

# **ENVIRONMENTAL HEALTH & SAFETY**

## **ANNUAL REPORT 2010**

### **INTRODUCTION**

#### **Mission**

The Environmental, Health and Safety Department is responsible for facilitating University safety by implementing programs that serve the students, employees and clients within the state. Effective fulfillment of our responsibility is made possible through the significant efforts of many individuals as well as our partnerships with various constituents of the campus community and regulatory agencies. EH&S provides leadership in environmental stewardship and regulatory compliance assistance to the NMSU system.

EH&S fulfills its mission to make NMSU a safe environment by implementing high quality/timely health and safety services in eight major areas.

1. Education, Training & Protective Equipment
2. Hazardous Waste & Materials Management
3. Health & Safety Inspection/Facility Audits/Activity & Work Reviews
4. Regulatory Compliance
5. Accident & Exposure Investigations
6. Exposure Prevention/Indoor Air Quality
7. Radiation Safety, Licensing & Permitting
8. Safety Standard & Procedures

#### **Vision**

Our vision at NMSU is to be recognized as a premier university. NMSU will not be recognized as such, unless the University demonstrates a strong commitment to protecting the health and safety of employees, students and the public as well as protecting the environment. Our goals are to have a workplace free of injuries and hazardous exposures, to prevent or minimize any adverse impact to the environment, to provide services of the highest quality to the NMSU system and to be recognized as leaders in the areas of environmental protection, health and safety.

#### **Department Values**

Staff will practice their profession by following recognized scientific principles and management practices, factually informing affected parties of their findings in an honest, straightforward manner, exhibiting the highest level of integrity, honesty and empathy, while never compromising the public's welfare. Staff will strive to be involved in continual education and professional development, to provide superior customer service in all areas, to perform service only in the areas of their competence and maintain information as confidential when appropriate.

## OVERVIEW OF 2010

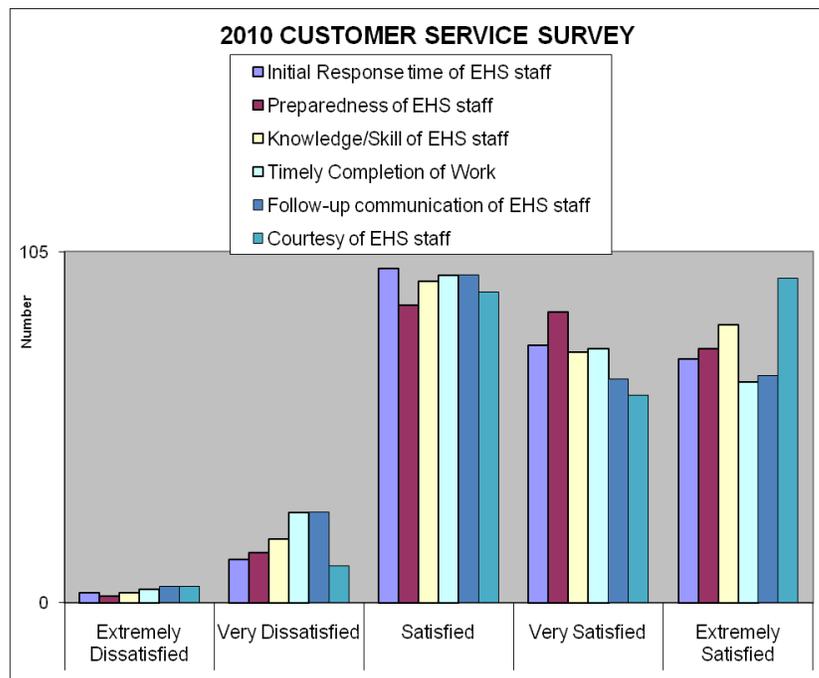
- 6% annual increase in number of safety classes
- 10% annual decrease in personnel trained (2920) in safety through formal classes
- Doubling of safety classes and training deliveries since 2002
- 25% decrease in detailed lab and general room inspections
- Directed about \$100,000 of BRR to correction of safety deficiencies
- 66% increase in number of work orders to affect repair of safety deficiencies
- Persistent trend of 50% less injury and illness cases with lost or restricted work days for three consecutive years
- Continued safety support to remote campuses and Ag. Science Centers to include inspections and training but at a reduced level
- Supported 33 asbestos abatement projects and established best pricing agreements
- Picked up, researched, processed, and shipped 66,000 pounds of waste in 2010 compared to 72,000 pounds averaged over the previous five years.
- Negotiated and received five year renewal of NMSU's Title V Air Permit, completed 10 detailed air compliance reports, and new Federal Greenhouse Gas Management Plan.
- Relocated all equipment, supplies and changed operations to the newly renovated Environmental Management Facility that now consolidates all NMSU hazardous waste (chemical, radiological, universal, biological) into one building with engineering safety controls.
- Implemented on-line Bloodborne Pathogen training and record keeping that resulted in a 54% increase in annually required training
- Added radiation safety refresher training and a laboratory hands-on exercise to demonstrate concepts of contamination; addition of both classes doubled the number of employees trained in radiation safety to comply with the new annual training requirement
- Passed NM Environment Department Radiation Protection inspection with no findings under new Radiation Safety Officer
- 34% decrease in number of driver's trained but only 5 % reduction in number of license validations resulting from vehicle reductions and increased utility cart use
- Maintained Continuity of Operations Planning and helped with revision of All Hazards Emergency Operations Plan and led development of protocols for hazmat protocol and utility outage response.
- Fall safety initiatives included special departmental safety training to over 700 staff

➤ Overall the department continued to provide most services at an acceptable level but budget reduction impacted some areas. University wide budget reductions impacted EH&S by reducing resources for inspection, training and hazardous waste operations. It is increasingly difficult, if not impossible, to meet all detailed compliance requirements. It becomes more and more critical to program new resources into the budget as new university space and new regulatory demands are added to the list of EH&S responsibilities. Areas that should be expanded are 1) inspection, training and waste management support for remote campuses and facilities, 2) annual inspections for a larger percentage of Las Cruces campus buildings and 3) staff to respond to new regulatory mandates.

## ORGANIZATIONAL CHANGES

Environmental Health & Safety was reorganized to Office of Facilities and Services (OFS) July 2010. In addition to this change, the Biosafety Manager reporting line was changed to the Office of Research Compliance and 0.5FTE General Safety Manager was reduced because of EH&S budget reductions. Near the beginning of the Fall semester, 2010, OFS and Office of Institutional Research, Planning, and

Outcomes Assessment worked together to update the 2009 OFS Customer satisfaction survey to account for organizational changes within OFS. Although only 34% of respondents had utilized EH&S services, the 268 respondents who answered the survey questions relating to Environmental Health & Safety services were likely to indicate they were satisfied with the services being provided. *With one exception, more than 90% of all responses indicated respondents were “Satisfied”, “Very Satisfied” or “Extremely Satisfied” with EH&S services.* In only one case, that of follow-up communications, did more than 10% of respondents indicate they were dissatisfied with the services provided and the issues raised tended to center around communication and timely follow up.



## FACULTY RESEARCH SUPPORT

The NMSU SCORE (Support of Continuous Research Excellence) Program conducted a formal [Research Environment Study](#) of researchers (n=266) on the Las Cruces campus, September 2007. Of the respondents, 70% were tenure-track faculty (representing one-third of the total NMSU tenure track faculty) and 19% were research scientist or professional research staff. Most of the respondents had long experience (54% with nine years or more) at NMSU. One repeated theme which emerged from the quantitative survey responses was satisfaction with Environmental Health & Safety support but frustration with other NMSU research support systems. *Across all colleges, the Environmental Safety practices were deemed good or excellent by 57% and fair by 32% with only 11% rating poor or terrible.* These ratings relate to one’s experience with the efficiency of NMSU EH&S systems and processes and whether EH&S procedures are judged to meet the organization’s needs without impeding research work. On the other hand, Accounting, Purchasing and Hiring processes were clearly judged as problem areas with poor / terrible scores from 71%, 62% and 68% of respondents for each area respectively. These data indicate that survey participants were distinguishing among categories and not merely complaining about all research support systems.

The EH&S department provides protocol assistance and review for research which is integral to our faculty’s undertaking safe and legally compliant research. There are three faculty research oversight committees with significant EH&S implications: the Radiation Safety Committee, the Institutional Biosafety Committee, and the Animal Care and Use Committee. These committees fulfill specific federal regulatory requirements in the areas of safe use and containment of radioactive and biological materials research and animal protections at NMSU. EH&S participates in all 3 faculty research oversight committees and also serves as administrative support for the Radiation Safety Committee (RSC). EH&S also Chairs the University Safety Committee and Communicable Disease Preparedness Committee.

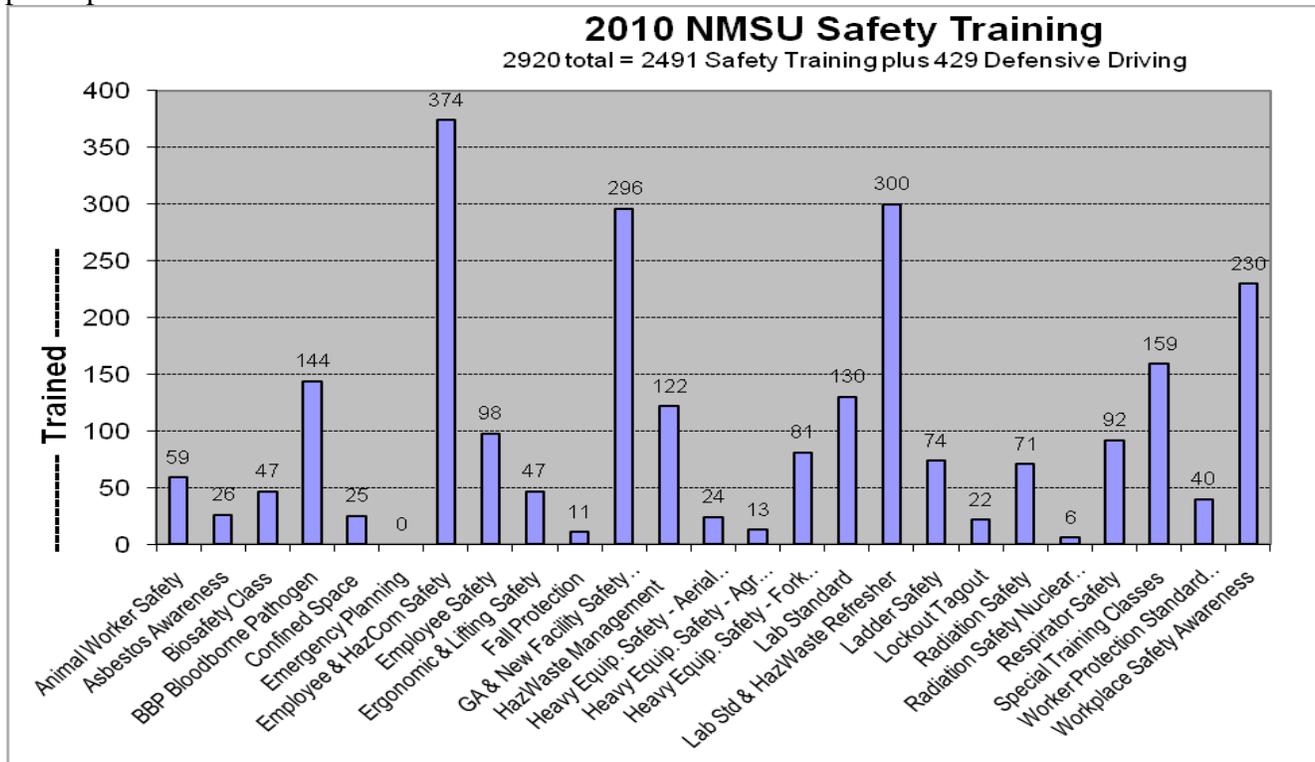
# CENTRALIZED SAFETY TRAINING

In 2010 EH&S provided 262 safety classes, a 6% annual increase compared to last year. These classes cover over 24 different safety topics for compliance with regulations, NMSU policy and State Risk Management's Loss Prevention and Control Rule.

Overall, in 2010 despite staff reduction EH&S was able to deliver safety training including defensive driving to a total of 2920 employees. Although this was a slight decrease from last year, there is an overall increase noted over the last 5 years and a 130% increase since 2001. Training includes 17 different routinely offered safety courses plus special sessions such as Workplace Safety Awareness, Worker Protection Training, Lab Standard Refresher, Graduate Assistant orientation and other special requests.

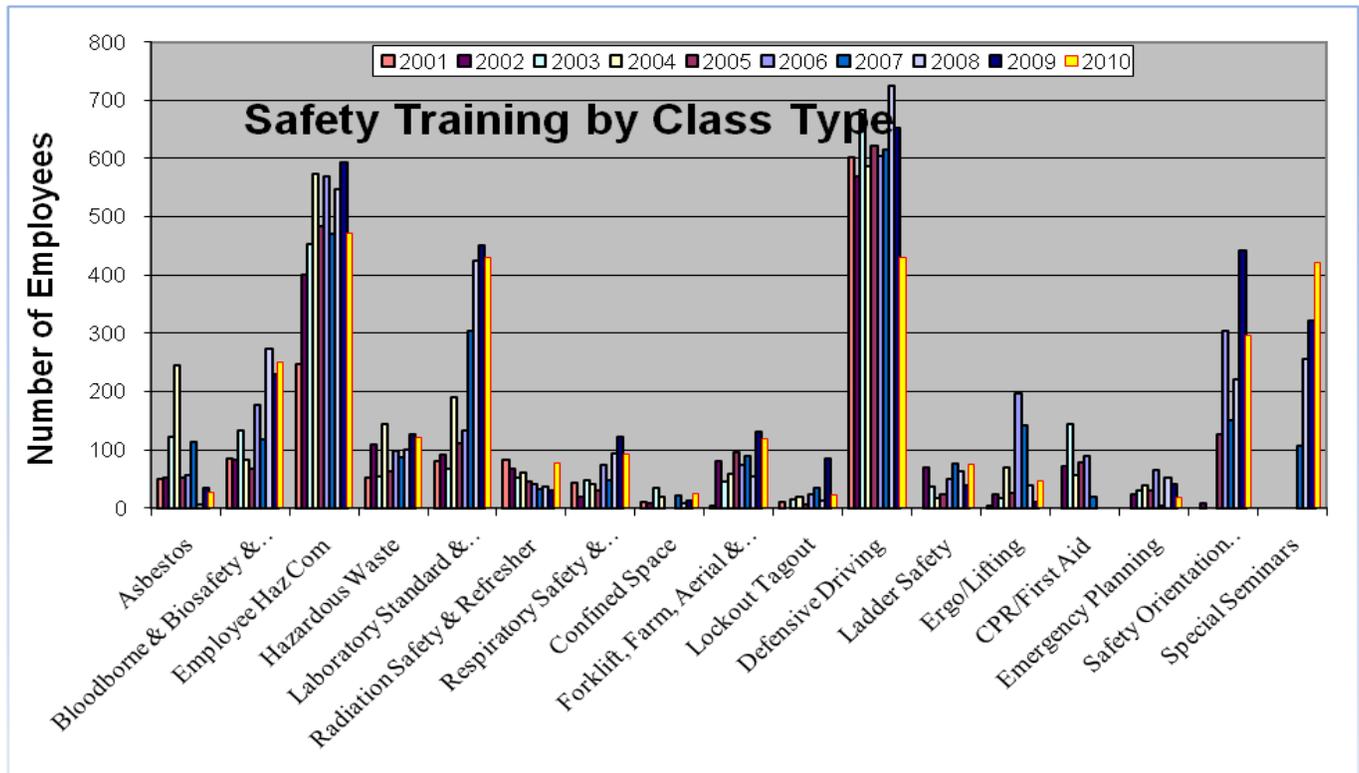


We have developed strong partnerships with academic, science and research departments through our safety training program. This is evidenced in repeated requests for EH&S staff to present special sessions on current safety issues which help departments comply with OSHA's annual lab refresher training requirement. In addition, EH&S arranged and supported NM OSHA personnel as well as Federal OSHA certified training group to respectively provide five 10 hour long safety classes on the OSHA Standards and a three day- 30 hour OSHA safety class. These were presented to workers from southern NM as well as employees from NMSU. The 2010 Safety Training chart (below) shows the participation in the various classes.



EH&S staff traveled throughout the state to provide safety training to 10 Agricultural Science Centers, NMSU Grants and NMSU Carlsbad campuses.

Over the last five years attendance at safety training has dramatically increased for most NMSU campus staff and in the academics, faculty, post-doctoral and graduate assistants especially in the sciences and research departments. Defensive driving course attendance is down this year as a result of vehicle reduction measures initiated through new vehicle assignment policy. The chart of safety training by class types shows this change (below).



The increases have been primarily classes for researchers, faculty, graduate assistants, and related staff working with hazardous materials or animals, e.g. laboratory, radiation, biosafety and animal worker safety. Also there is a companion decrease in attendance at facility and maintenance related training, e.g. asbestos, forklift, lockout/ tagout, respiratory protection.

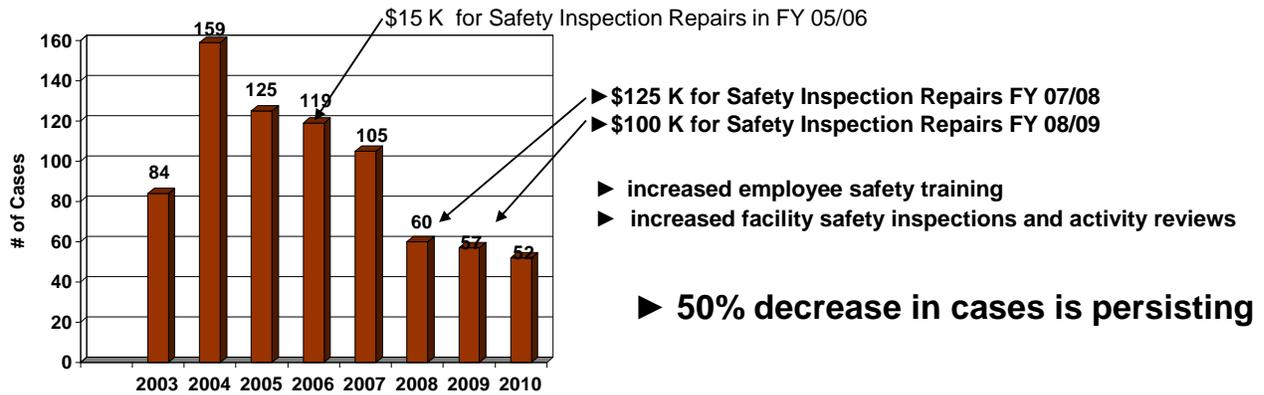
### **Training Program Goals**

- Transition to new learning management system
- Continue improving safety training at remote locations through site visits
- Work with facilities supervisors to improve asbestos awareness annual training compliance

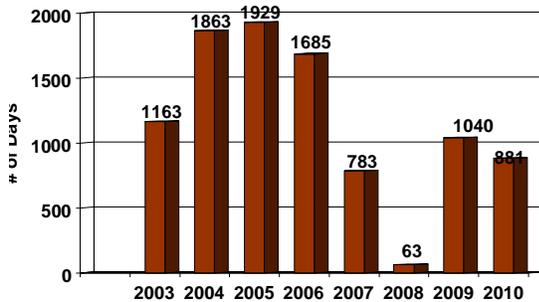
### **EMPLOYEE INJURY & ILLNESS LOSS CONTROL**

There is a continued trend of 50% less injury and illness cases with lost or restricted work days that has persisted for three years. The decrease in the more severe cases correlates with several initiatives including: increased funding for building safety repairs and safety upgrades, delivery of safety training related to injury trends, building safety inspections and a new workers compensation coordinator position.

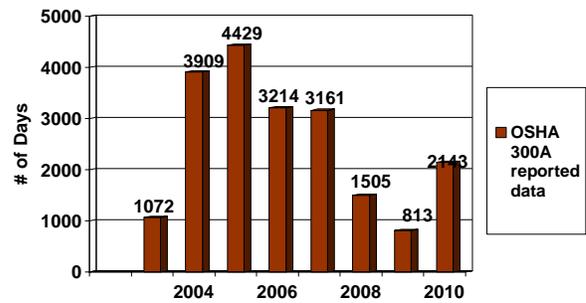
## OSHA Recordable Worker Comp Cases – with lost or restricted time



Total Number of Days Away from Work  
(Lost Days)



Total Number of Days with Modified Duty  
(Work Restriction)



New FTE worker comp coordinator

Ignoring the anomaly in 2008, there was a 46% decrease in lost days compared to previous four year average. The anomaly in 2008 was attributed to new FTE tracking data. The lowered injury rate correlates with a many EH&S safety initiatives including increased participation in training, more facility safety inspections and activity reviews. The addition of 1 FTE safety inspector and training in Spanish was effected in 2008.

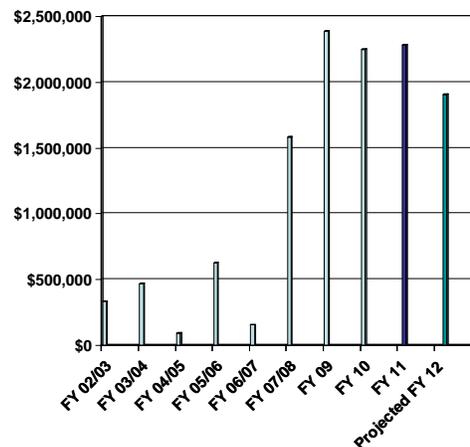
The worker compensation insurance premiums are based on experience and are starting to decline. Last year 59% (\$2.28M) of the total risk management premium (\$3.8M) was based on workers compensation claims, so it is important to maintain this constructive decrease in injury rate.

### Loss Control Program Goal

- Maintain low injury rate through training, inspections and timely facility repairs to improve workplace safety and ultimately reduce medical costs, lost work and insurance premium.

### Annual NMSU Worker Comp Premium

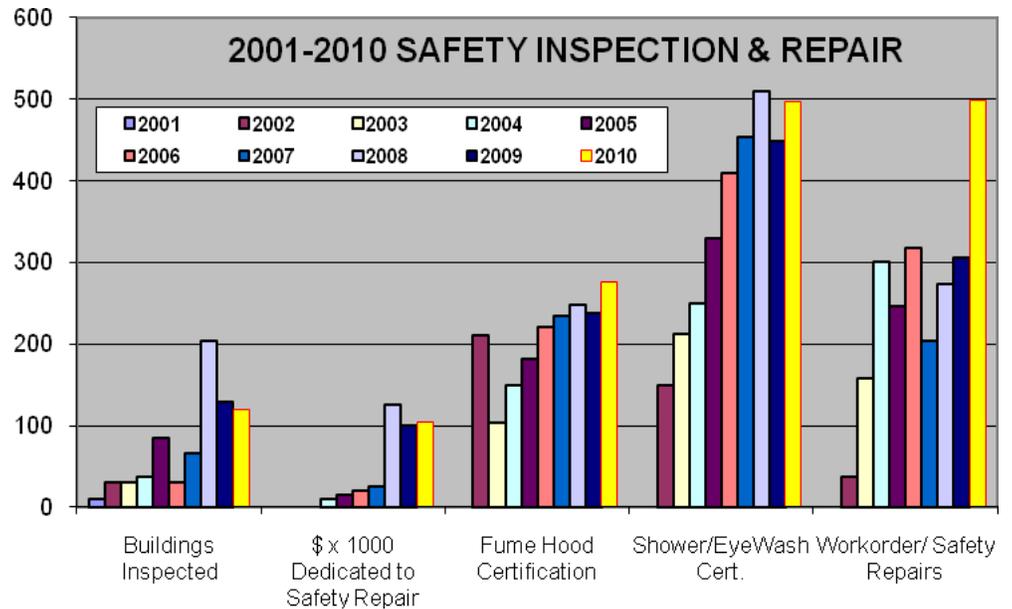
FY	WC Premium
02/03	\$333,564
03/04	\$466,820
04/05	\$92,667
05/06	\$628,734
06/07	\$154,981
07/08	\$1,584,211
08/09	\$2,387,452
09/10	\$2,249,292
10/11	2,280,159
11/12 projected	1,909,065



## INSPECTIONS & SAFETY SERVICES

To minimize and reduce personnel losses from work related injury and illness EH&S provides NMSU with an aggressive, proactive loss control program. This is multi-approach safety surveillance of workers and workplace as well as after the fact injury investigation to prevent similar incidents.

For 2010, the safety surveillance activities were comprised of facility inspections, equipment certifications, activity and work site reviews and incident/complaint responses. The number of work requests for correction and improvement of building safety almost doubled this year. Fume hood inspections also increased as those which failed the certification were retested after repairs were completed.



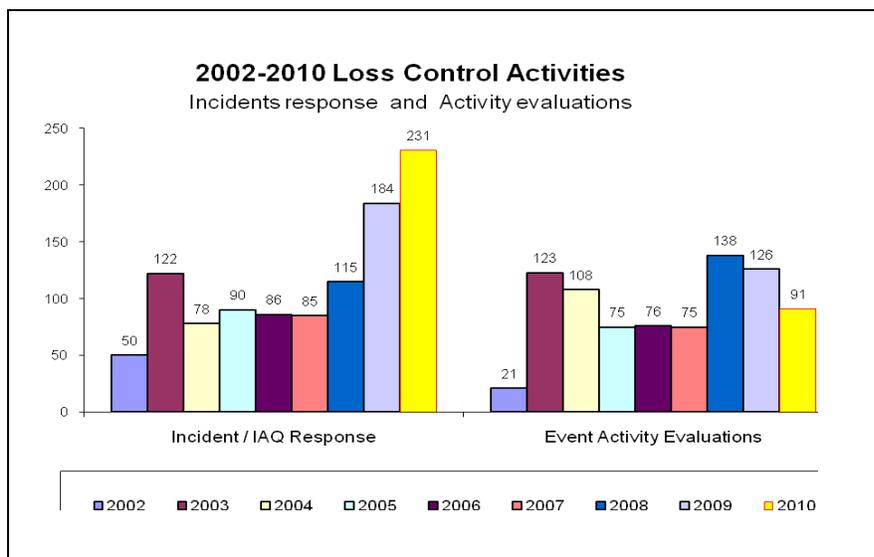
In 2010 EH&S completed inspections, workplace checks, and investigations of campus buildings, public areas, shops, classrooms and research facilities, as well as remote farm facilities. As part of the inspection process EH&S invested nearly \$100,000 of BRR funding via 305 work orders and provided details to correct safety deficiencies, concerns and dangerous conditions at I&G facilities and other NMSU areas, respectively.

The number of room and detailed lab inspections completed in 2010 decreased by approximately 25% from last year due to reduced staff inspector. EH&S did complete 24% more certification inspections on laboratory safety equipment, e.g. eyewashes, emergency showers and exhaust hoods using student inspectors.



The annual inspections of Las Cruces campus's high hazard areas includes labs, shops, chemical storage areas, warehouse and plant operations, construction sites, mechanical rooms, machine use areas. The annual facility safety inspections are required by Worker's Compensation Administration and State Risk Management Loss Control Rule (effective 2008) and required by several OSHA regulations.

There were 231 responses to incidents primarily involving indoor air quality complaints and minor hazardous materials spills/incidents, a 20% increase compared to last year (2009 and 2010 include mold and asbestos concerns). Event activity evaluations included 91 reviews of employee work activities, evaluation and authorization for non-routine campus events. The latter is done in conjunction with Campus Activities Office and Conferences Services.



### Remote Area Inspections

All NMSU components and entities need safety services and the importance of routine safety inspections and training became a tragic reality just six years ago. The root cause of the worker fatality was determined to have a number of contributing factors, including need for routine safety training and workplace inspections. Steps were taken to initiate training and inspection services for all 12 Agricultural Science Research Centers (ASC's) and farms three years ago with funding from the College of Agriculture.

Because funding for staff inspector was reduced this year, EH&S support to remote campuses and Agricultural Science Centers has decreased. In spring 2011, experienced staff provided on-site safety training and inspections to 10 of 12 ASC's and facilities inspections at Carlsbad and Grants campuses (2 of 4 community colleges). The inspection reports for the Agricultural Science Centers include details on noted safety deficiencies with corrective actions and a summary prioritizing safety concerns for executive leadership.

### Inspection Program Goals

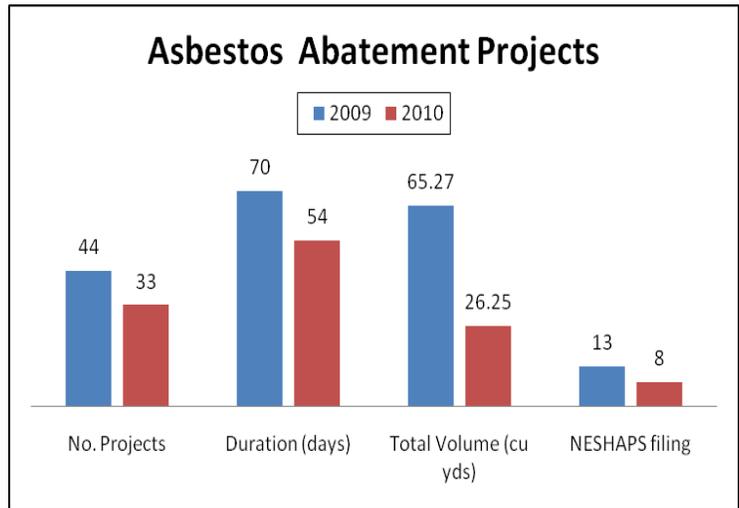
- Hire temporary replacement inspector to catch up on facilities inspections
- Increase budget to hire permanent staff inspector
- Increase inspection budget as new square footage is added to the NMSU system

## ASBESTOS MANAGEMENT AND ABATEMENT

In 2010 EH&S continued asbestos management and abatement oversight. EH&S established a NMSU Asbestos Management Program in 2009. The program is to help ensure proper identification and management of asbestos containing materials in the older (pre-1981) NMSU buildings and automotive shops and classrooms. Asbestos abatement for minor building remodels and general maintenance is contracted out under EH&S project oversight. A request for proposal was completed this year to establish the best contract rates for NMSU. The EH&S BRR funds asbestos remediation and special waste disposal.

EH&S has one dedicated employee and an alternate which are annually qualified as an asbestos inspectors. EH&S management responsibilities include providing immediate initial inspections, ensuring surveys and monitoring to assess potential environmental hazards and conducting Asbestos Awareness Training for campus personnel.

EH&S continued in 2010 to provide NMSU departments with timely and professional response in regards to asbestos, mold and lead related issues. During the year EH&S completed 33 abatement projects, 8 of which required permitting through NESHAP. There was an overall decrease in asbestos abatement projects, duration and volume of waste disposed. All abatements are performed and monitored by licensed contractors. Several mold assessments were also completed during this same period.



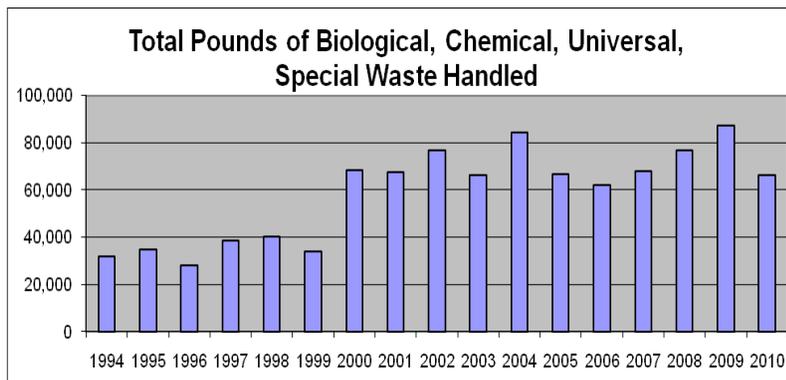
EH&S provides asbestos awareness training four times a year (in English and Spanish) with a total of 16 classes offered in 2010. Supervisors are reminded several weeks in advance of the annual refresher training requirements. This training informs staff on potential locations and types of materials that may contain asbestos and the NMSU procedure for notification so that appropriate containment and abatement is performed by contractor prior to NMSU employee work in these areas. Specific maintenance involving class IV non-friable asbestos and those with documented negative exposure are allowed by trained NMSU employees. However, in 2010 only 25 employees attended.

### **Asbestos Management Program Goals**

- Surveying more buildings to determine location of asbestos
- Improving identification of known asbestos using commercial software for tracking
- Increase Asbestos Awareness refresher compliance rate

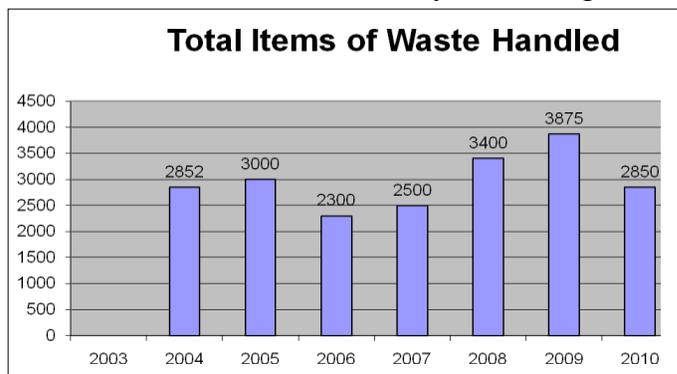
# HAZARDOUS WASTE MANAGEMENT

The EH&S environmental compliance team picked up, researched, processed, and shipped 66,000 pounds of waste in 2010 compared to 72,000 pounds averaged over the previous five years. The main reason poundage was down in 2010 is because of in depth environmental assessment which revealed option for combining waste streams and reducing waste cost. The cost savings will be realized each year moving forward because this is a sustainable change in operations.



The team also managed 2,850 different waste items compared to 3,015 items averaged over the previous five years, a slight decrease. This year 400 of the items handled were new chemicals not previously picked up for disposal on campus and thus required in depth analytical review of MSDSs/manufacturer's information to determine the safest, most cost effective disposal option.

The new chemical items were then added to the "NMSU EH&S Chemical Dictionary." Entering new information into the chemical dictionary will ensure that whenever an item is picked up again in the future a simple legacy reference exists to show how to dispose of it.



Most of the non-routine waste workload resulted from large chemical clean outs (greater than 50 chemical items at one time) from 21 different departments/labs: (4) Chemistry, (3) PSL, (2) Biology, Family Consumer Sciences, Leyendecker Farm, Geology, Art, USDA, EM,

SWAT, EPPWS, MAE, Civil Eng., PES, and OFS Central Plant. Overall, all hazardous waste items were disposed of legally and without any significant environmental health or safety incidents.

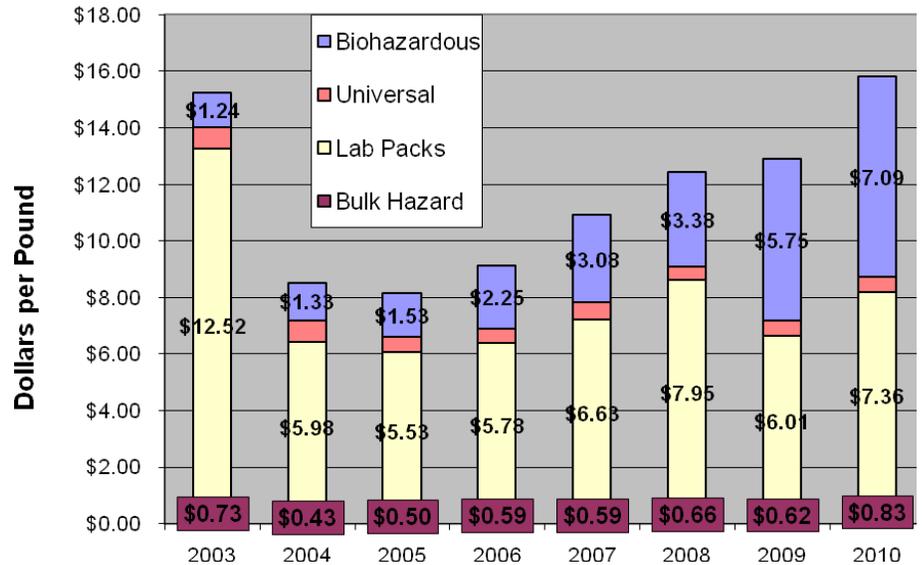
Physically opening chemicals and pouring/mixing compatible chemicals into 55-gallon drums keeps the cost per pound for disposal low. Mixing chemicals is risky however, and requires keen attention to detail. In cumulative, the 3.75 FTE team spent 65 hours in restrictive, encapsulating protective suits and respirators while mixing chemicals on 29 different days in all weather conditions. Overall, no significant adverse reactions occurred during mixing activities.

## Cost Saving Measures

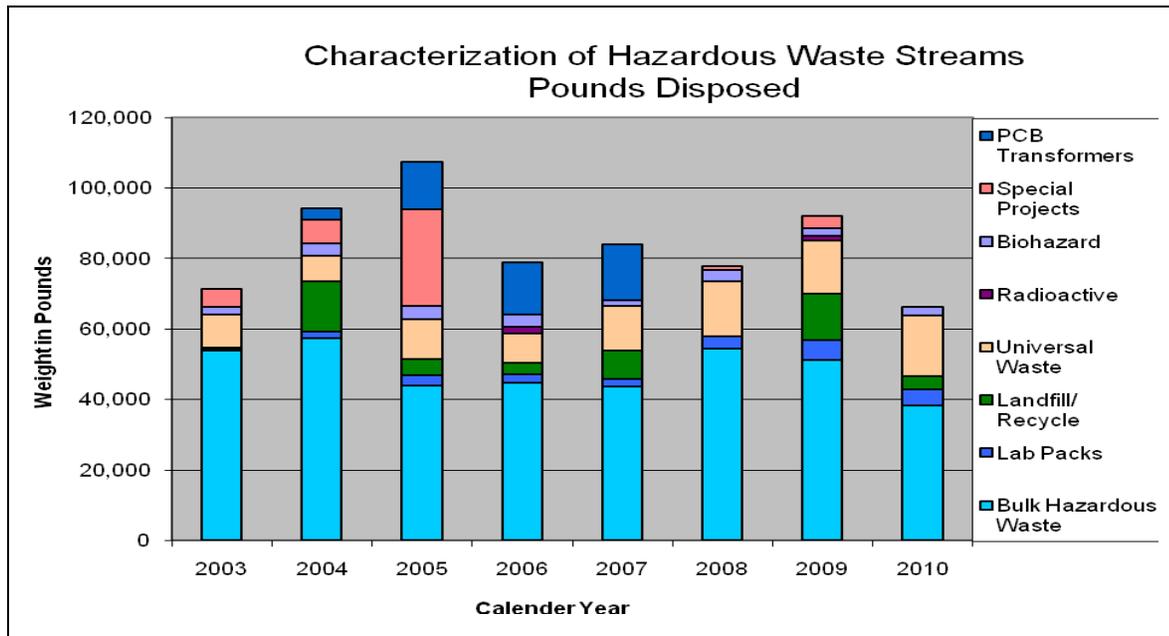
The per pound disposal costs in 2010 increased because of major increases in the cost of biological waste disposal and a special shipment of old gas cylinders which raised the lab pack cost per pound. Recognizing the escalating costs, efforts to reduce biological waste cost by finding alternative disposal methods and new vendors was initiated. The cost savings from these waste reduction efforts should be evident next year.

It is extremely important to note that the largest waste stream “bulk hazardous waste” is also the lowest cost. The average cost per pound of hazardous chemical waste varies by more than 10 fold with bulk waste being the lowest and lab packs being the highest. EH&S contains the cost by researching and combining similar waste types so that 89% of the chemical waste can be shipped in bulk containers for disposal. The cost of bulk waste this year was \$0.83per pound

### Cost per Pound by Waste Type



compared to \$7.36 per pound for lab pack waste which is shipped off without additional handling. The cost savings from bulking 89% of the chemical waste was \$249,456 in avoided disposal fees.



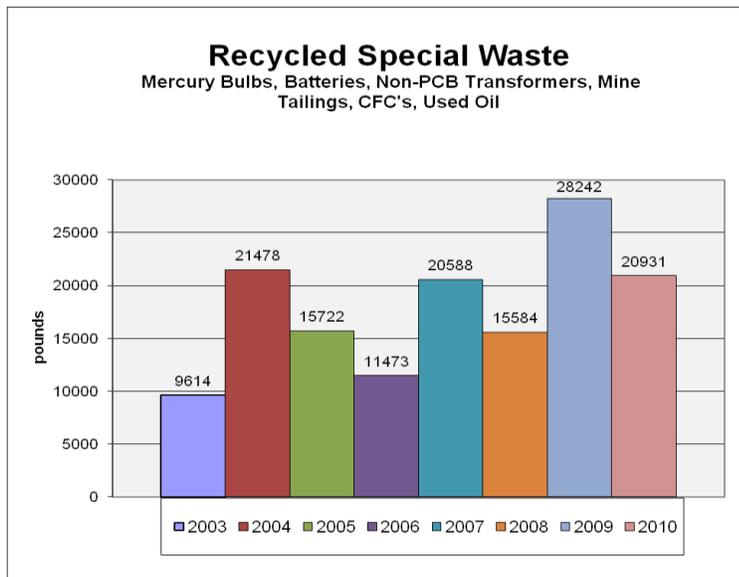
The team coordinates with eight different environmental services contractors: Clean Harbors, Veolia, Waste Mgt., Stericycle, Fuels, Rinchem, NEMS, and Interlab. By using specialized contractors for different projects, we are often able to reduce disposal/regulatory costs by thousands of dollars. Coordinating with numerous contractors however leads to additional problems with manifests, transportation, and billing. Four significant billing errors were identified totaling \$1,500 in wrong charges- and were successfully removed. Overall, NMSU’s 66,000 pounds of hazardous waste was disposed of at a total cost of \$91,500.

The team also aggressively tries to reduce the cost of empty containers, supplies, and equipment by

obtaining multiple quotes from contractors and ordering in bulk. Supplies include spill kits that are distributed to labs and shop work areas to cost effectively minimize losses from inadvertent releases of hazardous materials. Overall in 2010, about \$30,000 was spent on these items. The additional expense this year was directly related to one time purchases of equipment and supplies needed as we moved into a new hazardous waste storage facility. In 2011, it is anticipated that this type of expenditure will be in line with historic average of \$20,000.

## Sustainability

Hazardous wastes generated by the Las Cruces campus are directly managed and handled by EH&S. Campus operations, instruction and research programs generate a wide variety of hazardous and special wastes. Although EH&S cannot control the types or volume of wastes being generated, we do strive to recycle as much as legally possible. Special contracts are established for the routine waste streams including mercury containing bulbs, equipment such as thermostats, and non-PCB transformers. The mercury, oils and metals are recycled to the extent possible. Other wastes like mine tailings must be tested and qualify for special waste landfill. Recycle for reuse was affected for three hazardous compressed gas cylinders. Recycling small volumes of these types of wastes requires additional effort because of the additional research, testing, coordination and various contracts required but it saves on direct disposal expense. Environmental Health & Safety staff seeks to find these alternate solutions and dedicate the additional effort in a commitment to sustainability at NMSU.



### Special Projects:

In coordination with WERC, the Environmental Manager supported three formal, in-depth environmental assessments of the OFS Mechanic Shop, Paint Shop, and Electric Shop for the EPA funded grant: Environmental Management System Internal NMSU Assessment for Pollution Prevention. In depth team assessments reviewed all waste streams and disposal options for each. A big success story from the reviews was the discovery that Parking Dept. waste latex paint could be mixed with OFS Paint Shop latex paint and disposed of through a local vendor as

non-hazardous special waste at very low cost. This removed EH&S handling of 7,500 pounds of paint waste and eliminated higher disposal cost through EH&S hazardous waste vendor.

Another special project involved EH&S working with the Art Dept. to obtain a special filtered sink in the Ceramic Shop to remove solid glaze wastes with metals. This saved NMSU disposing of an extra 1,500 pounds of ceramic wastewater as hazardous waste and avoided \$1,500 disposal fee. These two special projects resulted in a 9,000 pound decrease in hazardous waste this year.

## **HazMat Response and Testing Unknowns**

The team also responded to fifteen emergency response calls for hazmat spills/incidents; the most significant involving mercury, lithium bromide, and transformer oil. Emergency response calls require an immediate action and are often labor/time intensive in terms of set up/clean up, demobilization/disposal, and documentation. The team also picked up and internally analyzed 50 unknown chemicals. Unknown chemicals are potentially highly hazardous because no content information is available on them. Each has to be carefully opened and a variety of wet chemistry tests performed to determine probable contents and then a final disposal path. By performing select unknown analysis internally, NMSU saved \$1,500 avoided contractor fees. Overall, ten additional chemical samples had to be sent off to a private lab for official analysis; the most significant involving oil tests for PCBs, Art Dept. ceramic wastewater metals, OFS Paint Shop latex paint metals/BTEX, Central Plant cooling water metals, and running track mercury analysis. Total cost for contracted lab analysis was only \$1,500.

## **Hazardous Waste Training**

Hazardous Waste Training for faculty, staff, and students is an essential component of a successful waste management program. The team presented 50 formal, dynamic hazardous waste management briefings resulting in about 700 faculty, staff, and students learning proper waste management techniques. Training was offered through the Hazcom program, monthly three-hour hazardous waste management classes, and special refresher trainings in key departments. Written evaluations for the three-hour classes resulted in 94% “excellent” ratings- the highest available. Specific written remarks this year included: “I liked the stories and they made everything make sense” and “I appreciate that the instructors are the same people that handle the hazardous waste” and “It is perfect...!”

## **Hazardous Waste Reports & Inspections**

Hazardous Waste Reports and Inspections are also essential components of a successful waste management program. Federally/State mandated reports completed and filed accurately and on time were: Tier II Chemical Inventory, Hazardous Waste Fees, PCB Log, Biennial Hazardous Waste, and Duplicate EPA ID Number Retraction. The team also conducted 15 formal, in depth hazardous waste inspections at key labs/work areas throughout campus. These inspections help reinforce training, identify/solve unique waste disposal issues, prepare personnel for unannounced EPA/NMED inspections, and build positive work relationships between EH&S staff and outside departmental personnel. EH&S coordinated external inspection by Las Cruces City Wastewater Treatment Plant personnel. They conducted two formal, half-day inspections on campus of waste disposal operations focusing on the Art Dept. Photo Lab and Skeen Hall Labs- no significant negative findings were noted.

## **Hazardous Waste Program Goals**

- Continuously assess our chemical/biohazardous/universal waste pick up, research, processing, and shipping system to ensure we safely dispose of all NMSU hazardous waste in a legal and cost-effective manner.
- Educate generators on waste minimization to maintain or reduce hazardous waste volume, especially in regards to costly biohazardous waste generation/disposal and lab clean outs.
- Update key SOPs/Training Classes, specifically DOT Security Plan, EMF Contingency Plan, EMF Weekly Inspection Form, Hazwopper Class.

## **ENVIRONMENTAL MANAGEMENT FACILITY**

After numerous delays and with no outside assistance, the EH&S team in August/September 2010 moved all supplies, equipment, and hazardous materials from the old A-Mountain Hazardous Waste Storage Facility and the Universal Waste Building to the new Environmental Management Facility (EMF) located centrally on campus. The new facility consolidates all Las Cruces campus hazardous waste (chemical, universal, biological, radiological) into one building for the first time. The facility also enables the mixing of chemicals to be conducted indoors for the first time and thus out of inclement weather conditions by including a special chemical mixing room with custom built walk in fume hood. As with most major lab construction projects, numerous meetings, walk throughs, special equipment research, and air quality sampling was conducted to best ensure a safe facility. A number of issues are still being worked on to include HVAC, back-up generator for electrical, security alarm, signage, new contingency plan and written SOPs. A new procedure implemented with success is the Electric Shop each day delivers burned out bulbs/ballasts to the EMF for ultimate disposal. In the past the Electric Shop stored the bulbs/ballasts in a trailer in the OFS Yard which EH&S would then weekly empty and move items to the Universal Waste Building. The new EMF eliminates the middle storage/removal step and allows bulbs/ballasts to be more efficiently managed by reducing OFS Electricians and EH&S valuable time. The reduced travel distance from campus waste generators to storage/removal location is also saving NMSU by eliminating vehicle expense and daily travel time.

## **TITLE V AIR PERMIT**

After three detailed reviews/revisions lead by EH&S, NMSU on October 27<sup>th</sup>, 2010 received a new five year Title V Air Permit from the New Mexico Environment Department (NMED). For the first time new language interpretation was included in the permit to ensure non-NMSU owned equipment (for example General Dynamic Generators) were excluded from NMSU air permit. Overall the new permit more efficiently streamlines Central Plant Equipment Inspection Reports and recordkeeping requirements to better ensure environmental compliance.

EH&S completed/ensured ten detailed air reports were filed accurately and on time to NMED: Annual air report, (2) semi-annual air reports, air emissions inventory, turbine test protocol, turbine air emissions test results, turbine emissions test deviation report, air fees, generator location/operational log, and new Federal Greenhouse Gas (GHG) Management Plan. These reports ensure we are documenting compliance with all environmental laws, collecting appropriate data, and identifying positive trends to build on or negative trends for correction to better protect health and the environment. The new Federal GHG Plan was the most complex and required NMSU to start tracking/reporting all natural gas usage on campus (not just gas used at the Central Plant), all propane usage at stationary equipment sources, and all farm animals on campus since they produce methane gas. This is a good example of new, increasing regulation that EH&S must interpret, lead implementation on, and manage at NMSU. To best ensure a successful clean air program, EH&S now visits the Central Plant at least monthly to meet with key staff on air issues and averages a monthly conference call with Trinity Consultants in Albuquerque to stay current on complex, changing regulations.

### **Environmental Management Program Goal**

- As new regulations are passed, additional staffing is needed to meet the new demands.

# **RADIATION SAFETY**

## **Regulatory Framework**

The use of radioactive material used for research and teaching at NMSU is regulated by the New Mexico Environment Department Radiation Control Bureau (NMRCB) as authorized under the New Mexico Radiation Protection Regulations (NMAC 20.3). The University holds two radioactive material (RAM) licenses issued by the NMRCB. The first is a “Broad-Scope Type AB” Radioactive Materials License which defines the specific types, terms and conditions for using radioactive material on the main campus. The second license held by NMSU is a “Facility-Specific” Radioactive Materials License which defines the type, terms and conditions for using radioactive materials at the Carlsbad Environmental Monitoring & Research Center (CEMRC). The CEMRC is a small NMSU-owned research laboratory containing several radiochemistry labs. The CEMRC facility is located near the Carlsbad Branch campus in Carlsbad New Mexico and is managed by the College of Engineering.

The NMRCB also regulates all analytical, medical and dental x-ray machines and other radiation producing devices in use at NMSU. These devices must be registered with the NMRCB which then issues Certificates of Registration (COR) to NMSU. The COR defines the type of allowable use, specific requirements and restrictions for the devices. Analytical x-ray (primarily x-ray diffraction and x-ray fluorescence) machines are located in several departments and locations across main campus. In addition, an x-ray diffraction machine is located in the CEMRC facility. Diagnostic medical x-ray machines are located in the NMSU Health Center and the NMSU Athletics department. The Dona Ana Community College next to main campus has several dental x-ray machines in the teaching dental clinic.

## **NMSU Radiation Safety Committee and EH&S Radiation Safety Program**

The NMSU Radiation Safety Committee (RSC) was formed to establish university radiation safety policies and provide broad administrative oversight of the use of radioactive material and radiation producing devices to ensure that NMSU is in compliance with all New Mexico Radiation Protection regulations and the specific terms and conditions documented in the NMRCB licenses and CORs. The RSC is currently comprised of 7 faculty and staff with expertise in various techniques and technical areas related to the safe use of radioactive materials and radiation producing devices. The RSC reviews/ approves all applications from faculty and staff wanting to use radioactive material or a radiation producing device at NMSU. Oversight of the committee extends to all NMSU facilities including branch campuses, farms and any other NMSU entities off the main campus that use radioactive materials or radiation producing devices, In addition, the RSC conducts an annual review of the NMSU radiation safety program.

The day to day administrative and technical duties required to manage the NMSU radiation safety program are performed by the Radiation Safety Program Manager (RSO) and technical staff. The RSO works in the NMSU EH&S department on main campus and directs safety staff that provide support to the program. The RSO also provides oversight of and support to all NMSU facilities off main campus including branch campuses, farms and other NMSU entities off the main campus in Las Cruces. This includes oversight of the CEMRC facility radiation safety program including providing direction to on-site radiation safety staff at the CEMRC.

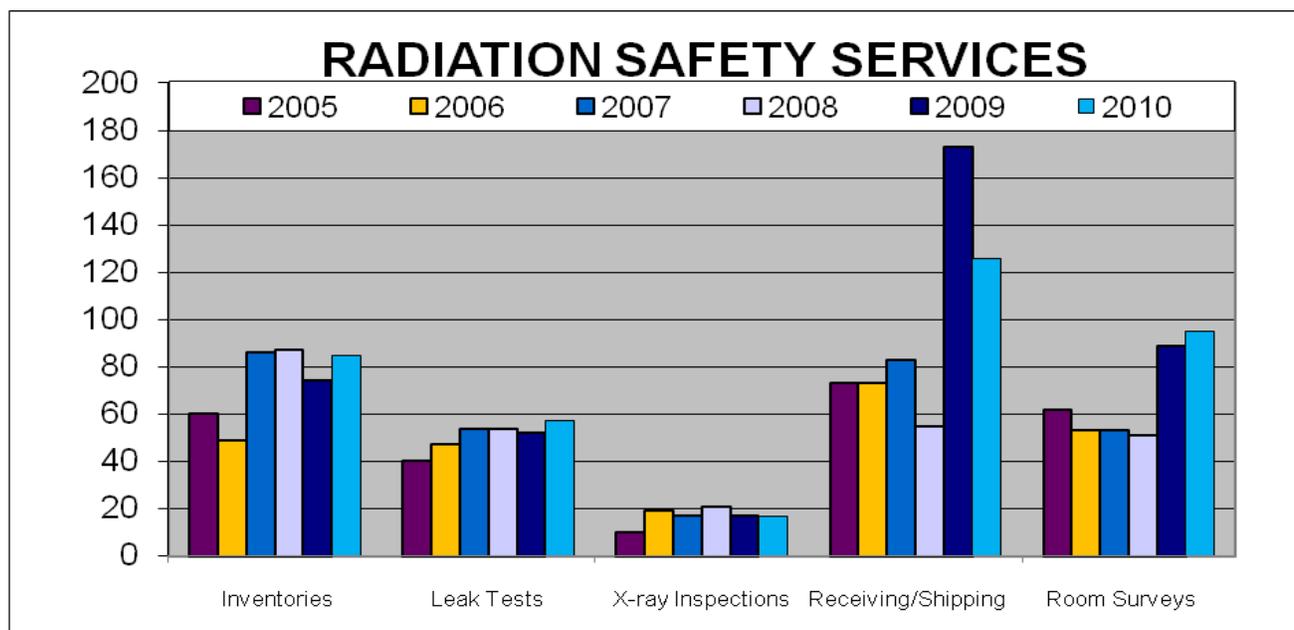
The RSO is responsible for, among other things,

- ensuring that RAM licenses and CORs issued to NMSU by the NMRCB are maintained and are up to date;

- management of legal records mandated by radiation protection regulations;
- serves as the primary liaison between the university and various radiation regulatory agencies;
- provides an interface between the RSC and NMSU faculty/staff using or wanting to use radioactive materials / devices;
- stay current on and identify any changes to federal and state radiation regulations that may affect university;
- developing and teaching various types of radiation safety training classes;
- maintenance of a university-wide RAM inventory including ensuring that semi-annual inventory reviews are completed
- maintenance of a university-wide inventory of all x-ray machines and instruments/devices containing a sealed radioactive source.

Other typical duties performed by the RSO and technical staff and some tracked in chart below:

- Receipt and deliver of all incoming radioactive material packages including performing regulatory-required radiation dose rate and contamination surveys;
- Ensure all out-going radioactive material and device shipments meet DOT requirements including proper shipping packaging, labeling and shipping documentation;
- Collect, store and ultimately dispose of various types of radioactive wastes generated by NMSU researchers;
- Perform inspections at least twice a year in labs authorized to use of radioactive materials;
- Perform contamination leak tests on various sealed radioactive sources semi-annually
- Perform x-ray machine inspections and leakage tests at least once a year.



### Inspections from Regulatory Agencies

In 2010, New Mexico Radiation Control Bureau (NMED) performed an inspection on main campus to assess the activities covered under the broad-scope license as they relate to radiation safety and compliance with the New Mexico Radiation Protection Regulations (20.3 NMAC). During the inspection, no violations found it was noted that the program appeared to be appropriately maintained.

## **2010 Radiation Safety Program Highlights and Changes**

### NMSU Radiation Safety Officer Change

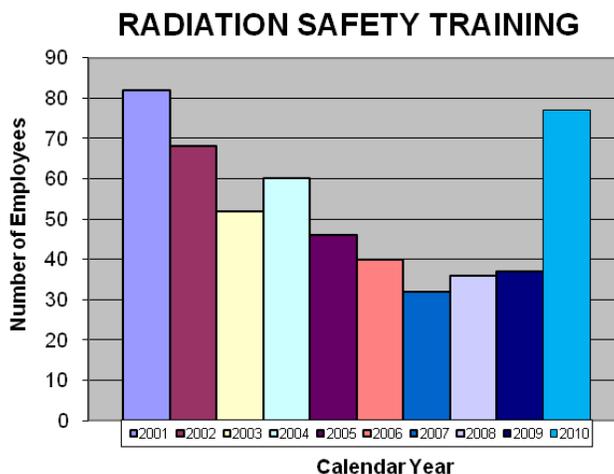
In July 2010 David Schoep took over the position of Radiation Safety Officer from Dr. Katrina Doolittle for the main campus Broad-Scope RAM license. In June 2010, the Dr. Doolittle sent a letter and supporting documentation to NMED requesting that the RSO be changed on the broad-scope license. The request was granted and on July 16, 2010 NMED issued a new license revision (AB151-41 / Expires Sept. 30, 2014).

### Environmental Management Facility Opened

The new EH&S waste management facility (EMF) has been opened and includes chemical and radioactive waste storage areas and two small laboratory. The RAM waste storage area is designed to hold both long-lived RAM waste and decay-in-storage waste. The RAM laboratory includes a liquid scintillation counter, survey meters and fume hood is used to process incoming RAM packages and characterize, segregate RAM waste.

### Radiation Safety Refresher Training Options Expanded

This year included adding a Radiation Safety Refresher section to the departmental Lab Standard/Hazardous Waste refresher training seminars that EH&S has provided for several years. The radiation safety section of the class was designed to meet the annual refresher training requirement for radiation workers put into effect in the 2009 revision of the NMSU Radiation Safety Manual. The addition of the refresher doubled the number of employees trained in radiation safety.



### Basic Radiation Safety Class Expanded

The basic radiation safety class was expanded to include a hands-on exercise where students perform basic chemical lab procedures using mock radioactive material. During the exercise students perform an exercise in the EMF lab where they manipulate a florescent mock “radioactive material”. The procedures the students perform include weighing out the material, mixing the material and pipetteing it into containers using techniques routinely used in chemistry labs. Once finished, a UV light as a “survey meter” to examine the student’s hands, clothing and work areas for contamination. The exercise demonstrates the concepts of contamination and the importance of using good lab technique to avoid contaminating themselves, lab equipment and work areas. The addition to the class has received very positive reviews from students.

## **2011 Radiation Safety Program Goals**

- Continue to maintain a high quality, customer-oriented and regulatory compliant radiation safety program at NMSU.
- Prepare the CEMRC RAM license renewal application including putting together supporting documentation and submitting the application package to the NMRCB for approval.
- Arrange for the disposal of radioactive wastes collected at main campus and CEMRC facility.

## BIOSAFETY MANAGEMENT

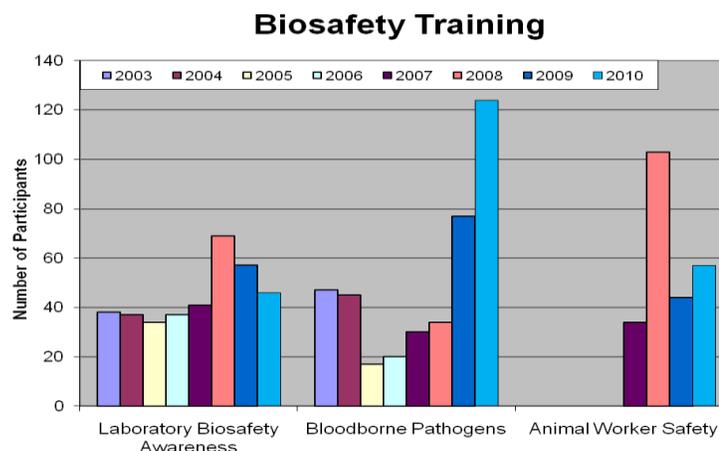
The one position in biosafety was vacated January 2010 and EH&S ensured continuity of critical biosafety functions by hiring an interim part time Biosafety Manager. The interim Biosafety Officer ensured continuity in research which included critical biosafety protocol reviews, training and inspections. On July 1, 2010, the Biosafety Manager position and program responsibilities were assumed by Research Compliance Office. The decision to reorganize the position was based on the source of funding and desire to expand the position for a wider breadth of research compliance issues. A full time Biosafety Manager was hired November 2010.

EH&S continues to support 25% of the Biosafety Manager salary which ensures training requirements are met. EH&S maintains a strong role in biosafety mission by providing the following additional support:

- training equipment and facilities,
- administrative support for monthly biosafety trainings including scheduling classes, web based registration, and managing training records
- handling and disposal for all biohazardous waste requiring incineration
- voting member of the Institutional Biosafety Committee (IBC)
- web based Bloodborne Pathogen training module that has been used exclusively this year to deliver required annual refresher training
- EH&S support of the Institutional Animal Care and Use Committee (IACUC) – this was requested by Chair to ensure continued involvement of EH&S which is critical for the occupational health and safety program for animal workers.

### Biosafety Training

Personnel training requirements are based on the nature of the materials used in the respective teaching and research activities at NMSU. For example, persons working at the University Health Center, Police, Fire and Emergency Services based on their contact with patients or members of the public are considered to have a routine potential for exposure to human blood, internal body fluids and “unfixed” tissue and therefore are required to attend annual training in bloodborne pathogen exposure control. With the addition of the EH&S developed web based bloodborne pathogen training, the compliance with this **annual** training mandate has more than tripled from previous years. A new on-line BBP training was developed and released at the beginning of 2010, providing readily accessible training for the NMSU system.

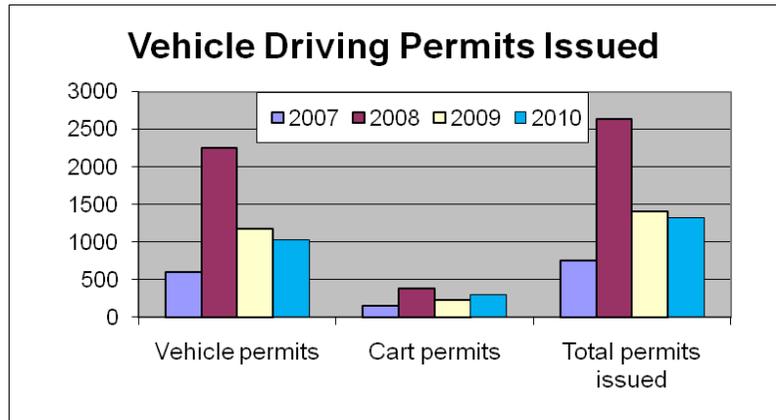


### **Biosafety Program Goals**

- Continue to support biosafety training classes
- Continue to provide most cost effective and legal biohazardous waste disposal service

## PERIODIC DRIVER LICENSE VERIFICATION

In 2005, NMSU instituted a driver license validation every three years for individuals authorized to drive university vehicles. The peak number of permits shown in 2008 results from the periodic license validation and permit renewal. This year a total of 1032 vehicle driver's licenses were validated compared to 1173 validated in 2009. In addition, 298 Utility Cart permits and license validation were provided. In total, EH&S staff verified about the same number of drivers



licenses and issued 1330 new vehicle and utility cart permits this year. A peak in permit renewals and license validation is expected for the three year renewal period in 2011. As a result of these new permit requirements; the driver license validation frequency for employees driving NMSU vehicles has significantly increased compared to previous years. This is a loss control measure as required by State Risk Management under the NMSU Loss Control Program and university policy.

### **Driver Safety and Risk Management Program Goal**

- Continue to provide loss control through license review and NMSU specific defensive driving course

## FALL SAFETY INITIATIVES AND EMERGENCY PREPAREDNESS

Since the events of 911, Environmental Health & Safety has coordinated Safety & Security Initiatives at the beginning of each Fall semester to raise awareness with departments and provide education of emergency planning and safety training for new employees and students. The events this year include:

- Distribution of NMSU Safety, Health & Security initiatives and annual requirements for emergency planning
- Testing of Department Emergency Action Plans through unannounced fire drills
- Testing of the Emergency Notification tools & updating emergency contact lists
- Communicable Disease Preparedness Committee and othes for a total of 31 departments completed Continuity of Operations Planning (CoOP) and designation of essential functions and personnel
- Special refresher training presentations to laboratory workers (over 400 faculty, staff, students)
- Workforce safety orientation to OFS (over 300 staff)
- Float safety training and inspections prior to parade
- Distributed 1000 emergency number stickers for phones
- Participated in new faculty orientation fair
- Updated All Hazards Emergency Operations Plan was signed by President
- Four updates of distributed CART and Resource Personnel contact information
- Developed new Hazardous Materials Release protocol and Severe Weather Emergency guide

### **Emergency Preparedness Program Goal**

- Maintain NMSU Las Cruces CoOP's and expand Continuity of Operations Planning throughout the NMSU system through training and guidance documents.