Brookhaven National Laboratory
2010 Annual ISMS
Effectiveness Review and Declaration

December 2010
Revision 0

BROOKHAVEN
NATIONAL LABORATORY

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1.0 INTRODUCTION/BACKGROUND

This report documents the fulfillment of Brookhaven Science Associate's (BSA) requirements to update and submit, for DOE approval, safety performance objectives, measures, and commitments. These requirements are established by the DEAR Clause 970.5223-1 in BSA's contract, as follows:

- 970.5223-1– Integration of Environment, Safety, and Health (ES&H) into Work Planning and Execution (e): *"On an annual basis, the contractor shall review and update, for DOE approval, its safety performance objectives, performance measures, and commitments consistent with and in response to DOE's program and budget execution guidance and direction. Resources shall be identified and allocated to meet the safety objectives and performance commitments, as well as maintain the integrity of the entire system. Accordingly, the system shall be integrated with the contractor's business processes for work planning, budgeting, authorization, execution, and change control."*

BSA meets the objectives to establish a DOE-approved Safety Management System to integrate Environment, Safety and Health (ES&H) into work planning and execution by implementing its Integrated Safety Management System (ISMS) Program Description.

The requirements to establish annual safety performance objectives, performance measures, and commitments for DOE approval are fulfilled by the process to establish the fiscal year (FY) contract performance evaluation and measurement plan (PEMP) goals and objectives, the BNL Annual Laboratory Plan (ALP) goals, objectives and targets that flow into the Laboratory organization Business Plans. The Laboratory's policy for implementing performance-based management includes the following guiding principles:

- Performance objectives are established in partnership with affected organizations and are directly aligned to the BSA Strategic Plan and Annual Laboratory Plan (ALP)
- Resource decisions and budget requests are tied to institutional risks and results
- Results are used for management information, establishing accountability, and driving long-term improvements

The performance-based management process is continuous during the fiscal year and consists of a series of monthly and tri-annual reviews (e.g., BSA Institutional Assurance Cycle reviews like the BSA Risk Committee reviews, monthly project and financial reviews, tri-annual PEMP, ALP, and Management System reviews), various Operational Awareness Activities (e.g., Work Planning and Control Processes, Management Work Observations), and out briefings and reports of specific investigations, reviews, appraisals, and assessments. A stream of performance measurement data beyond those associated with the PEMP is also analyzed throughout the year by support organizations. Finally, data associated with the Events and Issues Management process (Occurrence Reporting Process System [ORPS], SCBNL, Causal Analyses, and Lessons-Learned) are reviewed and trended.

On an ongoing basis, these inputs are analyzed by the appropriate line managers and management system stewards to determine if immediate corrective actions are indicated or further assessment/analysis is needed to better understand a potential problem before taking action. Follow-on actions are taken, as appropriate.

At year-end, the above inputs and status of actions taken and planned are rolled-up for further analysis and for input to support organization Business Plans, and to establish the annual ISMS effectiveness review process.

Two of the most significant end-of-year inputs are the BSA Corporate Assurance Process and the Laboratory's Self-Evaluation of performance against targets, established in the PEMP for the FY. These inputs represent performance areas that are important to the BSA Board of Directors and the customer, the DOE Office of Science.

The two key assessments mentioned above are combined with the continuous performance assessment data at year-end, and a roll-up and analysis are performed. Results are prioritized and communicated to Laboratory senior management, as well as other input for the development of the support organization's Business Plan for the FY. Follow-on actions identified in the Business Plan are flowed down into the goals of direct reports and the cycle begins again for the coming FY. Also key to this process is the annual BSA and line organizations' Environmental Management System (EMS) and Occupational Health and Safety Assessment Series (OHSAS) Management Reviews. Each document senior management input on specific ES&H activity throughout the year and establish future FY objectives and targets.

Four key ISM performance measures are reviewed on a continuous basis as part of the ISM Program Manger's responsibilities and are presented in this report.

2.0 SUMMARY OF ISM EFFECTIVENESS

The BNL ISMS continues to be a well-designed program for accomplishing work in a manner that protects workers, the public, and environment. BNL consistently sought to improve its safety performance by conveying "zero injuries" as achievable, which is the Laboratory's primary safety objective. Program effectiveness is substantiated by a number of indicators, performance analyses, data trending, and assessment results that include but are not limited to:

- ESH Assessments and Effectiveness Reviews
- Fiscal year end summaries, as reported in Performancesoft
- PEMP performance summaries as reported in Performance soft
- PEMP Annual reports to BHSO
- Management System Assessments
- External Regulatory Assessments
- FY ORPS and NTS Activities
- Analysis of ISM Performance Measures by ISM Program Manager
- EMS and OHSAS Management review

The following is a summary of ISM Strengths, Weaknesses, and Improvement Initiatives resulting from these inputs.

ISM Strengths

Leadership

BNL's Blueprint to enable the Laboratory to reach its strategic vision and goals was a significant FY10 achievement. The Blueprint projects fit into five broad categories: organizational changes; leadership effectiveness; engineering, construction and facility management; safety and operations excellence; and performance management. Routine progress meetings continue to report progress. DOE's Brookhaven Site Office (BHSO) conducted a thorough review of BNL's Blueprint initiative in March using a team headed by the SLAC site manager. The review validated our progress and resulted in BHSO taking over day-to-day oversight of the Blueprint initiative. Blueprint leadership elements continue to drive improvement toward operational excellence.

A significant ISM achievement of the Blueprint project was the implementation of the Integrated Facility Management Model to deliver mission-ready facility capability through enhanced operations and management of facility assets.

A significant ESH achievement this period was the recertification of the Laboratory's safety program to OHSAS 18001 and the environmental management system to ISO 14001 standards. It is noteworthy that both recertification reviews resulted in no findings, and credit was given to a robust self-assessment process.

Worker Safety and Health

BNL has achieved historically low injury rates for FY10, eclipsing the previous historic lows for FY08. The FY10 DART rate was 0.56, which is 24% lower than the previous rate of FY08. Similarly, the FY10 TRC rate of 1.09 is 10% lower than the FY08 rate. The low rates are attributed to the focus that the Leadership Action Plan and Blueprint project brought to the strategic importance of safety performance. Leadership engagement increased significantly,

including two Laboratory Safety stand-downs, the contractor safety stand-down, several supervisor meetings, and increased communications of the incidents to the Laboratory population. A Safety Resources web page was developed to communicate injury statistics and a series of "One Minute Safety Topics" was created as an aid to supervisor interactions during safety meetings and plan of day meetings.

Improvements in Electrical Safety, LOTO, Construction Safety programs were implemented. An Electrical Safety Strategic Plan is nearly completed for implementation.

A review of all high and moderate ranked Job Risk Assessments, 109 total, were reviewed and updated in FY10.

The Integrated Safety Management Improvement Project was completed and a final closeout report submitted to BHSO.

Environmental Management

The Quantification and Removal Study and Mercury Minimization Program required under BNL's modified SPDES permit were completed in July. The report recommends that the sewage treatment plant effluent be rerouted to new recharge basins constructed just to the south-east of the existing sand filters. By taking the discharge out of the river, BNL will no longer contribute contaminants to the Peconic River system which should lead to long term environmental improvement and should help reduce long term environmental monitoring costs.

The EM program successfully removed all graphite from the BGRR core and shipped the material to Nevada Test Site. HFBR facility was stabilized, prepared for long-term lay up, and placed in "cold and dark' status. Fanhouse and aboveground ducts were removed. Significant progress in Legacy Waste reductions included removal of two 20,000 gal tanks at Bldg 811, the 60" cyclotron, clean out of the MEL hotcells, and shipment of 10,000 lbs of lead from the 801 diverter tank.

Significant efforts to turn over land for use as part of the Long Island Solar Farm Photovotalic solar array including surveying an 11 acre parcel of property to identify and characterize areas of surface contamination, removal of contaminated soils and end-point sampling and formal final status surveys of the remediated property.

Radiological Protection

Radiological Control, Medical, and Safety and Health Services Division personnel worked closely to assess and improve the use of Personnel Protective Equipment. These groups determined the best type of latex gloves to use with chemicals that have a rapid penetration rate.

RCD continues to work closely with the EFCOG, DOE Laboratories and HS-22 on a path forward for moratorium metals and release of materials. A final path forward will allow for cost effective and optimal management of activated/potentially contaminated metals across the BNL site.

Processes and procedures are adequately documented and implemented to protect the Laboratory from significant risk. Standards Based Management System (SBMS) site-wide radiological control procedures and subject areas are mature. Internal and external assessments in FY09 and FY10 indicated that the radiological control program is strong in the following areas:

- Airborne radioactivity monitoring

- As Low As Reasonably Achievable (ALARA)
- Area radiation monitoring
- Radiation generating devices
- Radiation Safety Training
- Radiological work planning and control (i.e., Environmental Restoration Radiological Controls)
- Radiological Records

Emergency Management
OEM continues to improve its program and was recruited by DOE Headquarters to assist other Office of Science Laboratories in establishing their emergency management programs. EM experienced continued growth of an improved Training, Drill and Exercise program, with OEM and Laboratory leadership completing an outstanding Full-Scale Evaluated Exercise. OEM continues to expand its mission across the Laboratory developing relationships, establishing cooperation, and providing coordination between different departments as successfully demonstrated during the International Brotherhood of Electrical Workers Strike Contingency which OEM demonstrated their keen ability to orchestrate a solid continuity of operations plan should a work-stoppage prevail. OEM also performed expertly during BNL's preparations for Hurricane Earl.

OEM's outstanding performance is validated through additional accomplishments that include:

Hazards Survey/Hazard Assessment: Conducted additional walk through verifications for the 2010 Hazard Survey/Assessment report; The 2010 Hazard Survey/Assessment finalized and submitted to the DOE Brookhaven Site Office (BHSO).

Program Administration: Submitted the BNL Continuity of Operations Plan to the BHSO which was approved to comply with DOE Order 150.1 Continuity Programs; Analyzed and provided a cost saving by ending contractor support and hiring a full-time staff person to enhance the capabilities of OEM for Fiscal Year 2010.

Training, Drills and Exercises: Conducted Functional Exercise on June 23, 2010, which included the Brookhaven National Laboratory (BNL) Radiological Response Team and off-site agencies; Conducted the annual Full Scale Exercise on August 25, 2010, which included the BNL Radiological Response Team, Spill Control Team, Emergency Response Organization Team 2, and off-site agencies; Attended the Suffolk County Securing the Cities Tabletop Exercise conducted by the United States Department of Homeland Security (DHS).

Readiness Assurance: Tested the equipment and capabilities of the BNL Emergency Operations Center (EOC) during the functional and full scale exercises; Developed the BNL Strike Contingency Plan to prepare for a stoppage of work by union employees during contract negotiations; Assisted BHSO with conducting two assessments for OEM; Convened the Severe Weather Group to plan for Hurricane Earl; Developed a BNL Hurricane Planning guide.

Emergency Response Organization: Conducted monthly EOC Team briefings; EOC Team 2 participated in the functional and full scale exercises; Utilized other EOC Team members as controllers and evaluators for the functional and full scale exercises.

Off-site Response Interface: OEM staff attended the Long Island/New York City (NYC) Emergency Management Conference; Conducted meetings with the DHS Regional Interoperability Communications representative; Hosted a two day informational visit from OEM staff from Argonne National Laboratory; Hosted OEM and Security staff from DHS Plum Island during the full scale exercise; OEM staff attended

the NYC Department of Health Preparedness Workshop; The following offsite partners participated in the BNL exercises; New York State OEM, Suffolk County OEM, Suffolk County Department of Health, Brookhaven Town Fire Marshals, Stony Brook University Hazardous Material Team and the National Weather Service.

Emergency Facilities and Equipment: Activated and tested the equipment and capabilities of the BNL EOC during the functional and full scale exercises; Upgraded seven (7) laptop computers in the EOC; Re-positioned the projector screens to be more functional in the EOC.

Categorization and Classification: Cat/Class was successfully tested during the functional and full scale exercises; The Consequence Assessment Team participated in the functional and full scale exercises; Fire Rescue Incident Commander conducted categorization and classification during the annual exercise.

Communications and Notifications: Incorporated the Everbridge Mass Notification System as the site wide notifications for employees; Communications and notifications were tested site-wide for Hurricane Earl; Tested the Emergency Communications Nextel Kit during the annual exercise.

Consequence Assessment: Tested the capabilities of the Consequence Assessment Team during the functional and full scale exercises; Increased the space in the EOC for the Consequence Assessment Team to operate.

Protective Actions and reentry/Termination and Recovery: Successfully tested Protective Actions and Recommendations during the annual exercise; Successfully tested termination and recovery during the annual exercise.

Emergency Medical Support: BNL's Occupational Medical Clinic (OMC) participated in the functional scale exercise working with BNL Fire rescue and the Suffolk County Department of Health (DoH); OMC participated in the annual exercise working with the Suffolk County DoH and their Rehabilitation Unit.

Emergency Public Information: Activated the Emergency Information Center during the functional and full scale exercise; Conducted a press conference during the full scale exercise; Conducted emergency public information during each exercise for both internal and external partners.

ISM Weaknesses

Leadership

Although the rate of injuries declined in FY10 BNL continues to recognize that vigilance in promoting an improved safety culture is required. The Director has recently issued a set of Values and Behaviors to establish a baseline for BNL leadership expectations. Senior Management held several meetings with staff to socialize the values and collect feedback.

Worker Safety and Health

An OHSAS internal self assessment revealed a significant non-compliance issue. BNL has several older buildings with flat roofs at least four feet above the next level with unacceptable means of fall protection, as required by 29CFR1910 Subpart D. Workers perform both scheduled and unscheduled maintenance on roofs and roof mounted equipment. An ADS request for funding to implement improvements was submitted, and a fall protection strategic plan is being developed.

BNL conducted a self-assessment of the hazard categorization program with the assistance of an independent SME from ORNL . The self-assessment resulted in 7 findings, 8 OFIs, and 3 noteworthy practices. Causal analysis and a corrective action plan were prepared. Subsequent to the self-assessment it was determined that HC3 quantities of material were transported on site. This has been reported in ORPS and NTS, and immediate compensatory actions were implemented to prevent this from occurring. Additionally, an evaluation was performed by Sonalyst to serve as a basis for requesting an adjustment to nuclear hazard category 3 threshold quantities for phosphorus-32 (P-32) and phosphorus-33 (P-33), which are byproducts of isotope production from irradiated simple chloride salts at the BLIP facility.

The Energy Employee's Occupational Illness Compensation Program Act (EEOICPA) of 2000 including a BNL Special Exposure Cohort, has been approved by the CDC and NIOSH. The program affects personnel who worked as employees or subcontractors from January 1, 1947 through December 31, 1979. Substantial efforts are required by BNL to verify employment and exposure.

ARRA funding enabled a significant increase in construction and demolition activity. Construction planning and schedules have been accelerated such that multiple large activities are occurring simultaneously. The work is taxing the existing resources and has led to a need for additional experienced construction safety inspectors. Additional resources were added in FY10 and additional new hires are scheduled for FY11. The unprecedented increase in construction and demolition activity has created more exposure risk for BNL. An extended safety stand-down was conducted last fiscal year to impress upon the principals of the subcontractors to BNL that safety is paramount to continued work at BNL. An increase in incidents in FY10 compelled BNL to hold a mass meeting with subcontractors and BNL construction managers to re-emphasize their continued commitment to safety.

BNL experienced 16 DART injuries in FY10, the lowest in its history. However, one of these injuries was so serious that it triggered a Type B like investigation. A contractor on a construction site on 9/30/2010 experience a compound fracture of the leg. A contractor-led investigation found systemic issues with oversight and program implementation. Corrective actions have been initiated.

Recent observations of containers of peroxide forming compounds (PFC) found several instances where the Laboratory requirements on periodic testing of PFC containers had not been conducted. Without consistently implemented periodic testing, the risk of a container rupture from over-pressurization or explosion from hazardous decomposition products exists. An extent of condition evaluation is underway to fully evaluate the number of untested containers, immediate and long term corrective actions for hazardous situations are underway, and a revision of the formal policy on PFC planned to correct the underlying failure of administrative control procedures for testing and disposal of container within appropriate intervals. In addition, several recent reviews have indicated the need for a re-inventory of the chemical storage onsite at the Laboratory. A correct inventory is essential for various safety initiatives at the Laboratory and the level of accuracy needs to be improved.

The Laboratory and the DOE executed a Consent Order in November to resolve the pending enforcement action related to the October 2008 well house explosion. The DOE cited the Laboratory’s investigation and analysis thoroughness as the basis for this course of action. The Blueprint project contains several elements to addresses identified weaknesses.

Improvements to the quality and rigor of work planning needs to improve as described in Section 3.

Environmental Management
BNL was notified by Energy Solutions in May that a drum of mixed radioactive waste shipped to their Utah facility, did not meet waste acceptance criteria and exceeded the criteria stipulated in their license. The DOE, NRC and the State of Utah have been notified and BNL continues to work with the facility and regulators to resolve the issue. A causal analysis and CAP have been prepared to strengthen BNL waste characterization and transportation programs.

Radiological Protection
The Radiological Control Management System (RCMS) is well documented and aligned to support line organization radiological research and development operations. The largest group within the RCD is the Facility Support (FS) Section, which consist of the FS Manager and 7 department/divisions groups that FS provides BNL site-wide radiological oversight. Each BNL Department/Division has at least one professional (supervisor) and one or more radiological control technicians (RCTs). The FS, Personnel Monitoring and I&C Sections are operated under full cost recovery (recharge) business model, which presents challenges to match resources to risks. The ESH Service Model project under the Blueprint initiative is analyzing improvements to the cost recovery model.

In analyzing radiological control /radiation protection performance, weaknesses across the BNL complex were identified in the consistency and implementation of Radiological Work Permits (RWPs). Additionally, procedure development is inconsistent across the RCD groups. A similar condition exists with the quality assurance program. Quality assurance activities are not aligned or coordinated across RCD groups. Several findings from internal and external assessments in FY09 and FY10 were often a result of the decentralized procedure management and stand-alone quality assurance program employed by RCD.

Emergency Management
The identified program weakness for FY11 is the self-assessment program and will be the focus of attention this fiscal year. Building the program elements this past year will allow OEM to develop and implement an updated self-assessment program.

Events and Issues Management
Over the course of FY10 the rigor of event analysis, including low level events, varied due to an inconsistent level of quality. This resulted in a less than adequate analysis, and the need to revisit, some corrective actions.

Improvement Initiatives

Leadership
BNL is implementing several significant leadership and organizational changes that should have a measureable impact on safety performance. Chief among the significant safety initiatives is the Leadership Action Plan (LAP) and Blueprint Project. The goals strengthen line managers and supervisors, and will reduce injuries by expanding/re-energizing employee involvement in work planning, job risk assessments (JRA) and other key aspects of our safety programs. The plan centers around five major themes: Leadership Effectiveness, Organizational Realignment, Performance Management, Integrated Safety Management and Safety Communications.

Significant improvements have been implemented through improvements in communications and accountability. Sr. Management devotes one meeting per month (formerly a Policy Council meeting) to the Director's Safety and Operations Council (DSOC). This meeting provides an opportunity to review ESH performance metrics and make decisions on improvement initiatives. Furthermore, each Associate/Assistant Laboratory Director has established a DSOC for their directorate, to engage staff in ESH improvements.

Safety communications have been improved dramatically. The Safety Resources webpage provides up to date information on safety incidents as well as targeted communications to prevent injuries and tips and tools for supervisors to use in work planning and staff meetings. A Safety Communications Strategic Plan has been developed to keep the messages fresh and relevant, and the Laboratory Director includes safety as a significant element of his communications to the Laboratory (All Hands, Supervisor Meetings, Monday Memo).

The Contractor Assurance process for ESH continues to improve. In addition to external certifications in ISO 14001/OHSAS 18001, the ESH Directorate is committed to improve the quality of the self assessment program. Toward that end, three institutional ESH assessments were combined. The EMS Internal Audit, OHSAS Internal Audit and ESH Compliance Assessments were conducted over a four-week period. The previous burden for these assessments was more than ten weeks over the course of the fiscal year. In addition, what would have been more than five separate reports was consolidated into one report. This approach reduces the assessment burden and allows a more focused set of institutional improvement initiatives. BSA continues to work with BHSO to improve and integrate our assessments programs, including participation in collaborative assessments.

Worker Safety and Health

An Electrical Safety Strategic Plan is near completion and was developed as the result of an internal and external (BHSO) compliance assessment. This Plan will prioritize known deficiencies based on risk, develop cost and schedule information for corrective actions, and support the decision making process for allocation of resources.A risk assessment process has been developed and tested on two buildings at BNL, and was presented to the EFCOG electrical subgroup for review and comment at the October 2010 meeting at BNL. EFCOG highly endorsed the process and some other DOE laboratories will be adopting the same process. The ESSP encompasses several unresolved electrical safety issues cited by DOE and OSHA over the past decade including panel schedules (e.g., panel labeling), cable tray, GFCI testing, and electrical equipment maintenance.

Accelerator facility authorization basis is being updated for compliance with DOE O420.2B and internal requirements. All accelerator facilities (15), some dating from the 1960s, have an ASE or Interim ASE. BNL met the site office request to have final approved ASE and current SAD by the end of Q2FY10. Improved construction safety performance is expected by hiring additional experienced construction safety professional and will help considerably with daily site inspections for the 123 construction projects going on at BNL. An electronic based Phase Hazard Analysis (PHA) library has been developed and a database will be developed to allow contractors/sub-contractors to search various work tasks and provide them with a example PHA for their consideration.

Consensus has been reached on area-based personal protective equipment requirements. A program to post areas with the required PPE for entry will be implemented in FY11 with a phased schedule.

The Safety Observation Program has been reviewed by a consultant and recommended improvements are underway. The database has been redesigned on a new platform for improved maintenance, updates and reporting on leading indicators. A training manual is being developed to ensure consistent application of

risk analysis.

The Blueprint and Integrated Facility Management project initiated significant improvements to work planning and control. The following steps are taking place to make this process consistent across the lab.

- Complete modification of the F&O WP&C Procedure.
- An Environment, Safety, and Health Representative will be assigned to each complex, increasing the local focus on ESH in the complex work planning process. Additionally, F&O is hiring four additional Planners to add to the current staff of three. This will increase the capability to plan more work and reduce the amount of worker planned work.
- A new Maximo Scheduling module was purchased and will be used to schedule all F&O Work Orders, which will be used to develop a Plan of the Day (POD) and a Plan of the week (POW) for each complex within the IFM Program.
- Planners will use a new tool ("Work Planning- Screening Guidelines") developed to screen all work for hazards.
- Three new levels of work packages were developed that will be used for planning and execution of work; Low Priority Work Package, Moderate Priority Work Package, and Complex Priority Work Package.
- New Work Flow process to tie in with the IFM Program. F&O will set all work priorities, and define scope of work.
- New procedure process will be reviewed for use in other departments, by a newly formed WP&C Improvement Working Group and update SBMS Procedure.
- Consultants hired to perform Optimization of the Preventive Maintenance Program Job Plans, Identify weaknesses in areas of PPE, hazards and resource time. Make adjustments as required.
- Fifteen minute briefings prior to start of work include Human Performance tips and lessons learned; approval and acceptance of all work packages by IFM Facility Project Manager.
- Approval of all POD's and POW's by all Facility Complex Managers.
- Field work packages contain a process for feedback and lessons learned.

Additionally, work planning for research will benefit substantially from implementation of the ROCO model as it continues to evolve. Both IFM and ROCO will create a significantly improved line management responsibility for work control in operations and research, respectively.

Environmental Management

The Office of Emergency Management and the Waste Management Program continue to reach out to local/regional Emergency Management Offices and the LIRR to pave the way for an aggressive rail

shipping campaign that will begin in the late Fall. A test shipment of placarded rail-cars was shipped on September 19 without incident. Approximately 200 rail cars of non-placarded and placarded shipments of waste generated by the BGRR Bioshield and Stack demolition projects will be shipped to Energy Solutions for disposal.

The BGRR graphite pile demolition has been completed and the setup for Bioshield removal has commenced. All exterior structural balconies have been removed and the containment tent will be extended to include the Bioshield prior to work commencing. The BGRR project continues to perform at a high level without incident, zero injuries and low dose to workers. A significant milestone was achieved with the removal and shipment of all graphite from the core of the Brookhaven Graphite Research Reactor. All 234 waste packages were shipped to NTS without incident and the project was completed with zero injuries and low dose to workers.

Radiological Protection

In response to incidents, RCD used established processes (extent of cause review, Radiological Awareness Reports, lessons learned, etc.) and worked closely with line organizations to identify root causes and develop solutions. In addition, peer groups were engaged to review programs and share best practices.

In FY10 RCD developed and initiated implementation of a Division Quality Assurance Program matrix. In FY11 alignment and coordination across groups will be a major area of focus.

In FY11, RCD will develop and implement a consistent approach to procedure development, including subject areas and technical basis documents. The improvement initiative will also involve incorporation of human performance improvement (HPI) principles into RCD procedure development and implementation.

Emergency Management

The next fiscal year will require additional coordination between the Local Emergency Coordinator (LEC) program and the new Integrated Facility Management (IFM) program. OEM will work with the IFM Complex managers to ensure the LEC assignment is represented in each facility. We will provide training and information to newly assigned LEC's as BNL begins the IFM program.

The Center For Functional Nanomaterials (Building 735) - will require a quantitative analysis in an Emergency Planning Hazard Assessment (EPHA) for the projected inventory of chemicals required for the soon to be installed gas-metal plasma etching machine and nano-particle synthesis processes.

Implementation of DOE Order 150.1 Continuity of Operations Plan (COOP) will be a major undertaking for OEM. This fiscal year will continue to be the development and implementation of the BNL COOP program.

Events and Issues Management

Improvements were made to the institutional causal analysis process for ESH findings whereby a qualified person is assigned to ensure that the causal analysis process has the appropriate rigor. In addition, a Blueprint project was initiated to ensure that captured lower-level issues are proactively analyzed and utilized to correct adverse conditions that may exist across the Laboratory and, in addition, also used to identify Lessons Learned to be shared across all organizations.

3.0 ISM SYSTEM EFFECTIVENESS

ISM System effectiveness is a measure of multiple ESH performance measures. These measures are summarized as PEMP metrics, ALP objectives and targets, Division objectives and targets and routine reports. Two routine performance reports are summarized at least quarterly where one is a summary report on injury statistics submitted to BHSO and the second is a "one page" summary of key indicators presented to senior BNL staff periodically. A third performance report is the four work planning and control metrics presented here. These four key ISM performance measures are reviewed on a continuous basis as part of the ISM Program Manager's responsibilities and are presented below for FY10.

3.1 Analysis of Work Planning Type

One of the four ISM performance measures is to "*Analyze the percent of worker-planned, prescribed, and permit-planned work against the FY08 baseline. Use this analysis together with the lagging indicator analysis to determine if work is appropriately categorized as worker-planned, prescribed, or permit-planned work and consistent with risk levels.*"

In FY 2008 a consensus of all planned work was conducted where Work Control Managers provided a breakdown in percentage of each of the three types of work; Worker Planned, Prescribed and Permit Planned. FY08 results show that 60% of all work was Worker Planned, 30% was Prescribed Work and 10% was Permit Planned. In FY 10, self assessment data shows that 33% of all work was Worker Planned, 58% was Prescribed Work and 9% was Permit Planned identifying a shift away from worker planned work events. Figure 1 is a graphical representation of this data.

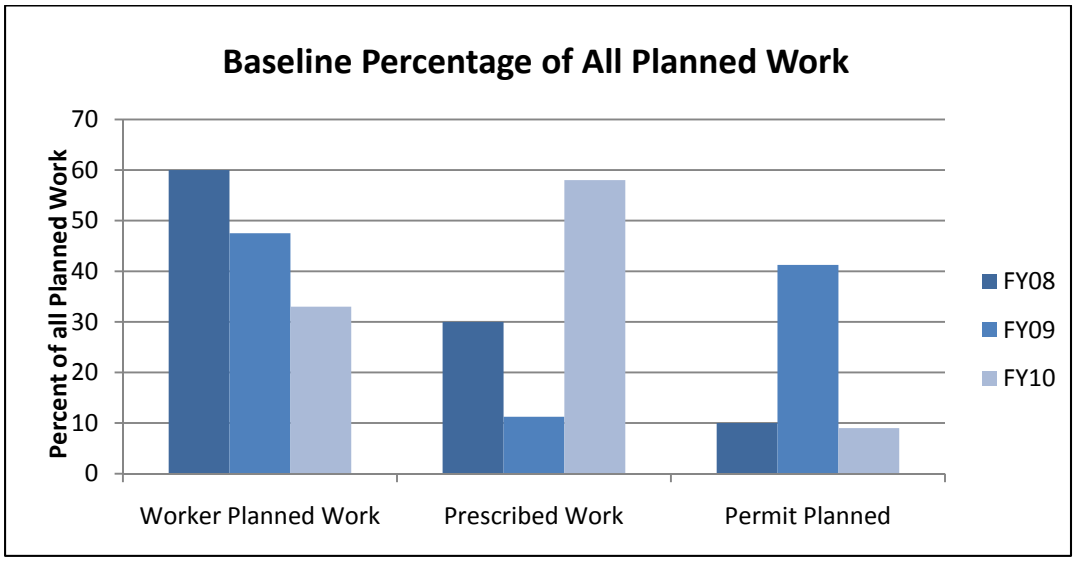

Figure 1

The increase in the number of prescribed work events suggests that risk levels are growing more consistent with work type or are being more conservatively applied. It is expected that with a shift away from worker planned work events a decrease will be noticed in corresponding lagging indicators such as those identified in Figure 6.

3.2 Analysis of Facility Downtime due to Work Planning Problems

One of the four ISM performance measures is to *"Analyze work planning problems (inadequate planning, hazard identification and controls, and performance of work within controls) that cause facility downtime (i.e., inadvertent shutdown of systems or processes) (lagging indicator)."*

A baseline for work planning problems that cause facility downtime allows BNL to measure its operational performance as a function of work planning problems. To establish a baseline for work planning problems that cause facility downtime a review of outages in 2007 and 2008 was conducted. In 2007, there were 10 outages with 2 of them in part attributable to work planning problems or 20%. In 2008, there were 7 outages measured with one of them in part attributable to work planning problems or 14%. In 2009, there were 5 events that resulted in facility or electrical downtime with 3 of those events attributable to work planning problems or 60%. Fiscal year 2010 shows positive progress in reducing facility downtime as there were no events due to work planning problems. Figure 2 is a graphical representation of this data.

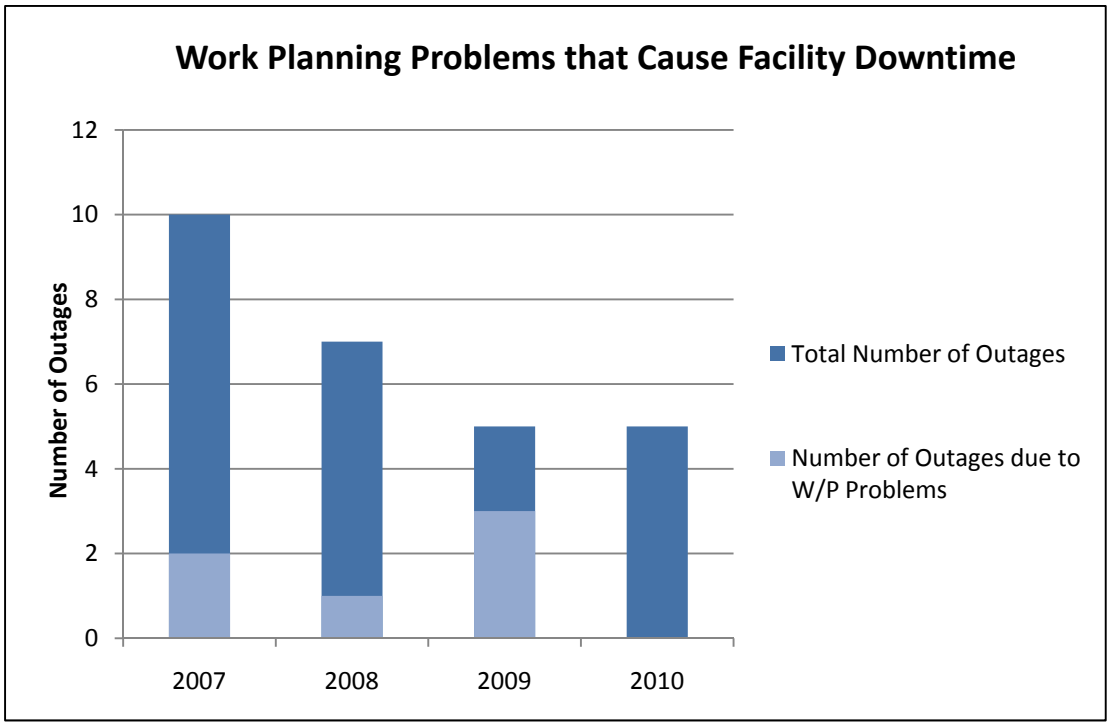

Figure 2

Although it is encouraging that there were no downtime events as the result of work planning problems continued attention to this metric will be addressed through Blueprint and Integrated Facility Management improvements.

3.3 Analysis of Safety Observations and ISM Core Functions

One of the four performance measures in the BNL ISM Program Description is to "*analyze unsafe behaviors identified during safety observations against ISM core functions"* as a leading indicator of improvement. The BNL Safety Observation database includes a report application for this purpose. The results from this report are discussed below and shown in Figure 3.

BNL analyzed the unsafe behaviors against the ISM core functions, 1) define the scope of work, 2) identification of hazards, 3) implementation of hazard controls, 4) performance of work within established controls, and 5) feedback and improvement to understand where to focus improvement efforts.

Core function 1 - In defining the scope of work, BNL unsafe behaviors observed in FY07, 08 and 09 were approximately 2.2%, 1.4% and 2% of all behaviors observed. In FY10 this trend continues with 1.8% of all behaviors observed. These represent a fairly consistent trend, the lowest percentage of core function deficiencies, and considerably lower than core functions 3 and 4.

Core function 2 - In identifying the hazards, BNL unsafe behaviors observed in FY07, 08 and 09 were approximately 3.6%, 2.6% and 3.9% of all behaviors observed. In FY10 this trend continues with 3.3% of all behaviors observed. This represents a fairly consistent trend considerably lower than core functions 3 and 4. In FY10 this trend continues with 3.3% of all behaviors observed. This represents a fairly consistent trend considerably lower than core functions 3 and 4.

Core function 3 - Implementation of hazard controls has been identified through internal and independent assessments as BNL's weakest, and the area needing the most improvement. In FY07, 08 and 09 BNL unsafe behaviors observed for core function 3 were approximately 16.3%, 9.1% and 14.1%, respectively, of all behaviors observed. In FY10 this trend continues with 13.3% of all behaviors observed. Although slightly less than FY09, this represents a fairly consistent trend that needs improvement.

Core function 4, performance of work within established controls, BNL found that FY07, 08 and 09 unsafe behaviors observed were approximately 7.2%, 4.4% and 5.6%, respectively, of all behaviors observed. Similar to Core function 3 internal and independent assessments corroborate that improvements are needed in this area. In FY10 this trend continued to rise with 6.2% of all behaviors observed and represents needed improvement.

Core function 5 - The fifth core function, feedback, is inherent in the implementation of the Safety Observation Program due to the interaction of managers and workers. As such, the overall use of the system is a measure of feedback. In FY10, 6817 observations were conducted. In comparing the FY07, 08, 09 and 10 safety observation rates the percentage of safe behaviors noted was 70.2%, 82.5%, 74.3%, and 75.5% respectively. These figures are not represented in Figure 1.

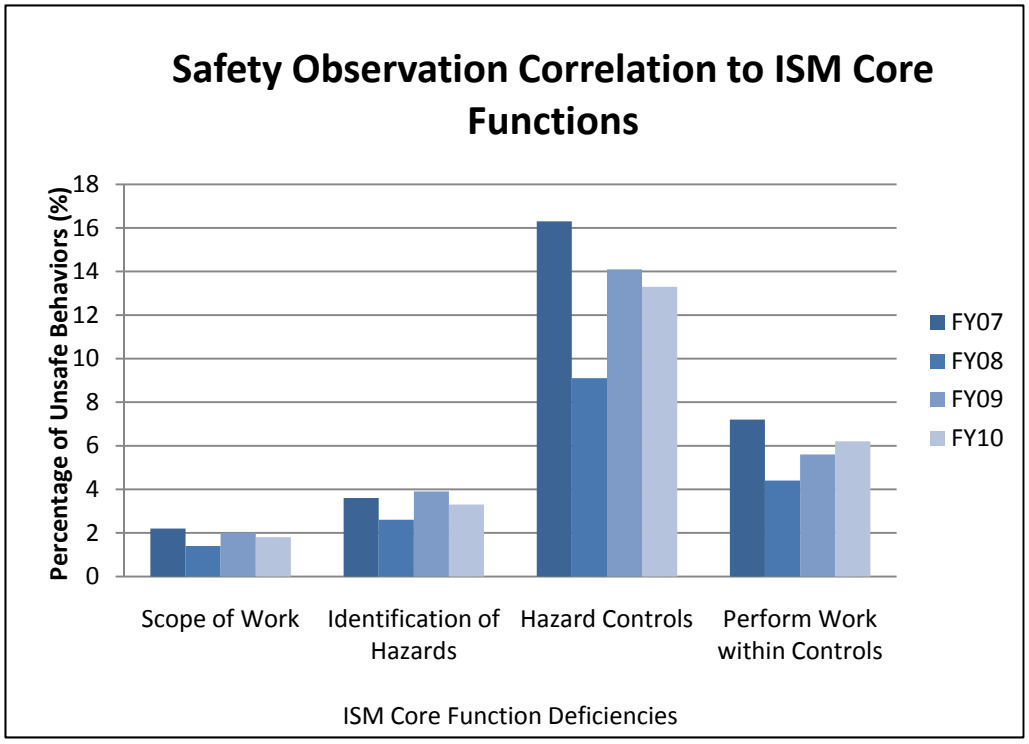

Figure 3

These leading indicator results continue to suggest improvements are needed in developing controls and performing work within controls both of which are addressed in Blueprint work planning improvement projects.

3.4 ISM Lagging Indicator Analysis

Events (Lagging Indicators) – The ISM program monitors lagging indicators to assess areas for continual improvement. The institutional events that are of concern are those that affect ESH operations identified as ORPS, SCBNL, Injury and Illness, RAR's and NTS. ORPS, and SCBNL institutional events are maintained on a database accessible through SBMS. Injury and Illness reports are maintained on a BNL intranet website and RAR's are maintained by the Radiological Controls Division. NTS reports are accessible through the Independent Oversight Office. Event details, such as causal analyses and corrective actions, are maintained in the BNL Assessment Tracking System. As noted in Section 3, the status of ORPS, NTS corrective actions are summarized in routine reports and submitted to BHSO.

One of the four BNL ISM Performance measures is to "*Improve baseline data for the ratio of work planning problems identified (implementation of the ISM 5 Core Functions) to the number of occurrence reports, SC-BNL, Radiological Awareness Reports (RARs), Noncompliance Tracking System (NTS) reports, and injuries and illnesses (lagging indicator). Analyze data to improve work planning type*

categorization and ISM Core function weaknesses." Table 1 is a summary of the occurrence of lagging indicators followed by the appropriate analysis.

Table 1 – ISM Lagging Indicators

FY10 Events			ISM Core Function						Work Planning Type		
Occurrence Type	Total Events	Amount with Work Planning Problems	Define SOW	Identify Hazards	Develop Controls	Perform Work	Feedback	Total ISM CF Problems	WPW	Prescribed	Permit Planned
ORPS/NTS	35	15	2	5	4	4	0	15	5	1	9
SC-BNL	16	11	0	5	4	2	0	11	7	0	4
RAR	18	14	0	6	1	7	0	14	3	6	5
TRC/DART	31	31	0	27	1	3	0	31	30	1	0
Total	**100**	**71**	**2**	**43**	**10**	**16**	**0**	**71**	**45**	**8**	**18**
FY09 Events			**ISM Core Function**						**Work Planning Type**		
Occurrence Type	Total Events	Amount with Work Planning Problems	Define SOW	Identify Hazards	Develop Controls	Perform Work	Feedback	Total ISM CF Problems	WPW	Prescribed	Permit Planned
ORPS/NTS	20	19	0	5	0	16	0	21	12	1	6
SC-BNL	12	5	0	0	0	5	0	5	4	0	1
RAR	16	11	0	1	2	7	1	11	3	2	6
TRC/DART	48	38	0	7	0	31	0	38	35	3	0
Total	**96**	**73**	**0**	**13**	**2**	**59**	**1**	**75**	**54**	**6**	**13**
FY08 Events			**ISM Core Function**						**Work Planning Type**		
Occurrence Type	Total Events	Amount with Work Planning Problems	Define SOW	Identify Hazards	Develop Controls	Perform Work	Feedback	Total ISM CF Problems	WPW	Prescribed	Permit Planned
ORPS/NTS	23	18	2	4	7	4	5	22	-	-	-
SC-BNL	10	2	-	-	-	2	-	2	-	-	-
RAR	-	-	-	-	-	-	-	-	-	-	-
TRC/DART	30	22	-	-	-	-	-	-	13	-	9
Total	**63**	**42**	**2**	**4**	**7**	**6**	**5**	**24**	**13**	**-**	**9**

- Indicates data unavailable

The lagging indicators in Table 1 were analyzed using three key indicators, 1) Total Events with Work planning problems, 2) Events with Work planning problems by ISM Core Function, and 3) Events versus Work Planning Type. These three indicators provide a snapshot of the relationship of work planning to total events and are used as an input to continual improvement measures.

Total Events with Work Planning Problems: The data for total events with work planning problems allows a measure of overall improvement by a reduction in work planning problems versus overall events. This analysis includes the total number of ORPS/NTS, SC-BNL, RAR, and Injury and Illness data versus the total number of these events with work planning problems. FY08 data was limited to ORPS/NTS, SC-BNL, and TRC/DART reports as RAR data was unavailable. There were a total of 63 events of which 42 were due to work planning problems or, 67% of events reported were due to work planning problems. FY09 data includes ORPS/NTS, SC-BNL, RAR and TRC/DART reports. There were a total of 96 events of which 73 were due to work planning problems or, approximately 76% of events reported were due to work planning problems. FY10 data identifies a total of 100 events of which 71 were due to work planning problems or, 71% of events reported were due to work planning problems.

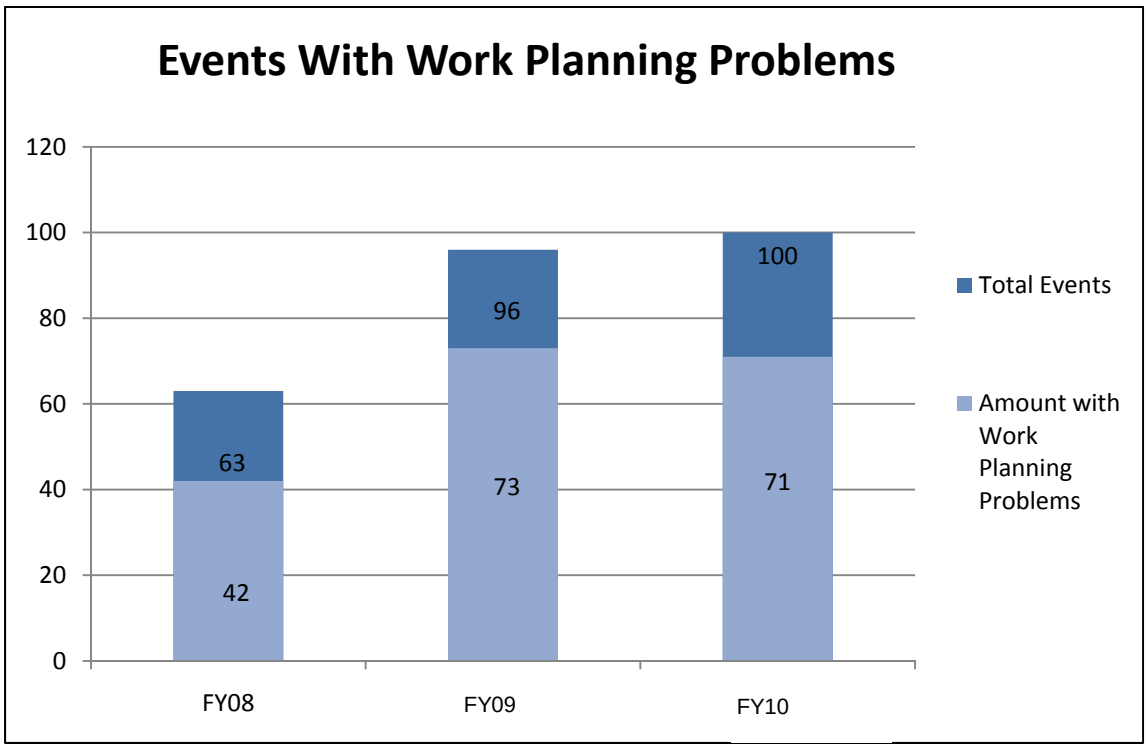

Figure 4

This lagging indicator shows a slight decrease in events with work planning problems. Improved work planning processes may be adding to this decrease however the trend continues to justify needed improvements in work planning.

Events with Work Planning Problems by ISM Core Function - an analysis of total events with work planning problems by ISM core function allows BNL to focus improvements within each Core Function on a prioritized basis. The analysis includes the total number of ORPS, SC-BNL, RAR, NTS and Injury and Illness data versus the total number of events with Core Function related problems. In FY10 results

show that hazard identification played a significant role in events followed by performing work within controls.

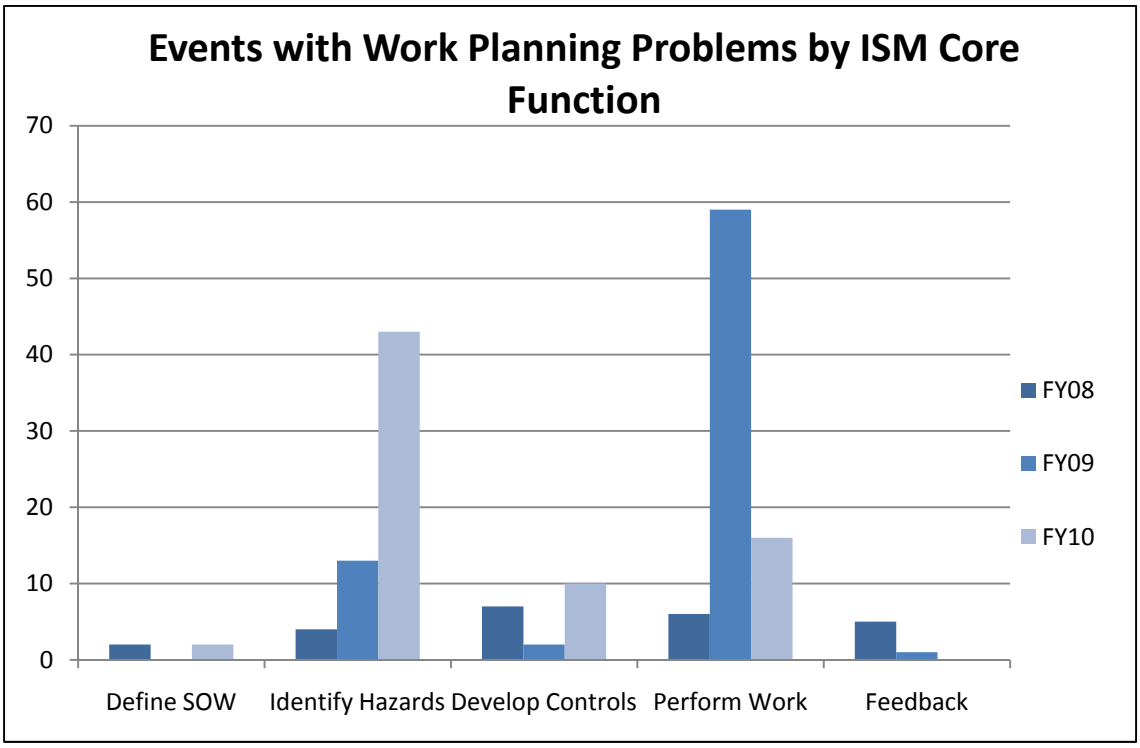

Figure 5

The data shows an improvement in performing work within controls but an increase in failure to identify hazards. The sharp increase in identification of hazards shows a shift away from proper planning at the early stages of work. Improvements to IFM work planning processes are expected to reduce this trend.

Events versus Work Planning Type - The data for total events versus work planning type offers a measure of overall improvement by the absence of work planning issues when an event occurs. A baseline of total events versus work planning type was not available in FY08 therefore FY09 data sets the baseline for future trending. FY10 results show a decrease in WPW related events with a slight increase in Prescribed and Permit Planned events.

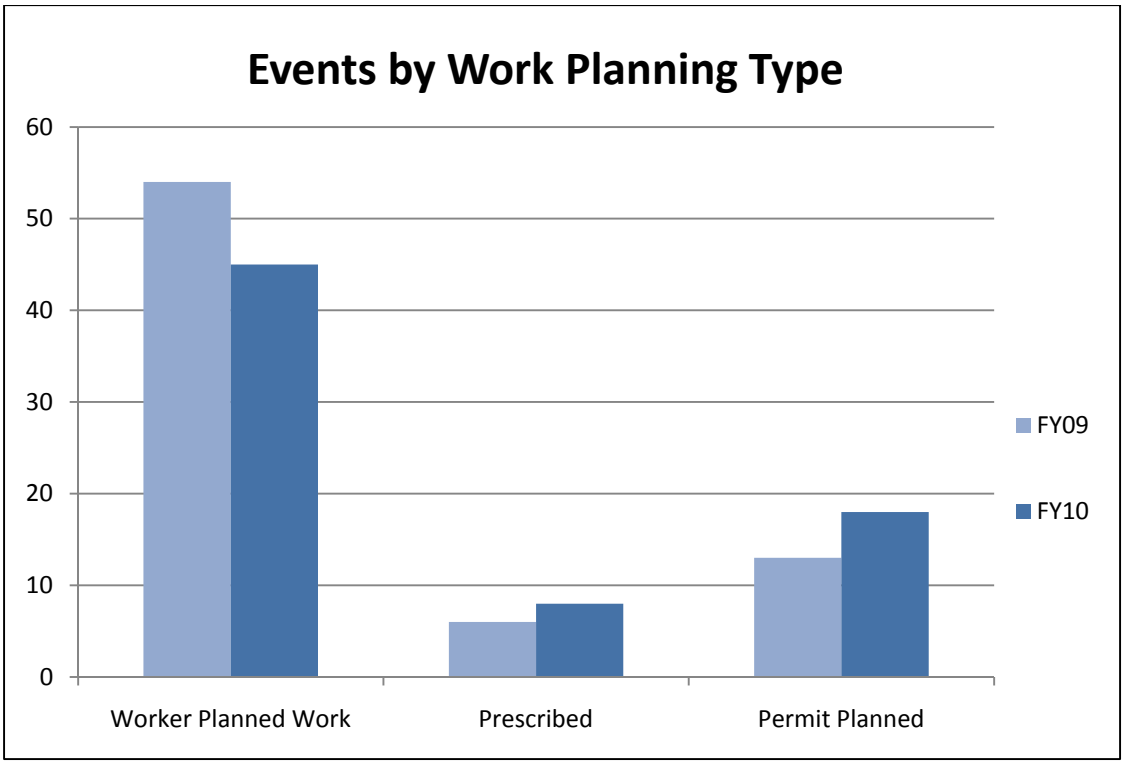

Figure 6

The results suggest a move away from worker planned work techniques in favor of more rigorous work planning methods. However, improvements continue to be needed in each method to reduce overall events. IFM projects are targeting needed improvements.

4.0 SUMMARY OF RELEVANT INSTITUTIONAL SELF ASSESSMENTS

BNL conducts annual self assessments on its continual improvement processes to ensure performance outcomes are being met. When events occur BNL conducts assessments to determine cause and to establish corrective actions and lessons learned. These event analyses are communicated to BHSO through quarterly NTS Status reports, ORPS Quarterly Performance Reports. Since not all assessment activity is reported in these periodic summaries Table 2 is included to list the relevant institutional self assessments that support ISM. The Assessment Tracking Number is provided for reference. Assessment results are inputs to the Strengths, Weaknesses and Improvement Initiatives in Section 2.0.

Table 2 – Relevant Institutional Self Assessments

FY 10 Assessment	Assessment Tracking System Number
NSLS II Construction Safety Program review Phase 3	ATS 5091
EMS/OHS Multi-Topic Assessment	ATS 5093
NSLS II Construction Safety Program review Phase 2	ATS 5099
EMS/OHSAS Management Review	ATS 5109
F&O JRA review in Support of FY 2010 PEMP 5.0	ATS 5188
NSF Registrar ISO/OHSAS Certification Audit	ATS 5290
BNL Self Assessment of Facility Hazard Categorization Program	ATS 5292
Electronic ESR Effectiveness Review	ATS 5392

5.0 EVALUATION OF THE BNL ISMS PROGRAM DESCRIPTION

The ISM Program Description underwent an annual review in FY10. Improvements were made in section 5.0 ESH&Q Continuous Improvement and ISMS Annual Effectiveness Review, to be consistent with current Effectiveness Review deliverables. Responsibility for management of the ISMS Program Description was moved from the Work Planning and Control Management System to the Worker Safety and Health Management System. It is currently complete and adequate with no immediate need for modification.

6.0 ISM DECLARATION

BNL completed a comprehensive FY10 Year-End review of its PEMP, Annual Laboratory Plan, objectives and targets, and self assessment results. The review included evaluations of management system activities, review of corrective actions from assessments and feedback, and review of continuous improvement and follow on activities. Based on this year-end review, *BNL declares that its ISMS is effectively implemented at the institutional, facility, and activity-levels with the need for continual improvement in areas noted in Section 2 "Weaknesses".* Weaknesses are being addressed as objectives and targets identified in Appendix A and by other means such as the Blueprint project.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Conclusion

Brookhaven National Lab continues to integrate ISM across organizational boundaries which are integral to achieving excellence in ESS&H. Senior leadership shows a dedicated commitment to ISM integration with the development of the Blueprint Project targeting improvements across all operational activities with an end result of an improved safety culture and injury free workplace.

Recommendation

BNL believes the ISM program is contributing to **Effective Performance** with the need for continual improvement in work planning methods such as hazard identification and performance of work within controls. Specific projects that address these areas are contained in the Blueprint Project and organized in Appendix A, Environment, Safety and Health objectives, measures, and commitments.

Appendix A - FY11 Environment, Safety and Health Objectives, Targets, and Actions (Rev 1-12/16/2010)

Goal	Objective	Target/Notable Outcome	Action/Means	Who	When	Driver
Create a Sustainable Safety Culture by Providing a Work Environment that Protects Workers and the Environment (OHSAS Objectives and Targets)	**1.0 Reduce Injuries**	1.1 BSA will review and upgrade performance in high risk topical safety programs	1.1.1 Review gaps and deficiencies in the following high risk areas and develop improvement plans. • Fall Protection • Walking & Working Surfaces • Electrical Safety • Construction Safety 1.1.2 Conduct fall protection study and inventory for flat roof buildings.	SHSD F&O SHSD	09/15/11 09/30/11	ESH Directorate ESH Directorate
		1.2 Reduce the DART/TRC rates through management of injury precursors.	1.2.1 Continue ergonomic evaluations of specific jobs and use of tools/equipment will be conducted for issues which have been identified through past injuries. 1.2.2 Continue implementation of communication plan with CEGPA. 1.2.3 Evaluate alternatives for cutting tools.	SHSD F&O SHSD CEGPA SHSD F&O	09/15/11 09/30/11 09/30/11	ESH Directorate
		1.3 Evaluate low level ESH events and issues to identify trends and disseminate lessons learned.	1.3.1 Assist QMO in trending and development of lessons learned	QMO (Lead) ESH	TBD	PEMP Notable Outcome Objective 5.1

Appendix A - FY11 Environment, Safety and Health Objectives, Targets, and Actions (Rev 1-12/16/2010)

Goal	Objective	Target/Notable Outcome	Action/Means	Who	When	Driver
		1.4 Blueprint ESH Initiatives • Blueprint WBS 4.2 Safety observations • Blueprint WBS 4.3 PPE • Blueprint WBS 4.4 Tier 1 • Blueprint WBS 4.5 Traffic Safety • Blueprint WBS 4.6 Construction Safety	1.4.1 Implementation of the ESH Blueprint initiatives (WBS 4.0 Safety And Operations excellence) in a timely and acceptable manner to improve worker safety (Leading indicators to drive Target 1.2 above)	SHSD	See Blueprint WBS Milestone Log	FY11 ALP, Blueprint WBS 4.2, 4.3, 4.4, 4.5, 4.6
		1.5 Blueprint Initiative PPE	1.5.1 Implement Communication Plan to inform workers of their role in the revised program. Review and post areas with new Area-Based PPE requirements.	All All	04/30/11 08/30/11	Blueprint WBS 4.3
		1.6 Traffic Safety Initiative	1.6.1 Validate metrics.	SHSD/LPD/Policy Council	12/31/10	ESH Directorate

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Goal	Objective	Target/Notable Outcome	Action/Means	Who	When	Driver
		1.7 Safety Performance Dashboard	1.7.1 Develop an ESH dashboard per directorate summarizing performance relating to safety observations, traffic safety, spills, etc.	SHSD Policy Council	03/31/11	ESH Directorate
		1.8 Electrical Inspector Program	1.8.1 Implements electrical inspector program 1.8.2 Electrical inspectors complete certification	SHSD All	03/31/11 09/30/11	ESH Directorate
		1.9 10CFR851 Pressure Safety Compliance	1.9.1 Inventory Pressure vessels and relief valves	All	12/31/12	ESH Directorate (Multi-year goal)
		1.10 Safety Observations	1.10.1 Participation in revised Safety Observation Program and data system.	All Level I, II and III supervisors	12 observations per year	ESH Directorate
	2.0 Reduce Occupational Radiation Exposure	2.1 Achieve excellence in radiation protection for the public, worker and environment by achieving or surpassing the dose forecast of ALARA Goals.	2.1.1 [RCD] Through the BNL ALARA program, monitor individual radiation exposure and control of radioactive material. Look for opportunities, and make adjustments for managing radiological control activities at BNL (i.e.,	RCD	09/15/11	ESH Directorate

Goal	Objective	Target/Notable Outcome	Action/Means	Who	When	Driver
			provide assurance for no unplanned radiation exposures, Loss of control of nuclear material, and no spread of contamination or reportable contamination events)			
			2.1.2 Provide radiological oversight and support for closure facilities (e.g., BMRR, BGRR, Nuclear Material disposition and other radiological facilities being decontaminated and decommissioned)	RCD	09/15/11	10CFR835
	3.0 Improve Fire Safety and Chemical Management	3.1 BSA will implement selected milestones in the FY08 Fire Safety Management Plan and the FY09 Chemical Safety Management Plan.	3.1.1 Actions based on the FY08 Fire Safety Management Plan will be reviewed with BHSO and approved budget items will be implemented. 3.1.2 Chemical Management: Finalize implementation of the improvement plan (Actions 9 – 12). 3.1.3 Chemical Management 3.1.3.1 Define plan to re-baseline inventory.	F&O SHSD SHSD	09/15/11 09/30/11 09/30/11	PEMP Objective 8.3, FY11 ALP
	4.0 Improve Facility Safety [ALP Improve	4.1 Blueprint WBS 4.8 – Facility Hazard Analysis	4.1.1 Develop and roll-out the new Hazard Assessment Tool	SHSD	See WBS Milestone Log	Blueprint WBS 4.8, FY11 ALP

Goal	Objective	Target/Notable Outcome	Action/Means	Who	When	Driver
	safety and Operational Performance]		4.1.2 Implement the Hazard Assessment Tool	F&O All		
		4.2 Evaluate the efficiency of the BORE process and make improvements, as necessary; develop multi-year schedule for BOREs	4.2.1 Competitiveness Improvement (CI).	CI Team	CI Project Schedule	FY11 ALP
		4.3 Support construction of the NSLS II facility thru the BORE/ARR Processes	4.3.1 TBD	SHSD	NSLS II Construction Schedule	ALP
	5.0 Improve protection of Special Nuclear Materials	5.1 Provide an Efficient and Effective System for the Protection of Special Nuclear Materials, Classified Matter, and Property	5.1.1 Manage the Laboratory's nuclear material program through timely reporting and control of accountable and special nuclear material. 5.1.2 Evaluate need for inventory of S&M in storage and reduce to material with concrete identified needs.	RCD RCD	09/30/11 09/30/11	ESH Directorate
Environmental Sustainability **(ISO 14001 Objective and Targets)**	**6.0 Reduce or Eliminate the generation and/or toxicity of waste and other pollutants at the source through pollution prevention.**	6.1 Provide efficient and effective waste management, minimization and pollution prevention	6.1.1 Support transportation and disposal of EM generated wastes (BGRR Bioshield and Stack) and support EM in the completion of its mission 6.1.2 Identify priority excess materials and chemicals and disposition	EPD All	09/15/11 09/30/11	ESH Directorate

Goal	Objective	Target/Notable Outcome	Action/Means	Who	When	Driver
			according to the Housekeeping Project.			
	7.0 Reduce or Eliminate the Acquistion, Use, and Release of Toxic and Hazardous Chemicals and Materials.	7.1 Reduce metals discharges in liquid effluents.	7.1.1 Support the implementation of the modifications to the STP per the recommendations of the Q&R Study. Retain design consultant and initiate design in 2011 7.1.2 Implement pilot waste line cleaning in Bldg 555.	E&U/EPD (studies) EPD/CO (Reduce metals discharges)	09/30/11 03/31/11	ESH Directorate
	8.0 Maximize the Acquisition and Use of Environmentally Preferable Products in the Conduct of Operations	8.1 Meet the DOE Goal of 95% Sustainable Acquisition.	8.1.1 Improve the Environmentally Preferable Purchasing program by evaluating effectiveness of the modifications to the web requisition system to track EPP purchases implemented in 2010. Revise as needed to improve line compliance with purchasing requirements. 8.1.2 Create a Department policy to increase purchase of recycled toner cartridges.	EPD/PPM All	12/31/11 03/31/11	ESH Directorate

Goal	Objective	Target/Notable Outcome	Action/Means	Who	When	Driver
	9.0 Reduce or Eliminate the Environmental Impact of Electronic Assets	9.1 Meet DOE Goal of 95% EPEAT compliant computers purchased	9.1.2 Develop a standard specification for non-scientific computers that requires EPEAT compliance. 9.1.3 Distribute specification and conduct training. 9.1.4 Utilize the standard EPEAT specification when procuring applicable computers.	EPD/PPM EPD ALL	12/31/11 03/31/11 03/31/11	
	10.0 Energy Efficiency	10.1 Meet the energy efficiency goals of EO 13514	10.1.1 Lead the development of the BNL Site Sustainability Plan 10.1.2 Participate in the development of the BNL Site Sustainability Plan 10.1.3 Participate in DOE Workgroups during development of new DOE Order regarding Sustainability 10.1.4 Communicate Plan requirements 10.1.5 Department Managers perform after hour walk-thrus and record and control wasteful energy habits.	F&O Energy and Utilities Division EPD EPD All All	Per SSP Plan Schedule 09/30/11	FY11 PEMP Notable Outcome (Objectives 4.2 and 4.3), Executive Order 13514

Appendix A - FY11 Environment, Safety and Health Objectives, Targets, and Actions (Rev 1-12/16/2010)

Goal	Objective	Target/Notable Outcome	Action/Means	Who	When	Driver
			10.1.6 Identify and implement an energy use reduction idea.	All	09/30/11	
	11.0 Renewable Energy	11.1 Meet the renewable energy goals of EO 13514	11.1.1 Support the installation of the LISF through the turnover of contaminated properties (perimeter soils).	EPD/RCD	09/30/11	ESH Directorate
	12.0 D&D of Reactors	12.1 Complete Stack D&D and transition to long-term surveillance and maintenance	12.1.1 See EM Work Plan	EM/RCD	See EM Wok Plan	FY11 ALP
ESH Management Process and Communications [ALP-Realign Organizations to better position the Laboratory for Growth, Improve performance of support services, and establish streamlined authority and accountability]	**13.0 Implement ESH Service Model**	13.1 Implement the ESH Service Delivery Model with improved quality and efficiency of Laboratory-wide support services.	13.1.1 See WBS 1.5 Milestone Log	ESH ALD	See WBS 1.5 Milestone Log	FY11 ALP, Blueprint WBS 1.5
	14.0 Improve Leadership Effectiveness	14.1 Revise the R2A2s of direct reports to ensure accountabilities and authorities are compatible with the newly developed institutional values, and contain the renewed commitment to achieving operational	14.1.1 Revise direct reports R2A2 during goal setting process for FY11	All ALD's	12/31/10	FY11 ALP, Blueprint WBS 2.5

Appendix A - FY11 Environment, Safety and Health Objectives, Targets, and Actions (Rev 1-12/16/2010)

Goal	Objective	Target/Notable Outcome	Action/Means	Who	When	Driver
		excellence and the goal to significantly reduce worker injuries. Ensure flow-down through the organizations				
	15.0 Third party verification of ESS&H Program Effectiveness	15.1 Favorable outcome in the independent ISO 14001 and OHSAS 18001 reviews and registrations	15.1.1 Meet all EMS and OHSAS system milestones	All ALDs	12/31/11	FY11ALP