Center: a switch was added to the emergency exhaust system to override the fire alarm panel to enable the emergency exhaust to be activated during a fire alarm. This exhaust is needed to ventilate the building during a fire emergency should the firemen request the building to be ventilated before entering.
- Potts' Report: In 1997, the University' fire marshal's office worked with Jim Potts, consultant retained by Auxiliary Services, to evaluate fire protection and compliance with NFPA 101 Life Safety Code requirements and compile a total report. This report was in addition to the State Fire Marshal's inspections and the recently completed sprinkler project for all the residence halls. The deficiencies listed in the report have been corrected.
- Primary Ambulatory Care: tested atrium smoke removal system,
- Distributed requirements per the State Fire Marshal's office to the Greek Chapters in reference to changing out dry chemical suppression systems for kitchen stoves to the wet chemical suppression system. The wet chemical system is now the only suppression system listed for stoves when vegetable oils are used for frying. Old exhaust hoods may need to be changed out to comply with current requirements. Some of the hoods are 30 plus years old.
- Reviewed and conducted acceptance tests on two new kitchen exhaust hood systems and wet chemical systems
- W.T.Young Library: tested atrium smoke control system to ensure atrium fire door enclosure system was operative,
- Flushed campus fire hydrants,

<u>INSPECTIONS</u>

- State Fire Marshal inspection of the entire campus
- Greek Chapters
- Residence Halls—cursory type inspections each semester (SEE NEW PROGRAMS)
- Residence Halls---inspections of all janitorial closets and supply rooms (see NEW PROGRAMS)
- Homecoming parade floats

FIRE INVESTIGATIONS

- Woodford Co. Farm (Pin Oak): July 14th, hay storage shed: completely destroyed; cause undetermined: no injuries. Shed valued at $32, 000 plus 85-1500lb rolls of hay.
- Vehicle fire: Hospital Parking Structure: July 31st: one car destroyed, another car damaged. No injuries
- Boyd Hall: August 26th; 4th floor closet open into an exit stairwell: illegally occupied by housekeeping; had several appliances powered by an extension cord; all appliance removed and locks changed to room (only maintenance manager now has key to room). No injuries
- Gillis Building; September 9th; alarm set off by contractors using torch in mechanical room. No hot work permit. No injuries
- Memorial Coliseum: October 17th, Midnight Madness activities: wiring for fireworks caught fire as a result of fallout from fireworks. No injuries; very minor; did not evacuate; fire department was not called.
- Animal Pathology; room 203; February 16th: laboratory fire; electrical in nature; very small, extinguished with a water bottle; fire alarm nor the sprinkler were activated; no damage
- Haggin Hall, March 3rd; arson—person unknown set a roll of toilet paper on fire in an exterior open stairwell. Alarm was not activated, no damage, no injuries
- Medical Center Heating and Cooling Plant: May 12th; The stairs to the second level of the tower and a small portion of the roof were damaged; no injuries; caused was a piece of slag from a welders torch had lodge between a support beam for the stairs and roof,
- Chemistry Physics: May 13th; report of a natural gas leak/chemical spill; investigation indicated the incident caused by the chemical mercaptan, a chemical that smells similar to natural gas,
- Grehan Journalism Building: May 21st; overheated motor; no injuries or damage,

PROFESSIONAL TRAINING

- July 28-8-01-03: CBMI (Greg)
- October 13th, 14th, 15th: CAAK—Garry and Greg

NEW PROGRAMS

- Residence Halls: mid-semester cursory inspection of each hall. Will include spot checks of a few rooms within each building. This will become an annual inspection activity.
- Kentucky Welcome: This is an existing program sponsored by Residence Life. The purpose is to introduce freshmen and their parents to "College Life" and to advise them of different programs available to them. The agenda is extensive and attendance is voluntary. The UK Fire Marshal's office had requested time for his office to introduce the residence halls fire prevention program to the students and their parents. This was the first year that the office has participated but will now be included each year. The objectives are to introduce the fire prevention program; answer questions the students or their parents may have, and to emphasize that the student is the key participant and is accountable for his/her actions.
- Parade Float Safety: in conjunction with the Student Activities Board, this was first time mandatory meeting on float safety. Efforts have been made in the past to inspect the floats but this was very ineffective. This year, as well as future years, this fire prevention/general safety meeting must be attended by all participants of the parade. In

addition, Jim Blackwell of campus PPD, demonstrated the proper way to use a portable generator. An area will be designated at the Stadium parking lots for all floats to receive a final compliance inspection.

- Residence Halls janitorial areas: these areas have been spot checked in the past. However, this was an organized inspection of all janitorial areas. A fire in Boyd Hall in an unknown and illegally located janitorial area created the need for this program. Fire prevention will become an annual training activity.
- Campus Janitorial Training: first training program as a result of the Boyd Hall incident (see Residence Halls janitorial training). The first session only involved supervisors. The intent is for them to inspect the areas within their buildings. An inspection check sheet was provided. This will become an annual training event.

## KEY INDICATORS

| | |
|---|---|
| Fire extinguishers inspected | 6475 |
| Fire extinguishers serviced | 47 |
| New fire extinguishers purchased | 100 |
| Fire Extinguisher/Fire Prevention Training | 3209 |
| Fire alarms | 362 |
| Actual fires | 18 |
| Working fires (Required UK Fire Marshal Response) | 10 |
| Plan Review (New Constructions/Renovations) | 186 |

## PICTORIAL ACTIVITIES OF THE FIRE MARSHAL'S OFFICE

**Janitorial Life Safety Training: Blocking a stairwell exit door**

New Residence Housing 2-19-04
Evaluation of the tunnel connecting Kirwian/Blanding Complex to the new housing units

Gail Minger talks with Residence Hall Staff.

Residence Hall staff receives valuable training from Ms. Minger.

Residence Hall staff crawl through smoke during Residence Hall Training.

# Report of the
# Committee on Safety and Environmental Health

## EH&S Certificates of Appreciation

*In recognition of outstanding contributions to safety at the University of Kentucky, the Committee on Environmental Health and Safety has awarded the following certificates of appreciation. This list includes the awardees for 2003 and previous years.*

| | | |
|---|---|---|
| **2004** | Debra Sipe | Agriculture Regulatory Services |
| | Pradeep Kachroo | Plant Pathology |
| | Robert Yokel | Pharmacy |
| | Susan Kraner | Pharmacology |
| | Charles Peyton | Auxiliary Services - Housing |
| **2003** | Teri Strickland | College of Pharmacy |
| | Cabot Jahniger | State Fire Marshal's Office |
| | Linus Walton | College of Agriculture |
| | Ben Crutcher | Auxiliary & Campus Services |
| | Jason Pridemore | Student Resident Advisor |
| | David Kaiser | Physical Plant Division |
| | Orlando Chambers | Tobacco Research & Development Center |
| **2002** | Lyle Morgan | Auxiliary Services – Housing |
| | Joe Crouch | Capital Project Management |
| | Homer Walter | Physical Plant Division |
| | Jerry Tackett | Robotics and Manufacturing Systems |
| | Michael Jay | College of Pharmacy |
| | Pamela Jacobs | Clinical Laboratories |
| | Don Stone | Parking and Transportation |
| | Debra Ross | Auxiliary Services – Apartment Housing |
| | Kathy Rose | Campus Recreation |
| | Maelor Davies | Tobacco Health Research Institute |
| | Eva Kaplan | Animal Sciences |
| **2001** | Gene Baber | Physics & Astronomy |
| | IACUC Committee | Mike Bardo, Chair |
| | John Anthony | Chemistry |
| | Mary Vickers | Livestock Disease and Diagnostic Center |
| | Jana Angel | Rehabilitation Services |
| | David Waldridge | Medical Center Physical Plant Division |
| | Gary Ginn | Anatomy & Neurobiology |
| | John Gurley | Cardiology |
| | Jeanne Bouvier | Nursing |
| | Ali Meigooni | Radiation Medicine |
| | Don Hill | Physical Plant Division |
| | Richard Riedl | Capital Project Management |

| | | |
|---|---|---|
| **2000** | Bob Brashear | Ag Management Operations |
| | Ted Jenkins | Chemistry |
| | Steve Evans | Residence Life |
| | Tony Ralph | Residence Life |
| | Marcia Shrout | Residence Life |
| | Stephen Stauffer | Residence Life |
| | Melanie Tyner-Wilson | Residence Life |
| | Loretta Hill | Custodial Services |
| | James Bryan | Surplus Property |
| | Brian Butler | Pharmacy |
| | Norman Goodman | Pathology |
| | Joseph Mallek | Medical Center Physical Plant Division |
| | Janet Rodgers | Lab Animal Resources |
| | Oney Vanlandingham | Center for Applied Energy Resources |
| **1999** | Donald Thornton | Parking and Transportation |
| **1998** | Mary Ferlan | Wellness |
| | John Summersett | Physical Plant Division |
| | Ralph Christensen | Allied Health, Clinical Sciences |
| | Creighton Trahan | Office of the University Veterinarian |
| | Kenneth Dickey | Laboratory Animal Resources |
| | Larry Iten | Laboratory Animal Resources |
| | Susan Overman | Serology and Virology |
| | Tomi Ross | Hospital Safety Office |
| | Carl Nathe | Public Relations |
| **1996** | Herbert Strobel | Animal Sciences |
| | Thomas Vanaman | Biochemistry |
| | Robert Toreki | Chemistry |
| | Claude Cornelison | Auxiliary Services |
| | Greg Shiddell | Auxiliary Services |
| | Joseph Mallek | Medical Center Physical Plant Division |
| | Relon Hampton | Whitesburg Community College |
| | Jerry Hensley | Whitesburg Community College |
| | Mike Polashock | Paducah Community College |
| | Rae Ann Egner | Paducah Community College |
| | Maintenance Department | Paducah Community College |
| | David Campbell | Henderson Community College |
| | Judith Chabot | Ashland Community College |

**Minutes of the**
**Environmental Health and Safety Committee**
**FY 2003-04**

**Environmental Health & Safety Committee**
**Minutes of September 24, 2003**

**Members Present:**

Mark Meier
Henry Huff
Wayne Ritchie
Harry Enoch
Ralph Christensen
Herbert Strobel
Nicholas McLetchie
Larry Piercy
Daniel Flournoy
Garry Beach
John Lowry

**Guests:**

Bob Wilson
Woody Bottom
David Hibbard

Mark Meier welcomed new members. He also recognized the subcommittee chairs, who also sit on the EH&S Committee: Caroline Gill, Chemical Safety Committee; Ralph Christensen, Radiation Safety Committee; Tomi Ross, General Safety Committee; David Hoke, General Safety Committee; Thomas Chambers, Biosafety Committee; and Louis Hersh, Biosafety Committee. Meeting dates for this school year were announced and approved by members. Meetings will be held from 1:00 p.m. to 3:00 p.m. on:

January 28, 2004
March 24, 2004

Minutes of the March 19, 2003 meeting were approved with no changes.

- **New Business**

**Annual Report**

Harry Enoch presented the *State of the Environment*, the annual report of the EH&S Division and of the EH&S Committee. In conjunction with the presentation, the individual departments and their functions within the Environmental Health & Safety division were discussed. The committee approved the report for submittal to Ken Clevidence, Associate Vice President for Campus Services. The report will also be put on the EH&S web site (http://ehs.uky.edu/welcome.html).

- **Old Business**

**Lab Safety Compliance/Enforcement Initiatives**

The committee has established lab safety compliance and enforcement as a priority work item for the year. EH&S will look at accountability measures at benchmark institutions and will work to develop a draft plan.

The meeting adjourned at approximately 2:40 p.m.

# Environmental Health & Safety Committee
# Minutes of March 24, 2004

**Members Present:**

Mark Meier
Larry Piercy
Harry Enoch
Wayne Ritchie
David Hoke
Ed McClure
Justin McLetchie
Tom Chambers
Herbert Strobel
Janet Williams
John Lowry
Ralph Christensen
Thomas Kluemper
Justin Rasner
Ada Sue Selwitz

**Guests:**

Lee Poore
Marcia Finucane
Woody Bottom
Ken Clevidence
Bob Cadle
Ann Harper
Chris Thompson
Ben Crutcher
James Bartos
Jan Hamon
David Hibbard
Bob Wilson
Angie Renick
Eli Miller
Bob Kiser
David Smith
Brenda Stamper
Frank Sikora

Mark Meier welcomed the members and visitors.

- **Annual Safety Awards**

Marcia Finucane, Harry Enoch, and Ken Clevidence presented the annual safety awards to the following individuals:

Debra Sipe
Pradeep Kachroo
Robert Yokel
Susan Kraner
Charles Peyton

The minutes of September 24, 2003 were approved as written.

- **Old Business**

**Lab Safety Compliance/Enforcement Initiatives**
The committee approved a list of lab safety compliance recommendations with some minor revisions to forward to Executive Vice President for Research, Wendy Baldwin regarding establishment of building safety committees.

- **New Business**

There was no new business.

- **Committee Reports**

Chemical Safety Committee - presented by Lee Poore on behalf of Caroline Gil, committee chair.

General Safety Committee - presented by David Hoke, committee chair.

Institutional Biosafety Committee - presented by Tom Chambers, committee co-chair.

Radiation Safety Committee - presented by Ralph Christensen, committee chair.

The meeting adjourned at 3:25 p.m.

**Minutes of the**
**Chemical Safety Committee**
**FY 2003-04**

**Chemical Safety Committee**
**Minutes of October 30, 2003**

| **Present** | **Absent** | **Guest** |
|---|---|---|
| Caroline Gil (Chair) | David Atwood | Angie Renick |
| Meg Steinman for Doris Baker | Peter Crooks | |
| Todd Porter | Peter Huettl | |
| Thomas Vanaman | John Lowry (Ex-Officio) | |
| Harold Burton | | |
| Barbara Knutson | | |
| David Hibbard (Ex-Officio) | | |
| Lee Poore (Ex-Officio) | | |

**Approval of minutes from March 25, 2003-** A motion was made by Tom Vanaman to approve the minutes. Todd Porter seconded and all approved. Motion passed

1. **Chemical Hygiene Plan/Lab Safety Manual Annual Review**
   Review the Model CHP online at http://ehs.uky.edu/ohs/chp/welcome.html
   Online training review http://ehs.uky.edu/classes/chemhyg/train.html
   Three specific changes that were proposed:
   - Designating areas for eating and drinking-Proposal was accepted with the additions of biohazards and radioactive materials. (Attatched)
   - Vacuum pumps and house vacuum lines- add instructions for vapor traps after the pump and evaluating appropriate types of pre-traps. Proposed change will be amended and resubmitted. (Attached to minutes, please review)
   - Approved equipment-add information about flammable safe equipment and how this designation differs from explosion proof equipment. Incorporate info into training courses. (Attached to minutes, please review)

2. **Laboratory Safety Inspection Summary Report (Draft)**
   Data was presented to show lab citations by building for FY 02-03.
   Dr. Vanaman discussed to need to impart information to administrators about serious facility or administrative issues that result in unsafe conditions in the lab. These issues might be flammable storage cabinets or bulk storage areas that may not be controlled by individual researchers. OHS is adding notations for such issues.

3. **Training Initiative-** Training initiative continues with the College of Agriculture. Last year the specific areas targeted were IBS, Chemistry graduate students and TAs, Physics department, Toxicology graduate students, Plant Pathology, and Agronomy with some Horticulture mixed in.

4. **Adjourned-** Meeting adjourned at 12:15 PM.

## Designated areas for eating

Current

**Food, Drink, Cosmetics** Eating, drinking and the application of cosmetics (including lip balm) are forbidden in areas where hazardous chemicals are used and must be done only in well-defined designated non-chemical areas. Do not store food in the same refrigerator with chemicals, biohazards or radioactive materials, refrigerators, microwaves and ice machines must have labels that denote their use, i.e. "Not for food or drink."

Proposed change:

**Food, Drink, Cosmetics** Eating, drinking and the application of cosmetics (including lip balm) are forbidden in areas where hazardous chemicals, biohazards and radioactive materials are used. These activities must be in designated, well defined non-chemical areas that are separated from the lab area by a physical barrier such as partitions or filing cabinets. A line on the floor will not be considered adequate separation. Do not store consumables in the same refrigerator with chemicals, biohazards or radioactive material.

Reasoning:

- This will better clarify areas acceptable for food storage and consumption.
- This is what OHS has been recommending and it resembles what the KY regulators for radioactive material. In that case, regulators have interpreted separation from "use" and "non-use" space as having partitions and a closed door.
- Will eliminate the need to label all appliances in the labs.

## Approved equipment

Current

**Equipment** Use proper equipment that is in good condition, For example, never use chipped or cracked glassware. Shield pressurized or vacuum apparatus and safeguard against bumping or overheating.

Proposed:

**Equipment** Use proper equipment that is in good condition. For example, never use chipped or cracked glassware. Use flammables with only approved equipment such as blenders. Flammables that require cooler temperatures for storage should be put in specific refrigerators. There are two types:

- Flammable safe refrigerators and freezers have no exposed ignition sources inside the cabinet, such as lights or switches that could ignite vapors. These are less expensive than the explosion-proof type and would be adequate for most lab applications.
- An explosion-proof refrigerator or freezer may be required in rare circumstances for hazardous locations. Explosion-proof or spark-proof units have no interior or exterior ignition sources and are considerably more expensive.

Contact OH&S or the Fire Marshal for more information.

Reasoning:

We have found many labs with flammables stored in non-industrial refrigerators not intended for such use. This poses a significant risk in the laboratory.

**Two types** of flammable storage units are commercially available:

- Flammable storage refrigerators and freezers have no exposed ignition sources inside the cabinet, such as lights or switches that could ignite vapors.
- An explosion-proof refrigerator or freezer may be required in rare circumstances in hazardous locations. Explosion-proof or spark-proof units have no interior or exterior ignition sources.

## Vacuum pumps

Current:

There is no written information about vacuum procedures in the CHP

Proposal:

**Vacuum Pumps and Vacuum Lines** Vacuum lines leading from an experimental procedure shall always be equipped with traps to prevent contaminating of vacuum equipment or house lines. Traps shall be evaluated for appropriateness and special safety precautions instituted if needed.

- √ **Particulates:** determine size range being generated and choose capable filtration
- √ **Aqueous non-volatile:** in most cases a filter flask at room temperature will prevent liquids from contaminating vacuum source
- √ **Solvents or other volatile liquids:** a cold trap that is large enough and cold enough to condense vapors plus a filter flask large enough to hold all possible liquids that could be aspirated. Avoid using liquid nitrogen if at all possible. Liquid Nitrogen should only be used in sealed or evacuated equipment and with extreme caution. Liquid oxygen can form if proper procedures are not followed. For most applications a slurry of dry ice and isopropanol or ethanol can be used.
- √ **Corrosive, highly reactive or toxic gases:** a sorbent canister or scrubber shall be used that can trap the contaminant.

Reasoning:

Biosafety Officer has found labs that are not following this practice.

**Chemical Safety Committee**
**Minutes of February 24, 2004**

| **Present** | | **Guests** |
|---|---|---|
| Caroline Gil (Chair) | Peter Crooks | Angie Renick |
| David Atwood | Peter Huettl | Harry Enoch |
| Barbara Knutson | David Hibbard (Ex-Officio) | Jan Hamon |
| Todd Porter | Woody Bottom (Ex-Officio) | Debie Sipe |
| Thomas Vanaman | Lee Poore (Ex-Officio) | |
| Harold Burton | | |

**Absent**
Meg Steinman for Doris Baker

Caroline Gil called the meeting to order at 12:00.

1. **Approval of minutes from October 30, 2003-** A motion was made by Tom Vanaman to approve the minutes. Todd Porter seconded and all approved. Motion passed.

2. **Chemical Hygiene Plan/Lab Safety Manual Annual Review**
   No additional changes were made to the CHP and Dr. Porter motioned that the draft 2004 version posted at http://ehs.uky.edu/ohs/chp/welcome.html be approved. Dr. Vanaman seconded and all approved.
   The three specific changes made this year were the addition of:
   - Designating areas for eating and drinking
   - Vacuum pumps and house vacuum lines
   - Approved equipment

3. **Laboratory Safety Inspection Summary Report (Draft)**
   Harry Enoch, Director of Environmental Health and Safety , discussed the inspections activity and the letter that was sent out resulting from the FY 2002-2003 data.
   Inspection data was part if regulatory campus safety initiative. EHS proposed a process to better inform administrators and researchers of the financial risk of non-compliance. EPA has been onsite in the past 3 years and found the same instances of violations from previous years. The concern is that this action will lead to larger fines in the future. In all cases the non-compliant issues were resolved prior to the inspector leaving the lab but have been found out of compliance again upon re-inspection. EHS realizes that some of these issues may seem insignificant to lab personnel but is taken very seriously by regulators.

   Dr. Enoch indicated that he would be meeting with Wendy Baldwin on March 4 to discuss how inspection will proceed. He will again outline his plan for a year of information and training for laboratories. There still needs to be some consequences for non-compliance. There was a lengthy discussion and many suggestions made by the committee members to improve the process. In summary, Harry Enoch stated that for the next year EHS will be going out to all covered areas at the university and working hard to show people why

correcting these violations permanently is important. OHS will also be updating information on the web site to provide PIs with more information.

4. **New Business-**

   Many member terms will be up this year. Lee Poore asked the committee for names to propose for the committee. Those members whose terms are ending are: Atwood, Gil, Baker, Burton, Huettl, Porter, Crooks.

   Harry introduced Woody Bottom, Director of Environmental Management. This position was created as a reorganization of the Environmental Health and Safety Division. Environmental Protection and Hazardous Materials Management were combined to create this new department. This is more in line with other departments that follow regulatory agency structures.

   Dr. Porter suggested the possibility that training record could be accessed online. This will be attempted and information on progress will be reported back to the committee.

5. **Adjourned-** Motion to adjourn by Dr. Porter, seconded by Dr. Vanaman and all approved. Meeting adjourned at 1:15 PM.

**Chemical Safety Committee**
**Minutes of May 2, 2004**

| **Present** | | **Guests** |
|---|---|---|
| Caroline Gil (Chair) | Lee Poore (Ex-Officio) | Marcia Finucane |
| Peter Huettl | Harry Enoch | Kathy Stanford |
| Todd Porter | David Hibbard (Ex-Officio) | Greg Williamson |
| Harold Burton | Woody Bottom (Ex-Officio) | |
| Thomas Vanaman | | |

**Absent**

| | | |
|---|---|---|
| Peter Crooks | Barbara Knutson | David Atwood |
| Meg Steinman for Doris Baker | | |

Caroline Gil called the meeting to order at 12:05.

1. **Approval of minutes from March 1, 2004-** Todd Porter recommended taking out all the discussion from the minutes. A motion was made by Tom Vanaman to approve the minutes with the modifications. Todd Porter seconded and all approved. The motion was passed.

2. **Security/Lab Access-**Harry Enoch discussed this topic. Dr. Timoney of Veterinary Science had questions as to the viability of the existing policy. The current policy is that all labs having radioactive material and hazardous chemicals should be locked when unoccupied. The surveyor determines whether the lab has "controlled access" or "uncontrolled access." If the lab is unlocked and no one from the lab returns for the entirety of the inspection (about 10-15 minutes), the lab is said to have "uncontrolled access." The committee felt this policy and its application was reasonable. Dr. Vanaman suggested that the chemical safety committee send a recommendation through the EHS committee to UK administration about the need for a security assessment and commitment of funds to provide more secure facilities.

3. **Toxic gases and compressed gas ventilation cabinets-**David Hibbard**-** Handouts were provided that contained a sample picture of a gas cabinet and also included the NFPA requirements for safe use on toxic compressed gas cylinders. There was considerable discussion about approaches to control the hazards of toxic gases. Harry Enoch indicated the OHS would be developing and inventory of compressed gases on campus. The conclusions were to develop a policy that included list of applicable gases, formulate a pre-approval system, and develop a training module for the use of toxic compressed gases.

**Minutes of the**
**General Safety Committee**
**FY 2003-04**

**General Safety Committee**
**Minutes of September 30, 2003**

| **Members Present:** | **Members Absent:** |
|---|---|
| David Hoke | Vince Austin |
| Angela Renick | Gerald Thomas |
| David Hibbard | Ben Crutcher |
| Mary Maley | Daret St. Clair |
| James Wims | David Acker |
| Kwaku Addo | Jack Applegate |
| Garry Beach | Ken Clevidence |
| Gus Miller | Travis Manley |
| Jeremy King | Don Thornton |
| Woody Bottom | Justin Rasner |
| Robert Cadle | |

**I.** Welcome of New Members/Introductions

**II.** The minutes of the March 13, 2003, meeting were approved.

**III.** Committee Replacement for Janet Hurley

David Hibbard informed the committee that Janet Hurley has retired from UK. Motion made and seconded to have David Hoke write a letter to the President requesting a replacement for Janet Hurley and to add two additional members representing the Staff and Faculty Senates.

**IV.** By-laws Review

Discussion with no proposed changes

**V.** Website

David Hibbard provided overview of committee's existing website. Discussion of advantages of online voting was led by David Hoke and Jeremy King. Motion made and seconded to pursue online voting. Target date for implementation is mid OCT03. Jeremy King designated as PPR.

**VI.** Old Business

Review of Action Log

a. Curb cuts at Limestone and Waller
   David Hibbard stated that issue had been discussed with Ken Clevidence on 18SEP03. Outcome of discussion was that PPD would get cut installed on NE corner

of intersection. Northwest corner ADA issue still being pursued. David Hibbard to further consult with Patty Bender and Jake Karnes for interpretation.

b. Stop sign at intersection of Complex Drive and University Drive

Issue to be revisited at next meeting. Impact of Johnson Center, PKS #1 renovation, and new dormitory construction discussed.

c. Clinic/Leader crosswalk

Item closed

d. Stop sign on Service Road

David Hoke to write a letter to Ken Clevidence requesting that a stop sign be reinstalled at this location.

e. Absence of sidewalk adjacent to VA Drive behind Animal Path. Bldg.

At a previous meeting, Jack Applegate indicated that this request was listed on a project list, but had not been prioritized or funded. David Hoke to write letter to Ken Clevidence requesting project funding.

f. Renaming of Streets and Changing of University Street Signs

Garry Beach and David Hibbard met with Ben Carr, Ken Clevidence and Henry Huff on 03APR03. Issue resolved such that streets renamed will bear two signs.

g. Sidewalk signage on west side of Limestone

Item closed

**VII.** 15-passenger Van Training

Bob Cadle updated the committee on training conducted. To date, 9 different departments trained for a total of 172 personnel. Initiative to address no new purchases of vans, driver certification, mandatory training of van drivers, warning tags, and removal of van rear seats has been presented to the EH&S Committee. Recommendations are being resubmitted to administration for action.

**VIII.** New Business

David Hoke reemphasized the need to solicit other unit safety committee members to attend General Safety Committee meetings. David Hibbard will add unit safety committee contacts to the General Safety Committee Meeting distribution list.

Bart Miller, UK Disability/Workers' Comp, will be invited to next meeting to present data on injuries and associated costs.  Return-to-Work program will also be discussed.

Next meeting to be scheduled in November.

**General Safety Committee**
**Minutes of November 19, 2003**

| **Members Present:** | **Members Absent:** |
|---|---|
| David Hoke | Vince Austin |
| Travis Manley | Gus Miller |
| Robert Cadle | Ben Crutcher |
| Mary Maley | Daret St. Clair |
| Gerald Thomas | David Acker |
| Kwaku Addo | Jack Applegate |
| Garry Beach | Ken Clevidence |
| Bart Miller – Guest | James Wims |
| Denny Haynes - Guest | Don Thornton |
| Jeremy King - Guest | Justin Rasner |
| David Hibbard - Guest | |
| Lee Poore – Guest | |

**I.** The minutes of the September 30, 2003, meeting were approved.

**II.** Fire Marshal's Report – Garry Beach

Gail Minger addressed the residence hall directors and resident advisors during the fall fire prevention residence halls training. Michael Minger, the son of Gail, is the student who lost his life in the Murray State University residence hall fire three years ago. Ms. Minger spoke of the importance of fire prevention and the dangers of false alarms. Her presentation seemed to have a major impact on the students.

A fire recently occurred in an unapproved janitorial closet in Boyd Hall. The room opened directly onto an exit stairwell and had improper electrical cords which caused the fire. UK Fire Marshal's Office has since inspected all residence halls janitorial rooms, and trained all janitorial staff on fire prevention.

Fire Marshal's Office is now conducting semester cursory fire prevention inspections of all residence halls. This is a resurrection of a prior inspection program that had been deleted due to limited staff.

Woodford County Farm fire: this was a major fire involving a hay storage building and at least 1500 rolls of hay. Cause has not been officially determined.

Homecoming Parade Float inspections: this is a new program with emphasis on fire prevention and general safety for the persons riding on the floats.

**III.** Old Business

Review of Action Log

h. Curb cuts at Limestone and Waller

David Hibbard stated that issue had been discussed with Ken Clevidence on 18SEP03. Outcome of discussion was that PPD would get cut installed on NE corner of intersection. Northwest corner ADA issue was reviewed onsite with Patty Bender. Curb not ADA compliant. David Hibbard sent email to Ken Clevidence on 03NOV03 requesting correction of cut.

*Item closed*

i. Stop sign at intersection of Complex Drive and University Drive

Impact of Johnson Center, PKS #1 renovation, and new dormitory construction discussed. Travis Manley stated that pedestrian:vehicle accidents had been minimal in this area. Based on this and on previous KTC evaluation, no further action planned.

*Item closed*

j. Stop sign on Service Road

On 09OCT03, David Hoke forwarded memo to Ken Clevidence requesting that a stop sign be reinstalled at this location. Return correspondence from Ken Clevidence on 16OCT03 stating area will be evaluated with UKPD.

*Item closed*

k. Absence of sidewalk adjacent to VA Drive behind Animal Path. Bldg.

On 09OCT03, David Hoke forwarded memo to Ken Clevidence requesting expediting PPD project to install sidewalks. Return correspondence from Ken Clevidence on 16OCT03 stating project will be moved up on PPD Project Priority List.

*Item closed*

**IV.** Electronic Voting

Results of online voting discussed. Eight responses received on memo to President requesting additional membership. David Hoke to forward memo to President.

**V.** Return-to-Work Program – Bart Miller

Bart Miller, UK Disability/Workers' Comp presented overview and status of return-to-work program.

**VI.** New Business

Travis Manley raised the issue of the absence of designated crosswalks (lined lanes) at Washington/Limestone and Washington/KY Clinic Drive. Curb cuts are present at both of these locations. It was speculated that crosswalks had been in these areas previously but had faded. David Hoke to send memo to Ken Clevidence requesting repainting of the crosswalks.

Travis Manley announced that UKPD will propose to the city that the speed limit on Rose Street section between Limestone and Hospital Drive be reduced from 35 MPH to 25 MPH.

Crosswalks proposed to be installed on:

- → Rose Street where walkway from WT Young Library intersects. This is where pedestrians cross in going to Chemistry/Physics Building. UKPD will make request to LFUCG.
- → Cooper where pedestrians travel from Boone Tennis Center to LCC
- → Washington at Limestone: UKPD will request UK PPD repaint crosswalk

Travis Manley stated that UKPD has stepped enforcement of vehicle moving violations. In the past 45 days, over 1500 citations have been issued.

In the next two weeks, UKPD will begin an initiative to make pedestrians more aware of jaywalking hazards and potential for citation issuance. After these two weeks, UKPD will commence with issuing citations for jaywalking violations. This is in response to increase of pedestrian/vehicle accidents with majority have pedestrian at fault as the cause. A draft of the handout UKPD will issue to pedestrians is attached.

**VII.** Next Meeting Date

Next meeting will take place in March 2004. Date and time to be announced.

**VIII.** Adjourn

**Minutes of the**
**Institutional Biosafety Committee**
**FY 2003-04**

# Institutional Biosafety Committee
# Minutes of July 16, 2003

**Members Present**
Arthur Hunt
Glenn Telling
Thomas Chambers
Robert Jacob
Marcia Finucane
Richard Wheaton
Chuck Staben
Jack Hiatt

**Members Absent**
Peter Nagy
Kenneth Dickey
Judith Lesnaw
Kelly Breeding
Anthony Sinai

**COMMITTEE BUSINESS**

Tom Chambers called meeting to order at 12:07pm**.**

OLD BUSINESS

**Approval of Minutes** June 11, 2003 minutes approved with no modifications. Richard Wheaton moved and Chuck Staben seconded that the minutes be approved as written. The motion carried unanimously.

**PROTOCOL REVIEW**

**James Geddes** - Calpain Inhibition Strategies for Spinal Cord Injury B03-271
Comments: Discussion

Action: Glenn Telling moved and Chuck Staben seconded that the committee grant full approval to this protocol. The motion carried unanimously.

**Boachun Li** – Resistance of Nicotiana Species to Tobacco Blue Mold and Black Shank –B03-257
Comments:
The following changes are required:

1. 0.5% NaOCl in the spill during transportation protocol
2. Use of disposable coveralls or lab coats, hair and shoe coverings, and gloves, as well
3. N95 respirators during aerosol inoculation (to prevent irritation or sensitization of the respiratory tract)
4. Testing of the growth chamber to ensure no dissemination of infectious materials into the environment BEFORE aerosol inoculations are started and periodic checks on this system
5. Containment equipment to include biological safety cabinet and growth chamber (biosafety chamber, clean room)
6. Certification of BSC to 7/2004

**Boachun Li –** Effect of R genes on Tobacco Responses to the Major Tobacco Diseases Blue Mold and Black Shank - B03-259
Comments:
The following changes are required:

1. 0.5% NaOCl in the spill during transportation protocol
2. Containment equipment to include biological safety cabinet and growth chamber (biosafety chamber, clean room)
3. Certification of BSC to 7/2004

**Boachun Li** – Identification of Nicotiana Species Resistant to Blue Mold Via Root Inoculation - B03-260

Comments:
The following changes are required:

1. 0.5% NaOCl in the spill during transportation protocol
2. Containment equipment to include biological safety cabinet and growth chamber (biosafety chamber, clean room)
3. Certification of BSC to 7/2004

**Action:** Chuck Staben moved and Richard Wheaton seconded, that the committee grant **provisional approval** pending receipt of these changes. The motion carried unanimously.

**PROTOCOLS ISSUED REGISTRATION NUMBERS**

These protocols do not require review by IBC and are registered with the BSO. Marcia Finucane briefly summarized these projects and the safety implications in them.

**Dr. Young** is administering recombinant toxin from a pharmaceutical company, to patients. The safety/spill procedures have been modified to use a chemical agent that will inactivate these toxins specifically.

**BO3-265** - **Byron Young** – A Multicenter Phase II Study of TP-38 in Those Patients with Glioblastoma Multiforme Who Have Recurred or Progressed After Previous Resection and radiation Therapy and Are Scheduled for Gross Total Resection

**BO3-270** - **Byron Young** - A Phase III Multicenter Study of Intratumoral/Interstitial Therapy with TransMID™ Compared to Best Standard of Care in Patients with Progressive and/or Recurrent, Non-Resectable Glioblastoma Multiforn

The following protocol falls within the NIH Guidelines, Section IIIE2a, BL1-P, disarmed Agrobacterium.

**B03-258 Boachun Li**– Responses of Nicotiana Species to *Agrobacterium tumefaciens* Infection

**PROTOCOLS GRANTED APPROVAL**

**B03-264 - Ambati, Jayakrishna** - Adeno-associated virus gene therapy and stem cell transplantation in a novel mouse model of age-related macular degeneration – Provisionally approved at the June 11, 2003 IBC meeting. The revisions were made per IBC request and checked by the IBC chair and BSO.

**New Business**

**NEW ibc REGISTRATION FORM**

Comments from the members were discussed and suggestions taken down by the BSO. These will be incorporated into the new form and made available electronically as a Word document from the EH&S website.

The meeting was adjourned at 1:15pm.

# Institutional Biosafety Committee
# Minutes of August 16, 2003

**Members Present**
Arthur Hunt
Glenn Telling
Thomas Chambers
Robert Jacob
Marcia Finucane
Jack Hiatt
Kenneth Dickey
Judith Lesnaw
Anthony Sinai

**Members Absent**
Peter Nagy
Kelly Breeding
Richard Wheaton
Chuck Staben

**COMMITTEE BUSINESS**

The meeting was called to order at 12:10pm**.** Judith Lesnaw introduced the new Co-Chair, Louis Hersh.

OLD BUSINESS

**Approval of Minutes** July 16, 2003 minutes approved with no modifications. Anthony Sinai moved and Jack Hiatt seconded that the minutes be approved as written. The motion carried unanimously.

**PROTOCOL REVIEW**

**Nancy Webb** – Group V sPLA2 and Atherosclerosis Macrophage-derived GX secretory phospholipase AA2 and atherosclerosis

Comments: After a long discussion the following clarifications are required:

1. Submit copies of training documents for the UK laboratory safety and blood borne pathogens courses for laboratory staff
2. Specify no eating or drinking in laboratory, not just work areas; the write up areas of the new laboratory space is considered part of the laboratory and cannot have food or drink in them; especially since staff must walk through the write up areas to get to the common equipment rooms and the autoclave rooms
3. Change “10% (bleach) of volume” to final concentration of 0.5% NaOCl
4. Retroviral use needs explanation of safe handling instructions
5. SOP on centrifuge use, especially how to handle centrifuge malfunctions or accidents.
6. Adenovirus and retroviruses need to be defined as defective not deficient
7. Fill out animal use page
8. Explanation of how the adenovirus-infected cells are tested/guaranteed to be free of infectious agents so that further manipulations can be conducted at BSL1 and a more complete discussion of what those manipulations will be
9. Discussion of how the retroviral bio-waste will be handled if different from the BSL2 procedures

Action: Judith Lesnaw proposed a sub-committee perform a site visit (Marcia Finucane, Robert Jacob and Glenn Telling) of proposed laboratory space. **Protocol returned**.

**Reto Asmis** – Role of Gluthathione Reductase and Glutaredoxin in Oxidative Stress-Induced Macrophage Dysfunction and Cell Death
Comments:

1. Clarify need for autoclave use : specify that autoclaving WILL be done, not that it is not necessary; and what the specific conditions are (temperature, time, psi, validation procedure)

2. Change room to MA27 on page 11 #3. Note that the cold room is MA 21
3. Site visit by sub-committee of the IBC to proposed laboratory facilities

Action: Robert Jacob moved and Arthur Hunt seconded that a site visit be performed and that **provisional approval be** granted upon receipt of changes. The vote was unanimous.

**Rolf Craven** – Adenoviral delivery of the Hpr6.6 protein
Comments:

1. Letter from Dr. Susan Kraner authorizing work in adenovirus core facility must be attached and she must be listed as co-PI if she is doing any of the adenovirus construction
2. List workers and training, including any workers in Dr. Kraner's lab who will work on Dr. Craven's project
3. Change 1:10 dilution to 0.5% NaOCl
4. Describe **lab specific** safety and spill procedures

Action: **Protocol returned** to investigator for revisions.

**Oliver Oakley** – Re-activation of Murine cytomegalovirus in Bone marrow transplantation and its impact on pneumonitis
Comments:

1. Revise CHS to Clinical Health Sciences
2. Change "no" to "yes" for potential for aerosols(injections pose potential for aerosols)
3. Change DLAR room from CB26 to CB27
4. Explain autoclaving procedures
5. Define infectious dose for mice
6. Submit rDNA form
7. Attach the SOP for disinfection of the instrument after processing unfixed cells, from the flow cytometry facility
8. Address how the pfu are determined for the inoculation of the mice and by whom

Action: Tom Chambers motioned and Glenn Telling seconded **provisional approval** upon comments being amended. Unanimously agreed.

The committee was reminded that the next review meeting will be September 10, 2003 in Coombs 308 and that the training and dinner will be September 17, 2003 at 5pm at the Faculty Club.

The meeting ended at 1:30pm.

# Institutional Biosafety Committee
## Minutes of September 10, 2003

**Members Present**
Arthur Hunt
Glenn Telling
Thomas Chambers
Eric Smart
Lou Hersh
Brian Rymond
Marcia Finucane
Jack Hiatt
Kenneth Dickey
Anthony Sinai
Chuck Staben
Richard Wheaton
Kelly Breeding
Peter Nagy

**Members Absent**
Nader Hanna
Robert Jacob

**COMMITTEE BUSINESS**

The meeting was called to order at 12:10pm**.** Thomas Chambers began introduction of all members present. New members include Lou Hersh co-chair, Brian Rymond, Eric Smart, Nader Hanna.

OLD BUSINESS

**Approval of Minutes** August 13, 2003 minutes approved with no modifications. Lou Hersh moved and Richard Wheaton seconded that the minutes be approved as written. The motion carried unanimously.

**PROTOCOL REVIEW**

**Rina Platner** – Characterization the role of Abelson kinases in growth factor signaling **B03-287**
Comments:

1. Clarify mouse and human cells in BSC are fixed with formaldehyde? Amounts of volatile chemical in BSC?
2. Lab audit needs to be performed.

Action: Chuck Staben moved for and Lou Hersh seconded **provisional approval** upon completion and clarification of comments. The vote was unanimous.

**Charles Lutz** – Natural killer cells in health, aging, cancer and infection **B03-274**
Comments: After discussion the following clarifications are needed:

1. Epstein Barr in blood samples or culturing?
2. How disposing of waste, autoclave?
3. How are blood samples obtained? If drawing human blood samples himself needs IRB approval.
4. Please expand your experimental protocol to give more details

Action: Thomas Chambers proposed the **protocol returned** to clarify issues.

**Deneys R. van der Westhuyzen** – Class B scavenger receptors and foam cell formation: HDL receptor SR-BI: influence of apoAll **B03-289**
Comments:

1. Lab audit performed when you are moved into laboratory facilities in the Allied Health Science Building.
2. Certification of biological safety cabinets.

Action: Eric Smart moved and Glenn Telling seconded **provisional approval** upon completion of comments. The vote was unanimous.

**Frederick de Beer** – SAA and sPLA2: Role in atherogenesis **B03-288**
Comments:

1. Lab audit performed when you are moved into laboratory facilities in the Allied Health Science Building.
2. Certification of biological safety cabinets.

Action: Eric Smart moved and Glenn Telling seconded **provisional approval** upon completion of comments. The vote was unanimous.

**Glenn Telling** – Pathogenic mechanisms of chronic wasting disease and scrapie prions **B03-286**
Comments:

1. BBP training not necessary for everyone, but a good idea for all lab personnel.
2. Pg. 10 **Infected** brain homogenates.
3. Cells will be fixed in DLAR CB27
4. Needles are luer-lock
5. Mouse carcasses are incinerated
6. Final solution 2% NaOCl

Glenn Telling excused from room for vote.
Action: Anthony Sinai moved and Arthur Hunt seconded **approval of protocol**. The vote was unanimous

**S. Reddy Palli** – Development of ligand inducible gene switches for simultaneous and independent regulation of expression of two genes in transgenic tobacco plants **B03-284**
Comments:

1. Form not filled out correctly, Section 2 number 1 should be “yes” for work to express a foreign gene.
2. Need greenhouse information on first page.
3. Page 8 Mus musculus listed as “rat” needs to be “mouse”.

Action: Arthur Hunt moved and Peter Nagy seconded the protocol granted **provisional approval** upon clarifications in comments. The vote was unanimous.

**PREVIOUSLY REVIEWED PROTOCOLS**

**Nancy Webb** – Group V sr4PLA2 and Atherosclerosis Macrophage-derived GX secretory phospholipase AA2 and atherosclerosis **B03-272**
Comments:

3. Lab audit performed when you are moved into laboratory facilities in the Allied Health Science Building.
4. Certification of biological safety cabinets.

Action: Lou Hersh moved and Richard Wheaton seconded **provisional approval** upon completion of comments. The vote was unanimous.

**Rolf Craven** – **B03-283** - Adenoviral delivery of the Hpr6.6 protein
**B03-281** - The role of Dap1p and Hpr6.6 in damage repair and cancer
Comments:

5. Change 0.5% NaCl to 0.5% NaOCl.
2. Certification of biological safety cabinets

Action: Anthony Sinai moved and Lou Hersh seconded **provisional approval granted** upon revisions and BSC certification.

**New Business:**
The committee was reminded about the training and dinner will be September 17, 2003 at 5pm at the Faculty Club.

An update on the testing of the growth chamber used by Dr. Li for blue mold experiments was handed out to the members.

The meeting ended at 1:30pm.

# Institutional Biosafety Committee
## Minutes of October 8, 2003

**Members Present**
Arthur Hunt
Peter Nagy
Thomas Chambers
Eric Smart
Lou Hersh
Brian Rymond
Marcia Finucane
Jack Hiatt
Kenneth Dickey
Chuck Staben
Peter Nagy
Robert Jacob

**Members Absent**
Nader Hanna
Glenn Telling
Kelly Breeding
Richard Wheaton
Anthony Sinai

**COMMITTEE BUSINESS**

The meeting was called to order at 12:10am. The order of protocol review was changed to accommodate members who had to leave early.

**OLD COMMITTEE BUSINESS**

Minutes of the September 10, 2003 IBC meeting were unanimously approved with no modifications.

**PROTOCOLS MEETING FULL APPROVAL REQUIREMENTS:**

**B03-283** Rolf Craven – Adenoviral delivery of the Hpr6.6 protein

**B03-285** S. Reddy Palli - Development of ligand inducible gene switches for simultaneous and independent regulation of expression of two genes in transgenic tobacco plants

**B03-273** Oliver Oakley - Re-activation of Murine cytomegalovirus in Bone marrow transplantation and its impact on pneumonitis

**PROTOCOLS WAITING ON MOVE INTO NEW FACILITIES AND/OR BSC CERTIFICATION FOR FULL APPROVAL:**

**B03-272** Nancy Webb - Group V sPLA2 and atherosclerosis"; "Macrophage-derived GX secretory phospholipase A2 and atherosclerosis

**B03-289** Deneys R. van der Westhuyzen – Class B scavenger receptors and foam cell formation; HDL receptor SR-BI: influence of apoAII

**B03-288** Frederick de Beer – SAA and sPLA2: Role in atherogenesis

**B03-287** Rina Plattner – Characterization the role of Abelson kinases in growth factor signaling

**B03-277** Reto Asmis - Role of Glutathione Reductase and Glutaredoxin in Oxidative Stress-Induced Macrophage Dysfunction and Cell Death

**PROTOCOLS ISSUED REGISTRATION NUMBERS**
(These protocols do not require review by IBC and are registered with the BSO)

**B03-281** Rolf Craven - The role of Dap1p and Hpr6.6 in damage repair and cancer

**B03-293** Michael Kilgore - Molecular Mechanisms of dietary fatty acids on breast cancer growth and development

**B03-275** Kyung Bo Kim - Cell-Permeable Small-Molecule Proteolysis Inducers

**PREVIOUSLY REVIEWED PROTOCOLS, RESUBMITTED:**

**Charles T. Lutz B03-274** – Natural killer cells in health, aging, cancer and infection

**Provisionally approved** pending revisions addressing the following:

1. Specifically state how the free EBV will be used once produced by the marmoset cells
2. Complete the tissue/cell culture section in the infectious agent form
3. Complete the biological safety cabinet certification information

A motion was made by Eric Smart, seconded by Art Hunt, that the revision be e-mailed to the IBC members and that they e-mail their accept/deny vote to the BSO. If the majority of the members accept the revision, full approval will be given. A unanimous vote accepted this motion.

**NEW BUSINESS**

**PROTOCOL REVIEW**

**Toborek, Michal, B03-291** - Effects of dietary fatty acids on HUVEC, Effects of Tat protein on tight junction proteins, Effects of Tat protein on PPAR activity, Effects of Nicotine on cultured spinal cord neurons

**Provisionally approved** pending the receipt of the following information and revisions:

1. Please supply a copy of the UK and/or hospital IRB approvals or exemptions which cover the **current** source of the umbilical cords
2. All laboratory workers need to take the Hazardous Material training, then send copies of the certificate to the BSO
3. Change the first page of the form, #1, no infectious agents are being worked with; human cell lines are considered **potentially** infectious and do not require the infectious agent form
4. Who is performing the screening for human pathogens, who is paying for this testing, which pathogens in particular?
5. Add homogenization and surgery to procedures that will be performed in the BSC (page 8, 1A)
6. Do not list the “agents” in the laboratory on the biohazard signs on the doors to the laboratories
7. Send the BSO the final procedure for transporting animals from the animal facility to your laboratory in Allied Health Science and a copy of the IACUC approval
8. Successful completion of laboratory biosafety audit and certification of the biological safety cabinet

Chuck Staben moved and Eric Smart seconded that full approval be granted after the BSO receives this information. It was unanimously passed.

**Mohan, Royce B03-292**- Natural Product Inhibitors and their Biological Targets in Angiogenesis

**Full approval** was granted. The motion was made by Lou Hersh, seconded by Robert Jacob, and carried unanimously.

**Smith, George B03-290** - Axonal growth and guidance for nervous system repair.

**Provisional approval** granted, pending receipt of the following revisions:

1. On page 3, section dealing with animal bites, the recommended disinfectant is either iodine or chlorhexidine (per Ken Dickey) not sodium hypochlorite;
   It is recommended that if a bitten person's tetanus vaccination is over three years old, they seek the advice of Worker's Care
2. State in the protocol that all adenovirus production and purification is carried out in the PI's lab, not a shared facility and that the centrifuge used is in that dedicated room
3. State the species of the source of the DNA in the rDNA form
4. Describe the lab coats used, especially when performing manipulations, like the injections, outside of the biological safety cabinet. Please note what the BSO has recommended as a prototype (water resistant, knit cuffed, solid front, closure in the back, disposable, worn only in the surgical room).
5. Contact David Acker in Occupational Health & Safety for the fit testing of the disposable respirators workers will wear when performing the injections and consult http://ehs.uky.edu/ohs/respgate.html for a respirator program

Eric Smart moved, Robert Jacob seconded, the motion carried unanimously.

**COMMITTEE BUSINESS**

**ITEM FOR DISCUSSION: Registration of diagnostic work for plant pathogens : Extension laboratory**

After a discussion of various options, it was decided that the BSO will work with the director of the laboratory, Dr. Vincelli, to develop a safety SOP for the laboratory in general. The IBC will review, make suggestions, and finally approve a general plan for the diagnostic work.

Criteria for which research projects require IBC review and approval will also be developed and sent to the IBC for approval.

The meeting was adjoined at 1:15pm.

# Institutional Biosafety Committee
# Minutes of November 12, 2003

**Members Present**
Arthur Hunt
Peter Nagy
Thomas Chambers
Eric Smart
Anthony Sinai
Brian Rymond
Marcia Finucane
Jack Hiatt
Kenneth Dickey
Chuck Staben
Peter Nagy
Robert Jacob
Kelly Breeding
Nader Hanna

**Members Absent**
Lou Hersh
Glenn Telling
Richard Wheaton

## COMMITTEE BUSINESS

The meeting was called to order at 12:10am by Tom Chambers..
Committee members given hand out on cell disruption procedures which are alternatives to sonication, the NIH letter finding the University of Kentucky Institutional Biosafety Committee compliant for another year (September 22, 2004), and samples of the biohazard labels given to researchers who require appropriate signage.

## OLD COMMITTEE BUSINESS

Minutes of the October 8, 2003 IBC meeting were unanimously approved with only one modification in the list of members present (Robert Jacob added).

**PROTOCOLS MEETING FULL APPROVAL REQUIREMENTS:**

**B03-292** Royce Mohan - Natural Product Inhibitors and their Biological Targets in Angiogenesis

**B03-286** Glenn Telling - Pathogenic mechanisms of chronic wasting disease and scrapie prions

**BO3-274** Charles Lutz - Natural killer cells in health, aging, cancer, and infection

**B03-290** George M. Smith - Axonal growth and guidance for nervous system repair

**PROTOCOLS WAITING ON MOVE INTO NEW FACILITIES AND/OR BSC CERTIFICATION FOR FULL APPROVAL:**

**B03-272** Nancy Webb - Group V sPLA2 and atherosclerosis"; "Macrophage-derived GX secretory phospholipase A2 and atherosclerosis

**B03-289** Deneys R. van der Westhuyzen – Class B scavenger receptors and foam cell formation; HDL receptor SR-BI: influence of apoAII

**B03-288** Frederick de Beer – SAA and sPLA2: Role in atherogenesis

**B03-287** Rina Plattner – Characterization the role of Abelson kinases in growth factor signaling

**B03-277** Reto Asmis - Role of Glutathione Reductase and Glutaredoxin in Oxidative Stress-Induced Macrophage Dysfunction and Cell Death

**PROTOCOLS ISSUED REGISTRATION NUMBERS**
(These protocols do not require review by IBC and are registered with the BSO)

**B03-293** Michael Kilgore - Molecular Mechanisms of dietary fatty acids on breast cancer growth and development

**B03-296** Rebecca Kellum - Drosophila chromosome structure and function

**MODIFICATIONS**

**B011219191** Nader Hanna – GV-001.003 An Open Label, Phase I, Dose-Escalation Study of TNFerade Biologic with Radiation Therapy as an Adjunct to Surgery or for Palliation in Soft Tissue Sarcoma of the Extremities. Amendment 2. April 20, 2002 GenVec, Inc.

- Personnel changes

**NEW BUSINESS**

**PROTOCOL REVIEW**

**B03-295** Jayakrishna Ambati - Mechanisms of Ocular Vascular Regression
**Fully approved**, pending :

1. remove reference to serum banking, p.16, #28; UK does not keep serum banks
2. add sentence addressing the issue of the testing for reactivation of the replication incompetent adenovirus, who does it and where
3. naked plasmids do not require an infectious agent form, remove this page from the application

Robert Jacob moved, Eric Smart seconded the motion, it carried unanimously.

Meeting was adjourned at 12:26pm by Tom Chambers after Eric Smart moved and Art Hunt seconded the motion.

# Institutional Biosafety Committee
# Minutes of January 14, 2004

**Members Present:**
Arthur Hunt
Peter Nagy
Thomas Chambers
Eric Smart
Brian Rymond
Marcia Finucane
Kenneth Dickey
Chuck Staben
Peter Nagy
Kelly Breeding
Glenn Telling
Richard Wheaton

**Members Absent**
Lou Hersh
Anthony Sinai
Jack Hiatt
Robert Jacob
Nader Hanna

## COMMITTEE BUSINESS

The meeting was called to order at 12:10am by Tom Chambers.. It was adjourned at 2:30pm.

## OLD COMMITTEE BUSINESS

Minutes of the November 12, 2003 IBC meeting were unanimously approved .

## NEW BUSINESS

### PROTOCOL REVIEW

**B03-294 – Valentino, Joseph** - SWOG S0011: A Phase II Trial of Surgery with Perioperative INGN 201 (Ad5CMV-p53) Gene Therapy Followed by Chemoradiotherapy for Advanced Resectable Squamous Cell Carcinoma of the Oral Cavity and Oropharynx IRB# 03-0667-F2L (INGN 201, Gene Therapy Phase II Trial )

Dr. Valentino attended the meeting 12:30 -1:05pm for questions and discussion.

The committee decided to **send the protocol back** to the researcher for further revisions and additions. The following issues need to be addressed in an "Infection Control" document:

1. **Locations**: which operating room, recovery room, hospital room, and procedure room for the second inoculation will be used; special, designated rooms should be used for this type of procedure
2. **Biohazardous waste**: details of how this will be handled in the operating room, recovery room, hospital room, procedure room, and after the patient goes home
3. **Shedding:** a discussion of the dissemination within the patient and shedding from the patient of the recombinant virus. Please include how this will be monitored and the criteria to be used to determine when it is safe to send the patient home. (Since there is not much of this type of data published, the protocol designers are **strongly urged** to include this in the study design. If the sponsoring company has such data available, it would be most helpful to the IBC if it was made available for review.)
4. **Staff:** Please name the backup physicians and all staff from the operating room, environmental services, recovery room, hospital room who will deal with the patient, or with the biohazardous waste from the patient, and cleaning/decontamination of rooms used by the patient.
   Dr. Valentino is strongly urged to collaborate with another University of Kentucky researcher with either laboratory or clinical experience with adenoviral vectors.

5. **Training**: Details of the staff training about gene transfer and this particular protocol must be discussed. Who is to give the training? This training should give the staff basic information about the vector (how it is replication defective and what that means, how it is manufactured, without divulging proprietary information), details of the protocol as it relates to each staff member, infection control procedures, spill procedures, exposure control plan that includes the worker's care information, etc.
   The dates, times and location of this training must be submitted to the Biological Safety Officer with sufficient notice so that she can arrange to be present. An attendance sheet documenting who received the training will also be kept in the IBC file. This training must be finished before patients can be enrolled.
   **Patient training**: instructions the patient will receive about wound care, infection control, care after discharge, etc. should also be discussed. Any visitation restrictions, instructions to family members should also be discussed.
6. **Patient/Drainage tube**: details of the drainage tube, how it will be handled, emptied, and other infection control measures (such as screening staff with active adenovirus-like respiratory infections, preventing the patient's contact with immunocompromised persons) should be discussed.
   7. **Harm to the patient**: what are the "worse case scenarios" for the patient regarding exposure to this recombinant virus and the risk that these events might occur? (e.g. replication defective virus recombines with endogenous adenovirus to form a replication competent virus containing the p53 gene, recombination of the viral and patient p53 genes, injection of the biologic into the bloodstream, etc).
   8. **Decontamination:** Dr. Marty Evans, an infectious disease specialist with knowledge and experience in infection control with gene transfer protocols, has recommended that a freshly mixed solution of 0.5% sodium hypochlorite (bleach) be used for decontamination of all hard surfaces in rooms where procedures are conducted, especially the operating room and procedure room. This is a different disinfectant from the regular hospital disinfectant/cleaner, A-456N (a quaternary ammonia). Sufficient time must be allotted to the thorough decontamination of the operating room after the initial surgery and inoculation, before the next surgery can take place in that room.

To be considered at the February 11, 2004 meeting, revisions and additions must be sent to the Biological Safety officer by January 30, 2004.

**B03-301 – Horohov, David** - Production of antibodies to equine cytokines
Provisionally approved, full approval is pending the following changes and procedures:

1. Insert the IACUC approval number on page 1
2. Check "yes" on page 8, using radioactive material in the BSC
3. Insert the appropriate form for personnel working the lab
3. Complete biosafety audit

Art Hunt moved and Peter Nagy seconded, the vote was unanimous for provisional approval.

**B03-299 -Greenberg, Richard** - The safety, tolerability, and immunogenicity of ACAM2000 smallpox vaccine in adults without previous smallpox vaccination (H-400-009).

**B03-304 -Greenberg, Richard** - The safety, tolerability, and immunogenicity of ACAM2000 smallpox vaccine in adults with previous smallpox vaccination (H-400-012).
Provisionally approval, full approval is pending the following changes and procedures in both protocols:

1. Please provide data from the manufacturer on the testing of Wescodyne against vaccinia. The committee would like to review the actual test results. The BSO will work with you in obtaining this information.
2. Wescodyne should be made up fresh each day that vaccinations or follow up visits are planned. The proper dilution is 6oz./5 gallons, or approximately 1:100. Please add this to the spill procedure Item #1.

3. In the Personnel section, please state whether blood borne pathogen training is up to date for each staff member.
4. On pages 8 & 9 in the safety plan: the "should" to be changed to "will"; also, change "study team members will be asked to wear" to "study team members will wear"
5. In the paragraph discussing adverse event reporting on page 8, add a sentence outlining the conditions which must be reported to the IBC:
   fever or rash within 2 weeks of vaccination
   cardiac complications at any time during the study
   These reports should refer to the IBC approval # and have the patient's study identification # clearly marked so that initial and follow up reports can be matched up.
6. In the safety plan, add a paragraph addressing the handling of biohazardous waste. The IBC decided using "standard precautions" that are used for all hazardous waste is sufficient. It is to be emphasized to the environmental maintenance staff that the bins are to be taken directly to the locked storage cage on the loading dock of the Kentucky Clinic to await transport to the incinerator by Stericycle. If the biohazardous disposal system changes, the Biological Safety Officer is to be notified immediately.

The motion was made by Eric Smart and seconded by Richard Wheaton. The vote for unanimously for the motion.

**PROTOCOL REQUESTING MODIFICATIONS**

**B03-273 Oakley, Oliver**- Re-activation of Murine cytomegalovirus in Bone marrow transplantation and its impact on pneumonitis

Adding *Pneumocystis. carinii* (*jaroveci*) to infectious agents in research.

**Provisionally approved**, pending receipt of information about the strain to be used is a murine adapted strain.

The motion was made by Chuck Staben and seconded by Peter Nagy. The vote

**COMMITTEE BUSINESS**

**ITEM FOR DISCUSSION:**

1. IBC definition of quorum
2. Autoclave validation program
3. Signs for BSL2-P laboratories
4. Field trials with pharmaceutical plants
5. Report of the Fink Committee

**PROTOCOL PENDING INVESTIGATOR RESPONSE/ACTION**

**B03-295** Jayakrishna Ambati - Mechanisms of Ocular Vascular Regression

**PROTOCOLS WAITING ON MOVE INTO NEW FACILITIES AND/OR BSC CERTIFICATION FOR FULL APPROVAL:**

**B03-272** Nancy Webb - Group V sPLA2 and atherosclerosis"; "Macrophage-derived GX secretory phospholipase A2 and atherosclerosis

**B03-289** Deneys R. van der Westhuyzen – Class B scavenger receptors and foam cell formation; HDL receptor SR-BI: influence of apoAII

**B03-288** Frederick de Beer – SAA and sPLA2: Role in atherogenesis

**B03-287** Rina Plattner – Characterization the role of Abelson kinases in growth factor signaling

**B03-277** Reto Asmis - Role of Glutathione Reductase and Glutaredoxin in Oxidative Stress-Induced Macrophage Dysfunction and Cell Death

**PROTOCOLS ISSUED REGISTRATION NUMBERS**
(These protocols do not require review by IBC and are registered with the BSO)

**B03-298** – Webb, Bruce - Somatic cell transformation of insect cells and larvae

# Institutional Biosafety Committee
# Minutes of February 11, 2004

**Members Present:**
Arthur Hunt
Lou Hersh
Thomas Chambers
Jack Hiatt
Robert Jacob
Nader Hanna
Marcia Finucane
Kenneth Dickey
Chuck Staben
Kelly Breeding
Glenn Telling
Richard Wheaton

**Members Absent**
Brian Rymond
Anthony Sinai
Eric Smart
Peter Nagy

## COMMITTEE BUSINESS

The meeting was called to order at 12:09am by Tom Chambers.. It was adjourned at 2:30pm.

## OLD COMMITTEE BUSINESS

Minutes of the January 14, 2004 IBC meeting were unanimously approved . Dr. Telling moved and Dr. Dickey seconded.

**ITEMS FOR DISCUSSION:**

1. Autoclave validation program
   Suggested that each bag of biohazardous waste autoclaved have a "Comply" strip attached by the researcher or his/her designated person, to indicate that the proper conditions were met for decontamination before disposal into the dumpster/landfill. This is to be substituted for the requirement of the maintenance of a logbook in each research lab. The requirement for monthly testing of each set of parameters used to decontaminate waste in each autoclave and the results recorded in a log book for the autoclave room/facility remains. This is to be the responsibility of the owner of the autoclave.

2. Signs for BSL2-P laboratories
   No objections

3. Report of the Fink Committee
   Handed out, not discussed

## NEW BUSINESS

**PROTOCOL REVIEW**

**B03-294 – Valentino, Joseph** - SWOG S0011: A Phase II Trial of Surgery with Perioperative INGN 201 (Ad5CMV-p53) Gene Therapy Followed by Chemoradiotherapy for Advanced Resectable Squamous Cell Carcinoma of the Oral Cavity and Oropharynx IRB# 03-0667-F2L (INGN 201, Gene Therapy Phase II Trial ) **(reconsideration of gene transfer protocol with investigator's responses)**
**Provisional approval was** granted, pending compliance with the following conditions:

1. Dr. Valentino meets with and works with Dr. Marty Evans (Infection Control), Ms. Sharon Berry (Infection Control) and Marcia Finucane (Biological Safety Officer) to produce a complete and detailed exposure control plan and spill plan. Dr. Nader Hanna also offered to consult on this document. This document should include:

   a. definition of what constitutes medical regulated waste **for this protocol**, which is to be collected in specially marked (gene transfer protocol) containers and picked up by Hazardous Material Management for incineration, and what constitutes regular waste, to be disposed of by hospital or MCC environmental services per standard procedures

   b. how personnel handling the viral preparation and how the patient will be protected during the administration of the gene transfer agent and during the maintenance of the drainage tube (personal protective equipment, procedures)

   c. name and dilution of the hospital disinfectant (the requirement to use 10% bleach is dropped)

   d. specify that occlusive dressings will be used for the surgical wound which will be inoculated with the gene transfer agent, to minimize shedding of the virus from the wound site

2. A copy of the Power Point presentation (or written outline) used in the training of hospital and Markey Cancer Center staff is to be sent to the BSO and will be placed in the IBC file for this protocol
   a. training to be given, at a minimum, twice at dates and times so that different shifts can attend

   b. sign in sheets of those present at the training will be kept in Infection Control office and copies placed in the IBC file

   c. names of relevant nurse managers, supervisors, etc. who will be charged with the care of patients in this protocol shall placed in the IBC file

   d. representatives of hospital Infection Control and of the Biological Safety Office will be present at the larger training sessions to assist in answering any questions the staff may have

   e. procedures for training personnel who do not attend the formal training sessions will be described

3. Hard copies of the exposure/spill control plan and of the training will be easily accessible at the nurse's station at each location the patient will be treated (OR, ICU, MCC-2)

Louis Hersh moved and Dr. Hanna seconded that provisional approval be granted. The vote was unanimous.

**B04-308 – Chen, Jinhui** - Signaling Pathway regulating the fate-determination of neural stem cells in the adult hippocampal dentate gyrus

**Returned** to investigator for further revisions.

1. in the rDNA attachments, please give more details about what the specific wild type genes normally do, and what the mutant genes are expected to do when expressed
2. in the scientific summary, describe why the 293 cells are infected, what will be done with the cells or if used to produce viruses, what will be done with the viruses; give a summary of what the recombinant adenovirus and retrovirus are used for
3. if animals are to be infected with these viruses, surgeries with these animals must be performed in a biological safety cabinet (not a fume hood) in order to contain the recombinant viruses; isoflurane exposure can be addressed by the use of a scavenger; please consult with Dr. Ken Dickey in the DLAR or his staff about this

4. after this issue is worked out with DLAR, specify where these surgeries will take place, in the animal facility or your laboratory and the specifics of biological and chemical containment
5. on page 7, regarding the ultracentrifuge: state whether a swinging bucket or fixed rotor will be used and that this will be disinfected with what disinfectant after each use. Quarternary ammonium compounds are recommended because they are not corrosive to the equipment (A456-N is used in the hospital)
6. it should be stated that loading and unloading of the buckets with lids or the rotors, when used with viruses, will be done in a biological safety cabinet
7. a biosafety laboratory audit must be performed before work can be initiated

**B04-306 Allen, George** - Efficacy of experimental vaccines for prevention of viremia following exposure of horses to equine herpesvirus-

**Provisional approval** was granted pending compliance with the following conditions:

1. completion of biosafety laboratory audit
2. addition of the particular strain of herpesvirus-1 used
3. addition of IACUC approval # 641A2003

Dr. Jacob moved, and Dr. Dickey seconded. The vote was unanimous.

**PROTOCOLS REQUESTING MODIFICATIONS**

**B03-283-M - Craven, Rolf** - Modification of Adenoviral delivery of the Hpr6.6 protein
Room change noted.

**PROTOCOLS MEETING IBC CONDITIONS AND GRANTED FULL APPROVAL:**

**B03-277** Reto Asmis - Role of Glutathione Reductase and Glutaredoxin in Oxidative Stress-Induced Macrophage Dysfunction and Cell Death

**B03-287** Rina Plattner – Characterization the role of Abelson kinases in growth factor signaling

**OLD BUSINESS:**

**PROTOCOL PENDING INVESTIGATOR RESPONSE/ACTION**

**B03-295** Jayakrishna Ambati - Mechanisms of Ocular Vascular Regression
Testing requested by the IBC is progressing.

**PROTOCOLS WAITING ON MOVE INTO NEW FACILITIES AND/OR BSC CERTIFICATION AND/OR BIOSAFETY LAB AUDIT FOR FULL APPROVAL:**

**B03-272** Nancy Webb - Group V sPLA2 and atherosclerosis"; "Macrophage-derived GX secretory phospholipase A2 and atherosclerosis

**B03-289** Deneys R. van der Westhuyzen – Class B scavenger receptors and foam cell formation; HDL receptor SR-BI: influence of apoAII

**B03-288** Frederick de Beer – SAA and sPLA2: Role in atherogenesis

**B03-301** – Horohov, David - Production of antibodies to equine cytokines
Lab audit pending.

**PROTOCOL WITHDRAWN**

**B03-273-M - Oakley, Oliver**- Re-activation of Murine cytomegalovirus in Bone marrow transplantation and its impact on pneumonitis

Adding *Pneumocystis. carinii* (*jaroveci*) to infectious agents in research.
Will keep this work at the VA facility

# Institutional Biosafety Committee
# Minutes of March 10, 2004

**Members Present**
Thomas Chambers
Kenneth Dickey
Marcia Finucane
Nader Hanna
Jack Hiatt
Arthur Hunt
Robert Jacob
Peter Nagy
Brian Rymond
Anthony Sinai
Eric Smart
Chuck Staben
Richard Wheaton

**Members Absent**
Kelly Breeding
Louis Hersh
Glenn Telling

## COMMITTEE BUSINESS

The meeting was called to order at 12:07pm by Tom Chambers.
The minutes of February 11, 2004 IBC meeting were unanimously approved. Chuck Staben moved, Richard Wheaton seconded.

## RECONSIDERATION OF REVISED PROTOCOLS

**B03-294 - Valentino, Joseph** - INGN 201, Gene Therapy Phase II Trial
SWOG S0011: A Phase II Trial of Surgery with Perioperative INGN 201 (Ad5CMV-p53) Gene Therapy Followed by Chemoradiotherapy for Advanced Resectable Squamous Cell Carcinoma of the Oral Cavity and Oropharynx
Dr. Valentino, and Dr. Marty Evans, were available at 12:30pm for discussion of the exposure control plan for this protocol.
**Full Approval** was granted. Eric Smart moved. Richard Wheaten seconded. The vote was unanimous.
The Biological Safety Officer will send an e-mail to Dr. McCormick, director of the UK Hospital Infection Control Department, asking that the hospital policy on gene therapy/transfer be revised to use standard precautions for disposal of gene therapy/transfer waste. The policy currently has this waste disposed of by Hazardous Materials Management. The preponderance of reports in the literature indicate that if the inoculation of recombinant adenoviral vector is $\leq 10^{13}$pfu/dose, standard precautions are sufficient.

**B04-308 – Chen, Jinhui** - Signaling Pathway regulating the fate-determination of neural stem cells in the adult hippocampal dentate gyrus (REVISED)
**Provisional Approval** was granted pending compliance with the following conditions:

1. All (not most) work should be done using a biological safety cabinet, page 4.
2. Explain that dialysis waste from the purification of virus will be decontaminated with bleach, final concentration of 0.5% sodium hypochlorite, page 3.
3. Certification of biological safety cabinets
4. Laboratory biosafety audit

Eric Smart moved. Nader Hanna seconded. The vote was unanimous.

**NEW BUSINESS**

**NEW PROTOCOL REVIEW**

**B04-310 – St. Clair, Daret** - To study the role of Manganese Superoxide Dismutase in the progression of certain types of tumor cell lines
**Provisional Approval** was granted pending compliance with the following conditions:

1. Blood born pathogen training was taken five years ago (see p. 5).
   Please renew training through the on-line course at
   http://ehs.uky.edu/classes/bloodborne/bptrain.html
   and send copies of certificates to the Biological Safety Officer
   Please fill in dates of lab safety and hazardous material training

2. Make sure cell homogenates are prepared in a biological safety hood (see p. 4).

Eric Smart moved. Chuck. Staben seconded. The vote was unanimous.

**COMMITTEE BUSINESS**

1. Autoclave verification program: review of next draft:
   discussion was focused on minor concerns.
   a. Practicality discussed. Label on outside of bag suggested.
   b. Where will money come from to pay for supervision of autoclaves?

Approval was granted with the suggestion that the phrase "Use dry cycle" be removed.
Anthony Sinai moved. Art Hunt seconded. The vote was unanimous.

2. IRB/IBC Internal Adverse Event Form
   -IBC-will only use this for gene transfers in human subjects enrolled in clinical trials at UK.

Full approval granted. Ken Dickey moved. Richard Wheaten seconded.
The vote was unanimous.

3. Vaccinia policy discussion (handouts given at meeting)
   -We need a policy at UK. Should we simply use the CDC recommendations?
   -Recommendations from IBC members requested.

Motion to adjourn was made by Brian Rymond and seconded by Robert Jacob. The vote was unanimous. The meeting was adjourned at 1:25pm.

**BSO UPDATE ON PROTOCOLS:**

**PROTOCOL PENDING INVESTIGATOR RESPONSE/ACTION**

**B03-295 Jayakrishna Ambati** - Mechanisms of Ocular Vascular Regression
Results of RCA testing presented.
-Meets requirements of IBC. **Full approval** can now be sent to Dr. Ambati.

**PROTOCOLS WAITING ON MOVE INTO NEW FACILITIES AND/OR BSC CERTIFICATION FOR FULL APPROVAL:**

**B03-272 Nancy Webb** - Group V sPLA2 and atherosclerosis"; "Macrophage-derived GX secretory phospholipase A2 and atherosclerosis

**B03-289 Deneys R. van der Westhuyzen** – Class B scavenger receptors and foam cell formation; HDL receptor SR-BI: influence of apoAII

**B03-288 Frederick de Beer** – SAA and sPLA2: Role in atherogenesis

**PROTOCOL MEETING FULL APPROVAL REQUIREMENTS:**

**B04-306 Allen, George** - Efficacy of experimental vaccines for prevention of viremia following exposure of horses to equine herpesvirus-

**PROTOCOLS ISSUED REGISTRATION NUMBERS**

(These protocols do not require review by IBC and are registered with the BSO)

**B04-305-BBP Pu, Lee** – Human Adipose Studies in the Nude Mouse Model

**B04-307-BBP Tannock, Lisa –** Proteogylcans and Artherosclerosis

**B04-312-BBP Ferraris, Victor** – Aspirin Related Gene Expression

# Institutional Biosafety Committee
# Minutes of April 14, 2004

**Members Present**
Thomas Chambers
Kenneth Dickey
Marcia Finucane
Nader Hanna
Arthur Hunt
Peter Nagy
Brian Rymond
Anthony Sinai
Eric Smart
Chuck Staben
Richard Wheaton
Kelly Breeding

**Members Absent**
Louis Hersh
Glenn Telling
Robert Jacob
Jack Hiatt

## COMMITTEE BUSINESS

The meeting was called to order at 11:59 pm by Tom Chambers.
The minutes of March 10, 2004 IBC meeting were unanimously approved. Anthony Sinai moved. Brian Rymond seconded.

## NEW BUSINESS

### NEW PROTOCOL REVIEW

**B04-316 GREENBERG, RICHARD**: The safety, tolerability, and immunogenicity of three dose levels of ACAM3000 modified vaccinia Ankara (MVA) smallpox vaccine in adults without previous smallpox vaccination: A double-blind, placebo-controlled, dose-ranging, phase I study followed by a challenge with Dryvax® smallpox vaccine
**Full approval granted**. Chuck Staben moved. Anthony Sinai seconded. The vote was unanimous.

**B03-317 LI, BAOCHIN**: Responses of *Nicotiana* hybrids to tobacco mosaic virus
**Full approval granted**. Arthur Hunt moved. Peter Nagy seconded. The vote was unanimous.

**B04-313 MCDOWELL, KAREN**: Mare reproductive loss syndrome bacterial infections: Ongoing research on uterine-conceptus interactions, and mare/stallion fertility
**Full approval granted.** Richard Wheaton moved. Arthur Hunt seconded. The vote was unanimous.

**B020620206 CHAMBERS, ORLANDO**: 2 modifications to THRI field trial project
**Provisional approval** was granted pending compliance with the following condition:

1. Copy of APHIS permit filed with protocol modifications.

Chuck Staben moved. Ken Dickey seconded. The vote was unanimous.

## COMMITTEE BUSINESS

1. The group discussed confidentiality issues related to protocols submitted to the IBC. It was decided that a copy of any confidentiality agreements between UK and any outside sponsor or company be submitted with the IBC application. M. Finucane will also have a "non-disclosure/confidentiality" and "conflict of interest" document drafted for IBC approval. If

adopted, every member of the IBC would sign this document when they join the committee.

2. The group determined there is a need for policies to be developed to offer or strongly suggest employees potentially exposed to vaccinia virus, recombinant vaccinia viruses, and other Orthopoxviruses receive vaccinia vaccination as follows:
    a. Health care workers who may contact only **highly attenuated** vaccinia strains (MVA, NYVAC, ALVAC, and TROVAC) **may** be offered vaccination with Dryvax® (or other FDA-approved vaccine). It is **not required**. The health care worker may decline vaccination without reassignment.
    b. Laboratory and health-care personnel who may contact **nonhighly attenuated** vaccinia strains (NYCBOH strain, WR strain, recombinants using the Copenhagen and Lister vaccinia strains) are at risk of infection and **must be offered** vaccination with Dryvax® (or other FDA-approved vaccine). If declined, the Principal Investigator may reassign the employee if he/she deems it necessary to avoid putting the employee at serious risk.
    c. Laboratory workers who directly handle cultures or animals contaminated or infected with **nonhighly attenuated** vaccinia virus, **recombinant** vaccinia viruses derived from **nonhighly attenuated** vaccinia strains, or **other orthopoxviruses** that infect humans (monkeypox, cowpox, vaccinia, and variola) **MUST** be offered vaccination. If declined, the Principal Investigator may reassign the employee if he/she deems it necessary to avoid putting the employee at serious risk.
    d. Revaccination every 10 years should be considered for personnel working with nonhighly attenuated vaccinia viruses
    e. Personnel working with nonvariola Orthopoxviruses (monkeypox) should consider revaccination every 3 years.

    These recommendations are based on the 2001 Advisory Committee on Immunization Practices report "Vaccinia (Smallpox) Vaccine Recommendations of the Advisory Committee on Immunization Practices (ACIP), 2001." MMWR 50 (RR10); 1-25.

Action Item: M. Finucane will research proper funding mechanisms to cover cost of employee vaccinations. M. Finucane will also draft this policy and disseminate electronically for committee comments and approval.

3. The committee would like to see a current APHIS checklist for field release of an organism that is engineered to produce products intended for pharmaceutical use, bioremediation, or industrial nonfood/feed use. M. Finucane will provide copies to members via a weblink or hard copy distributed at the next meeting.

**BSO UPDATE ON PROTOCOLS**

**PROTOCOLS MEETING FULL APPROVAL REQUIREMENTS:**

**B04-310 St. Clair, Daret –** To study the role of Manganese Superoxide Dismutase in the progression of certain types of tumor cell lines

**B03-272 Nancy Webb –** Group V sPLA2 and atherosclerosis; Macrophage-derived GX secretory phospholipase A2 and atherosclerosis

**B03-289 Deneys R. van der Westhuyzen –** Class B scavenger receptors and foam cell formation; HDL receptor SR-BI; Influence of apoAII

**B03-288 Frederick de Beer –** SAA and sPLA1: Role in atherogenesis

**PROTOCOLS ISSUED REGISTRATION NUMBERS:**
These protocols do not require review by IBC and are registered with the BSO

**B04-311-BBP Garvey, Beth A. –** Blue Grass Care Clinic Exercise Intervention

**B04-318 – Duncan, Marilyn -** Neural Mechanisms of Resetting of the Aged Circadian Pacemaker

Motion to adjourn was made by Richard Wheaton and seconded by Chuck Staben. The vote was unanimous. The meeting was adjourned at 1:08 pm.

# Institutional Biosafety Committee
# Minutes of May 19, 2004

**Members Present**
Kelly Breeding
Thomas Chambers
Louis Hersh
Jack Hiatt
Arthur Hunt
Robert Jacob
Peter Nagy
Brian Rymond
Kathy Sandford
Anthony Sinai
Chuck Staben

**Members Absent**
Kenneth Dickey
Marcia Finucane
Nader Hanna
Eric Smart
Glenn Telling
Richard Wheaton

## OLD COMMITTEE BUSINESS

The meeting was called to order at 12:07 pm by Tom Chambers.
The minutes of April 14, 2004 IBC meeting were unanimously approved. Chuck Staben moved. Anthony Sinai seconded.

## NEW BUSINESS

### NEW PROTOCOL REVIEW

**B04-314 Garvey, beth** – HOST RESPONSE TO P. CARINII IN NEONATAL MICE
The committee decided to **send the protocol back** to the researcher for further revisions and additions. The following issues need to be addressed:

1. Will P. carinii f. sp. hominis to be used in project?
2. Clarify which procedures are carried out in the UK lab vs. the VA.
3. Provide details on in vitro work in UK laboratory.
4. Type of transgenic mice used.
5. This work should be done at BL-2.

**B04-322 swerczek, thomas** – EVALUATION OF BACTERIAL ENDOPHYTES OF GRASS- AND LEGUME-FORAGES AS EMERGING CAUSES OF REPRODUCTIVE LOSS DISEASE IN AGRICULTURAL HERBIVORES
The committee decided to **send the protocol back** to the researcher for further revisions and additions. The following issues need to be addressed:

1. Background information describing previous work and identification of these bacteria.Description of the bacterial strains that will be used for the experiments---are these pure-culture isolates already prepared in the laboratory? Are they mixed cultures from natural materials, with potential for unknown components? Characterize the strains to be used. If the strains are largely uncharacterized, address the biosafety problems that could occur.

2. Describe animal carcass transport. Please describe handling and final disposal of the carcasses.

3. Quantify and identify the oral inoculum.

4. Describe whether and how the agent may be spread. Describe decontamination of animal waste and also decontamination of the infected animal facility.

5. The PI should complete training in the following areas:
Blood-borne pathogen
Lab specific safety training
Hazardous Materials
DOT/IATA Shipping

**B04-323 Rabchevsky, Alexander** – role of intraspinal plasticity in autonomic dysreflexia

The committee decided to **send the protocol back** to the researcher for further revisions and additions. The following issues need to be addressed:
1. A letter from Dr. George Smith in support of this project.
2. Details about how the pseudorabies will be perpetuated in the lab and in which lab this work will be done.
3. Maps of the vector if it is a derivative of Ad-Easy (commercial) or a clear description (p. 15).
4. A paragraph or more on pseudorabies as it pertains to this work.
5. Change the protocol to reflect that the vector is able to alter cell cycle.

**B04- 324 Farman, mark** – Molecular Genetics of the Phytopathic fungus magnaporthe grisea
Mark Farman attended the IBC meeting to discuss his submission and prior work with M. grisea. The committee decided to send the protocol back to the researcher and requests resubmission as at least two separate protocols.

## COMMITTEE BUSINESS

**Non-disclosure/confidentiality statement**
IBC decided postpone a decision until Katherine Adams can provide further explanation.
Action item: BSO will invite K. Adams to next IBC meeting for clarification.

## BSO UPDATE ON PROTOCOLS

### PROTOCOLS MEETING FULL APPROVAL REQUIREMENTS

**Chambers, Orlando B020620206-M-4** KTRDC Field Trial Modification
**Chambers, Orlando B020620206-M-5** KTRDC Field Trial Modification

### PROTOCOLS ISSUED REGISTRATION NUMBERS

(These protocols do not require review by IBC and are registered with the BSO)

**Chendil, Damodaran B04-321-BBP** CAM Drugs for the Treatment of Cancer

**Slack, Charles B04-320-FT** Benefits of the Roundup Ready Alfalfa Week Control System 2004

**Webb, Bruce B03-298 -** Somatic cell transformation of insect cells and larvae

**Duncan, Marilyn B04-318 –** Neural mechanisms of resetting of the aged circadian pacemaker

**Bessin, Ricardo B04-325 –** Evaluation of transgenic corn for southwestern corn borer resistance

Motion to adjourn was made by Robert Jacob and seconded by Kelly Breeding. The vote was unanimous. The meeting was adjourned at 2:15 pm.

# Institutional Biosafety Committee
# Minutes of June 9, 2004

**Members Present**
Thomas Chambers
Arthur Hunt
Kenneth Dickey
Marcia Finucane
Glenn Telling
Anthony Sinai
Eric Smart
Chuck Staben
Richard Wheaton
Louis Hersh
Robert Jacob

**Members Absent**
Jack Hiatt
Nader Hanna
Peter Nagy
Brian Rymond
Kelly Breeding

## COMMITTEE BUSINESS

The meeting was called to order at 11:40 am by Tom Chambers.
The minutes of May 19, 2004 IBC meeting were unanimously approved. Chuck Staben moved. Louis Hersh seconded.

## NEW BUSINESS

None

## OLD COMMITTEE BUSINESS

### RECONSIDERATION OF REVISED PROTOCOLS

**B04-314 Garvey, beth** – HOST RESPONSE TO P. CARINII IN NEONATAL MICE
**full Approval** was granted. Eric Smart moved. Chuck Staben seconded. The vote was unanimous.

**b04-322 swerczek, thomas** – evaluation of bacterial endophytes of grass- and legume-forages as emerging causes of reproductive loss disease in agricultural herbivores
Provisional Approval was granted pending compliance with the following conditions:
1) The disinfectant to be used will be 10% bleach solution or 0.5% NaOCl solution.
2) Completion of Biosafety audit of all laboratories used in this research.
Eric Smart moved. Richard Wheaton seconded. The vote was unanimous.
B04-323 Rabchevsky, alexander and cameron, adrian – role of intraspinal plasticity in autonomic dysreflexia
**Full Approval** was granted. Chuck Staben moved. Eric Smart seconded. The vote was unanimous.

## COMMITTEE BUSINESS

Discussion of non-disclosure/confidentiality statement was postponed pending a response from legal counsel.

Discussion/Review of Farman protocols B010724167-Advanced Genetic Technologies and B98021966- Molecular Biology of Phytopathogenic Fungi.

After a brief discussion, the committee asked Tom Chambers to send a memo to Wendy Baldwin, Executive Vice President for Research regarding Dr. Farman's previous approvals.

Motion to adjourn was made by Eric Smart and seconded by Richard Wheaton. The meeting was adjourned at 12:40pm.

**Minutes of the**
**Radiation Safety Committee**
**FY 2003-04**

**Radiation Safety Committee**
**Minutes of August 12, 2003**

| **Members Present:** | **Members Absent:** |
|---|---|
| Ralph Christensen (Chair) | Guy Simmons |
| Thomas Curry | Robert Zwicker |
| Angela Lehr (Ex-Officio) | Sarajane Doty |
| Harry Enoch (Ex-Offico, Administration) | James Matthews |
| Bob Wilson (Ex-Officio, RSO) | |
| Steven Yates | |
| John Timoney | |
| Mary Allen (Ex-Officio) | |
| Sheryl Abercrombie | |
| William St. Clair | |
| Robert Yokel | |

**Guest(s):**

Dr. David Orren, Captain Henry Huff, Fred Rawlings, Assistant RSO; Jerry Schlenker; Assistant RSO and William Garner, RHT.

Chairman Christensen called the meeting to order at 3:00 P.M. A quorum was present. Dr. Orren and Capt. Huff, new Committee members after September, were present. Introductions were made.

1. **Minutes for the May 13, 2003 meeting:** The Minutes were reviewed. Dr. Yates moved to accept the minutes as written, seconded by Dr. Timoney. The Minutes were approved by an 8 to 0 vote.

2. **Quarterly Report, Including the ALARA and Trends Reports:** The report review was led by Mr. Rawlings. There was discussion on ALARA and citation statistics and trends. Mr. Rawlings' new ALARA trend graph was presented. Future graphs will include a notation as to where the revised 2002 ALARA standards began. Ms. Allen moved to approve the quarterly and ALARA reports. Dr. Yates seconded the motion. The motion was approved by an 11 to 0 vote.

3. **Annual Radiation Safety Program Audit Report:** Mr. Wilson presented the annual program audit report. There was discussion on Table 9B and 9C, and on the lost package incident. Dr. Yates moved to approve the report, seconded by Ms. Abercrombie. The motion was approved by an 11 to 0 vote.

4. **RSO Report:** Mr. Wilson presented the RSO Report. The lost package incident and a skin contamination incident were discussed, and questions answered. The FY 2002-2003 x-ray inspections were completed. Reports on Hospital waste alarm activities and newly approved Authorized Users were provided. A patient dose event occurred with a clinical accelerator

(Kentucky QMP regulations do not include accelerators). The Radiation Medicine Department investigated.

Mr. Wilson reported that contact with DOE was ongoing, and plans were being made to pack the surplus sources for later shipment.

The State of Kentucky regulatory agency inspected two University Of Kentucky x-ray installations during the last quarter. One item was corrected and compliance restored.

There were no action items in the report and no vote taken.

There being no other business items, Dr. Christensen adjourned the meeting at 3:45 P.M.

**Radiation Safety Committee**
**Minutes of December 2, 2003**

| **Members Present:** | **Members Absent:** |
|---|---|
| Ralph Christensen (Chair) | Guy Simmons |
| Robert Yokel | Sheryl Abercrombie |
| Robert Zwicker | James Matthews |
| Tim Gorringe | Angela Lehr (Ex-Officio) |
| David Orren | Henry Huff (Ex-Officio) |
| Sarajane Doty | Mary Allen (Ex-Officio) |
| Harry Enoch (Ex-Offico, Administration) | |
| Bob Wilson (Ex-Officio, RSO) | |
| William St. Clair | |

**Guest(s):**

Fred Rawlings, Assistant RSO; Jerry Schlenker; Assistant RSO and William Garner, RHT.

Chairman Christensen called the meeting to order at 3:00 P.M. A quorum was present.

1. **Minutes for the August 12, 2003 meeting:** The Minutes were reviewed. Ms. Doty moved to accept the minutes as written, seconded by Dr. Zwicker. The Minutes were approved by an 8 to 0 vote.

2. **Quarterly Report, Including the ALARA and Trends Reports:** The report review was led by Mr. Rawlings. There was discussion on ALARA and citation statistics and trends. Dr. Yokel moved to approve the quarterly and ALARA reports and was seconded by Dr. Enoch. The motion was approved by a 9 to 0 vote.

3. **RSO Report:** Mr. Wilson presented the RSO Report. Elements of the written report, provided, were discussed. Mr. Schlenker updated the x-ray survey report, noting that 15 inspections have now been completed for FY 2003-2004. Reports on Hospital waste alarm activities and newly approved Authorized Users were provided. Mr. Wilson reported on the status of returning loaned DOE sources. Two of the three final packaged containers will be shipped on December 04, 2003. The remaining container will be shipped in the near future.

   There were no action items in the report and no vote taken.

4. **Compliance Summary Report:** A handout was provided of the Radiation Safety Office portion of the recent EH&S Compliance Summary Report. Dr. Enoch discussed the report, its intent and considerations for further compliance efforts. He also described, at Chairman Christensen's invitation, the current administrative changes and chain-of-command as it relates to the Committee. Discussion included procedures for rapid action by EH&S and the Committee in the event of major emergency events, especially requiring immediate use of funds. Dr. Enoch described a system now in place for such events involving hazardous chemicals, whereby

prearranged actions can take any necessary actions; engage specialty teams, etc. immediately. Committee members felt this same arrangement should be extended to radiological events. Dr. Enoch was invited to consider this approach and report on the subject at the next (February 2004) Committee meeting.

5. **Emergency Response Exercise:** Mr. Rawlings reported on the events of a radiological emergency response exercise held on November 20. It was a major, broad scope project that involved the radiation safety Office, LFUGA Fire Department with an EMS unit, UK Police, UK Hazardous Materials Management, and the UK Hospital Emergency Department. Overall, the exercise was considered to be a great success. Communications and procedures were tested, lessons were learned, and needed improvements noted. All involved parties were pleased and want to make it a regular event.

There being no other business items, Dr. Christensen adjourned the meeting at 3:50 P.M.

**Radiation Safety Committee**
**Minutes of February 10, 2004**

| **Members Present:** | **Members Absent:** |
|---|---|
| Ralph Christensen (Chair) | Robert Zwicker |
| Robert Yokel | Mary Allen (Ex-Officio) |
| Guy Simmons | James Matthews |
| Tim Gorringe | Angela Lehr (Ex-Officio) |
| David Orren | Henry Huff (Ex-Officio) |
| Sarajane Doty | |
| Harry Enoch (Ex-Offico, Administration) | |
| Bob Wilson (Ex-Officio, RSO) | |
| William St. Clair | |
| Sheryl Abercrombie | |

**Guest(s):**

Fred Rawlings, Assistant RSO; Jerry Schlenker; Assistant RSO, William Garner, RHT, and Dr. Christensen's Radiation Protection Class members: Jennifer Clark, Rebecca Duncan, Mihaila Mihalache-Leca, Aaron Odom, Kevin McNamara and Sheri Dini.

Chairman Christensen called the meeting to order at 3:10 P.M. A quorum was present.

1. **Minutes for the December 02, 2003 meeting:** The Minutes were reviewed. Ms. Doty moved to accept the minutes as written, seconded by Dr. Enoch. The Minutes were approved by a 9 to 0 vote.

2. **Quarterly Report, Including the ALARA and Trends Reports:** The report review was led by Mr. Rawlings. There was discussion on ALARA and citation statistics and trends. A fourth quarter 2003 rise in citations will be watched. Ms. Abercrombie moved to approve the quarterly and ALARA reports, seconded by Dr. Yokel. The motion was approved by a 9 to 0 vote.

3. **Draft AU Application Revision:** Mr. Wilson presented and discussed recommended revisions to the radioactive material application system. A draft version was provided as an example. After discussion, Dr. Yokel moved to approve continuation of the revision project, with another review at another time. Dr. St. Clair seconded, and the motion was approved by a 9 to 0 vote.

4. **RSO Report:** Mr. Wilson presented the RSO Report. Elements of the written report, provided, were discussed.

   a). Potential Occupational Overexposure in Diagnostic Radiology: A potential occupational overexposure occurred in Diagnostic Radiology in 2003. An x-ray technologist's badge received 5,687 mrem through November 2003. A report has been filed with the KY

Radiation Health Branch. An argument was offered that, considering lead apron wear and Effective Dose Equivalent adjustment, no overexposure occurred. There has been no response from the Agency to date.

b). Prearranged Authorization for funds in the Event of a Major Radiological Event: Dr. Enoch described how the UK Hazardous Materials Management is required by regulations to have an Administration letter stating that financial assets will be delegated in an emergency situation. The Radiation Safety Office has a standing contract with a company at this time for similar purposes, which accomplishes the same objective. Dr. Enoch recommended, and the Committee agreed, that no further action was needed.

5. Nuclear Medicine Authorized Users: Dr. Conrad, Nuclear Medicine, submitted a request to add two new Authorized Users. He provided the qualifications for Wei-Jen Shih, M.D., and James Buck, M.D. Dr. Simmons moved to approve either or both physicians, pending Mr. Wilson's confirming documentation of qualifications and Departmental approval. The motion was seconded by Ms. Doty and approved by a 10 to 0 vote.

There being no other business items, Chairman Christensen adjourned the meeting at 4:00 P.M.

**Radiation Safety Committee**
**Minutes of May 11, 2004**

| **Members Present:** | **Members Absent:** |
|---|---|
| Ralph Christensen (Chair) | Guy Simmons |
| Robert Yokel | Mary Allen (Ex-Officio) |
| James Matthews | Tim Gorringe |
| Angela Lehr (Ex-Officio) | Sarajane Doty |
| David Orren | Sheryl Abercrombie |
| Robert Zwicker | |
| Harry Enoch (Ex-Offico, Administration) | |
| Bob Wilson (Ex-Officio, RSO) | |
| William St. Clair | |

**Guest(s):**

Jerry Schlenker; Assistant RSO, William Garner, RHT, and Dr. Christensen's Radiation Protection Class members: Ashley Gale and Dan Farrer.

Chairman Christensen called the meeting to order at 3:10 P.M. A quorum was present.

1. **Minutes for the February 09, 2004 meeting:** The Minutes were reviewed. Dr. St. Clair moved to accept the minutes as written, seconded by Dr. Matthews. The Minutes were approved by an 8 to 0 vote.

2. **Review of the Pending Nuclear Medicine AU Action:** Two physicians were approved as Nuclear Medicine Authorized Users at the February 2004 meeting, pending confirmation of qualifications and Department approval. With no word from the Department of Diagnostic Radiology, the Committee felt that some final action must be taken. Instructions were provided to Mr. Wilson to approach Dr. Conrad and Sheryl Abercrombie to reach an understanding of on the desired final action. Mr. Wilson should contact the Department Chair for a resolution if necessary. If there is no resolution by July 01, 2004, the pending confirmation will become null and void. As a matter of Committee policy henceforth, all future medical AU candidates must be recommended by the department chair by signed document, including the date of specialty certification or other qualifications of each candidate. Mr. Wilson is to prepare a model statement form of this policy for department chairs use and information. Ms. Allen moved to accept this action, seconded by Dr. Yokel. The action was approved by a 9 to 0 vote.

3. **Quarterly Report, Including the ALARA and Trends Reports:** The report review was led by Mr. Wilson. Two errors in the report were noted, in that a listed fetal ALARA Level 2 was a mistake and in the Compliance / Monthly Surveys bar graph the 4$^{th}$ Qt. '03 was duplicated. There was discussion on ALARA and citation statistics and trends. A fourth quarter 2003 rise in citations was not repeated. Dr Yokel moved to approve the quarterly and ALARA reports, seconded by Ms. Allen. The motion was approved by a 9 to 0 vote.

4. **Draft AU Application Revision:** Mr. Wilson presented and discussed additional revisions to the radioactive material application system. An example completed application and P-32 safety plan were provided for study. During discussion other changes were suggested. There was agreement that the project was moving in the right direction, and work was to continue. Some potential problems in establishing a two-way on-line application preparation and submittal system were noted.

5. **RSO Report:** Mr. Wilson presented the RSO Report. Elements of the written report, provided, were discussed.

   a). Potential Occupational Overexposure in Diagnostic Radiology: Mr. Wilson noted that, following the February Committee meeting, a response had been received from the KY Radiation Health Branch. The argument for the use of an Effective Dose Equivalent adjustment was accepted, so no overexposure occurred.

   b). Updated X-Ray Inspection Report: Mr. Schlenker noted that ninety-two machines have now been inspected. Fifteen new machines have been added to date in FY 2003-2004.

   Mr. Wilson commented that some hospitals were using or contemplating providing a letter or card for patients discharged while containing radioactive materials. With the expansion of security radiation detectors in airports and other public places, some patients are being stopped and questioned. The Committee agreed that this subject could be given consideration.

There being no other business items, Chairman Christensen adjourned the meeting at 4:30 P.M.

**Radiation Safety Committee Membership**

**2003-2004**

Abercrombie, Sheryl, Diagnostic Radiology, slaber0@pop.uky.edu, 257-3502
Christensen, Ralph, VC, Clinical Science, Radiation, rcchri1@pop.uky.edu, 323-1100, ex. 80847
Doty, Sarajane, Lexington Comm. College, sdoty01@pop.uky.edu, 257-4872, ex. 4100
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Matthews, James, Animal Sciences, jmatthew@ca.uky.edu, 257-7513
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Yokel, Robert, College of Pharmacy, ryokel1@uky.edu, 257-4855
Zwicker, Robert, Radiation Medicine, zwicker@pop.uky.edu, 257-7612

**Ex-Officio**

Allen, Mary, University Relations, mlallen@email.uky.edu, 257-6398
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