Health, Safety, and Environmental Affairs

Rutgers, The State University of New Jersey

ANNUAL REPORT 2002

rehs.rutgers.edu
“The end of the beginning.” We think this phrase is an apt description of our safety and environmental work for 2002. During the past year, we continued our efforts to promote a safety culture for Rutgers University. We also pursued aggressively the audits of our compliance with eleven different regulatory programs to meet the obligations of our agreement with the Federal EPA. These two efforts demonstrate our commitment to:

Protect People

Protect the Environment

Promote Compliance

We believe that “good safety is a result of good safety management.” We are especially proud of the administrative units in Dining Services, Facilities Maintenance, Housing, and Public Safety that have embraced the philosophy of a safety culture. Their efforts have contributed to significant improvement in the total University safety performance for 2002. For the year (as compared to our baseline averages):

- Recordable incidents were reduced by 35%, and
- Total days away from work were reduced by 83%. In addition, we
- Qualified for the New Jersey Department of Labor Governors Safety Award for 2002

The EPA Self Audit / Self Disclosure agreement requires us to perform audits of our compliance with environmental regulations and to disclose violations to the Federal EPA Region 2. Most importantly, all violations must be corrected and we must implement mechanisms to prevent the recurrence of these violations in the future. We think the Self Audit program has been a great success. Regulatory compliance means better environmental protection, certainly a benefit for all.

Significant reductions in workplace incidents and the completion of the EPA audits do not mean we have reached our safety and environmental goals. Indeed, this is only the beginning of these efforts. Our goal of excellence in health, safety, and environmental management is an ongoing challenge and requires a commitment to continuous improvement and the support and cooperation of all members of the University community.

Please contact us with your questions or suggestions. We look forward to another safe and successful year for 2003.

Michael C. Quinlan, Director
Rutgers, The State University of New Jersey

II. SELECTED ACCOMPLISHMENTS

UNIVERSITY SAFETY PERFORMANCE:

REHS continued efforts to promote a “safety culture” throughout the University. These efforts included our semi-annual safety management meetings, detailed review of the administrative Department incidents for 2000 / 2001, a “Safety Awareness Day” for Facilities Maintenance and Housing employees, distribution of quarterly safety statistics, and working with the various unit safety committees. Our measures for total incidents (Recordable Cases) and Lost Work Days (Days away from Work) showed significant improvement from 2001. For the fourth consecutive year Rutgers University qualified for the New Jersey Department of Labor “Governor’s Safety Award” for minimizing lost time incidents.

UNIVERSITY SAFETY PERFORMANCE:

Audited compliance with eleven regulatory programs and submitted disclosure reports to the Federal EPA. All identified violations were corrected and we continue to implement mechanisms to prevent the recurrence of noncompliance. Final disclosure reports were due March 31, 2003.

To date, the EPA has waived $740,000 in penalties that would have been assessed for the disclosed violations.

For our work on the Self Audit Program and our leadership amongst academic institutions, the EPA Region 2 granted us their “Environmental Quality Award” for 2002. (photo at left)

EMERGENCY RESPONSE:

Implemented a joint response team with RU Emergency Services (RUES) to provide improved responses to hazardous materials incidents, updated the Hazardous Materials Annex to the RU Emergency Operations Plan, and conducted several joint training exercises, table top exercises and emergency response drills with RUES. Responded to the following emergencies (those requiring an immediate response):

- 34 Spills or releases of hazardous chemicals
- 7 Complaints of indoor air quality emergencies
- 6 Severe injuries or other safety incidents
- 6 Radioactive materials incidents
- 3 Reports of suspicious packages
- 5 Other emergencies
The old adage, “accidents just happen,” is simply not true. We believe they can be prevented through good safety management, training, and real efforts to involve our employees. The injuries and illnesses that result from workplace incidents and exposures have a significant cost in terms of treatment, workers’ compensation, and lost productivity. Perhaps the greatest cost is the inconvenience, pain, or suffering to our employees, certainly the greatest resource at Rutgers University.

We have developed a safety and health program that is comprehensive and diverse to address the variety of activities and tasks performed by our employees. Some of these are described below. For more details please visit our web site at http://rehs.rutgers.edu.

**ASBESTOS MANAGEMENT:**

Asbestos can present a hazard if building materials (containing asbestos) are not maintained in good condition, or if it is disturbed during building demolition, renovation, or other maintenance work. To provide for the safety of our students, employees and other building occupants, we maintain a comprehensive management program that includes building inspections, sampling and analysis of suspect materials prior to disturbance, use of licensed and approved abatement contractors, and final inspections of all abatement activities. We also provide annual awareness training of potential asbestos hazards to University staff.

During 2002 we collected 1298 samples for asbestos analysis, conducted visual inspections of 2831 rooms in 31 buildings, and completed 359 abatement projects.

**BIOLOGICAL SAFETY:**

A wide variety of hazardous biological agents (viruses, bacteria, fungi, recombinant DNA, human tissues and blood) are used in our research and teaching laboratories. We work closely with the University Biosafety Committee to provide for the safe use of these materials. This includes the review and approval of research protocols, laboratory inspections, training programs, certification of Biosafety Cabinets, and oversight of a medical waste vendor to provide for the safe disposal of selected biohazardous materials. Conducted surveys of the university research community to identify and report on the use of select biological agents, plant pathogens, and wild poliovirus materials. The surveys for select agents and plant pathogens were part of the national effort to address potential bioterrorism attacks. We also prepared a detailed summary of the new USA PATRIOT Act requirement for notifying the research community.

**REHS FAST FACTS FOR 2002**

- Participated in 16 state and county regulatory inspections
- Conducted 31 ergonomic evaluations
- Reviewed over 50 design projects
- Responded to 57 emergency incidents
- Conducted 65 indoor air quality investigations
- Participated in over 125 safety committee meetings
- Performed almost 200 safety-training sessions
- Conducted 350 radioactive material contamination surveys
- Completed 359 asbestos abatement projects
- Completed over 800 radioactive waste pickups
- Surveyed 1057 fume hoods
- Completed over 1400 hazardous waste pickups
- Collected over 1500 samples for analysis
- Decayed and discharged 1700 gallons of radioactive liquid waste
- Delivered 2250 packages of radioactive materials
- Conducted over 2800 asbestos ceiling inspections
- Decayed and disposed of 6600 pounds of low-level radioactive wastes
- Disposed of 152,000 pounds of hazardous waste
Rutgers, The State University of New Jersey

OCCUPATIONAL HEALTH & SAFETY:

We have over 15,000 employees who perform a wide array of tasks from teaching to research, maintenance, support services, administrative and other disciplines. We are committed to providing for their health and safety by identifying and addressing potential hazards of their daily work. Thus, we have developed and maintained many health and safety programs. Select programs include:

- Accident Investigation
- Confined Space Entry
- Hearing Conservation
- Indoor Air Quality
- Laser Safety
- Lockout / Tagout of Hazardous Energy Sources
- Safety Management Audits
- Bloodborne Pathogens
- Ergonomics
- Hot Work
- Laboratory Safety
- Lead Paint
- Respiratory Protection

RADIATION SAFETY:

Throughout the year, almost 150 faculty investigators used sources of ionizing radiation (including x-ray producing machinery) in their teaching and research activities. To support their work, we provide comprehensive radiation safety services and manage licenses with the US Nuclear Regulatory Commission and the NJ Department of Environmental Protection (Bureau of Radiation Protection). Our services include training, surveys, consultation, personnel monitoring, inspections, emergency response, and waste management. The University Radiation Safety Committee, which includes faculty from a number of academic disciplines, is an integral part of our radiation safety efforts.

During 2002, we delivered 2250 radioactive materials packages, calibrated 325 radiation detection instruments, and inspected about 2300 individual laboratories.
We have a strong commitment to protecting the environment on and around our campuses, research stations and other facilities. REHS strives to provide programs and services to address the myriad of environmental issues and responsibilities that challenge such a large institution. Detailed below are some of our environmental programs and our accomplishments for 2002. Certainly, the EPA Audit Program, which required extensive audits of our compliance with regulations and subsequent correction of all violations, has been a great benefit and will continue to have a dramatic impact on our environmental protection efforts in the coming years.

**EPA SELF AUDIT / SELF-DISCLOSURE PROGRAM:**

We audited compliance with the following regulatory programs and submitted disclosure reports to the EPA. All violations were corrected and we instituted mechanisms to prevent the recurrence of subsequent violations.

- Asbestos – NESHAPS
- Clean Air Act – CFCs
- Clean Air Act – NSPS
- FIFRA – Pesticides
- Lead Based Paint Disclosures
- RCRA—Hazardous Waste Management
- Risk Management Plan
- Spill Prevention, Countermeasure, and Control Plans
- Toxic Substances Control Act – PCBs
- Underground Injection Control (UIC)
- Underground Storage Tanks

**AIR EMISSIONS:**

The University generates air emissions primarily through the combustion of natural gas and oil for heating, cooling and providing electric power to the campus buildings. Due to the size of the University and the amount of fuel burned, Rutgers must comply with the same regulations that govern large power plants and industrial facilities. This includes elaborate permits (the Title V air permit for the Busch / Livingston campus consists of over 180 pages of requirements) with extensive and continuous requirements for monitoring, testing, record keeping and reporting.
REHS has initiated a program to introduce Alternative Fuel Vehicles (AFV’s) into the campus fleet. AFV’s are vehicles that use fuels other than gasoline or diesel oil. They generate significantly less emissions and have the added benefit of reducing our dependence on foreign fuel supplies.

The first phase of this program is nearly completed with the installation of a Natural Gas refueling station with 4 to 6 Natural Gas Vehicles to be purchased by the end of the first quarter of 2003. REHS is working with the NJ Board of Public Utilities and the North Jersey Clean Cities Organization to explore other options for advancing the use of AFVs at the University.

HAZARDOUS WASTE MANAGEMENT:

REHS provides for the management and disposal of hazardous waste from all University facilities. We collect the wastes directly from the research labs, facilities maintenance shops, and other generators. To provide for this service, we maintain Commercial Drivers Licenses (CDL) and US Department of Transportation training for our employees.

Wastes are taken to the Environmental Services Building on the Busch Campus or in some instances, sent directly for disposal. Flammable wastes are used for fuels blending, aqueous wastes are treated, and other lab wastes are incinerated. All wastes are transported off campus by a licensed hazardous waste management firm and only approved facilities are used for ultimate disposal.
Rutgers Environmental Health and Safety

IV. PROTECTING THE ENVIRONMENT (CONT.)

Other Waste Facts for 2002:

- 152,000 pounds of hazardous waste were disposed.
- Over 1,400 waste pickups were completed.
- REHS provides a chemical recycle program where discarded chemicals are stored for redistribution within the University.
- An inspection is conducted during each chemical waste pickup to promote compliance with EPA and NJDEP regulations.

RADIOACTIVE WASTE MANAGEMENT:

We provide radioactive waste management services to all Rutgers University facilities and campuses and the UMDNJ – Robert Wood Johnson Medical School research operations in Piscataway and New Brunswick. All wastes are collected by REHS staff and transported to our Environmental Services Building. The wastes are then segregated for packaging for disposal or for “decay in storage”. Solid wastes with short-lived isotopes are held for storage until the radioactivity is reduced to background levels (or “decayed”). This process is both environmentally friendly and extremely cost effective as it significantly reduces the amount of radioactive waste that must be sent for final disposal. Liquid radioactive wastes are also decayed and disposed via the drain to the sanitary sewer.

LLRW: Low Level Radioactive Waste


REGULATED MEDICAL WASTE:

Student Health Services and our teaching and re-
search activities generate these wastes. They include cultures
and stocks of infectious agents, sharps (needles and syringes),
gloves and other protective equipment. (Note that for regula-
tory compliance, all decayed radioactive solid waste is also dis-
posed as medical waste.) All medical wastes must be properly
packaged, labeled, recorded and sent for disposal by a li-
censed hauler to an approved waste disposal facility. REHS
assists with managing these wastes, ensuring proper disposal,
and maintaining all records.

OIL SPILL PREVENTION (SPCC PLANS):

New this year is the implementation of a comprehensive Spill Prevention Control and Countermeasure (SPCC) plan. This plan, in effect on the Busch/Livingston, College Avenue and Newark campuses as well as several off campus University facilities, insures the continued safe management of all sources of oil (underground and above ground tanks, and drums) through the implementation of best management practices and periodic inspections.

UNDERGROUND STORAGE TANKS:

To date, Rutgers has removed more than 280 un-
derground storage tanks (USTs) from University property. All
remaining Federally regulated USTs have now been up-
graded to regulatory standards and are part of a periodic
monitoring program.

GROUNDWATER INVESTIGATIONS:

As a result of our UST closure program and other investigations into local water quality, there are several sites that are
in the process of additional investigation and/or remediation. Currently, our largest such project is affiliated with the Busch Ga-
rage. Further remedial investigation this summer will include the installation and sampling of several groundwater monitoring
wells to aid in the delineation of this contamination plume. Other projects in progress include the Cook Blacksmith Shop, Corwin
Housing and the Meteorology Building. Currently, there are approximately 20 projects that have been satisfactorily investigated
and remediated and await administrative closure from the appropriate State or Federal regulatory agency.
### V. REGULATORY INSPECTIONS 2002

<table>
<thead>
<tr>
<th>Month</th>
<th>Agency</th>
<th>Activity</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>February</td>
<td>PEOSHA</td>
<td>Student complaint of asbestos exposure from sprinkler installation in Livingston Quads.</td>
<td>NO VIOLATIONS.</td>
</tr>
<tr>
<td>March</td>
<td>PEOSHA</td>
<td>Notification of hospitalization of an employee. Employee received electrical burns from electrical arc in NPL.</td>
<td>Citation issued for failure to ensure use of personal protective equipment (PPE). All items abated.</td>
</tr>
<tr>
<td></td>
<td>PEOSHA</td>
<td>Employee complaint of poor air quality at Jersey City facility.</td>
<td>NO VIOLATIONS.</td>
</tr>
<tr>
<td>April</td>
<td>PEOSHA</td>
<td>General safety inspection of Newark Physical Plant shops.</td>
<td>NO VIOLATIONS.</td>
</tr>
<tr>
<td>May</td>
<td>PEOSHA</td>
<td>Contractor complaint of exposure to unspecified chemicals in Olson Hall.</td>
<td>NO VIOLATIONS.</td>
</tr>
<tr>
<td></td>
<td>PEOSHA</td>
<td>Follow up safety inspection for incident at NPL.</td>
<td>All citations abated.</td>
</tr>
<tr>
<td></td>
<td>NJDEP</td>
<td>Follow up inspection from notification of herbicide spill at research farm.</td>
<td>NO VIOLATIONS.</td>
</tr>
<tr>
<td>June</td>
<td>PEOSHA</td>
<td>Notification of hospitalization of a Housing employee. Employee cut on abdomen while removing trash.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NJDEP</td>
<td>Employee complaint of exposure to pesticides (workers’ protection standard) at Snyder Farm.</td>
<td>NO VIOLATIONS</td>
</tr>
<tr>
<td>July</td>
<td>Middlesex County Health Dept.</td>
<td>Inspection of hot water, ventilation systems at Stonier Hall per visitor’s complaint.</td>
<td>NO VIOLATIONS</td>
</tr>
<tr>
<td>August</td>
<td>PEOSHA</td>
<td>Site inspection of Livingston Quads per notification in June.</td>
<td>NO VIOLATIONS.</td>
</tr>
<tr>
<td>September</td>
<td>NJDEP</td>
<td>Compliance inspection for radiation producing machinery at Camden</td>
<td>NO VIOLATIONS.</td>
</tr>
<tr>
<td>October</td>
<td>Middlesex County Health Dept.</td>
<td>Student complaint of poor living conditions in Corwin Dormitory.</td>
<td>NO VIOLATIONS.</td>
</tr>
<tr>
<td></td>
<td>Middlesex County Health Dept.</td>
<td>Student complaint of no sanitation facilities in Hardenburgh Dormitory.</td>
<td>NO VIOLATIONS.</td>
</tr>
<tr>
<td></td>
<td>NJDEP</td>
<td>Multi-media environmental compliance inspection at Camden</td>
<td>NO VIOLATIONS.</td>
</tr>
<tr>
<td></td>
<td>NJDEP</td>
<td>Pesticide compliance initiative in Camden</td>
<td>NO VIOLATIONS.</td>
</tr>
</tbody>
</table>

NOTES: PEOSHA—New Jersey Public Employees Occupational Safety & Health Administration  
NJDEP—New Jersey Department of Environmental Protection
Rutgers, The State University of New Jersey

VI. GOALS 2003

HEALTH, SAFETY, AND ENVIRONMENTAL MANAGEMENT SYSTEM: Revise the policy for health, safety, and environmental affairs and develop a proposal for a comprehensive management system.

LABORATORY SAFETY AND COMPLIANCE: Implement a comprehensive laboratory inspection program and complete annual inspections of all university labs.

RADIATION SAFETY: Complete an external audit of both the Rutgers University and RWJMS programs.

EPA AUDIT PROGRAM: Submit the final disclosure reports and ensure completion of all required actions to prevent the recurrence of disclosed violations.

EMERGENCY RESPONSE: Continue training and planning activities with Public Safety. Conduct quarterly drills of the emergency response team to ensure team readiness.

AIR EMISSIONS COMPLIANCE: Submit Title V air permit applications for the Cook/Douglass and College Avenue Campuses.

BIOSAFETY: Address all compliance requirements for the Public Health Security and Bioterrorism Preparedness Act of 2002 included in the new select agent rule.
Rutgers, The State University of New Jersey

Rutgers Environmental Health and Safety

NEW ADDRESS!
27 Road 1, Bldg. 4086
Livingston Campus
Piscataway, NJ
08854

Phone: 732-445-2550
Fax: 732-445-3109
www.rehs.rutgers.edu