

New Mexico State University

ENVIRONMENTAL HEALTH & SAFETY

ANNUAL REPORT 2012

INTRODUCTION

MISSION

Environmental, Health and Safety is [committed to facilitating University safety, health and environmental protection](#) by providing and coordinating programs and services that support teaching, learning and research activities. Through these EH&S programs and our partnerships with various constituents of the campus and regulatory agencies, we prevent personal injury, recognize and control hazards, minimize risk and loss, and provide leadership in environmental stewardship.

EH&S fulfills its mission to make NMSU a safe work and learning environment and ensure regulatory compliance by implementing programs and 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 Assistance
5. [Accident, Incident](#), & 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. Responsibility for health, safety and environmental protection will be an integral requirement of all employees and students of New Mexico State University.

DEPARTMENT VALUES

Our department will be comprised of individuals committed to our mission and values and the highest professional practices and standards. We provide quality services to our customers by understanding their individual needs and measuring our effectiveness. We

carry out our responsibilities with knowledgeable professionalism. We provide creative, reasonable and timely solutions. We empower and require accountability of our staff in a supportive work environment where we can achieve our full potential.

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 2012

- EH&S continued to score the highest in customer satisfaction with at least 97% of respondents satisfied to extremely satisfied with EH&S services in all categories except one; follow up communications was improved from previous year.
- System wide safety training was provided to a total of 3,606 persons for 2012
- Fall safety initiatives included special departmental safety trainings to over 700 staff
- Safety training of NMSU personnel through formal classes increased 10.5% compared to 2011. EH&S provided 252 safety classes in 2012. There is an overall 21.5% average increase in number trained over the last five years, and an 86% increase since 2003.
- Excellent loss control trend of 50% less injury and illness cases with lost or restricted work days for five consecutive years!!
- Total number of room and detailed lab inspections completed increased by approximately 23%. The number of general room inspections completed increased by 23% and this is attributed to focus on remote facilities and campuses located outside of Las Cruces. The lab inspections performed decreased 11% from the previous year.
- As part of the inspection process, EH&S invested approximately \$100,000 of BRR funding via 336 work orders on Las Cruces campus to the correction of safety deficiencies.
- EH&S completed certification inspections on 927 units of laboratory safety equipment, including eyewashes, emergency showers and exhaust hoods using student inspectors.
- There were 187 responses to incidents primarily involving indoor air quality complaints and minor hazardous materials spills/incidents. The 49% decrease compared to last year was an unusually high incidence of mold investigation in 2011.
- Focused on continued safety support to remote campuses and Ag. Science Centers which includes annual room and lab inspections, and instructor lead safety training and certification for forklift drivers
- Asbestos abatements increased about 60% as shown by number and duration of projects, state required permit under NESHAP, and volume of waste produced.
- Expanded emergency preparedness testing to Carlsbad campus.
- Lead the development of NMSU's Hazard Mitigation Plan to be incorporated in

- the Dona Ana County Hazard Mitigation Plan for approval by FEMA
- Picked up, researched, processed, and shipped 73,000 pounds of waste in 2012 compared to 74,000 pounds averaged over the previous five years. The team managed over 2,800 different waste items.
- Responded to 13 emergency calls for hazmat spills or incidents requiring evacuation.
- Aggressively implemented education and inspection to successfully lower the amount of biohazardous waste generated by 75%.
- Formal NM Environment Department Hazardous Waste compliance inspection with no violations noted for EH&S operations and minor findings and warnings for campus lab operations.
- Completed nine detailed reports in compliance with NMSU's Title V Air Permit, and natural gas usage tracking under Federal Greenhouse Gas Management Plan.
- Passed NM Environment Department Radiation Protection inspection of licensed activities for Las Cruces campus radioactive materials and X-ray registrations and a separate inspection of the same at the Carlsbad Environmental Monitoring Facility, both inspections were completed with no findings.
- Continued support of Biosafety Program through committee application reviews, provisions for monthly training facility, registration and maintenance of records. Provide waste management and disposal of biohazardous wastes generated by laboratories.
- Issued validation for 1432 drivers licenses which includes 293 permits for utility cart use. This is a 16% decrease reflecting the three year renewal and increased number of permits last year.

➤ Overall the department continued to provide most services at an acceptable level. 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.

PARTNERSHIPS FOR IMPROVED SAFETY CULTURE



Writer: Tonya Suther

Adam Labe is a “Friend of Safety” at New Mexico State University. The Department of Art’s manager of chemical safety was recognized by Environmental, Health & Safety for working to improve the environmental health and safety culture on campus. For his efforts, in 2012 Adam was presented with an engraved globe, representing the impact safety managers make in the world.

Established at NMSU in 2008, the “Friend of Safety” award was inspired by the contributions of Michael Johnson, a chemistry professor, and Mary O’Connell, a Regents Professor in plant and environmental sciences, to improve the safety in science laboratories on campus. EH&S staff nominate deserving NMSU employees for the awards before voting for the winner.

“In a very short time, Adam has shown his success in leading the art safety program forward,” said EH&S Executive Director Katrina Doolittle. “He’s taken the lead on identifying safer equipment and creating organized work areas that include clear instructions and safety requirements, and he’s worked to identify alternate strategies to minimize hazardous waste and find less hazardous alternatives where possible.”

Among his duties, Labe oversees the storage and disposal of hazardous chemicals in the College of Arts and Sciences’ Department of Art. He also maintains and repairs machinery and tools throughout the facility as well as provides technical instruction in the areas of woodworking, welding and mold making.

“It’s extremely important to integrate safety and hazard awareness as an integral part of the art program,” Doolittle said. “There is a lot of work and good communication that goes into establishing an effective safety program that will ensure students and employees work safely and protect themselves, others and the environment.”

Doolittle also noted Labe’s actions in a recent building evacuation where he served as liaison during the emergency response incident.

Labe, who has worked as the manager of chemical safety for three years, holds a BFA in ceramics from the University of the Arts in Pennsylvania and received an MFA in sculpture from NMSU in 2000.

“Adam is a talented sculptor, a meticulous craftsman, a lover of tools, a man with a sense of humor, and he is utterly devoted to making the art department a safe environment for faculty and students,” said Julia Barello, art department head.

FS CUSTOMER SATISFACTION SURVEY

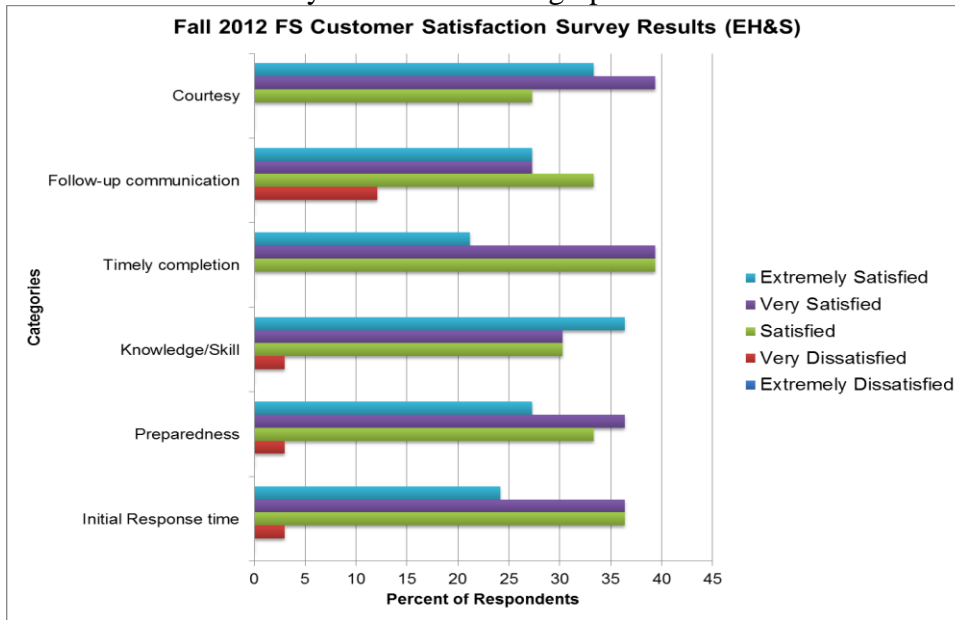
Environmental Health & Safety was reorganized to Facilities and Services (FS) July 2010 and has participated in FS’s customer satisfaction survey each year with positive improvements. There was an increase in the number of respondents that have utilized EH&S services in 2012 and there was an overall shift in the positive responses. Respondents were less likely to be dissatisfied with EH&S than in prior years.

From the survey, FS determined 151 respondents had utilized EH&S’s services in 2012. EH&S was graded from “Extremely Dissatisfied” to “Extremely Satisfied” by each respondent in each of the following categories:

- Initial Response time of EH&S staff
- Preparedness of EH&S staff
- Knowledge/skill of EH&S staff

- Timely completion of work
- Follow-up communications by EH&S staff
- Courtesy of EH&S staff toward customer

The results of the survey are shown in the graph below:



Based on the survey results, 55% of respondents had high levels of satisfaction in each of the categories. At least 97% of respondents were satisfied to extremely satisfied with EH&S services in all categories except one.

EH&S scored the highest in satisfaction than any other FS department that was included in the customer survey. EH&S was also the only department to not receive any “Extremely Dissatisfied” ratings.

In only one case, that of follow-up communications, did more than 12% of respondents indicate they were dissatisfied with the services provided. The issues that were 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. This study remains relevant because the results were used during 2012 to help focus groups under President Couture.

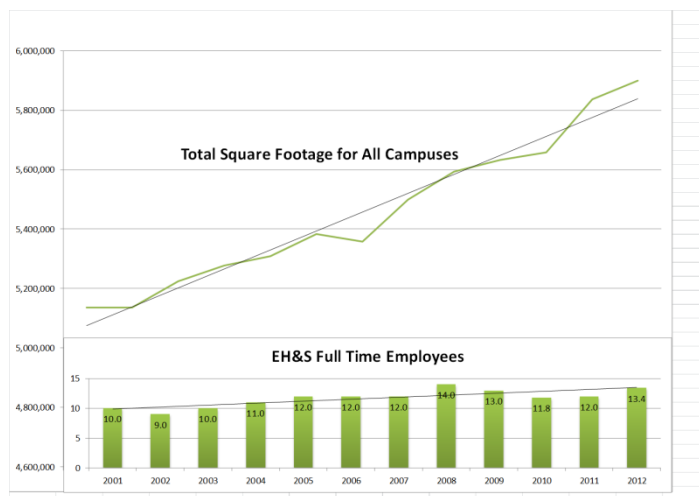
One repeated theme which emerged from the quantitative survey responses was satisfaction with Environmental Health & Safety support but frustration with other NMSU research support systems. *Across all colleges, the Environmental Safety practices were deemed good or excellent by 57% and fair by 32% with 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.

UNIVERSITY GROWTH AND EH&S SUPPORT

The chart shows a dramatic trend of increasing footprint of usable space without the corresponding increase in personnel to provide safety services. Increasing safety staff and services is a primary goal and focus of EH&S and Facilities and Services.



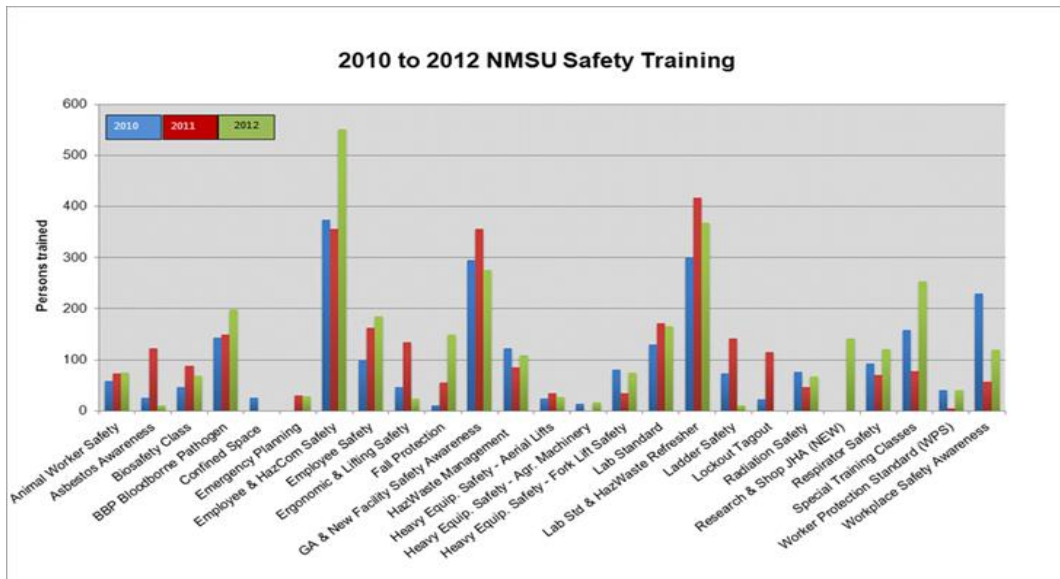
CENTRALIZED SAFETY TRAINING

In 2012, EH&S provided 252 safety classes. The classes cover over 24 different safety topics. The topics include 17 different routinely offered safety courses and special sessions such as Workplace Safety Awareness, Worker Protection Training, Lab Standard Refresher, Graduate Assistant orientation, and other special requests. Each class offers compliance with different regulatory standards, NMSU policy, and the State Risk Management's Loss Prevention and Control Rule.

EH&S staff was able to deliver safety training (including defensive driving) to a total of 3,606 persons for 2012. The total includes all safety training that EH&S staff provided to NMSU Grants campuses, NMSU Carlsbad campuses, twelve Agricultural Science Centers and Carlsbad Environmental Monitoring and Research Center.



The number of persons trained increased 10.5% from 2011. There has also been an overall 21.5% average increase over the last five years, and an 86% increase since 2003.



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 helps departments comply with OSHA's annual lab refresher training requirement.

From 2010, the increase in attendance was primarily for the following classes:

- BBP Bloodborne Pathogen
- Employee & HazCom Safety
- Employee Safety
- Fall Protection
- Respirator Safety
- Special Training
- Shop safety JHA

However, there is a companion decrease in attendance since 2010 for the following classes:

- Ergonomic & Lifting Safety
- GA & New Facility Safety Awareness
- Ladder Safety

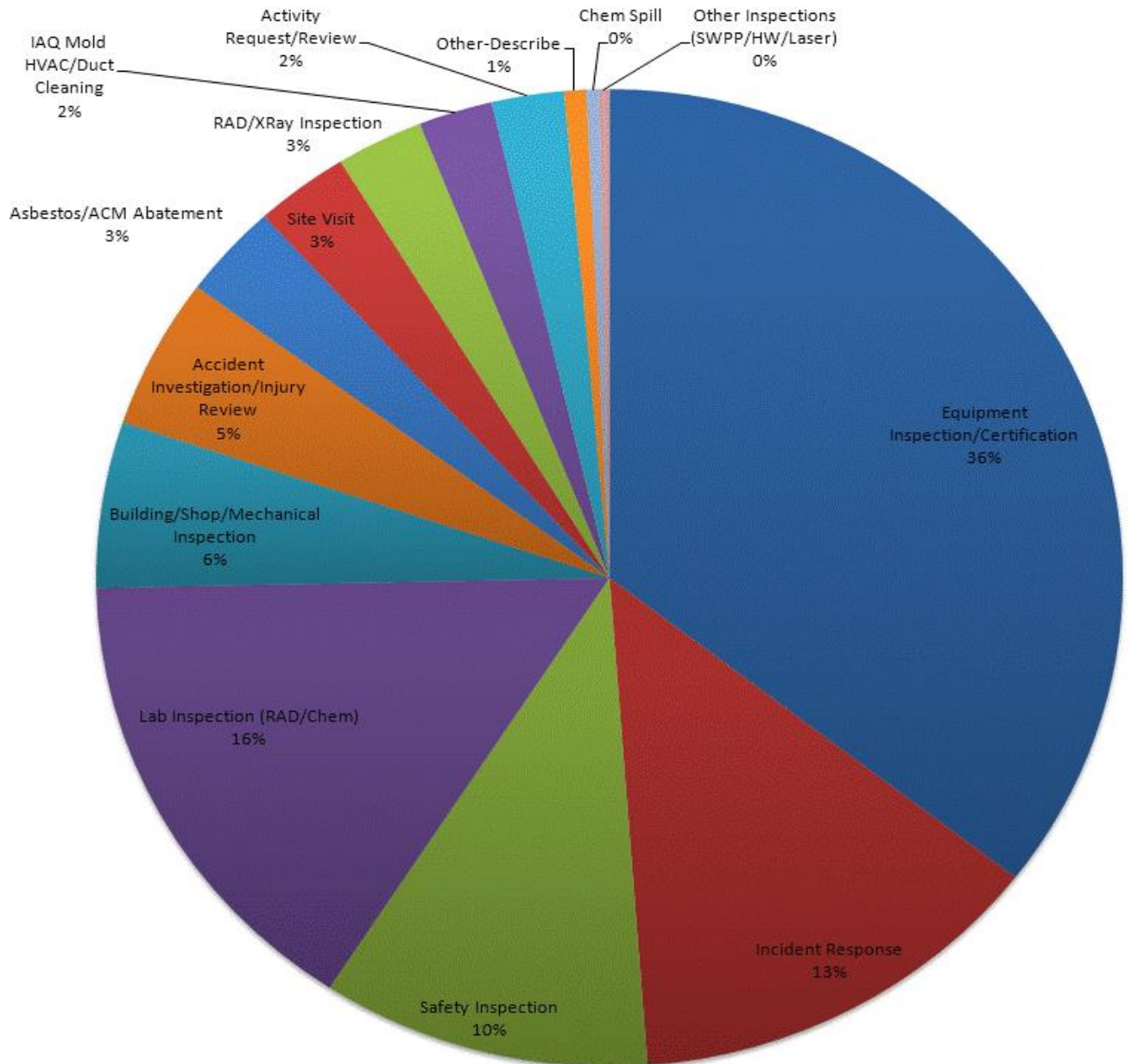
The Research & Shop Job Hazard Analysis class is a newly added class for the year 2012. The Confined Space class is not attended unless specific projects dictate just in time training. The Lockout Tagout classes were provided in 2011 to approximately 125 facilities staff.

Training Program Goals

- Transition to new learning management system
- Continue improving safety training at remote locations through on-line options
- Work with facilities supervisors to improve annual training compliance and focus on priority areas

LOSS CONTROL PROGRAM 2012

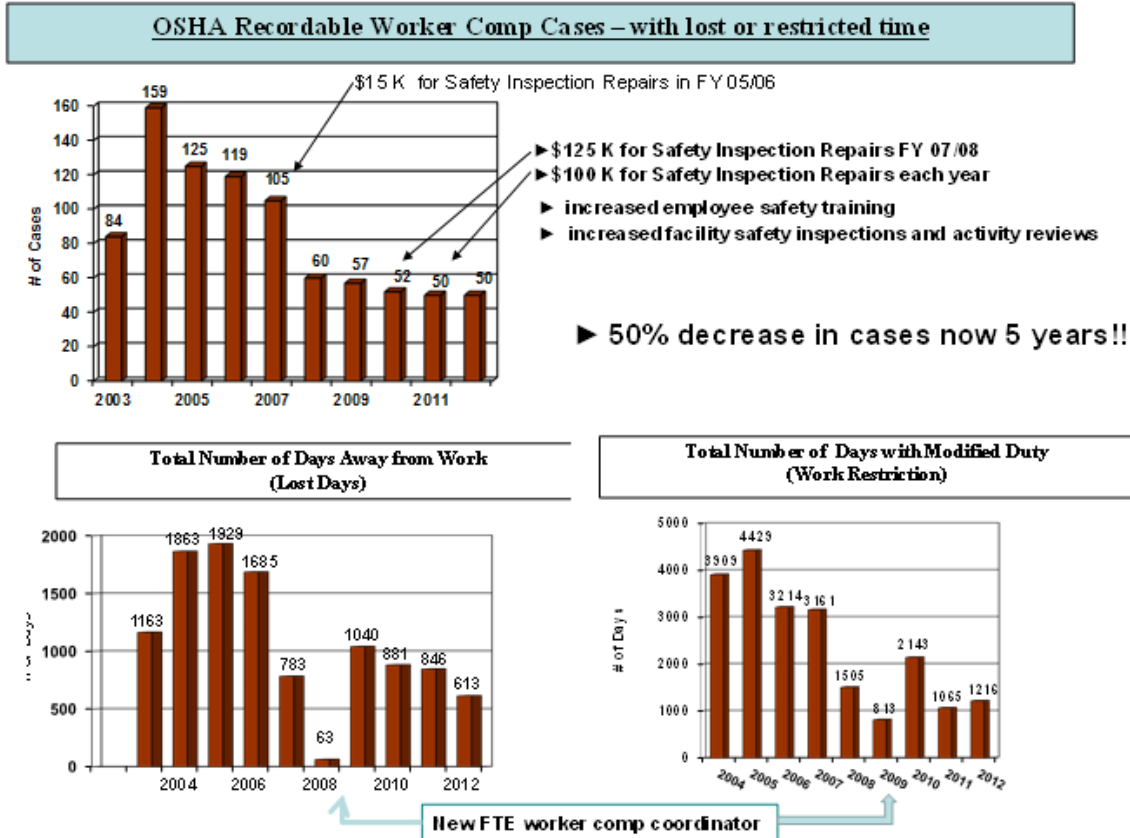
To minimize and reduce personnel losses from work related injury and illness EH&S provides NMSU with an aggressive, proactive loss control program. This is multi-approach safety surveillance of workers and workplace as well as after the fact injury investigation to prevent similar incidents. The graph below demonstrates all of EH&S's activities throughout 2012, with the exception of safety training.



For 2012, the safety surveillance activities were comprised of facility inspections, safety equipment certifications, activity and work site reviews, hazardous materials cleanup and complaint responses. Over 80% of EH&S activities focus on proactive inspection of hazardous work areas and correctly functioning safety equipment.

EMPLOYEE INJURY & ILLNESS 2012

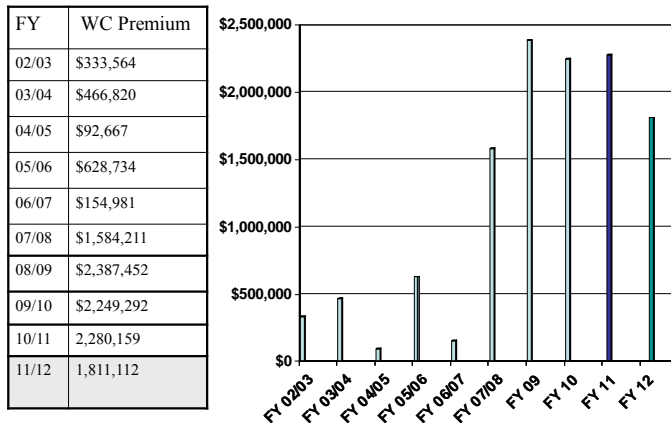
There is a continued trend of 50% less injury and illness cases with lost or restricted work days that has persisted for five years. The decrease in the more severe cases correlates with several initiatives including: increased funding for building safety repairs and safety upgrades, delivery of safety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



During the past four years, we have maintained a 54% reduction in lost days compared to previous four year average (ignoring the anomaly in 2008 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, training 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. In 2012, the premium specific to worker compensation was only 41% of the total risk management premium (\$4.4M) compared to previous year's premium which was 57% (\$2.28M) of the total risk management premium (\$3.9M). Maintaining reduction in workers compensation claims has a significant positive financial in premiums and work performed.

Annual NMSU Worker Comp Premium



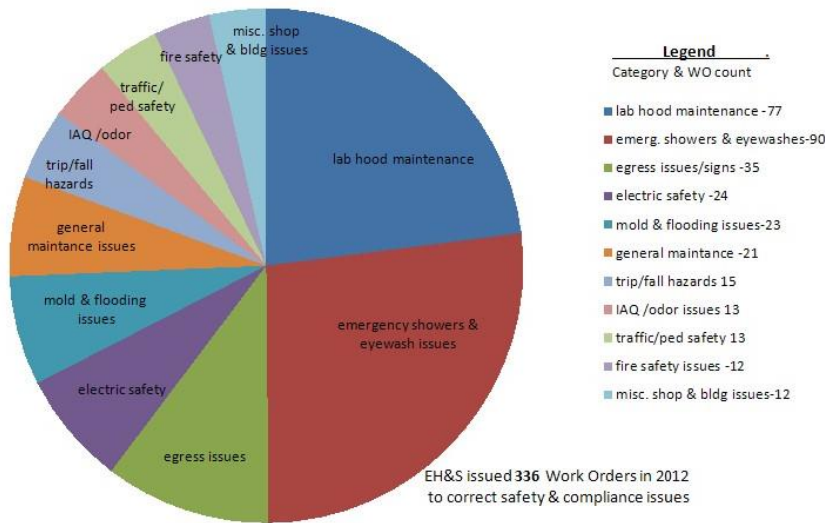
Loss Control Program Goal

➤ 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.

INSPECTIONS & SAFETY SERVICES 2012

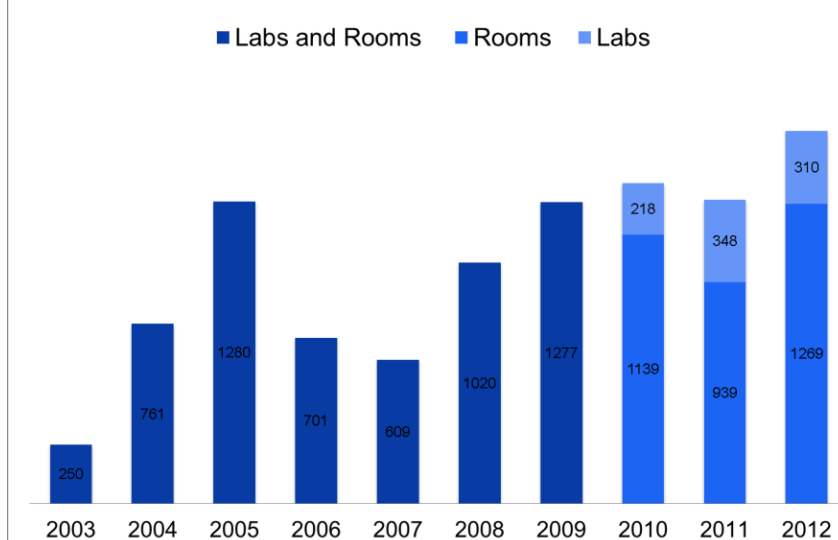
In 2012 EH&S completed inspections, workplace checks, and investigations of campus

2012 EH&S Correcting Work Orders by 11 safety deficiency category



buildings, public areas, shops, classrooms and research facilities, as well as remote farm facilities. As part of the inspection process, EH&S invested approximately \$100,000 of BRR funding via 336 work orders (Las Cruces campus shown in graph above). At facilities across the state, EH&S provided details to correct safety deficiencies, identify concerns and dangerous conditions at campus facilities and other NMSU areas, respectively.

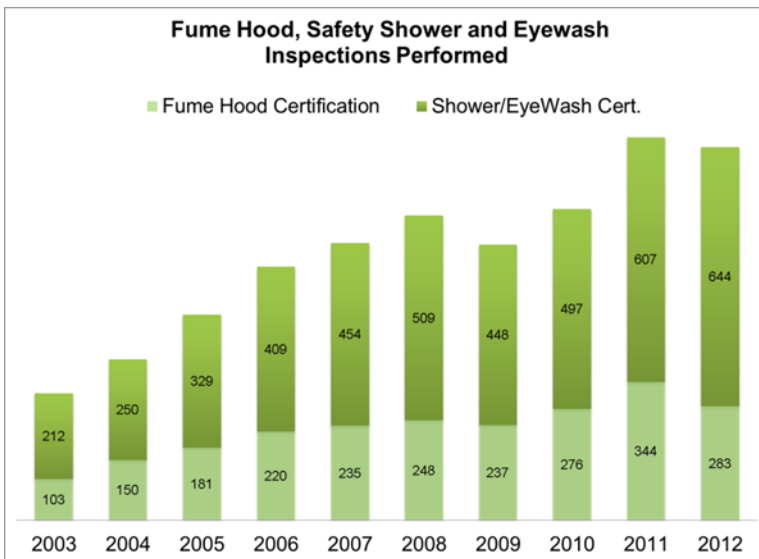
2003-2012 Lab and Room Inspections Performed



The annual inspections of **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.

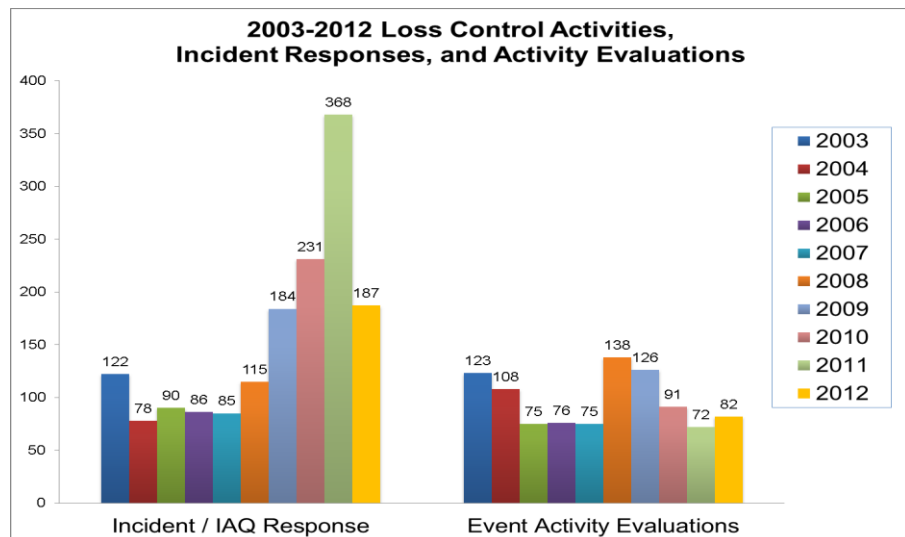
Beginning in 2010, EH&S began to separately track the number of labs and rooms inspected every year, as shown on the graph. In 2012, the total number of room and detailed lab inspections completed by EH&S inspectors increased by approximately 23%. Compared to 2011, the room inspections completed increased by 35%. This increase is attributed to better tracking of room inspections and focus on completing inspections at all remote facilities and all campuses located outside of Las Cruces. The number of lab inspections performed slightly decreased by 11% from the previous year.



Operable safety equipment is a critical component of an effective safety program. EH&S completed certification inspections on laboratory safety equipment, including eyewashes, emergency showers and exhaust hoods using student inspectors. The 18% increase in shower and eyewash certifications is attributed to new installations and sink mounted units. There was a 6% decrease in number of

fume hood certifications for 2012. All safety equipment which failed the certification were retested after repairs were completed and this is included in the overall number of certifications performed.

There were 187 responses to incidents primarily involving indoor air quality complaints and minor hazardous materials spills/incidents, a 49% decrease compared to last year. There was an unusually high incidence of



mold investigation in 2011. Data shown from 2009 through 2012 include mold and asbestos concerns. The event activity evaluations included 82 reviews of employee work activities, evaluation and authorization for non-routine campus events, which is an 18% increase from 2011. 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 eight 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 six years ago. Annual inspections and training has been implemented for the four NMSU campuses, Agricultural and research facilities throughout the state of NM.

In 2012, experienced EH&S staff provided on-site safety training and inspections to 8 of 12 ASC's and facilities inspections at Carlsbad, Grants and DACC campuses (3 of 4 community colleges). The safety inspection reports for the Agricultural Science Centers and campuses include details on noted safety deficiencies with corrective actions and a summary prioritizing safety concerns for executive leadership.

Inspection Program Goals

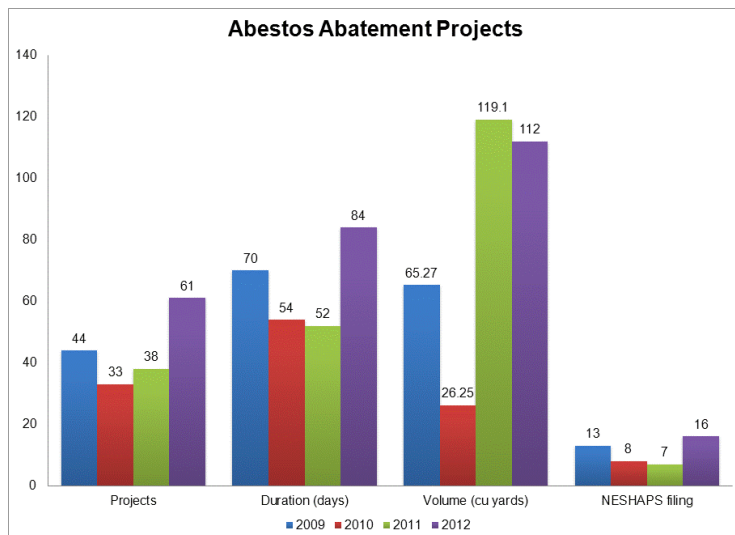
- Expand inspection to include DACC sub-campuses throughout the state
- Increase number of general building inspections/ share load with Fire Department
- Increase inspection budget as new square footage is added to the NMSU system

ASBESTOS MANAGEMENT AND ABATEMENT 2012

In 2012 EH&S continued to provide NMSU departments with timely and professional response in regard to asbestos, mold and lead management. 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. 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 asbestos inspectors. EH&S 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 asbestos project support increased about 60% as shown by number and duration of projects, state required permit filed under NESHAP, and volume of waste produced in 2012. During the year EH&S completed 61 abatement projects, 16 of which required permitting through NESHAP. There was an overall increase in asbestos abatement projects and duration, and a small decrease in 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 in English and Spanish. Facilities maintenance employees attend refresher training informing on potential locations and types of materials that may contain asbestos and NMSU procedure for notification. EH&S provides for contractor to ensure appropriate containment and abatement is performed prior to NMSU employee work in these areas. The annual asbestos training sessions provided as part of the 4 hour maintenance safety training was effective in meeting compliance requirements. Specific maintenance involving class IV non-friable asbestos and those with documented negative exposure are allowed activities when using trained NMSU employees.

Asbestos Management Program Goals

- Surveying prior to projects
- Abatement of all asbestos containing materials – no encapsulation
- Improving tracking and identification of known asbestos using software tool

SAFETY INITIATIVES AND EMERGENCY PREPAREDNESS 2012

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

- Distribution of NMSU Safety, Health & Security initiatives news and updates to 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
- Chair Communicable Disease Preparedness Committee and others 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 and faculty (over 400 faculty, staff, students)
- Special refresher Workforce safety training to facilities employees (over 300 staff annually obtain 4 hour focused safety training)
- Float safety training and inspections prior to Homecoming parade
- Distributed 1000 emergency number stickers for phones
- Participated in new faculty orientation fair

- Updated All Hazards Emergency Operations Plan was distributed to new President, Provost and other new executive officials
- Distributed 60 updated All Hazard Emergency Operations Manuals to Deans, Community College Presidents, CART and Resource Personnel in 2011.
- Developed utility outage guide for general public on Emergency Preparedness web 2011
- Enhanced safety message to reinforce supervisory responsibility for safety training and protective equipment was signed by President 2012
- Emergency preparedness effort was expanded to NMSU Carlsbad campus 2012 through a formal review and table top exercise of their critical incident management plan in conjunction with Eddy County OEM
- Trained 40 faculty and staff in Animal & Range Sciences department on emergency operations and procedures by special request.
- After considerable research on FEMA Disaster Resistant University requirements and identifying process for grant opportunities, NMSU chose to participate with Dona Ana County in development of a Hazards Mitigation Plan.
- Lead the development of NMSU's Hazard Mitigation Plan action items.

2013 Emergency Preparedness Program Goals

- Maintain NMSU Las Cruces CoOP's and expand Continuity of Operations Planning throughout the NMSU system through training and guidance documents
- Implement Hazard Mitigation Plan goals once approved by FEMA, five year goal

HAZARDOUS WASTE MANAGEMENT PROGRAM 2012

The EH&S environmental compliance team picked up, researched, processed, and shipped 73,000 pounds of waste in 2012 compared to 74,000 pounds averaged over the previous five years. The unusually high poundage noted in 2007 is because a large number of transformers were disposed. This year 2012, there was one large transformer shipment which was very time consuming because it contained low level PCBs and was located in the KRWG facility at the Las Cruces Fair Grounds.



The noted trend of decreasing hazardous waste is evident and good trends of overall hazardous waste reduction. This is especially important as the cost of waste disposal increases (See cost issues).

On the other hand, the trend for number of items handled is clearly

increasing. Simply stated, the increase in containers handled results in increase in staff time spent managing each container. The team managed 2,800 different waste items compared to 3,100 items averaged over the previous five years.

Most of the non-routine waste workload resulted from large chemical clean outs (greater



than 50 chemical items at one time) from 12 different departments/labs: Chemical Engineering (2), WERC, SWAT, EPPWS, DACC Water Tech, Interlab, Music, Physics, Custodial, ANRS Nutrition, and Biology Basement. 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 4.0 FTE team spent 65 hours in restrictive, encapsulating protective suits and respirators while mixing chemicals on 29 different days. Overall, no significant adverse reactions occurred during mixing activities.

This year 220 of the items were new chemicals not previously picked up before for disposal on campus and thus required in depth analytical review of safety 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.

HAZMAT RESPONSE AND TESTING UNKNOWNNS

The team also responded to thirteen emergency response calls for hazmat spills/incidents; the most significant involving mercury (3), possible tank projectile/explosive, and transformer oil (2). The most labor intensive and expensive (\$2,500) spill involved cleaning up and disposing of old plumbing removed from Chemical Engineering that dripped mercury. Emergency response calls require an immediate response 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 60 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

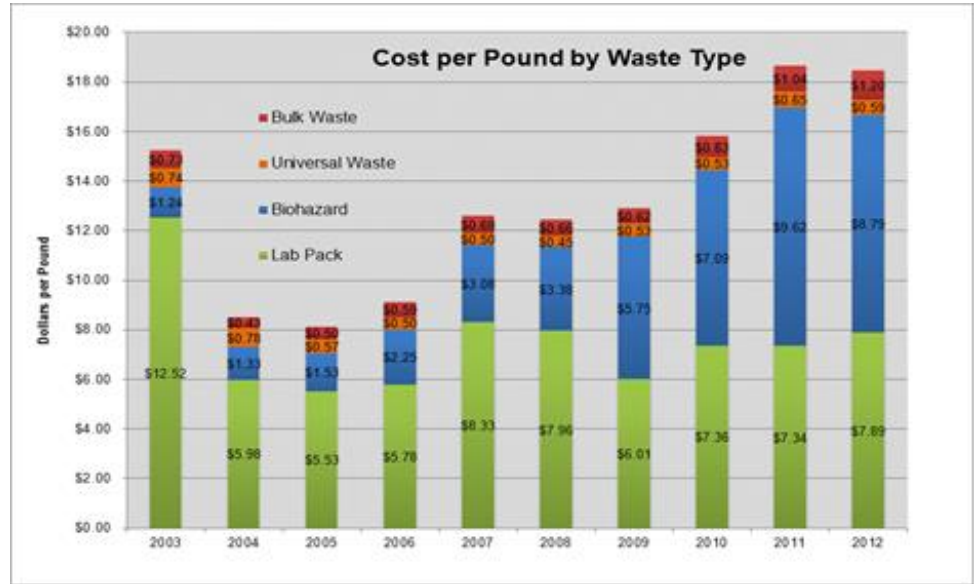
select unknown analysis internally, NMSU saved \$2,000 in contractor fees. The Physics Dept. however turned in 30 unknown chemicals at once and these were turned over to a contractor for analysis at a cost of \$1,000. Overall, three additional NMSU chemical samples had to be sent off to private labs for additional analysis; the most significant involving oil tests for PCBs. Total cost for all private lab analysis was \$300, significantly less than in previous years.

COST ISSUES

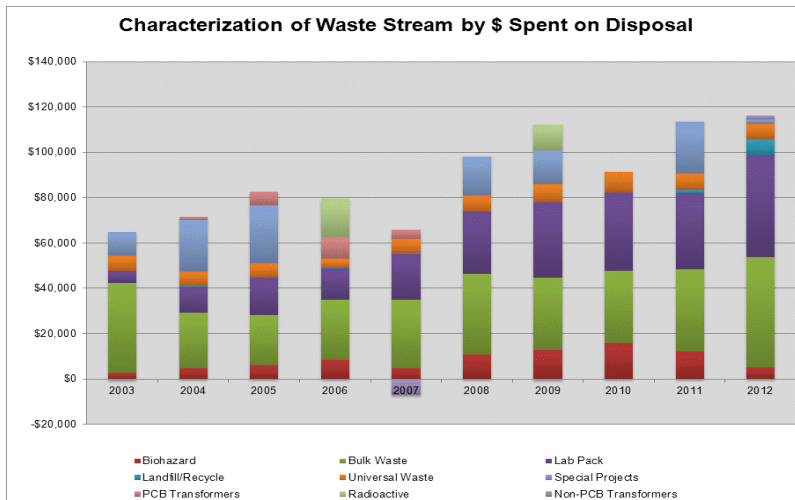
The cost per pound for disposal in 2012 increased in several waste streams because of increases in contractor disposal rates.

To be most cost effective, the team coordinates with eleven different environmental services

contractors: Clean Harbors, Veolia, Waste Mgt., Stericycle, Fuels, NEMS, Interlab, A&B Labs, Hudson Tech, Arizona Waste Oil Service, and PSC. 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 complexities with manifests, transportation, and billing. Overall, NMSU’s 71,000 pounds of hazardous waste was disposed of at a total cost of \$99,000. Overall per pound disposal costs in 2012 remained steady.



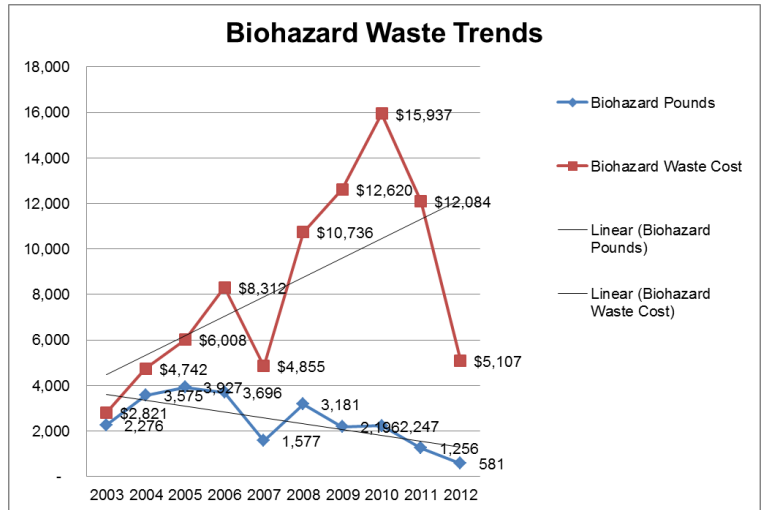
It is important to note that even though the waste volume is decreasing, the disposal expenses continue to rise. NMSU’s main hazardous waste disposal contract was placed



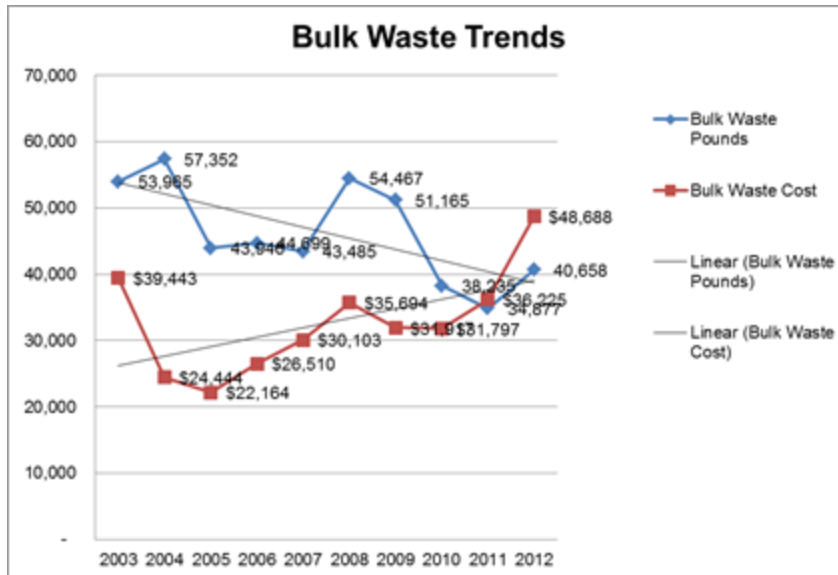
out to bid at the end of 2011 in hopes of containing costs by obtaining the best local rates possible. Five bid proposals were received and over 1,500 pages reviewed to determine which contractor could provide the best service for the best cost. In the end there was a tie between the companies Clean Harbors and PSC.

To be fair, we conducted a major quarterly shipment of hazardous waste with each company to test which was truly the best. In the end, Clean Harbors electronic profile/manifest/LDR system was superior and they will continue to be NMSU's primary hazardous waste disposal company.

NMSU experienced continued yearly escalating cost for biohazardous waste disposal that was unmanageable because there is only one local vendor. To combat the cost, in 2010 the team ***aggressively implemented educational and inspection processes to successfully lower the amount of biohazardous waste generated on campus by 75%***. The pounds of biohazardous waste was cut in half from 2010 to 2011 due to higher scrutiny of biohazardous waste streams. Additional educational efforts to ensure only biohazardous waste items were placed in biohazardous waste containers resulted in cutting waste volume in half again. ***The dollars saved over the two year span is \$16,000 in avoided expense.*** In summer of 2012 the team negotiated a better contract rate for the disposal of biohazardous waste drums and price per container dropped from \$400 to \$100 each. The waste price dropped by stricter segregation and switching treatment technologies from incineration to steam sterilization which is sufficient for the majority of NMSU biohazardous waste. ***This dual approach results in huge cost savings that will continue forward for years to come.***



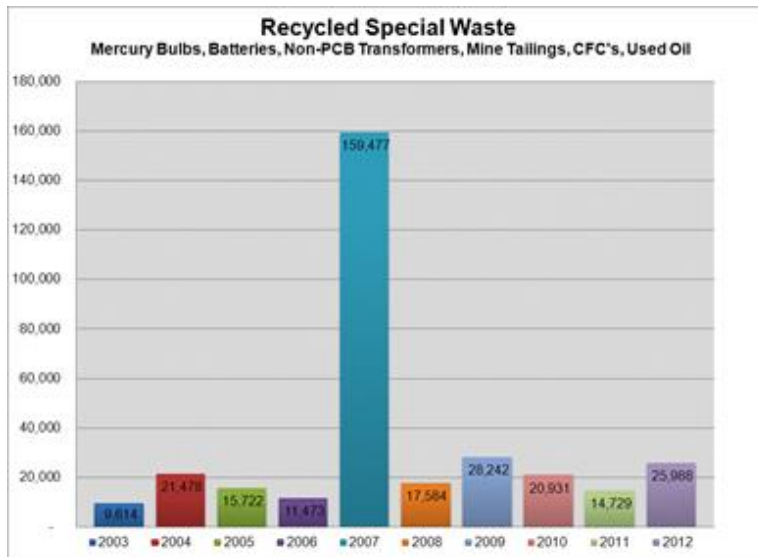
It is important to note that the largest waste stream “bulk hazardous waste” is also the lowest cost per pound. The average cost per pound of hazardous chemical waste varies



by almost 10 fold with bulk waste being the lowest and biohazardous waste being the highest. ***EH&S contains the waste cost by researching and combining similar waste types so that 88% of the chemical waste can be shipped in bulk containers for disposal.*** The cost of bulk waste this year was \$1.20

per pound compared to \$7.89 per pound for lab pack waste which is shipped off without additional handling. ***The cost savings from bulking 88% of the chemical waste in 2012***

was **\$320,747** in avoided disposal fees. Because the waste volume increased this year, the cost savings from bulking is **\$100,000** more this year than the previous year.



Recycled Waste

Campus operations, instruction and research programs generate a wide variety of hazardous and special wastes.

The peak value in 2007 is disposal of non-PCB transformers – a unique one time shipment.

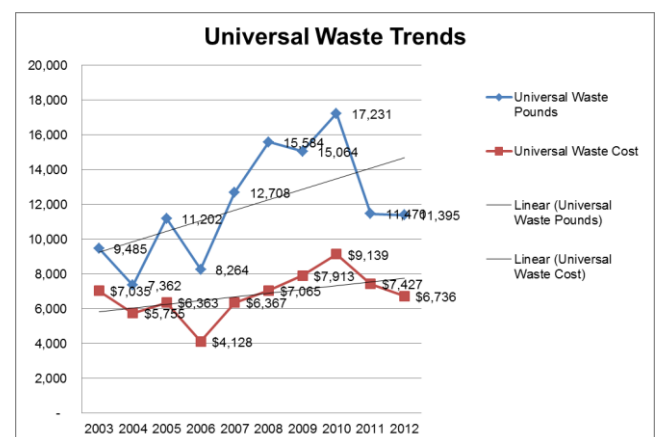
Although EH&S cannot control the types or volume of wastes being

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 halon and CFC 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 avoids the 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

Special waste projects included four main campus special shipments of unique recyclable hazardous materials- CFC cylinders (2), KRWG Fairgrounds Trace PCB Transformer, and Large Forklift Lead/Acid Battery. In each case a special vendor was found that could recycle the hazardous materials and at low costs. **NMSU recovered \$7,441 for about 1,000 pounds of old refrigerants which Hudson Tech paid NMSU to reuse.** It is rare that companies will pay to receive NMSU old chemicals, but whenever we pick up pure refrigerants for disposal we try to recycle them for cash returned to the original department who purchased the item. **EH&S does not directly benefit.** If the above materials had simply been shipped for disposal through our standard hazardous waste contractor, NMSU would have incurred \$7,000 in expense.

The team also managed two special hazardous waste shipments for CEMRC and Grants Campus. These are critical services provided to our remote campuses and each special project consumes staff resources. These projects are



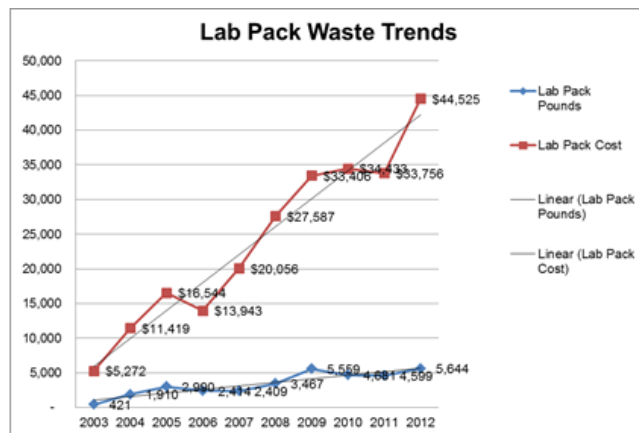
managed for environmental compliance, required reporting, and ensuring that vendor quotes are reviewed and negotiated for the best available pricing.

WASTE VOLUME AND COST TRENDS

The volume of Universal waste (mercury containing bulbs, ballasts, batteries, transformers, CFC's, used oil) shows a trend of increasing pounds disposed. This trend is expected to continue as more energy efficient building components replace the old style lighting and battery back-ups and cooling systems. Fortunately, associated costs are only slightly increasing as expected over time.

On the other hand, lab pack waste costs are escalating each year regardless of vendor selection and competitive procurement selection process for this service. EH&S will begin additional education and inspection to contain the costs through volume control. However, this will have minor impact since the increase in volume has been relatively minor. The research use of highly toxic, reactive and highly

hazardous chemical and their mixtures is materials that cannot be safety comingled and disposed through bulk waste.



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 ~900 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 briefings in key departments. Written evaluations for the three-hour classes resulted in 92% “excellent” ratings- the highest available. Specific written remarks included: “Great class, informative & delivered well (Faculty Comment)” and “I like how we went through the EPA procedures, those are rarely expressed to me in the lab. This was a great class to attend” and “Very interesting; I especially like listening to stories.” The team also overhauled the 30 minute Hazcom waste presentation (including new slides) ensuring it was current and focused. The new presentation was presented to the NMSU Sustainability Council and received positive reviews. Internally, the team also maintained all of their certifications through completing training in: EPA RCRA, DOT Hazmat Shipping, OSHA HAZWOPER, OSHA Respirator, and OSHA Medical Surveillance.

Training reinforces that campus personnel need to focus on ensuring all waste containers are closed/labeled and incompatible chemicals are not mixed together. It only takes one open/unlabeled container, or one improper mixing of chemicals to cause an incident that can damage health or result in an EPA fine. As special projects increase and new environmental regulations are passed, additional EH&S staffing is needed to meet the

new demands. Staff continue to focus on core functions prioritized based on direct risk to employee health/safety and air/water/land pollution prevention.

HAZARDOUS WASTE REPORTS & INSPECTIONS

Hazardous waste reports, inspections and standard operating procedures (SOPs) are also essential components of a successful waste management program. Federal and State mandated reports completed and filed accurately and on time were: Tier II Chemical Inventory, Hazardous Waste Fees (2), PCB Log, and Biennial Hazardous Waste. The team also conducted 14 formal, in depth hazardous waste inspections at key labs or shop 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.

On May 2-4 of 2011, NMSU underwent a formal, unannounced NMED hazardous waste compliance inspection. Three inspectors reviewed EH&S operations/records, and conducted a walk-through of almost all labs on campus to see firsthand how hazardous waste is managed. Overall, no violations were noted for EH&S operations/records and only minor, but significant, warnings were issued for lab violations. Most labs on campus were in full compliance, but a few had hazardous waste containers that were not closed or labeled. EH&S continues to stress that all hazardous waste containers on campus must be labeled and closed to protect health, comply with the law, and avoid costly fines.

Las Cruces City Wastewater Treatment Plant personnel conducted a formal, half-day inspection on December 13th, 2012 of campus waste disposal operations focusing on the Central Plant and no significant negative findings were noted.

Standard operating procedures (SOPs) that were created for the first time were: NMSU Lab Decommissioning Procedures, Lab Sharps/Glassware Disposal Guide. The SOPs that were significantly updated include: EMF Contingency Plan, DOT Security Plan, EMF Weekly Inspection Form, NMSU Waste/Material Tracking Form, and NMSU Waste Minimization Plan. Clear and direct written SOPs are very important to ensure campus and EH&S personnel know their environmental compliance responsibilities. EH&S staff continue to focus on core functions prioritized based on direct risk to employee health/safety and air/water/land pollution prevention.

2013 Hazardous Waste Management 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.
- Emphasize waste minimization and compliance specific to high hazard waste generators with goal to reduce high hazardous waste
- Educate all generators of waste to keep waste minimized and ensure compliance with all environmental laws, especially in regards to closing/labeling containers and segregating incompatible waste streams.
- As special projects increase and new environmental regulations are passed, additional EH&S staffing is needed to meet the new demands

ENVIRONMENTAL MANAGEMENT FACILITY

The EMF consolidates all NMSU hazardous waste (chemical, universal, biological) into one building. 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. Upgrades to the EMF in 2011 were: New chemical mixing room snorkel capable of use inside walk in fume hood for additional hazardous vapor removal, new gas valve that remains open during electrical outages (heat remains on), fully operational security and ventilation alarms, large open bay hazard signage, and shade structures covering blast panels to reduce radiant heat into flammable storage and chemical mixing rooms. All of these upgrades increase facility and personnel safety and security. A foam test was also conducted by the NMSU Fire Dept. to ensure the EMF foam suppressant system is charged and ready in case of emergency. The NMSU Electric Shop continues to routinely deliver burned out bulbs/ballasts to the EMF for ultimate disposal. The bulb/ballast delivery program has expanded to include select contractors also removing old bulbs/ballasts on campus.

TITLE V AIR PERMIT AND NSR AIR PERMIT

EH&S completed/ensured nine detailed air reports were filed accurately and on time to EPA/NMED: Annual air report, (2) semi-annual air reports, air emissions inventory, turbine test protocol, turbine air emissions test results, air fees, generator location/operational log, and new Federal Greenhouse Gas (GHG) Registration/Report. 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 Report 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), and all propane usage at stationary equipment sources. This is a good example of new, increasing regulation that EH&S must interpret, lead implementation on, and manage at NMSU. NMSU's Federal GHG Report also made the front page of the Las Cruces Sun-News identifying facilities in the area that are emitting significant amounts of carbon dioxide. Additional special air compliance issues addressed in 2011 were: New Annual/Semi-Annual Report Forms with new compliance requirements, new EPA Boiler MACT Rules, revised turbine testing procedures for carbon monoxide, City of Las Cruces natural gas sulfur tests and sulfur tariff compliance, new Barnes & Noble boiler compliance, and Leyendecker Farm biodiesel generator reporting. To best ensure a successful clean air program EH&S continues to visit the Central Plant at least monthly to meet with key staff on air issues and averages a monthly conference call with Consultants to stay current on complex, changing regulations.

RADIATION SAFETY MANAGEMENT

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.

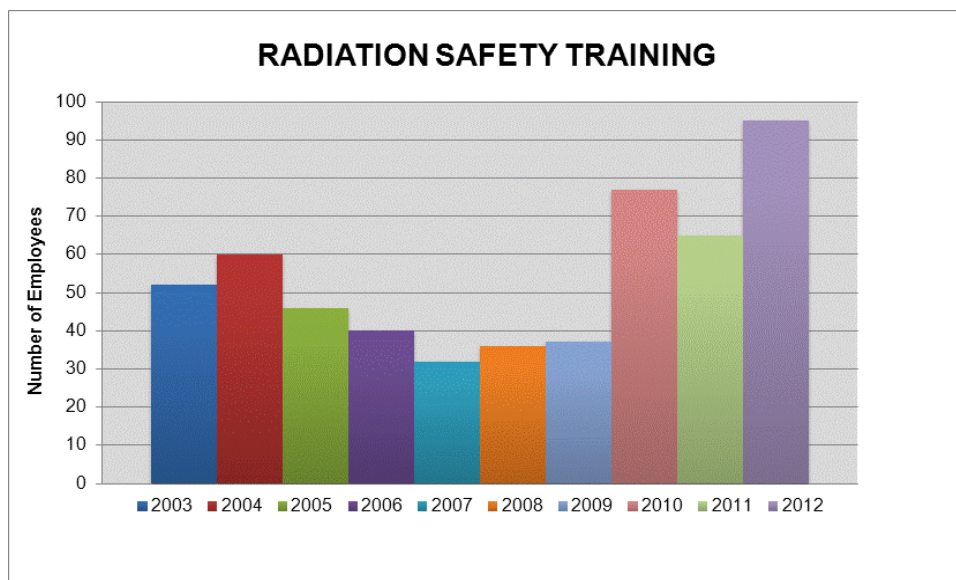
The NMRCB also regulates all analytical, medical and dental x-ray machines and other radiation producing devices in use at NMSU. These devices must be registered with the NMRCB which then issues Certificates of Registration (COR) to NMSU. The COR defines the type of allowable use, specific requirements and restrictions for the devices. Currently NMSU maintains 6 active CORs. 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 in use at NMSU to ensure that the university is in compliance with all applicable radiation protection regulations. The RSC is currently comprised of 7 faculty and staff with expertise in various technical areas and techniques related to the safe use of radioactive materials and radiation producing devices. In addition to establishing policy, the RSC reviews/ approves all applications from faculty and staff requesting 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. A formal review of the NMSU radiation safety program is conducted by the RSC annually based on a detailed compliance report prepared by the Radiation Safety Manager.

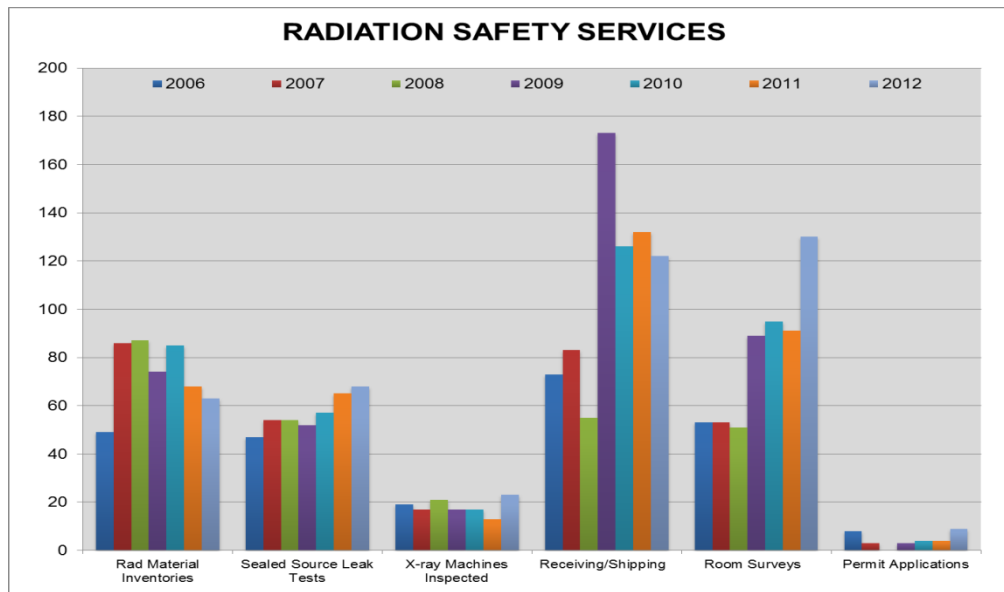
The day to day administrative and technical duties required to manage the NMSU radiation safety program are performed by the Radiation Safety Manager (RSM) and technical staff working in the EH&S department. The RSM provides oversight of and support to all NMSU main campus and off main facilities including branch campuses, farms and other NMSU entities using radioactive materials or radiation devices. The RSM 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. This number has increased over the past three years.
- management of legal records mandated by radiation protection regulations;
- serves as the primary liaison between the university and various radiation regulatory agencies. There were three external inspections this year with positive findings.
- provides an interface between the RSC and NMSU faculty/staff using or wanting to use radioactive materials and radiation producing devices. The number of applications this year doubled compared to the previous 5 year average.
- identifying any changes to federal and state radiation regulations that may affect university;
- developing and teaching various types of radiation safety training classes to



- faculty, staff and students. This includes annual assessment of compliance with initial and refresher training requirements.
- maintaining a university-wide inventory of licensed radioactive materials and ensuring that inventories are reconciled semi-annually;
 - maintaining a university-wide inventory of all x-ray machines, instruments containing sealed sources and any other ionizing radiation producing devices.

Chart and table below shows duties performed by the RSM and technical staff which include:



- Approving all orders and transfers of radioactive material and radiation-producing devices at NMSU facilities including CEMRC. This has been relatively stable the past three years. This function includes receipt and delivery of all incoming radioactive material packages on main campus and CEMRC which entails performing regulatory-required package radiation dose rate and contamination surveys. In addition, the RSM ensures all out-going radioactive material and device shipments meet DOT requirements including proper shipping packaging, labeling and shipping documentation.
- Inspections of labs authorized to use of radioactive materials at least semi-annually increased this year with addition of CEMRC metrics.
- Performance of contamination leak tests on sealed radioactive sources semi-annually shows a trend of increased number of sources that require testing.
- X-ray machines are inspections and radiation leakage tests are measured at least once a year as required by radiation protection regulations. The number of devices registered with the NM Environment Department has increased.
- Collect, store and ultimately dispose of various types of radioactive wastes generated by NMSU researchers;
- Facilitating applications from faculty and staff requesting to use radioactive material or a radiation producing device. These more than doubled this year.

RADIATION SAFETY INSPECTIONS FROM EXTERNAL REGULATORY AGENCIES IN 2012

On May 1, 2012, an inspector with the State New Mexico Radiation Control Bureau (NMED) conducted an inspection and audited the activities authorized under the conditions of the main campus Broad-Scope Radioactive Materials License (AB151-41) as they relate to radiation safety and compliance with the New Mexico Radiation Protection Regulations (20.3 NMAC). The formal inspection report concluded “During this inspection, no violations were noted and the program appears to be properly maintained.”

During the same visit the radiology x-ray at the Campus Health Center was inspected. The inspection included making a number of x-ray beam quality and radiation dose measurements. The facility was found to be “in compliance with New Mexico Radiation Protection Regulations”.

On August 22, 2012, an inspector with the State New Mexico Radiation Control Bureau (NMED) conducted an inspection and audited the activities authorized under the conditions of the Carlsbad Environmental Monitoring & Research Center Facility Radioactive Materials License (AN317-11) as they relate to radiation safety and compliance with the New Mexico Radiation Protection Regulations (20.3 NMAC). The formal inspection report concluded “During this inspection, no deficiencies were found. Your records are well organized and include all information required in assessing your radiation protection program.”

2012 RADIATION SAFETY PROGRAM HIGHLIGHTS AND CHANGES

CEMRC Radioactive Material License Modification

Final approval was received by the College of Engineering to proceed with a request to modify the CEMRC Radioactive Materials License. To support the request, the CEMRC Decommissioning Funding Plan needed to be revised and the exact wording of the modification request needed to be finalized. April 2013, the license modification letter and revised DFP was sent to the NMRCB.

NMSU Laser Safety Program

A new laser user basic safety class is near completion and will be offered to the campus community as an on-line course through the NMSU Training Central in 2013.

Building / room surveys are in progress to identify laboratories across campus where lasers are in use and a university-wide inventory of Class 3B and Class 4 lasers is being compiled. In 2013, the owners of Class 3B and Class 4 lasers will be directly contacted and formal hazard evaluations conducted for each Class 3B and Class 4 laser system identified in the inventory.

The goal is to bring the NMSU laser safety program into compliance with ANSI Z136.1, American National Standard for Safe Use of Lasers.

NMSU Radioactive Waste Disposal

An RFP to select a waste broker for radioactive waste was issued and Thomas Gray & Associates was selected early 2012 as the vendor to handle radioactive and mixed waste disposal for NMSU main campus and the CEMRC facility. Disposal cost estimates have been received and various permits needed to dispose of the waste have either already been received or are in process. A summary of the estimated waste to be picked up for disposal in the first part of 2013 is shown below.

Estimated Main Campus Radioactive & Mixed Waste Summary

Description	Quantity	Costs
Dry Bulk Lab Waste	1234 pounds	\$9872
Liquid Scintillation Cocktail	230 pounds	\$1600
11 Individual Lab Packs	Various	\$32,320
Misc. Disposal Charges		\$6024
	Total	\$49,816

Estimated CEMRC Radioactive & Mixed Waste Summary

Description	Quantity	Costs
Dry Bulk Lab Waste	2279 pounds	\$18,232
U-Mixed Waste Bulk Liquid	500 pounds	\$21,500
Mixed Bulk Liquid Wastes	670 pounds	\$27,000
Misc. Disposal Charges		\$7024
	Total	\$73,756

2013 Radiation Safety Program Goals

- Continue to maintain a high quality, customer-oriented and regulatory compliant radiation safety program at NMSU.
- Dispose of radioactive wastes generated at NMSU main campus and at the CEMRC facility routinely.
- Roll out a new on-line basic laser safety class through NMSU Training Central
- Complete the Class 3B and Class 4 laser inventory and begin documenting formal hazard assessment / evaluations for each system
- Renew the Las Cruces Broad-Scope type A/B RAM license Sept 2014
- Update the NMSU Radiation Safety Manual before Sept 2014

BIOSAFETY MANAGEMENT 2012

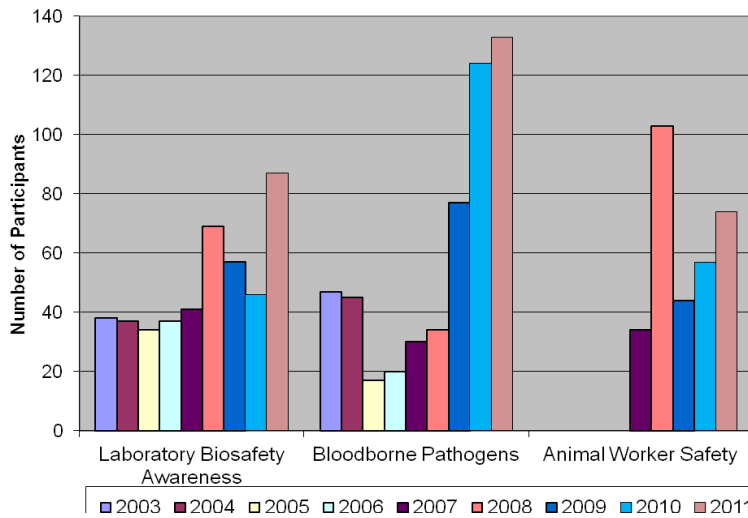
The one position in biosafety was vacated January 2010 and EH&S ensured continuity of critical biosafety functions by hiring an interim part time Biosafety Manager. The interim Biosafety Officer ensured continuity in research which included critical biosafety protocol reviews, training and inspections. 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, reporting to Vice Provost for Research.

EH&S continues to support Biosafety by maintaining a strong role in the biosafety mission by providing the following direct support and services:

- training equipment and facilities,
- administrative support for monthly biosafety training 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) and primary reviewer

- safety program mentor for Biosafety Manager
- web based Bloodborne Pathogen training module that has been used exclusively to deliver required annual refresher training

Biosafety 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.

Personnel training requirements are based on

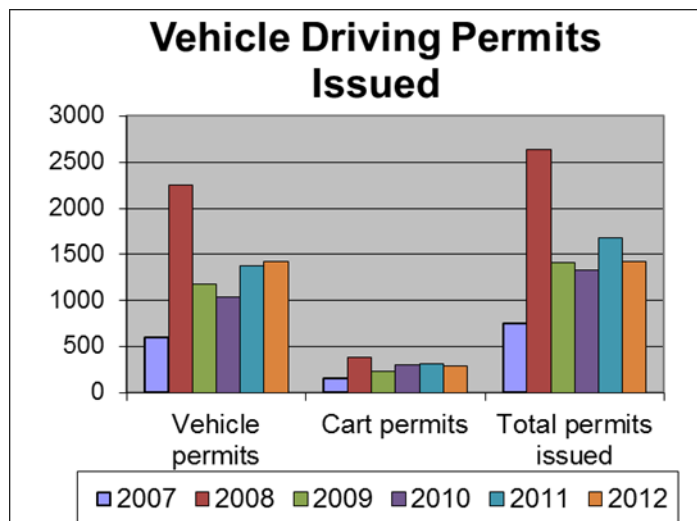
the nature of the materials used in the respective teaching and research activities at NMSU. For example, persons working at the University Health Center, Police, Fire and Emergency Services based on their contact with patients or members of the public are considered to have a routine potential for exposure to human blood, internal body fluids and “unfixed” tissue and therefore are required to attend annual training in bloodborne pathogen (BBP) 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 and continues to climb. The on-line BBP training was developed and released at the beginning of 2010, providing readily accessible BBP training for the NMSU system.

Biosafety Program Goals

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

PERIODIC DRIVER LICENSE VERIFICATION 2012

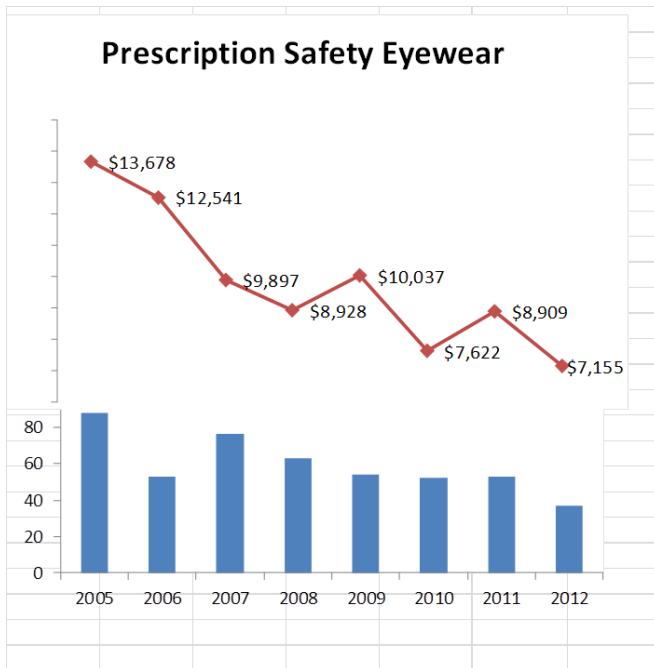
In 2005, NMSU instituted a driver license validation every three years for individuals authorized to drive university vehicles. The peak number of permits shown in 2008 results from the first periodic license validation and permit renewal. This year, 2012, a total of 1423 driver’s licenses were validated compared to 1685 in 2011. The



validation ensures a valid license is held by the employee. The total for utility cart use was 293 compared to 298 in 2011. The 16% decrease reflects that last year was the 3 year renewal and revalidation for a larger population of current employees. The driver license validation frequency for employees driving NMSU vehicles shows a stable trend. This loss control measure is 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 and cart safety program



In 2012 EH&S dispensed and billed a total of 36 pair of prescription and 61 non-prescription safety eyewear. Safety eyewear is being monitored more than other years. This decreasing trend will continue as employees continue to obtain their safety non-prescription eyewear from the warehouse and purchase prescription safety glasses off campus. The EH&S managed service is beneficial to NMSU as a mechanism to ensure safety eye protection meets ANSI