

# Physics Department Management Review

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*December 22, 2010*

**BROOKHAVEN**  
NATIONAL LABORATORY

*a passion for discovery*



# Physics Department Management Review

**This presentation is part of the periodic senior management review of ESSH performance related to the EMS and OHSAS management systems in the Physics Department.**

**The purpose is to assess management system effectiveness and identify opportunities for improvement.**

## **Agenda**

- Scope and overview of the management systems
- Hazard and environmental aspects identification
- Review of related assessments
- Financial investments and stakeholder concerns
- FY10 performance versus goals
- Proposed FY11 goals
- Management feedback

# EMS and OHSAS Scope

- NPP Work (Office & Experiments) in Buildings 510, 515, 901A
- ATF Operations & Experiments in Building 820
- CMPMSD in Building 510
  - CMPMSD is part of BES, but uses 510
  - Review of experiments in 510 CMPMSD responsibility
    - PO maintains reference to ESRs in EMS
      - Use 510 90-Day Area – keep “trail” of process → waste

# Operating Mechanisms

- Hazards, Environmental Aspects & Controls identified & reviewed via ESRs & work planning
- ECR reviews all ESRs for Environmental component
- IH Rep reviews all ESRs for concerns/monitoring
- All ESRs have Pollution Prevention plans
- ESRs provide Risk Assessment for each hazard
- Information distribution
  - Web pages
    - <http://www.phy.bnl.gov/~safety/EMS>; ...OHSAS; ...ESRs
  - New employee handout
  - First topic at weekly Physics Department management meeting
  - All-hands meetings
  - ESSH Committee Meetings
  - Group Safety Coordinator (GSC – Worker Committee) meetings
  - Group leader meetings

# Hazards & Environmental Aspects

## Hazards:

- Hazardous or Toxic Materials
- Electrical Energy
- Flammable Gases and Liquids
- Flammable or Combustible Materials
- Cryogenic materials/devices
- Oxygen deficiency potential
- Ionizing Radiation
- Non-Ionizing Radiation
- Radioactive Materials
- Operating Vehicles
- Housekeeping Hazards
- Working Environment Hazards
- Nanomaterials (CMP)

## SEAs:

- Regulated Industrial Waste Generation
- Hazardous Waste Generation
- Radioactive Waste Generation (sealed sources)
- Storage/Use of Chemicals & Radioactive Materials
- Liquid Discharges

# External Assessments

- BHSO ISM Effectiveness & ESR Audit – 12/09 *No findings*
- IH Multi-Topic Assessment – 2/10 *No findings*
  - Lasers
  - Static Magnetic Fields
  - Non-ionizing Radiation
- EPA RCRA Inspection – 2/10 *No findings*
- BHSO Electrical Safety Assessment – 4/10
  - Corrected Electrical Work Permits
  - Incomplete Training Requirements – LOTO needed for >200 V
  - Knockouts missing on circuit breaker boxes missing
  - No MOU for Tier 1 inspections in that area
- NYS DEC Hazardous Waste Audit – 4/10 *No findings*

# External Assessments

- EMS-OSH Surveillance Audit – 5/10 *No findings*
  - No nonconformances lab-wide
  - Science Divisions: Implementation of the ESR review process at the project or specific experiment level is commendable.
  - Science Divisions: Pilot Electronic ESR is a positive example of employee involvement in the development of tools.
- DOE Assessment of the BNL Fire Safety Program – 5/10
  - Materials in corridors impede egress
- BHSO Surveillance Software Safety – 9/10 *No findings*

# BNL Internal Assessments

- Nessus Daily scans for cyber security high vulnerability
- Nessus Full Scans – Quarterly
- Building Hazard Assessment – 11/09
- Flammable Cabinet Inventory – 11/09
- Work Planning & Control Assessment – 11/09
- Lead Storage and Use Inventory – 2/10
- He-3 Inventory – 5/10
- Beryllium Use Assessment – 8/10

# Physics Assessments

- Tier 1 Inspections
- Management Work Observations
- Quarterly Reviews of ATF Area Dose Rates
- Required Annual Reviews
  - Individual Dose Rate including cross-departmental workers
  - Annual Policy & Procedure Reviews
  - Annual Hazard Placard Reviews
  - Annual LO/TO Review
- Various Ergonomic Evaluations
- Chemical Inventory Reconciliation – 3/10
- JRA Review – 3/10
- Radioactive Source Review for reduction in unneeded sources – 9/10
- Physics Department FY10 Self Evaluation – 12/10

# Physics Incidents

- Building Ventilation Impact on ODH – 10/09
- Radioactive Sources Not in Master Site Inventory – 2/10
- Chipped Tooth Injury (SCBNL) – 5/10
- Stolen Laptop (SCBNL) – 6/10
- Compressed Air System Failure – 6/10
- Smoke Emanating from Air Conditioner, Fire Department Contacted – 6/10
- CMP Machine Shop Injury (Laceration) – 7/10
- ATF Fire Corrective Actions Completed – 9/10

# Financial Investments & Stakeholder Concerns

- Funded through Department Operating Budget
  - ~2 FTE for entire ESSH program
  - ECR – shared with CAD
  - SHSD Rep. – shared with other Departments (20%)
- No External Stakeholder Concerns Communicated or Identified
- Staff Involved with Teacher and Student Mentoring Programs

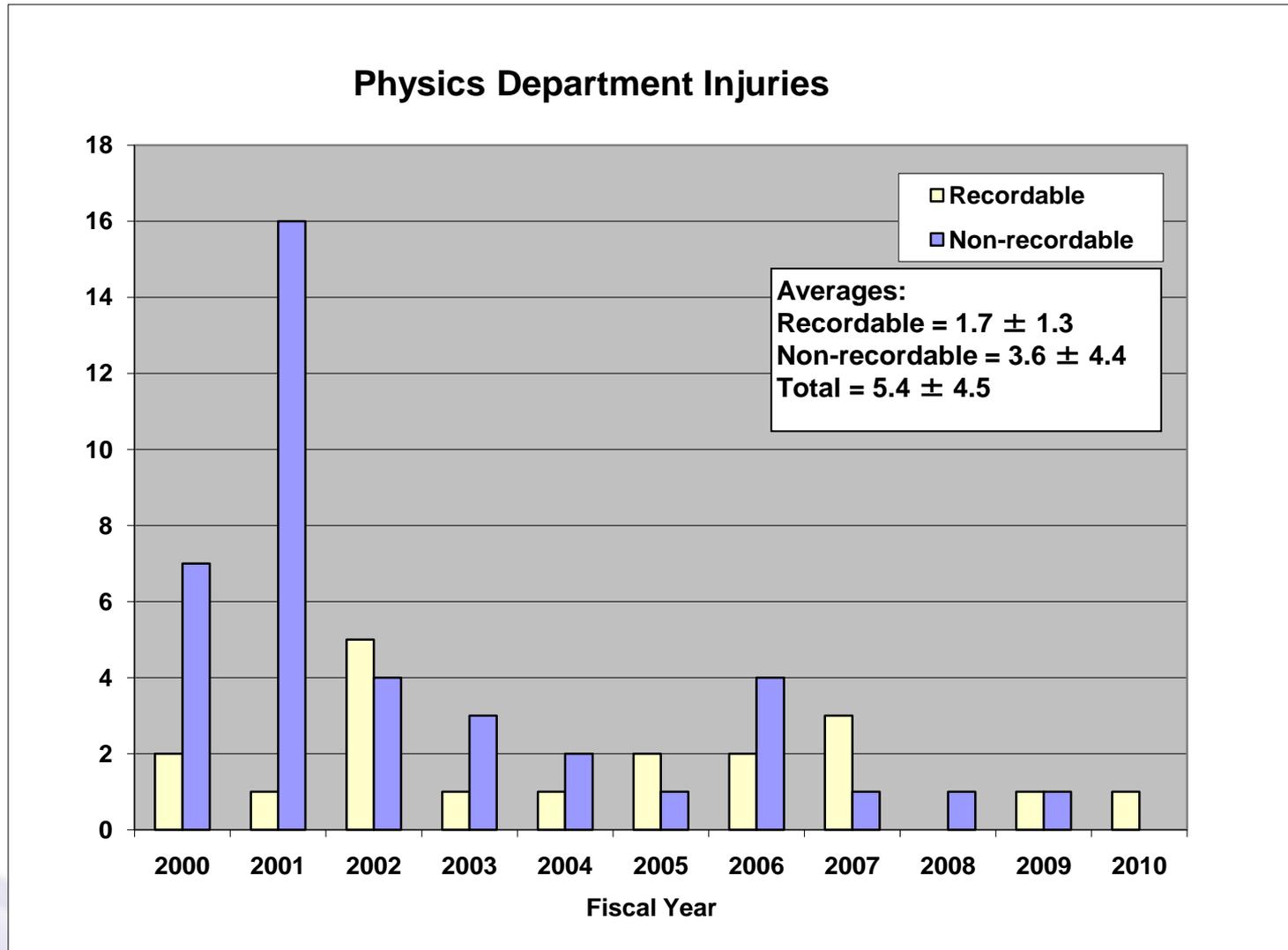
# Physics Performance FY2010

- EMS and OHSAS Targets
  - Reduce excess chemicals and materials stored in the Department
    - Evaluate storage and usage of chemicals in 2 labs or work areas
    - Dispose of unneeded chemicals or materials in 2 labs or storage areas
      - Various rooms disposed of numerous chemicals, oils, and grease
      - Removed lead glass from a basement cage, sent to HWM for disposal
  - Reduce energy and paper consumption
    - Require all ESRs to be submitted using the on-line form
    - Transfer all existing ESRs to the lab-wide electronic system
  - Send email messages to all Department members when conditions warrant, at least twice during the year.
    - 12/09 - sent email "Winter Slips and Falls"
    - 5/10 - forwarded email "Grill Safety"

# Physics Performance FY2010

- Conduct inspections of satellite accumulation areas in addition to Tier 1 inspections. Perform on approximately a monthly basis, at least 9 times a year. (Did 6 Inspections).
- Other Activities or Issues
  - F&O removed many mercury-containing devices from service
  - Tested 2 old shops for heavy metal contamination
  - Arranged HPI training for Department personnel
  - Conducted Evacuation Drill for Building 510
  - Tested Rooms for Mold and other environment quality issues
  - Interface with RSL2 Initiative – ESH, energy conservation
  - Electronic ESR Working Group

# Injury Statistics



# Proposed FY 2011 Targets

- Improve safety awareness in laboratory areas.
  - Post new area-based PPE requirements on all laboratory rooms.
  - Post new hazard placards on all laboratory rooms.
  - Inventory all pressure vessels and pressure relief valves.
  - Submit repair order for the crumbling sidewalk near 510.
  - Conduct at least two ergonomic evaluations.
- Provide effective waste and material management.
  - Identify and dispose of priority excess materials and wastes from two laboratories.
  - Conduct four inspections of satellite accumulation areas in addition to Tier 1 inspections.
- Promote energy efficiency.
  - Identify and implement one energy reduction or conservation idea.
    - Identify hoods that can be turned off except when in use

# Management Feedback

- Are the Systems Effective and Adequate in terms of:
  - Policy commitments?
  - Achieving objectives & performance measures?
  - Identifying SEA, impacts & Risks?
  - Resource allocation, information systems & organizational issues?
- Are Objectives & Targets Suitable in terms of:
  - Environmental impacts & injury/illnesses?
  - Meeting regulatory requirements?
  - Should additional objectives/targets be established?
- Recommendations for Improvements?

# Physics Department Management Review

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*December 22, 2010*



SIXTY YEARS  
OF DISCOVERY  
1947-2007

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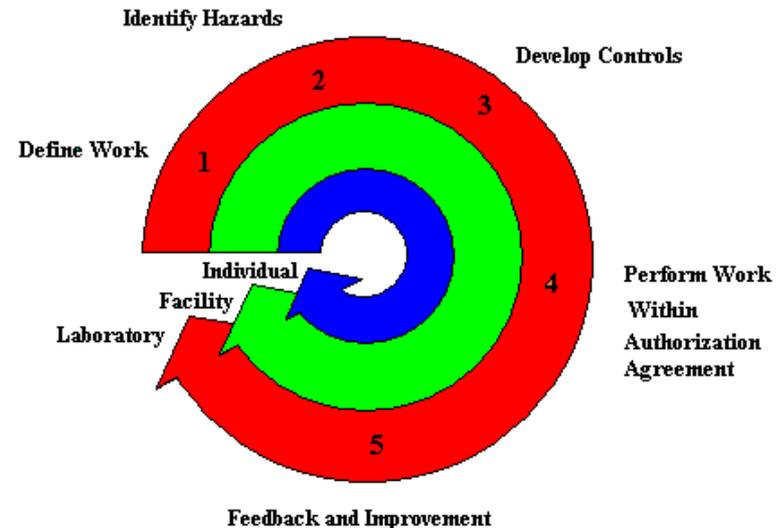
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# ESSH Self-Evaluation

The Physics Department has embraced the 5 core functions of Integrated Safety Management (ISM) in its conduct of work planning and control for operations and experiments. The Experimental Safety Review Form is organized into sections that are aligned with the 5 core functions – Define the scope of the Work, Identify the Hazards, Develop Controls for the Hazards, Work Within the Approved Safety Envelope, and Provide Feedback to improve or fine tune the processes.



# 7 GUIDING PRINCIPLES OF INTEGRATED SAFETY MANAGEMENT ...AND HOW THE PHYSICS DEPARTMENT IMPLEMENTS THEM

## Line Management Responsibility for ESSH.

- Responsibilities are well documented (Physics Department Policies, SBMS, etc.)
- Weekly Management discussion of safety as first item
- Group Leader involvement in any incident/accident investigation
- Department Management and Group Leader participation in Tier I Inspections
- Department Line Management participation in Safety Observations
- Department Chair directs Group Leaders to appoint a Group Safety Coordinator, and Group Leaders allow that person to spend time on ESSH issues

## Clear Roles and Responsibilities

All employees have R2A2s  
Safety Responsibilities well defined by Department Policies  
JTAs reviewed annually or as jobs change

## Competence Commensurate with Responsibilities

Authorized Worker Lists  
Users receive hands-on training (where applicable)  
Workers are required to read and sign ESR or Work Permit

# 7 GUIDING PRINCIPLES OF INTEGRATED SAFETY MANAGEMENT ...AND HOW THE PHYSICS DEPARTMENT IMPLEMENTS THEM

## Balanced Priorities: on the grand scale, are the hazards being appropriately addressed?

- The Department does address the hazards associated with work and recognizes its need to allocate resources to address safety, through its programs and operations.
- Job Risk Assessments are used to evaluate hazards or risks

## Identification of ESH Standards and Requirements

- The Department follows the SBMS for all the standards and requirements it operates under.

## Hazard Controls Tailored to Work Being Performed

- The Department has comprehensive SOPs and ESRs that list and describe all the hazards and provide controls for each. This is a dynamic system that changes with feedback or as experiments evolve.

# 7 GUIDING PRINCIPLES OF INTEGRATED SAFETY MANAGEMENT ...AND HOW THE PHYSICS DEPARTMENT IMPLEMENTS THEM

## Operations Authorization

### For the User

- Comprehensive Check-in procedures and forms
- Site specific training by PIs (or his designee) is an individual training providing an excellent platform for interaction and evaluation of competence.
- Authorized User Lists (Electrical Workers, LO/TO, Laser Operators, ATF Linac Operators, Modulator Operators, Machine Shops, Material Handlers, MPMS, Rotating Anode)

### For the Experimental Laboratory

- ESR or Work Permit that is comprehensive

### For the ATF

- ATF Specific training
- SAD, ASE, COO, ATF Procedures

# Areas Assessed

- Communications
- Training
- Leadership
- Tier I Inspection Program
- Industrial Hygiene Monitoring
- ESSH Committee and Work Planning
- Security
- Cyber Security
- Accident and Incident Management
- Corrective Action Management
- **Emergency Management\***
- Accelerator Test Facility (ATF) issues
- Memoranda of Understanding (MOUs)
- Group Safety Coordinator (GSC) Program
- Environmental Performance
- Summer Student Monitoring Program
- Safety Observations.

\*New Area

# Communications – Line Management

## Line Management Commitment

- Discussion and review of ESSH topics at each Department Administration Meeting (usually weekly), Department Group Leader Meetings, Department Group Meetings, and at Department “All Hands” Meetings. These meetings have been enhanced with an increased safety focus, with a goal of reaching every employee. The meetings included safety issues as a principal component of discussion, usually first.
- The Physics Department continues to disseminate information on accidents, recalls of products, timely safety messages, and lessons learned.

## Group Leaders' Commitment

- To provide their personnel a safe working environment and encourage communication in their group meetings. Groups meet at different frequencies depending on the nature of their work. The following have been reported by Group Leaders for this self-evaluation.
- The **Electronic Detector Group** has weekly meetings with safety as a regular agenda item. They discuss ORPS reports, ESRs and observations from their everyday work experience. This group is taking the primary responsibility for developing safety policies for the Daya Bay project and the Long Baseline Neutrino Experiment's Water Cherenkov Detector.
- The **PHENIX Group** has group meetings the first and third Thursdays of the month for scientific staff. The first topic on the agenda is safety. Additionally, the PHENIX technical support team has weekly meetings to discuss safety, work planning, and jobs for the upcoming week. This includes all technicians, engineers, scientific associates, and PHENIX physicists involved in operations. In addition, the engineers and techs on PHENIX discuss the work plan in 1008 at the beginning of each working day. This involves CA-D engineers and safety personnel before the start of all major tasks and scheduling the necessary safety reviews with the various safety review committees when appropriate.

# Communications – Group Leaders

- In the **STAR Group** there are three primary vehicles for communication:
- Regular group meetings at which safety is a recurring item for discussion; regular (weekly during the Shutdown) Scheduling and Coordination meetings to review tasks planned to be carried out in the STAR experimental hall and associated buildings, in which work planning is one of the objectives; STAR Skill of the Craft Training.
- The first item above is targeted to maintain high awareness on the part of BNL employees who work on STAR that safety is integral to every task they perform and that it has first priority. Ten to fifteen minutes is spent at each group meeting (approximately 1 per month) discussing an aspect of safety (e.g. work planning), reviewing the lessons learned from incidents that have occurred, etc.
- The second vehicle above is intended to insure that all work performed at the STAR site by BNL employees and non-BNL guests and visitors goes through the appropriate work planning process before work begins.
- The third item is the way in which STAR visitors, collaborators, and guests are informed about their responsibilities related to work planning while working at the STAR site. All STAR Collaborators are further required to take and pass C-AD user training before going to the STAR hall. This training they are aware of the potential hazards they may encounter while at RHIC/STAR, what their response should be if they do encounter such hazards, and what their rights and responsibilities are regarding safe conduct of operations at the STAR hall.
- The **Advanced Accelerator Group** has roughly 2 group meetings per year where safety is discussed. Most of the group's work is computer based.

# Communications – Line Management

- The **Physics Applications Software Group** holds weekly meetings where safety is discussed as relevant to computer engineers and scientists.
- The **RHIC and ATLAS Computing Facility Group** holds weekly group meetings where safety and cyber security matters are discussed
- The **Accelerator Test Facility Group** has engineering meetings each Monday morning to discuss safety related to the ATF (any corrective actions related to ATF, interlock work, documentation, rack grounding, etc.), and Friday meetings where safety is also discussed.
- The **OMEGA Group** is a diverse group working in physics analysis, software development, computing, detector construction and operation, and research and development in labs. As such, regular meetings are not held for the entire group but, work planning meetings are held, when necessary, for each of the areas we are involved with. Safety is discussed during the meetings involved with construction and lab work. In addition, lessons learned discussions take place along with follow-ups to our tier 1 inspections. When work planning involves working at other locations (CERN, Fermilab etc.) the staff are required to conform to the safety policies of the locations in addition to the policies instituted by Brookhaven.
- The **Medium Energy (RHIC Spin) Group** encompasses three working sub-groups: STAR, PHENIX, Polarimetry. The STAR subgroup discusses safety regularly in its weekly work planning meetings. The Polarimetry subgroup meets weekly during the running of RHIC and as needed during the other periods. Safety is an integrated part of the meetings and included in the work planning. The PHENIX subgroup includes safety discussions and training in preparation for shift duties.

# TRAINING

- The Physics Department maintained a level of 97% of required training completed for employees and 89% for guests as of 9/30/09.
- All employees and long term guests received and reviewed their JTAs.
- This year there were new trainings, “Information Security Awareness Qualified” required for all personnel who have an “exempt” status and “Ethical Behavior and Professional Conduct at Brookhaven” required for all employees lab wide.
- The Physics Department Chair has mandated the “Introduction to Human Performance Principles” course for all Department members. This has been viewed by about 2/3 of our employees and will be completed for all this fiscal year.
- The ATF ESH Officer performs monthly training database and ESR audits of all ATF staff and experimenters. He also gives the Department specific training in addition to the ATF Facility training.
- The Physics Department recognizes the additional risk posed by inexperienced people working in areas where hazards are present. In an effort to manage this, the Physics Department's Safety & Training Office maintained a list of summer students. The Department Chair and the ESH Coordinator met with the students as a group when they arrived. The ESH Coordinators and Building Manager specifically looked for students working in laboratories throughout the summer to make sure they were working safely. Students were reminded to wear bicycle helmets.
- The ATF does host students throughout the year. The students receive a comprehensive orientation and are monitored at all times. Their ability to work independently is governed by their achievements in their areas of expertise and demonstrated record of compliance.

# LEADERSHIP

- The Physics Department has representation on SBMS Subject Area Development Groups
- Cyber security issues are included in our weekly Management Meeting with one or both of our two Cyber security representatives, Brett Viren and Tom Throwe attending and giving weekly updates. The Department demonstrates leadership as Tom Throwe was the former head and Martin Purschke is the current head of CSAC (Cyber Security Advisory Council). The Department has a total of seven representatives in CSAC.
- The Physics department recognized its Group Safety Coordinators with a 'Thank You Luncheon' again this year for the leadership they provide do in bringing safety issues to their groups and group safety issues to management. Additionally, those who perform sweeps during emergency evacuations were also recognized at this luncheon.
- The Physics Department has volunteered to be one of the first Departments to post the updated hazard placards using the new forms.

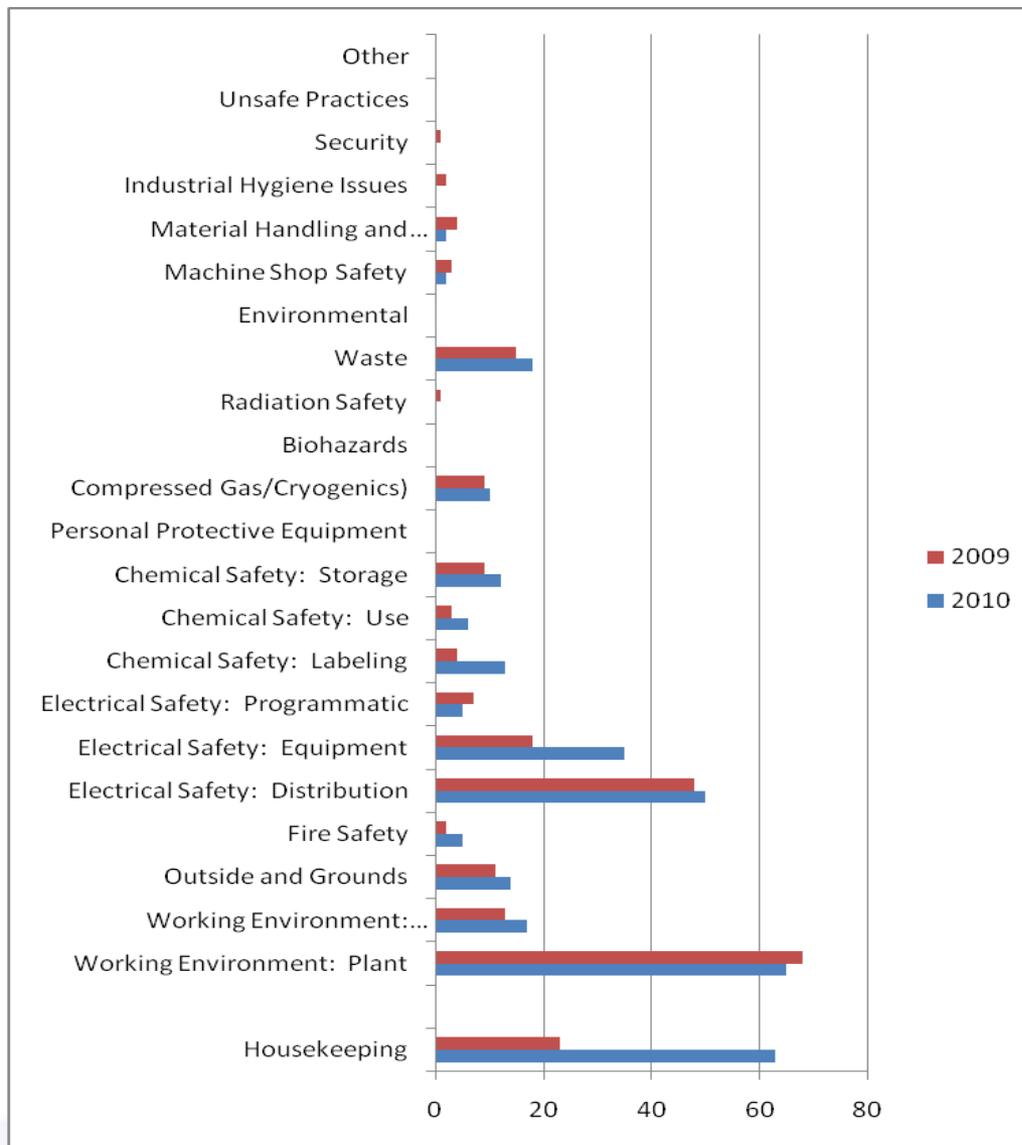
# Members of Physics Department who are involved in Departmental and Laboratory Safety Committees or SBMS Subject Areas:

- Marcus Babzien - **Laser Safety Committee**
- Dana Beavis, - **Chair, C-AD Radiation Safety Committee, C-AD Experimental Safety Committee, C-AD Legacy Committee, Laboratory ES&H Committee**
- Bill Christie – **RHIC Experimental Safety Committee, NPP Safety Council, HP Advocate**
- Ron Gill, **ESH Coordinator, Laboratory ES&H Committee, Working with Chemicals Working Group, Small Science Working Group, Physics Department ESSH Committee, HP Advocate, Group Safety Coordinator, Electronic ESR Development Team, Daya Bay Safety Officer**
- Brant Johnson - **ESSH Committee Chair - BNL Director's Safety Committee, NPP Safety Council**
- Karl Kusche - **ESSH Officer at the ATF, Public Access AED SBMS Subject Area, Group Safety Coordinator, Physics Department ESSH Committee**
- Mike Zarcone – **Event Categorizer (ORPS), Emergency Response Organization, Training & Qualifications Steering Committee, Laser Safety Committee, Operations Forum, Radiation Protection Working Group, NPP Safety Council, Physics Department's ESSH Committee, EEO Representative, Diversity Committee, HP Advocate. Management of Change, Supplemental Oversight of Research Operations**

# TIER I Program

The Tier 1 program worked very well this year but the number of findings rose by about 30% from last year. This is mostly attributed to the > 80 repeat violations attributed to the infrastructure. No situations involving 'imminent danger' were discovered. As can be seen from the chart below, Housekeeping, Working Environment Plant (lighting), Electrical Safety Distribution (daisy chaining, blocked breaker panels), and Electrical Safety: Equipment issues (bad cords) make up 2/3 of the issues, same as last year. Corrective Actions are assigned and tracked to completion. Responses to the corrective actions other than for the infrastructure were timely. Participation was good with Department Chair, Associate Chairs, ESSH Committee Chair and members, PIs, Group Leaders, and Group Safety Coordinator participation.

**RED = 2009**    **BLUE = 2010**



# Industrial Hygiene Monitoring

- The Physics Department has continued its use of our Industrial Hygienist this year with sampling (lead, cadmium, chromium, beryllium, etc.), reviews of flammable cabinets and chemical storage areas for incompatibles and compliance, and sampling for legacy contaminants (radiation & perchlorates) in our hoods scheduled for replacement/removal in the refurbishing of the 3-story wing of Building 510.

# ESSH Committee and Work Planning

- The Committee reviewed and approved all ESRs that were brought to it this year. Work Permits have been updated in the Department for Machine Shops, Computer room, and the routine work performed by staff at the ATF.
- The Committee reviewed the investigation of the stolen laptop finding it complete, requiring no further investigation.
- Whole body exposures continue to be very low with a total cumulative exposure of **28 mRem for the entire year**. This has been the case for the last 5 years where the annual exposures in mRem were **22, 28, 24, 0, and 56 for the calendar years 2009, 2008, 2007, 2006, and 2005 respectively**. Doses at the ATF for the complex continue to remain below 100 mRem as seen on the area monitors.
- Our source inventory has been reviewed to ensure we are not keeping sources that we have no use for in the Department.

# Security Issues

- Security issues and information are presented at All Hands meetings.
- Emails relating to security are distributed to all personnel by the Physics Department's Safety & Training office.
- The Physics Department is in compliance with all SECON security requirements. In particular, all laboratory and office doors are locked outside of working hours. Noncompliance reports (doors left open) have been given to the Department Chair and Group Leaders of the responsible individuals. In 2008 the ATF secured S2 funding to install timed locks on both main entrances to building 820. This continues to work well.
- One issue that has recently come to our attention is security in our High Bay in Building 510. As work is being done there and Lab assets are present, we are in the process of securing the area with timed locks. All other exterior doors will remain unlocked as usual.

# Cyber Security

- Cyber security receives a great amount of emphasis each year and the Physics Department has done its part to satisfy the concerns of the DOE. Cyber security issues are included in our weekly Management Meeting with at least one of our two Cyber security representatives attending.
- Cyber security received a "satisfactory" rating from the DOE Chicago Office audit conducted in September of 2009. As a result of the high rating, the Chicago office will not conduct another cyber security audit for two years. The successful outcome of the audit was due, in part, to the great amount of emphasis cyber security is given by the Laboratory as a whole and by the Physics Department in particular. The Department's management and individual members continue to take the cyber security concerns of the DOE seriously.
- All computers in the Department continue to have password protected screensavers activated, and DOE login banners installed. All computers running Windows based operating systems are part of the BNL Domain and all those running a form of UNIX have the Ordo host-based scanner installed. The Department continues to respond to potential findings from both the full quarterly network-based scans and the targeted continuous network-based scans. An in-house developed application gives weekly notice of any systems that are out of compliance. S. Aronson and P. Bond are on the distribution list to keep them apprised of our compliance. Typically there are on order of or less than 0.1% of the department machines with any findings. Finally, the Physics Department continues to ensure that all new and existing laptops are compliant with DOE requirements regarding encryption capability.
- ITD has rolled out a project to centralize the administration of user accounts and system configuration management. The Physics Department has completed this on all existing machines and continues to bring new machines into compliance as they arrive.

# Accident/Incident Management

- There was one incident, not ORPS reportable – Stolen Laptop (SCBNL Management Concern) for the fiscal year as compared to one ORPS in 2009, one in 2008, five incidents/accidents for 2007, four in 2006, and three in 2005. There were no PAAA violations.
- There was 1 DOE (OSHA) recordable case (SCBNL – chipped tooth), a DART rate of 0.00 (number of cases/200,000 hours worked), a TRC rate of 0.0 (number of cases/200,000 hours worked) and no first aid cases (non-sport related).
- These incidents were discussed with the Group Safety Coordinators and at a Department All Hands meeting.
- Other incidents were:
  - Building Ventilation Impact on ODH – 10/09
  - Radioactive Sources Not in Master Site Inventory – 2/10
  - Compressed Air System Failure – 6/10
  - Smoke Emanating from Air Conditioner, Fire Department Contacted – 6/10

# Emergency Management

- A successful emergency drill was completed in January for occupants of Building 510. The drill provided insight into a few deficiencies and improvements. They are given below.
- Emergency Management was very pleased with our sweeper plan and the job the sweepers did.
- Emergency Management was very pleased with our accountability program. It functioned well. They would like us to be a little quicker in getting the total results to the Incident Commander so they can begin the rescue process, if necessary, but they recognize the difficulty in getting everyone accounted for in a building of this size in a short period of time.
- When the fire alarm, located next to the front door, was pulled, the emergency management people were not aware that the alarm would only sound in one of the areas of 510. There were no alarms in the Phenix or Star halls, the three story wing, or the basement. This was disadvantageous for the drill, but does not put us at greater risk since the areas not alarming are covered by fully functional alarms that would have activated, if affected, in a real fire. **Next time we need to pull alarms for the other areas.**

# Emergency Management

- Some things the Department can do better:
  - We all, except the sweepers, need to leave the building by the **closest** exit then move around the building to the assembly place. A number of people walked through the building instead of going outside by the nearest exit. Some of this was my fault as I gave some people incorrect information. **I'll make sure to emphasize this for next year's drill.**
  - The evacuation took 8 minutes as people were standing outside on different sides of the building and needed to be told to go to the assembly area. Emergency Management wants us to get this down to 4 minutes. **I'll make sure to emphasize this for next year's drill.**
  - Many people left their office doors open when they left the building. Mostly, this was due to people not being in their offices at the time of the alarm and leaving the building directly from where they were. This could exacerbate the spread of a fire. We'll need to get the residents of the hallways and the sweepers to close doors of the empty offices as they go through their routes. **I'll make sure to emphasize this for next year's drill.**
  
- The assembly area is not good. Had this been a real fire, the multitude of fire engines and other emergency vehicles would be filling the front circle. There is a possibility of someone getting hurt by the vehicles and we would be in the way of vehicles, fire hoses, etc. if they were needed. **We need to find a better assembly area out of the way of the emergency vehicles.**
  
- Two fire doors were found to be chocked open (wooden wedges propping the doors open). We need to make sure this doesn't happen as it could greatly enhance the spread of the fire. **We need to be vigilant about this all the time.**
  
- Another drill took place in October 2010 with even better results.

# Accelerator Test Facility Issues

- In February 2009, there was a fire in one of the modulator cabinets that destroyed the cabinet, its contents and did collateral damage to the adjacent area totaling around \$100K. An extensive investigation was undertaken due to other incidents that had occurred in the Laboratory in which common threads were found. Although it took 7 months for the ATF to come back on line and renew its User Program, the investigation and subsequent committees' reports were beneficial to the Laboratory and have helped enhance safety. Nearly all of the ATF's procedures, SAD (3/1/10), ASE (3/1/10), were reviewed and updated where necessary.
- The dose to the area monitors was reviewed quarterly. The only concern was two areas that may reach 100 mRem in a year requiring a higher level of posting. Documentation establishing one of these areas as a low occupancy area was completed few years ago. The other area is in an interlocked room, generally unoccupied when the beam is on, and presents no hazard to the public. An effort to map the radiological footprint in this area was conducted and found to be confined to a small area where there is no occupancy. It is noted that all TLDs of personnel at the ATF have no recorded dose.
- The new laser interlock system functions well. The testing procedure continues to be updated with small refinements.
- This year we will update the Conduct of Operations (COO), if required, to reflect the new DOE Order 442 once the Laboratory and BHSO determine who will need to do it and how it will be done. We had submitted a completed COO Matrix this past year but BHSO decided to wait until the new order was published.

# MOUs

- There were five Memoranda of Understanding that were reviewed, or updated. These MOU establish the responsibilities for Work Planning and Control of Experiments and Tier I Inspections. They are:
  - MOU with C-AD for Physics Personnel working in C-AD space (reissued)
  - MOUs (2) with ITD for our use of Building 515 (reissued)
  - MOUs (2) with the CMPMS Department for their use of Building 510 space (reissued)
  - In process: MOUs (2) with Photon Sciences Directorate for their use of Building 820.

# Group Safety Coordinator Program

- The GSCs were again involved as members of teams reviewing Job Risk Assessments. A 'Thank-You' luncheon and meeting was held in September. Ken Asselta, Dana Beavis, Marcy Chaloupka, Joseph Cracco, Susan Duffin, Susan Foster, Ron Gill, Richard Hogue, Nicole Kelly, Harold Kirk, Karl Kusche, Sean Stoll, and our colleagues from the CMPMS Department - Robert Konik, Al Langhorn, Fran Loeb, Bill Schoenig, and Ed Stein.
- The discussions and interaction of this group remain productive each year. There is more feedback and discussion of items on the agenda and other issues are brought up by GSCs.
- Many of the GSCs are now part of our Emergency Response Program. They have 'sweep' routes and accountability responsibilities. They work with the Group Leaders and the LEC and have greatly improved our accountability.

# Safety Observations

The Physics Department Chair, Associate Chair, Deputy Chair, and Manager of ESSH&T Programs participate with the ALD of NPP, Managers and Chairs from the C-A Department and others to perform monthly safety observation walkthroughs in the NPP Directorate. These have proved to be fruitful. A number of corrective and follow-up actions have resulted from these observations. Each member completed the required 12 observations.

Observations were undertaken in the Physics Department , Phenix & STAR Experimental Halls this past year. No unsafe acts were observed.

A SORO (Supplementary Oversight of Research Operations) Observation was undertaken by The Manager of ESSH&T Programs, and members of the Medical Department that included the Chair, ESH personnel, and scientific staff from PET/MRI. A number of useful suggestions came from this.

Additionally, our DOE Facility Representative and the Manager of ESSH&T Programs also make unannounced visits to areas of the Department. During these visits, workers have an opportunity to bring safety issues to the attention of our DOE Representative who has followed up on issues to the benefit of the Department, the work area, and the morale of employees.

# Completed Recommendations/Goals for FY 2010

- Continue reducing chemicals and cleaning up flammable cabinets of unneeded spray cans
  - Chemicals removed from former machine shop, 2-233
  - Removed more lead and a large quantity of paints, spray cans, oils, and epoxies – mostly non-bar-coded items
  - Down to 143 – mostly epoxies, oils, and solvents left
- Prepare for the renovation by reducing unneeded equipment and clean up more storage cages
  - The STAR and Omega cages were cleaned out and re-organized. Several other cages (Phenix, Electronic Detectors, CMPMSD) were partially done as well. The CMPMS Department vacated one of their storage rooms. A number of laboratories in the 3-story wing have been cleaned out and will not be reused at this time.
- Sample and clean at least 2 labs for heavy metal contamination
  - Tested 2 old shops – 2-233 and 1-151
- Compliance with new PPE rules for chemicals
  - Posted all chemical containing labs with requirements
- Generate a MOU with NSLS and NSLS II for Building 820
  - Currently getting signatures
- Renew MOUs with C-AD and ITD
  - C-AD (1/10)
  - ITD (8/10)

# Completed Recommendations/Goals for FY 2010

- Keep up with NRTL/EEI inspections for new and brought in equipment
  - Met the 9/30/10 deadline for evaluating all laboratory equipment
- Improve emergency planning by conducting and analyzing a drill
  - Drill completed, analyzed, and repeated
- Continue to suggest improvements of the network scanner through the Scanning Working Group.
  - After suggestions were initially considered the Group did not feel there was a need to continue at this time
- Continue to bring eligible machines into ITD's centralization project and provide an equivalent option for other machines.
  - Completed
- When the new computer room is completed, move the NUHEP computing resources to the new room ahead of the building renovation.
  - Room not yet completed

# Recommendations/Goals for FY 2011

- Coordinate/work plan the moving of personnel prior to renovation so that there are no injuries/accidents
- Work with the new FCM, FPM, and lab people to improve the IFM as it relates to Physics
- Remove remaining legacy chemical items from labs and storage
- Sample vacated labs for lead, cadmium, beryllium, and chromium
- Volunteered to replace Hazard Placards – Area designations and PPE required
- Get rid of remaining oil pumps from basement
- Complete HP introduction for remaining employees
- Work with ITD to receive an Authority to Operate for BNL
- Continue to meet the cyber security goals of the DOE while maintaining our ability to do science