UNIVERSITY OF KENTUCKY

State of the Environment

2001-02 Annual Report

Prepared for the
Vice President for Auxiliary and Campus Services

Presented by the
Environmental Health & Safety Division
and
Committee on Environmental Health and Safety

September 2002

EH&S Environmental Health & Safety
UK Safety begins with YOU!

State of the Environment
University of Kentucky

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2001-02 Annual Report

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
25th day of September 2002
by

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

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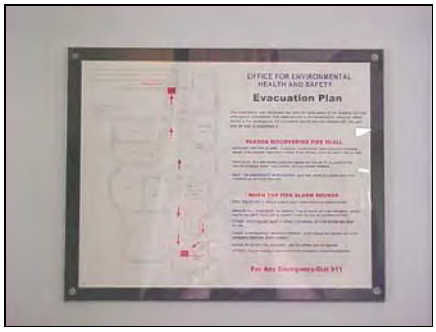
Environmental Health & Safety Main Office

Major Accomplishments

1. **Expanded web-based delivery of safety training**. EH&S now offers four safety courses on the web, and the response to them has been excellent. The online training numbers are up more 2.5-fold—from 125 trained last year to 322 this year. Overall, training by the EH&S division was up significantly. Over 5,000 faculty, staff and students attended safety classes this year (5,066), up nearly 2,000 from last year's total of 3,193.

> ★ *EHS has trained over 31,000 people since 1994*

2. **Improved fire safety in Patterson Office Tower.** New emergency evacuation signs were posted on all floors and training was provided on the building's emergency plan. The building's corridors and stairwells were evaluated, resulting in the ongoing removal of obstructions by the affected units. A fire drill will be scheduled early in fiscal year 2002-03.



Typical New Evacuation Sign

3. **Improved fire safety awareness in student housing**. A Fire Prevention Fair was held for UK apartment housing, attracting 350 people. Residents were given literature, shown safety tapes and instructed in the use of fire extinguishers. The Lexington Fire Department also participated in demonstrations. Other activities included development of a hands-on training program designed to give Residence Hall Advisors practical experience in conducting fire prevention inspections, and a joint project with LFUCG to develop a safety brochure, a flipchart called "Taking Emergency Action," 5,000 of which were distributed on campus.

Fire Extinguisher Training

4. **Achieved a milestone in waste minimization.** Opening the Environmental Quality Management Center in 1998 allowed full implementation of our waste minimization program, which has reduced hazardous waste quantity by nearly half and cut disposal cost by more than two-thirds. A progress report was issued in August 2001.

Environmental Quality Management Center

5. **Expanded the delivery of industrial hygiene services**. Extensive monitoring was performed to detect exposure to toxic materials and other hazards. The number of personal and area monitoring samples taken was more than tripled — from 52 last year to 184 this year. The number of overexposures detected increased similarly, from 5 to 21; these included exposures to formaldehyde, arsenic, methylene chloride, and carbon monoxide. Each case of overexposure was followed up to help units reduce employee or student exposure.

Exposure Monitoring

6. **Improved laboratory safety**. Efforts this fiscal year resulted in the installation of 147 eyewash units and 117 safety showers in four research buildings.

7. **Improved the acquisition and delivery of environmental services**. A Master Order process was instituted for initiating and tracking asbestos abatement projects conducted under UK's unit price contract. The new procedure significantly reduced the amount of paperwork and customer workload as well as the time it takes to get asbestos jobs done. In addition, the asbestos abatement unit price contract was revised and re-bid for the first time in five years. Many of the revisions were designed to reduce the incidence of odor complaints from UK employees in areas near abatement projects. Service was further improved by the establishment of new price contracts for all contractors and consultants providing other environmental services, effective July 1.

★ *New Process Saves 550 Hours per Year*

8. **Improved processes for responding to hazardous materials emergencies**. In partnership with the UK Police Department, new procedures for handling potential bioterrorism events, such as anthrax scares were developed. EH&S personnel responded to 36 suspected anthrax incidents beginning in September 2001. Other improvements included the design, construction, and testing of decontamination units which are used in UK Hospital emergencies, as well as participation in a citywide emergency response exercise that got excellent marks from federal observers.

Typical Emergency Response

Significant Projects

1. **Lead contamination at Barker Hall**. Monitoring determined that the UK Rifle Team was being exposed to excessive lead levels at the Barker Hall firing range. EH&S worked with contractors to decontaminate the range and with PPD on a renovation to reduce future exposure and contamination. A large remediation project was conducted to clean up lead contamination outside the range; the clean up involved removal of approximately 100 tons of soil.

Barker Hall Cleanup Project

2. **Terrorism and Laboratories**. Given the post-September 11 concern for security, lab surveys were conducted to evaluate the security of biological, chemical and radioactive materials on campus. While security is generally good, several improvements are being implemented.

★ *UK has over 1,100 laboratories to protect*

3. **Radiation-producing Machinery**. Worked with Medical Center to develop a safety program for radiation-producing machinery (x-ray) to be implemented July 1, 2002. The Radiation Safety Office will provide safety oversight for 100+ medical x-ray units at the University, including machine registration, shielding designs, equipment testing, safety inspections, dosimetry, and program administration. Medical Center purchased $15,000 worth of testing equipment for RSO use and will fund the program through user fees.

Typical X-ray Unit

4. **Battery Recycling**. Developed a battery testing and redistribution procedure for handling waste batteries from UK Hospital. Batteries with more than 90% charge remaining are given away to faculty, staff and students. 858 "good" batteries were given out this year.

> ★ *EHS received over 31,500 batteries this year*

5. **Laboratory Clean Outs**. Conducted 5 major laboratory clean out operations that involved removal of 1,016 chemical containers.

Chemicals Collected for Recycling

6. **Safety Videos**. Revised the safety video for new employee orientation to include an introduction by President Todd and completed a new videotape on fire prevention and emergency evacuation for employee orientation.

7. **Delivery of Radioactive Materials**. Began a delivery service for UK's 2000+ orders of radioactive materials per year, ending the requirement for labs to pick up their own radioactive materials.

8. **Former Chemical Disposal Sites**. Successfully completed remediation of a former chemical disposal site located on Coldstream Farm. The site was one of four identified on the North Farms and the third to have been remediated.

Excavation of Chemical Disposal Site

9. **Mercury in Wastewater**. Cleaned out 656 sink traps in the Chemistry-Physics Building to remove mercury-contamination. Concentrations of mercury in the sewer discharge were reduced nearly 10-fold, but are still above compliance levels. Additional measures are needed to achieve compliance by December 2002.

Glass Pipe Being Cleaned

Regulatory Activities

1. In 2000 UK received a violation from the State Fire Marshal for our campus fire alarm monitoring system. In response the University initiated three capital projects totaling ~$1.1 million designed to modernize the fire alarm network and convert it from a "proprietary system" monitored by UKPD, PPD, and Med Center to a "central station system" monitored by an off-campus vendor (Simplex). The new system is projected to be in full operation by August 2002.

> ★ *UK's alarm system monitors 250 buildings*

2. Following the Murray State University tragedy and passage of the Minger Act, UK has been able to accelerate the installation of sprinkler systems in dormitories.

> ★ *All 2,800+ Dorm Rooms and Greek houses will have sprinklers by August 2002*

3. Following an inspection by US DOT in August, EH&S prepared an in-house training program and certified 151 people to ship dangerous materials in compliance with federal and international regulations. UK had a follow up inspection in December and received no violations.

4. Following the Administration Building fire, EH&S worked with all the construction units on campus to achieve compliance with the OSHA requirements for controlling the hazards of hot work, i.e., construction work involving open flames. Provided program assistance and training for the 8 units that use contractors and provided similar assistance and training for units with employees performing hot work: Medical Center PPD, PPD Plumbing Shop, and the College of Agriculture.

Administration Building Fire

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 and lead samples analyzed (cost)	385 ($11,600)
Asbestos abatement projects	110
Asbestos abatement costs	$385,000
Asbestos and lead awareness class attendees	180
Other environmental sampling (air, water, soil, etc.)	1,382
PCB transformer inspections	14
PCB transformers removed	1
Environmental remediation costs	$171,280

Hazardous Materials Management

Hazardous waste generators	324
Pounds of hazardous waste shipped*	158,744
Waste disposal cost (total UK)	$104,546
Waste containers picked up	4,951
Fluorescent bulbs recycled	27,140
Dry cell batteries recycled	959
Lead acid batteries recycled	495
Hazardous waste class attendees	404
Incidents/releases responded to	80
Biohazard and rDNA proposals reviewed	60
Number of biosafety cabinets	188

Occupational Health and Safety

Research laboratories in the Chemical Hygiene database	1,144
Laboratories inspected	667
Fume hoods tested	962
Indoor air quality investigations	32
Training class attendance (total):	2,768
Chemical Hygiene Plan/Laboratory Safety	559
Hazard Communication	41
Hazard Assessment for the Use of PPE	48
Hot Work Permitting	112
Respiratory Protection	30
Bloodborne Pathogens	126
Ergonomics	29
Vehicle Safety	25
New Employee Orientation (EH&S Section)	1593
SuperVISION (EH&S Section)	205

** Does not include approximately 349,000 pounds of hazardous lead-contaminated soil shipped from the Barker Hall cleanup project*

Radiation Safety

Authorized users	214
Authorized laboratories	304
Radionuclide purchases, cost	$1,103,886
Radionuclide purchases, curies	180.997
Radionuclide orders received	2,051
Laboratory inspections/surveys	1,665
Sealed source leak tests	151
Patient therapies:	
Brachytherapy	69
Thyroid	92
Radiation safety class participants	712
Personnel monitoring:	
Film badges, etc. used	10,460
Level I ALARA reports	179
Level II ALARA reports	55
Waste disposal:	
Dry solid, long-lived, radioactive (cu. ft.)	165
Dry solid, short-lived, decayed (cu. ft.)	218
Aqueous liquid (mCi)	43
Waste disposal cost	$55,104
Radiation instruments calibrated	243
Number of registered lasers (Class IIIb and IV)	71
Number of x-ray units	112

University Fire Marshal

Fire extinguishers inspected	6,138
Fire extinguishers serviced	82
New fire extinguishers purchased	303
Fire extinguisher/fire prevention training attendees	1,188
Fire alarms	551
Working fires	8
Plan reviews of new construction/renovation projects	191

Hazardous Waste
Cost and Quantity Trend Reports

Total UK Regulated Waste Disposal

Fiscal Year	Disposal Cost ($)
1984-85	12,000
1985-86	12,000
1986-87	32,000
1987-88	141,000
1988-89	112,000
1989-90	124,000
1990-91	221,000
1991-92	275,000
1992-93	329,000
1993-94	298,949
1994-95	317,803
1995-96	294,644
1996-97	317,591
1997-98	254,932
1998-99	226,506
1999-00	95,668
2000-01	99,226
2001-02	119,938

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

Source: Year-ending FRS Account Statement for Hazardous Materials Management and Disposal of Wastes

Hazardous Waste Disposal Per Calendar Year (in Pounds)

Calendar Year	Campus	CAER	North Farms	Animal Diagnostics	Other
1981	23,186				
1982	21,292				
1983	22,160				
1984	56,660				
1985	63,352				
1986	57,933				
1987	467,713[1]				
1988	83,186[2]				
1989	82,221				
1990	89,354	1,668			7,869[3]
1991	140,623				8,109[3]
1992	197,640	18,088		667	
1993	111,531	4,170		1,438	2,400[4]
1994	114,483	2,711		3,373	183,620[4]
1995	175,543	2,463		1,252	
1996	113,222	1,476		2,701	
1997	146,812	25,650	6,646	4,374	
1998	109,558	2,085	7,776	5,084	
1999	76,875	4,949	500	4,400	
2000	98,926	3,434	1,900	4,401	
2001	427,162[5]	3,407		4,551	

1 Includes 365,576 pounds of waste from the South Farm cleanup project

2 Includes 16,847 pounds of waste from the South Farm cleanup project

3 Waste from the Peterson Service Building

4 Waste from Robinson Forest

5 Includes 345,800 pounds of waste from the Barker Hall cleanup project

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

Radioactive Waste
Cost Trend Report

Fiscal Year	Cost*
1992-93	$134,300
1993-94	90,200
1994-95	8,000
1995-96	71,400
1996-97	29,500
1997-98	46,400
1998-99	21,100
1999-00	109,700
2000-01	44,700
2001-02	55,104

** Excluding mixed radioactive-hazardous waste.*

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

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	2001-02
Total Solid Waste Discarded, tons	**7,805**	**8,333**	**8,123**	**7,759**	**7,626**
Total Recycled, tons	**1,153**	**1,312**	**1,441**	**1,483**	**1,568**
Percentage of Solid Waste Recycled	**12.9%**	**13.6%**	**15.1%**	**16.0%**	**17.1%**

2001 – 02 Statistics

Solid Waste Disposed (tons)	
Campus Dumpsters	4,137
Campus Rolloffs	337
Campus Other	213
Med Center Compactor	1,840
Med Center Rolloffs	308
Auxiliary Services	791
Total	7,626

Recycled Materials (tons)	
Paper	897
Cardboard	210
Excess Kernels	8
Scrap Metal & Cans	74
Plastics	4
Electronics	87
Oils/Greases	4
Fluorescent Bulbs	13
Batteries	2
Glass	1
Pallets / Other Wood	115
Compostables	102
Sawdust / Wood Chips	27
Student Programs	24
Total	1,568

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 (2000 Bureau of Labor Statistics) incident rate for education services – colleges and universities is 3.6. This does not include education services with a hospital or health care facility.

OSHA Data (Calendar Year)

Metric	2001	2000	1999	1998
OSHA recordable injuries	399	349	458	471
Injuries involving lost work days	111	130	161	258
Number of days lost	4,645	3,232	2,906	6,043
Injuries involving restricted work days	101	96	167	105
Number of restricted work days	5,048	5,671	4,898	7,244
Fatalities	0	0	2	0
Incident rate	4.6	3.7	3.2	4.7

- Incident Rate = The number of injuries/illnesses related to a common exposure base of 100 full-time workers
- 17,363,442 total man hours worked for 2001 by 10,893 employees (full time, part time, temporary & students)
- 200,000 = base for 100 full-time equivalent workers (number is a constant for this calculation)

$$\text{Incident rate} = \frac{\text{No. of injuries and illnesses}}{\text{Total man-hours worked}} \times 200{,}000 = \frac{399}{17{,}363{,}442} \times 200{,}000 = 4.6$$

Worker's Care Data (Fiscal Year)

Metric	2001- 02	2000 - 01	1999 - 00	1998 - 99
All employee injuries reported to Worker's Care	1063	1099	1130	1177

Major Types of Injuries	2001 - 02	2000 - 01	1999 - 00	1998 - 99
Bruise/Contusion/Hematoma	169	138	149	146
Cut/Puncture/Laceration	329	309	337	350
Exposure to blood/body fluids	57	55	68	69
Exposure to TB	15	30	49	8
Exposure to Unknown Virus	15	93	9	5
Sprain/Strain	295	270	305	355
Carpal Tunnel	4	11	17	13

Major Causes of Injuries	2001 – 02	2000 - 01	1999 - 00	1998 - 99
Needlesticks	182	180	199	218
Contact with Airborne Virus	10	104	57	43
Contact with Sharp Object (non-needle)	125	88	116	111
Slips/Trips/Falls	146	132	138	147
Struck by Object	96	106	75	117
Repetitive Motion	23	35	24	31
Lifting	96	117	144	173
Pushing/Pulling	77	45	57	54

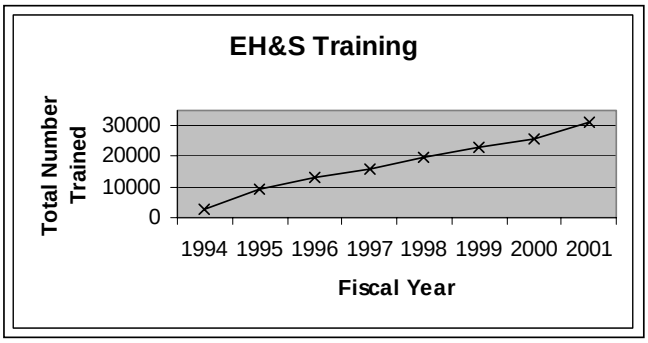
Parts of the body	2001- 02	2000 - 01	1999 - 00	1998 - 99
Back	126	119	171	188
Eyes	73	68	58	85
Finger	277	270	306	286
Hand	77	89	103	120

Environmental Remediation Cost History

1994-95	
Robinson Forest Storage Site	$812,981
Jet Fuel Release	$3,500
Agriculture Motor Pool	$2,225
1995-96	
Robinson Forest Treatment Site	$17,000
Agriculture Motor Pool	$2,191
1996-97	
South Farm Tract A	$37,152
North Farm Chemical Disposal Sites	$22,488
Carnahan House USTs	$35,713
Agriculture Motor Pool	$8,450
1997-98	
North Farm Chemical Disposal Sites	$114,382
Reynolds #2 PCB Spill	$68,500
Carnahan House USTs	$15,260
PPD Pole Yard PCB Spill	$14,662
1998-99	
North Farm Chemical Disposal Sites	$92,285
Closure of Interim Part B Hazardous Waste Storage Facilities	$55,205
Central Heating Plant USTs	$1,310
1999-00	
North Farm Chemical Disposal Sites	$27,866
Central Heating Plant USTs	$27,683
Haggin Hall PCB Spill	$5,900
Chemistry-Physics Mercury	$1,700
College of Ag USTs	$84,297
2000-01	
Barker Hall Firing Range	$19,000
Chemistry-Physics Mercury	$12,100
Arboretum Hydraulic Oil Spill	$2,500
North Farm Chemical Disposal Sites	$1,500
Student Center PCB Spill	$1,200
Reynolds #1 Oil Spill	$375
2001-02	
Barker Hall Firing Range	$84,939
Chemistry-Physics Mercury	$58,812
North Farm Chemical Disposal Sites	$25,927
CAER Diesel Spill	$1,600
UST-related Remediation Projects To-Date (not specified elsewhere)	$154,713
Total	**$1,857,190**

EH&S Training Efforts

Fiscal Year	# Trained
1994-95	2,950
1995-96	6,600
1996-97	3,500
1997-98	3,076
1998-99	3,742
1999-00	2,888
2000-01	3,193
2001-02	5,066
Total	**31,015**



Cost of Enforcement Actions
Since 1990

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

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

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

Report of the
Environmental Protection Department

ENVIRONMENTAL PROTECTION

Annual Report

FY 01-02

Accomplishments and Major Events

1. Following a project to decontaminate the Barker Hall firing range, a remediation project was conducted outside the range, mainly during July and August 2001. The cleanup involved removal of approximately 100 tons of soil that had been contaminated by lead dust exhausted from the range. Formal closure from the state is anticipated in FY 02-03.

2. Remediation of a former chemical disposal site located on Coldstream Farm was completed in July 2001. The site was one of four identified on the North Farms and was the third of the four to have been remediated.

3. In an ongoing effort to remove mercury contamination, 656 sink and fume hood traps in the Chemistry-Physics Building were cleaned out in July 2001. Concentrations of mercury in the sewer discharge were reduced nearly 10-fold.

4. In cooperation with the Purchasing Division, a new procedure was developed to improve the process for initiating and tracking asbestos abatement projects conducted under UK's unit price contract. The new procedure (using a Master Order) significantly reduced the amount of paperwork and customer workload as well as the time it takes to get asbestos jobs done.

5. In cooperation with the Purchasing Division, the asbestos abatement unit price contract was revised and rebid in May 2002 for the first time in five years. Many of the revisions were designed to reduce the incidence of odor complaints from UK employees working in areas near the sites of abatement projects. A second major purpose was to reconcile certain unit rates with current market conditions.

6. The state's UST Branch granted closure on two projects related to the removal of two fuel tanks that did not meet current standards. The tanks in question were located at the Lake Cumberland 4-H Camp (closure received August 2001) and at Eden Shale Farm (February 2002).

7. A small amount of lead debris was dumped outside the Barker Hall firing range in November 2001 by a contractor involved in renovating the range. The contractor was required to clean up and dispose of the material and affected soil. Confirmatory sampling revealed that the area had been properly restored.

8. A limited soil and groundwater investigation was conducted at the former LR Cooke Chevrolet property in downtown Lexington during March 2002. The site was being evaluated as a potential site for a new UK building.

9. A diesel fuel spill occurred at the Center for Applied Energy Research in August 2001 as a result of improper drum handling practices. The spill was investigated in August and September 2001. The environmental impact of the spill was later determined to have been minimal.

10. A small-scale ceiling collapse occurred at the Delta Delta Delta sorority house in August 2001. Initial cleanup and repair activities were conducted by Physical Plant Division personnel before the potential presence of asbestos was evaluated. Subsequent testing revealed the presence of asbestos in the ceiling plaster, and the University's asbestos contractor was mobilized to clean up the material. Air monitoring performed throughout the area confirmed that hazardous concentrations of asbestos were not present elsewhere in the house.

11. Work was started on the University's Spill Prevention Control & Countermeasure Plan as required under the Clean Water Act. When completed in FY 02-03, the Plan will identify ways to prevent and/or respond to oil spills.

12. Despite the significant improvement observed in mercury concentrations in Chemistry-Physics Building wastewater discharges following the aforementioned trap-cleaning project, mercury levels still exceeded permit limits. In February 2002, the University was ordered to develop a corrective action plan and compliance schedule to bring the discharge into compliance by December 2002.

13. New fact sheets were developed to address drinking water and sewers. The drinking water fact sheet was modified for publication in the UK News.

14. 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.

    - Medical Center Heating Plant (damaged insulation due to ladder use)
    - Medical Center Heating Plant (disturbance of pipe and tank insulation)
    - Chandler Medical Center (failure to promptly report and clean up damage)
    - Scovell Hall (disturbance of plaster and floor tile)
    - Cooling Plant #1 (disturbance of roofing without prior testing)
    - Boone Faculty Center (disturbance of floor tile and mastic)
    - Delta Delta Delta Sorority (plaster incident referenced above)

15. The Kentucky Division of Waste Management conducted a compliance inspection of the University's registered underground storage tanks in April 2002. No violations were reported.

16. The Kentucky Division of Waste Management conducted a PCB compliance inspection in May 2002. The inspection report is still pending.

17. With the cooperation and assistance of PPD personnel, the asbestos sampling database was modified in order to make it accessible to selected UK employees on line. As a result, it will now be possible for supervisors and/or project managers to obtain asbestos information much faster than previously.

Key Indicators/Routine Functions

- Over **107** Service Center projects
- Asbestos abatement project activity (including pre-abatement testing and air monitoring) - approximately **110** projects totaling approximately **$385,000**
- Sampling for asbestos and lead-based paint – **385** samples (**$11,600** survey/testing cost)
- Other environmental sampling (air, radon, water, soil, waste, etc.) – **1,382** samples
- Monitoring compliance of underground storage tank leak detection methods
- Property visits - demolitions, Real Property acquisitions, selected leased property
- PCB transformer removals – **1** transformer removed
- PCB transformer inspections – **14** inspections
- Training (asbestos and lead awareness) – **180** people
- Environmental remediation costs - **$171,280**

Pending Projects (FY 02-03)

- Remediation – clean out major trunk lines of Chemistry-Physics laboratory plumbing system
  benefit: environmental protection; regulatory compliance
- Fayette County Farms - investigation of Site #3 (fourth of four sites)
  benefit: environmental protection; regulatory compliance
- Emergency Planning – finalize and implement the Spill Prevention Control and Countermeasure Plans for the Lexington campus
  benefit: compliance with regulations; environmental protection
- Risk Assessment – evaluate lead-based paint hazards in University housing
  benefit: regulatory compliance; liability reduction
- Training – identify ways to improve EHS training programs
  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 02-03 fiscal year and beyond)

- Evaluation of campus "green" initiatives
- Environmental performance measures
- 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

Employee Development

Tommy Taylor completed a 30-hour OSHA General Industry Standards training course in May 2002.

Woody Bottom completed 15 hours of graduate credit while working on an MPH degree.

Memberships/Societies: ASTM, ASSE, APPA (Woody Bottom)

Accreditations: Asbestos Inspector / Management Planner (Tommy Taylor)
Lead-based Paint Inspector / Risk Assessor (Tommy Taylor)
Registered Professional Geologist (Woody Bottom)
Asbestos Inspector / Management Planner (Woody Bottom)
Lead-based Paint Inspector / Risk Assessor (Woody Bottom)

Program Improvements (over time)

- UST removals - 112 tanks originally, now reduced to 18
- PCB transformers - 58 units in 1984, now reduced to 1 (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, 2001 – June 30, 2002

HAZARDOUS WASTE GENERATORS 324

POUNDS OF WASTE SHIPPED

Total for University	621,515 lbs.
Campus Total	492,696.22 lbs.
Barker Hall Lead Dirt	349,010.2 lbs.
Campus Total Minus Barker hall Project	143,686.02 lbs.
Animal Diagnostic Total	8,850 lbs.
Farm Total (Non-regulated waste)	113,760 lbs.
CAER Total	6,209 lbs.

BIOHAZARD LBS. SHIPPED 8,220.5 lbs.

WASTE DISPOSAL COST

$96,391.12 Total Cost of Waste
$15,392.00 Landfill disposal fee for Barker Hall lead project

WASTE CONTAINERS PICKED UP 4,951

FLUORESCENT BULBS RECYCLED 27,140

FLUORESCENT BULBS SHIPPING COST $6,603.01

BATTERIES RECEIVED 31,581

BATTERIES RECYCLED 1,454

959 recycled to staff, faculty and students
495 lead acid recycled to Interstate Batteries

GLASS BOTTLES RECYCLED 1,714

GOOD CHEMICALS RECYCLED 120

HAZARDOUS WASTE CLASSES ATTENDEES 258

ONLINE HAZARDOUS WASTE PARTICIPANTS 146

DOT/IATA CLASS ATTENDEES 151

HAZARDOUS MATERIALS INCIDENTS/RELEASES 80

BIOHAZARD/ rDNA PROPOSALS REVIEWED 60

BIOLOGICAL FUMEHOOD CERTIFICATIONS 24

ACID/BASES NEUTRALIZED 4759.76 lbs.

OXIDIZERS REDUCED 28.5 lbs.

LAB CLEAN OUTS

PHM 333 – Dr. Jay
P/U Dates 1/28, 1/29, 2/8 & 2/27
300 Items

PHM 164 – Chemical Store Room & Dr. Crooks
P/U Dates 1/16, 1/28, 3/26, 5/23
506 Items

HSRB 442 - Dr. Wise
P/U Dates 3/27, 4/1
101 Items

MCMS 667 – Dr. McLane
P.U Date 6/6
109 Items

Phm B013C – Dr. Digenis
P/U 6/17/02
526 Items

Chem/Phys. – Trap Cleanout – 2 – 55 gallon drums
Chem/Phys – Dilution Pit Cleanout - 7,506 pounds
PPD Pesticide Trailer Cleanout – 30 items
UK Baseball Stadium Pesticide Cleanout – 35 items
Gluck Equine Chemical Storeroom Cleanout – 100 items
Regulatory Chemical Storeroom Cleanout – 150 items
Swine Center at Coldstream Cleanout – 425 items

CONFERENCES/WORKSHOPS ATTENDED BY HMM STAFF

Lee Faulkner and Mike Blackard - 4th Annual Kentucky Environmental Permitting & Reporting Conference
All HMM staff - Haz-Wopper 8 hour Refresher Course
Lee Faulkner and Mike Blackard - DEEM Domestic Terrorism Chemical Seminar
Peggy Quisenberry - NIH IBC Conference
Kevin Gaff – Certified Hazardous Materials Management Examination
Brian Butler – Represented HMM in safety training video for all staff at Ky. Clinic
Brian Butler – 40 hour HAZWOPER
Lee Faulkner and Mike Blackard – Certified Hazardous Materials Managers

Lee Faulkner and Mike Blackard – Members of the Institute of Hazardous Materials Management
Lee Faulkner and Mike Blackard – Members of the Academy of Hazardous Materials Management
Mike Blackard – Public service presentation of DOT/IATA training class for the Veterans Administration Hospital and the Central Ky Blood Center.

Report of the
Occupational Health and Safety Department

Occupational Health and Safety

Annual Report

FY 2001 – 2002 Work Plan

1. Continue effort in identifying, contacting, and providing departments with the required OH&S training

   Continued with targeted training initiative in identifying units in need of required Chemical Hygiene Plan/Laboratory Safety training. Completed Department of Chemistry and Physics and Astronomy. Conducted additional training sessions within College of Engineering. A total of 111 employees and/or students were trained. As a result of injury data trend analysis, additional focus placed on first year organic chemistry students, TAs and undergraduates conducting research. Total of 110 students/employees trained.

2. Develop a schedule to conduct lab classifications of all areas that are or have potential for chemicals to be utilized on a small scale for research or teaching.

   The process of gathering the information to classify labs was incorporated into this FY's lab inspection schedule. Data has been acquired for 691 labs. Currently pursuing the development of a computerized system to manipulate data and expedite classification.

3. Continue to conduct job/task analysis and employee exposure monitoring as needed within targeted units to determine employee exposures to chemical, biological and physical hazards (HCHO, Pb, noise, bloodborne pathogens and others).

   Increased industrial hygiene sampling by over 200 percent from last FY. A total of 184 individual samples obtained in determining employee/student exposure to environmental hazards. Twenty-one exposures exceeding permissible exposure limits were documented. Units evaluated included College of Medicine, Athletics, CAER, PPD, College of Pharmacy, Regulatory Services, DLAR, UK Hospital, Radiation Safety, CRMS and THRI.

4. Develop and administer an on-line application for Hazard Communication training.

   Draft module developed. Incorporation into computer-based training program in progress.

5. Develop and administer an on-line application for Bloodborne Pathogens Refresher training

   Draft module developed. Incorporation into computer-based training program in progress.

6. Develop and administer a training program for unit safety committee members on safety and health inspection procedures.

   This item was addressed by identifying existing committees and providing onsite training to committee members during inspection activity. The committees included Ag Science, Ag Engineering, Plant Pathology and Agronomy.

7. Revise and enhance the UK safety orientation videotape to potentially feature an introduction by President Todd.

   Revised the safety video for new employee orientation, which now includes an introduction by President Todd.

8. Continue to 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.

   Interacted with Regulatory Services Safety Committee in expanding its role to test safety eyewash/showers on monthly basis as interim measure.

   Established OH&S Team representation on the UK Bicycle Safety Committee to promote synergism with the General Safety Committee in addressing bicycle safety issues.

   The OH&S Team continues to analyze, trend, interpret and distribute quarterly the associated Worker's Compensation and Form 6 injury/illness data to all applicable university units in heightening awareness and defining opportunities for hazard abatement.

9. Review, enhance and expand current Fume Hood Survey criteria/procedures.

   Additional quantitative and qualitative criteria with associated testing procedures completed. These include:

   - **Use of visual smoke for each fume hood survey conducted**
   - **Minimum criteria of $\pm$ 20% variance from average allowed for each individual velocity reading**
   - **Criteria for when large scale smoke emitters are required to be utilized**
   - **Procedure incorporating use of particle counter in determining capture effectiveness of select fume hoods**
   - **Development and use of a visual indicator (label) to restrict use of fume hood when survey indicates flow rate or other parameters do not meet UK Standards**

Additional Accomplishments/Events

1. Provided guidance and OH&S design oversight in ensuring completion of eyewash/safety shower upgrade project involving Garrigus Building, Agricultural Science Center North Building, College of Pharmacy Building, and Combs Cancer Research Center Building. Added a total of 147 eyewash units and 117 safety showers. Completed in January.

2. Worked with PPD to identify and correct the problem of lead exposure to the UK Rifle Team at the Barker Hall indoor firing range. Assisted Athletics in the development and implementation of a range cleaning procedure and schedule to maintain lead surface level contamination at acceptable levels.

3. Since the Administration Building fire, all units with contractor oversight responsibilities have been trained on the hazards of Hot Work (HW) and associated systems to prevent contractor fires. A total of 8 units have been trained which includes a total of 39 employees.

4. Conducted training of all affected employees and assisted PPD (Plumbing Shop), MCPPD and College of Ag in developing HW procedures for their affected employees. Trained a total of 71 employees.

5. Established a continuing partnership with the School of Public Health to allow students practical experience in industrial hygiene exposure monitoring. Program integrated into existing OH&S Team projects in expanding OH&S services provided to customers.

6. Established an Eastern Kentucky University, College of Health Sciences undergraduate internship position within the department to provide for an additional resource for existing OH&S Team projects and enhancement of OH&S services provided to customers.

7. Conducted a concentrated focus on DLAR resulting in review, development and implementation of required and recommended OH&S programs. Included Hazard Communication, PPE Hazard Assessment, Respiratory Protection, industrial hygiene exposure assessments, ergonomics and spill containment.

8. Integrated use of “pocket PCs” into industrial hygiene and laboratory safety inspection field use. Resulted in increased efficiency of personnel, data accuracy and transfer.

9. In collaboration with PPD, established and implemented industrial hygiene sampling schedule to evaluate suspected airborne hazards including but not limited to asbestos, lead, coal dust, silica, arsenic and other heavy metals. One element of this effort identified employee overexposures to arsenic during boiler cleaning operations. This resulted in work task modifications to ensure the safety of those affected.

10. Provided onsite services to Ag Mgmt. Operations in removal of heat exchanger located in the Garrigus Building. Effort resulted in avoidance of employee overexposures to CO, welding fumes, and implementation of Hot Work Permitting procedures.

11. In conjunction with the IACUC’s Animal Facilities Inspection Program, the OH&S Team conducted occupational safety and health inspections of 256 spaces utilized by UK animal

workers. All safety deficiencies noted were incorporated into the IACUC's notification and correction tracking system.

12. Collaborated with IACUC Committee in modifying EH&S review process of all animal use protocols. Resulted in more comprehensive review and identification of EH&S deficiencies associated with these protocols and expedient resolution avoiding preemption of research activities.

13. 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, Mechanical Engineering Building, UK Center for Rural Health.

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

15. In support of the university's research function, OH&S conducted 8 comprehensive laboratory inspections and EH&S program reviews associated with DOD Grant Proposals.

16. Conducted safety eyewash/shower review of Regulatory Services resulting in funding of project to upgrade the facility.

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

18. Conducted a total of 32 Indoor Air Quality Investigations in response to employee solicitations. These investigations involved 17 different buildings.

19. Provided guidance and input to the one year warranty review of the Anderson Tower Fume Hood Upgrade Project.

20. Continued effective maintenance of 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.

21. Developed and posted to web site Fact Sheets providing guidance on Peroxide Forming Chemicals and Perchloric Acid Use in Laboratories. Additional Fact Sheets developed for Silane and Hydrofluoric Acid with web site posting pending.

22. Conducted 3 investigations of significant incidents involving employee/student injury, fire, and/or chemical releases.

23. Conducted departmental specific Chemical Hygiene Plan/Laboratory Safety training sessions for College of Engineering, Dept. of Chemistry and Dept of Physics & Astronomy.

24. KY OSH Compliance inspection conducted 25JUN02 of Office for Experiential Education located in the Stuckert Building. Inspection result of complaint alleging mold and noise issues. No violations documented.

Key Indicators/Routine Services

Research laboratories in the Chemical Hygiene database	1,144
Laboratories inspected	667
Fume hoods tested	962
Indoor Air Quality investigations	32
Respirator Fit-tests	41
Industrial Hygiene samples	184
Ergonomic Office Assessments	1
Training Class Attendance	
Chemical Hygiene Plan/Laboratory Safety	559
Classroom Training	(280)
On-line Training	(161)
Laboratory Safety (specialized)	(118)
Hazard Communication	41
Hazard Assessment for the Use of PPE	48
Hot Work Permitting	112
Respiratory Protection	30
Bloodborne Pathogens	126
Ergonomics	29
Vehicle Safety	25
New Employee Orientation (EH&S Section)	1593
SuperVISION (EH&S Section)	205

Academic Participation for 2001-2002 School Year

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

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

Lee Poore
Chemistry: Organic Chemistry Laboratory I & II, CHE-231/233 (1 hour)

Lee Poore
Chem Eng: The Engineering Profession, CME-006 (1 hour)

Professional Development and Outreach Activities

Lee Poore

- Conducted 2 hour training session on laboratory safety at the Governor's Safety & Health Network Conference

- Attended American Chemical Society Conference

- Tested and became a Certified Chemical Hygiene Officer as recognized by the National Registry of Certified Chemists

- American Chemical Society - Member

Bob Cadle

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

- Attended half-day course entitled “Injury and Illness Recording Requirements” sponsored by KY OSHA’s Division of Education and Training

David Hibbard

- Completed two semesters of graduate course work in pursuit of Master of Public Health degree at Eastern Kentucky University

- Attended half-day course entitled “Injury and Illness Recording Requirements” sponsored by KY OSHA’s Division of Education and Training

- American Industrial Hygiene Association – Diplomate

- American Board of Industrial Hygiene – Diplomate

David Acker

- American Conference of Governmental Industrial Hygienists – Full Member

Report of the
Radiation Safety Department

University of Kentucky
Radiation Safety Office
Annual Report

For

Harry Enoch
Director, UK Environmental Health & Safety Division

July 12, 2002

Prepared by the Radiation Safety Office Team

Radiation Safety

Authorized users	214
Authorized laboratories	304
Radionuclide purchases, cost	$1,103,886
Radionuclide purchases, curies	180.997
Radionuclide orders received	2,051
Laboratory inspections/surveys	1,665
Sealed source leak tests	151
Patient therapies:	
Brachytherapy	69
Thyroid	92
Radiation safety class participants	712
Personnel monitoring:	
Film badges, etc. used	10,460
Level I ALARA reports	164
Level II ALARA reports	50
Waste disposal:	
Dry solid, long-lived, radioactive (cu. ft.)	165.0
Dry solid, short-lived, decayed (cu. ft.)	217.5
Aqueous liquid (mCi)	42.577
Waste disposal cost	$55,104
Radiation instruments calibrated	243

Radioactive Waste
Cost and Quantity Trend Report

Fiscal Year	Volume (cu. ft.)*	Cost**
1992-93	953	$134,300
1993-94	473	90,200
1994-95	180	8,000
1995-96	120	71,400
1996-97	90	29,500
1997-98	120	46,400
1998-99	315	21,100
1999-00	633	109,700
2000-01	390	44,700
2001-02	383	55,104

** 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.

Radiation Safety Inspections

The broad medical and the irradiator licenses were inspected in August 2001. Compliance findings included; (1) all required quality management program items were not covered in the annual review, (2) the management representative was not present at all the past radiation safety committee meetings, (3) records of initial training for a nuclear medicine technician were not available, (4) a radiation survey instrument calibration certificate did not have the correct model number. The dedicated check source reading obtained at the time of the calibration was not recorded, (5) a Sr-90 eye applicator source was not on the Radiation Medicine physical inventory, and (6) documentation of the calibration for two radiation measuring systems was not available.

All items were promptly corrected and full compliance achieved.

No response was received from the regulatory agency regarding any findings for the irradiator license.

Report of the
Radiation Safety Department

July 12, 2002

Radiation Safety Officer's
Annual Report to the Radiation Safety Committee
Fiscal Year 2001-2002

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) 2001-02 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

The broad medical and the irradiator licenses were inspected in August 2001. Compliance findings included; (1) all required quality management program items were not covered in the annual review, (2) the management representative was not present at all the past radiation safety committee meetings, (3) records of initial training for a nuclear medicine technician were not available, (4) a radiation survey instrument calibration certificate did not have the correct model number. The dedicated check source reading obtained at the time of the calibration was not recorded, (5) a Sr-90 eye applicator source was not on the Radiation Medicine physical inventory, and (6) documentation of the calibration for two radiation measuring systems was not available.

All items were promptly corrected and full compliance achieved.

No response was received from the regulatory agency regarding any findings for the irradiator license.

Incidents

- Markey Cancer Center, Tuesday, July 3, Waiting Area, Second Floor Nursing Station – A patient, who had received a 200 mCi I-131 therapy dose on July 2, was being released when she became nauseous and vomited. A large portion of the area floor, furniture, nearby equipment and two MC staff members were contaminated. Final decontamination was achieved on July 10. Thyroid counts on the two staff members indicated low activity uptakes, with effective doses of 1 and 3 mrem respectively. A recommendation was made to keep all I-131 therapy patients in their room until the moment of release or when transportation is actually available. Patients should also be draped with a sheet when being transported. It is noted that this is a very rare occurrence, especially post-dose administration.

- Markey Cancer Center, Sunday, August 12, Linen Room, 2nd floor. A foul odor was said to be emanating from radioactive patient waste containers temporarily stored there. Upon

examination, one drum contained a paper cylinder that appeared to be a bug trapping substance with a pesticide odor. The containers were removed to the Radioactive Waste Holding Room.

- Radiation Safety Office, Wednesday, October 30. A new order of C-14, 400 uCi, could not be located. The AU said it had not been received. The vendor said a trace showed it had been received and signed for by RSO staff. A thorough records and physical search did not find the package. A preliminary status report was made to the Radiation Control Branch, where it was discovered that, due to the recent national experiences, such an event of any quantity or radionuclide was seen as extremely significant. Tracy Cayson of the RSO then found discrepancies in the vendor's records. Edward Lohr, Radiation Control Branch, contacted the vendor's regulatory agency. The vendor quickly found the package had been returned days earlier as undeliverable.

- Radiation Safety Office, Butler Waste Facility, Wednesday, November 14. Damage was discovered to the steel door at the facility of considerable extent. UKPD was called. An investigation concluded that entry had not occurred. Recommendations for improved security were received. Both the Butler and Bunker radiation facilities are now on a special security patrol pending completion of security improvements. The UK police security consultant reviewed the Butler and Bunker facilities on January 10. Recommendations are being carried out. A FBI agent visited UK on January 14 as a follow-up to the attempted break-in.

- Hospital Basement Hallway near Waste Alarm, March 08. A waste alarm was responded to, with discovery of radioactive liquid and floor contamination. The radioactivity was identified as Tc-99m with an overall activity of about 10 mCi. The contamination was cleaned up. The source of the Tc-99m could not be determined.

- Sanders-Brown, Room 329, Dr. Bondada's Lab, April 26. A lab tech was transferring about 20 uCi of H-3 thymidine to sample trays with an insulin type syringe. He accidentally stabbed his left index finger. He responded well, promptly squeezing some blood from the wound and washing his hands for several minutes. The Radiation Safety Office was called, but no one was contacted until 1:15 due to the lunch hour. Campus Police was not called, whereby Radiation Safety staff could have been paged. A urine sample was obtained and analyzed. An uptake of 0.006 uCi was measured, with a resultant whole body dose, organic label form, of 0.001 mrem. This was reported in writing to the lab tech. It does not constitute a reportable or summation dose. Dr. Bondada changed the procedure such that a blunt "needle" is used.

- Radiation Medicine, Patient Room, Markey Cancer Center, June 09. While clearing the treatment source (250 millicuries of liquid I-125) from a therapeutic balloon catheter in the brain, the syringe plunger was slightly depressed, and several droplets sprayed onto the floor and onto the treatment system vendor representative. His shirt was contaminated, measuring 1.7 mrem/hr. at 6 inches. It was taken and bagged out. One of his shoes was cleaned and released. He was given scrubs to wear. The table and floor of the patient room was decontamination and released. Approximately 0.6 millicuries of I-125 was stored as waste for decay.

Misadministrations

- There were no patient misadministrations in FY 01-02.

Radiation Safety Office Accomplishments

The items listed below were completed as part of the Major Business Objectives for the EH&S Division in FY 2001-02:

1. Developed and approved a comprehensive Hospital / Medical Center x-ray safety program.

2. Established a radioactive material shipment delivery service as an aide to the research labs.

3. Established and filled a new Radiation Health Technician Position. Welcomed William Garner as the new employee.

4. Replaced the eleven-year-old laboratory radiation counter with a new model, and recycled the old model to a research facility for continued service. The new counter was connected to the computer network, making results electronically available to the staff.

5. Completed a campus-wide review of the radioactive material security status, with improvements made and in progress.

6. Provided radiological coverage for 161 radiation therapy patients.

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

8. Continued with the quarterly Radiation Safety Newsletter.

Additional Radiation Safety Office accomplishments for the year:

9. Prepared the 2001 U.S. EPA NESHAPS report for the University.

10. Conducted the annual Laser Safety Inspections.

11. Revised and implemented a new S.O.P. for radiation/radiopharmaceutical therapies.

12. Performed the annual Quality Management Program (QMP) reviews of the Radiation Medicine and Nuclear Medicine departments.

13. Assisted Asbury College with the disposal of radioactive waste as requested by the Kentucky Radiation Control Branch.

14. The Office staff cut costs by recycling radionuclides from vendor mistakes and reducing unnecessary radiation badge dosimeter and use via a new monitoring policy.

15. Reviewed for comment 32 sets of animal research protocols and 244 human subject research protocols.

16. Completed an Authorized User survey of the radioactive waste pickup service for guidance toward improvements.

16. Reviewed and updated the Radiation Emergency response plan for UK Police.

18. Conducted a radiation incident drill, incorporating the Radiation Safety Office, Occupational Safety and Health and UK Police.

19. Developed specific radiation safety guidelines for future adoption of "Open Space" lab designs.

Academic Participation by Radiation Safety Office Staff
2001-02 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

Initial, Basic and Advanced Radiation Safety courses.
Staff technical in-service training classes.
Ancillary staff in-service safety classes.

Gerald Schlenker

Basic, Advanced and Laser Radiation Safety courses.
Initial and refresher Radiation Safety classes for nursing staff.
Medical School graduate student Radiation safety Orientation class.
Staff technical in-service training classes.
Ancillary staff in-service safety classes.

Bob Wilson

Initial Radiation Safety classes.
Irradiator safety class.
Cardiology medical staff safety class.
Hospital / Medical Center x-ray safety classes.

3. Radiation Safety Office staff professional activities.

Gerald Schlenker observed and participated for one week at another university hospital in the clinical x-ray inspection program. Mr. Schlenker attended the Health Physics Society Summer School's forty-hour internal dosimetry course.

Bob Wilson attended the annual Southeast University Radiation Safety Officers' Conference. Mr. Wilson also attended the annual Health Physics Society conference, and completed his term as President of the Radiation Safety Operations Section.

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

Bob Wilson, Gerald Schlenker and George Ellis attended the joint Cincinnati and Blue Grass Chapter - Health Physics Society meeting in Cincinnati. The traveling Marie Curie Exhibition was toured and the President-Elect of the national Health Physics Society spoke. Fred Rawlings and Mr. Wilson attended a meeting of the Cincinnati Radiation Society for a presentation on the Utah Envirocare disposal site.

Fred Rawlings attended a special IATA transportation regulation training course. This gives the Radiation Safety Office up-to-date expertise with the newly revised international radioactive material shipping rules.

George Ellis, Radiation Health Technician, attended a three-day radiation protection course. Mr. Ellis was promoted to the Technician II level.

David Rich completed requirements and was promoted to Radiation Health Technician III.

William Garner attended a 40-hour technical course provided by Oak Ridge Associated Universities on the inspection of x-ray devices.

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	214
Authorized laboratories	304
Radionuclide purchases, cost	$1,103,886
Radionuclide purchases, curies	180.997
Radionuclide orders received	2,051
Laboratory inspections/surveys	1,665
Sealed source leak tests	151
Patient therapies:	
Brachytherapy	69
Thyroid	92
Radiation safety class participants	712
Personnel Monitoring	
Film badges, etc. used	10,460
ALARA reports, Level I	164
Level II	50
Waste disposal, dry solid (cu. ft.)	
Long-lived, radioactive	165.0
Short-lived, decayed (non-radioactive)	217.5
Liquid (aqueous), released (mCi)	42.577
Waste disposal cost	$55,104.00
Radiation instruments calibrated	243

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 01-02 the Radiation Safety Office conducted nine hundred and fifty-two (952) AU facility (1348 individual labs and 118 hospital labs) surveys, or two hundred and thirty-eight (238) AU facilities per quarter. Seventy-five percent (75.14 %) of the AUs were found to be in compliance.

The most frequently observed non-compliance item was lack of survey records (20.48 %). Such records are required to show that the Authorized User is controlling contamination and radiation exposure in his/her laboratory. The frequency depends on the amount of material used, but area surveys are typically conducted each month. This item has increased, and is identified for priority compliance action.

The second most common item of non-compliance is evidence of eating or drinking in the lab (3.18 %). The third item is radioactive materials not properly secured (2.52 %). These items are also identified for priority compliance action. The fourth item is fume hood not operational (2.08 %). Occupational Safety is looking at this situation.

Contamination was found in laboratories 0.33 % of the time. The most frequently observed locations of contamination are laboratory benches, refrigerators, and laboratory equipment. Other less frequently observed locations of contamination, but significant for exposure, are desks, telephones and computers.

The most serious issue observed continues to be a lack of performance or documentation of area surveys. Various methods have been used in effort to gain improvements with little effect. A new compliance follow-up and action system is being planned.

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. 01-02

Item #	Occurrence	Percent	Violation
01	4	0.44	UK Notice to Employees not posted
02	5	0.55	Radioactive Materials sign not posted
04	3	0.33	Contamination in Laboratory Area
07	3	0.33	Emergency instructions not posted
11	4	0.44	Rad. Safety Manual not available
14	8	0.88	Emergency #s on lab entrance not posted
18	1	0.11	Radionuclides received directly in lab
22	187	20.48	Area survey documentation lacking
23	16	1.75	Survey instrument not used or unavailable
26	29	3.18	Evidence of eating or drinking
27	10	1.10	Staff not wearing personal protective clothing
30	19	2.08	Fume hood not operational or not utilized
33	18	1.97	Radionuclides improperly stored
35	23	2.52	Radionuclides not secured
48	686	75.14	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 214 Authorized Users with approximately 304 laboratories in FY 01-02. 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
Med. Center Small Animal Hospital (Spindletop	1	4
Medical Center	55	95
Combs	11	23
ASCN	17	27
Pharmacy	13	28
Sanders Brown	13	18
Markey Cancer Center	3	4
Gluck	6	12
Garrigus	5	5
T.H. Morgan	9	15
Chem-Physics	6	11
Tobacco & Health	6	7
Funkhouser	3	3
Research #3	4	6
HSRB	18	33
Kastle Hall	1	1
ASTeCC	3	5
Wenner Gren	1	1
CAER	1	2
MRI	3	3
Sloan	1	1
Total	180	304

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

During FY 01-02, six (6) new AUs and ten (10) authorization amendments were approved. Twenty-seven (27) authorizations were terminated (by choice, leaving, etc.), up ninety-three percent (93 %) from FY 00-01. 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. Twenty-four (24) AUs received their 5-year authorization renewal. The five-year renewal program is on schedule.

Table 3

Total and Changes in the Number of Authorizations for FY 01-02

	Medical Center	Campus
Total Users	**132***	**82**
New Users	**4**	**2**
Terminated	**19**	**8**
Amendments	**6**	**4**

*Includes 1 reactivation

Radiation Safety Training

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

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

The Advanced Radiation Safety Course is for faculty and staff new to UK but with previous training and experience. This course is 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 two hundred and eleven (211) radiation safety courses of all types in FY 01-02, with four hundred and ninety-four (494) attendees. This is increased sharply from last year due to the new, one-on-one Initial Training class that replaced the outdated video-based approach.

Table 4

Radiation Safety Training Attendance

Title	Number offered	Number of attendees
1. Basic Radiation Safety	**12**	**179**
2. Advanced Radiation Safety	**15**	**15**
3. Ancillary Staff	**5**	**121**
4. Initial Training (prereq. For Basic)	**179**	**179**
TOTAL	**211**	**494**

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 August 2001 the personnel monitoring service was let to a new vendor for a potentially substantial cost saving. Some changeover problems are still being worked out. The anticipated savings will be fully reflected in FY 02-03 since several invoices from the former service provided were payable in FY 01-02.

The Radiation Safety Office issued 7820 monthly radiation badges and 2640 quarterly badges during FY 01-02. In addition, the Office issued 1015 ring badges, 206 neutron badges, and 239 double badges. Two hundred and thirty-nine (239) selected EDE calculations per year were performed. The total cost for film badges for FY 01-02 was $40,325, down 2.6 %.

Table 5

Dosimetry Issued in F.Y. 00-01

Quarterly Badges

Type of dosimetry	Total Issued	Aver. per shipment
Whole Body	2640	660
Rings	260	65
Neutron	96	24
Area Monitor	44	11
Double Badges	0	0

Monthly Badges

Type of dosimetry	Total Issued	Aver. per shipment
Whole Body	7820	651
Rings	755	63
Double Badges	239	20
Neutron	0	--
EDE Calculations	239	--
New Badges (estimated)	380	--

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	722	Medicine	10/01
Lens of the Eye	625	Cardiology	07/01
Skin (Shallow)	887	Radiation Medicine	11/01

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. The values given are estimated due to a reporting problem with the service contractor.

Table 7

Annual Whole Body Dose for Selected Departments in mrem (estimated)

Department	# Badged Personnel	Total Exposure	Average Exposure
Dept of Medicine	6	816	160
Nuclear Medicine	15	2595	173
Radiation Medicine	58	275	< 10
Radiology Techs and Radiology Residents	116	2590	22

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 and is requested to complete an investigation form as to the probable cause and consideration of actions for reducing the probability of a recurrence.

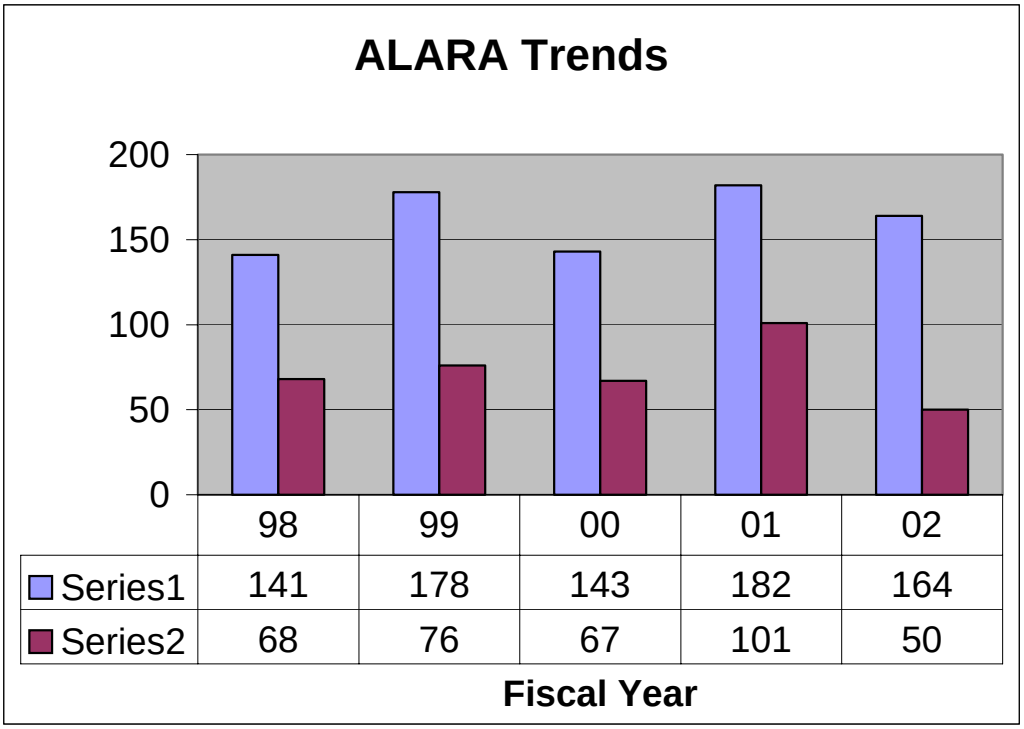
The ALARA notifications for FY 01-02 appear in Table 8 for each quarter. A trend graph is included. The number of ALARA Levels I and II notifications decreased on average during the FY. The double badge program, with its EDE calculations, has helped with this. The use of the EDE calculation provides a more realistic representation of the individual’s dose through a comparison between the under lead apron badge reading with the outside apron badge reading.

Level I reports are down nine and nine tenths percent (9.9 %) and Level II reports are down fifty percent (50 %) from last fiscal year.

Table 8

ALARA Numbers for Each Quarter

Quarter	Level I	Level II
3rd 00	89	34
4th 00	41	10
1st 01	23	5
2nd 01	11	1
TOTAL for the Year	164	50



Bioassays

A thyroid scan is required on individuals who use certain quantities of I-125 and I-131 in both bound and volatile form. Thyroid scans or urinalysis is also done if there is skin contamination. Nuclear Medicine performs its own thyroid scans for staff directly involved in I-131 therapy administrations. The Radiation Safety Office conducted ten (10) thyroid scans in FY 01-02. 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 140.439 curies of radioactive material (down 9.5 %) at a total of $1,103,886 (up 24 %) for Authorized Users in FY 01-02. The most commonly purchased radioisotopes were H-3, Ir-192, I-125, P-32, and S-35 (Table 9a).

Records indicate 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 01-02

Isotope	Amount (mCi)	Isotope	Amount (mCi)
Al-26	0.005		
C-14	43.926	Mn-54	3.040
Ca-45	1.013	P-32	1698.760
Co-57	0.007	P-33	24.090
Cr-51	38.190	Pd-103	100.544
Ga-67	0.000	Rb-86	11.817
H-3	130221.840	S-35	479.513
I-123	.000	Sr-89/90	218.735
I-125	3090.013	Tc-99m	0.000
In-111	113.093	Tl-201	0.000
Ir-192	4394.500	Zn-65	0.000
		Total	140,439.086

Table 9b

Quantity of Radioactive Material Ordered Through Nuclear Medicine, FY 01-02

Isotope	Amount (mCi)
Ga-67	779.000
I-123	3650.000
I-131	21555.300
In-111	1991.060
Tc-99m	85961.340
Tl-201	301.620
Total	114,238.320

Table 9c indicates that as of June 30, 2001, the University had a total of 371,083.307 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)
Al-26	0.001	In-111	0.000
Ba-133	0.001	Lu-177	0.001
C-14	257.283	Mn-54	4.764
Ca-45	0.700	Na-22	0.151
Cd-109	0.117	Ni-63	1.925
Co-57	6.650	P-32	122.320
Co-60	0.018	P-33	2.227
Cr-51	3.764	Pu-239	0.001
Fe-55	0.575	Rb-86	0.001
Ga-67	0.000	S-35	137.709
Gd-153	0.001	Sr-89/90	0.084
H-3	370053.916	Tl-201	0.003
I-125	490.713	Zn-65	0.381
I-131	0.001		
		Total:	371,083.307

Radioactive Waste

The Radiation Safety Office conducted eight hundred and fifty-six (856) pickups of radioactive waste. Table 10 lists the radionuclides picked up and the total activity for each radionuclide for the fiscal year. The dry solid waste was either shipped out as long-lived radioactive waste or held in storage for at least ten (10) half-lives, surveyed, and disposed of as non-radioactive waste. The aqueous waste was disposed of via the sanitary sewerage system according to Kentucky and City of Lexington regulations. UK generated three hundred and ninety-three (393) liters of mixed waste during FY 01-02. H-3, C14 and S-35 were the most common long-lived radionuclides, with P-32, P-33 and I-125 the most common short-lived radionuclides. Mixed hazard waste is segregated by half-life, radionuclide and concentration. It is then either decayed until it is only a chemical waste or shipped as a mixed waste (mixed waste is not included in Table 10). During FY 01-02 the Radiation Safety Office shipped 30.7 cubic feet of animal waste.

Table 10

Total Radioactive Waste Received by Radionuclide

Activity in millicuries

Isotope	Dry Solid Waste	Aqueous
Al-26	0.001	0.000
Ba-133	0.001	0.000
C-14	28.272	4.258
Ca-45	0.010	0.000
Co-57	0.000	0.000
Co-60	0.000	0.000
Cd-109	0.000	0.000
Cr-51	3.975	0.000
Fe-55	0.000	0.000
H-3	39.566	33.519
I-125	186.191	0.243
I-131	0.001	0.000
In-111	0.000	0.000
Mn-54	1.947	0.000
Na-22	0.000	0.000
P-32	375.117	2.516
P-33	0.000	0.598
Rb-86	0.000	0.037
S-35	53.807	1.406
Sm-153	0.300	0.000
Tc-99m	0.000	0.000
Zn-65	0.030	0.000
Total	689.217	42.577

An eighty percent reduction in the amount of radioactivity released as aqueous waste was achieved due to a new storage-for-decay and assay program.

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

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 forty-three (243) meters were calibrated during FY 01-02.

Patient Care Support

The Radiation Safety Office provides radiation safety support for patient's receiving therapeutic radiopharmaceuticals (>33 mCi I-131), Cs-137 implants, Ir-192 implants and seed implants. Upon administration of radiopharmaceuticals or brachytherapy implants, the Radiation Safety Office performs and documents a multi-point radiation survey. This data is used to determine the allowed time hospital staff and visitors are allowed to be adjacent to the patient. The hospital staff and visitors are then instructed on the radiation safety precautions to be followed when in or around the room containing the radioactive patient. Patient care support increased by eleven percent (11 %) in FY 01-02.

Table 11

Radiation Safety Services to Nuclear Medicine and Radiation Medicine

Brachytherapy Implants	**69**
Thyroid treatments	**92**
Total	**161**

Sealed Source Inventory and Leak Test

The Radiation Safety Office performs all sealed source leak tests. All beta/gamma and neutron sealed sources (greater than 100 microcuries) were tested for leakage at intervals not to exceed six months. All sealed sources (greater than 10 microcuries) designed for the purpose of emitting alpha particles were tested at intervals not to exceed three months. Ni-63 foil sources (greater than 100 microcuries) were tested at intervals not to exceed six months. If a leak test reveals removable contamination greater than 0.005 microcuries, the source is removed from use and decontaminated, repaired or disposed of as radioactive waste. During FY 01-02, the Radiation Safety Office conducted one hundred and fifty-one (151) leak tests. No activity greater than 0.005 microcuries was observed. The inventory of sealed sources is decreasing as those no longer in service are shipped for disposal.

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 01-02, twenty-two (22) laser facility inspections were completed. Consultations and preregistration guidance was provided. A web based training program is available, allowing users to complete the laser safety training requirements on line. Eight (8) laser users have completed the online web based training during FY 01-02.

Bob Wilson, Director
UK Radiation Safety Office
July 12, 2002

Report of the
University Fire Marshal

FIRE MARSHAL ACTIVITIES
FISCAL YEAR 2001-2002

TRAINING---- (FIRE EXTINGUISHERS/FIRE PREVENTION)
>HRS Fire Extinguisher classes (Refer to NEW PROGRAMS)

- July 18---3 people
- Dec 18---6 people
- January 22---20 people
- February 22---10 people
- March 27—1 person
- April 10---0 persons
- May 2---7 people
- June 25---4 people

>UK Food Services---July 24---26 people

>Greek Chapter houses directors---August 1st---15 people

>Dormitory Hall Directors training—August 7th---45 people

>Dormitory Resident Advisors training---August 13th---168 people

>UK Parking/Fleet employees---August 20th---6 people

>Chemistry Physics TA's, August 22nd—25 people

>Sigma Chi Fraternity—September 10th. —30 people (fire prevention only)
>Sigma Chi Fraternity—February 18th—30 people (fire prevention only)

>Coopertown Apartments (fire extinguisher training) 75 people and
Shawneetown Apartments (fire extinguisher training) 25 people-- [A total of 350 people attended. See NEW PROGRAM section]

>Delta Zeta, 319 Columbia Terr.—October 11th: 20 people (fire prevention only)—Conducted a fire drill; [See SPECIAL PROJECTS]

>Patterson Tower, Social Studies (6th floor)—10 people. Discussed fire prevention for the towers and the safety features built into the tower

>Phi Kappa Tau fraternity—November 19th---15 people (fire prevention only)

>LCC faculty and staff—January 4, 2002; 125 people (see NEW PROGRAMS)

>College Engineering (Dr. Hahn is contact)—graduate students, staff, and faculty---75 people (mainly fire prevention—very short demonstration with fire extinguishers)

>Graduate School faculty and staff (Patterson Office Tower)---February 22—20 people (fire prevention only)

>Greek House Directors---March 6th---25 people (fire prevention only)

>Farmhouse Fraternity—March 25th---40 people (fire prevention only)

>Blanding 4—April 9th---(fire prevention only)—15 people

>PPD Building Operators—April 23rd—55 people (fire prevention only)

>Agricultural Regulatory Services---25 people

>Agricultural Maintenance and Operations---17 people

FIRE/LIFE SAFETY INSPECTIONS
>State Fire Marshal inspection of campus

>Greek Chapter inspections

>Rough-in inspections and compliance/acceptance inspections on all Medical Center Physical Plant and Campus Physical Plant construction projects

>Assistant fire marshal accompanies the State inspector on Capital Construction Projects

>Vending area inspections (continuation of existing program): Holmes, Keeneland, Jewell, Boyd, Blazer, Dickey Hall, Taylor Education, Home Economics, Funkhouser, Seaton Center, Lancaster Aquatics, Law Building, Haggin Hall, Dormitory Complex, Bradley, Memorial Coliseum, 305 Euclid, Coopertown Building C, Communication Building, Mining and Minerals, Ag. Science South, Matthew's Building, Barker Hall, Minerals Industries, LCC Academic and Technical Building, Motor Pool, Commonwealth Village Unit 1, Werner Green Laboratory, Donovan Hall, W.T. Young Library, Strudel Building, Scott St. Building, Reynolds #1 (two locations), Combs Building, College of Pharmacy, Cool of Nursing, Student Center Addition, Gilles, Lifetree Hall, Fine Arts Building, Chemistry Physics, Pence Hall, King Library, McZee Hall, Oswald Building, Moloney Building, Kentucky Clinic,

>Corridor/Stairwell evaluations (refer to separate section on these inspections)

>Dietrich 4-H camp: The campus 4-H office requested a fire/life safety inspection. This was the first notice that this camp existed. As a result of the inspection, exit corridors will now be fire rated, additional emergency lighting and exit signs have been provided, an additional exit door will be provided from the cafeteria, and emergency procedures will be developed.

PROFESSIONAL TRAINING
>BOCA /Building Code Conference—Sept 16th –19th/Garry

>CAAK Conference –Sept 18th (in conjunction with BOCA conference)/Garry

>NFPA Article 25 seminar (maintenance and testing suppression systems) October 4, (Greg)

>KBC 2002 Edition—3 hour overview—January 8, 2002---(Garry and Greg)

>KBC 2002 Edition---3 days intensified training ---January 22-24th—(Greg)

>Emergency Preparedness---April 23rd---Sponsored by DEEM (Greg)

>Fire Alarm Seminar—June 27th—(Garry and Greg)

EMERGENCY PROCEDURES (REVIEW/APPROVAL)
>Blanding and Kirwan Low Rises Fire Drill evaluations
>Sanders Brown
>Allied Health
>Kentucky Clinic
>Dental Wing
>Patterson Hall
>Patterson Office Tower
>Agricultural Science South
>LCC Safety Manual
>Patterson Office Tower
>Lancaster Aquatics Center

SPECIAL PROJECTS

>July 20---had two vendors to demonstrate flame-retardant products to Debra Ross (housing) and Susan West (Greek Chapters Representative). The purpose was to make them aware of the products that can be used to flame retard materials used in decorations (parties and floats, etc)

>Designed and made a fire prevention training tape to be used in the new employee orientation program (See NEW PROGRAMS for details)

>Fire/Life Safety room inspection training for dormitory resident advisors (See NEW PROGRAMS for details)

>Evaluated fire works demonstration at Commonwealth Stadium for football season

>September 30th: assisted Fire Department in practice/reviewing their “preattack” plan for the Patterson Office Tower. This included the fire department connection, fire pump, emergency generator, firemen service for the elevators, and a practice pull of 2 ½” fire hose from the stairwell standpipe hose cabinet. Use of hydrants was also discussed and revamped. This will enable the firemen to make a safer and more effective “attack” should a fire occur.

>Delta Zeta Sorority, 319 Columbia Terrace: October 11th: Assisted by the Fire Department, a fire drill was held utilizing smoke in the corridor. This drill was the first drill of this nature utilizing smoke in the corridors within the Greek system. Efforts will be made to develop this type a fire drill into a new program for the Greek Chapters.

>Participated in a program with the Lexington Fire Department's Training Division in developing a tape on residence halls fire safety. Program was shown on the government channel (cable 3) for several weeks.

>Developed and posted evacuation plans for Patterson Office Tower. In conjunction, conducted two fire prevention safety classes. Also, departments were strongly encouraged to develop internal procedures to ensure evacuation T including a physically impaired person; and closing of doors to help to contain the fire/smoke. This is in preparation for a forthcoming fire drill. Also, the new fire prevention training tape was shown.

>Reviewed on site the sprinkler projects for Blazer and Keeneland with Carvon Hudson, Assistant State Fire Marshal.

>Developed a building facilities data spread sheet indicating fire prevention features and special inspections within a particular building.

>April 11th---Made a training tape in conjunction with the Kentucky Clinic on fire emergency procedures. This training tape is to be shown to all Kentucky Clinic employees.

>UK and Kentucky Community and Technical College System Wellness Program Annual Conference: provided a booth with a display of fire extinguishers, safety brochures, and training tapes. 150 people visited the booth.

>Worked with Lexington DEEM in developing a flip chart that presented information on "Taking Emergency Action" on specific emergencies. 5000 of the flip charts were purchased for University employees.

>Appeared on TOWN TALK at WVLK AM in conjunction with the Kentucky Coalition for Fire Safety. The purpose was to discuss the progress being made in sprinkling college residence halls since the fire at Murray University and to promote campus fire safety awareness.

FIRES ON CAMPUS

>Sigma Chi Fraternity---August 17th (4:20pm): Kitchen residential gas stove was destroyed. The cause of the fire was materials left in the oven from usage earlier in the day were ignited when a member of the fraternity tried to melt wax in the oven. The stove had not been cleaned from the previous incident although members had been advised to clean the stove. The student using the stove causing the 2nd incident turned on the oven to melt wax and left the stove unattended. Smoke activated a smoke detector; the student returned shutting off the gas to the oven but opened the oven

door. The heat then set off a sprinkler head that suppressed the fire. The stove was destroyed, ceiling tiles will need to be replaced, and the room cleaned and painted. If the stove is replaced, some one needs to maintain the stove in a clean manner and the stove should be used only for cooking purposes; not to melt wax. No injuries occurred.

>Holmes Hall, September 16th, arson: unidentified individual(s) piled trash against the exterior of the building and set the trash on fire. Windows in rooms directly above were opened causing the smoke to enter and set off smoke alarms. Building was evacuated; no injuries.

>Cooling Plant #2, October 21st. Electrical controls for a chiller caught fire—cause undetermined but the resister bank may have failed or the heating coils failed: $50,000 loss is guess-estimate. Building was not damaged and no injuries occurred

>Vehicle fire, October 31st: One vehicle a total loss, vehicle parked on each side were damaged. Guess-estimate loss $10-15,000. No injuries occurred.

>Kirwan 1, December 11th, ARSON—2nd and 3rd floors. No injuries. Minor physical damage; considerable amount of smoke caused students to have to stay out of building for 1-½ hours (semester exam week)

>Blanding Tower, February 15th—ARSON 13th floor: small fires set in 6 different areas—minor damage—no injuries—building evacuated

>Dumpster fire—March 13th—behind Wildcat Lodge: no injuries or damage to building

>Kappa Sigma Fraternity: April 2nd: exterior deck caught fire due to a chemical reaction of chemicals left of the deck by a member of the fraternity. The chemicals were being used for an art project. Minor damage to deck; no injuries

MAJOR IMPROVEMENTS

>Boyd Hall---added self-latching hardware and magnetic door holders to stairwell doors

>Holmes—a stairwell was enclosed and self-latching hardware was added to all stairwell doors

>Jewell: constructed smoke barrier wall to eliminate a dead-end corridor

>Blanding 1, 2, 3, 4; Kirwan 1, 2, 3, & 4; Coopertown D & E, Homes Hall were sprinkled

NOTE: all residence halls will be sprinkled by the end of August. All students living in the halls will be protected via a sprinkler system. In addition, all residence halls have smoke detectors.

>Mathews Building: major improvements in exits and emergency lighting

>Reynolds #2: added an exit from the basement and second floor, exit signs, and improved safety operations of front elevator,

>January 29th—Central Fire Alarm System: first 36 buildings tested and accepted. By the end of August 2002, all buildings having fire alarm systems are scheduled to be tied into the Central Fire Alarm System. This will provide a uniform method of notifying emergency authorities and will enhance the reporting of each fire alarm to the State Fire Marshal' s office as required by the Minger Act. In addition, it will enable the University's fire marshal's office to better track the fire alarms.

>Spindletop Hall: replaced existing fire hydrants and improved water pressure for fire fighting purposes. Also, Phase 2 for life safety improvements consisting of additional emergency lighting units and exit signs was completed.

NEW PROGRAMS

>Residence Life: to improve fire/life safety training for hall directors and resident advisors, two new programs were implemented;

1. During the lecture training sessions, a "mobile sprinkler room" designed by Landmark Sprinkler Company was made available for the students to review. The purpose of the room is to demonstrate how a sprinkler head actually works. A small fire is built within the unit, a sprinkler head operates and extinguishes the fire. This demonstration was well received by the students and really educated them in how a sprinkler head (system) actually works,
2. A program requirement is for the resident advisors to inspect student rooms once a semester and provide a report to the University Fire Marshal. The inspection form is provided to the students. In the past, training as what to inspect for was not provided. To improve the program, two rooms were set up with fire deficiencies to allow the students to gain experience in inspecting a room before actually inspecting rooms on their particular floor. This program was well received by the students.

>Fire Prevention Training Tape: In conjunction with TV Media Services, a training tape has been developed primarily for orientation program for new employees through Human Resources. The purpose of the tape is to introduce new employees to the fire prevention and fire safety polices of the University. It's also applicable to current employees and will be used for departmental meetings.

>Fire Extinguisher Training: is now being offered on a regularly scheduled basis through Human Resource Services.

>LCC Faculty and Staff: in conjunction with Marylyn Childre, we participated in the "Training and Orientation" of faculty and staff in regards to fire prevention and fire extinguisher training. The orientation tape for new employees as well as other training tapes was shown and safety pamphlets were handed out. This will become an annual training program for the faculty and staff.

>Coopertown and Shawneetown Apartment Housing--- Conducted two safety fairs for tenants on September 15th and October 16th. Live fire extinguisher demonstrations were conducted as well as showing fire safety tapes. 75 people used fire extinguishers. A total of 350 people attended and was given fire extinguisher pamphlets, emergency numbers, and fire prevention literature. UKFM worked with Debra Ross on a special handout given to all occupants on fire prevention policies that will be published in

Tenant Talk, a pamphlet given to all occupants. Fire department training personnel assisted the University Fire Marshal in this program.

STAIRWELL/CORRIDOR EVALUATIONS

ENTIRE BUILDING
>Dimmock Animal Pathology
>Medical Science Wing
>Dental Science Wing
>Patterson Office Tower
>Health Science Research Building
>Combs Building
>Engineering Tower
>Garrigus Building
>Lancaster Aquatics Building
>College of Pharmacy
>Gatton Building
>LCC (campus) all three buildings
>College of Nursing
>Warren Wright Medical Plaza
>Kentucky Clinic (old and new buildings)
>College of Medicine Office Building
>Kastle Hall

SPECIFIC AREAS (per request)
>Gillis
>Journalism
>MRISC

It is the goal of the Fire Marshal's office to complete 3 evaluation per month until all University buildings have been evaluated. Residence halls and Greek Chapters have previously been evaluated.

KEY INDICATORS

Fire Extinguishers Inspected	6138
Fire Extinguishers Services	82
New Fire Extinguishers Purchased	303
Fire Extinguishers/Fire Prevention Training	1188
Fire Alarms	551
Working Fires	8
Plan Review: New Construction/Renovation Projects	191

Report of the
Committee on Environmental Health and Safety

EH&S Certificates of Appreciation

In recognition of outstanding contributions to safety at the University of Kentucky, the Committee on Environmental Health and Safety has awarded the following certificates of appreciation. This list includes the awardees for 2002 and previous years.

2002	Lyle Morgan	Auxiliary Services – Housing
	Joe Crouch	Capital Project Management
	Homer Walter	Physical Plant Division
	Jerry Tackett	Robotics and Manufacturing Systems
	Michael Jay	College of Pharmacy
	Pamela Jacobs	Clinical Laboratories
	Don Stone	Parking and Transportation
	Debra Ross	Auxiliary Services – Apartment Housing
	Kathy Rose	Campus Recreation
	Maelor Davies	Tobacco Health Research Institute
	Eva Kaplan	Animal Sciences
2001	Gene Baber	Physics & Astronomy
	IACUC Committee	Mike Bardo, Chair
	John Anthony	Chemistry
	Mary Vickers	Livestock Disease and Diagnostic Center
	Jana Angel	Rehabilitation Services
	David Waldridge	Medical Center Physical Plant Division
	Gary Ginn	Anatomy & Neurobiology
	John Gurley	Cardiology
	Jeanne Bouvier	Nursing
	Ali Meigooni	Radiation Medicine
	Don Hill	Physical Plant Division
	Richard Riedl	Capital Project Management
2000	Bob Brashear	Ag Management Operations
	Ted Jenkins	Chemistry
	Steve Evans	Residence Life
	Tony Ralph	Residence Life
	Marcia Shrout	Residence Life
	Stephen Stauffer	Residence Life
	Melanie Tyner-Wilson	Residence Life
	Loretta Hill	Custodial Services
	James Bryan	Surplus Property
	Brian Butler	Pharmacy
	Norman Goodman	Pathology
	Joseph Mallek	Medical Center Physical Plant Division
	Janet Rodgers	Lab Animal Resources
	Oney Vanlandingham	Center for Applied Energy Resources

1999	Donald Thornton	Parking and Transportation
1998	Mary Ferlan	Wellness
	John Summersett	Physical Plant Division
	Ralph Christensen	Allied Health, Clinical Sciences
	Creighton Trahan	Office of the University Veterinarian
	Kenneth Dickey	Laboratory Animal Resources
	Larry Iten	Laboratory Animal Resources
	Susan Overman	Serology and Virology
	Tomi Ross	Hospital Safety Office
	Carl Nathe	Public Relations
1996	Herbert Strobel	Animal Sciences
	Thomas Vanaman	Biochemistry
	Robert Toreki	Chemistry
	Claude Cornelison	Auxiliary Services
	Greg Shiddell	Auxiliary Services
	Joseph Mallek	Medical Center Physical Plant Division
	Relon Hampton	Whitesburg Community College
	Jerry Hensley	Whitesburg Community College
	Mike Polashock	Paducah Community College
	Rae Ann Egner	Paducah Community College
	Maintenance Department	Paducah Community College
	David Campbell	Henderson Community College
	Judith Chabot	Ashland Community College

Minutes of the
Environmental Health and Safety Committee
FY 2001-02

Environmental Health and Safety Committee
Minutes of September 19, 2001

Members Present:

Mark Meier	Tomi Ross
Eugene Gaetke	Ed McClure
Wayne Ritchie	Thomas Lillich
Janet Williams	J. W. Yates
Daniel Noonan	Larry Piercy
Harry Enoch	Jacob Karnes
Ada Sue Selwitz	Warren Denny
	Judith Lesnaw

Guests:

Lee Faulkner	Steven Pulliam
Bob Wilson	Greg Williamson
Woody Bottom	Shirley Cruse

Mark Meier welcomed new members. He also recognized the four subcommittee chairs, who sit on the EH&S Committee: Caroline Gill, Chemical Safety Committee; Guy Simmons, Radiation Safety Committee; Tomi Ross, General Safety Committee; and Judith Lesnaw, Institutional Biosafety Committee. Meeting dates for this school year were announced and approved by members. Meetings will be held from 1:00 p.m. to 3:00 p.m. on

November 21, 2001
January 23, 2002
March 20, 2002

There was a discussion on whether members prefer (1) to get meeting information by e-mail before the meeting so they have a chance to review it or (2) to receive the materials at the meeting. Members prefer to receive a hardcopy of the materials at the meeting.

Minutes of the March 29, 2001 meeting were approved with no changes.

- **Old Business**

Workers' Comp coverage
In January 2000, the EH&S Committee forwarded a request to Human Resources to clarify coverage of lab workers under Workers' Compensation, specifically whether coverage applies to teaching assistants, resident advisors, graduate students, undergraduates, high school students, and others. The committee received a response from Bart Miller, Disability Benefits Manager, in August 2001, stating that coverage applies to UK Employment Status Codes 1 through 6 and 9 and F, H, O, P, R, X, and Y. This information may be obtained from the Human Resources System (HRS). A non-covered person who is injured must file a claim with their personal

insurance carrier. The committee recommended that Human Resources put this information on their website and send it out to all deans, directors and department heads.

Tomi Ross announced that high school students and volunteers who work in the Medical Center need to register with the Medical Center Safety Office.

- **New Business**

Annual Report
Harry Enoch gave a brief presentation on the *7th Annual State of the Environment Report*, the annual report of the EH&S Division and of the EH&S Committee. The committee approved the report for submittal to Ben Carr, Vice President for Auxiliary and Campus Services. The report will also be put on the EH&S website.

Administration Building Fire
Greg Williamson, Assistant University Fire Marshal, made a presentation on the fire that destroyed the Administration Building in May. He discussed the cause of the fire, the problems experienced evacuating the building, the problems the Fire Department had fighting the fire, and what we learned from it. Bob Cadle, Occupational Health & Safety, then discussed what UK is doing to prevent similar fires in the future.

There was a discussion of the relationship between false alarms and the failure of occupants to evacuate buildings for fire alarms. Numerous instances were cited where employees, students and visitors remained in buildings with the fire alarm going off. The committee urged that UK administration do more to reduce false alarms and to comply with the requirement to evacuate buildings for fire alarms. Tomi Ross noted that in light of the recent terrorist attacks, UK should take this opportunity to emphasize the importance of following the emergency procedures.

Physical Development Plan
Warren Denny, University Architect, made a presentation on the process underway to update UK's long-range physical development plan. Consultants have been selected, and they have met with the steering committee and various campus groups. Early steps will involve developing design principles and design guidelines. The EH&S Committee was invited to participate in the process, and the committee expressed an interest in doing so.

Waste Minimization
Lee Faulkner, Hazardous Materials Management, gave an update on UK's hazardous waste minimization program. The program has made considerable progress since the Environmental Quality Management Center opened in 1998. Hazardous waste quantities have been reduced by nearly half and disposal cost has been reduced by more than two-thirds. A copy of the progress report is included in the Annual Report, and a copy will be sent to the UK President.

Meeting adjourned at 3:05 p.m.

Environmental Health and Safety Committee
Minutes of November 21, 2001

Members Present:

Mark Meier
Eric Moss
Harry Enoch
Wayne Ritchie
Harold Laswell
Herbert Strobel
Steven Pulliam
Tomi Ross
Ed McClure
Thomas Lillich
J. W. Yates
Larry Piercy
Nicholas McLetchie

Guests:

John Lowry
Bob Wilson

Minutes of the September 19, 2001 meeting were approved with no changes.

- **Old Business**

Workers' Comp coverage
No response was received from the October 4, 2001 memo to Benefits. Committee recommends a follow up to the memo.

EH&S Annual Report
The 7th Annual State of the Environment Report was received favorably by Dr. Ben Carr.

Physical Development Plan
The EH&S Committee and sub committees were invited to be involved in the process to develop UK's next long-range Physical Development Plan. Recommended identifying a group of interested volunteers from the five safety committees to participate.

Pedestrian Safety Issues
Dr. Carr responded to a memorandum from the General Safety Committee regarding two pedestrian safety recommendations. PPD is in the process of implementing corrections on the wheelchair ramp at Cooper Drive and Nicholasville Road intersection. The item regarding cars parking on sidewalks will be revisited at the next General Safety Committee meeting.

- **New Business**

Draft Lab Standards
A draft of the Laboratory Standards was presented and discussed. The committee recommended revising the wording and reviewing at the next meeting.

EH&S Unit Review
Deferred until a later meeting.

US Patriot Act
The new act, signed into law October 26, is an antiterrorism bill, which makes it a crime for any person to possess a biological agent or toxin without needing to for any good reason.

Restricted access for certain individuals. If an individual is a convicted felon, drug addict, or illegal alien, it is a crime to possess anything on CDC Select Agent list. Determine who (not restricted individuals) is working with Select Agents. Need to see how Select Agents are secured and stored.

X-ray Program
Medical Center Executive Council organized a task force to compile an inventory of radiation producing equipment (99 pieces of equipment identified). The group has been meeting to look at requirements and approaches to x-ray safety. The task force reported back to Medical Center Executive Council on November 15 with recommendations for a new safety program to be coordinated by the Radiation Safety office. The program is to be in place by July 2002.

The next EH&S Committee meeting is scheduled for January 23, 2002. The meeting will be held at 1:00 p.m. in room 102 of the Mining and Minerals Building unless otherwise notified.

The meeting adjourned at 2:52 p.m.

Environmental Health and Safety Committee
Minutes of January 23, 2002

Members Present:

Mark Meier	Nicholas McLetchie
Eugene Gaetke	Ed McClure
Harry Enoch	Daniel Noonan
Wayne Ritchie	J. W. Yates
Herbert Strobel	Larry Piercy
Janet Williams	Caroline Gil
Steven Pulliam	

Guests:

John Lowry	Bob Wilson
Garry Beach	Brian Bottom
Bob Cadle	Lee Poore
David Hibbard	Norma Epley

Minutes of the November 11, 2001 meeting were approved with no changes.

- **Old Business**

Pedestrian Safety Issues
Bob Cadle presented the pedestrian safety issues discussed at the recent General Safety Committee meeting. The GSC will write a memo addressing the Cooper Drive issue and the Seaton Center 4-way stop sign to Ben Carr.

Draft Lab Standards
A revised draft of the Laboratory Standards was presented and discussed. The committee approved the revised draft with the removal of the "Exceptions" paragraph.

- **New Business**

EH&S Unit Review
The Committee discussed the unit review and the need for methods to enforce safety compliance. The Committee recommended that the Environmental Health & Safety division compile compliance enforcement data on benchmark institutions to present at the next meeting.

Certificates of Appreciation
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 submit to either Dr. Meier or him the names of individuals they would like to nominate with a general statement regarding his/her contribution to safety.

Mid-year EH&S Division update
The mid-year EH&S division update prepared for Vice President Jack Blanton was provided for review.

The next EH&S Committee meeting is scheduled for March 20, 2002. The meeting will be held at 1:00 p.m. in room 102 of the Mining and Minerals Building unless otherwise notified.

The meeting adjourned at 2:30 p.m.

Environmental Health and Safety Committee
Minutes of March 20, 2002

Members Present:

Mark Meier
Eugene Gaetke
Harry Enoch
Eric Moss
Herbert Strobel
Janet Williams
Nicholas McLetchie
Ralph Christensen
J. W. Yates
Caroline Gil
Judith Lesnaw

Guests:

Ben Carr
John Lowry
Garry Beach
Bob Cadle
David Hibbard
Jacob Karnes
James Boling
Bob Wilson
Lee Poore
Bill Collins
Milford Jarrells
Jack Miller

Mark Meier welcomed the members and visitors.

Annual Safety Awards

Mark Meier presented the annual safety awards to the following individuals in recognition of their outstanding contribution to improved safety at the university:

Lyle Morgan
Joe Crouch
Homer Walter
Jerry Tackett
Michael Jay
Pamela Jacobs
Don Stone
Debra Ross
Kathy Rose
Maelor Davies
Eva Kaplan

Minutes of the January 23, 2002 meeting were approved with no changes.

- **Old Business**

Draft Lab Standards
The Laboratory Standards was received by Ben Carr and forwarded to the Capital Projects Management and Physical Plant divisions.

Pedestrian Safety Issues
Discussed in the General Safety Committee report.

Compliance Enforcement Data
Deferred until a later meeting.

- **New Business**

Authorized Users of Radioactive Materials
The committee approved sending a memo to Michael Nietzel, James Boling and James Holsinger to commend authorized users of radioactive materials who had perfect inspections for the year 2001.

DEEM Handout
The Division of Environmental and Emergency Management's emergency quick reference handout was presented to the committee as an informational item. The Environmental Health and Safety division worked with DEEM to develop the handout. Environmental Health & Safety purchased 5,000 copies of the handout to distribute to the campus community.

Committee Reports

Institutional Biosafety Committee - presented by Judith Lesnaw, committee chair.

General Safety Committee - presented by Bob Cadle on behalf of Tomi Ross, committee chair. The committee will rewrite the memo addressing the University Drive, Seaton Center 4-way stop sign and send through the EH&S Committee to Ben Carr.

Chemical Safety Committee - presented by Caroline Gil, committee chair

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

The meeting adjourned at 2:18 p.m.

Minutes of the
Chemical Safety Committee
FY 2001-02

Chemical Safety Committee
Minutes of September 29, 2001

Attendees:

Harold Burton	Thomas Vanaman
Doris Baker	David Hibbard
Peter Crooks	John Lowry
Peter Huettl	Lee Poore

Guest:
Shirley Cruse

Introduction of members (Chair – Dr. Gill could not attend.)

Minutes from March 28, 2001 meeting approved .

- **Old Business**

Laboratory Injury/Illness Report
Lee Poore provided laboratory injury/illness data. Information should include only injuries requiring attention (Hibbard (DH) said not beyond first aid) Information as reflected in Form 6 database – but all probably not reported.

Comment: *not sure here Lee.*

Tom Vanaman comments low blood sugar doesn't belong here, more serious-not a chemical safety problem. If too much included, people won't read – Peter Crooks

Loss Injury – visiting not employee – same reporting procedure – but medical is different---

Training Initiative
College of Engineering is the concentration area at this time. COE is gathering information on spaces and number of people so we can set up training classes and perform lab safety surveys.
College of Pharmacy and College of Chemistry have already been through initiative.
OHS is now putting information about training requirements on the Office of Research Integrity's web page and in the UK News.
Dr. Vanaman suggested a look at the generic program the College of Medicine does and go through Sandy Akai. LP and DH confirmed working with her and training all the COM research graduate students.
College of Agriculture Training will include PCBs in extension programs – Robinson Forest, etc.
Doris Baker asked about UK Disaster Plan. DH commented that UK has a Emergency Action Plan. Action Item: What is protocol for major accident. LP to comment at next meeting.

Combs Building ventilation
Ventilation of Combs Building update: Next step is to meet with Ed McClure to determine what we can do in-house before bringing outside person. To completely overhaul fan units on roof , electrical probably $10-20 Million
Coordination of this effort is still being organized.
Davis Mills Research Building – also has problems.

Workmen's Compensation Coverage
Workmen's Compensation questions were presented to the Environmental Health and Science (EH&S) Committee. January – to EH&S August 21, 2001 a letter was sent to Bart Miller for clarification on who is covered by Workmen's Compensation insurance.

(DH) We will return to chair of EH&S committee for better clarification.

- **New Business**

UK Model Chemical Plan Approval
All members were requested to review the Model Chemical Hygiene Plan. Hard copies were given out at the meeting. The plan can also be reviewed on the web. Request for printing format from Tom Vanaman. There is a word version on the web but a discussion of doing a PDF document as option. Lee Poore to make some additions and changes and then it will be uploaded after changes approved by committee.
Also take a look at Chemical Inventory Software – review and give feed back on usefulness.
Link: http://www.uky.edu/FiscalAffairs/Environmental/WICS/cheminv.html

Meeting Schedule
Discussed meeting schedule, to continue on fourth (4) Wednesday of every other month at 2:30 to 3:30 in the Combs Research Building. Committee is required to meet four (4) times a year. We try to do that during school so no meetings held in summer. Next meeting dates are November 28, 2001, January 23, 2002, March 27, 2002. All agreed to keep as now scheduled

Shipping of Hazardous Material Training
John Lowry, Manager of EH&S Hazardous Materials Management Office provided information on DOT – IATA. Training for shipping hazardous material according to DOT-IADATA regulations, especially if by air takes a couple hours or a day. Usually done on Thursday afternoon or Friday morning.
FAA is particularly looking at it. A consultant was called in to give training. There was poor turnout for the eight- (8) hour training period. UK has had three (3) unannounced inspections. Fortunately we had trained those people or they had attended training. Person must be certified to ship. Hazardous Materials is training on Tuesday, Wednesday, and Thursday 9 a.m. to 11 a.m. at different locations – exam is given to reinforce instruction and a certificate is presented to the student.
Approximately 120 people have called or emailed about the training so maybe it can be given one time per semester. Action Item: John Lowry will check responsibility and liability of person signing shipping papers.

Discussion
Should this committee review or approve chemicals used at UK? A lot of discussion but there were no conclusions. Does this need to be done? How could it be done.

Adjourned

Chemical Safety Committee
Minutes of November 28, 2001

Attendees:

Harold Burton	David Atwood
Todd Porter	John Lowry
Peter Huettl	Lee Poore

Meeting began at 2:35 pm without a quorum. September 29, 2001, meeting minutes were reviewed but could not be approved. The meeting continued but agenda items were either deferred or discussed for general information.

- **Old Business**

Workers Compensation
David Hibbard will discuss the information he has obtained about the clarification on worker's compensation coverage memo.

Shipping Hazardous Materials
John Lowry will report on liability for certified shippers of hazardous materials.

Major Accidents
Lee Poore to give information about protocol for major accident.

- **New Business**

Patriot Act
John Lowry to discussed implications of the new Patriot Act. The act is an enhancement of the Antiterrorism Act. Bush passed the act on October 26. Title 8 is the specific section discussing the possession of dangerous biological agents. In the future, persons using these listed chemicals will have to be approved and background checks performed. Who is going to do the background checks is a question that is unresolved. All these biologicals would be in a BL-3 lab or higher.

There may be issues that arise about security of chemicals on campus. There is no central approval

Changes to UK Model Chemical Hygiene Plan
Pete Huettl brought his changes marked in a book.
David Atwood suggested these pages be sent out.
Pete Huettl suggested that some important information that researchers would like to know. This stresses the importance of the review process and even extensive changes to this program if neccessary

Adjourn

Chemical Safety Committee
Minutes of January 30, 2002

Attendees:

Harold Burton	David Atwood
Todd Porter	John Lowry
Peter Huettl	Lee Poore
D. K. St. Claire	Michael Barrett
Tom Vanaman	Caroline Gil
Doris Baker	

Motion to approve meeting minutes for September and November- seconded and approved unanimously.

- **Old Business**

Report from EHS Committee
Caroline Gil went over issues that were covered at the EHS meeting. They included:
Pedestrian walkways on campus
Lab classification draft- included in minutes
EHS unit review
Major finding was there was no accountability when deficiencies are found.
Call for name for EHS certificates of appreciation

Changes to UK Model Chemical Hygiene Plan
Lee Poore-revisions are still being worked on. Committee suggestions can still be added.

Laboratory injury and illness report
Most injuries appear to be with students. Vanaman made a suggestion that possibly review what training chemistry students are getting and possibly have them into lab safety online training.

Training Initiative
Lee Poore reported on the training for College of Engineering was completed and the Department of Physics and Astronomy is scheduled later today.
Lab survey schedule was handed out at meeting.
Combs hoods are still having problems. This problem was very apparent by the recent incident that caused a fan on the roof to blow a circuit and a positive pressure resulted in the hood system. This is a very serious problem due to the nature of chemicals used in fume hoods. Also, the alarms did not warn users there was a problem.
Motion: Dr. Vanaman made a motion that a request be made to Harry Enoch to address this problem. Motion was seconded.

- **New Business**

Online Training
Dr. Huettl brought examples of another university's online DOT/IATA training. John Lowry indicated that his department did not feel they could provide and opportunity for question and the books that are needed to fill out a manifest. John Lowry did indicate they were looking at this option for the 3-year refresher.

Adjourn

Chemical Safety Committee
Minutes of March 27, 2002

Attendees:

Harold Burton	David Atwood	David Hibbard
Todd Porter	John Lowry	Caroline Gil - Chair
Peter Huettl	Lee Poore	Tom Vanaman
D. K. St. Claire	Michael Barrett	

Motion to approve meeting minutes for January- seconded and approved unanimously.

- **Old Business**

UK Model Chemical Hygiene Plan
Lee Poore provided revisions for discussion. Additional changes were suggested for page 8 to indicate that PPD checks the showers/eyewashes monthly and not the lab user. Also discussed was verifying with PPD about having tags on units that indicate check date. Motion was made to approve CHP with noted additional changes. Motion seconded and approved unanimously.

Laboratory Injury and Illness Report
Last meeting it was suggested that the committee take a look at safety training for chemistry students because the report indicated organic students had a high incident rate of injury. Dr. Atwood brought information that he gives his students prior to working in the lab. He said there is nothing that firmly states what safety training needs to be conducted prior to students working in the lab. Lee Poore will review the idea of putting together a specific lab safety class for chemistry students. The monthly lab safety class and the online training are available and have been utilized by this group in the past.

Combs Fume Hoods
David Hibbard presented data that indicated that a majority of the fume hoods are and have not been performing effectively. The details that were learned from a meeting with MCPPD were shared with the committee. The committee felt the design of the ventilation system was such that it was not fail-safe and needed immediate attention. A motion was made and seconded to have the committee's chair send a letter to the Director of EH&S, Harry Enoch, to bring this issue to his attention for action.

Training Initiative
Nothing new to report.

Lab Surveys
Pharmacy and Dentistry had been performed since last meeting and major findings in Pharmacy had been storage issues of some chemical. Teri Strickland has been working with PIs to correct these problems in Pharmacy.

- **New Business**

Chemical Theft
The committee was given information about the theft of chemicals from Chemistry. Dr. Atwood indicated that about $2000 worth of chemicals and equipment had been taken. There was a discussion that perhaps the chemical inventory that is listed on the internet should be password protected and fire-walled for only UK user access.

Recognition of Members
Caroline Gil thanked all the members of the committee for their work this year, in particular Michael Barrett's contributions, since he will be rolling off the committee this year.

Adjourn

Minutes of the
General Safety Committee
FY 2001-02

General Safety Committee
Minutes of September 19, 2001

Present:

Tomi Ross	**David Hoke**	**Greg Copley**
Bob Cadle	**David Hibbard**	**Brian Bottom**
G. Greg Williamson	**Betsy Mahoney**	**Jim Wims**
Gerald Thomas	**Vince Austin**	**John Sampson**
Guest: Shirley Cruse	**Mike Blackard**	**Gus Miller**

Minutes from the March 27, 2001, meeting were read and approved.

- **Old Business:**

Pedestrian Safety Issues
Sidewalk diversion or pedestrian safety issue. Medical center bus shuttle service creates a parking and visibility issue for pedestrians at the Stadium Parking area.

Solution #1) Discussion of cutting into the sidewalk so the bus can pull over for visibility of other buses lined up and any pedestrians in the area. This creates issue then of stumbling over the curb cut by pedestrians, wheelchair problems and large crowds exiting the stadium or the safety issue of football fans on game days.

Solution #2) placing a rail in front of the bus stop so people assemble there while waiting for the bus. Proposed length of rail discussed – approximately ten (10) feet. It was noted that the drop-off area at the KY Clinic had similar problem and they solved it with a 3 to 4 foot railing. This solution would be cheaper.

Other discussion was bus hazard lights when they first stop. If more than one bus in line, additional warnings? Bus signage on building. Repaint the crosswalk (Tomi Ross made last).

Fire Marshal's Report
Report of the Fire at the Administration Building and a fire marshal report were given by Greg Williamson.

Specifically noted was the lack of access for the fire trucks and equipment and employees lacking attention to the alarms, did not leave or tried to return to the burning building. Stairwells were not constructed to withstand the debris falling but the enclosed elevator shaft was properly constructed and still standing after the fire. Need to partition off on White Hall classroom building or a better plan needs to go to the Fire Department

Tomi asked if a recommendation was coming to us or somewhere else. Greg W said it has gone to others.

Presently, we sprinkle every building that we build. Most are constructed better and several old buildings need updating. GW says up to us and police department to play a part. Noted brick pavers will not support fire trucks, there are no access codes now, you do get credit for 30 feet open perimeter, can build bigger but there is no requirement.

Discussions on tunnels and vaults especially at the hospital and Medical Center. Anyone building a tunnel should have an across-the-board design for supporting heavy equipment (such as fire trucks). Question: Was University Architect involved on new building? GW said yes to layout and access and the FM Office is in that loop.

Committee agreed that chair, Tomi Ross, would draft a letter to present to the EH&S committee meeting same afternoon. Discussion that our charter is to the EH&S committee and recommendations go to the Vice President and then to the President through the EH&S Committee.

Discussion of Injury and Illness
Handout provided and shows majority of UK accidents are falls, which follows the nation's top areas of injury; i.e., slips/trips/falls, followed by strains from lifting. Needle sticks are the highest number of injuries for the Med Center and Hospital. The hospital safety officer reports the hospital is keeping a sharps log, recording needle sticks; and other sharps incidents.

Back strains are another injury trend which happens to be one of the high expense worker's comp loss items. A pilot program has been under way at the Main Campus Physical Plant Custodial Department. We are doing training for lifting, etc and as a result, muscular sprains have decreased and we are doing refinements to the training and plan to include more groups.

If departments want information on accidents at their area, please e-mail OH&S (Bob Cadle) and a copy of the quarterly report will be sent to you.

- **New Business**

Permits for Hot Work
A recommended hot work permit and a flow chart were provided to the committee. Administration building fire was started by soldering copper on the exterior fasciae. This operation heated the 100-year-old wooden rafters in the attic. To prevent recurrence of this type of loss, it is a good idea to provide a hot work permit, one for our UK work and for outside contractors. Contractors should be required to furnish a copy of their plan for hot work. OSHA issue, yes for our employees. NFPA (National Fire Protection Association) requirement for contract work. Discuss the issue of hot work with the contractors at beginning of project. If work includes hot work a hot work process is required.

Get in on contract work before project started and could go in with special conditions. Recommended that Gerald Thomas needs to look at the CAER, Housing, and Agriculture should address for their departments.

How to get compliance, make them show the permit while on site, others notice hot work, call EH&S to report; TR those that do inspections can do at progress meeting, weekly or biweekly for follow up for accountability. END Discussion

Shipping Hazardous Goods Guidelines

DOT air shipping and proper labeling of hazardous goods requirements overview presented by Hazardous Material Management. Mike Blackard gave information on how the packages and types of packing materials are allowed on airplanes. If infectious it must be properly marked or it is returned. Labs have had instance where FedEx has refused to take a package. About 110 people have requested and are now waiting for training. There are fines for label, packaging, and identifying contents. Toyota was fined $350,000 for paint and shock absorbers. Univ. of Nebraska was fined because no one was trained.

Dangerous Goods Manifest must be properly filled out. Infectious substance is a lot of what we ship. We get at least 2 calls per day. Dry Ice is a dangerous material in air shipment. There are nine (9) classes of hazards: explosives, flammable liquids, solids, oxidizer, peroxides, radiation, corrosion, etc? FAA at Stillwell, Atlanta to do the training, has approved Mike Blackard. UPS won't take chemicals, Airborne and FedEx only ones that take all. UPS will not, US Mail a few but it defers back to DOT performance packaging. Lithium battery must be included as hazardous goods.

We are trying to get UK Stores to stock air packaging that is compliant with DOT and IATA . We have provided three names of vendors to them, it is about $22.50, and infectious has tape and stickers, a good turnkey system.

Meeting Times

Bob Cadle asked if mornings was best – YES was answer and the committee agreed it could meet Monday, Tuesday, or Thursday at 9 AM, but only 1PM to 3PM on Wednesday.

Pedestrian Issues

Stop or slow sign needed for the area of Complex Drive and University Drive. This intersection is dangerous for pedestrians and especially students crossing from medical center area or main campus to the dormitories and the Seaton Center. Cars are traveling too fast. Issue of the sign being taken down due to football season discussed.

Adjourn

General Safety Committee
Minutes of November 29, 2001

Attending

Tomi Ross, Hospital
David Hoke, Wellness
Gerald Thomas, CAER
Bob Wilson, Radiation Safety
Garry Beach, UK Fire Marshal
David Hibbard, OH&S
John Sampson, HR
Kwaku Addo, NFS
Jim Wims, Residence Life
Vince Austin, LCC
Gus Miller, UKMC

Approval of September 19, 2001 minutes

- **Old Business**

Pedestrian Safety
Tomi Ross has submitted a letter to Joseph Frye, Director of Medical Center Safety, Security, and Parking, asking him to investigate the feasibility of recommendations made to improve the safety of passengers disembarking from the shuttle buses. Mr. Frye will submit a response cost estimates and/or alternate recommendations prior to the next meeting.

Vince Austin asked for follow up on the request for a crosswalk on Cooper Drive between the Seaton Center and LCC. Gus Miller reminded the group that Cooper Drive is a city street. He indicated, however, that the city had allowed such a crosswalk to be added across Harrodsburg Road by the Sullivan College. John Sampson suggested that we also recommend that additional lighting be installed along Cooper Drive at this location.

Tomi Ross will submit these recommendations to the Environmental Health and Safety Committee at its next meeting.

Fire Marshal's Report
Garry Beach provided an overview of recent activities from the Fire Marshal's office, including:

Inspection of all campus vending areas for obstructions, electrical hazards, or other hazards.
New fire prevention program aimed at campus married and apartment housing.
Review of fire and evacuation plans for Patterson Office Tower. A drill has been scheduled.
Sprinkler mapping project
Improvement in sprinkler systems in residence halls
Development of a training tape on fire prevention for new employee orientation

Since the last meeting, two fires have occurred on the UK campus.
Cooling Plant #2—A fire in the electrical equipment was extinguished using portable fire extinguishers. The building is fully sprinklered, but the heat from the fire was not sufficient to activate the system.

Parking Structure #3—A vehicle fire in the KY Clinic structure extensively damaged three vehicles. The fire department extinguished the fire.

Injury/Illness Statistics
David Hibbard will distribute this data with the minutes.

- **New Business**

Pedestrian Safety
John Sampson asked whether there were specific criteria for when "chirping" crossing signals, designed for the visually impaired, should be installed at crosswalks. He expressed specific concern about the crosswalk at Virginia Avenue and Limestone. Tomi Ross will contact Jake Karnes to determine if such criteria exists. She will recommend that chirping mechanisms to guide the visually impaired be installed at all future or updated crosswalks.

Gus Miller announced that work is proceeding with realignment of the intersection of State Street and Limestone.

Adjourn

General Safety Committee
Minutes of January 17, 2002

Present:

Jim Wims	Woody Bottom
Gerald Thomas	David Hibbard
Bart Miller	David Hoke
Betsy Mahoney	Bob Wilson
Gus Miller	Bob Cadle

The minutes of the November 29, 2000 meeting were approved.

- **Old Business**

Medical Center Bus Loading Area
Gus Miller stated that a new bus loading area is to be constructed in 2002. Chair previously sent Memorandum to Director of Medical Center Safety, Security for awareness and solicitation for response to committee's recommendations. No known response yet received. Chair to follow-up to ensure recommendations are considered for incorporation into planned construction project.

Cross-walk for Cooper to LCC
Committee consensus to drop issue after input from LCC and other affected parties

Stop sign at intersection of Complex Drive and University Drive
Committee consensus that stops signs need to be installed at Complex and University intersection. Chair to write letter to EH&S Committee Chair with recommendations and request for action.

Fire Marshal's Report
Fire Prevention Training programs conducted for faculty and staff at LCC and UK College of Engineering)

Scheduled corridor/stairwell evaluation for all Med Ctr buildings. Will be completed in June 2002.

Patterson Office Tower
Have posted evacuation plans
Training faculty and staff (today)
Will conduct corridor/stairwell evaluation next week
Will schedule the first organized fire drill within the next month

Have completed fire prevention training tape

Have reviewed sprinkler drawings for Keeneland, Blazer, and Kirwan Low Rises

Sprinkler projects for Blanding 1 and 2 are nearing completion

Sprinkler projects for Blanding 3 and 4 have begun

Smoke detector projects for Blanding and Kirwan Towers have started

Most significant fire incident occurred in Kirwan 1. Three football players have been charged with arson. Minor physical damage, no injuries.

- **New Business**

Stop Sign on Service Road
Bob Cadle mentioned a pedestrian safety issue involving a blind corner involving traffic and pedestrians located on the SW corner of the Kelly Building. Pedestrians utilize the road for travel and oncoming traffic cannot see pedestrians. Bob Cadle to further investigate and bring situation status to next meeting for formulating recommendations

Absence of sidewalk adjacent to VA Drive behind Animal Pathology
Condition presents pedestrian safety issue. Committee consensus to have Chair write letter to EH&S Committee Chair with recommendations and request for action.

"Preventable Injuries at UK" – David Hoke

See Attached file

Preventable Injuries at UK.ppt...

General Safety Committee
Minutes of March 15, 2002

Present:

Jim Wims	Angela Renick
Kwaku Addo	David Hibbard
John Sampson	David Hoke
Betsy Mahoney	Bob Wilson
Tomi Ross	Bob Cadle
Greg Copley	

The minutes of the January 17, 2002 meeting were approved.

- **Old Business**

Stop sign at intersection of Complex Drive and University Drive
Previous committee consensus that stops signs need to be installed at Complex and University intersection. Chair presented draft letter to be forwarded to EH&S Committee Chair with recommendations and request for action. Minor Modifications made to documents.

Fire Marshal's Report - Bob Cadle

Injury/Illness Statistics – Bob Cadle

What's New with OSHA – Bob Cadle
Overview on OSHA's new recordkeeping requirements

- **New Business**

Stop Sign on Service Road – initial discussion at 17JAN02 meeting
Bob Cadle revisited a pedestrian safety issue involving a blind corner involving traffic and pedestrians located on the SW corner of the Kelly Building. Pedestrians utilize the road for travel and oncoming traffic cannot see pedestrians. Committee consensus to have Chair write letter to EH&S Committee Chair with recommendations and request for action.

Absence of sidewalk adjacent to VA Drive behind Animal Pathology –
initial discussion at 17JAN02 meeting
Condition presents pedestrian safety issue. Committee consensus to have Chair write letter to EH&S Committee Chair with recommendations and request for action.

Recognition of members rolling off
The committee recognized the following members and expressed appreciation for their participation and efforts:

Tomi Ross
Ben Crutcher
David Hoke
Wendy Katz

Looking forward
David Hibbard asked the committee to reflect on past accomplishments and to think about ways to improve the function of the committee.

Adjourn

Minutes of the
Institutional Biosafety Committee
FY 2001-02

Institutional Biosafety Committee
Minutes of July 11, 2001

Members Present:
Kelly Breeding
Arthur Hunt
Charles Issel
Craig Jordan
Judith Lesnaw
John Lowry
Robert Perry
Susan Straley
Creighton J. Trahan
Bruce Well

Protocol Review and Action Taken:

1. Project Title: Biosynthesis of Polyamines and Related Alkaloids in Grasses and Endophytes
   Principal Investigator: **Christopher Schardl**

Comments:
The committee determined that the protocol was exempt. However, they would like the P.I. to use biohazard signage at lab entrance.

Action: Mr. Breeding moved and Dr. Perry seconded that the registration be approved as exempt. The motion carried unanimously.

2. Project Title: CAREER: Development Role of the MADS_Domain Protein AGL15 During Embryogenesis
   Principal Investigator: **Sharyn E. Perry**

Comments:
Page Two under host and vectors to be used, provide to the committee the strain of agrobacterium used and its properties.

On your outline of safety precautions taken you have indicated bleaching. The IBC recommends exposure to a freshly prepared 10% bleach solution for 10 minutes minimum.

Action: Dr. Trahan moved and Dr Issell seconded that the registration be approved **provisionally** as **exempt**. The motion carried unanimously. The provisions are the two modifications listed above.

3. Project Title: Role of Gluathione Reductase in Macrophage Death
   Principal Investigator: **Reto Asmis**

Comments:
On both the recombinant DNA registration and infectious agent form, you have indicated that biohazards are not identified on the signs. They should be identified.

Provide a copy of Nancy Webb's VA protocol approval and the lab site in VA were you would be performing your work.

Provide information on how the virus will be transported from the VA Medical Center to Sanders Brown.

On the SOP attachments please change the following: Under safety precautions item #2, reference to bleach should be changed to: "will be done with a freshly prepared 10% bleach solution for a minimum of 10 minutes".

Your spill and work decontamination SOP item #2 should be changed to state that the area will be disinfected with a freshly prepared 10% bleach solution for a minimum of 10 minutes. Please do this throughout the SOP attachments.

Action: Dr. Jordan moved and Dr. Perry seconded that the registration be **provisionally approved**. The motion carried unanimously. The provisions are the items listed above.

4. Project Title: Identification of Plant Genes that Confer Tolerance to Oxidative Stress
   Principal Investigator: **Deane L. Falcone**

Comments:
A detailed project description should be provided to enable the committee to know what is to be done.

Please identify the name of the strain of Agrobacterium to be used.

On your page of safety practice it is indicated that all labware or glassware is disinfected with 40% bleach (paragraph 5), please change this to "10% freshly prepared bleach solution for a minimum of 10 minutes", also the last paragraph for spills should be changed as well.

Action: Dr. Perry moved and Dr. Issel seconded that the registration be **approved provisionally** as **exempt**. The motion carried unanimously. The provisions are the modifications listed above.

5. Project Title: Transcription Factor Isoform-Specific Regulation of Hormone Gene Expression
   Principal Investigator: **Scott E. Diamond**

Comments:
Project summary submitted was unclear, provide to the committee where the cells you will be using are coming from.

Clarify how and what source will be used for DNA cells. Do you already have the DNA or will animals be involved"

How will you use the mammilian cells?

On the safety and decontamination protocol it is indicated that work surfaces will be cleaned with either a bleach solution, 70% ethanol or Virex. It is the recommendation of the IBC that a freshly prepared solution of 10% bleach be used to clean the area for a least 10 minutes. If you use Virex please provide the safety data sheet.

Action: Dr. Issel moved and Mr. Breeding seconded that the registration be **provisionally approved**. The motion carried unanimously. The provisions are the items listed above.

6. Project Title: Factors Affecting the Interaction Between a Cyclin Dependent Kinase and It's Inhibitor
   Principal Investigator: **Michael Mendenhall**

Comments:
On the recombinant DNA form page twq under section "Hosts and Vectors" the strain of Ecoli (i.e. K12) should be specified.

It should be indicated that BL1 guidelines would be followed.

On the safety precautions it should be indicated that a freshly prepared 10% bleach solution should be used to clean areas and to clean up spills.

Action: Dr. Perry moved and Dr. Trahan that the registration be **approved provisionally** as **exempt**. The motion carried unanimously. The provisions are the modifications listed above.

Institutional Biosafety Committee
Minutes of August 14, 2001

Members Present:
Thomas Chambers
Arthur Hunt
Charles Issel
Craig Jordan
Judith Lesnaw
John Lowry
Robert Perry
Susan Straley
Creighton Trahan
Jack Hiatt

Protocol Review and Action Taken:

1. Project Title: Role of mismatch repair in hematological diseases
   Principal Investigator: **Guo-Min Li**

Comments:
1). From where will the PI obtain the virus?

2). How will the virus be prepared? Will the virus be grown and purified in the PI's lab.

3). What protocols for handling/purifying the virus will be employed?

4). Where will the work be conducted? Here provide specific sites for all procedures.

5). The PI states that the work will be conducted in a "fume hood". Is this statement correct? The virus should be handled in a Biosafety cabinet.

6). Are HSRB 124 and 127 suitably equipped for the various procedures? The facility should be inspected by the Biosafety officer.

7). The PI should provide a description of safety precautions to be followed.

8). The PI should provide a description of procedures for disposal of material.

Action: The committee requested that the information detailed above be provided for review at the next meeting.

2. Project Title: Molecular Genetics of the Interaction between corn and corn stalk rot fungi
   Principal Investigator: **Lisa J. Vaillancourt**

Comments:
1). The PI should provide a protocol for decontaminating spills.

2). The PI states that materials will be decontaminated by autoclaving 30 min. The committee commented that the length of time is dependent on the size of the load, and upon the specific autoclave used. The committee requested that the PI conduct an experiment to validate their autoclave protocol. This could be accomplished be burying a biological indicator (eg. Steris, available from Fisher) in the center of the load. This experiment should be conducted using the autoclave that will be employed in the project.

Action: Dr. Hunt moved and Dr. Chambers seconded a motion to PR0VISIONALLY declare the project EXEMPT. The motion was passed unanimously. The two provisions are that the PI: 1). Provide a spill protocol, 2). Validate the autoclave protocol.

3. Project Title: Sequence Analysis and genomic DNA fragment analysis of cDNAs differentially expressed in mutants of Arabidopsis thaliana, Lycopersicon esculentum and Zea mays affected in aspects of seed germination
   Principal Investigator: **Bruce Downie**

Comments: The committee requested that the PI provide the following modifications to the registration form:

1) a general project summary

2) under the spill protocol, change 70% ethanol to 10% bleach for 10 min.

3) in the description of the transport of materials, the PI should specify a leak-proof container with a lid.

Action: Dr. Issel moved and Dr Perry seconded that the registration be approved **provisionally** as **exempt**. The motion carried unanimously. The provisions are the three modifications listed above.

4. Project Title: EIF-4E and Lung Cancer Metastasis
   Principal Investigator: **Stephen Zimmer**

Comments: The committee considered the hand written registration forms submitted by the PI to be difficult to decipher and incomplete. List of employees, project summary, general protocols, and safety protocols were missing. The relationship of the second infectious agent registration form submitted to the project was not clear.

The committee pointed out that the retrovirus described in the form is amphotropic and therefore infectious for humans.

Action: The committee requested that the PI resubmit the registration forms in a typed format, and that he clarify and provide the missing information.

5. Project Title: Architecture of the muscle cytoskeleton: Analysis of the role of talin isoforms
   Principal Investigator: **Richard O. McCann**

Comments: The committee requested that the following missing information and modifications be provided:

A) The certification of the Biosafety hood has expired and should be renewed.

B) The PI should get a copy of the current safety book.

C) A project summary should be provided.

D) A completed recombinant DNA registration form should be submitted.

E) Item 3 under use/disposal of cell lines etc should specify 10% **final concentration** of bleach.

F) Decontamination should involve 10 min exposure to 10% bleach prior to disposal.

G) The committee questioned whether the primary cardiomyocyets are obtained from eggs prior to hatching, or from hatched eggs. If hatched eggs are employed, the PI will additionally require animal care aapproval.

Action: The committee postponed action until the information listed above is provided.

6. Project Title: Live cell imaging to investigate cardiogenesis in whole embryo cultures
   Principal Investigator: **Carole Moncman**

Comments: The committee requested that the following missing information and modifications be provided:

1) The certification of the Biosafety hood will soon expire and should be renewed.

2) The PI should get a copy of the current safety book.

3) A completed recombinant DNA registration form should be submitted.

4) Item 3 under use/disposal of cell lines etc should specify 10% **final concentration** of bleach.

5) Decontamination should involve 10 min exposure to 10% bleach prior to disposal.

6) The committee questioned whether the primary cardiomyocyets are obtained from eggs prior to hatching, or from hatched eggs. If hatched eggs are employed, the PI will additionally require animal care approval.

Action: The committee postponed action until the information listed above is provided.

7. Project Title: Regulation of LDL receptor-mediated uptake of M-CSF
   Principal Investigator: **Steven R. Post**

Comments: The committee requests that the PI replace the use of 70% ethanol with 10% bleach for 10 min in the safety protocols.

Action: Dr. Chambers moved and Dr. Trahan seconded provisional approval as exempt. The motion carried unanimously. The sole provision was correction of the decontaminant in the safety protocols as specified above.

8. Project Title: Host Responses to Trichomonoiasis
   Principal Investigator: **Beth Garvey**

Comments: The protocol for sonication should be detailed. Aerosols should be avoided. Use of a cup attachment is recommended. If a probe is to be used the potential for infectious aerosols should be minimized by shrouding the probe in a disenfectant soaked pad. The procedure should be carried out in a Biosafety cabinet. Gloves and goggles should be worn.

The effectiveness of the sonication procedure should be validated by microscopy and expressed as the percentage of disrupted cells.

The sonicated samples should be treated as potentially infectious.

The PI should contact the CDC for acceptable procedures, additional safety precautions following sonication, and a recommendation regarding whether the ELISA can be performed on the open bench or needs to be done in a Biosafety hood. The PI should forward the recommendations to our local IBC.

In Section II: the specified host range should be changed from “world wide” to “human”; virulence data should be provided

Action: The committee postponed action until the requested information is available.

9. Modification Request: Addendum to B990914104
   Principal Investigator: **Ginell R. Post**

Comments: The committee pointed out that all the genes to be added to the approved protocol are oncogenes, and asked whether the approved protocol included oncogenes. If it did, then the addendum is to be approved.

Action: Action was postponed until the original protocol was examined for the requested information.

10. Project Title: Chloroplast Localized N-terminal Protein Processing by Peptide Deformylase
Principal Investigator: **Lynnette Dirk**

Comments: In response to an email from Dr. Houtz regarding this registration, the committee suggested that Dr. Dirk complete and submit the registration forms, sign as the responsible PI, and state that the site of the experiments will be Dr. Houtz.

The committee suggested that we prepare guidelines for reporting changes in personnel listed in approved projects. A simple form is recommended.

Dr. Bob Perry reported that the test of the new P3 facility in the Health Research Building failed; the building smelled of spearmint.

Institutional Biosafety Committee
Minutes of October 3, 2001

Members present:
Judith Lesnaw
Kelly Breeding
Thomas Chambers
Arthur Hunt
Charles Issel
Natasha Jones
Craig Jordan
Peter Nagy
Anthony Sinai
Martin Evans
Creighton Trahan
John Q. Lowry

Members Absent:
Jack Hiatt
Brian Rymond
Susan Straley
Edward Hirschowitz

The agenda was modified to include review of a protocol from Dr. Richard Greenberg that was received 10/2/01 . Supplementary materials from Merck were delivered to Dr. Lesnaw's office, the latest as of Tuesday 2 October. A safety protocol was handed to me by Dr. Greenberg at the meeting. Because Dr. Evans invited Dr. Greenberg to attend the meeting, this protocol was placed first on the agenda.

Protocol Review and Action Taken:

1. Project Title: Protocol 008-02: Study to Evaluate the Safety, Tolerability, and Immunogenicity of the HIV-1 Gag DNA Vaccine Formulated with PBS or with Aluminum Phosphate Followed by AD5 HIV Gag Vaccine in a Prime Boost Regimen
   Principal Investigator: **Dr. Richard Greenberg**

Comments:

1). The committee requested information concerning the safety of the room (CC-440) in which Dr. Greenberg proposed to administer the vaccines.

Dr. Greenberg explained that the room is one of his research labs and is low in traffic, locked, accessible only to his staff and himself, and therefore secure. He stated that no housekeeping staff enter the room.

The committee asked whether any experiments being conducted in the room could be of potential harm to the patient.

Dr. Greenberg stated that only cell lines were incubated in the room and that there was no danger to any patient.

The committee requested that John Lowry inspect the lab and inventory cell lines and experiments.

2). The committee requested that the description of the disposal of waste generated in the protocol be amended as follows: Syringes and needles will be placed in puncture-proof biohazard red waste containers, other materials will be placed in biohazard red waste containers. The containers should be clearly labeled. The PI will fill out a Hazardous Waste Disposal/Profile (may be obtained from HMM by calling 3-6280) and fax to 3-6274 for waste pickup. The waste should be secured in CC-440 until pickup which will be within 24 hrs. of the notification.

3). A complete description of the Adenovirus vector must be added to the Recombinant DNA Registration Form.

4). On the first page of the Recombinant DNA Registration Form the PI should check "yes" for expression of foreign protein and identify the protein to be expressed in the patient.

5). The section on safety precautions should be modified and expanded. Spills should be decontaminated with 10% bleach (final concentration 0.55% sodium hypochlorite) prepared fresh daily. Materials should be exposed for a minimum of 10 minutes. Ethanol is not effective.

Routine decontamination of the work area should be described.

A section covering occupational health and safety procedures including accident reporting and accidental needle-stick procedures should be included.

6). All staff involved in the protocol should be trained in the proper handling of the material. This includes nurses, technical staff, and housekeeping if appropriate. Dr. Martin Evans has agreed to provide this training. The schedule of training sessions and the names of all who have successfully completed training should be reported to the Biosafety officer (John Lowry). The PI should state this policy in his registration material.

7). **ANY** adverse event experienced by any patient enrolled in the protocol must be reported **IMMEDIATELY** to the local Institutional Biosafety Committee, Insitutitional Review Board, Office for Human Research Protection (if applicable), and NIH/OBA, followed by the submission of a written report filed with each group (**per NIH Guidelines for Research Involving Recombinant DNA Molecules, Appendix M-I-C-F, serious adverse event report**). The PI should state this policy in his registration material. The PI should include the policy he

described for taking specimens of any enrolled patients who experience symptoms of respiratory illness, and sending them to Merc for analysis.

8). Should provide details in the event that a patient might end up in emergency room.

9). Infection Control (Marty Evans) should be contacted when the first patient is enrolled so that personnel from that office may observe the administration of the drug.

Institutional Biosafety Committee
Minutes of December 5, 2001

Members Present:
Judith Lesnaw
Kelly Breeding
Jack Hiatt
Arthur Hunt
Craig Jordan
John Q. Lowry
Peter Nagy
Anthony Sinai
Susan Straley

Members Absent:
Thomas Chambers
Charles Issel
Brian Rymond
Creighton Trahan

Protocol Review and Action Taken:

1. Project Title: Gender Difference in Nevirapine Clearance
   Principal Investigator: **Igho Ofotokun**

Comments:

1. Information on disposal of sharps should be provided..
2. Information on storage of samples prior to shipment must be provided.
3. On page two of the form the biosafety level of project should be list as BL2, not none of the above.
4. Preparation of blood sample must be done under BL2 conditions (e.g. in a biosafety cabinet).
5. Page two of the form should be completed with biological safety cabinet certification date, also the room number where biosafety cabinet is located needs to be provided.
6. The name of the person who will be spinning the blood and where the spinning will take place must be listed in application

Action: Dr. Straley moved and Dr. Nagy seconded that the registration be **provisionally approved**. The motion carried unanimously. The provisions are the items listed above.

2. Project Title: Testing of ADI-PEG20 in Humans with Hepatocellular Carcinoma or Metastatic Melanoma
   Principal Investigator: **Mike Clark**

Comments:
On page two of the infectious agent registration form Section II should be completed regarding Biosafety Level (should be BL2). Also please provide certification information on biosafety cabinet.

On page one under employees conduction experiments please add your name to the list.

Action: Dr. Sinai moved and Mr. Breeding seconded that the registration be **provisionally approved**. The motion carried unanimously. The provisions are the items listed above.

3. Project Title: Analysis of Iron-Regulated Genes in Porphyromonas Gingivalis
   Principal Investigators: **Karen Novak/Lakshmyya Kesavalu**

Comments:
On the safety precautions section it should be specified that decontamination will be done with a 10% bleach solution for a minimum of 10 minutes.

Action: Dr. Perry moved and Dr. Nagi seconded that the registration be **provisionally approved**. The motion carried unanimously. The provisions are the items listed above.

4. Project Title: Molecular Analysis of a Potential Transport Operon in Act.actinomycetemcomitans
   Principal Investigator: **Karen Novak**

Comments:

1. Page two of the infectious agent registration form section "this agent is a" Indigenous to Kentucky should be checked.

2. The safety precautions should specify that decontamination will be done with a 10% bleach solution for a minimum of 10 minutes.

Action: Dr. Perry moved and Dr. Nagi seconded that the registration be **provisionally approved**. The motion carried unanimously. The provisions are the items listed above.

5. Project Title: Smallpox Vaccine (Dryvax) Use with Alternate Diluent"& "A Phase 1 Study of Safety, Pock Lesion Formation (Take Rate), and Immunogenicity of a Cell-cultured Smallpox Vaccine (CCSV) Compared to a Calf Lymph Vaccine (Dryvax)
   Principal Investigator: **Richard Greenberg**

Comments:

1). The committee requested information concerning the safety of room CC-440 in which Dr. Greenberg proposed to administer the vaccines.

Dr. Greenberg explained that the room is one of his research labs and is low in traffic, locked, accessible only to his staff and himself, and therefore secure. He stated that no housekeeping staff enters the room.

The committee asked whether any experiments being conducted in the room could be of potential harm to the patient

Dr. Greenberg stated that only cell lines were incubated in the room and that there was no danger to any patient. A hood to prepare media and cell cultures is in the room also.

These points must be clearly stated in the registration forms.

The committee requested that John Lowry inspect the lab and inventory cell lines and experiments to ensure the safety of the room for patients in the proposed protocol.

2). The committee requested that the description of the disposal of waste generated in the protocol be amended as follows: Syringes and needles will be placed in puncture-proof biohazard red waste containers, other materials will be placed in biohazard red waste containers. The containers should be clearly labeled. The PI will fill out a Hazardous Waste Disposal/Profile (may be obtained from HMM by calling 3-6280) and fax to 3-6274 for waste pickup. The waste should be secured in CC-440 until pickup, which will be within 24 hrs. of the notification.

3) A complete description of the Adenovirus vector must be added to the Recombinant DNA Registration Form.

4) On the first page of the Recombinant DNA Registration Form the PI should check "yes" for expression of foreign protein and identify the protein(s) to be expressed in the patient.

5) The section on safety precautions should be modified and expanded. Spills should be decontaminated with 10% bleach (final concentration 0.55% sodium hypochlorite) prepared fresh daily. Materials should be exposed for a minimum of 10 minutes. Ethanol is not effective. Routine decontamination of the work area should be described.

P. . A section covering occupational health and safety procedures including accident reporting and accidental needle-stick procedures must be included. The PI must inform Employee Health in writing about his protocol and what they are supposed to do if one of his health care workers becomes ill and reports to their clinic. A copy of this written memo must be appended to the registration forms.

7) All staff involved in the protocol should be trained in the proper handling of the material. This includes nurses, technical staff, and housekeeping if appropriate. Dr. Martin Evans has agreed to provide this training. The schedule of training sessions and the names of all who have successfully completed training should be reported to the Biosafety officer (John Lowry). The PI should state this policy in his registration material.

8) To be in compliance with current **NIH Guidelines for Research Involving Recombinant DNA Molecules, Appendix M-I-C-F, serious adverse event report, ANY** adverse event experienced by any patient enrolled in the protocol must be reported **IMMEDIATELY** to the local Institutional Biosafety Committee, Institutional Review Board, Office for Human Research Protection (if applicable), and NIH/OBA, followed by the submission of a written report filed with each group. The PI should state this policy in his registration material.

9) The PI should include the policy he described for taking specimens of any enrolled patients who experience symptoms of respiratory illness, and sending them to Merck for analysis.

10) A protocol for dealing with patients enrolled in the protocol who might be admitted to an emergency room should be outlined. The Biosafety Officer must be notified of any enrolled patient admitted to the emergency room.

11) The Biosafety Officer (John Lowry) and Infection Control Office (Martin Evans) should be contacted when the first patient is enrolled. Personnel from Infection Control will observe the administration of the drug to the first patient. The Infection Control Office will submit a report to the Biosafety Officer and the PI.

12) According to IBC interpretation, the proposed protocol is by definition a gene therapy protocol and the PI must use that language in material discussed with patients enrolled in the study and in all documents related to the study (e.g., SOPs for emergency treatment of patients with adverse effects).

13) The PI will submit the original typed form and 14 copies to Peggy Quisenberry, Hazardous Materials Management, 350 Cooper Drive, 0490 for further review by the IBC Committee.

Action: Mr. Breeding moved and Mr. Hiatt seconded that the registration be **provisionally approved**. The motion carried unanimously. The provisions are the items listed above.

Institutional Biosafety Committee
Minutes of March 6, 2002

Members Present:
Judith Lesnaw
Kelly Breeding
Thomas Chambers
Jack Hiatt
Charles Issel
Craig Jordan
John Q. Lowry
Peter Nagy
Brian Rymond
Creighton Trahan

Members Absent:
Arthur Hunt
Anthony Sinai
Susan Straley

Protocol Review and Action Taken:

1. Project Title: Identification of Protein Interactors of AGL15, an Embryo MADS-Domain Factor
   Principal Investigator: **Sharyn E. Perry**

Comments:
More details of the experimental plan (e.g. describe the yeast 2-hybrid , what quantity of plant material is anticipated) is needed.

The autoclave conditions specific for the type of load (i.e., plants + soil + containers + amount) should be provided.

Throughout the "Safety Precautions" it is indicated bleach will be used for decontamination. This should be changed to reflect, "Decontamination will be done with a freshly prepared 10% bleach solution for 10 minutes minimum.

Action: Dr. Chambers moved and Dr. Trahan seconded that the registration be **provisionally approved**. The motion carried unanimously. The provisions are the items listed above.

2. Project Title: Functions of Multiple Poly(A)Polymerase Genes in Plants
   Principal Investigator: **Arthur Hunt**

Comments:
The location of plant growth and containment protocol of the transgenic plants is needed.

Action: Dr. Issel moved and Dr. Jordan seconded that the registration be **provisionally approved**. The motion carried unanimously. The provisions is the item listed above.

3. Project Title: Calcium Regulastion in Brain Aging and Alzheimer's Disease
   Principal Investigator: **Susan Kraner**

Comments:
Any laboratories in which the materials are to be used and any co-pi's involved must obtain approval. A problem with the application is that various PI's and lab locations lack Institutional Animal Care & Use Approval and IBC approval for the projects proposed. Safety protocols and evidence of proper training from all personnel should be provided.

The chlorox concentration on page three, four lines from the bottom, is too low. The approved standard is a final concentration of 10% bleach for a minimum of 10 minutes.

Action: The committee postponed action until the information listed above is provided.

4. Project Title: Transgenic Zebrafish Expressing Photoreceptor Genes
   Principal Investigator: **Lei Li**

Comments:
It was determined by the committee that not enough information was provided to determine exactly what would be done. It was also noted that Institutional Animal Care and Use Committee (IACUC) approval was not in place.

It was also noted that the P.I. should be informed that if the protocol has been initated that he is operating in violation of IACUC & IBC regulations.

Action: The committee postponed action until the information listed above is provided.

5. Project Title: Oxidative Cellular Signaling in EBV-Lymhoprolieration
   Principal Investigator: **Dinesh Ranjan**

Comments:
It was noted that the Institutional Animal Care and Use Committee has issued provisional approval pending IBC approval.

P.I. should be requested to submit proof of Bloodborne pathogen training.

It was suggested that P.I. consult with IACUC and IBC regarding decontamination procedures.

Action: The committee postponed action until the information listed above is provided.

6. Project Title: Retroviral Gene Transfer
   Principal Investigator: **Reto Asmis**

Comments:
The application needs a clear project outline with sufficient detail to permit safety assessment (eg., the use of human cells was checked off but no mention of how they would be used).

The project description should be linked with the safety protocol.

The P.I. should include a protocol for assaying the potential production of retroviral reactivants, and should screen his preparations routinely for their production.

The committee suggested that Dr. Craig Jordan should assist the PI in revising his application

Action: The committee postponed action until the information listed above is provided.

7. Project Title: Testing of Plasmid DNA Formulation in Rabbits
   Principal Investigator: **Russell J. Mumper**

Comments:
The application states that p.i. is not producing plasmas. The protocol looked straight forward.

Dr. Trahan moved and Dr. Rymond seconded that protocol be **approved**. The motion carried unanimously

Institutional Biosafety Committee
Minutes of April 15, 2002

Members Present:
Judith Lesnaw
Kelly Breeding
Thomas Chambers
Jack Hiatt
Arthur Hunt
Charles Issel
Craig Jordan
John Q. Lowry
Peter Nagy
Brian Rymond
Anthony Sinai
Susan Straley
Creighton Trahan

Protocol Review and Action Taken

1. Project Title: Identifying Virulence Factors in Pneumonic Plague
   Principal Investigator: **Jacqueline D. Fetherston**

Comments:
Since the proposal is for work in a BL3 facility, the protocol was tabled until the next IBC meeting, which Dr. Fetherston will be invited to join the meeting to address the concerns of the committee.

2. Project Title: *Borrelia burgodorferi* protein expression
   Principal Investigator: **Brian Stevenson**

Comments:
Because of the incomplete nature of the proposal review was **deferred** until the information below has been received:

Please provide to the committee a project summary so that what you will be doing with the bacteria, ticks and mice can be determined.

Has the human blood been tested for HepC?

All personnel handling the human blood must have Bloodborne Pathogen Training Course.

Please provide BloodBorne Pathogen certification for these personnel.

3. Project Title: Processing of Human Bone Samples for Diagnosis and Clinical Trials
   Principal Investigator: **H.H. Malluche**

Comments:
The IBC took no action on this application because of the following concerns. A letter to the investigator was sent requesting the following:

Have you applied for and received Institutional Review Board (IRB) approval)?

On Section V of the infectious agent registration form it is requested that safety precautions be outlined, please provide.

Also, please provide a project description.

This work **must not proceed** in the absence of an appropriate biological safety cabinet.

Meeting was adjourned.

Institutional Biosafety Committee
Minutes of May 2, 2002

Members Present:
Judith Lesnaw
Kelly Breeding
Thomas Chambers
Jack Hiatt
Arthur Hunt
Charles Issel
Craig Jordan
John Q. Lowry
Peter Nagy
Brian Rymond
Anthony Sinai
Susan Straley
Creighton Trahan

Protocol Review and Action Taken

1. Project Title: *Borrelia burgodorferi* protein expression
   Principal Investigator: **Brian Stevenson**

This protocol was deferred from April meeting until requested information was received.

Comments:
It was noted that a project summary was needed so that it can be determined what will be done with the bacteria.

Verify that the people listed as personnel have been properly trained.

Action: Dr. Trahan moved and Dr. Straley seconded that the registration be **provisionally approved**. The motion carried unanimously. The provisions are the items listed above

2. Project Title: Identifying Virulence Factors in Pneumonic Plague
   Principal Investigator: **Jacqueline D. Fetherston**

Dr. Fetherston was invited to the meeting along with Dr. Robert Perry. The committee suggested that since this study was for work involving BL3 facility, and since that facility is not ready for work yet, that the level should be changed to BL2 until such time as that facility is ready. The investigator informed the committee that the initial work has to be done in a BL3 facility in order to obtain the mutants.

In the section covering safety precautions it is indicated that Amphyl will be used for disinfection. It is the recommendation of the IBC committee that a freshly prepared 10% bleach

solution be used for a minimum of 10 minutes. Dr. Fetherson indicated that she does use 10% bleach for a lot of the things in her lab. She also indicated that all reference to Amphyl would be removed from the protocol. The committee thanked her for attending the meeting to answer questions that were not addressed in the project description.

Action: Dr. Trahan moved and Dr. Jordan seconded that the registration be **approved for execution in a validated BL3 facility**. The motion carried unanimously.

3. Project Title: Transgenic Zebrafish Expressing Photoreceptor
   Principal Investigator: **Li Lei**

Comments:
Application was discussed at last months IBC meeting. Peggy Quisenberry of the Hazardous Materials Management office meet with Dr. Li on April 30. Dr. Li addressed all issues from the previous meeting.

Action: Dr. Sinai moved and Dr. Nagy seconded that the registration be **approved**. The motion carried unanimously.

4. Project Title: Transcription factor Isoform-Specific Regulation of Hormone Gene Expression
   Principal Investigator: **Scott Diamond**

Comments:
The committee asked if the BL2 tissue hood had been inspected. It was reported by John Lowry that it had been.

On the spill and work area decontamination procedures attached to the recombinant DNA registration form, the wording "with either a bleach solution, 70% ethanol solution or a commercial germicidal detergent (Virex) as appropriate" should be changed to a freshly prepared 10% bleach solution for at least 10 minutes minimum.

Action: Dr. Rymond moved and Dr. Hunt seconded that the registration be **provisionally approved**. The motion carried unanimously. The one provision being the change in wording listed above.

The meeting was adjourned.

Institutional Biosafety Committee
Minutes of June 17, 2002

Members Present:
Judith Lesnaw
Kelly Breeding
Thomas Chambers
Jack Hiatt
Charles Issel
Craig Jordan
John Q. Lowry
Peter Nagy
Brian Rymond
Creighton Trahan

Members Absent:
Arthur Hunt
Anthony Sinai
Susan Straley

Protocol Review and Action Taken

1. Project Title: THRI Field Trial Project
   Principal Investigator: **Orlando Chambers**

Comments
Please provide to the IBC the plot location at Spindletop?

Please address the safety issues with regard to processing and harvesting of the materials. (i.e. protective equipment used).

Action: Dr. Breeding moved and Dr. Nagy seconded that the registration be **provisionally approved**. The motion carried unanimously. The provisions are the items listed above.

2. Project Title: Genetic Mapping in Nicotiana
   Principal Investigator: **David Zaitlin**

Comments
It was noted by the committee that a project description was not provided.

Action: Dr. Issell moved and Mr. Hiatt seconded that the registration be **provisionally approved**. The motion carried unanimously. The provision is to provide a project description.

3. Project Title: Expression of C-terminal hexahistidyl tagged reporter genes (BUS, LUC, CAT, GFP, B-galactosidase) in yeast and transgenic plants; Expression of Eukaryotic Peptide Deformylase Genes *AtDEF1* and *AtDEF2* in Tobacco; Expression of Antifungal Vicotriocin Genes in Tobacco**;**Expression of Genes that Inhibit Insect Growth in Tobacco; Development of Plant Gene Expression Tools Using Genetic Elements of Caulimoviruses
   Principal Investigator: **Indu B. Maiti**

Comments
The five protocols were reviewed together. All proposals were lacking a research description.

Action: Dr. Jordan moved and Dr. Nagy seconded that the registration be **provisionally approved**. The motion carried unanimously. The provision is to provide a project description.

4. Project Title: Evaluation of Plant Defense – Related Genes on Resistance to Plant Pathogens in Tobacco; Evaluation of Transgenic and Non-Transgenic Tobacco Plants for Resistances to Pathogens; Evaluation of Nicatiana Species for Susceptibility to Agrobacterium Tumefaciens Infection
   Principal Investigator: **Boachun Li**

The three protocols were reviewed together. All proposals needed an infectious agent registration form.

Action: Dr. Jordan moved and Dr. Nagy seconded that the registration be **provisionally approved**. The motion carried unanimously. The provision is to provide a infectious agent registration form for each project.

5. Project Title: Alpha1-adrenergic Receptors Subtypes and Vascular Smooth Muscle Cells
   Principal Investigator: **Michael T. Piascik**

Comments:
The following was requested of the P.O. on June 4.

Please provide verification that Dr. Susan Kraner has agreed to be involved in the experiments you list on the first page of the research summary.

Provide location of “other labs” as stated in paragraph three of the “Pharmacology Adenovirus Core Facility and “Safety First Training”. Do these “other labs” have biosafety cabinets?

On page two of the Infectious Agent Registration Form under “host: rat’s are indicated. However, page three says that no animals are in use. Please reconcile.
The Ad vector looks fine - but please provide details of what you will do with them and safety issues in your lab.

Action: Review was deferred until all the questions above were responded to.

6. Project Title: EGR-1 and Apoptosis in Prostate Cancer
   Principal Investigator: **Mansoor Ahmed**

Comments:
It was unclear to the committee what the researcher was doing, because no project description was provided.

Action: Review was deferred until a project description has been received so that it can be determined what the P.I. will be doing.

7. Project Title: Surface Secretion Systems in Tobacco & Microarray Analysis of Factors Regulating TobaccoTrichone Exudate Production
   Principal Investigator: **George J. Wagner**

Comments:
Before final approval can be issued please elaborate on spill procedures, i.e. what will be done with the adsorbent covering that spills are contained with, what are the standard laboratory procedures.

Action: Dr. Nagy moved and Mr. Breeding seconded that the registration be **provisionally approved**. The motion carried unanimously. The provision is to provide a spill procedure.

8. Project Title: Regulation of PDGF Gene Expression in Embryonic Development and Cancer
   Principal Investigator: **David M. Kaetzel**

Comments:
On page 7 of the infectious agent registration form please specify the room number in the animal facility where work will be conducted.

On page 8 under procedures for disposing of animals please change "incinerated" to "cremation", please make this change throughout the proposal.

On page 4 of the recombinant DNA form, please change the reference in section one of "Bacterial disinfectant" to 10% freshly prepared bleach solution.

Action: Dr. Jordan moved and Dr. Issel seconded that the registration be **provisionally approved**. The motion carried unanimously. The provisions are listed above.

Meeting was adjourned.

Minutes of the
Radiation Safety Committee
FY 2001-02

Radiation Safety Committee
Minutes of August 7, 2001

Members Present:	**Members Absent:**
Guy Simmons (Chair)	William St. Clair
John Timoney	Michael Jay
Bob Wilson (Ex-Officio, RSO)	Sarajane Doty
Joseph Frye (Ex-Officio, MC Security)	
Ralph Christensen	
Mark Farman	
Mary Allen (Ex-Officio)	
Sandra Earls (Ex-Officio)	
Thomas Curry	
Steven Yates	
Arthur Lieber	
Tae Ji	
Harry Enoch (Ex-Offico, Administration)	

Guest(s):

Fred Rawlings, Assistant RSO, Jerry Schlenker, Senior HP, Robert Zwicker, Radiation Medicine and Tomi Ross, Medical Center Safety Officer

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

1. **Minutes for the May 09, 2001 meeting:** The Minutes were reviewed. Dr. Yates moved to accept, seconded by Dr. Christensen, with typos corrected. The Minutes were approved.

2. **RSO Quarterly Report, Including the ALARA and Trends Reports:** There was discussion on activity and compliance trends, ALARA scope and noncompliance items. Ms. Earls stated that nursing personnel had shown interest in recent Level I notifications and were interperting them to be overexposures. Dr. Christensen recommended that the ALARA Level I and Level II notices include a clear description of the Levels and their meanings. Dr. Simmons offered to provide an example of such a description used at some other institutions. Ms. Ross ask if an actual overexposure (> 5000 mrem in a year) would be a workman's comp issue. The feeling was that it could be if it were an actual injury, such as a skin injury from an analytical x-ray machine. The Report, including ALARA data, was approved by voice vote without dissent.

3. **RSO Report:** Mr. Wilson led the way through a discussion of the report.

    a. **Fluoroscopy Training:** Chairman Simmons advised that training is becoming an increasingly prominent topic. He reminded of a strongly emphasized advisory guide sent by the KY Radiation Protection Branch on x-ray skin dose risks and control. The advisory calls for training and specific x-ray measurements, posting of guidance on skin exposure limits

and conducting direct measurements of patient skin exposures. The subject is being discussed in the current x-ray safety program meeting series. Funding for the training program must be found also.

b. **I-131 Patient Workload and Area Radiation Levels:** Dr. Ain has increased the number of I-131 therapy patients and the dose per patient. Local radiation levels may become a problem. Mr. Schlenker will borrow a high I-131 dose from Nuclear Medicine and conduct worst case surveys in and around typical rooms. The survey results will provide information for possible actions.

c. **New Position:** Seven applications have been received for the newly approved ` Radiation Health Technician position. Interviews will start this week.

d. **H-3 Possession Limit Amendment:** The broad Academic License possession limit for H-3, any Form, was raised from 300 curies to 1000 curies for research accelerator support.

e. **Industrial Radiography Notification:** Mr. Wilson will work with Ms. Ross toward a notification system on industrial radiography contract services. Campus safety checks can then be made.

f. **License Inspections:** The Radiation Control Branch has notified Mr. Wilson that license inspections will be conducted for the broad medical and irradiator licenses during the week of August 27.

4. **Broad Medical License Amendment for GliaSite Device:** A license amendment is needed for the use of a new brain tumor brachytherapy device (GliaSite) from Proxima. A possession limit of 3 curies for I-125, liquid, is recommended. After discussion, Dr. Ji moved and Dr. Christensen seconded to empower Mr. Wilson to make amendments as necessary to permit use of the device. The motion was approved by voice vote without dissent.

5. **Annual Radiation Safety Program Review Report:** The Report was reviewed in detail. Additional information on changes in various areas over the past year was provided. Efforts to include more comparative or trending information will continue. Dr. Lieber moved, seconded by Ms. Allen, to approve the Report, with typo corrections. The motion was approved by voice vote without dissent.

Having no other business, Dr. Lieber motioned to adjourn, with Dr. Curry seconding. The meeting was adjourned by unanimous approval at 4:40 P.M.

Radiation Safety Committee
Minutes of November 20, 2001

Members Present:	**Members Absent:**
Guy Simmons (Chair)	William St. Clair
Harry Enoch (Ex-Offico, Administration)	Michael Jay
Bob Wilson (Ex-Officio, RSO)	Mary Allen (Ex-Officio)
Joseph Frye (Ex-Officio, MC Security)	John Timoney
Ralph Christensen	Sandra Earls (Ex-Officio)
Mark Farman	
Sarajane Doty	
John Rebuck	
Thomas Curry	
Steven Yates	
Robert Zwicker	

Guest(s):

Fred Rawlings, Assistant RSO, Jerry Schlenker, Senior HP, Tomi Ross, Hospital Safety Officer.

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

1. **Minutes for the August 7, 2001 meeting:** The Minutes were reviewed. Dr. Yates moved to accept, seconded by Dr. Christensen. The Minutes were approved as written by voice vote without dissent.

2. **RSO Quarterly Report, Including the ALARA and Trends Reports:** The ALARA scope, incidents, and noncompliance items were discussed. A question was asked if all ALARA instances are reported in the Quarterly report. Only the top five are noted in the Report to the Radiation Safety Committee. Routinely, these are all Clinical settings rather than research. There was a short discussion of raising the ALARA levels. This might be accomplished by setting different levels for the clinical areas as opposed to the research areas.
   Incidents were as follows: Markey Cancer Center, Sunday, August 12, 2001, linen room, 2nd floor, that a foul odor was coming from a radioactive waste container. Fred Rawlings, Assistant RSO, responded to a page. Mr. Rawlings removed the containers to the RSO Radioactive Waste Holding Room H-66. Radiation Safety Office, Wednesday, October 30, 2001. A new order of C-14, 400 uCi, could not be located. The AU said it had not been received. The vendor said a trace showed it had been received and signed for by RSO staff. A thorough records and physical search did not find the package. A preliminary status report was made to the Radiation Control Branch, where it was discovered that, due to the recent national experiences, such an event <u>of any quantity or radionuclide</u> was seen as extremely significant. Tracy Cayson of the RSO then found discrepancies in the vendor's records. Edward Lohr, Radiation Control Branch, contacted the vendor's regulatory agency. The vendor quickly found the package had been returned days earlier as undeliverable. Radiation Safety Office, Butler Waste Facility, Wednesday, November 14. Damage was discovered to the steel door at the facility of considerable extent. UKPD was called. An investigation

concluded that entry had not occurred. Recommendations for improved security were received. Both the Butler and Bunker radiation facilities are now on a special security patrol pending completion of security improvements. The motion to accept the Quarterly Report, including the ALARA report was made by Dr. Christensen. Seconded by Dr. Yates. It was accepted unanimously.

3. **Badge Vendor Problems –** Mr. Wilson stated that the online transaction protocol promised by the vendor was not working properly. Poor service in general was hampering our use of the system. Previously, ring badges had fallen apart. Now there were reports that the whole body badges were separating as well. One member questioned whether the quarterly badges were film, and if this was appropriate. Mr. Wilson stated that ICN has Navlap approval to utilize film for quarterly use.

4. **Review of RSO Inspection Response** - There was a review of the noncompliance letter response that Mr. Wilson had sent to the State Radiation Control Branch. Each area had been addressed. Mr. Wilson stated that, since the Committee had approved, and Dr. Enoch had reviewed and approved, all business at the meetings that Dr. Enoch had missed, it would be appropriate to re-approve the business at those meetings. The Action Item is to review and act upon certain business items conducted during the absence of the management representative, as noted in letter Item 2. These consist of:

   Meeting of November 08, 2000

   1. Action on Minutes of August 09, 2000 meeting
   2. Action on November 08 Quarterly Report (ALARA and TRENDS)

   Meeting of February 14, 2001

   1. Action on Minutes of November 08, 2000
   2. Action on February 14 Quarterly Report (ALARA and TRENDS)
   3. Action on the February 14 Radiation Badge Assignment policy

   Meeting of May 09, 2001

   1. Action on Minutes of February 14, 2001
   2. Action on May 09 Quarterly Report (ALARA and TRENDS)

   Dr. Christensen made a motion to approve the minutes and reports of the above mentioned meetings missed by Dr. Enoch. Dr. Enoch seconded the motion. The committee voted unanimously in favor of the motion.

5. **I-125 Brain Tumor Treatment System –**The topic was raised by Mr. Wilson describing the licensing status of the Proxima brain tumor treatment system. It was presented that Dr. Mohuiddin, Dr. William St. Clair, and Dr. Regine be approved by the Radiation Safety Committee as Authorized Users for this protocol. Dr. Christensen made a motion that the above mentioned Authorized Users be approved as Authorized users for the Proxima system. Dr. Enoch seconded the motion. The committee voted unanimously in favor of the motion. Mr. Wilson stated that he would pursue a

possession amendment for I-125 that would allow for multiple procedures in a short time. Three Curies should be sufficient.

6. **Radiation Safety Manual-** Changes and additions to the Radiation Safety Manual proposed by the Kentucky Radiation Control Branch were brought up for discussion. A query was made as to whether Pd-103 used for implants should be a line item in the license. This should not be an issue, as it is covered by the general conditions of the license. Dr. Yates moved to accept the amended Manual . Sara Jane Doty seconded the motion. The committee voted unanimously in favor of the motion.

7. **Security Audit of Sources –** Mr. Wilson described the security situation of significant sources on campus. Two moisture density gauges were transferred to the Radiation Safety Office by the Assistant RSO pending improvements to the security in place. They are now stored in the Bunker. All other security measures were deemed to be acceptable at this point in time.

8. **Motion to Adjourn** – Dr. Simmons moved that the meeting be adjourned. Dr. Christensen seconded the motion. The committee voted unanimously in favor of the motion. The meeting was adjourned at 4:15.

Radiation Safety Committee
Minutes of February 12, 2002

Members Present:	**Members Absent:**
Guy Simmons (Chair)	William St. Clair
Harry Enoch (Ex-Offico, Administration)	Joseph Frye (Ex-Officio, MC Security)
Bob Wilson (Ex-Officio, RSO)	Mary Allen (Ex-Officio)
John Timoney	Sarajane Doty
Ralph Christensen	Sandra Earles (Ex-Officio)
Mark Farman	
Michael Jay	
John Rebuck	
Thomas Curry	
Steven Yates	
Robert Zwicker	

Guest(s):

Fred Rawlings, Assistant RSO; Jerry Schlenker; Senior HP, Sheryl Abercrombie, Diagnostic Radiology

Chairman Simmons called the meeting to order. A quorum was present.

1. **Vice Chairman:** A motion was made to elect Dr. Christensen as Vice Chair of the Radiation Safety Committee, due to Dr. Simmons' desire to step down as chair. Dr. Jay so moved. Dr. Enoch seconded the motion. Motion approved by voice vote without dissent. Dr. Christensen immediately assumed the duties of chair and continued with the meeting.

2. **Report on Personnel Monitoring Needs for Some Groups:** There are many groups on campus who are badged but minimally exposed (receive less than 100 mrem per year). A study is progressing to fully identify groups that fit in this situation. The groups studied have good return rates on the badges, and receive less than 100 mrem per year occupational dose. The study would continue through August to gain more data.

3. **Waste Pickup Survey:** Mr. Wilson reviewed an opinion survey that was sent to all Authorized Users regarding the waste pickup program. The results indicated that people were generally happy with the service, that morning pickups are preferred, and that an online waste ticket would be appreciated. There was a discussion of logistical problems with generating the paper ticket at the lab site.
4. **Minutes for the November 20, 2001 meeting:** The Minutes were reviewed. Dr. Zwicker moved to accept, seconded by Dr. Farman. The Minutes were approved as written by voice vote without dissent.

5. **RSO Quarterly Report, Including the ALARA and Trends Reports:** The ALARA scope, incidents, and noncompliance items were discussed. There was a discussion on how to ensure that surveys will continue uninterrupted in labs when the experienced tech leaves. This could be a major

topic for conferences with AU's. Reminders could also be sent with routine monthly paperwork. A simplified way for AU's to become inactive could help with survey problems. A form and instructions on filing for inactive status could be offered on the website. The Reports were approved by voice vote without dissent.

6. **License Amendment for Uranium –** A UK researcher stationed at the Paducah Engineering section of the Community College has requested AU status for experimentation with uranium. Specifically licensing this use would require an amendment to the Broad Academic license. Although this research could be performed under a general license, clear UK oversight is desirable. This would be more easily expressed by including the research in the broad license umbrella. Dr. Jay made a motion that a license amendment be submitted for possession of depleted uranium. Dr. Enoch seconded the motion. The motion was approved by voice vote without dissent.

7. **Radiation Source Security:** Mr. Wilson stated that source security measures continue to be reviewed and improved. The compacting facility doors are being reinforced, and alarms are being ordered for storage areas.

8. **Proxima GliaSite Procedure:** The license for this procedure has been received.

9. **Incidents/Misadministrations:** There were no incidents or misadministrations to report.

There being no other business items, Dr. Simmons moved that the meeting be adjourned and the motion was seconded. The motion was approved by voice vote without dissent. The meeting was adjourned at 4:15 P.M.

Radiation Safety Committee
Minutes of May 14, 2002

Members Present:

Ralph Christensen (Vice Chair)
Guy Simmons
Harry Enoch (Ex-Offico, Administration)
Bob Wilson (Ex-Officio, RSO)
John Timoney
Joseph Frye (Ex-Officio, MC Security)
Mary Allen (Ex-Officio)
Mark Farman
John Rebuck
Thomas Curry
Robert Zwicker

Members Absent:

Sandra Earles (Ex-Officio)
William St. Clair
Michael Jay
Steven Yates
Sarajane Doty

Guest(s):

Fred Rawlings, Assistant RSO; Jerry Schlenker; Senior HP

Vice Chairman Christensen called the meeting to order. A quorum was present.

1. **Minutes for the February 12, 2002 meeting:** The Minutes were reviewed. The spelling of Ms. Earles' name was noted. Dr. Simmons moved to accept with the spelling correction, seconded by Dr. Dr. Enoch. The Minutes were approved as corrected by a 9 to 0 voice vote.

2. **RSO Quarterly Report, Including the ALARA and Trends Reports:** The inspection program results, noncompliance items and ALARA report were discussed. AUs are now being reminded to assure that surveys get done each month. Dr Christensen made recommendations on report format changes and the use of units. Mr. Wilson discussed the ALARA reporting levels. The limits should be labeled with units (mrem) in the reports. There was a clarification to the Committee that dosimetry reports generally indicated the badge dose on the outside of lead aprons. The option for double badging with a dose calculation has been utilized in many of the fluoro physicians. Mary Allen moved to accept the Reports, seconded by Dr. Enoch. The Reports were approved by a 9 to 0 voice vote.

3. **Radiation Medicine Authorized User:** Dr. Mohiuddin provided training and experience documentation to add Mahesh Kudrimoti, M.D., as an Authorized User for brachytherapy. After discussion, it was concluded that Dr. Kudrimoti met the AU requirements. Dr. Zwicker moved to approve, seconded by Dr. Simmons. The authorization was approved by an 11 to 0 voice vote.

4. **Review of New Nuclear Medicine and Radiation Medicine Therapy Procedures:** A new nuclear medicine therapy regimen, trade name Zevalin, using Yttrium-90, was discussed. There were

several issues on risk and dose calibration. FDA has approved the procedure. It is a type of last resort therapy, but with some positive results. Mr. Wilson was to attend a meeting on the procedure the evening following the RSC meeting. Mr. Wilson moved to approve the Zevalin procedure, seconded by Mary Allen. The procedure was approved by an 11 to 0 voice vote.

FDA has approved a new HDR accessory device, MammoSite, to facilitate radiation therapy to the site of breast lump removals. After discussion, it was decided that no action was needed to perform such applications.

5. **RSO Report:** Mr. Wilson presented the RSO Report. The needle stick incident with H-3 uptake was discussed. The exceptionally expensive disposal costs of the Physics Dept. H-3 "furnaces" was discussed, with a decision to investigate departmental payment for disposals.

   Mr. Wilson noted that the Radiation Control Branch has lost the Radioactive Material Section supervisor and any license work may be significantly hampered for a time.

   The May 2002 meeting of the Conference of Radiation Control Program Directors included discussion on (a) increased regulation of fluoroscopy and CT uses, (b) a grass root effort to initiate a Low Level Radioactive Waste tax on all such material coming into Utah (the last remaining site available to Kentucky), and (c) increased focus on radioactive material security issues ("dirty bomb" concerns).

   The supervisor position in the State Radiation Control Branch is open at this time, and there will likely be delays in license amendments from Frankfort.

   Vicki Morris from the University of Cincinnati attended the May 2002 CRCPD meeting. She reports that (a) fluoroscopic and CT X-rays are expected to receive more regulatory attention, (b) a LLRW tax on waste coming into Utah is being discussed, and (c) there is increased focus on radioactive material security issues ("dirty bomb concerns).

   Further review of the waste pickup questionnaire suggested that on-line waste forms would be a help to our UK clients.

   The State Radiation Control Branch had a medical advisory board of experts during the 1960's. Dr. Volpe of the Radiation Control Branch has invited the Bluegrass Chapter-
   HPS to look into setting up some type of advisory group for the Agency. There was discussion of this concept and NRC trends among the members.

   Mr. Frye queried how long it would take to determine what radionuclides were in a room during an emergency. The maximum amount of radioactivity in all stock solutions and waste combined can be determined within an hour (or less) from the RSO database. Determining what might be missing, or in a certain waste stream would require the Lab personnel's input. The Radiation Safety Office will demonstrate this to Mr. Frye in the future.

There being no other business items, Dr. Christensen ask for a motion to adjourn. Mary Allen moved to adjourn, seconded by Mr. Wilson. The motion was approved by an 11 to 0 voice vote. The meeting was adjourned at 4:30 P.M.