Seventh Annual State of the Environment Report for the University of Kentucky

Jointly submitted by the
Environmental Health & Safety Division
and the
Committee on Environmental Health and Safety

to
Ben W. Carr
Vice President for Auxiliary and Campus Services

on the
19th day of September 2001

by

Harry G. Enoch, Director Environmental Health & Safety Division	Mark Meier, Chair Committee on Environmental Health and Safety

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Report of the
Environmental Health & Safety Division

EH&S Accomplishments

The following workplan items were submitted to the President as Major Business Objectives for the EH&S Division:

1. **Implemented a program to maintain safe exit corridors and stairwells in University buildings**. This program was developed to address the obstruction of exit corridors and stairwells with furniture, file cabinets and other stored material. The program provides the means to have a corridor reviewed and possibly approved for a specific use that does not obstruct required exit egress. It also provides the means to have obstructions automatically removed. The Hospital adopted this program as one of their policies (No. 04-22). To date, full surveys have been conducted in Dentistry, Combs, MRISC, Ag Science North, Pence Hall, T. H. Morgan and Chemistry-Physics; partial surveys conducted in 21 buildings; and 14 vending areas have been surveyed. This activity will continue in FY 2001-02.

2. **Initiated a program to help UK units meet the requirements of the Department of Transportation (DOT) and the International Air Transportation Association (IATA) regarding the shipment of hazardous materials via commercial carriers**. Persons who prepare "dangerous goods" for shipment must receive appropriate training. Regulations require these persons to receive general awareness, function-specific, and safety training. EH&S worked with the Vice President for Research and Graduate Studies and the Vice Chancellors for Research to identify all the units that ship hazardous materials. EH&S brought in a consultant to provide on-site training for 58 people in 25 units. EH&S is providing technical assistance to UK shippers. In December 2000, one month after the training was provided, UK had a DOT inspection with no violations.

3. **Developed and implemented a program to reduce musculo-skeletal injury rates in PPD**. EH&S, working cooperatively with Wellness and PPD, formed a project team to conduct a pilot injury prevention program for PPD custodial staff. The team has completed ergonomic exposure assessments for all tasks associated with custodial staff and developed recommendations to reduce the injury risk associated with these tasks. They then met with custodial supervisors and staff to obtain "customer buy in" and consensus on engineering controls, training, and new tool designs. The recommendations are being implemented, and an effectiveness evaluation will be conducted next year.

4. **Prepare UK for an Environmental Protection Agency Multimedia Inspection that is part of the EPA compliance initiative for colleges and universities**. U.S. Environmental Protection Agency (EPA) has made colleges and universities a top enforcement priority and intends to hold higher education facilities to the same standards as industry. EH&S has documented current compliance status by interviewing employees, reviewing records, and making site visits. Seven major EPA statutes covering 13 regulatory programs were reviewed, and 8 significant compliance issues were identified. A list of 17 recommendations was developed to improve compliance status.

Other major accomplishments of the EH&S Division are listed below:

5. **Provided training for 3,193 faculty, staff, and students**. Each department has a significant training component. Training includes both classroom style and on-line courses. Class schedules are listed on an EH&S training web page. A checklist was prepared to help employees and students identify what safety training they must have.

6. **Rolled out three new on-line safety training courses as alternatives to classroom style courses**. The new classes include Hazardous Waste, Laser Safety, and Advanced Radiation Safety.

7. **Continued to reduce the cost and quantity of hazardous waste**. The amount of hazardous waste shipped in calendar 2000 was 108,661 pounds compared to 197,640 in 1992. The cost of waste disposal in FY 2000-01 was $99,226 compared to $329,000 in FY 1992-93. The significant accomplishments of this program are detailed in a special report: *Waste Minimization Progress Report* (Appendix 1).

8. **Served as co-host of the 18th Annual College and University Hazardous Waste Conference** (with University of Louisville). Over 300 people attended the conference held in August 2000 in Louisville; we received excellent feedback from participants.

9. **Achieved compliance with the fire reporting and fire alarm reporting requirements of the Michael Minger Act (KRS 164.948)**. The reporting requirements went into effect in July 2000; since that date, EH&S has been reporting all UK fires immediately to the State Fire Marshal's office and reporting all fire alarms daily to the State Fire Marshal's office.

10. **Initiated a campus-wide improvement of the fire alarm monitoring systems**. In the summer of 2000, the State Fire Marshal's office noted several code violations in UK's fire alarm monitoring system. Since that time, improvements have been planned to bring the entire system into compliance. A vendor has been contracted to monitor fire alarms for 51 building with digital dialing systems. The systems in more than 160 of UK's remaining buildings are being tied together in a fiber optic campus network. When completed, these fire alarms will be monitored by an outside vendor for the purpose of notifying the fire department. UK will also be able to monitor the system.

11. **Completed eleven major life safety projects**. Projects included Anderson Tower fume hood renovation ($2.2 million), Medical Center asbestos abatement ($1,000,000), Lexington Campus asbestos abatement ($500,000), Administration Building fire and life safety improvements ($80,000), Scovell Hall second exit ($102,000), Pence Hall second exit ($300,000), sprinklers for Holmes Hall and the Blanding Complex 1 and 2 low rise dorms ($642,000), and College of Agriculture's underground storage tank upgrades ($110,000), and Medical Center PCB transfer removal (addressed below).

    EH&S prepared a new six-year life safety plan which identified nearly $25 million of needed improvements. The plan was submitted to UK Administration in December.

12. **Achieved a PCB-free Medical Center**. The removal of the last four PCB transformers from the Chandler Medical Center ($329,000) leaves this facility free of PCB transformers for the first time since it was constructed in 1962.

    Of the 58 transformers UK had in 1984, 51 have been removed, 5 are in the process of being reclassified, and only 2 remain.

13. **Obtained state approval of the Groundwater Protection Plan for UK campus**. UK's plan was approved in August.

14. **Obtained clean closure certification from the state for three major environmental projects**. The projects closed include the two underground storage tank sites at the Ag Motor Pool, the two concrete underground storage tanks at the Central Heating Plant, and site #2 of the North Farms remediation project.

    Of the 112 underground storage tanks UK had at one time, only 18 remain.

15. **Conducted 110 asbestos abatement projects at a total cost of $374,000**. These projects were performed by UK's unit price contractor and managed by the Environmental Protection Department.

16. **Rolled out five new safety programs**. Programs include construction safety awareness, respirator use, bloodborne pathogens, hazard communication, and lead-paint awareness.

17. **Significantly upgraded industrial hygiene program activities**. The unit invested $58,000 in new equipment and spent over $4,000 for analysis of personal exposure samples. Monitoring to date has focused on high hazard areas. Problems were found with formaldehyde exposure in Surgical Pathology and Autopsy at the Medical Center, the Animal Diagnostic Center, and the Center for Rural Health. Problems were found with lead exposure to UK Police and the UK Rifle Team at the Barker Hall firing range. All these exposures have been addressed.

18. **Developed an oversight program for all UK health care units using radiation**. The Radiation Safety office implemented a process for monitoring the use of radioactive materials in health care. Two satellite (off site) Radiation Medicine facilities were inspected. X-ray policies and procedures and a safety manual have been approved by the Radiation Safety Committee and are under review by the health care units of the Medical Center.

19. **A Periodic Unit Review of EH&S was conducted by an outside committee**. In April the committee submitted its report to the Vice President listing EH&S accomplishments and overall positive evaluation (Appendix 2). The committee made eight recommendations, which are being followed up by EH&S. Their major conclusion: that UK needs to strengthen its institutional commitment to safety.

20. **The division had several personnel changes during the year**:

Resignations:	Melinda Holbrook, IS Tech Support Assistant David Sutton, Sr. Hazardous Materials Specialist
New hires:	Shirley Cruse, IS Tech Support Assistant
Promotions:	Mike Blackard, Hazardous Materials Specialist Lee Faulkner, Sr. Hazardous Materials Specialist Tommy Taylor, Sr. Environmental Specialist

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.

Environmental Protection

Asbestos samples analyzed (cost)	545 ($13,044)
Asbestos abatement projects	110
Asbestos abatement costs	$374,000
Building audits for asbestos condition	19
Asbestos awareness class attendees	58
Lead paint samples analyzed (cost)	39 ($1,536)
Other environmental sampling (air, water, soil, etc.)	984
USTs tested	2
PCB transformer inspections	14
PCB transformers removed	4
Environmental remediation costs	$36,700

Hazardous Materials Management

Hazardous waste generators	291
Pounds of hazardous waste shipped	108,661
Waste disposal cost (total UK)	$99,226
Waste containers picked up	5,003
Fluorescent bulbs recycled	28,981
Dry cell batteries recycled	34,448
Lead acid batteries recycled	810
Inspections by HMM	708
Hazardous waste class attendees	515
Incidents/releases responded to	35
Biohazard and rDNA proposals reviewed	40

Occupational Health and Safety

Research laboratories in the Chemical Hygiene database	1,140
Laboratories inspected	291
Laboratory classifications	386
Fume hoods tested	911
Indoor air quality investigations	47
Training class attendance:	1,608
Chemical Hygiene Plan/Laboratory Safety	554
Hazard Communication	54
Hazard Assessment for the Use of PPE	118
Respiratory Protection	10
Bloodborne Pathogens	30
Ergonomics	60
Construction Safety	201
Vehicle Safety	6

New Employee Orientation (EH&S Section)	369
SuperVISION (EH&S Section)	206

Radiation Safety

Authorized users	242
Authorized laboratories	344
Radionuclide purchases, cost	$887,080
Radionuclide purchases, curies	156.2
Radionuclide orders received	2,094
Laboratory inspections/surveys	1,536
Sealed source leak tests	175
Patient therapies:	
Brachytherapy	71
Thyroid	74
Radiation safety class participants	452
Personnel monitoring:	
Film badges, etc. used	10,647
Level I ALARA reports	172
Level II ALARA reports	101
Waste disposal:	
Dry solid, long-lived, radioactive (cu. ft.)	157
Dry solid, short-lived, decayed (cu. ft.)	210
Aqueous liquid (mCi)	64
Waste disposal cost	$39,461
Radiation instruments calibrated	237

University Fire Marshal

Fire extinguishers inspected	5,983
Fire extinguishers serviced	168
New fire extinguishers purchased	400
Fire extinguisher/fire prevention training attendees	560
Fire alarms*	240
Working fires**	14
Plan reviews of new construction/renovation projects	253

** Total is inaccurate. After completion of the Central Fire Alarm project, a designated computer will monitor and record all fire alarms.*

*** The definition of a "working fire" is a fire that causes the fire department to use their fire hose. Other fires, as noted, were put out with a fire extinguisher, although in some instances the extinguisher was used by the firemen.*

Hazardous Waste
Cost and Quantity Trend Report

Total UK Regulated Waste Disposal

Fiscal Year	Gross weight* (lbs)	Disposal Cost** ($)
1984-85	70,314	12,000
1985-86	57,968	12,000
1986-87	45,053	32,000
1987-88	83,726	141,000
1988-89	110,876	112,000
1989-90	116,808	124,000
1990-91	143,470	221,000
1991-92	272,244	275,000
1992-93	232,882	329,000
1993-94	126,271	298,949
1994-95	150,400	317,803
1995-96	240,336	294,644
1996-97	188,476	317,591
1997-98	181,062	254,932
1998-99	149,054	226,506
1999-00	146,950	95,668
2000-01	168,859	99,226

* *Includes hazardous, mixed radioactive-hazardous, TSCA, medical and other regulated waste; excludes other radioactive and Hospital biohazard waste.*

** *Includes all expenses associated with waste disposal.*

Hazardous Waste Disposal*

Calendar Year	Gross weight (lbs)
1984	56,560
1985	63,350
1986	57,933
1987	91,459
1988	88,739
1989	82,221
1990	106,616
1991	148,732
1992	197,640
1993	111,531
1994	114,483
1995	175,426
1996	178,105
1997	174,282
1998	124,503
1999	86,724
2000	108,661

* *Waste regulated under RCRA Subtitle C, the Resource Conservation and Recovery Act.*

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

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

** 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.

Recycling Program Summary

The UK recycling program is operated by the Recycling Office of the Physical Plant Division and depends for its success on the participation and cooperation of the entire UK community.

Trend Report

	1997-98	1998-99	1999-00	2000-01
Total Solid Waste Discarded, tons	**7,805**	**8,333**	**8,123**	**7,759**
Total Recycled, tons	**1,153**	**1,312**	**1,441**	**1,483**
Percentage of Solid Waste Recycled	**12.9%**	**13.6%**	**15.1%**	**16.0%**

UK recycles office paper, cardboard, shredded confidential paper, excess Kentucky Kernels, scrap metal, aluminum cans, plastic, appliances, scrap electronics, grease, oil, antifreeze, fluorescent bulbs, batteries (dry & wet), glass, paint, pallets, wood chips, sawdust, compostables (leaves), and other wood products. Not all items are recycled at all campus locations.

Injury and Illness Trend Report

Employee injuries and illnesses are reported to UK Worker's Care via Form IA-1. Occupational Health & Safety reviews all Form IA-1's in determining whether an injury/illness meets OSHA's recordable injury/illness criteria.

The incident rate is based on OSHA recordable injuries and illnesses per 100 employees. The current (1999 Bureau of Labor Statistics) incident rate for education services is 2.9. This does not include education services with a hospital or health care facility.

OSHA Data (Calendar Year)

Metric	2000	1999	1998	1997
OSHA recordable injuries	349	458	471	570
Injuries involving lost work days	130	161	258	250
Number of days lost	3,232	2,906	6,043	5,066
Injuries involving restricted work days	96	167	105	90
Number of restricted work days	5,671	4,898	7,244	7,470
Fatalities	0	2	0	0
Incident rate	3.7	3.2	4.7	4.8

- Incident Rate = The number of injuries/illnesses related to a common exposure base of 100 full-time workers
- 19,061,104 total man hours worked for 2000 by 11,180 employees (full time, part time, temporary & students)
- 200,000 = base for 100 full-time equivalent workers (number is a constant for this calculation)

$$\text{Incident rate} = \frac{\text{No. of injuries and illnesses}}{\text{Total man-hours worked}} \times 200{,}000 = \frac{349}{19{,}061{,}104} \times 200{,}000 = 3.7$$

Worker's Care Data (Fiscal Year)

Metric	2000 - 01	1999 - 00	1998 - 99
All employee injuries reported to Worker's Care	1099	1130	1177

Major Types of Injuries	2000 - 01	1999 - 00	1998 - 99
Bruise/Contusion/Hematoma	138	149	146
Cut/Puncture/Laceration	309	337	350
Exposure to blood/body fluids	55	68	69
Exposure to TB	30	49	8
Exposure to Unknown Virus	93	9	5
Sprain/Strain	270	305	355
Carpal Tunnel	11	17	13

Major Causes of Injuries	2000 - 01	1999 - 00	1998 - 99
Needlesticks	180	199	218
Contact with Airborne Virus	104	57	43
Contact with Sharp Object (non-needle)	88	116	111
Slips/Trips/Falls	132	138	147
Struck by Object	106	75	117
Repetitive Motion	35	24	31
Lifting	117	144	173
Pushing/Pulling	45	57	54

Parts of the body	2000 - 01	1999 - 00	1998 - 99
Back	119	171	188
Eyes	68	58	85
Finger	270	306	286
Hand	89	103	120

Significant Occurrences

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

Fires
In May, a fire caused extensive damage to UK's historic Administration Building. The fire started when a construction worker using a propane torch to solder copper eaves ignited wood rafters in the building's attic. A similar though less damaging fire occurred in September when construction workers set the roof of the new Hardymon Building on fire. There were five minor fires in residence halls including fraternities and sororities (one less than last year); one of these fires was arson (two less than last year).

NIOSH Assessment of Pharmacy
In November, the University received the final report and recommendations of NIOSH's health hazard evaluation of the Pharmacy Building. NIOSH concluded that no health effects could be linked to occupational exposures in the building, but the report did identify several ventilation issues that need to be addressed. The report's eight recommendations are being implemented by the Medical Center, College of Pharmacy, and EH&S.

Radiation Safety Inspections
There was no inspection of the radioactive materials program in FY 2000-01. One inspection of a new clinical accelerator installation was conducted by the state; the agency requested UK to restrict access to the area outside above the unit; plans have been completed for achieving this. An inspection of the Department of Radiology X-ray units was conducted in June by the state.

Hazardous Waste Inspection
In September, U.S. EPA and the state Division of Waste Management inspected the Environmental Quality Management Center and Chemistry-Physics. No violations were found.

Mercury in Wastewater
The Chemistry-Physics Building was in significant noncompliance with the sewer discharge permit limits for mercury. A corrective action plan has been implemented to reduce mercury levels. Progress at Medical Center resulted in their not being listed in significant noncompliance this year.

Spills and Releases
UK had two hazardous materials releases that exceeded the reportable quantities (i.e., requiring notification of federal, state and local authorities). In July, contractors working in Commonwealth Stadium parking lot dumped six 55-gallon drums containing mineral spirits in unknown concentration. In December, a UK employee spilled about 120 gallons of gasoline at the PPD pumps at the Cooling Plant.

Fines and Penalties
None. Second year in a row with no fines or penalties.

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).

EH&S Certificates of Appreciation

In recognition of their outstanding contribution to safety at the University of Kentucky, the following certificates of appreciation have been awarded.

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

Report of the
Environmental Protection Department

ENVIRONMENTAL PROTECTION

Annual Report

FY 00-01

The following work plan item was submitted as the Major Business Objective (MBO) for Environmental Protection to George DeBin, Vice President for Fiscal Affairs:

1. Prepare UK for an Environmental Protection Agency (EPA) Multimedia Inspection that is part of the EPA compliance initiative for colleges and universities.

   A draft format has been developed for the assessment. A stand-alone presentation has been prepared for delivery to the President's staff.

The following were major workplan items for Environmental Protection for Fiscal Year 2000-2001.

2. Coordinate the preparation of a Spill Prevention Control and Countermeasure (SPCC) plan for main campus.

   Negotiations with a consultant are underway. $10,000 to be funded from the Vice President's reserve. Initial work will involve a comprehensive inventory of regulated sources or areas and a review of other university plans. Additional funding for full plan development approved late in June 2000.

3. Oversee implementation of the compliance plan for mercury reduction in the wastewater from Chemistry-Physics.

   Implementation of the city-approved compliance plan is on schedule. Two pilot sink trap cleaning projects have been completed. The full-scale trap cleanup project is being developed.

4. Obtain state approval of the Groundwater Protection Plan for main campus.

   The Kentucky Division of Water approved the plan in August 2000.

5. Review and recommend additions/changes to UK's Clean Air Act permit.

   Needs are to be assessed pending review of the EPA compliance assessment.

6. Develop and implement a lead-based paint awareness-level training course for maintenance and operations workers.

   A new course has been developed and was given to Ag Design and Construction in June 2001. Additional dates and units are to be added thereafter.

7. Remediation of the four disposal sites at the North Farms (continuing activity).

   Additional sampling was conducted at Site #2 to further characterize lead concentrations in residual soils, followed in November 2000 by receipt of a "no further action" letter from the Kentucky Division of Waste Management. Work started at Site #3 in late June 2001.

8. Asbestos awareness training (continuing activity).

   On going. Additional training sessions to be added in Fiscal Year 01-02.

9. Asbestos and lead-paint abatement (continuing activity).

   On going. Asbestos abatement price contract to be re-bid in 2002.

Other Accomplishments and Major Events

- The state granted closure of the project to perform "confirmatory sampling" associated with two large concrete underground storage tanks (USTs) at the Central Heating Plant. The closure letter was received in November 2000.

- The state's UST Branch granted closure on two projects at the Agriculture Motor Pool. One project was related to the removal and replacement of two fuel tanks that did not meet current standards. The other was an ongoing project (beginning in 1991) to investigate groundwater contamination discovered during construction of the nearby Nutter Field House. The closure process took place over the period of April 2000 through the beginning of FY 00-01.

- A small-scale spill of hydraulic fluid occurred at the UK – LFUCG Arboretum in March 2001 when an equipment hose ruptured. The spill was reported to the appropriate authorities, following which approximately 18 cubic yards of soil was removed and disposed.

- Additional activities related to the Corrective Action Plan for the new Southeast Community College –Whitesburg Academic/Technical Building site were conducted to further determine the extent of soil and groundwater contamination related to four former USTs, as well as several off-site USTs. The project is expected to continue for many years.

- An oil spill occurred at Reynolds #1 (Surplus Property area) in December 2000 when a transformer from x-ray equipment was twice dropped from a forklift, resulting in the release of a large amount of oil. A large area of the building and an exterior dumpster were roped off and cleanup took place. The oil was tested and found to be non-PCB.

- A PCB spill occurred at the Student Center in February 2001 when a hose failed, causing PCB-contaminated fluid to collect in the containment curb surrounding the affected transformer. The hose was part of equipment being used to reclassify the transformer to non-PCB status, and this was the second such incident to occur at this location. The affected area was cleaned up in accordance with EPA guidelines, and confirmatory sampling was performed to document the adequacy of the cleanup. The contractor to whom the failed equipment belonged was held responsible for the financial cost of the cleanup.

- Four PCB transformers were removed from the Chandler Medical Center, leaving the facility free of PCB transformers for the first time since it was constructed.

- Significant improvement was observed in the level of compliance with the Medical Center's LFUCG Industrial User Permit, specifically the permit limit for mercury. Although several measures were taken, the improvement was largely attributed to diversion of waste from dental clinics as well as the shutdown of the medical waste incinerator.

- A small mercury spill discovered during the Chemistry-Physics trap cleaning pilot project was cleaned up. Further investigation revealed that the mercury had come from broken equipment in storage.

- 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.

    - Coldstream Farm (furnaces removed from houses)
    - Shively Sports Center (disturbance of tank insulation)
    - Taylor Education Building (improper abatement work practices)
    - M.I. King South (disturbance of pipe insulation)
    - Cooperstown Apartments (disturbance of floor tile and mastic)

- A small spill of diesel fuel occurred on the Plant Science Building construction site in February 2001. The contractor was advised to improve spill containment measures and fuel dispensing procedures. The spilled material itself was cleaned up.

- A database of lead-based paint testing results was created. It will be used to evaluate future construction projects for the potential to disturb lead.

- After discovery of a leaking glass pipe under the floor slab of a basement laboratory in the Pharmacy Building, two soil samples were collected in January 2001 and analyzed to determine if evidence of a chemical release was present. No evidence of a release was detected.

<u>Key Indicators/Routine Functions</u>

- Over **110** Service Center projects

- Asbestos abatement project activity (including pre-abatement testing and air monitoring) - approximately **110** projects totaling approximately **$374,000**

- Sampling for asbestos – **545** samples (**$13,044** survey/testing cost)

- Sampling for lead-based paint – **39** samples (**$1,536** testing cost)

- Other environmental sampling (air, radon, water, soil, waste, etc.) – **1,143** samples

- Monitoring compliance of underground storage tank leak detection methods

- Property visits - demolitions, Real Property acquisitions, selected leased property
- Building “audits” for asbestos condition - **19** locations
- USTs - **2** tanks tested
- PCB transformer removals – **4** transformers removed
- PCB transformer inspections – **14** inspections
- Training (asbestos and lead awareness) – **58** people
- Environmental remediation costs - **$36,700**

Pending Projects (FY 01-02)

- Remediation – implement investigation and cleanup of Barker Hall firing range and exterior soils
  benefit: environmental protection; regulatory compliance
- Fayette County Farms - remediation of Site #4 (third of four sites)
  benefit: environmental protection; regulatory compliance
- Emergency Planning – prepare a Spill Prevention Control and Countermeasure Plan for the Lexington campus
  benefit: compliance with regulations; environmental protection
- Compliance – continue to evaluate readiness for an EPA multimedia inspection
  benefit: regulatory compliance; liability reduction
- Training – evaluate providing web-based versions of training programs and deliver lead-based paint awareness course to additional units (beyond Ag)
  benefit: compliance with regulations; safety; worker awareness
- Wastewater – continue oversight of the implementation of the Lexington Campus’ plan to reduce mercury in wastewater discharges
  benefit: hazard and liability reduction; regulatory compliance
- PCB transformer removals - EH&S oversight
  benefit: hazard source reduction; removal of regulatory risk
- UST Removals – EH&S assistance and oversight on closure of remaining unregulated USTs and assistance with operation of regulated USTs still in service
  benefit: compliance with regulations; environmental protection; liability reduction

Long-term Projects (end of 01-02 fiscal year and beyond)

- Evaluation of campus “green” initiatives
- Additional work at Barker Hall (lead contamination)
- Additional assessment of Fayette County farms (site #3 – fourth of four)
- Asbestos guidebook or reference manual
- Lead abatement specification
- Asbestos Management Plans and/or O&M documents
- Compliance monitoring - air, asbestos, lead, USTs
- Additional asbestos awareness training

Program Improvements (over time)

- UST removals - 112 tanks originally, now reduced to 18
- PCB transformers - 58 units in 1984, now reduced to 2 (5 more in reclassification)
- Asbestos - over 250 buildings surveyed
- Asbestos - asbestos awareness training for maintenance & housekeeping personnel
- Asbestos - improved signage in mechanical rooms (high hazard areas)
- Lead-based paint – All childcare facilities surveyed for lead risks
- Lead-based paint – Pilot sample of employee housing assessed
- Radon - over 250 buildings tested and 10 mitigation systems installed

Report of the
Hazardous Materials Management Department

Hazardous Materials Management
Annual Report July 1, 2000 – June 30, 2001

WASTE

1. Total containers 5,003 total pounds 168,859 (campus)
2. Pickups at other non-campus locations 11, total pounds 21,719

HAZARDOUS WASTE CLASSES

Total 12 classes 515 attendees

HAZARDOUS WASTE GENERATORS

291 per ticket tracker unique room pick up report

HAZARDOUS MATERIALS INCIDENTS

Hazardous Materials Management responded to 35 notable incidents

HAZARDOUS MATERIALS COMPLIANCE INSPECTIONS CONDUCTED BY HMM

1. Main Campus 695
2. Off Campus 13

INSPECTIONS (STATE / FEDERAL)

1. Inspection by State DEP at end of 1999-2000 period resulted in 100% compliance.
2. Joint EPA and DEP inspections on 9/27/00 resulted in 100% compliance.
3. DOT inspection on 12/13/00 to verify training resulted in 100% compliance.

BIOHAZARD/ rDNA PROPOSALS

40 reviewed by IBC officer and sent to Committee

PUBLICATIONS

1. Placed EQMC Fact Sheet on web page
2. Hazardous Waste Class was offered on Web

PERMITS

No significant changes in fiscal year 00-01

UNIVERSAL WASTE

A Universal Waste Program has been initiated to manage fluorescent light bulbs, batteries, mercury switches, and unused pesticides as defined by the State and Federal EPA. In fiscal year 00 - 01, HMM managed the following volumes of Universal Wastes:

Fluorescent light bulbs	28,981
Batteries	34,448
Lead acid batteries to recycled at no charge	810

WASTE MINIMIZATION

1. Continued practice of recycling fluorescent light bulbs. Negotiated an even lower disposal price with current vendor by finding a lower price with competitive vendor and having them match it.

2. Continued on-site analysis of unknown compounds at EQMC laboratory. This results in better compliance with regulations, reduction of waste and reduces off site lab costs.

3. Continued to collect and recycle batteries, 34,448 have been collected. Expanded on practice of taking lead acid batteries to local recycler for disposal at no charge. Began tracking this number separately from other battery operations.

4. Empty glass bottle program has recycled 2,523 containers year to date. We have also added large chemotherapy cans to the recycling program.

5. Ongoing bulking and treatment activities continue to produce significant cost savings. Year to date disposal costs are $99,226.

6. Bulking of hazardous waste in common drums to reduce the volume and number of containers shipped for disposal has resulted in cost savings of $108,989 per year since EQMC opened.

7. Acid/Base neutralization operations removed 5,186-lbs. waste from UK's waste stream. 36.12 lbs. of oxidizers were treated and removed from the hazardous stream as well.

8. Increased efforts to reduce lead paint related wastes by taking the lead paint dumpster out of service and labpacking the waste in the facility. Have further reduced the amount of lead waste generated by screening the paint waste for large debris and non-hazardous material.

9. Continue to work on method of redistilling waste solvents. Technical difficulties with equipment have hampered progress to obtain an acceptably pure product.

HAZARDOUS MATERIALS MANAGEMENT ACTIVITIES

1. Co-hosted the 18th Annual College & University Hazardous Waste Conference with the University of Louisville. Conference was well attended and well received.

2. Revised the hazardous waste training class and outline to make it more informative and effective.

3. Passed federal and state inspection by EPA and DEP at both facility and laboratory level.

4. Passed DOT inspection for training documentation standards.

5. Developed, organized and presented a DOT/IATA (FAA) Training Class to certify UK staff to ship hazardous materials by ground or air.

6. Downgraded North Farm Area from large quantity generator to small quantity generator. Will alleviate inspection, reporting and compliance issues.

7. Coordinated with state waste official to change registration dates from many different dates to one common date. This will reduce the chance of registration non-compliance and cut down on number of checks needing to be made to state.

8. Began to identify chemicals on farm that require them to report on Community Right to Know forms. Will attempt to bring quantities down to below threshold so they do not have to be reported.

9. Extended favorable waste disposal contract pricing for one additional year.

10. Swapped over from voice mail contract to digital answering machine resulting in immediate savings and quicker response to messages.

11. Established and implemented thorough lab auditing system which will track compliance with hazardous waste guidelines in UK labs.

INTERNET / WEB PAGE

The HMM Web page has been expanded to offer the Hazardous Materials Training Class and certification process on-line. DOT shipping information and a Facility Information Fact Sheet has also been added. The web based Chemical Redistribution Program has recycled 638 chemicals since March 1998.

CLEANOUTS / PROJECT

Pharmacy – Jacobson/Sarkari	250 chemicals
Microbiology – Sisken	300 chemicals
Energy Research Center – Thomas	400 chemicals
Medical Center – Pavlik	200 chemicals

BIOHAZARD WASTE

4,036.96 pounds shipped in fiscal 00-01

Hazardous Waste Cost and Quantity Trend Report

Total UK Regulated Waste Disposal

Fiscal Year	Gross weight* (lbs)	Disposal Cost** ($)
1984-85	70,314	12,000
1985-86	57,968	12,000
1986-87	45,053	32,000
1987-88	83,726	141,000
1988-89	110,876	112,000
1989-90	116,808	124,000
1990-91	143,470	221,000
1991-92	272,244	275,000
1992-93	232,882	329,000
1993-94	126,271	298,949
1994-95	150,400	317,803
1995-96	240,336	294,644
1996-97	188,476	317,591
1997-98	181,062	254,932
1998-99	149,054	226,506
1999-00	146,950	95,668
2000-01	168,859	99,226

*Includes hazardous, mixed radioactive-hazardous, TSCA, medical and other regulated waste; excludes other radioactive and Hospital biohazard waste and all non-campus waste.
**Includes all expenses associated with UK waste disposal.

Hazardous Waste Disposal*

Year	Gross weight (lbs)
1984	56,560
1985	63,350
1986	57,933
1987	91,459
1988	88,739
1989	82,221
1990	106,616
1991	148,732
1992	197,640
1993	111,531
1994	114,483
1995	175,426
1996	178,105
1997	174,282
1998	124,503
1999	86,724
2000	108,661

* Waste regulated under RCRA Subtitle C, the Resource Conservation and Recovery Act. Data taken from the Hazardous Waste Annual Reports for all UK areas, campus and non-campus.

KEY INDICATORS FOR HAZARDOUS MATERIALS MANAGEMENT

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

Hazardous Materials Management

Pounds of waste shipped (campus)	168,859
Waste disposal cost (total UK)	$99,226
Containers picked up:	
Waste	5,003
Good chemicals distributed for reuse	638
Fluorescent bulbs recycled	28,981
Batteries recycled	34,448
Hazardous waste class attendees	515
Incidents/releases responded to	35
Biohazard and rDNA proposals reviewed	40

HMM MAJOR OBJECTIVES FOR FISCAL YEAR 2000-01

1. Continue with efforts to redistribute solvents reclaimed from distillation process.

2. As recommended by the University of Kentucky Institutional Effectiveness Periodic Unit Review Committee, item 6, "Timely Hazardous Waste Removal," the following items MJO's for the 01-02 period.
   a. Purchased small golf cart sized waste vehicle which will be used to further reduce amount of time required to remove waste from labs. Cart will be used in core-campus area. Will also be used in spill scenarios to increase response efficiency. Will also reduce fuel and maintenance costs.
   b. Analyze the timeliness of current hazardous waste removal process. Plan for continuous improvement in this area of responsibility.

3. Develop web based ticket submission process.

Report of the
Occupational Health and Safety Department

Occupational Health and Safety Team
Annual Report
FY 2000-2001

Workplan

The following workplan item was one of the Major Business Objectives for EH&S:

1. Implement an injury prevention program working cooperatively with Wellness and PPD to reduce musculo-skeletal injury rates in PPD.

   The Pilot Team has completed ergonomic exposure assessments for all tasks associated with custodial staff. Intervention design and recommendation has been completed. Customer buy-in and consensus secured on engineering controls, training and new tool designs. Intervention implementation to be completed early FY 2001-2002. Intervention evaluation to commence early FY 2001-2002.

These were the other major workplan items for OH&S this fiscal year:

2. Develop and implement a program for conducting respirator fit-testing and training.

   Program developed and implemented. Ten employees fit-tested and trained. Continually identifying potential units to target for training, fit-testing and Respiratory Protection Program development.

3. Develop and implement a safety awareness training program for UK employees who must go onto construction sites.

   Program developed and implemented. Training has been conducted for over 200 employees. Training is continuously available by request.

4. Work with Hospital, College of Medicine, and others to ensure that workers are not overexposed to formaldehyde.

   Exposure assessments have been performed for Surgical Pathology, Autopsy, Histology, Ear Nose and Throat—Surgery, and Parasitology. Levels in Surgical Pathology and Autopsy required implementation of formaldehyde protection programs (written program, training, medical surveillance, engineering controls, and personal protective equipment).

5. Expand industrial hygiene assessments to monitor areas/jobs with the potential for employee or student overexposure to hazardous substances.

   Exposure assessments for lead were conducted for UK Police and the UK Rifle Team at the Barker Hall firing range. Overexposures were documented which resulted in administrative controls to reduce exposure.

Additional exposure assessments for formaldehyde, glutaraldehyde, mercury, and/or noise have been conducted for Veterinary Science – LDDC, UK Center for Rural Health, PPD – Plumbing, College of Architecture, Communications, UK Information Systems – Duplicating Services, and UK Hospital.

Overexposures to formaldehyde were documented in Veterinary Science – LDDC and UK Center for Rural Health, which resulted in engineering controls and/or administrative controls to reduce exposure.

6. Develop and implement an annual refresher training program for bloodborne pathogens.

   Developed and implemented initial/refresher training program. Conducted training of all affected personnel within Sanders-Brown Research Center and Hazardous Materials Management. Assisted College of Dentistry with training and an exposure control plan. Classroom training is currently offered by request with targeting of affected groups ongoing. A model Exposure Control Plan has been completed and is available for customer utilization.

7. Revamp and implement the UK Hazard Communication program.

   The model UK hazard communication program has been revised; a training module (class) has been developed and is offered monthly and by request. Training and written program development assistance (as applicable) has been rendered to College of Agriculture – Communications, Auxiliary Services, Veterinary Science – LDDC, Communications – Field Operations, UKMC - Drug Product Evaluation, Radiation Safety, Hazardous Materials Management, Environmental Protection, and the University Fire Marshal's Office. Training and written program development assistance has been provided to College of Agriculture – Management and Operations, MC PPD, Housing, and College of Fine Arts – Metal Arts.

8. Develop a schedule for lab inspections that ensures all labs get inspected on a regular basis.

   A schedule has been developed to inspect each UK lab on an 18-month cycle. We are currently up to date.

9. Develop and implement a set of equipment standards for laboratories based on categories of chemical use.

   Standards have been developed and a pilot application tested for seven lab buildings. Sharing of pilot performance for customer buy-in to be conducted early FY 2001-2002.

10. Provide data on work-related injuries and illnesses to UK units on a regular basis.

    Completed. Reports are being sent to UK units and safety committees quarterly.

11. Expand the role of Unit Safety Committees/Coordinators by getting additional committees/coordinators appointed, developing tools for them to use, holding occasional safety conferences, and distributing safety information on a regular basis.

    New committees were established in Combs and Dentistry.

OH&S collaborated with the Office of Research Integrity in providing health and safety orientation to new faculty at the MC New Faculty Retreat.

Additionally, OH&S serves as the primary EH&S trainer for the EH&S orientation of all new employees and supervisors.

12. Work with UK administration to make safety training mandatory for faculty.

    Policy adopted; College of Pharmacy and Chemistry completed.

There have been a number of projects initiated over the past several years that add significant, continuing work activities for OH&S:

13. Annual fume hood inspections.

    Up to date.

14. Indoor air quality investigations.

    Total of 47 IAQ investigations conducted. Procedure in place for defining actions required for each investigation request. Additionally all new construction and renovation projects forwarded to OH&S are evaluated in determining affected indoor air quality.

15. Driver education training.

    Program developed and is available upon request. Have trained 36 employees since inception.

16. Participation in the following committees: Institutional Animal Care and Use Committee, Institutional Review Board, Hospital Environment of Care Committee, Medical Center Safety Committee, VA Radiation Safety Committee, Fayette LEPC, Royal Springs Water Supply Protection Committee (Georgetown), and the 5 EH&S committees.

    On going.

17. Web page design and maintenance.

    On going.

Additional OH&S Accomplishments

1. Developed and administered training program to supervisors on how to conduct workplace hazard assessments in determining the need and proper use of personal protective equipment.

2. Conducted a total of 47 Indoor Air Quality Investigations in response to employee solicitations. These investigations involved 24 different buildings.

3. Conducted occupational health and safety audit of the UK Center for Rural Health. Performed chemical exposure assessments and review of safety programs and associated training. Also identified other EH&S deficiencies/concerns and made referrals to appropriate EH&S departments for action.

4. Provided guidance and OH&S design oversight in ensuring initiation of eyewash/ safety shower upgrade project involving Garrigus Building, Agricultural Science Center North Building, College of Pharmacy Building, and Combs Cancer Research Center Building.

5. Provided guidance and OH&S design oversight in ensuring completion of Anderson Tower Fume Hood Upgrade Project.

6. Continually providing guidance and OH&S design oversight for all new construction/renovation projects including but not limited to: Women's Cancer Center, Gill Heart Institute, Plant Science Building, Aging Allied Health Building, BBSRB, Biological Sciences Building, and the Mechanical Engineering Building.

7. Developed and initiated the use of a Bloodborne Pathogens Program Self-Audit Program for UKMC.

8. In conjunction with the IACUC's Animal Facilities Inspection Program, the OH&S Team conducted occupational safety and health inspections of 254 spaces utilized by UK animal workers. All safety deficiencies noted were incorporated into the IACUC's notification and correction tracking system.

9. The OH&S Team actively participates in all IACUC Protocol Application reviews in ensuring all required EH&S requirements have been met prior to protocol approval. This has resulted in 23 laboratory personnel receiving the required Chemical Hygiene Plan/Laboratory Safety Class. In addition, this effort has resulted in 15 laboratory personnel receiving the required Hazardous Waste Training.

10. Participated in the SGA Walk for Safety.

11. Conducted 8 investigations of significant incidents involving employee/student injury, fire, and chemical releases.

12. Conducted departmental specific Chemical Hygiene Plan/Laboratory Safety training sessions for Materials Engineering, College of Pharmacy, Chemistry and ASTeCC.

13. Maintained the UK Accident Report (Form 6) computerized database for identifying and trending non-OSHA Recordable/ Worker's Compensation (WC) injuries and illnesses. Standardized trend reports developed and disseminated to university sectors on a quarterly basis in conjunction with WC injury/illness data.

14. The OH&S Team continues to analyze, trend, interpret and distribute associated WC injury/illness data to all applicable university units in heightening awareness and defining opportunities for hazard abatement.

15. Conducted extensive revisions of the UK Model Chemical Hygiene Plan. Disseminated copies to all affected Principal Investigators/Laboratory Supervisors.

16. Fume Hood Survey Program continues to function effectively.

17. Trained UKMC Safety Committee new membership on laboratory inspection procedures and hazard identification.

18. Coordinated effort on providing EH&S booth display at UK Staff Appreciation Day in improving employee EH&S awareness.

19. Collaborated with Hazardous Materials Management in responding to four chemical spills. Provided analytical services in characterizing customer exposure levels and determined and authorized safe reentry of building occupants.

20. Developed and posted to the EH&S website a Fact Sheet on mold and microbial contamination in the indoor environment.

21. Created and staffed a part-time Occupational Health & Safety Technician position.

22. Conducted an occupational health and safety gap analysis of UK Physical Plant Division. The goal of this effort was to identify areas requiring improvement as well as existing good practices associated with PPD safety programs. The analysis was a review of selected programs to identify indicators which would prompt further extensive evaluation.

23. In support of the university's research function, OH&S conducted 5 comprehensive laboratory inspections and EH&S program reviews associated with DOD Grant Proposals.

24. The OH&S Team and the UK Wellness Program formed a collaboration to investigate and address employee requests for ergonomic exposure assessments, surveys and training.

25. Served as panel member and provided EH&S orientation to faculty at the UKMC New Employee Retreat in collaboration with the Office of Research Integrity.

Key Indicators for Occupational Health and Safety

Research laboratories in the Chemical Hygiene database	1,140
Laboratories inspected	291
Laboratory Classifications	386
Fume hoods tested	911
Indoor Air Quality investigations	47
Training Class Attendance	
Chemical Hygiene Plan/Laboratory Safety	554
➤ Classroom Training	(439)
➤ On-line Training	(115)
Hazard Communication	54
Hazard Assessment for the Use of PPE	118
Respiratory Protection	10
Bloodborne Pathogens	30
Ergonomics	60
Construction Safety	201
Vehicle Safety	6
New Employee Orientation (EH&S Section)	369
SuperVISION (EH&S Section)	206

Academic Participation by OH&S Team
2000-2001 School Year

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

Bob Cadle

Preventive Medicine and Environmental Health: Practicum in Advanced Industrial Hygiene, PM-663 (12 hours)

David Hibbard & Lee Poore

Chemistry: Seminar in Chemistry - Chemical Safety, CHE-772 (2 hours)

Report of the
Radiation Safety Department

Radiation Safety Officer's
Annual Report to the Radiation Safety Committee
Fiscal Year 2000-2001

Introduction

The Radiation Safety Officer is required to submit an annual report regarding the state of radiation safety to the University of Kentucky Radiation Safety Committee. The Report for Fiscal Year (FY) 2000-01 is provided herein.

Significant Occurrences

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

Regulatory Inspections

No inspections of licensed activities were held in FY 2000-01. One inspection of a new clinical accelerator installation was conducted. The area above the accelerator, a planter with trees in it, meets the *dose to the public* standard, however the view of the state representatives is that more should be done under ALARA. The planting of a continuous hedge around the planter edge and thorny bushes above the accelerators themselves has been agreed to as adequate. Plans have been completed for achieving this. An inspection of the Department of Diagnostic Radiology, X-ray, was conducted on June 12, 13 and 14, 2001. Several relatively minor safety findings were made. The Department has corrected all but two of these. In-house inspections had been done, and Mr. Wilson was provided with the reports.

Incidents

- A significant near-miss incident occurred at about noon, August 9, 2000. A 150 mCi I-131 dose was being transported from Nuclear Medicine to Second Floor Markey. While exiting the elevator, the transfer cart wheel fell into the elevator door crack, tilted the cart and the I-131 shield fell off. The shield broke open and the glass dose vial rolled through the door crack and fell 2 ½ floors to the elevator well. The vial was retrieved intact with no I-131 contamination found. The transport equipment and procedure has been revised.

- January 28, 2001, 8:00 P.M., Markey Cancer Center, Patient Room 222. A brachytherapy patient got out of bed and caused a dislodgement of the radiation sources. The sources were retrieved and all fully accounted for without further incident. No undue radiation exposures resulted. No safety policy or procedure was broken. No misadministration resulted.

- A complaint was filed with the Cabinet For Health Services regarding one or more x-ray technologists who delegated radiographing patients to aides who were not trained or credentialed. Clinic management acted swiftly and positively in correcting the situation. The Cabinet has suspended at least one technologist for five days. The committee feels such events fall within its purview, and it should have been notified through the RSO.

- Medical Center, Wednesday, May 16, 2001, Hallway at room N-51, Nuclear Medicine - At approximately 3:00 P.M. two Nuclear Medicine technicians were transporting I-131 patient waste to the Waste storage Room near the Nuclear Medicine Dept. A discarded utensil pierced the bag and liquid leaked out onto the hall floor. Nuclear Medicine staff took control and called the radiation Safety Office for assistance. Fred Rawlings responded. Complete decontamination was accomplished. There were no significant exposures and no personnel contamination. A recommendation for the use of secondary containment for patient waste was made.

Misadministrations

- There were no patient misadministrations in the Fiscal Year.

Radiation Safety Office Accomplishments

The items listed below were completed as part of the Major Business Objectives for the EH&S Division in FY2000-01:

1. Added the Advanced and Laser safety courses to the EH&S Homepage.

2. Reviewed and improved record procedures, developed system for computer-based records.

3. Completed five-year renewal applications for teletherapy/gamma knife and irradiator licenses.

4. Expanded the formal safety oversight program for all Medical Center and Hospital use areas.

5. Conducted the annual Radiation Safety Office Audit Report.

6. Developed an x-ray safety program approved by the Radiation Safety Committee. The Medical Center and Hospital administration is reviewing implementation approaches.

7. Completed the annual refresher radiation safety training for ancillary workers.

8. Continued with the quarterly Radiation Safety Newsletter.

Additional Radiation Safety Office accomplishments for the year:

9. The Radiation Safety Office conducted a safety inspection of the Berea medical accelerator facility in July 2000 and the Maysville facility in December. Only minor items were observed, including obtaining a survey meter, some signage and labeling, manual, etc.

10. An increased frequency radioactive waste shipment schedule has been established to prevent waste buildup and storage shortages.

11. The Director served on the VA Radiation Safety Committee, the Medical Center Hazardous Materials Management and the Environment of Care Committees, the Institutional Review Board and the Radioactive Drug Review Committee.

12. The Senior Health Physicist attended the Oak Ridge X-Ray Inspection course.

13. The Director and Assistant Director participated in the annual South East University Radiation Safety Officer's conference in April 2001.

14. Assisted the Environmental Health and Safety Committee in the presentation of safety awards to forty-five Authorized Users who had no safety citations throughout Year 2000.

15. Two new, improved bedside shields for nursing staff protection were obtained.

Academic Participation by Radiation Safety Office Staff
2000-01 Academic Year

1. Gave lectures, seminars, etc. in UK courses. (contact hours)

Bob Wilson
Occupational Health and Safety: Occupational and Environmental Health,
PM 601 Radiation Dose Risk, (1 hour)
Industrial Uses of Radiation, (1 hour)
Fred Rawlings
Radiation Medicine: Radiation Protection,
RM/BIO 740 Mammalian Radiation Biology (1 hour)

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

Fred Rawlings
Basic and Advanced Radiation Safety courses
Gerald Schlenker
Laser, Basic and Advanced Radiation Safety courses
Bob Wilson
Basic and Advanced Radiation Safety Course (backup)

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	242
Authorized laboratories	344
Radionuclide purchases, cost	$887,080
Radionuclide purchases, curies	156.2
Radionuclide orders received	2,094
Laboratory inspections/surveys	1,536
Sealed source leak tests	175
Patient therapies:	
Brachytherapy	71
Thyroid	74
Radiation safety class participants	452
Personnel Monitoring (film badges, etc. used)	10,647
ALARA reports, Level I	172
Level II	101
Waste disposal, dry solid (cu. ft.)	
Long-lived, radioactive	157.5
Short-lived, decayed (non-radioactive)	210
Liquid (aqueous), released (mCi)	64.463
Waste disposal cost	$39,461
Radiation instruments calibrated	237

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 00-01 the Radiation Safety Office conducted nine hundred and seventy-four (974) AU facility (1545 individual lab) surveys, or two hundred and forty-four (244) AU facilities per quarter. Seventy-one percent (70.53%) of the AUs were found to be in compliance.

The most frequently observed non-compliance item was lack of survey records (18.98%). 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 typically area surveys are conducted monthly. This non-compliance has decreased. A factor is believed to be the continued, selected formal consultations being conducted now by Mr. Rawlings, Assistant Director.

The second most common item of non-compliance is emergency numbers not posted (4.45%). The third item is radionuclides not properly stored (5.30%). This has risen in spite of efforts to achieve improvements. Efforts will continue for improvements. The fourth item is emergency phone numbers not posted (4.45%). Security of radioactive materials is at 0.74%.

Contamination was found in laboratories 0.21% of the time. The most frequently observed locations of contamination are laboratory benches, refrigerators, and laboratory equipment. Other less frequent 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. This is being reduced, with efforts continued for still greater improvement.

The revised survey form put into use last year 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 F.Y. 00-01

Item #	Occurrence	Percent	Violation
01	15	1.59	UK Notice to Employees not posted
02	19	2.01	Radioactive Materials sign not posted
04	2	0.21	Contamination in Laboratory Area
07	14	1.48	Emergency instructions not posted
11	14	1.48	Rad. Safety Manual not available
14	42	4.45	Emergency #s on lab entrance not posted
18	1	0.11	Radionuclides received directly in lab
22	179	18.98	Area survey documentation lacking
23	38	4.03	Survey instrument not used or unavailable
26	6	0.64	Evidence of eating or drinking
27	10	1.06	Staff not wearing personal protective clothing
30	9	0.95	Fume hood not operational or not utilized
33	50	5.30	Radionuclides improperly stored
35	7	0.74	Radionuclides not secured
44	9	0.95	Staff not wearing required dosimeter
48	660	69.99	No items of noncompliance in Lab

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 243 Authorized Users with approximately 344 laboratories in FY 00-01. 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
Medical Center	**59**	**105**
Combs	**12**	**25**
ASCN	**17**	**31**
Pharmacy	**15**	**32**
Sanders Brown	**10**	**19**
Markey Cancer Center	**3**	**4**
Gluck	**6**	**12**
Garrigus	**5**	**6**
T.H. Morgan	**10**	**16**
T.P. Cooper	**0**	**0**
Chem-Physics	**8**	**13**
Tobacco & Health	**7**	**7**
Funkhouser	**4**	**4**
Ag. Engineering	**0**	**0**
Research #3	**6**	**8**
Mining & Minerals	**0**	**0**
HSRB	**22**	**40**
Kastle Hall	**1**	**1**
ASTeCC	**3**	**7**
Wenner Gren	**1**	**2**
CAER	**1**	**2**
MRI	**3**	**3**
Total	**193**	**337**

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

During FY 00-01, twenty (20) new AUs and twelve (12) authorization amendments were approved. Fourteen (14) 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. Nine (9) 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 00-01

	Medical Center	Campus
Total Users	**155***	**86**
New Users	**19**	**1**
Terminated	**12**	**2**
Amendments	**4**	**5**

*Includes 3 reactivations

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 can be approved to start work promptly by observing three radiation safety introduction videos. The Basic Course is, however, still required. Upon satisfactory completion, a certificate is awarded. The Radiation Worker is required to complete the Basic Course within 4 month of beginning as a radiation worker.

The Advanced Radiation Safety Course is for faculty and staff new to UK but with previous training and experience. This course is now 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 twenty-

four (24) radiation safety courses of all types in FY 00-01, with four hundred and fifty two (452) attendees.

Table 4

Radiation Safety Training Attendance

Title	Number offered	Number of attendees
1. Basic Radiation Safety	**12**	**232**
2. Advanced Radiation Safety (Online course – 6)	**4**	**25**
3. UK Police	**3**	**29**
4. Ancillary Staff	**5**	**166**
TOTAL	**24**	**452**

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.

In March 2001 the personnel monitoring service was let out for new competitive bids. This was still pending at the end of June 2001.

The Radiation Safety Office issued 7800 monthly radiation badges and 2720 quarterly badges during FY 00-01. In addition, the Office issued 988 ring badges, 268 neutron badges, and 348 double badges. Three hundred and forty-eight (348) selected EDE calculations per year were performed. The total cost for film badges for FY 00-01 was $41,407, down 10%.

Table 5

Dosimetry Issued in F.Y. 00-01

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	7800	650
Rings	744	62
Double Badges	348	29
Neutron	110	9
EDE Calculations	348	--
New Badges	442	--

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.

Table 6

Maximum Observed Monthly Radiation Exposures

Organ	Dose (mrem)	Department	Date
Deep	2751	Radiation Medicine	1/01
Lens of the Eye	2751	Radiation Medicine	1/01
Skin (Shallow)	2739	Radiation Medicine	1/01

Table 7 provides the annual dose for selected departments at the University of Kentucky. Individuals in these departments typically receive more exposure because of the nature of their work.

Table 7

Annual Whole Body Exposure for Selected Departments in mrem

Department	# Badged Personnel	Total Exposure	Average Exposure
Dept of Medicine	22	2736	124.36
Nuclear Medicine	20	5898	294.9
Radiation Medicine	58	4719	81.36
Radiology Techs and Radiology Residents	120	36040	300.33

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 month's 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 month's exposure period). The recipient is notified when their exposure meets this level's criteria. In addition to reviewing procedures as with Level I, Level II requires the worker to respond in writing to the Radiation Safety Office. The response must include the cause of the exposure and a consideration of actions that may be taken to reduce the probability of a recurrence.

The ALARA notifications for FY 00-01 appear in Table 8 for each quarter. The number of ALARA Levels I and II notifications increased on average during the FY. The double badge program will be expanded to help manage these levels and take full advantage of the available EDE calculations for those radiation workers receiving significant monthly doses. The use of the EDE calculation provides a more realistic representation of these individuals exposure as a result of placing one badge under the lead apron and one outside the apron on the collar. The calculation weighs the badge under the apron more than that on the collar thus giving a more realistic representation of the dose to the individual. Level I’s are up twenty-seven percent (27%) and Level II’s are up fifty-one percent (51%).

Table 8

ALARA Numbers for Each Quarter

Quarter	Level I	Level II
3rd 00	55	25
4th 00	35	21
1st 01	49	39
2nd 01	43	16
TOTAL for the Year	182	101

Bioassays

A thyroid scan is required on individuals conducting research involving 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 three (3) thyroid scans in FY 00-01. 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 156.171 curies of radioactive material (up 164%) at a total of $887,080 (down 7%) for Authorized Users in FY 00-01. The most commonly purchased radioisotopes were H-3, Ir-192, I-125, P-32, and S-35 (Table 9a).

A review of records for radioactive material indicates that at no time was the University close to exceeding its licensed possession limits. The amounts in possession by Authorized Users at the University for the majority of radioisotopes did not exceed 10% of the licensed limits.

Table 9a

Quantity of Radioactive Material Ordered Through The Radiation Safety Office, FY 00-01

Isotope	Amount (mCi)	Isotope	Amount (mCi)
C-14	130.335	Mn-54	18.277
Ca-45	1.075	P-32	1213.09
Co-57	1.063	P-33	18.81
Cr-51	89.82	Pd-103	33.4
Ga-67	0	Rb-86	15.32
H-3	130117.87	S-35	334.18
I-123	.300	Sr-89	0
I-125	2785.65	Tc-99m	0
In-111	62.24	Tl-201	0
Ir-192	20440.5	Zn-65	0.51
Misc.			
		Total	155262.44

Table 9b

Quantity of Radioactive Material Ordered Through Nuclear Medicine, FY 00-01

Isotope	Amount (mCi)
Ga-67	767.50
I-123	4314.06
I-131	19567.33
In-111	35995.56
Tc-99m	83,317.57
Tl-201	210.5
Total	144,172.52

Table 9c indicates that as of June 30, 2001, the University had a total of 1802.490 mCi of radioactive material on hand (not including sealed sources).

Table 9c

Radioactive Material On-hand as of June 30, 2001, Campus

Radionuclide	Activity (mCi)	Radionuclide	Activity (mCi)
C-14	248.794	In-111	0.122
Ca-145	0.487	Mn-54	6.985
Cd-109	0.394	Na-22	0.198
Co-57	17.317	Ni-63	1.938
Co-60	0.021	P-32	63.985
Cr-51	3.830	P-33	2.524
Fe-55	0.768	Rb-86	0.869
Ga-67	0.000	S-35	79.832
Gd-153	0.001	Sr-89	0.0
H-3	1261.646	Tl-201	0.000
I-125	111.753	Zn-65	1.026
		Total:	1,802.490

Radioactive Waste

The Radiation Safety Office conducted eight hundred and fourteen (814) pickups of radioactive waste. Table 10 lists the radionuclides picked up and the total activity for each radionuclide for the fiscal year. The solid dry 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. The aqueous waste was disposed of via the sanitary sewerage system according to Kentucky regulations. UK generated 568 liters of mixed waste during FY 00-01. H-3, C14 and S-35 were the most common long-lived, 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 00-01 the Radiation Safety Office shipped 16 cubic feet of animal waste.

Table 10

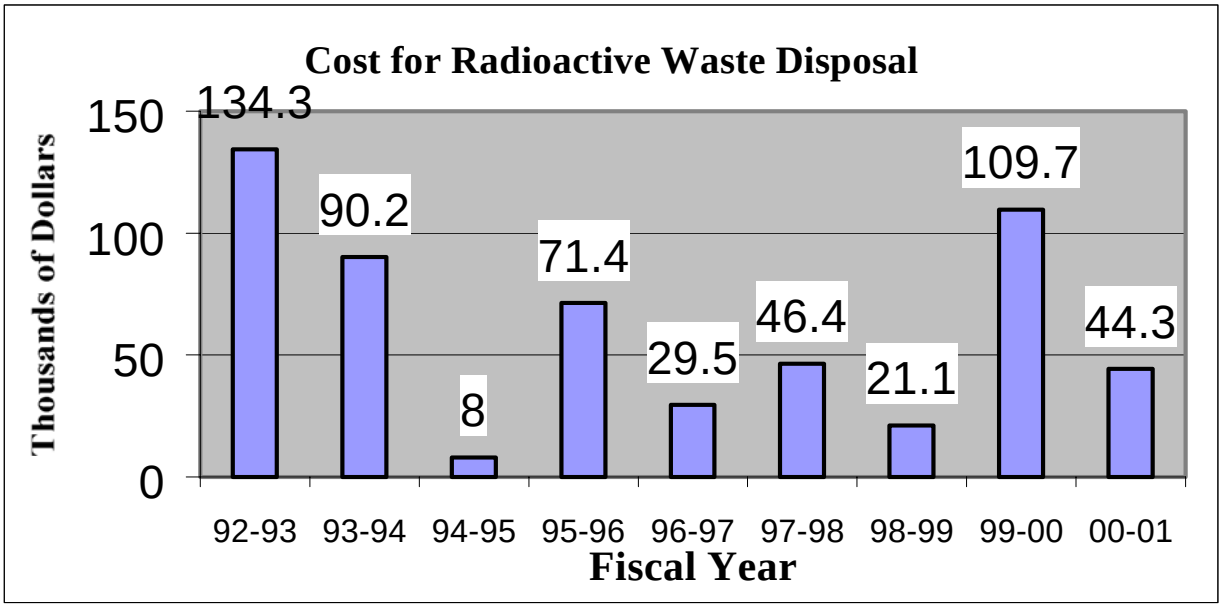
Total Radioactive Waste Received by Radionuclide

Activity in millicuries

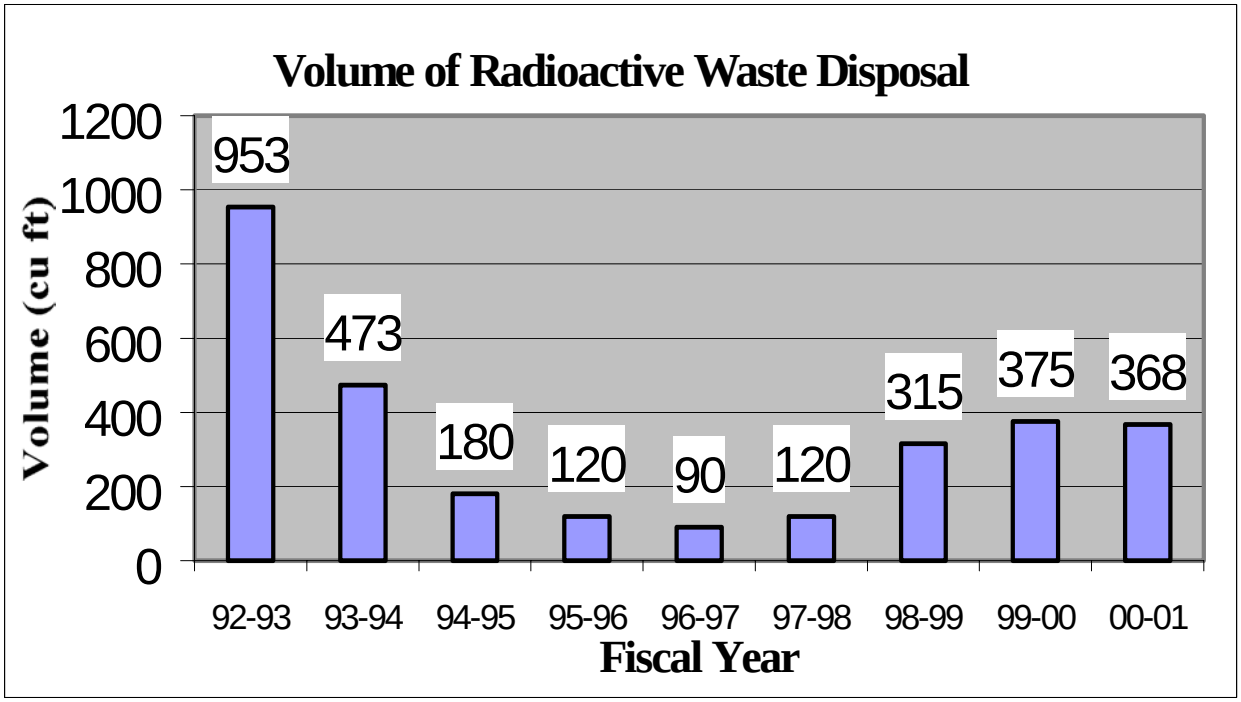
Isotope	Dry Solid Waste	Aqueous
C-14	39.389	35. 617
Ca-45	0.024	0.085
Co-57	0.0	0.0
Co-60	0.0	0.0
Cd-109	0.001	0.0
Cr-51	9.330	0.400
Fe-55	0.000	0.203
H-3	75.960	42.461
I-125	274.225	78.377
In-111	1.500	0.0
Mn-54	8.014	0.060
Na-22	0.050	0.0
P-32	335.453	41.878
P-33	10.860	0.06
Rb-86	1.000	1.000
S-35	35.289	16.208
Tc-99m	0.0	0.0
Zn-65	0.0	0.0
Total	791.095	216.349

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 eight years. In general, UK has been able to contain waste costs. However, fees are rising and charges are being added such that the overall cost can be expected to increase.

Radioactive Waste
Cost and Quantity Trend Report



Excluding mixed radioactive-hazardous waste.



Volume of dry, solid radioactive waste only, short and long-lived.

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 a 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 thirty-seven (237) meters were calibrated during FY 00-01.

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 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 more than forty percent (40%) in FY 00-01.

Table 11

Radiation Safety Services to Nuclear Medicine and Radiation Medicine

Thyroid treatments	**74**
Brachytherapy Implants	**71**
Total	**145**

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 pulled from use and decontaminated, repaired or disposed of as radioactive waste. During FY 00-01 the Radiation Safety Office conducted one hundred and seventy-five (175) leak tests. 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. Lasers must be registered with the Radiation Safety Office Prior to use. During FY 00-01, twenty-three (23) laser facility inspections were completed. Consultations and preregistration guidance was provided. A web based training program was established to allow users to complete the laser safety training requirements on line. Ten (10) laser users have completed the online web based training during FY 00-01.

Bob Wilson, Director
UK Radiation Safety Office
August 02, 2001

Report of the
University Fire Marshal

MEMORANDUM

TO: Harry Enoch

FROM: Garry Beach
University Fire Marshal

DATE: May 1, 2001

RE: Annual Report
Fiscal Year 2000-2001

The following is a copy of the activity sheet listing some of the major activities of my office:

Fire Marshal Activities
00-01 Fiscal Year

Training—(Fire extinguisher use/Fire prevention)
>Greek Chapters House Directors: August 4---25 people
>Residence Halls House Directors: August 7---50 people
>Residence Halls Resident Advisors: August 16, 2000---160 people
>Harry's chemistry class: August 31---18 people
>Drug Product Evaluation Unit/College of Pharmacy: September 6---10 people
>Sigma Chi Fraternity: October 2---40 people
>Carnahan House (Bobbi Looper): 10 people
>Agriculture (Herb Strobel): October 13---15 people
>Agriculture Distribution Center: October 25---9 people
>Residence Halls Resident Advisors (New, Spring Semester): 20 people
>Random employees for advertised class: February 6---15 people (mainly PPD)
March 8---12 people (PPD)
April 11---4 people (PPD)
May 10---11 people
June 4--8 people
>SAE Fraternity: February 19---75 people
>Pi Kappa Alpha Fraternity: February 25---25 people
>ASTeCC/pharmaceutical sciences: 10 people
>UK Food Services: May 22, June 12---43 people (program will continue on into July of fiscal year 2001-02)

Fire/Life Safety Inspections
>Reviewed and processed State Fire Marshal's campus inspection report.
>Conducted fraternity and sorority inspections.
>Inspected all residence halls.
>Completed 24 building audits.

Professional Training
>Overview of International Building Code: Frankfort, September 20 (Garry)
>CAAK Conference—October 16-18 (Greg)
>NFPA Fall Conference--- Orlando Fla., November 11-16, Emphasis was on Student Housing Fire Safety: Campus Fire Safety Forum II (Garry)
>HVAC Seminar—Somerset—March 6 (Greg)
>CAAK Conference---April 23-25 (Garry)
>NFPA 101 Health Care Seminar, Nashville, Tenn. April 26-27 (Greg)

Emergency Procedures (Review/Approval)
Reviewed/revised UK Emergency Response Plans:
>Shawneetown Buildings D, F
>Cooperstown Buildings D
>Holmes Hall
>Donovan Hall
>Haggin Hall
>German House
>Alumni Gym
>Boone Faculty Club
>Agriculture Buildings (8)
>Spindletop Mansion
>Memorial Coliseum
>Lexington Community College Safety Manual
>Hospital's Interim Life Safety Plan

Special Projects
>Conducted training fire drills for both Residence Hall Directors and Resident Advisors utilizing smoke in the corridors.

>August 7-11: flushed campus hydrants.

>October 10: as a result of two arson fires in Holmes Hall, a special meeting with the students in Holmes was conducted to emphasize the seriousness of the fires and their responsibility to provide information to apprehend the person(s) who committed this crime. Jim Wims and the Fire Department participated in the meeting. Via a toll free number, the State is offering a $1,000 reward for information leading to an arrest and conviction on any person committing arson. This is statewide, not just on the Holmes Hall incidents.

>Assisted in writing specifications for an RFP for outsourcing fire alarms on the Silent Knight reporting system to a central reporting station.

>Student Financial Aid, Funkhouser—special training on emergency procedures: 25 people

>UK course—Architecture 869 & 870—Comprehensive Studio/Building Systems Integration—evaluation of projects—Greg, per request from the Dean, participated in the evaluation of the projects of the 5th year students.

Fires on Campus

>K-Lair grill—July 28: grill fire caused by electrical short beneath grill. Fire extinguished with wet chemical extinguisher. No physical damage. Wiring to grill to be replaced. No injuries

>Coldstream farm Satellite Building—August 3: arson per fire dept. Building had previously been demolished. Remaining rubble was burned. No cost estimate. No injuries.

>Chemistry Physics—August 11: fume hood fire, room 225: no damage. Extinguished with a fire extinguisher. No injuries.

>Holmes Hall—August 12: arson; minor damage; fire suppressed with a portable fire extinguisher. 2nd incident—October 6: arson, trash can in 2nd floor bathroom, no injuries.

>James Hardymon Communications Building—August 12: roof fire caused by worker using torch to braze guttering. $10-12,000 damage; no injuries.

>PPD vehicle: electrical fire--$6-7,000 damage; no injuries.

>Roach Building: elevator motor; no damage other than a new motor will be required. Cost unknown; no injuries.

>Alpha XI Delta sorority—October 3: flash fire involving kitchen stove (pilot light gas leak)—cook slightly injured. No damage to room.

>Wenner Gren Lab—October 18: sump pump shorted out; $200 damage; no injuries.

>Donovan Hall, room 360—January 15: caused by a candle; no injuries; $2,000 damage plus personal items of individuals involved.

>Holmes Hall, room 414—January 23: caused by a candle; $3,000 damage plus personal items of individuals involved.

>Greg Page Apartment #273, Building 11—April 8: grease fire on stove: extinguished with a fire extinguisher: no fire damage, minor smoke damage. No injuries

>Administration Building—May 15: building a total loss; most of contents were lost. No estimate on total cost but will be in millions. No injuries. Fire caused by a welder's torch while brazing gutter joints.

Key Indicators

Fire Extinguishers Inspected	5983
Fire Extinguishers Serviced	168
New Fire Extinguishers Purchased*	400
Fire Extinguishers/Fire Prevention Training	560
Fire Alarms**	240
Working Fires***	14
Plan Review of New Construction/Renovation Projects	253

*The program of exchanging pressurized water units and carbon dioxide units to All Purpose (ABC) units has been completed.

**This total is very inaccurate. The ongoing Central Fire Alarm project has provided a computer totally designated to fire alarms and will enable an accurate number of alarms to be recorded.

***The definition of a "working fire" is a fire that causes the fire department to use their fire hose. Other fires, as noted, were extinguished with a fire extinguisher. Firemen used the extinguisher on some of these fires.

Major Improvements

>Evacuation plans posted in each room for Shawneetown and Cooperstown Buildings as previously noted under Emergency Procedures. This is a first time effort. The plan(s) for each building lists specific guidelines as what to do when a fire condition is discovered, and what to do when you hear the fire alarm. Also, new evacuation plans were developed and posted for Alumni Gym, Gluck, Ag Regulatory Services, Ag Engineering, Forestry Building, and 252 E. Maxwell.

>Addressed all deficiencies listed on the State Fire Marshal's inspection. 75% of listed deficiencies have been corrected: 15% are scheduled for correction; others are still in planning.

>Corridor smoke partitions added to Kirwan and BlandingTowers.

>All campus fire alarms are to be outsourced to a central reporting/recording station. Several systems have been completed; all others to be completed by late summer/early fall.

New Programs

>Implemented corridor utilization program. NOTE: *In conjunction with this new program, some vending areas were evaluated separately. Vending areas that were evaluated are Gillis Building, Administration Building, Journalism Building, LCC East, and Hardymon Building.*

>Started monthly scheduled fire extinguisher training classes at Human Resources Development (HRD) training room. These classes are open to the entire University. Schedule of the classes are posted on the Web.

>Training for new resident advisors for the Spring Semester

>Minger Act: Requires reporting all fire alarms to the State Fire Marshal. A new computer tracking program obtained in conjunction with the campus central fire alarm project will enhance this program.

>Developed policy for the location of microwaves.

GENERAL DISCUSSION OF ACTIVITIES

Training: A new means to reach University employees has been established through Human Resources with a monthly scheduled class. Pre-registration is not required. A new training tape on the proper usage of fire extinguishers was purchased from NFPA. This tape, in addition to using extinguishers charged only with air, will provide better training for indoors when the weather will not permit outside training with live fires.

Fire/life safety inspections: See comment under Major Improvements for reference to the State Fire Marshal's report. All major deficiences listed during the inspections of the Greek Chapters were corrected. All resident halls were inspected. Corridor smoke partitions were added to Kirwan and Blanding Towers and self-latching hardware and magnetic door holders were added to Holmes Hall. The State has been very complimentary of the efforts being made by the University to improve fire prevention in the buildings.

Emergency Procedures (Review and Approval): A new program was established to provide evacuation plans for Shawneetown Buildings D and F, and Cooperstown Building D. Other buildings in both of these complexes will have evacuation plans posted in the near future. The fire marshal's office also assisted the Hospital in developing an interim life safety plan. The Joint Commission of Accreditation requires a plan of this nature when existing fire prevention equipment has to be temporarily out of service due to construction.

Special Projects: In conjunction with the Residence Hall Life office, assisted the Metro Fire Department in conducting two life safety meetings in Holmes Hall as a result of two arson fires. No other arson fires occurred. NOTE: *see comments under Major Improvements in reference to campus fire alarms reporting to a central station.*

Fires on Campus: One employee received minor injuries as a result of a fire in a sorority. As can be seen from the fires listed in the activity section, two fires in

residence halls were caused by the illegal usage of candles. From a financial standpoint, the most serious fire was the Administration Building. This fire as well as the Hardymon Building fire were caused by a contractor employee using a blow torch while working on the gutters.

Major Improvements: As a result of the Minger Act that was passed by the State Legislature, all fire alarms now must be reported to the State Fire Marshal. This became effective in January of 2000. More efficient reporting as well as investigation of an alarm should be recognized with the completion of the Central Fire Alarm project. A computer with special software for recording alarms has been provided to the fire marshal's office. All campus fire alarms will be reporting to a central fire alarm recording station with the completion of the Central Fire Alarm project. The number of fire alarm reports received as listed in the Key Indicators activity section is very inaccurate. The new computer provided to the fire marshal's office will cause this figure to be much more accurate when activated.

New Programs: The program that has had the most impact is the Corridor Utilization program. Corridors provide the required means of egress to exit stairwells and, many times, these required means of egress are severely obstructed with furniture, storage, file cabinets and other materials. This program provides a means to have a corridor reviewed and possibly approved for this type usage without obstructing the required exit egress width. It also provides a means to have obstructions automatically removed. Ag Science South, MRISC, Dentistry, Hunt Morgan, and Chemistry-Physics have had a full evaluation. Several other buildings have had partial evaluation of the corridors as a result of a complaint received by the fire marshal's office. All University buildings will eventually have a full evaluation. A program to train new resident hall advisors from the fall to the summer semester was implemented. This was a first time program but will be continued.

Appendix 1

Waste Minimization Progress Report

Waste Minimization Progress Report

Improving Environmental Quality with Economic Benefits

Environmental Quality Management Center

May 2001

Hazardous Materials Management Department
Environmental Health & Safety Division
University of Kentucky

The Past—

During the 1970s, the seriousness of the hazardous waste problem became apparent and resulted in Congress passing the Resource Conservation and Recovery Act (RCRA). In response to the law, the U.S. Environmental Protection Agency (EPA) established a regulatory program requiring "cradle-to-grave" management of hazardous waste. It soon became clear, however, that even well-regulated land disposal could cause environmental damage. Thus, RCRA was amended in 1984:

> *The Congress hereby declares it to be the national policy of the United States that, wherever feasible, the generation of hazardous waste is to be reduced or eliminated as expeditiously as possible.*

As a result, EPA rules now require all generators of hazardous waste to have a waste minimization program in place.

The University of Kentucky, being a public institution and one of the largest generators of hazardous waste in Fayette County, should have a model waste minimization program. Prior to 1998, UK had difficulty implementing an effective program due to severe space restrictions. In 1993, the Hazardous Materials Management (HMM) Department was conducting its waste operations in two rooms totaling 939 square feet. In May of that year, UK applied to the State for a permit to build an 11,000 square-foot, state-of-the-art waste storage facility. The major objectives of the new building were (1) to improve the safety and reduce the environmental risks of UK's waste operations, (2) to improve compliance with environmental laws and regulations, and (3) to fully implement a waste minimization program.

What We Are Doing—

The $2.4 million Environmental Quality Management Center (EQMC) opened in March of 1998. This convenient, centralized facility houses UK's hazardous waste operations. It has approximately 1,000 square feet of office space and 10,000 square feet of waste storage area.

Numerous engineering controls were incorporated into the design of the facility, enabling it to operate safely with no impact on the surrounding environment. Floors and walls are twelve-inch thick reinforced concrete. Floors are sealed and sloped toward the center of the facility to keep liquids from migrating to the exterior. The facility has sophisticated fire and vapor monitoring systems and several fire suppression systems, all designed to quickly mitigate any releases. The waste area is kept locked at all times to prevent unauthorized entry, and there are motion detectors and intrusion alarms throughout. All systems are continuously monitored, and HMM is on call to respond to emergencies twenty-four hours a day, seven days a week. Exhaust from the waste storage section and the chemical fume hoods is routed through an elaborate ventilation system to induced-draft fans on top of the adjacent, nine-story Garrigus Building. The waste area receives an average of six air changes per hour, and the exhaust can be increased to fourteen changes per hour if necessary.

HMM handles all of the hazardous waste generated by the campus, associated farms, and research centers in strict compliance with federal, state and local environmental regulations. The department provides full waste pick up service and transports waste to the EQMC for storage and processing prior to shipping. In 2000, HMM staff handled nearly 6,000 waste containers and processed approximately 150,000 pounds of regulated waste at the EQMC. HMM is also

responsible for UK's waste minimization program. The EQMC allows the department to take advantage of a full range of waste minimization opportunities:

Reuse—Reuse is the process of diverting chemicals and other products from the waste stream by finding new uses for these materials. HMM operates an extensive distribution program for the beneficial reuse of good laboratory chemicals. Available stock can be viewed and ordered on HMM's web page. These chemicals are available at no charge to the UK community. The program not only cuts down on the amount and cost of waste disposal, but also avoids the purchase cost of new chemicals. ***Last year HMM distributed over 600 containers of good chemicals for reuse. (Zero prior to 1998.)***

Recycling—Recycling is the process of extracting raw materials from waste products and reusing them in a beneficial manner. UK collects a variety of recyclable products and sends them to off-site facilities for recycling. HMM operates two major recycling efforts, one for spent fluorescent bulbs removed by the physical plants and one for used batteries generated across campus. EPA regulations treat fluorescent bulbs and all types of batteries as hazardous waste. In order to reduce hazardous waste generation, HMM collects and stores these items until shipment to a recycling contractor. ***Last year HMM recycled approximately 54,000 bulbs and 32,000 batteries. (Zero prior to 1998.)***

HMM also initiates waste reduction activities that occur outside the EQMC facility. The department has been able to eliminate all of the parts washers on campus that use mineral spirits, a flammable liquid. (The spent solvent is hazardous waste.) These units were replaced with parts washers that use a non-flammable solvent, which is recycled. Other significant initiatives include recycling lead from radioactive materials labs and the firing range and silver recovery from photo labs.

Treatment—Treatment is the act of altering a material through a chemical process to make it less toxic, nontoxic or unregulated. The EQMC has a 228 square-foot treatment room that enables HMM to perform small-scale chemical reactions to render chemicals non-hazardous so they can be removed from the hazardous waste stream. Examples are the neutralization of acids and bases (corrosive liquids) and the chemical reduction of oxidizing agents. ***Last year HMM neutralized nearly 6,000 pounds of corrosive liquids and reduced over 200 pounds of oxidizing agents. (Both were zero prior to 1998.)***

Bulking and other physical processes—Bulking is the process of transferring compatible chemicals and other toxic materials from many small containers, which may or may not be full, into 55-gallon drums that are stored until completely filled. Prior to the opening of the EQMC, only three waste streams could be bulked, and then only infrequently, when space permitted. These included flammable liquids, toxic liquids and waste oil. Since moving into the EQMC, HMM not only bulks those wastes, but also has added six more waste streams: non-organic liquids, chemotherapy agents, pesticides, fertilizers, mercury compounds and antifreeze. In the past, these nine wastes would have been shipped in "lab packs," multiple containers in drums filled with a material such as vermiculite to keep the containers from breaking. This costly mode of disposal has been cut dramatically. ***HMM has reduced the number of "lab packs" shipped by 95 percent, resulting in hazardous waste reduction by more than a third and annual cost savings of $165,000 from these operations.***

The quantities of two other waste streams were reduced by improved separation and bulking. Lead-based paint waste, which results from renovation projects and sidewalk curb repair, is collected and consolidated in a manner to exclude soil and other non-lead debris that formerly added to the amount of lead waste. PCB waste, which results from transformers and light ballasts removed or replaced by the Physical Plant Division, is also handled at the EQMC. HMM works closely with the physical plant to collect, store and properly dispose of these items without extraneous non-PCB debris. ***The effectiveness of HMM's bulking and segregating lead paint and PCB waste may be judged by the fact that the quantity of toxic solids generated has been reduced by more than 85 percent.***

EQMC has a 240-square foot analytical lab, which allows HMM to perform approximately 150 chemical determination per year of unknowns that previously had to be presumed hazardous waste, but which often turn out to be non-hazardous.

Intact compressed gas cylinders are considered hazardous waste, even when they are empty. HMM dismantles gas cylinders to remove them from the hazardous waste stream. HMM no longer ships any intact, empty cylinders.

The Results—

The EQMC has played an integral role in UK's waste minimization efforts, including the reuse, recycling, treatment, and bulking of hazardous materials. The facility provided new equipment and additional storage area, enabling HMM to significantly expand its waste minimization activities. The results have been striking. ***Since the EQMC opened, the amount of hazardous waste generated at UK has been reduced by nearly half, and the cost of hazardous waste disposal has been reduced by more than two-thirds.***

The impact of waste minimization at UK may be determined by examining the historical trend of cost and quantity (see Tables 1 and 2). Waste quantities and disposal costs both increased on a steeply rising curve following enactment of RCRA and its amendments. Total regulated waste generation increased by nearly 4-fold between 1984 and the peak year of 1991. Hazardous waste generation peaked at nearly 200,000 pounds in 1992. Disposal cost over the same period increased 27-fold. Due to space limitations, HMM's initial waste minimization efforts achieved only modest results. ***In 1997, the quantity of hazardous waste generated by UK was 174,000 pounds. Since the EQMC opened in 1998, hazardous waste quantities have been reduced sharply—to 124,000 pounds in 1998; 87,000 pounds in 1999; and 109,000 pounds in 2000. Cost reductions have been even more impressive—down from a peak of $329,000 in 1992 to $99,000 in 2000.***

Without HMM's aggressive pursuit of UK's waste minimization goals, waste quantities and disposal costs would still be increasing. These results were achieved in spite of the fact that

- UK's research activities—the major source of hazardous waste—have increased significantly. Sponsored-research funding rose from $61 million in 1991 to $150 million in 2000.
- The price vendors charge for disposal of certain waste streams has soared. UK has to pay higher prices today to dispose of toxic metals (e.g., mercury), chlorinated hydrocarbons (e.g., pentachlorophenol) and compressed gas cylinders.

- Recycling to reduce hazardous waste has resulted in new costs. Last year HMM spent over $15,000 just to recycle batteries and fluorescent bulbs.

Looking to the Future—

HMM plays a vital role in helping the University meet its objectives for environmental stewardship. The department will continue to pursue new waste minimization opportunities in the future. Some of these will be accomplished at the EQMC in the areas identified above. For example, distillation and reuse of spent solvents is being examined as an option to solvent disposal.

Other opportunities exist, but many of the activities will have to take place outside the EQMC. HMM will work with other UK units to implement strategies that include

- Substitution of non-hazardous materials for hazardous materials in all UK operations.
- Greater use of micro-chemistry to reduce the quantity of wastes generated in research and teaching labs.
- Better segregation of waste to keep non-hazardous materials out of hazardous waste streams and to keep costly hazardous waste from contaminating less costly non-hazardous waste streams.
- Institutional purchasing policies to encourage source reduction by buying smaller quantities of hazardous materials.

The waste minimization program has enabled UK to deal more efficiently and effectively with materials that may be harmful to human health and the environment. The payoff is a cleaner, healthier environment for the University, the local community and citizens of the Commonwealth.

The HMM team: Peggy Quisenberry, Mike Blackard, Kevin Gaff, Lee Faulkner, and John Lowry.

Hazardous Waste Cost and Quantity Trend Report

Table 1

Total Regulated Waste Disposal

Fiscal Year	Gross weight* (pounds)	Disposal Cost** ($)
1984-85	70,314	12,000
1985-86	57,968	12,000
1986-87	45,053	32,000
1987-88	83,726	141,000
1988-89	110,876	112,000
1989-90	116,808	124,000
1990-91	143,470	221,000
1991-92	272,244	275,000
1992-93	232,882	329,000
1993-94	126,271	298,949
1994-95	150,400	317,803
1995-96	240,336	294,644
1996-97	188,476	317,591
1997-98	181,062	254,932
1998-99	149,054	226,506
1999-00	146,950	95,668
2000-01	168,859	99,226

* Includes hazardous waste (Subtitle C, RCRA), mixed radioactive-hazardous waste , TSCA waste, medical and other regulated waste; excludes other radioactive and Hospital biohazard waste and non-campus waste.

** Includes vendor cost plus other expenses associated with all UK waste disposal.

Table 2

Hazardous Waste Disposal

Year	Gross weight* (pounds)
1984	56,560
1985	63,350
1986	57,933
1987	91,459
1988	88,739
1989	82,221
1990	106,616
1991	148,732
1992	197,640
1993	111,531
1994	114,483
1995	175,426
1996	178,105
1997	174,282
1998	124,503
1999	86,724
2000	108,661

* All UK waste regulated under Subtitle C, Resource Conservation and Recovery Act. Data taken from the UK Hazardous Waste Annual Reports.

Appendix 2

Periodic Unit Review of EH&S

UNIVERSITY OF KENTUCKY

Human Resource Services

111 Scovell Hall
Lexington, KY 40506-0064
Telephone: (606) 257-9555
FAX: (606) 323-8512

April 17, 2001

TO: George DeBin
Vice President for Fiscal Affairs

FROM: Boyd Haley
Ed McClure
Tom Moore
Linus Walton

RE: Periodic Unit Review of Environmental Health and Safety

Our committee met with Harry Enoch and Bob Wilson from Environmental Health and Safety (EH&S) on Tuesday, March 6, 2001 to conduct a periodic review of the performance of this unit. Prior to our meeting EH&S provided the committee with an internal report and self-evaluation. We spent approximately two hours discussing and evaluating the unit.

Although our findings of the unit's activities and accomplishments are generally positive, it is the position of our review committee that in order to effectively reach a top-20 status the University must take action to strengthen its overall commitment to safety projects, awareness, compliance and accountability.

The attached report provides a summary of our review and includes specific findings and recommendations to the unit and the University's Administration.

enclosure

CC: Richard A. Barbella
Kenneth F. Clevidence
Harry Enoch
Connie Ray
Nancy Johnson
Connie Johnson

University of Kentucky
Institutional Effectiveness
Periodic Unit Review

Fiscal Affairs - Environmental Health and Safety
Fiscal Year 2000-2001

Review Date:
Tuesday, March 6, 2001

Review Committee:
Boyd Haley, Professor and Chair, Department of Chemistry; Chair, Chem. Safety Committee
Ed McClure, Director, Medical Center Physical Plant Division
Tom Moore, Business Officer, College of Engineering
Linus Walton, Associate Dean for Administration, College of Agriculture

Representatives from Environmental Health and Safety:
Harry Enoch, Director
Bob Wilson, Associate Director

Review Facilitator:
Connie Johnson, HRS

Overall Evaluation

We appreciate the thorough manner in which the unit's self-evaluation was completed. The information provided detailed insight into the unit's operations. Based on the self-evaluation, review meeting discussions as well as our experiences with the unit, we report an overall positive evaluation of the unit and its services.

Our experience with the EH&S staff has been positive. We have found them to be professional, knowledgeable and committed to their unit's mission. We appreciate their proactive approach in identifying safety hazards and assisting departments in developing preventative strategies. They have established a good rapport with departments within the University as well as with outside regulatory agencies.

Although our findings of the unit's activities, staffing, and accomplishments are generally positive, it is the position of our review committee that in order to effectively reach a top-20 status the University must strengthen its overall commitment to safety-related issues and projects.

The following sections include recognition of the unit's accomplishments along with our recommendations and conclusions.

Accomplishments

We are particularly impressed with the units' accomplishments. *Section 7* of the self-evaluation highlights the unit's accomplishments from 1992-2000. Notable accomplishments include:

- **Environmental Surcharge** – EH&S implemented an "environmental surcharge" on purchases to help fund waste disposal and recycling programs. This funding program has proven an effective means of helping to cover disposal costs. We suggest that this method be considered as a means to raise funds for other unfunded or under-funded projects.
- **Radioactive Waste Reduction** – EH&S implemented a radioactive waste reduction program including hold-for-decay, compaction, and competitive bidding. We commend EH&S on the success of this program that resulted in reducing the volume of radioactive waste by approximately 90% and decreasing the cost by about 80% within two years.
- **Asbestos Program** – Although costly to the University and sometimes frustrating at the department and employee levels, EH&S is to be commended on its current 's asbestos program that has brought the University close to compliance in this area. EH&S is responsible for the completion of 600 asbestos abatement projects since 1992. To assist in tracking asbestos in UK facilities, the unit has developed an on-line asbestos database.
- **Training** – Our committee agrees that the staff has developed a good offering of safety classes and informational resources (i.e., web site, safety manuals, safety video, and Employee Safety Handbook) to accompany the unit's programs. Training program's have been well received with nearly 20,000 individuals trained over the past 5 years. We are pleased with the unit's efforts to reach new staff and faculty with an introductory safety training session during the mandatory staff New Employee Orientation and through the new non-mandatory Lexington Campus Faculty Orientation.

Findings and Recommendations

Based on our evaluation of the performance of the EH&S unit and our experience and knowledge of safety-related issues throughout the University, we submit the following findings and recommendations to EH&S and the University's administration:

1. **Unfunded Life Safety Projects** - We find that the University must implement a comprehensive plan and ongoing commitment to identifying funding for and carrying out major life safety and environmental projects. Please see the attached prioritized listing of currently unfunded life safety projects identified by EH&S and other units within the University.
2. **Equipment Storage and Removal** - We recommend that all University renovation and construction project planning be comprehensive enough to include specific plans and space allocations as to keep the storage and moving of old, new and/or construction-related equipment from creating safety problems during the project or the area's ongoing operation. Most importantly, we recommend that a plan for addressing the need for expedited trucking services and surplus storage when EH&S issues are of concern.

3. **Identification of Individual Training Needs** - To address University-wide compliance issues, we recommend that University administration implement a program assigning unit administrators the responsibility of identifying individuals needing training in

   radiation safety, chemical safety, toxic waste management and other safety-related topics. Please see the attached checklist developed by EH&S that could be used internally by units throughout the University as a means to identify and track individual training needs and completions. The checklist would be part of the employee's standard personnel file.

4. **Departmental Level Training** - Although the EH&S staff and our committee are pleased with the successes of the unit's training and educational efforts, it has been our experience that not all staff, faculty or students receive the full range of safety training needed for their role within the University. We encourage EH&S to continue in its efforts to contact individual department heads to schedule classes specifically needed for the department's staff and faculty. One of our committee members reported the success of such an approach in his area and noted that the classes were well received and attended by faculty.

5. **Lab Safety during Employee Turnover, Program Completion, and Lab Relocation** - We recommend a continued investigation into the development of an administrative mechanism that ensures the planned and safe transition of laboratories upon employee turnover, program completion and/or program relocation. These measures must include the safe management and/or disposal of chemicals, materials and equipment.

6. **Timely Hazardous Waste Removal** – We recommend that EH&S take the following steps regarding Hazardous Waste Removal: (1) analyze the timeliness of the current hazardous waste removal process, (2) develop and implement response standards, (3) track and evaluate data, and (4) plan for continuous improvement in this area of responsibility.

7. **Compliance Reviews for New Construction and Renovations** – We recommend compliance reviews for new construction and renovations not only include standards of the Kentucky Building Code and the National Fire Protection Association (NFPA), but also include those of other standard setting bodies such as the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) and the Health Care Financing Administration (HCFA) as appropriate.

8. Pedestrian and Traffic Routing – We recommend better planning for pedestrian and traffic re-routing at construction sites. An area currently needing improvements is the Medical Center Emergency Department patient drop-off and pedestrian entrance. The area's current re-routing system creates a confusing and unsafe environment during life threatening situations.

Conclusion – UK Must Establish a Top-20 Commitment to Safety

As a future top-20 public institution, the University must take action to strengthen its commitment to safety projects, awareness, compliance and accountability. Even though the University's Administrative Regulations define the responsibilities for ensuring safety, there is little consequence for non-compliance at the employee, supervisory and unit-head levels. Creating and maintaining a safe environment at UK is the responsibility of each department and ultimately

each individual. To effectively develop individual awareness, compliance, and responsibility, it is the position of our review committee that the University must at the same time strengthen its overall commitment to safety-related issues and projects.

Appendix 3

Lab Standards--Draft

Safety Requirements for Chemical Laboratories

For the purpose of this standard, **hazardous chemical** is defined as a substance or mixture that meets one of the following criteria: (a) National Fire Protection Association (NFPA) hazard rating of 3 or 4 for health, flammability or reactivity, or rated as water reactive or oxidizing agent; (b) listed carcinogen; (c) aqueous solution with pH less than 2 or greater than 12.5; (d) strongly malodorous compounds, or (e) hazardous waste. Chemicals or mixtures with NFPA hazard ratings of 0, 1 or 2 may be used in a CL-2, CL-1 or CL-0 laboratory.

A **chemical laboratory** is defined as an area where chemicals are used on a small scale for research, teaching or clinical functions. A laboratory may consist of one or more interconnected rooms.

Chemical Lab (CL) Designation:	**CL-4**	**CL-3**	**CL-2**	**CL-1**	**CL-0**
	Broad use of hazardous chemicals	**Restricted use of hazardous chemicals***	**Hazardous chemical storage only**	**No hazardous chemical storage or use**	**No hazardous chemical storage or use**
Safety Requirements:	**Broad use of non-hazardous chemicals**	**Broad use of non-hazardous chemicals**	**Broad use of non-hazardous chemicals**	**Broad use of non-hazardous chemicals**	**Non-hazardous chemical storage only**
Sprinklered	✓				
Supply and exhaust air system	✓	✓	✓		
No recirculation of room exhaust	✓	✓	✓		
Fume hood	✓				
Sink	✓	✓	✓	✓	
Eyewash	✓	✓			
Safety shower	✓	✓			
Portable fire extinguisher	✓	✓	✓	✓	✓
Controlled access (lockable door)	✓	✓	✓		
Approved floor surface (no carpet)	✓	✓	✓	✓	✓

* **Restricted use**: In a CL-3 lab, the following hazardous chemicals (see definition above) are restricted to closed systems (e .g., HPLC, scintillation counter, etc.): gases; volatile liquids or malodorous compounds; solids that may become aerosolized in a process; liquids or solids that may become volatile at elevated temperatures; or reactions that may generate any of the preceding.

Notes

These requirements are meant to be used as guidelines and by no means constitute an exhaustive list of all the safety requirements for chemical laboratories.

Temporary exceptions to the requirements for new or existing chemical labs must be approved in writing by (1) the department chair or unit head, (2) the dean or director, and (3) the vice chancellor for research or vice president for research. If the exception does not meet safety standards, it must include an EH&S-approved plan and schedule for correction.

When non-lab spaces are being converted to spaces for the use of chemicals, they must be assigned a chemical lab designation by EH&S and meet the requirements consistent with the intended use prior to renovating or occupying the space.

The University Fire Marshal's office has delegated authority for compliance with Kentucky Building Code; new and renovated chemical labs must be reviewed and approved by the University Fire Marshal. Failure to obtain this approval may result in a "Stop Construction" order or posting of the space as "Illegally Occupied." Since they represent a "change in occupancy," non-lab spaces that are converted to chemical labs require approval by the University Fire Marshal. After the effective date of this policy, such conversions will be reviewed for compliance with Kentucky Building Code and this list of safety requirements.

Additional requirements:

All chemical labs must be negatively pressurized relative to the corridor.

Each room in a chemical lab must have at least one 5-lb. ABC fire extinguisher.

Rooms in CL-4, CL-3 and CL-2 labs have limits on the quantity of flammable and combustible liquids allowed (see http://www.uky.edu/FiscalAffairs/Environmental/fire/flstpol1.html).

Other requirements may apply to chemical labs using radioactive materials, biohazards and/or animals. Separate standards may be developed for chemical use in cold rooms, animal rooms, greenhouses, and certain other specialized rooms.

NFPA Hazard Ratings

Health (Blue Diamond)

0---No chemical is without some degree of toxicity.

1---Slightly toxic material. May cause irritation, but only minor residual injury even without treatment. Recognized innocuous materials when used with responsible care.

2---Moderately toxic material. Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical treatment is given.

3---Seriously toxic material. Short term exposure could cause serious temporary or residual injury even though prompt medical treatment is given. Includes known or suspect small animal carcinogens, mutagens or teratogens.

4---Highly toxic material. Very limited exposure could cause death or major injury even though prompt medical treatment is given. Includes known or suspect human carcinogens, mutagens or teratogens.

Flammability (Red Diamond)

0---Materials which will not burn.

1---Slightly combustible. Materials which requires considerable preheating before ignition can occur. This rating includes most ordinary combustible materials.

2---Combustible. Materials which must be moderately heated before ignition can occur. Including liquids having a flash point above 100 degrees F, and solids which readily give off flammable vapors.

3---Flammable. Liquids and solids that can be ignited under almost all ambient temperature conditions. Including liquids with a flash point below 73 degrees F and a boiling point above 100 degrees F, solid materials which form coarse dusts that burn rapidly without becoming explosive, materials which burn rapidly by reason of self-contained oxygen (i.e. organic peroxides), and materials which ignite spontaneously when exposed to air.

4---Extremely flammable. Materials which will rapidly vaporize at normal pressure and temperature

and will burn readily. Including: gases, cryogenic materials, any liquid or gaseous material having a flash point below 73 degrees F and a boiling point below 100 degrees F, and materials which can form explosive mixtures with air.

Reactivity (Yellow Diamond)

0---Materials which are normally stable, even under fire conditions, and which are not reactive with water.

1---Materials which are normally stable, but which can become unstable at elevated temperatures and pressures, or which may react with water with some release of energy, but not violently.

2---Materials which in themselves are normally unstable and readily undergo violent chemical change, but do not detonate. It includes materials which may react violently with water or which may form potentially explosive mixtures with water.

3---Materials which in themselves are capable of detonation but which require a strong initiating source, or which must be heated first. This rating includes materials which are shock sensitive at elevated temperatures, and which react explosively with water without requiring heat.

4---Materials which in themselves are readily capable of detonation or explosive decomposition at normal temperatures and pressures. Includes materials which are shock sensitive at normal temperatures and pressures.

Special Notice (White Diamond)

OX---Denotes materials that are oxidizing agents. These compounds give up oxygen easily, remove hydrogen from other compounds or attract negative electrons.

W---Denotes materials that are water reactive. These compounds undergo rapid energy releases on contact with water.

Center for Applied Energy Research

Room #	CL	Supply Air & Exhaust	Room Exhasut Non-recirculated	Fume Hood	Sink	Approved Eyewash	Unapproved Eyewash	Safety Shower	Fire Extinguisher	Controlled Access	Approved Floor Surface [1]
01A	0	X		X	X		X	X	X	X	X
012/012A/013/014	0	X					X		X		X
016	0	X		X	X		X		X		X
019	0	X							X	X	X
020	0	X			X	X		X	X	X	X
021	0	X		X	X		X	X	X	X	X
022	0	X		X	X		X	X	X	X	X
023	0	X							X	X	X
118	0	X		X	X		X	X	X	X	X
119/120	0	X		X	X		X	X	X	X	X
121/122/123	0	X		X	X		X	X	X	X	X
136/137	0	X		X	X	X		X	X	X	X
138	0	X		X	X			X	X	X	X
139	0	X			X		X	X	X	X	X
140/141	0	X			X		X		X	X	X
207	0	X		X	X		X		X	X	X
208/209	0	X		X	X		X	X	X	X	X
212	0	X			X		X	X	X	X	X
223/224/225	0	X		X	X		X	X	X	X	X
226	0	X		X	X		X	X	X	X	X
227/228	0	X		X	X		X	X	X	X	X
231/232/233	0	X		X	X		X	X	X	X	X
234/235/236	0	X		X	X		X	X	X	X	X
237/238	0	X			X		X	X	X	X	X
239	0	X		X	X		X	X	X	X	X
240/241/242	0	X		X	X		X	X	X	X	X

[1] surface is not carpeted. This safety requirement is currently under review and may be expanded in the future.

Thomas Hunt Morgan

Room #	CL	Supply Air & Exhaust	Room Exhasut Non-recirculated	Fume Hood	Sink	Approved Eyewash	Unapproved Eyewash	Safety Shower	Fire Extinguisher	Controlled Access	Approved Floor Surface [1]	
B01	0	X		X	X		X		X	X	X	
B02	0	X			X				X	X	X	
B03	0	X		X	X		X	X	X	X	X	
B06A	0				X				[2]	X	X	
B06B	0				X				[2]	X	X	
B06C	0				X				[2]	X	X	
B06E	0				X				[2]	X	X	
B06F	0	X			X				[2]	X	X	
B08	0	X		X	X		X		X	X	X	
202	0	X		X	X		X	X	X	X	X	
203	0	X			X			X	X	X	X	
204	0	X		X	X		X	X	X	X	X	
211	0	X		X	X		X		X	X	X	
212	0	X			X				X	X	X	
213	0	X		X	X		X	X	X	X	X	
214	0	X			X			X	X	X	X	
215	0	X		X	X		X	X	X	X	X	
224	0	X		X	X		X		X	X	X	
225	0	X			X		X		[2]	X	X	
226	0	X		X	X		X	X	X	X	X	
300	0	X		X	X		X		X	X	X	
300E	0	X		X	X	X		X	X	X	X	
301	0	X			X			X	X	X	X	
302	0	X		X	X		X	X	X	X	X	
303	0	X		X	X		X	X	X	X	X	
304	0	X		X	X		X		X	X	X	
311	0	X		X	X		X		X	X	X	
312	0	X			X		X	X	X	X	X	
312A	0	X			X				X	X	X	
313	0	X							X			
314A	0	X		X	X	X		X	X	X	X	
315	0	X		X	X	X		X	X	X	X	
324	0	X							[2]	X	X	
325	0	X			X				X	X	X	

[1] surface is not carpeted. This safety requirement is currently under review and may be expanded in the future.

[2] installation of 5 lb. ABC fire extinguisher will meet requirement of minimum classification (CL-0)

Mining and Minerals Resources Building

Room #	CL	Supply Air & Exhaust	Room Exhasut Non-recirculated	Fume Hood	Sink	Approved Eyewash	Unapproved Eyewash	Safety Shower	Fire Extinguisher	Controlled Access	Approved Floor Surface [1]
008/008A	0	X							[2]	X	X
009	0	X							[2]	X	X
010	0	X		X	X		X		X	X	X
012	0	X		X	X	X		X	X	X	X
013	0	X							[2]	X	X
014	0								[2]	X	X
017	0	X			X				[2]	X	X
020	0	X			X				[2]	X	X
105	0	X		X	X		X		X	X	X
111	0	X			X				[2]	X	X
113	0	X			X				X	X	X
115	0	X			X				[2]	X	X
116	0	X							[2]	X	X
118	0	X							[2]	X	X
120	0	X			X				[2]	X	X
123	0	X		X	X		X	X	X	X	X
124	0	X							[2]	X	X
125	0	X							[2]	X	X
127	0	X							[2]	X	X
354/356	0	X		X	X		X	X	X	X	X
360/362/362A/364	0	X		X	X		X	X	X	X	X
361	0	X		X	X		X	X	X	X	X
361A	0	X					X	X	X	X	X
361B	0	X					X	X	X	X	X
361C	0	X		X	X		X	X	X		X
361D	0			X	X		X	X	X	X	X
367	0	X		X	X		X		X	X	X
367A	0	X			X		X		[2]	X	X
369	0	X					X		X	X	X

[1] surface is not carpeted. This safety requirement is currently under review and may be expanded in the future.

[2] installation of 5 lb. ABC fire extinguisher will meet requirement of minimum classification (CL-0)

College of Pharmacy

Room #	CL	Supply Air & Exhaust	Room Exhasut Non-recirculated	Fume Hood	Sink	Approved Eyewash	Unapproved Eyewash	Safety Shower	Fire Extinguisher	Controlled Access	Approved Floor Surface [1]
B04	0	X							[2]	X	X
B09	0	X							X	X	X
B09A	0	X							[2]	X	X
B10	0	X							X	X	X
B11	0	X			X				X	X	X
B13A	0	X		X	X		X		X	X	X
B13B	0	X			X		X		X	X	X
B13C	0	X		X	X		X		X	X	X
124	0	X		X	X		X		X	X	X
157A/157B/157C	0	X		X	X	X		X	X	X	X
164 Storage	0	X							X	X	X
164 Receiving	0	X							[2]	X	X
333	0	X		X	X		X	X	X	X	X
413	0	X		X	X		X		X	X	X
415	0	X		X	X				X	X	X
417	0	X		X	X		X	X	X	X	X
419	0	X		X	X			X	X	X	X
421	0	X		X	X				[2]	X	X
422/422A	0							X	X	X	X
423	0	X		X	X		X		X	X	X
427	0	X		X	X		X		X	X	X
431	0	X		X	X		X		X	X	X
433	0	X		X	X				X		X
435	0	X		X	X				X	X	X
436	0	X		X	X		X		X	X	X
437	0	X		X	X		X	X	X	X	X
439	0	X		X	X			X	X	X	X
441	0	X		X	X		X	X	X	X	X
443	0	X		X	X		X		X	X	X
445	0	X		X	X		X		X	X	X
447	0	X		X	X		X		X	X	X
448	0	X			X				X	X	X
513	0	X		X	X		X		X	X	X
515	0	X		X	X				X	X	X
517	0	X		X	X			X	X	X	X
519	0	X		X	X		X	X	X	X	X
521	0	X		X	X		X	X	X	X	X
522	0	X							[2]	X	X
523	0	X		X	X				X	X	X
527A/527B/527C	0	X							X	X	X
529	0	X			X				[2]		X
531	0	X		X	X				X	X	X
533	0	X		X	X		X		X	X	X
534	0	X			X		X		X	X	X
535	0	X		X	X				X	X	X
537	0	X		X	X				X	X	X
539	0			X	X		X	X	X	X	X
540	0	X			X			X	X	X	X
541	0	X		X	X			X	X	X	X
543	0	X		X	X			X	X	X	X
545	0	X		X	X		X	X	X	X	X
546	0	X							[2]	X	X
547	0	X		X	X				X	X	X
548	0	X		X	X		X		X	X	X

[1] surface is not carpeted. This safety requirement is currently under review and may be expanded in the future.

[2] installation of 5 lb. ABC fire extinguisher will meet requirement of minimum classification (CL-0)

Tobacco and Health Research Institute

Room #	CL	Supply Air & Exhaust	Room Exhasut Non-recirculated	Fume Hood	Sink	Approved Eyewash	Unapproved Eyewash	Safety Shower	Fire Extinguisher	Controlled Access	Approved Floor Surface [1]
01A/01B	0	X	X							X	X
05	0	X	X		X				X	X	X
10	2	X	X		X			X	X	X	X
104	0	X	X							X	X
106	1	X	X				X	X	X	X	X
110B/110C	2	X	X	X	X		X	X	X	X	X
111/112	2	X	X	X	X		X	X	X	X	X
113	2	X	X		X		X	X	X	X	X
114	2	X	X	X	X		X	X	X	X	X
115/116	2	X	X	X	X		X	X	X	X	X
124	2	X	X	X	X		X	X	X	X	X
125/130A	2	X	X	X	X		X	X	X	X	X
126	0	X	X					X		X	X
128	1	X	X	X				X	X	X	X
129	0	X	X					X		[2]	X
130	2	X	X	X	X		X	X	X	X	X
200G	2	X	X		X				X	X	X
201A	0	X	X		X		X			X	X
201B	0	X	X		X					X	X
201C	0	X	X		X		X			X	X
204A	2	X	X	X	X				X	X	X
204B	2	X	X		X		X	X	X	X	X
204C	0		X							[2]	X
210	0	X	X							X	X
211	0	X	X							X	X
212	2	X	X	X	X			X	X	X	X
213	0	X	X							X	X
214	0	X	X							X	X
215	2	X	X	X	X			X	X	X	X
216	0	X	X							X	X
217A/217B	0	X	X							X	X
218	2	X	X	X	X		X	X	X	X	X
219	0	X	X		X					X	X
220	0	X	X		X					X	X
225	2	X	X	X	X		X	X	X	X	X
227	0	X	X		X					[2]	X
228	0		X							X	X
229	2	X	X	X	X		X	X	X	X	X
231	2	X	X	X	X		X	X	X	X	X
232	2	X	X	X	X		X	X	X	X	X

[1] surface is not carpeted. This safety requirement is currently under review and may be expanded in the future.

[2] installation of 5 lb. ABC fire extinguisher will meet requirement of minimum classification (CL-0)

Report of the
Committee on Environmental Health and Safety

Minutes of the
Environmental Health and Safety Committee
FY2000-01

Environmental Health & Safety Committee
Minutes of September 28, 2000

Members Present:

Mark Meier
Ed McClure
Eric Moss
Larry Piercy
J.W. Yates
Boyd Haley
Harry Enoch
Nicholas McLetchie
Wayne Ritchie
Herbert Strobel
Janet Williams
John Lowry
Garry Beach

Guests:

Woody Bottom
David Hibbard
Bob M. Wilson

Mark Meier welcomed the members. Members discussed and approved scheduling future meetings on Thursday afternoons with four meetings per academic year. In previous years, meetings were scheduled on Tuesday mornings with one meeting per quarter year. The minutes of March 21, 2000 were approved as written.

- **Annual Report**

Committee members received a copy of the Sixth Annual State of the Environment Report for the University of Kentucky prior to this meeting for their review. Members submitted suggested revisions via email prior to the meeting. The report with the revisions was approved for submission to Vice President George DeBin, Fiscal Affairs. The report will also be put on the EH&S web site (http://www.uky.edu/Fiscal/Environmental/welcome.html).

- **Old Business**

IAQ Policy
Deferred until a later meeting.

Mandatory Training
Environmental Health & Safety is looking at initiatives to promote mandatory training of all new faculty, staff and students. Further development of web based training as an alternative to classroom training is in process to promote compliance.

- **New Business**

Life Safety Projects
The Life Safety Project List 2002-2008 Capital Plan was submitted to the committee. Harry Enoch asked the committee to review the list to see if they knew of any item(s) that should be added and to notify him as soon as possible regarding additions.

Biomedical & Biological Research Building
Committee members voiced concerns regarding pedestrian safety on Limestone Street with the added vehicular and pedestrian traffic the new building will generate. The committee recommended sending a memorandum to Vice President George DeBin, Fiscal Affairs requesting the architects to inform the committee regarding the measures they envision to ensure pedestrian safety.

EH&S Policy Recommendations
Two policy recommendations were presented and discussed (see attached). The committee recommended revising the wording and reviewing at a later date.

The next EH&S Committee meeting is scheduled for November 30. The meeting will be held at 3:00 p.m. in room 110 of the Mining and Minerals Building unless otherwise notified.

The meeting adjourned at 4:30 p.m.

Environmental Health & Safety Committee
Minutes of November 30, 2000

Members Present:

Mark Meier	Wayne Ritchie
Eugene Gaetke	Tomi Ross
Nicholas McLetchie	Garry Beach
Eric Moss	Jacob Karnes
Daniel Noonan	John Lowry
J.W. Yates	Harry Enoch

Guests:

Woody Bottom	Bob M. Wilson
David Hibbard	David Acker

Mark Meier welcomed the members. The minutes of September 28, 2000 were approved as written.

EH&S FY2000-01 Workplan
It was decided that the workplan would be discussed at the next meeting. Harry Enoch urged the committee to review the workplan and offer suggestions as to what other issues they feel EH&S should be involved in.

- **Old Business**

Annual Report
George Debin wrote a letter in appreciation of the efforts of the Committee and EH&S. Committee members were informed that if they did not receive a copy of the Annual Report it is available on the EH&S website at http://www.uky.edu/Fiscal/Environmental/annrep.pdf or they may contact the office of EH&S to receive a copy.

Biomedical & Biological Sciences Research Building
Mark Meier sent a letter to George Debin stating the concerns the committee has in regards to the expansion across South Limestone. In the letter of response, George Debin requested suggestions from the Committee on how to encourage people to use the existing crosswalks. There was further discussion of pedestrian safety on University Drive, especially during rush hour traffic. Speeding in conjunction with drivers not stopping at crosswalks is a concern. It was decided that this issue would be assigned to the General Safety Committee for further discussion.

Policy recommendations
Harry Enoch provided amended recommendations for the safety policy. The following was approved.

The University adopts the following objectives in order to help meet its goal of providing a safe and healthful campus environment for students, employees, patients, and visitors. Meeting these objectives shall be the responsibility of everyone at the University. The EH&S division shall provide oversight and report on progress toward meeting these objectives.

All activities at the University shall be conducted in accordance with environmental, health, and safety regulations. Activities not conducted in compliance with this objective are designated as "unsafe acts" and are not permitted by the University for any purpose or under any circumstances.

Personal exposure to chemicals and other health hazards shall be kept as low as reasonably achievable. This goal shall be met by providing appropriate work practices, engineering controls, and personal protective equipment.

The University's goal for all preventable occupational injuries and illnesses is zero. Procedures and practices consistent with this approach will be implemented and continuously improved.

Injury/Illness statistics
David Hibbard gave a report on the injury and illness statistics. This will be a regular item on the agenda. It was suggested that rather than raw numbers the data would be presented in a per capita ratio for the three major sectors. David Hibbard announced that reports on Form 6 data has been and will continue to be sent to various departments and if anyone wishes to receive this information they are to contact his office. UK will participate in a college and university benchmarking study; we hope the accident data will provide a useful basis for comparison.

IAQ Policy
David Acker gave a report on the implementation of the Indoor Air Quality Initiative. His report was based on an evaluation by OHS. The committee requested that information be gathered from all units with responsibility for HVAC equipment. This data will be presented at the next meeting along with recommendations for a new or amended IAQ plan.

Mandatory Training
Currently all new faculty members are being informed of the mandatory training requirement. EH&S will go unit by unit to try to get current faculty, staff and students to complete the training. College of Pharmacy was the first unit completed and as a result is currently 100% in compliance with training. Chemistry will be the next unit; training will begin in January.

- **New Business**

Fume hood notification
David Hibbard reported that the Chemical Safety committee had concerns about inadequate notification of fume hood shutdown. Action Item: Harry will draft a memo to Debin to make him aware of the need for an emergency notification of fume hood outages.

Ventilation of Combs Building
David Hibbard reported that the Chemical Safety Committee would like to have EH&S and MCPPD do a formal investigation into the ventilation problems of the Combs Building. Action Item: EH&S will work with MCPPD to do study.

Workers' Comp Issues
David Hibbard reported that the Chemical Safety Committee would like a formal memo sent to department chairs to inform faculty regarding who is covered and not covered by workers comp. There has been confusion as to who is covered under workers comp. Action Item: David Hibbard will draft a memo for the Chair to send to HR to request they send a memo to the department chairs to clarify who is covered and not covered by workers comp.

The next EH&S Committee meeting is scheduled for January 25. The meeting will be held at 3:00 p.m. in room 102 of the Mining and Minerals Building unless otherwise notified.

Adjourn.

Environmental Health & Safety Committee
Minutes of January 25, 2001

Members Present:

Mark Meier	Wayne Ritchie
John Botkin	Herbert Strobel
Eugene Gaetke	Tomi Ross
Nicholas McLetchie	Garry Beach
Eric Moss	Harry Enoch
Daniel Noonan	John Lowry
Larry Piercy	Ada Sue Selwitz

Guests:

David Hibbard	David Acker
Bob M. Wilson	Bob Cadle

Announcements
There were two fires within the last week at residential halls. Both of the incidents involved candles. The committee brought up concerns that the penalties have not been spelled out for the students. There were also concerns as to what disciplinary action will follow the incident. The committee will follow up on this issue.

In August 1999 NIOSH conducted a Health Hazard Evaluation of the Pharmacy Building. We received their report and recommendations in December 2000. We submitted a Capital request to improve the air quality by modifying the HVAC system of the building.

The following are new classes being offered by EH&S. Schedules and course information can be found at http://www.uky.edu/Fiscal/Environmental/classes.html.

- Hazardous Communication course
- Construction Safety Awareness
- Lockout/Tagout – Control of Hazardous Energy Training
- Hazard Assessment for the use of Personal Protective Equipment

The new Biomedical & Biological Sciences Research Building will be constructed on Limestone. This is the first in a series of buildings that will be placed in the vicinity. A bridge is in the design that will service this building and future buildings in the area.

- **Old Business**

Policy Recommendations
The policy recommendations decided on at the last meeting have been accepted by George Debin. Policies are now on the EH&S webpage.

Workers Comp

Mark Meier sent a letter to T. Lynn Williamson who forwarded it to John Samson addressing the concerns about who is covered by workers comp.

Injury/Illness statistics
Bob Cadle gave a report on the injury and illness statistics. The information will be available on the web for calendar year 2000.

IAQ Policy
Deferred to a later meeting.

- **New Business**

EH&S FY2000-01 Workplan
Harry Enoch went over the workplan and briefly spoke about the issues facing EH&S.

EH&S challenges/opportunities
The EH&S Division was asked to provide challenges and opportunities for the new President. One of the major items discussed was the funding of Life Safety needs. Warren Denny suggested that it would be a good idea to keep a running list of needs by building.

Safety Awards
It was decided that the committee would award certificates of appreciation to individuals at the next EH&S Committee meeting. Harry asked the committee to send him the names of the people they wish to nominate.

The minutes of November 30, 2000 were approved as written.

The next EH&S Committee meeting is scheduled for March 29. The meeting will be held at 3:00 p.m. in room 102 of the Mining and Minerals Building unless otherwise notified.

Adjourn.

Environmental Health & Safety Committee
Minutes of March 29, 2001

Members Present:

Mark Meier
Ed McClure
Nicholas McLetchie
Eric Moss
Daniel Noonan
Wayne Ritchie
Janet Williams
Tomi Ross
Harry Enoch
John Lowry
Ada Sue Selwitz

Guests:

Woody Bottom
Lee Poore
Fred Rawlings
Bob Cadle

Certificates of Appreciation
The following people were awarded Safety Certificates of Appreciation.

- Jana Angel — Rehabilitation Services
- John Anthony — Chemistry
- Gene Baber — Physics & Astronomy
- Jeanne Bouvier — Nursing
- Gary Ginn — Anatomy & Neurobiology
- John Gurley — Cardiology
- Don Hill — Physical Plant Division
- IACUC Committee — Mike Bardo, Chair
- Ali Meigooni — Radiation Medicine
- Richard Riedl — Capital Project Management
- Mary Vickers — Livestock Disease and Diagnostic Center
- David Waldridge — Medical Center Physical Plant Division

The January minutes were approved as written.

- **Old Business**

Workers Comp
Mark Meier has not received a response back regarding this issue.

- **New Business**

Recognition for Radiation Safety
After discussion, it was decided that a memo would be sent to the Chancellors from the Radiation Safety Committee recognizing 45 Authorized Users of radioactive materials who had perfect inspections for the last four quarters.

EH&S Unit Review
George DeBin scheduled outside reviews of all Fiscal Affairs units. The review for EH&S was conducted on March 6 and the review committee's recommendations are being prepared at this time. The major recommendation will be to find funding for the health and safety needs for campus buildings. The report will be forwarded to committee members when it is completed.

- **Subcommittee Reports**

Chemical Safety
Lee Poore reported about the issues that the Chemical Safety Committee has been involved with the last year. A review of the bylaws concerning meeting frequency was discussed and it was decided to continue to meet in accordance with the current bylaws. They implemented a new fact sheet about chemical use by pregnant laboratory workers. This is now located on the EH&S webpage, discussed during employee orientation and during the lab safety training course. The committee brought several concerns to the EH&S committee including: notification of fume hood outages, ventilation of Combs Building and clarification of worker's compensation issues.

General Safety
Tomi Ross reported that the General Safety committee also did a review of their bylaws regarding meeting frequency and they also decided to not amend the bylaws. They have now made the Injury and Illness report a standard agenda item for each meeting. They reviewed the new legislation concerning needlestick prevention and ergonomics. They have also addressed Pedestrian Safety issues of the University and the chair will forward a copy of the committee's findings to the EH&S Committee.

Action Item: It was decided that pedestrian safety problems and recommendations should be spelled out in a memo; Tomi will prepare and send to Mark who will then forward to EH&S committee members for objections or revisions. Mark will then forward the memo to George Debin.

Institutional Biosafety
John Lowry reported that they have developed general guidelines for usage of viruses and gene therapy trials.

Radiation Safety
Fred Rawlings reported that the Maysville Cancer Treatment Center was inspected and there were no significant non-compliances. The Committee approved the Irradiator License renewal application. They approved a personnel monitoring badge assignment policy. The Committee is addressing a need to provide special patient dose training for physician performing high fluoroscopy workloads.

There was a discussion about times and days for next year's meetings and it was decided that an e-mail will be sent out to get input on this issue.

Adjourn.

EH&S Committee Membership

2000-01

Meier, Mark (Chair), Chemistry, meier@pop.uky.edu, 257-3837

Botkin, John (Vice Chair), Admin. Hospital, jbotkin%taonode@mvs.hosp.uky.edu, 323-5925

Clark, Dall, Procurement & Construction, dclark@pop.uky.edu, 257-5911x124

Crooks, Peter, College of Pharmacy, pcrooks@pop.uky.edu, 257-1718

Gaetke, Eugene, College of Law, ggaetke@pop.uky.edu, 257-3434

Jolly, Laura, Merchandising & Textiles, ldjolly@pop.uky.edu, 257-4798

Kline, Michelle, Undergrad Student Rep

Laswell, Harold, Dentistry Clinical Affairs, hblasw1@pop.uky.edu, 323-5876

McClure, Ed, UKMC PPD, emcclur@pop.uky.edu, 323-5792

McLetchie, Nicholas, Biological Sciences, mclet@ceeb.uky.edu, 257-6786

Ritchie, Wayne, Chancellor's Office UKMC, writchi@pop.uky.edu, 257-1063

Scroggins, Robert, Art, rlscro1@pop.uky.edu, 257-5371

Scutchfield, Doug, Health Services Management, scutch@pop.uky.edu, 257-5624

Strobel, Herbert, Animal Sciences, strobel@pop.uky.edu, 257-7754

Tripathi, Sugata, Graduate Student Rep, sugata@pa.uky.edu

Watts, Jean, Lexington Comm. College, jwatt0@pop.uky.edu, 257-2624

Williams, Janet, Col. of Med. Dean's Office, jrwill1@pop.uky.edu, 323-6589

Ex officio:

Beach, Garry, University Fire Marshal, gbeach@email.uky.edu, 257-6326

Davis, Debbie, Sponsored Projects Admin., ddavis@pop.uky.edu, 257-8311

Enoch, Harry, Environmental Hlth & Safety, henoch@email.uky.edu, 257-3242

Horstman, Tony, Preventive Medicine, swhors1@pop.uky.edu, 323-8089

Karnes, Jacob, Disability Resource Center, jkarnes@ukcc.uky.edu, 257-2754

Lowry, John, Hazardous Materials Mgt., jqlowry@email.uky.edu, 323-5728

Selwitz, Ada Sue, Research Subjects, selwitz@pop.uky.edu, 257-2861

Minutes of the Chemical Safety Committee
FY 2000-01

Chemical Safety Committee
Minutes of September 27, 2000

Attendees:

Boyd Haley	Todd Porter
Doris Baker	Thomas Vanaman
Caroline Gil	David Hibbard
James O'Reilly	John Lowry

Welcome/Recognize New Members
Daret St. Claire
Thomas Vanaman

Minutes from June 6, 2000 meeting approved

- **Old Business**

Bylaws Review
The current bylaws of the committee were discussed. Committee was requested to review further and provide any feedback to David Hibbard. It was discussed if the committee was involved with enough issues to justify meeting four times a year. Consensus was to continue meeting at the frequency specified in the bylaws (once/quarter).

New Employees – mandatory training
There was further discussion on the legal issues of requiring employees to complete all mandatory EH&S training as a condition for continued employment. Concerns arose that if training is required to be completed within a specific time frame, the variable of training accessibility must be further evaluated. Action Item: EH&S is still looking into the legal issues of this.

Follow-up on Chemical Use by Pregnant Laboratory Workers
David Hibbard reported to the committee that the "Chemical Use by Pregnant Lab Workers - Guidance Document" was reviewed by legal. It has been incorporated into the UK Model Chemical Hygiene Plan, EH&S website, and is distributed at New Employee Orientation and the Chemical Hygiene Plan/Laboratory Safety Class.

- **New Business Brought by Members**

Effectiveness of Fume Hood Testing Program
Concerns were mentioned about the effectiveness of the current fume hood testing program. Questions were raised about the current reports generated. David Hibbard discussed the current process of action when a defective hood is detected. EH&S is currently exploring ways to improve the notification and repair process when hoods are failing or operating marginally.

Worker's Compensation Coverage

There were many questions raised regarding WC coverage. Specifically, is coverage extended to Teaching Assistants, Graduate Students, Undergraduates, Resident Advisors, Graduate Students on stipends, and High School Students working in labs? Action Item: David Hibbard to confer with Human Resources for clarification.

EH&S Training Integration

It was proposed to integrate hazardous waste, biological, radiation and chemical safety training courses. It was suggested the courses be provided on-line and be geared towards the specific jobs to eliminate irrelevant training. This will be proposed at the next EH&S committee meeting.

Adjourn

Chemical Safety Committee
Minutes of November 29, 2000

Attendees:

Boyd Haley	Thomas Vanaman
Doris Baker	David Hibbard
Caroline Gil	John Lowry
John Hahn	Lee Poore
Daret St. Claire	

Minutes from September 27, 2000 meeting approved

- **Old Business**

Bylaws Review
There were no comments or additions to the bylaws.

New Employees – mandatory training
It was suggested that the EH&S Division schedule periods to provide all mandatory EH&S training for the required faculty and staff. EH&S is still exploring the legalities of imposing consequences if training is not completed. There was discussion on the potential for acceptance of EH&S training certification from other universities in lieu of attending UK EH&S training. Lee Poore and David Hibbard explained that this would be difficult due to the specificity of each university's training programs. EH&S has and is currently working with various departments and sectors in identifying faculty and staff that are in need of mandatory EH&S training. The committee supported this effort. It was also mentioned that the department chairs need to be made aware of the courses that are available on-line.

Fume Hood Survey Procedure
Lee Poore gave a report on the procedure utilized to evaluate chemical fume hoods at the university. Further explanation focused on how and who is notified when a hood is operating marginally or failing. The committee was concerned that building occupants are not notified of when there is a partial or total shutdown of the ventilation system associated with building fume hoods. There was additional related discussion regarding the high frequency of marginal and failing fume hoods within the Combs Cancer Research Building. Action Items:

Motion made to have David Hibbard raise the issue of ventilation system shutdown notification at the EH&S Committee Meeting. Proposal by the committee was to have departments provide the respective PPD with an e-mail listing of all applicable building occupants to be utilized for electronic notification (e-mail) when ventilation systems were to be shut down.

Motion made to have David Hibbard raise the issue of Comb's ventilation system problems at the EH&S Committee Meeting. Proposal by the committee was to have EH&S and MC PPD collaborate in conducting an evaluation of the Combs Cancer Research Building's ventilation system.

Worker's Compensation Coverage
David Hibbard reported back to the committee on who is covered by Worker's Compensation. Per his discussion with Bart Miller, Disability Benefits Manager, an individual will receive compensation for a work-related injury if they receive a W-2 Form from the university and have completed a Form I-9. There was concern by the committee that numerous faculty and staff may not be aware of this. Action Item: Motion made to have David Hibbard raise this issue at the EH&S Committee Meeting. Proposal by the committee was to have the EH&S Committee hear this concern and determine means to inform faculty and staff on Worker's Compensation Coverage.

- **New Business**

No new business

Adjourn

Chemical Safety Committee
Minutes of January 24, 2001

Attendees:

Boyd Haley	Thomas Vanaman
Doris Baker	David Hibbard
Todd Porter	John Lowry
Daret St. Claire	Lee Poore

Minutes from November 29, 2000 meeting approved

- **Old Business**

New Employees – mandatory training
David Hibbard gave an update on the status of the mandatory training effort. Currently all new faculty members are being informed of the mandatory training requirement. EH&S will go unit by unit to try to get current faculty, staff and students to complete the training. College of Pharmacy was the first unit completed and as a result is currently 100% in compliance with training. Chemistry will be the next unit; training will begin in 3rd quarter of this FY. It was also suggested that departmental managers be notified when employees complete the necessary training.

Fume Hood Survey Procedure
David Hibbard informed the committee that the Director of EH&S will draft a memo to the VP of Fiscal Affairs to make him aware of the need for an emergency notification of fume hood outages.

Ventilation of Combs Building
David Hibbard reported that the EH&S Committee designated OH&S and MCPPD do a formal investigation into the ventilation problems of the Combs Building.

Worker's Compensation Coverage
David Hibbard informed the committee that the Chairperson of the EH&S Committee had forwarded a memo to HR. This memo was a formal request to have HR provide clarification to all department chairs on the decision logic that should be utilized in determining coverage.

UK Model Chemical Hygiene Plan Review
Lee Poore solicited the committee for any input as to changes or modifications to the plan.

Laboratory Injury/Illness Report
David Hibbard provided laboratory injury/illness data for sharing and awareness. Sharing of this information will be a standing agenda item.

Solicitation for Prospective New Members
Six member's terms will end this year. David Hibbard requested the committee to submit names.

- **New Business**

The university had recently received a DOT inspection for shipping dangerous goods. Anyone that has questions about shipping dangerous materials is to call Hazardous Materials Management. John Lowry informed the committee that there are substantial fines and penalties for violations of DOT regulations pertaining to the shipment of dangerous materials.

Adjourn

Chemical Safety Committee
Minutes of March 28, 2001

Attendees:

O.J. Hahn	Thomas Vanaman
Doris Baker	David Hibbard
Todd Porter	John Lowry
James O'Reilly	Lee Poore

Minutes from January 24, 2000 meeting approved

- **Old Business**

New Employees – mandatory training status
Lee Poore gave an update on the status of the mandatory training initiative. Currently all new faculty members are being informed of the mandatory training requirement. EH&S will go unit by unit to try to get current faculty, staff and students to complete the training. College of Pharmacy was the first unit completed and as a result is currently 100% in compliance with training. Chemistry was the next unit and many participated. Follow-up sessions will be offered for this unit to ensure 100% compliance.

Dr. Vanaman solicited the committee on ways further communicate the requirement for training. Suggestions from committee members were to investigate UK News publication, orientation and a link on the Research and Graduate Studies page.

UK Model Chemical Plan Approval
Minor changes were made to the model program and the committee approved the plan.

Ventilation of Combs Building
David Hibbard reported that the EH&S Committee designated OH&S and MCPPD do a formal investigation into the ventilation problems of the Combs Building. Coordination of this effort is still being organized.

Laboratory Injury/Illness Report
Lee Poore provided laboratory injury/illness data for sharing and awareness. Committee members requested that the report be more focused to show chemical safety related data. Also suggested was to create a document that would specifically define what individuals need to report.

Committee Members for next fiscal year
Six member's terms will end this year. The committee appreciates the efforts these members have made to help with chemical safety on our campus. Thanks to Todd Porter, Doris Baker, James O'Rielly, John Hahn, Caroline Gil and Boyd Haley for their service.

- **New Business**

Members brought no new business.

Adjourn

Chemical Safety Committee Membership
2000-01

Haley, Boyd (Chair), Chemistry, behaley@pop.uky.edu, 257-7082

Baker, Doris, Clinical Sciences, dbake0@pop.uky.edu, 323-1100x241

Barrett, Michael, Agronomy, mbarrett@pop.uky.edu, 257-5846

Gil, Carolyn, Lexington Comm. College, cjgil00@pop.uky.edu, 257-1457

Hahn, John, Mecanical Engineering, hahn@engr.uky.edu, 257-5862

Kendrick, Frank, Pediatric Dentistry, fkend1@pop.uky.edu, 323-1292

O'Reilly, James, Chemistry, jeorei0@pop.uky.edu, 257-7077

Porter, Todd, College of Pharmacy, tporter@pop.uky.edu, 257-1137

St. Claire, Daret, Toxicology, dstcl00@pop.uky.edu, 257-3956

Vanaman, Thomas, Biochemistry, vanaman@pop.uky.edu, 257-1347

Ex officio:

Hibbard, David, Occupational Health and Safety, dwhibb0@email.uky.edu, 257-3845

Lowry, John, Hazardous Materials Mgt., jqlowry@email.uky.edu, 323-5728

Poore, Lee, Occupational Health and Safety, lpoor2@email.uky.edu, 257-2924

Minutes of the General Safety Committee
FY 2000-01

No committee meeting was held in September.

General Safety Committee
Minutes of November 1, 2000

Present:

Tomi Ross	Jack Wireman
Kwaku Addo	Travis Manley
John Summersett	Greg Zoll
Greg Copley	David Hibbard
Tony Ralph	Woody Bottom
John Sampson	Bob Cadle

Welcome and introduction of new members.

The minutes from June 12, 2000, meeting were approved.

- **Old Business**

Bylaws Review
The bylaws were reviewed. There was discussion related to changing the mandatory quarterly meeting dates. It was suggested that the meetings could be four per academic year rather than calendar year. This would be in going with the frequency the EH&S Committee has adopted. It was mentioned that attendance would be higher if meetings were not held during the summer. Committee will revisit the issue of meeting frequency at the next meeting.

Injury/Illness Statistics
Bob Cadle presented UK's injury/illness statistics. (Attachments 1-1 through 1-3)

Injury/Illness Prevention at PPD by Cross Functional Team- Pilot Program
David Hibbard presented an overview of the current Musculo-skeletal Disorder Prevention Program Pilot. (Attachments 2-1 through 2-7)

Pedestrian Safety Issues
Causal Factors Study Presentation (Attachment 3-1 through 3-4)

Travis Manley (UK Police) presented a "Summary of Motor Vehicle & Pedestrian Accidents". This was a summary of statistics that UK Police had compiled for 1996 – YTD. A recommendation was made to have Civil Engineering do a study about the number of pedestrians and near misses at the high-risk intersections.

Pedestrian Safety Issues – (Attachment 3-1 through 3-4)

The committee reviewed a list of pedestrian safety issues received from the EH&S Committee. The following status updates and/or committee input was provided for each item indicated:

#2 John Summersett to pursue with PPD

#4 Issue in progress of being resolved
#5 Sidewalk currently under construction that will resolve issue
#6 Travis Manley commented that UK Police has issued moving violation tickets 4X to Lextran drivers in this area. There was discussion that relocation of the traffic light may aid in vehicles stopping at the light.
#7 Committee agreed that this was a Lexington-Fayette City Police issue
#8 Committee agreed that this was a Lexington-Fayette City Police issue
#9 Travis Manley commented that the city has removed two parking spaces to improve visibility
#10 Committee agreed to request UK Fiscal Affairs contact city to request timing of pedestrian walk light to allow adequate time for pedestrians to cross. There is higher pedestrian traffic during shift change at Medical Center. Another option discussed would be to assign a safety officer to stop traffic during shift changes.

These and other remaining issues will be discussed and specific action plans developed for each at next meeting.

- **New Business**

John Summersett gave a report about a group of PPD employees be participate in a study to evaluate a slip prevention device for shoes. The device to aid in the reduction of slips and falls on.

Adjourn

Attachment 4

Pedestrian Safety Issues

Examples that have been submitted since the last EH&S Committee meeting.

1. bicycle riders: speeding, going wrong direction in bike lanes, and riding in prohibited areas (enforcement issue?)

2. greenhouses near Ag South; underpass on Tobacco Rd near Parking Structure #1: poor lighting (??)

3. wheelchair ramp on south side of Cooper Dr: does not have a level landing zone (ADA issue?)

4. narrow strip used by pedestrians on north side of Cooper Dr in front of the practice facility: is unpaved; is used by motorists trying to get around cars turning left into KET (??)

5. Cooper Dr near LCC: there is a sidewalk perpendicular to the street on both sides that encourages crossing where there is no light (??)

6. Limestone crossing at Service Bldg: buses stopping here often run the red light (enforcement issue?)

7. Limestone crossing at Service Bldg: vehicles turning onto Lime from Upper often run the red light (enforcement issue?)

8. Farm Rd intersections at University Dr and Nicholasville Rd: vehicles on Farm Rd crossing multiple lanes of traffic have caused many accidents (**)

9. Limestone crossing at Holmes Hall/McDonalds: parking spaces on the east side of Lime block visibility for those who chose to cross there (??)

10. Limestone crossing at Kentucky Clinic: large numbers of employees cross Lime between the lights at Virginia Ave and Leader Ave (??)

11. tractor-trailer trucks on inner campus: large trucks must negotiate narrow streets and crowded parking lots to make deliveries to inner campus (??)

12. vehicles on sidewalks, grass, and other pedestrian areas: vendors, contractors, and UK vehicles drive and park off the street in pedestrian areas (??)

13. transport of hazardous materials on campus (e.g., liquid nitrogen)

[Other attachments may be viewed at the EH&S office, 252 E. Maxwell]

General Safety Committee
Minutes of January 23, 2001

Present:

Tomi Ross	David Hibbard
David Hoke	Bob Cadle
Greg Copley	Lee Poore
Tony Ralph	David Acker
Jack Wireman	

Welcome.

The minutes from November 1, 2000, meeting were approved.

- **Old Business**

Pedestrian Safety Issues
There was discussion about what and to whom the issues should be addressed. It was decided that Tomi Ross would draft a memo through EH&S Committee to the VP for Fiscal Affairs to address items 6, 7, 8, and 10 from the list. All other issues have been addressed as indicated in the GSC minutes of 01NOV00 with exception of issues #1, #2, #11, #12 and #13.

Issue #1
Discussion focused on enforcement and education as response to this issue. David Hibbard to check status of UK Bike Committee for possible referral. Tony Ralph to inquire as to bike safety education being provided to residence halls. Letter to UK Police to promote awareness of this issue for additional enforcement action was discussed.

Issue #2
John Summersett to pursue with PPD.

Issue #11 & #13
Committee was at a loss as to what actions could be taken. Restriction of size of trucks on campus did not seem logistically possible. Hazardous Materials must be transported to and from campus as is related to conduct of university business.

Issue #12
This was deemed an enforcement issue for Parking and UK Police. Discussion of forwarding letters of awareness.

Responses to all issues should be compiled and forwarded to the EH&S Committee to verify closure.

Injury/Illness Statistics
Bob Cadle presented UK's injury/illness statistics. (Attachments 2-1 through 2-3)

New OH&S Training Course Offerings
Bob Cadle announced the addition of several new courses:

Hazard Communication
Construction Safety Awareness
Louckout/Tagout – Control of Hazardous Energy Training
Hazard Assessment for the Use of Personal Protective Equipment

Information about these courses can be found on the EH&S web site at
http://www.uky.edu/Fiscal/Environmental/classes.html

New Needlestick Legislation Overview
David Hibbard gave a report on the new legislation that will become effective 21MAY01. (Attachments 3-1 through 3-2)

New OSHA Ergonomics Standard Overview
David Acker gave a report and overview on the new Ergonomics standard.

Meeting Frequency
The committee agreed to continue to meet four times throughout the year.

Solicitation for Prospective New Members
David Hibbard informed the committee that five of the members' terms would end this year and he asked the committee for suggestions for new members. David will submit the nominees on January 31, 2001.

- **New Business**

No new business.

Adjourn.

[Attachments may be viewed at the EH&S office, 252 E. Maxwell]

General Safety Committee
Minutes of March 27, 2001

Present:

Tomi Ross	Lee Poore
David Hoke	David Acker
Greg Zoll	Bob Cadle
Jack Wireman	

Welcome.

Minutes from the January 23, 2001, meeting were read and approved.

- **Old business**

Pedestrian Safety Issues

3. Wheel chair ramp south side of Cooper Drive. PowerPoint pictures made of the area and discussed with committee members. The solution is to re-stripe the crosswalk to meet the existing handicap curb cuts both for the Ag. Science side of the road and the other side of the road so they are properly aligned. To be sent up to the Chairman of the EH&S committee to be presented to the City.

#6. Buses stopping at limestone crossing running red light. The Metro bus company urged those who observing the violation to get the bus number and the time of violation and report it to Lextran.

#11. Tractor trailer traffic on campus tabled.

#12. Vehicles on sidewalks and other pedestrian areas. Committee Chair will prepare a letter to EH&S Committee.

#13. Transportation of hazardous materials on campus. Tabled.

Fire Marshal's Report

No fires reported. Had a discussion of the requirement for recording and reporting all alarms in resident halls.

OH&S Report

OH&S training courses are now being offered each month at Scovell Hall. Courses are listed on the EH&S web site under training. David Acker of OH&S discussed the Ergonomics Standard's demise and its impact on the University. Work will continue on the pilot program for PPD Custodial Service.

- **New Business**

Bus loading/unloading traffic hazard at the Medical Center shuttle bus loading area was discussed and pictures were displayed (PowerPoint) for discussion and analysis. Copies are attached to these minutes. The Committee Chair was to write a letter to the Director, Joseph Frye, and relay the committee recommendations.

There being no other new business, the meeting was adjourned.

[Attachments may be viewed at the EH&S office, 252 E. Maxwell]

General Safety Committee Membership
2000-01

Collins, Terence (Chair), Prev. Med. & Envir. Health, trcoll01@pop.uky.edu, 323-5166

Addo, Kwaku, Nutrition & Food Science, kaddo01@pop.uky.edu, 257-7784

Columbus, Kathleen, Student Rep

Crutcher, Ben, Auxiliary Services, ben@pop.uky.edu, 257-5849

Hoke, David, Wellness Program, djhoke2@pop.uky.edu, 257-9355

Katz, Wendy, Biochemistry, wkatz@pop.uky.edu, 323-4612

Mallek, Joe, UKMC PPD, jmallek@pop.uky.edu, 257-8513

Ralph, Tony, Residence Life, atralp0@pop.uky.edu, 257-4784

Ross, Tomi, Hospital Safety Officer, tross@pop.uky.edu, 323-5734

Summersett, John, Physical Plant Division, jsummers@ppd.uky.edu, 257-9377

Wireman, Jack, KY Clinic Admin., jwire1@pop.uky.edu, 257-6780

Zoll, Greg, LCC Dental Lab Tech., gzoll@pop.uky.edu, 257-3732

Ex officio:

Beach, Garry, University Fire Marshal, gbeach@email.uky.edu, 257-6326

Bottom, Woody, Environmental Protection, bbottom@email.uky.edu, 257-3285

Cadle, Robert, Occupational Hlth. & Safety, rccadl1@email.uky.edu, 257-3862

Clevidence, Ken, Procurement & Construction, kclevid@pop.uky.edu, 257-3062

Hibbard, David, Occupational Hlth. & Safety, dwhibb0@email.uky.edu, 257-3845

Langston, Rebecca, Police Department, rplang1@pop.uky.edu, 257-6313

Minutes of the Institutional Biosafety Committee
FY 2000-01

Institutional Biosafety Committee
Minutes of July 25, 2000

Members Present	**Members Absent**
Kelly Breeding	Ken Dickey
Thomas M. Chambers	Arthur Hunt
Norman Goodman	Charles Issel
Craig Jordan	Mike Russ
Judith Lesnaw	
John Lowry	
Robert Perry	
Susan Straley	
Bruce Webb	

Protocol Review and Action Taken:

1. Project Title: Retroviral Gene Transfer
   Principal Investigator: **Eric J. Smart**

Following discussion the committee requested that the PI clarify the following points, and resubmit the registration forms. A) On page one of the recombinant DNA registration form, section II, the PI indicated that the project does not require IBC approval. Approval is required and should be so indicated. B) On page one of the recombinant DNA registration form, section II, the PID indicated that no foreign protein is to be produced. This is not correct and should be changed to the affirmative, and the protein to be expressed should be indicated. C) On page two the source of rDNA (the species from which it was derived) should be indicated. D) Regarding the PIs section IX C.; specify the physical location of this procedure and safety measure. E) The PIs section on safety and handling needs to be expanded to include details of what disinfectant and spill procedure is to be used. F) The committee expressed concern for the safety of the virus and requested the following details: define the host range, address the potential for the production of replication-competent virus able to infect humans, specify the cell lines and type of virus produced, and amphotrophic viruses capable of infecting humans produced:

2. Project Title: Architecture of the hin filament Z-line junction: Analysis of nebulette functions
   Principal Investigator: **Carole L. Moncman**

Following discussion Dr. Jordan moved and Dr. Straley seconded that the application be approved provisionally pending the following additions: a brief description of the two-hybrid system that will be used, submission of an infectious agent registration form for the adenovirus vector since it may contain reactavants. The motion carried unanimously.

3. Project Title: Mechanism of Replication of Defective Interfering RNA Associated with Plant Virus Infection
   Principal Investigator: **Peter Nagy**

The committee requested that Mr. Lowry notify the office of occupational health regarding the proposed use of para-formaldehyde, ethidium, bromide and chloroform. Dr. Perry moved and

Mr. Breeding seconded provisional approval pending addition of the following information: in the event that a spill does not land on the protective pad, the area will be decontaminated with 10% Clorox. The motion was approved unanimously.

4. Project Title: Mechanism of Ras in Tumor Progression
   Principal Investigator: **Bin-Tao Pan**

Following discussion the committee requested that the PI provide the following information and clarification, and resubmit the application. A detailed project description should be provided to permit the committee to assess the classification of the project. In section A). General Safety, point 2, the disinfectant must be specified and authenticated, and the time of exposure for decontamination indicated. The word "should" in this line must be changed to "will. B) In A.7, the aerosol issue must be clarified. Minimized is not sufficient. Is there a potential for aerosols? C) B1, the word "should" is to be changed to "will" be immediately decontaminated. The use of iodet rather than 10% Clorox is to be justified or changed. The requisite length of time for exposure to 70% ethanol is to be indicated.

5. Project Title: Stress Induction of HSV-1 Genes
   Principal Investigator: **Robert J. Danaher**

Following discussion Mr. Breeding moved and Dr. Chambers seconded that the application be provisionally approved pending addition of the following information. The project description must be expanded to provide sufficient detail to enable the committee to know what is to be done. The source and nature of the HSV plasmids, promoters, and genes (if any) must be specified. The hosts need to be clarified. The PI lists E-coli on page two of the form, but mentions PC12 under Experimental Protocols.
The motion carried unanimously.

6. Project Title: Effects of Feeding A Mannan Oligosaccharide Preparation to Holstein Cows
   Principal Investigator: **Robert J. Harmon**

Following discussion Dr. Straley moved and Dr. Perry seconded provisional approval pending specification of the "sanitizing" solution and its efficacy for the agents used. The motion carried unanimously.

The meeting was adjourned at 2:30 p.m.

Institutional Biosafety Committee
Minutes of September 6, 2000

Members Present:
Kelly Breeding
Dr. Thomas Chambers
Dr. Arthur Hunt
Dr. Craig Jordan
Dr. Judith Lesnaw
John Lowry
Dr. Robert Perry
Dr. Susan Straley
Dr. Bruce Webb

Members Absent:
Dr. Norman Goodman
Dr. Charles Issel
Mike Russ

The meeting was called to order by Dr. Judith Lesnaw.

Protocols reviewed and actions taken:

1. Project Title: Metabolism-dependent neuro-and vascular toxicity of redox active compounds.
   Principal Investigator: **Richard Miller**

The committee noted the proposed use of CO and asked Mr. Lowry to notify the occupational hazards office. The PI answered NO to the question of identifying biohazards on the posted signs. The committee requested that the agents be identified and the answer changed to YES thereafter. Bruce Webb moved and Craig Jordan seconded a motion to approve provisionally the project as exempt from the NIH guidelines. The provisions are agent identification, and indication of the action on the registration form. The motion carried unanimously.

2. Project Title: Infectivity of ePTFFE vs. Polypropylene mesh
   Principal Investigator: **Adrian Park**

Dr. Straley moved and Dr. Chambers seconded a motion for provisional approval. The provisions are: specification of the E coli strain used (is it pathogenic or normal human flora), clarification of the containment level (is BL2 needed), and specification of the host used. The motion carried unanimously. If the PI is to use BL2, Mr. Lowry will check out the Biosafety cabinet.

3. Project Title: Early events in pneumonic plague
   Principal Investigator: **Susan Straley**

Dr. Straley addressed several questions from committee members prior to leaving the room. The committee discussed the proposal and noted that it was very well prepared. The committee requested verification of the efficacy of the proposed disinfectant. Dr. Chambers moved and Dr.

Hunt seconded a motion to approve the protocol upon receipt of the requested verification. The motion carried unanimously.

4. Project Title: Opioids and Central Nervous System Vulnerability to HIV and Opiate Drugs and Nervous System Vulnerability to HIV.

Principal Investigator: **Kurt Hauser**, Anatomy and Neurobiology

Committee reviewed the protocol and voted unanimously that protocol was NIH exempt, since the non-toxic purified protein that Dr. Hauser is obtaining will come from the lab of Avindra Nath.

Meeting adjourned at 2:30 p.m.

Institutional Biosafety Committee
Minutes of November 1, 2000

Members Present	**Members Absent**
Kelly Breeding	Dr. Susan Straley
Dr. Thomas M. Chambers	Mike Russ
Dr. Norman Goodman	Dr. Ken Dickey
Dr. Arthur Hunt	
Dr. Charles Issel	
Dr. Robert Perry	
Dr. Craig Jordan	
Dr. Judith Lesnaw	
John Lowry	
Dr. Bruce Webb	
Peggy Quisenberry, support staff, non-voting	

The meeting was called to order by Dr. Judith Lesnaw, IBC Chairperson.

Protocol Review and Actions Taken:

1. Project Title: Molecular Biology of RNA Viruses (Hepatis C Virus, RSV, and etc.).
   Principal Investigator: **Guangxiang Lu**

The committee discussed the following issues with the application. The application as submitted was incomplete the committee decided to send back to investigator for completion. Also the following issues were sent to the investigator for clarification.

a. Project Title must be specific the use of the term etc. is unacceptable in the title.
b. Provide accurate description of the cell lines
c. Provide a complete project description.

No action was taken on this protocol.

2. Project Title: Macrophages in Atherosclerosis
   Principal Investigator: **Reto Asmis**

After reviewing the application the committee gave provisional approval contingent upon the requested items below. Kelly Breeding moved and Dr. Issel seconded. The motion carried unanimously.

a. Provide blood born pathogen-training certificates for everyone included in study.
b. What equipment will be used in the project and how will the equipment be decontaminated?
c. Please indicate what you would consider to be a large spill that would require you to contact Hazardous Materials Management.

3. Project Title: Molecular Basis of CA1 Synaptic Reorganization in Focal Epilepsy

Principal Investigator: Gregory Barnes

After the committee discussed the registration it was granted provisional approval provided the investigator provided the following information/clarification. Once the revisions were delivered to the Hazardous Materials Management Office copies would be made and distributed to the committee. Committee members would email back to Peggy Quisenberry if all the points had been addressed.

a. Please submit a completed "infectious agent" registration form.
b. All personnel involved in the project must be identified and listed on the form.
c. Please substitute a 10% bleach solution for the 10% solution of Rocol in the areas to be disinfected, also the committee wishes to inform you that the needs you are disposing of do not need to be decontaminated in Clorox before disposal.
d. Please submit a completed "Recombinant DNA Registration Form, the IBC only received page one and two of the form.

Dr. Norman Goodman moved and Kelly Breeding seconded that the application be approved after committee had seen the project one more time. The motion carried unanimously. Dr. Craig Jordan abstained.

4. Project Title: Antifolate Sensitivity of Hematopoietic Cells Transduced with the Reduced Folate Carrier Gene.
   Principal Investigator: Jeffrey Moscow

Following a lengthy discussion it was decided that the protocol would be tabled. Dr. Craig Jordan and Dr. Arthur Hunt abstained from the vote. Protocol was sent back to the investigator with a letter requesting the following clarifications: Please specify the strain and detail the nature of defective retrovirus used; describe in detail (e.g. what transgene is being carried) the transgenic mouse to be used; substitute 10% bleach for 70% alcohol and UV used for decontamination procedures; Section II of the Recombinant DNA form change the first item to "yes", experiments do require IBC approval.

Meeting adjourned at 3:30 p.m.

Institutional Biosafety Committee
Minutes of December 13, 2000

Members Present	**Members Absent**
Norman Goodman	Kelly Breeding
Craig Jordan	Thomas Chambers
Judith Lesnaw	Ken Dickey
John Q. Lowry	Arthur Hunt
Susan Straley	Charles Issel
Martin Evans	Robert Perry
Edward Hirschowitz	Mike Russ
	Bruce Webb
	Jack Hiatt

Dr. Judith Lesnaw, IBC Chairperson, called the meeting to order.

Protocol Review and Action Taken:

1. Project Title: GVOO1.002: An Open-Label, Phase I, Dose-Escalation Study of Tumor Necrosis Factor-a (TNFerade Biologic) Gene Transfer with Radiation Transfer for Locally Advanced, Recurrent, or Metastatic Solid Tumors. Principal Investigator: **Nader Hanna**

It was noted by the committee that Dr. Hanna did not submit an infectious agent registration form. Dr. Nader Hanna was invited to join the committee meeting to answer any questions that the committee might have. The location of the study was discussed as well as patient transport. It was noted by a committee member that the fifth floor is an isolated unit. Dr. Hanna was asked if beds were decontaminated after each patient. Committee was informed that the patients would not be infectious. Also was noted that if the two available rooms in 5 North were unavailable the study would not take place. The patients entering the study will be admitted directly to 5 North. The committee also noted that they had not received from Dr. Hanna the final copy of his protocol, only one member of the committee had access to the changes.

Dr. Hanna was excused from the meeting. It was unanimously voted by the committee that once the revisions/clarifications were received that members of the committee would be sent copies of changes. Project would be discussed at the next meeting after revised forms were received. All agreed.

a. Complete and submit for review an Infectious Agent Registration Form.
b. On the front page of the Recombinant DNA Registration form you have answered “no” to question two in Section II, this should be answered “yes” and complete the question which follows.
c. Please provide committee with a description as to what protein TNFL is.

d. On page two of the Recombinant DNA form you have answered “NO’ to the question regarding biohazards being identified on biohazard signs. It was the consensus of the committee that the biohazards should be identified on the signs.
e. Dr. Martin Evans informed the committee that the documents provided to the committee was not current. The committee request that the authenticated final documents be submitted for their review (e.g. pharmacy policy, housekeeping document, IRB document).
f. The P.I. should also include a clear statement that in the event a patient experiences adverse effects that the P.I. himself will directly notify NIH, FDA, UKIBC, and UK IRB committees. (Note: This action must be taken even if P.I. notifies the drug company.)

2. Protocol Title: The Focal Adhesion Protein Tailin in Prostate Adenocarcinoma
Principal Investigator: **Richard McCann**

Following discussion Dr. Norman Goodman moved and Dr. Susan Straley seconded that protocol was exempt. The motion carried unanimously.

3. Project Title: Regulation of Angiogenesis by a Ras-Related Protein
Principal Investigator: **Douglas Andres**

The committee noted that there was some inconsistency in the forms. Dr. Norman Goodman moved and Dr. Craig Jordan seconded provisional approval pending the following clarification and minor modification. The motion carried unanimously.
a. The descriptions of the deletion in the adenovirus vector differ within the application (see page two, Recombinant DNA form, page 5, Infectious Agent Registration Form, and page 11, Project summary section Experimental Protocols). Please resolve this inconsistency.
b. On the attachment for safety procedure item #3, last sentence "if spill occurs...” please change the wording from "spray" bleach to "flood with" bleach.

4. Project Title: Membrane Fusion Promoted by Viral Glycoproteins
Principal Investigator: **Rebecca Dutch**

Following discussion Dr. Norman Goodman moved and Dr. Straley seconded that the application be provisionally approved pending the following clarifications. The motion carried unanimously.

a. On page two of the Recombinant DNA Registration form please give a detailed description of plasmids.
b. On the attachment for safety precautions (your page four) point two and four, please specify that decontamination will be done with a 10% bleach solution for a minimum of 15 minutes.
c. For point nine of page four specify the situations appropriate for lab personnel to wear facemask and goggles.
d. On your page nine of safety precautions point three and eight, please specify that decontamination will be done with a 10% bleach solution for a minimum of 15 minutes.
e. Point four of page nine please substitute 10% bleach solution for the 70% ethanol.

f. One page ten last sentence on page please change from “all liquid waste is bleached…” to “All liquid waste is decontaminated with a 10% bleach solution for a minimum of 15 minutes prior to disposal”.

Modification Review:
Protocol Title: EGR-1 and Radiation – Induced Apoptosis
Principal Investigator: **Mansoor Ahmed**

No action was taken on this modification because of insufficient data.

Meeting adjourned at 4:00.

Institutional Biosafety Committee
Minutes of February 7, 2001

Members Present:	**Members Absent:**
Kelly Breeding	Ken Dickey
Thomas Chambers	Craig Jordan
Arthur Hunt	Robert Perry
Norman Goodman	Mike Russ
Judith Lesnaw	Bruce Webb
John Lowry	Jack Hiatt
Susan Straley	
Martin Evans	
Edward Hirschowitz	

Dr. Judith Lesnaw called the meeting to order.

Protocols reviewed and actions taken:

1. Project Title: GVOO1.002: An Open-Label, Phase I, Dose-Escalation Study of Tumor Necrosis Factor-a (TNFerade Biologic) Gene Transfer with Radiation Transfer for Locally Advanced, Recurrent, or Metastatic Solid Tumors
   Principal Investigator: **Nader Hanna**

Following discussion Dr. Hanna was asked to join the meeting. Also in attendance were Anna Rockich and Stacy Newsome. Dr. Hanna and his guest were excused from the meeting. Dr. Straley moved and Kelly Breeding seconded provisional approval pending receipt of the following information.

a. Section D.3 describing the human clinical trial must be deleted to avoid any confusion. The IBC does not approve a clinical trial at this time.
b. In Section IV-Cell Culture (3rd page) the cell cultures to be used must be specified. They are mentioned in D.1.a, but they must be clearly listed here.
c. Page 5, NIH guidelines should be deleted or expanded or the safety precautions section presented later should be moved here.
d. Page 6, bottom, the specially designated hoods and rooms must be identified.
e. Page 10, Recombinant DNA Registration Form, the experiments DO require IBC approval.
f. Page 11, rDNA form pg 2, Source of DNA is Human.
g. Page 11, under vectors only the Ad5 vector listed. Will this vector be obtained from another lab/company, or will it be constructed and/or produced in Dr. Hanna's lab. If the vector must be constructed the list of hosts and vectors must be expanded to include the bacterial hosts and plasmids. Additionally, the details of vector production and safety measures must be added to the protocol.
h. Page 11, biohazards stated as NOT identified, yet on page one it states that they are. Change NO to YES on P 11.

i. Page 13, Precautions point 6, decontamination with 10% bleach must be for 10 minutes minimum.
j. Page 14, safety equipment point 3, Lab workers must wear disposable lab coats over their white lab coats to protect them from spills and thereby to prevent laundry workers coming in contact with the vector while handling the white coat.
k. The application materials must be checked for spelling/grammar errors and corrected appropriately.

2. Project Title: Molecular Mechanisms of Platelet Exocytosis
Principal Investigator: **Sidney Waldo Whiteheart**

Following discussion Dr. Norman Goodman moved and Dr. Goodman seconded provisional approval pending the following modification/clarifications. The motion carried unanimously.

a. On page two of the infectious agent registration form you need to indicate where the work will be conducted.
b. On page two of the infectious agent registration form you need to indicate BL2 for the Biosafety level.
c. The recombinant DNA form needs to be signed.
d. The principal investigator responsibility form must be signed.

3. Project Title: Desensitization Mechanism of Thromboxane Receptor
Principal Investigator: **Hsin-Hsiung Tai**

Kelly Breeding moved and Dr. Straley seconded that the project was exempt. The committee did request that PI make the following minor changes. A) On page one of the recombinant DNA form Section II the first question "Do the rDNA experiments described…" should be answered "NO" instead of "YES". B) On page two of the form, item #3, "The hosts and vectors…" please add the mammalian cell line to the list. C) On the attachments for safety precautions, item #2 please specify that decontamination will be done with a 10% bleach solution for a minimum of 15 minutes. The motion carried unanimously.

4. Project Title: Emergence of Resistant Group B Streptococcal Strains in Central Kentucky
Principal Investigator: **Julies A. Ribes**

Following discussion Dr. Goodman moved and Dr. Chambers seconded approval with the following minor change: in safety section of study change "Universal" to "Standard Precautions". The motion carried unanimously.

5. Project Title: Immune Involvement in Traumatic Spinal Cord Injury
Principal Investigator: **Sonia Carlson**

Following discussion Kelly Breeding moved and Dr. Goodman seconded that the application be provisionally approved pending the following corrections. The motion carried unanimously.

a. On the infectious agent registration form page two is checked that this agent is an animal pathogen, however human pathogen should be checked.

b. Indicated throughout the safety procedures that a solution of “Rocol” will be used, please change this to Clorox or provide data indicating that “Rocol” is effective for adenovirus disinfecting.
c. On the page entitled “Safety Procedure When Using Adenovirus” item four, last sentence change the word “spray” to “pour”.

6 & 7. Project Title: Molecular Basis of Mossy Fiber Sprouting in Epilepsy
Principal Investigator: **Gregory Barnes**

No action was taken on this study because of the confusion, Dr. Barnes submitted two applications with the only difference being one was using rats and one was using mice. It was decided that Peggy Quisenberry would call Dr. Barnes and determine exactly what the committee should receive.

Meeting was adjourned at 3:00 p.m.

Institutional Biosafety Committee
Minutes of March 7, 2001

Members Present:	**Members Absent**
Judith Lesnaw	Mike Russ
John Lowry	
Craig Jordan	
Thomas Chambers	
Norman Goodman	
J. Hiatt	
Susan Straley	
Bruce Webb	
Chuck Issel	
Arthur Hunt	

Dr. Judith Lesnaw called meeting to order.

Dr. Nader Hanna informed the IBC Chair via email that the rooms designated in the human gene therapy protocol "An Open-label Phase 1 --- TNFerade tm biologic)----" approved by the IBC last month had to be changed to rooms on the seventh floor. The emails are attached. The IBC requests that Dr. Hanna provide justification of the use of the specified rooms in the context of patient/health care worker safety. Are the rooms equivalent to those originally designated with respect to safety?

The IBC noted that as different "bleach" products that vary in Na hypochlorite concentration are sold and in use, our stipulation that 10-minute exposure to10% bleach be used for decontamination should be clarified by stating the precise percentage of Na hypochlorite.

The descriptions of the rAd virus vectors and safety measures in most of the applications need to be expanded and clarified. The IBC suggested that the IBC Chair, John Lowry, and Dr. Smith prepare a "boiler plate" document.

Protocol Reviews and Action Taken:

"Hypoxia Mediated Genetic Manipulation of Radiation Response in Multimodality treatment of Human Cancer"
PI: Dr. Nadar Hanna

Following discussion Dr. Webb moved that, if Dr. Hanna is not generating and growing the Ad vector in his lab but obtaining it from another lab, the IBC provisionally approve the application; Dr. Issel seconded the motion. In the event that the vector is to be constructed/grown and purified in his lab, the application must be modified accordingly and resubmitted. The motion was approved unanimously. The requisite provisions are itemized below:

Section D.3 describing the human clinical trial must be deleted to avoid any confusion. The IBC does not approve a clinical trial at this time.

In Section IV-Cell Culture (3rd page) the cell cultures to be used must be specified. They are mentioned in D.1.a, but they must be clearly listed here.

Page 5, NIH guidelines should be deleted or expanded or the safety precautions section presented later should be moved here.

Page 6, bottom, the specially designated hoods and rooms must be identified.

Page 10, Recombinant DNA Registration Form, the experiments DO require IBC approval.

Page 11, rDNA form pg 2, Source of DNA is Human.

Page 11, under vectors only the Ad5 vector listed. Will this vector be obtained from another lab/company, or will it be constructed and/or produced in Dr. Hanna's lab. If the vector must be constructed the list of hosts and vectors must be expanded to include the bacterial hosts and plasmids. Additionally, the details of vector production and safety measures must be added to the protocol.

Page 11, biohazards stated as NOT identified, yet on page one it states that they are. Change NO to YES on P 11.

Page 13, Precautions point 6, decontamination with 10% bleach must be for 10 min minimum.

Page 14, safety equipment point 3, Lab workers must wear disposable lab coats over their white lab coats to protect them from spills and thereby to prevent laundry workers coming in contact with the vector while handling the white coat.

The application materials must be checked for spelling/grammar errors and corrected appropriately

"Molecular Basis of Synaptic Reorganization in Focal Epilepsy"
PI Dr. Gregory Neal Barns

"Molecular Basis of Mossy Fiber Sprouting in Epilepsy"
PI Dr. Gregory Neal Barns

The IBC observed that the two applications submitted by Dr. Barnes were nearly identical. The difference centered about the use of mice VS rats. The applications were therefore reviewed together and comments apply equally to both.

Dr. Jordan moved that applications be provisionally approved. Dr. Issel seconded the motion. The motion was unanimously approved. The provisions are detailed below:

The role of Dr. Smith in the project must be clarified as follows. Dr. Smith should be listed as a co-investigator, must clearly state what procedures are to be done in his lab, and must co-sign the application and thereby take full responsibility for those procedures carried out in his lab.

The description of the protocol on pages 4 and 5 should be clarified and expanded to include protocols for detection of replication-competent Ad virus, and additional details of decontamination. Exposure to 10% bleach must be for a minimum of 10 minutes.

Page 4, paragraph 3, line two, "sterile tissue culture hood" must be changed to " Biosafety laminar flow hood".

Page 5, have the vectors already been generated as the PI states?

Section II of the Micro. Agent Use form must be corrected.
Rout of spread is given as "aerosol", is this right?
Virulence is given as 10^7 PFU. Is the vector, or WT Adenovirus?
Will all the work done in a hood? Will some be done on bench etc?

In Section IV of Micro. Agent Use Form, Adenovirus is not a cell culture. Cells are eg. Name: Hek293, species, human.

"Genetic Determinants of Atrial Fibrillation"
PI Dr. Victor A. Ferraris

Following discussion Dr. Straley moved that the IBC provisionally approve the application. Dr. Webb seconded the motion, and it was approved unanimously. The provisions are detailed below:

The PI responded to IBC's previous request by stating that samples frozen immediately at –80 are considered non-infectious. This is incorrect. In fact, the procedure will preserve most infectious agents. The PI should delete this statement and add that Universal Precautions will be employed.

The exact location of the storage freezer must be provided.

"Mechanisms of Autonomic Dysreflexia Following Spinal Cord Injury"
PI Dr. Alexander G. Rabchevsky

Following discussion Dr. Jordan moved that the IBC provisionally approve the application. Dr. Chambers seconded the motion, and it was approved unanimously. The provisions are detailed below:

Page 1, IBC approval is required.

Page 2, how and where are the viruses to be purified?

Dr. Smith must clearly state what procedures are to be done in his lab, and must co-sign the application and thereby take full responsibility for those procedures carried out in his lab.

Page 3, needles need not be chlorxed prior to disposal in the sharps container.

Page 3, exposure to10% bleach for 10 minutes, and not rocol must be used for decontamination.

Page 3, paragraph 2, “most of work----“ should be clarified. Exactly which procedures will be done where?

Page 3, paragraph 2, the issue of the surgical room under construction must be clarified. Where will the work be done prior to its completion, and exactly where will the new surgical room be located?

The description of the rAd virus vectors and safety measures should be expanded and clarified by inclusion of a detailed description of safety procedures, decontamination method, and assay for replication-competent adenovirus.

Section II Micro. Agent Use, The expiration date for safety cabinet certification must be provided.

Section II Micro. Agent Use, sites of work other than safety cabinet should be indicated.

Section IV, Micro. Agent Use, the 293 cells should be listed.

Infectious Agent Form lacks safety/spill information. The PI may state that the protocol detailed in the accompanying rDNA form will be followed exactly.

“Regulation of Vascular Smooth Muscle Contraction”
PI Ming Gong

Following discussion the IBC requested that the PI address the following concerns and resubmit a modified application for IBC review.

The application lacks a spill protocol.

Page 2, biohazard signs must be posted on all storage areas.

Page 5, Safety Precautions, the method of decontamination must be specified. The IBC recommends exposure to 10% bleach for 10 minutes minimum.

In the last bullet under Safety Precautions the PI refers to use of a departmental tissue culture hood. This is not acceptable. A Biosafety laminar flow hood dedicated to adenovirus research must be employed. Additionally, a dedicated incubator (page 6, #4) must be employed.

In the waste disposal section the PI refers to use of 10% chlorine. This is not acceptable.

In the Experimental Protocols section the PI describes the use of rabbits. Rabbits should therefore be listed in Section III page 9.

Dr. Smith should be listed as a co-PI, and he should co-sign the application and thereby take full responsibility for all work conducted in his lab. A detailed list of these procedures should be presented.

A detailed description of safety procedures, decontamination method, and assay for replication-competent adenovirus should be presented.

Page 6, Experimental Protocols, the term “sanitized” should be replaced with a detailed description of decontamination. How will the tension setup be decontaminated?

Page 8, section II-Micro. Agent Use, Is the agent really type 4 as stated?

Page 8, section II-Micro. Agent Use, the agent is a human pathogen and should be so identified.

Page 8, section II-Micro. Agent Use, Are rabbits and rats really to be maintained in the lab MS 533? Has animal care approved this arrangement?

Page 8, section II-Micro. Agent Use, specify the incubator as an other site for work.

Page 8, section II-Micro. Agent Use, provide the expiration date for certification of the Biosafety cabinet.

Page 8, section II-Micro. Agent Use, Change the NA (any vaccination, skin test, etc) to no.

Page 8, section II-Micro. Agent Use, Uncheck “does not apply” on the top of the page.

Page 9, Section III, add rabbits

Page 9, Section IV, Add the cell lines used to construct and purify the vectors, eg. 293 cells.

Institutional Biosafety Committee
Minutes of April 4, 2001

Members Present:	**Members Absent:**
Dr. Chuck Issel	Kelly Breeding
Dr. Craig Jordan	Dr. Thomas Chambers
Dr. Judith Lesnaw	Dr. Ken Dickey
Dr. Robert Perry	John Lowry
Dr. Susan Straley	Mike Russ
Dr. Bruce Webb	Jack Hiatt
Dr. Norman Goodman	Dr. Arthur Hunt

Dr. Judith Lesnaw called the meeting to order.

Protocols reviewed and actions taken:

1. Project Title: Functional Implications of Polydnavirus Genome Organization
Principal Investigator: Bruce Webb

Dr. Craig Jordan moved and Dr. Straley seconded that the application be approved as submitted. The motion carried unanimously.

2. Project Title: Advanced Genetic Technologies
Principal Investigator: Christopher L. Schardl

No action was taken on this application because of the numerous questions involved. All agreed. Following is the letter that was sent to the PI.

MEMORANDUM

TO: Christopher L. Schardl
FROM: IBC Committee
RE: IBC Approval
DATE: April 5, 2001

Complete and submit for review the Infectious Agent Registration Form.

You have indicated that the rDNA work takes place only in designated facilities. Please provide more detail on this statement.

You indicate that spills are cleaned up and sterilized with 70% ethanol. Please replace ethanol with a 10% freshly made bleach solution. The area should be cleaned for a minimum of 10 minutes.

Please provide further information on the type of samples you will be handling (e.g. will you require the IBC approval number).

The committee request further information on how you will handle and store samples you receive.

3. Project Title: Genetic Analysis of Leukemia Development in Mice
Principal Investigator: Stephen J. Szilvassy

Following discussion Dr. Robert Perry moved and Dr. Straley seconded that application be given provisional approval pending minor modifications. The motion carried unanimously. The modification requested follows: On page 4 of the application item c. #1 strike "centrifuging" from the list.

4. Project Title: Cyclooxygenase Gene Polymorphism and Aspirin Sensitivity
Principal Investigator: Victor Ferraris

Following discussion Dr. Chuck Issel moved and Dr. Jordan seconded that application be approved with a phone call to Dr. Ferraris to post biohazard sings in work areas and lab entrance. The motion carried unanimously.

Meeting adjourned at 3:00 p.m.

Institutional Biosafety Committee
Minutes of May 2, 2001

Members Present	**Members Absent**
Kelly Breeding	Dr Norman Goodman
Dr. Thomas M. Chambers	Mike Russ
Dr. Creighton Trahan	Dr. Susan Straley
Dr. Arthur Hunt	Dr. Charles Issel
Dr. Robert Perry	Dr. Craig Jordan
Dr. Judith Lesnaw	Dr. Bruce Webb
John Lowry	
Peggy Quisenberry, support staff, non-voting	

The meeting was called to order by Dr. Judith Lesnaw, IBC Chairperson.

Dr. Robert Perry reported to the IBC that the BL3 Advisory Committee has written an SOP for the medical center for clean up, certain experiments and what the pi would need to do in order to b e approved for use of the BL3 Facility Research Bldg. The SOP has a few more revisions and comments before the final version will be given to the IBC for review. The exhaust system in the facility has been repaired. All the hoods in the facility need to be certified and should be ready for use by late summer at the earliest.

Dr. Perry stated that he felt that investigators should not have to go through two committees and that the BL3 committee should cease to be active. Dr. Lesnaw stated that she thinks the committee should stay active.

Protocol Review and actions taken:

1. Project Title: IL-10 Receptor Function in Lung Inflammation.
Principal Investigator: Donald Cohen

The committee questioned the safety precautions listed in the protocol. Protocol states that intranasal infection will be administering aerosols; there was no good section on how it was to be dealt with.

The care of the mice used in the protocol was discussed. Following additional discussion it was determined that no action would be taken on the protocol until the investigator addressed the following issues:

a) Please provide clarification on the administration of agent (in one part of the form you indicate that administration will be by intranasal inoculation and other part you specify injection will be intratracheally), also provide details of how and where administration will take place.

b) Provide the IBC committee with details of decontamination procedures. You have indicated that you will be using 70% ethanol. It is the recommendation of the IBC that decontamination be

with a 10% freshly made Clorox solution for a minimum of 10 minutes. If you wish to use ethanol please provide published literature that it is an appropriate decontamination agent.

c) You have indicated on page three of the form that infected mice will be housed in a laminar flow hood, the appropriate place to store the mice would be in a biosafety cabinet. Please specify model number and certification date. Please note that personnel from Hazardous Materials checked the laminar flow hood in room MS427 of the Medical Sciences Building. It was determined that the flow hood had last been tested in March of 1992, the hoods should be certified at least annually. Please provide verification that this has been done as soon as possible.

d) Please provide information regarding how long mice will be left in hood (will the mice be anesthetized before being left in hood).

e) Specify and give the origin of the strain you propose to use.

2. Protocol Title: Molecular Biology of Hepatitis C Virus and Antiviral Mechanisms
Principal Investigator: Guangxiang Lu

The investigator indicated that he did not have a copy of the CDC/NIH booklet. One was been mailed to him. Following discussion Dr. Robert Perry moved and Kelly Breeding seconded a motion for provisional approval upon receipt of the following clarifications. . All agreed

a) On your attachment "application to the Institutional…" page one under biosafety practices item number eight should to be completed.

b) Under the same section delete reference to commercial antimicrobial agents (e.g. #9 & 12) and replace it with a 10% freshly made bleach solution. The area should be cleaned for a minimum of 10 minutes.

3. Protocol Title: Expression and Purification of Recombinant Human Tumor Necrosis Factor
Principal Investigator: Mike Clark

The committee discussed the spill procedure provided with protocol. It was discussed that it had major problems. It was determined that there was not enough information included with the protocol for the committee to be able to make a determination on approval. Protocol was sent back to the PI requesting the following additional information:

a) On the attachment section IV Safety Precautions all references to decontamination should be specified, it is the recommendation of the IBC that decontamination is with a freshly made 10% bleach solution for 10 minutes minimum.

b) Fill in details of the decontamination of work surface. Provide details of the purification of TNFalpha, include: how/if cells are broken open (is protein secreted), additional details of the purification.

c) Provide information on TNF alpha as a toxin, including effects on animals and humans, half-life, how it is destroyed, how it should be decontaminated.

d) Is the use of glove and facemask appropriate, particularly for bench or fermentor work that has potential for creating aerosols?

4. Project Title: Beuregulins, Neuroprotection and Parkinson's Disease
Principal Investigator: Kim Seroogy

Following discussion it was determined that no action would be taken with this protocol because of lack of a research description, from the information available it was unclear what the investigator proposed to do. Protocol was sent back to PI with request for a completed application with all attachments.

Meeting was adjourned at 2:30p.m.

Institutional Biosafety Committee Membership
2000-01

Lesnaw, Dr. Judith (Chair), Biological Sciences, biojal@pop.uky.edu, 257-3804

Breeding, Kelly, Fayette County Public Schools, kbreedin@fayette.k12.ky.us, 381-3828

Chambers, Dr. Thomas, Veterinary Science, tmcham1@ukcc.uky.edu, 257-3407

Delph, Larry A., Fayette County Health Dept., ldelph_lfchd@hotmail.com, 231-9791

Goodman, Dr. Norman, Pathology, nlgood01@pop.uky.edu, 323-6266

Hunt, Dr. Arthur, Agronomy, aghunt00@pop.uky.edu, 257-3637

Issel, Dr. Charles, Veterinary Sciences, cissel@pop.uky.edu, 257-1710

Jordan, Dr. Craig, Hematology Oncology, cjordan@pop.uky.edu, 323-5688

Perry, Dr. Robert, Microbiology & Immunology, rperry@pop.uky.edu, 323-6341

Russ, Dr. Mike, Biochemistry, maruss@pop.uky.edu, 257-4475

Straley, Dr. Susan, Microbiology & Immunology, scstra01@pop.uky.edu, 323-6538

Webb, Dr. Bruce, Entomology, bawebb@pop.uky.edu, 257-7415

Ex officio:

Dickey II, Dr. Ken, Laboratory Animal Resources, ratdoc@pop.uky.edu, 323-5885

Evans, Dr. Martin, Infectious Diseases, meevan1@pop.uky.edu, 323-8178

Lowry, John, Hazardous Materials Mgt., jqlowry@pop.uky.edu, 323-5728

Minutes of the Radiation Safety Committee
FY 2000-01

Radiation Safety Committee
Minutes of August 9, 2000

Members Present:
Guy Simmons (Chair)
Harry Enoch (Ex-Offico, Administration)
Bob Wilson (Ex-Officio, RSO)
Mary Allen (Ex-Officio)
William Silvia
Thomas Curry
Arthur Lieber
Geoffrey Ibbott
Joseph Frye (Ex-Officio, MC Security)
Sandra Earls (Ex-Officio)
Sarajane Doty
Mark Farman

Members Absent:
Michael Jay
Ramesh Gupta
Pusha Patel

Guest(s):
Fred Rawlings, Assistant RSO, Jerry Schlenker, Senior HP, Ralph Christensen, New Member-to-be, Simeon Hodges, Graduate Student

The meeting was called to order by Chairman Simmons. A quorum was present.

1. **Minutes for the May 10, 2000 meeting:** The Minutes were reviewed. Dr. Ibbott motioned to accept, seconded by Dr. Lieber. The Minutes were approved as written by voice vote.

2. **Old Business: Training of Non-Radiologist Medical X-Ray Users –** Chairman Simmons discussed the subject of training non-radiology physicians who use fluoroscopy. He provided a handout on a course, Minimizing Risks from Fluoroscopic X Rays – Bioeffects, Instrumentation and Examination. The course authors, Dr. L.K. Wagner and Dr. B.R. Archer, are two highly regarded medical physicists. It was recommended that the Radiation Safety Office order a $60 review copy of the course to help direct further Committee action.

3. **RSO Quarterly Report, Including the ALARA and Trends Reports:**
   a. **Incidents –** A significant near-miss incident occurred at about noon, August 09. A 150 mCi I-131 dose was being transported from Nuclear Medicine to Second Floor Markey. While exiting the elevator, the transfer cart wheel fell into the elevator door crack, tilted the cart and the I-131 shield fell off. The shield broke open and the glass dose vial rolled through the door crack and fell 2 ½ floors to the elevator well. The vial was retrieved intact with no I-131 contamination found. A review is underway.
   b. **Misadministrations –** In two separate cases, I-125 prostate therapy seeds were damaged while removing them from the patients' bladder. It is proposed that excessive pressure was applied to the forceps during removal. A different size forceps have been found that are recommended by other institutions to prevent recurrence.
   c. **Accelerator Misadministration Reporting as a Policy –** Dr. Ibbott has been reporting any accelerator events that would meet the definition of a misadministration. However,

since the KY regulations do not include such reports as a requirement, it is suggested that the Committee adopt this practice as policy. This suggestion was accepted. Dr. Ibbott will draft a policy.

d. **Satellite Facility Safety Inspections –** A safety inspection of the Berea medical accelerator facility on July 25. Only minor items were observed, including obtaining a survey meter, some signage and labeling, manual, etc. A visit to the Maysville facility is being scheduled.

e. **Radioactive Waste News –** UK may be able to access the SC Barnwell site until 2008. There is no progress toward additional site development in any Compact regions. Mr. Schlenker reported that the uranium from the decommissioned sub-critical assembly should be shipped to Oak Ridge in September. Efforts continue to schedule the return of plutonium and americium sources to DOE.

f. **Therapy Patient Rooms –** The Medical center is actively pursuing the purchase of additional, improved design bedside shields.

g. **Revised KY Regulations –** Some KY radiation regulations are being promulgated. These appear to be NRC compatibility matters. One especially, covering the decommissioning of buildings where radioactive materials were used, could impact UK in the future.

h. **ALARA Report –** The quarterly ALARA Report was reviewed and discussed. There has been some decrease in the number of Level I and Level II reports. Dr. Enoch recommended that subject titles on the report be reworded to clearly define the data subject. Dr. Ibbott motioned acceptance of the report, seconded by Dr. Farman. The report was approved by voice vote.

i. **TRENDS Report –** Mr. Rawlings presented the TRENDS Report. There was discussion on the apparent rise in the volume of radioactive waste. This was apparently due to spring cleanouts. The number of noncompliance citations has declined since the end of 1998 and has now plateaued at about 100 citations per quarter. The number of Survey Results Not Available citations has declined to the lowest level since the First Quarter of 1999.

4. **X-Ray Administrative Policy:** Mr. Wilson presented a draft X-Ray Administrative policy meant to provide guidance for following the regulatory requirements covering the shielding, installation, surveying and registration of x-ray machines. The policy was reviewed and discussed. Several comments were provided. All but x-ray machines should be eliminated. The membership was invited to send any comments to Mr. Wilson. Further study will be done and a revised draft presented.
5. **New Authorized Users:** Radiation Medicine submitted background information on two new physicians for action on becoming Authorized Users. William H. St. Clair, M.D. and Marguerite A. Sellitti, M.D. are licensed to practice medicine in Ky. Dr. St. Clair was certified in Radiation Oncology in May 2000 and Dr. Sellitti was so certified in June 1995. Motioned to approve by Ms. Doty, seconded by Dr. Ibbott, both physicians were approved by voice vote.

6. **FY 1999-00 Annual Program Review Report:** The draft Annual Review Report was reviewed. There was discussion on streamlining the format and improving the presentation. Toward this, the Committee meeting minute's section could be put in the back as an

appendix. Dr. Lieber motioned to accept the report, seconded by Dr. Ibbott, with the direction to the RSO that the report evolve toward more of a review mission with recommendations. This direction and the current report were approved by voice vote. Comments from any members are to be accepted.

There being no other business, the meeting was adjourned by unanimous approval at 4:45 P.M.

Radiation Safety Committee
Minutes of November 8, 2000

Members Present:
Guy Simmons (Chair)
Michael Jay
Bob Wilson (Ex-Officio, RSO)
Mary Allen (Ex-Officio)
Mark Farman
Sarajane Doty
Thomas Curry
Arthur Lieber
Geoffrey Ibbott
Tae Ji
Sandra Earls (Ex-Officio)
Ralph Christensen

Members Absent:
Joseph Frye (Ex-Officio, MC Security)
John Timoney
Steven Yates
Harry Enoch (Ex-Offico, Administration)

Guest(s):
Fred Rawlings, Assistant RSO and Jerry Schlenker, Senior HP

The meeting was called to order by Chairman Simmons. A quorum was present.

1. **Minutes for the August 9, 2000 meeting:** The Minutes were reviewed. Dr. Ibbott motioned to accept, seconded by Dr. Lieber. The Minutes were approved as written by voice vote.

2. **RSO Quarterly Report, Including the ALARA and Trends Reports:** There was discussion on activity and compliance trends, ALARA, noncompliance items and plans to streamline the survey program.

3. **New User Applicant, No Prior Experience:** An application from Hans Lehmler was reviewed and discussed. Dr. Jay spoke in favor of approval due to his having worked with Dr. Lehmler in the past. A letter of support was also submitted by Dr. Robertson, who is a long-time AU and who will be working in the same lab with Dr. Lehmler. Mr. Wilson had reviewed Dr. Lehmler's application and supported approval. The application was approved. The Committee recommended any such future (rare events) applications should be sent forward for review and action in the usual way provided the RSO recommended approval.

4. **RSO Report:** Mr. Wilson led the way through a discussion of the report. Some new items were brought forward:
    a. A complaint has been filed with the Cabinet For Health Services regarding one or more x-ray technologists who delegated radiographing patients to aides who were not trained or credentialed. Clinic management acted swiftly and positively in correcting the situation. The Cabinet has suspended at least one technologist for five days. The committee feels such events fall within its purview, and it should have been notified through the RSO.

b. Brachytherapy shielding plan for adjacent renovation changes are being prepared by Dr. Ibbott. His calculations indicate that no additional shielding will be required, but a report must be submitted to the Cabinet.

c. Mr. Wilson presented data on some problematic badge groups and suggested that, following efforts to elicit improvements in badge wearing and returns and consultation with the groups, certain ones be dropped. There was a through discussion with several significant points of view being presented. Mr. Wilson will work with Chairman Simmons to develop a draft badge assignment policy for review at the February 2001 meeting. He will also endeavor to gain improved cooperation from selected groups.

d. An exemption request to the Cabinet from installing area radiation monitors in clinic accelerator rooms was discussed and approved.

e. The future prospects for UK radioactive waste disposal, especially after 2008, were reviewed and discussed. At this time, the Utah Envirocare site is available.

5. **Old Business: Training of Non-Radiologist Medical X-Ray Users –** Chairman Simmons presented and passed around a copy of the Minimizing Risks from Fluoroscopic X Rays – Bioeffects, Instrumentation and Examination by Dr. L.K. Wagner and Dr. B.R. Archer, medical physicists. There was substantial discussion on need, educational approaches and communications to get a program launched. Mr. Wilson will work out an approach strategy with Chairman Simmons and report to the Committee at the next meeting.

6. Dr. Ibbott announced that this would be his last UK Radiation Safety Committee meeting. He is leaving for a position with the M.D Anderson facility in Texas. William H. St. Clair, M.D., was suggested as an excellent appointee for the Committee vacancy. Mr. Wilson will work on the appointment procedure.

There being no other business, the meeting was adjourned by unanimous approval at 5:00 P.M.

Radiation Safety Committee
Minutes of February 14, 2001

Members Present:
Guy Simmons (Chair)
John Timoney
Bob Wilson (Ex-Officio, RSO)
Tae Ji
Mark Farman
Sarajane Doty
Thomas Curry
Steven Yates
Arthur Lieber
William St. Clair
Ralph Christensen

Members Absent:
Joseph Frye (Ex-Officio, MC Security)
Michael Jay
Sandra Earls (Ex-Officio)
Harry Enoch (Ex-Offico, Administration)
Mary Allen (Ex-Officio)

Guest(s):
Fred Rawlings, Assistant RSO, Jerry Schlenker, Senior HP and Dr. Christensen's Radiological Medical Physics graduate class; Gabor Menyhart, Sugata Tripathi, Joshua Hayes, Justin Keister, Maung Yoe-Sein, Simeon Hodges, and Candace Perry.

The meeting was called to order by Chairman Simmons. A quorum was present.

1. **Minutes for the November 8, 2000 meeting:** The Minutes were reviewed. Misspellings, typo's and name omissions were noted. Dr. Yates motioned to accept, seconded by Dr. Christensen. The Minutes were approved as amended by voice vote without dissent.

2. **Old Business – Fluoroscopy Training:** A memo drafted by Dr. Simmons was provided for review. The memo is to the Dean, College of Medicine, to solicit support for a fluoroscopy training program. Dr. Simmons proposed that the memo (or letter) be put on Radiation Safety Office letterhead, signed by both Dr. Simmons and Mr. Wilson and be sent forward, with the Committee's blessings. The course book, Minimizing Risks from Fluoroscopic X Rays and other articles would be attached. Dr. Christensen motioned to approve the proposal and Dr. Yates seconded. The proposal was approved by voice vote without dissent.

3. **RSO Quarterly Report, Including the ALARA and Trends Reports:** There was discussion on activity and compliance trends, ALARA, noncompliance items and package survey results. Ms. Doty moved to accept the report and Dr. Yates seconded. The Report, including ALARA data, was approved by voice vote without dissent.

4. **Badge Assignment Policy:** A draft personnel monitoring badge assignment policy was reviewed. Dr. Christensen moved to accept the policy with amendments to clearly include medical x-ray use and correction of typos. Dr. Lieber seconded. The policy was approved, allowing Mr. Wilson to make final corrections, by voice vote without dissent.

5. **License Amendment Proposals:** Licensing actions were presented for consideration.

a. The Radiation Medicine medical physics staff had asked about amending the Broad Medical license to permit the delivery of Intravascular Brachytherapy (IVB) services at other institutions. The feeling of the Committee was that the action should be tabled until Mr. Wilson could discuss the proposal and requirements with the regulatory agency.

b. The Committee approved the Irradiator license five-year renewal application filing by Mr. Wilson.

6. **RSO Report:** Mr. Wilson led the way through a discussion of the report. Some item updates included:
   a. The order for two additional, improved design bedside shields has been placed. The shields should be delivered by approximately April.
   b. Radiation Medicine medical physics has ask the Committee to endorse a plan to purchase new, improved hardware for handling and loading permanent brachytherapy seeds, based in part on ALARA considerations. The Committee requested a report on the cost effect and estimated dose reduction before endorsement.
   c. Dr. Enoch and Mr. Wilson are invited to speak to the Medical Center Executive Council on February 23 and present the Radiation-Producing Device program as it relates to the Hospital / Medical Center.
   d. Room H-66 has been provided for freezer waste (animal carcasses and I-131 patient materials) storage. However, H-66 is adjacent to the Dock 2 radiation waste alarm detectors. Whenever Nuclear Medicine waste was brought to H-66, the alarm activated. Mr. Schlenker has adjusted the alarm level, and the alarm response procedures are being revised. The problem seems to be solved. Various approaches to providing additional freezer space are being investigated.

Having no other business, the meeting was adjourned by unanimous approval at 4:20 P.M.

Radiation Safety Committee
Minutes of May 9, 2001

Members Present:
Guy Simmons (Chair)
John Timoney
Bob Wilson (Ex-Officio, RSO)
Joseph Frye (Ex-Officio, MC Security)
Ralph Christensen
Mark Farman
Sarajane Doty
Sandra Earls (Ex-Officio)
Thomas Curry
Steven Yates
Arthur Lieber

Members Absent:
William St. Clair
Michael Jay
Mary Allen (Ex-Officio)
Tae Ji
Harry Enoch (Ex-Offico, Administration)

Guest(s):
Fred Rawlings, Assistant RSO, Jerry Schlenker, Senior HP, Robert Zwicker, Radiation Medicine.

The meeting was called to order by Chairman Simmons. A quorum was present.

1. **Minutes for the February 14, 2001 meeting:** The Minutes were reviewed. Dr. Yates motioned to accept, seconded by Dr. Christensen. The Minutes were approved as amended by voice vote without dissent.

2. **Old Business – Fluoroscopy Training:** Chairman Simmons discussed a 26-page guide the KY Radiation Protection Branch has sent to registrants on x-ray skin dose risks and control. This document could be incorporated into the planned training for safe fluoroscopy at UK. Further discussion on the fluoroscopy lead to a plan for Mr. Wilson to get in touch with the involved department chairs on getting the program started. The funding issue must also be resolved.

3. **RSO Quarterly Report, Including the ALARA and Trends Reports:** There was discussion on activity and compliance trends, ALARA and noncompliance items. Dr. Christensen moved to accept the report and Dr. Yates seconded. The Report, including ALARA data, was approved by voice vote without dissent.

4. **RSO Report:** Mr. Wilson led the way through a discussion of the report. Some item updates included:

    a. The State X-ray branch inspected the new accelerator in the Markey Center with several inspectors. The area above the accelerator, a planter with trees in it, meets the *dose to the public* standard, however the view of the state representatives is that more should be done to for ALARA. The planting of a continuous hedge around the planter edge and thorny bushes above the accelerators themselves has been agreed to as adequate.

b. The two additional, improved design bedside shields have been received, but need finish repair before acceptance.

c. Dr. Enoch and Mr. Wilson spoke to the Medical Center Executive Council on February 23 and presented the Radiation-Producing Device program as it relates to the Hospital / Medical Center. No word has been received on progress with implementation of the program. Dr. Enoch is considering approaching Vice President DeBin on the next step. The KY Radiation Protection Branch is scheduled to inspect the x-ray machines in Diagnostic Radiology on June 12, 13 and 14. Chairman Simmons said in-house inspections have been done this year. He has asked Mr. Rebuck to send the report to Mr. Wilson.

5. Chairman Simmons recommended that the members be thinking about candidates for the Committee Chair after the August meeting. He would not be continuing. Discussion was held on changing the Committee meeting day to accommodate other schedules. Mr. Wilson will conduct an email poll for a decision. Mondays and Fridays should be avoided.

Having no other business, Dr. Lieber motioned to adjourn, with Dr. Curry seconding. The meeting was adjourned by unanimous approval at 3:45 P.M.

Radiation Safety Committee Membership
2000-01

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