

AGS Department

FY 1999 Annual Self-Assessment

Prepared by:


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10-15-99
Date

Approved by:


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10-15-99
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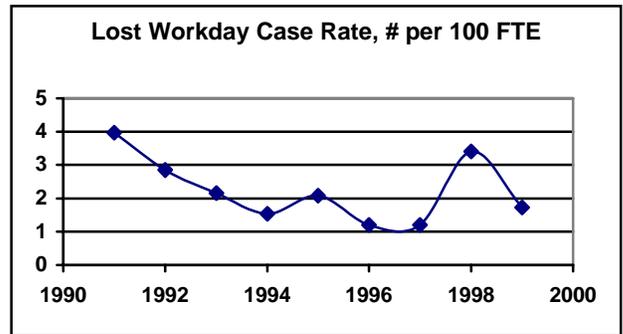
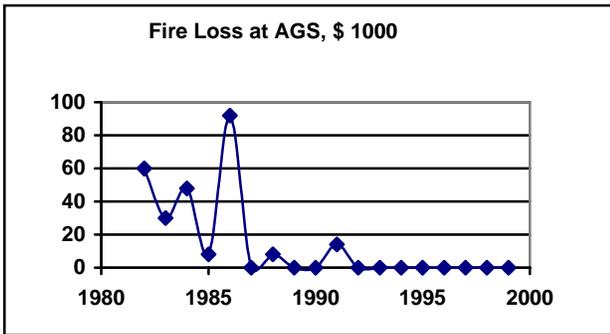
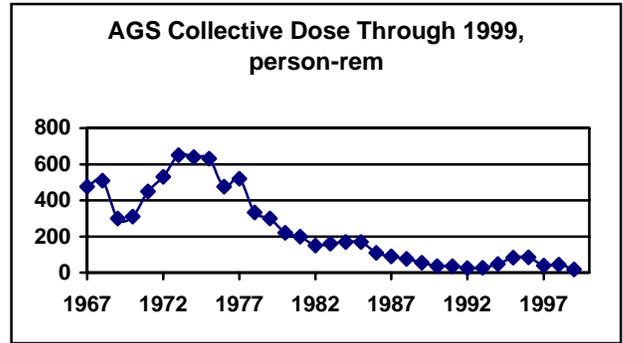
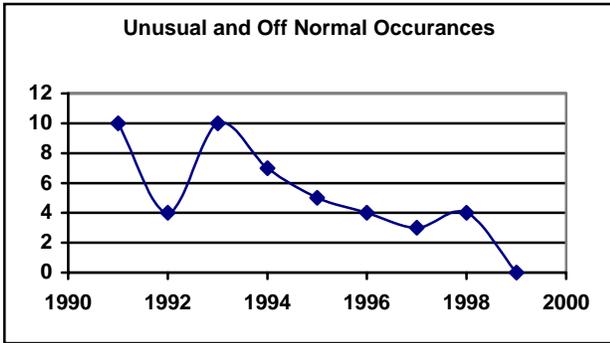
1.0 Organizational Information:
Department: Alternating Gradient Synchrotron

2.0 Critical Outcome Performance Measures

- a. The proton beam program supplied beam for 100 % of the 24 approved experiments. The radiobiology program supplied beam for 100% of the 15 approved experiments. One proton experiment was not totally serviced because of an inoperable cryogenic target. This was due to technical reasons and inadequate AGS construction manpower resources. The DOE HEP FY99 budget had been reduced by 40% from FY98 as the HEP program was being phased down. All experiments that were scheduled to be completed in FYI 999 were done so. Two experiments were not scheduled to be completed due to lack of funding to provide additional running time. All parties prior to the start of operations had accepted this. The overall assessment for proton operations is an outstanding rating (3.8). The overall assessment for NASA heavy ion operations is outstanding rating (4.0).
- b. FY1999 was scheduled to be the last operating year for the HEP slow extracted beam program. Due to both the quality of new experimental proposals and the cost effectiveness of AGS operations in FY2000 and beyond, the DOE HEP and NP to a more limited extent, have provided positive guidance for future AGS proton operations. This alone would confirm our assessment of an outstanding rating (3.8).
- c. The AGS machine performance continued to set reliability and performance records. As an example, the AGS intensity reached 7.2×10^{13} protons per pulse, well over a factor of two greater than either CERN or FNAL proton synchrotrons. The average intensity delivered was 6×10^{13} per pulse and well over a factor of two above other proton synchrotron performance statistics. We rate the overall performance as outstanding (3.8).
- d. The AGS injector system supplied the RHIC collider during the commissioning period flawlessly and at the specified beam parameters. This resulted in DOE CD4 approval for the RHIC Project. We rate the overall performance as outstanding (3.8).
- e. The Booster Applications Facility Project only received initial partial funding during the third quarter of FY1999. The two major tasks; the Booster tunnel penetration will be completed by October 1999; the MP6 tandem upgrade and bypass line will be completed by November 1999. Both tasks will be completed ahead of schedule and within budget. We rate this NASA program performance as outstanding (3.9)
- f. The SNS Project has delivered on all its task orders within time and below budget, during an ongoing upheaval within the ORNL SNS management. The BNL design work has withstood an onslaught of technical and cost reviews by SNS management, DOE and technical expert committees. In addition, BNL was tasked to design and cost a radically different accelerator design approach, a rapidly cycling synchrotron versus the baseline accumulator ring. This was completed in the remarkably short time of two months. Technical reviewers, senior DOE management and senior SNS management has acknowledged the quality and quantity of work by the BNL team. We rate the overall performance as outstanding (3.9).

- g. Performance against important financial objectives and measures was determined by the Department Chairman. Financial objectives were documented in the Department Budget Spreadsheets as approved by the Chairman. Performance measures were determined in consultation with the BNL Directorate, and were documented as a BNL high-level objective. We rate the overall performance as outstanding (3.8).
- h. Performance against operations objectives and measures was accomplished by monitoring equipment operations continually from the Main Control Room and identifying undesirable trends in advance of equipment failures. In case of machine interruption, summaries of operator actions were recorded in the Operations Journal, and the Journal was reviewed each day. Various categories of machine downtime were recorded and long-term trends were examined. This data was trended and presented in various graphical and written forms and reviewed at the AGS division levels for trends. We rate the overall performance as outstanding (3.7).
- i. The Accelerator Division management team reviewed the data for severity, trends and programmatic impact. Operational, ES&H, user and economic decisions were based on this data. For example, cooling-water system improvements were approved by Accelerator Division management in order to reduce downtime and environmental vulnerability. Decisions made because of this data were communicated to the Department management for their action if it involved significant resources. We rate the overall performance as outstanding (3.8).
- j. Performance against essential programmatic objectives and measures was determined by collecting data and comparing it to prior years. The systematic method used to gather and evaluate programmatic data was performed by a Scheduling, Physicist who tracked and reported on experiment hours, machine hours, cumulative protons on target, and beam-on-time efficiency. This data was trended and presented each week at the AGS Time Meeting and was published on the web. Operational, user and economic decisions were based on this data. For example, the decision to extend the commissioning schedule for RHIC was based on this data. Decisions made based on these measures were communicated to all affected parties via the web and through weekly meetings. We rate the overall performance as outstanding (3.9).
- k. Performance against ES&H objectives was tracked by collecting periodic data and comparing it to prior periods. For example, supervisors reviewed exposure trends weekly by reviewing dosimeter data and monthly by reviewing TLD results. This year, this data is was made available via the web. Managers, ALARA Committee members, and supervisors reviewed quarterly dose records via the AGS Performance Indicator program. The overall radiation-exposure trends at AGS were reviewed by the AGS ALARA Committee. Operational, user and economic decisions were based on this data. For example, improvements in the access controls to High Radiation Areas were made. ALARA goals were documented via OPM 9.5.7, "ALARA Goals." The collective dose goal for all personnel within the Department was 28.5 person-rem for FY99. Through three quarters of FY99, the Department accumulated 17.7 person-rem and is expected to be within its fiscal year goal. The lost-work-case rate goal was also achieved; that is, a 50% reduction was achieved through

the third quarter of FY99. Overall ESH performance is reflected in the following calendar-year graphs which show continual improvement. We rate the overall performance as outstanding (3.9).



1. In the management area, the AGS Department and the RHIC Project will have totally integrated into the Collider Accelerator Department at the close of FY 1999. The merger, restructuring and concomitant downsizing were accomplished ahead of schedule and without significant personnel problems. The management systems, such as conduct of operations and work-planning, are undergoing development so as to provide a single uniform approach across the department. We rate the overall performance as outstanding (3.5).
- 3.0 Issues, Strengths, and Improvement Opportunities (Baldrige Criteria)
Reference attached matrix for performance evaluation.

| CRITERIA | PERFORMANCE |
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| 1 Leadership Commitment and Involvement | |
| 1.1 Setting Direction and Mentoring Effective Leadership System | <p>The mission of the Department was completely defined in 5 Field Work Proposals. Future vision and mission were defined in 2 Conceptual Design Reports and Project Management Plans. Changes or upgrades to the accelerators were described in 4 Accelerator Improvement Projects. Future ES&H improvements were captured in Safety and Health Activity Data Sheets and in EPA Phase II Process Evaluations. Mission and vision was communicated to the Department via a "State of the Department" address by the Department Chair.</p> <p>Authority, responsibility, accountability were captured in Department wide R2A2s. The Conduct of Operations Agreement with DOE was updated to include Tandem Van de Graaff operations and CAD operations, and it was modernized by creating a web version.</p> <p>Approximately 36 self-assessments were performed under AGS OPM 9.4.2, AGS Self Assessment, by workers and supervisors. Eleven assessments were performed under AGS QAP-901, Management Assessment.</p> <p>Mentoring an effective leadership system was accomplished by</p> <ul style="list-style-type: none"> • training 6 staff members in laboratory supplied management skills training, • 24 education enhancements such as encouragement and fiscal support of degree level courses, • completing 341 yearly performance evaluations and 14 management observation in the workplace, • a customer opinion pole via questionnaire to RHIC and AGS users. |
| 1.2 Integrating Customer and Performance Expectations in the Management Systems | <p>The accelerator management system met the expectations of DOE's Office of Energy Research, expectations that are prescribed in DOE Order 420.2, "Accelerator Safety."</p> <p>Customer and stakeholder expectations were identified in Memoranda of Agreement/Understanding between operations and users. Each experiment liaison-physicists and engineers from the Department were assigned to communicate with Experiment Spokespersons, who were chosen from among the users. Integrating user and performance expectations into the management systems was accomplished by setting operations goals, which were documented in OPM 2.1 "AGS Operations Organization and Administration," Section 2.5, "Monitoring of Accelerator Performance."</p> |
| 1.3 Integrating Risks, Regulatory, and Contractual Requirements in Setting | <p>Integrating risks, regulatory, and contractual requirements in setting operational objectives was done by conducting hazards reviews for 14 individual experiments, for 2 accelerator modifications (waste compactor and TVDG MP6 upgrade) and RHIC at the planning , design, and execution/operations stages. Operational</p> |

| CRITERIA | PERFORMANCE |
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| Operational Objectives | objectives were established in: OPM 2.5, Operational Safety Limits/Accelerator Safety Envelope, OPM 2.5.1 Operational Safety Limits/Accelerator Safety Envelop for the TVDG, and OPM 2.5.1 Operational Safety Limits/Accelerator Safety Envelop for Commissioning RHIC. |
| 1.4 Communication | <p>The AGS Department Chairman, Accelerator and Experimental-Planning-and-Support (EP&S) Division Heads regularly met daily with AGS users. They regularly inspected (daily) the experimental areas and groups. Communication of technical, ES&H and programmatic objectives to users and to maintenance and operations staff was accomplished through weekly meetings (see AGS OPM 2.28.a, Weekly Meeting Diagrams). Communication of AGS ES&H performance was through quarterly reports to upper levels of management and to Department supervisors. An annual ALARA report on dose reduction efforts was submitted to the AGS Department Chair. Communication of technical and programmatic information to DOE HEP and NP was via visiting committees and peer reviews.</p> <p>The Associate Director for High Energy and Nuclear Physics held weekly meetings with the AGS Department management to discuss programmatic, operational, safety, etc. aspects of department operations.</p> <p>Communication of business objectives was done via supplying budget outlays and projections in all categories to the department management on a monthly basis, as well as upon demand. These budget communications document the financial support available for facility operations and management. Spending priorities were set at the department and division head levels.</p> |
| <p>Strengths:</p> <ul style="list-style-type: none"> • The Operations Procedures Manual (OPM) was amended and modernized by creating a web version. • Each week during operations, physicists, operators, Head of Main Control Room, liaisons, Experiment Spokespersons, users, and AGS Department management met to analyze prior week's operations and discuss customer, stakeholder and performance expectations. | |
| <p>Improvement Opportunities:</p> <ul style="list-style-type: none"> • The recent DOE ISM Team found that the "administrative controls" in the SADs for the complex of accelerators were not maintained up-to-date. This was due to multiple changes to organizations within the Laboratory. A program to modernize the SAD by creating a web version has been undertaken and is expected to be completed October 1, 2000. "Administrative controls" such as organization charts and procedure numbers will be kept up-to-date by creating hyper-links to on-line versions of the documents. | |

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| 2. Human Resource Development and Management | |
| 2.1 Planning and Evaluating Performance For Staff Development | <p>Planning and evaluating performance for staff development was accomplished via a long-range staffing plan, which is prepared by management, and via annual performance appraisals of the staff. In the planning area, the AGS Department and the RHIC Project will have totally integrated into the Collider Accelerator Department at the close of FY1999. The merger, restructuring and concomitant downsizing were accomplished ahead of schedule and without significant personnel problems. The management systems, such as conduct of operations and work-planning, are undergoing development so as to provide a single uniform approach across the department.</p> |
| 2.2 Promoting Effective Work, Compensation and Reward Systems | <p>Promoting effective work systems was via the use of OPM 2.28, "Enhanced Work Planning." This procedure and associated training provided work planners with requirements for "enhancing" work controls. It documented supervisor and worker responsibilities and communications that exist within the Department. Promoting compensation and reward systems was accomplished via the annual performance-appraisal system, and via participation in the BNL Employee Awards Programs. The awards given this year included nine spotlight awards in recognition of exceptional job performance.</p> |
| 2.3 Promoting Education, Training and Development | <p>Training was promoted via the AGS Training Plan as described in AGS OPM 1.12, "Conduct of Training Policy (Training Plan)." This year the Department transitioned training records and Job Training Assessments to the BTMS. Although some records problems existed, the Department has been shown to meet the 80% fully trained level via the BTMS system.</p> <p>The AGS promoted education of its staff through the laboratory reimbursement program for continuing college-level education. In addition, the Department encouraged and supported all of its staff to attend technical industrial courses, as well as various accelerator and high energy and nuclear physics conferences. Major conferences attended this year included the Fifteenth International Conference on the Application of Accelerators in Industry, and the Particle Accelerator Conference 99, which was chaired by a member of this Department. Various other workshops and seminars were also attended, e.g. the Proton Radiography Workshop, and the Atlantic Design Engineering Expo.</p> |
| 2.4 Maintaining Quality of Work Life (Employee Satisfaction and Well Being) | <p>Maintaining quality of work life (employee satisfaction and well being) was done by:</p> <ul style="list-style-type: none"> • training and educating employees, empowering employees, for example with stop work authority (AGS OPM 2.28.d, "AGS Work Screening Guide"), |

| CRITERIA | PERFORMANCE |
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| | <ul style="list-style-type: none"> • offering flexibility in work organization and work scheduling on either a case by case basis or for an entire work group. We consider flexible work schedules because of family concerns, e.g., single mothers with school-age children, as well as for groups such as the main control room operators. The latter was in response to their request to go to four 12-hour rotating-shifts on Friday through Sunday, instead of the traditional 8-hour shift, • compensating and recognizing employees for their work via the annual performance appraisal system, • providing an exceptional BNL benefits package, and • recruiting and selecting motivated employees. <p>Employees participated in the weekly planning meetings (see AGS OPM 2.28), and they related ES&H concerns within facilities by using the Self-Assessment program (OPM 9.4.2). A self-critical attitude was fostered throughout the department from workers to senior management and it provided the basis for correcting weaknesses as well as promoting best practices. Employee satisfaction in the ES&H area was seen in performance indicators such as the decline in lost-work-case injuries, collective dose and reportable occurrences.</p> |
| <p>Strengths:</p> <ul style="list-style-type: none"> • Implementation of work planning helped continue the 10-year trends (calendar year) in occurrence reduction, dose reduction, lost-work-day case rate and fire loss. • The AGS performed Job Training Assessments for all positions including management and supervisors, and has developed corresponding training requirements for each member of the staff. | |
| <p>Improvement Opportunities:</p> <ul style="list-style-type: none"> • The BNL BTMS user interface needs to be improved and flexibility added to the inquiry functions. | |
| <p>3. Customer Focus and Satisfaction (Customer Value)</p> | |
| <p>3.1. Understanding of Customer and Market Needs</p> | <p>Understanding of "customer and market needs" was accomplished via discussions, formal proposals, and formal agreements between experimenters (users) and AGS staff. In several cases, a Letter of Intent from the experimenters was sent to the Associate Director for High Energy and Nuclear Physics. Proposals were sent in all cases. Discussion of the proposal occurred between the experimenters, the AGS EP&S Division Head and the AGS staff. The AGS staff met and reviewed the proposal, and an experienced liaison physicist</p> |

| CRITERIA | PERFORMANCE |
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| | <p>reviewed the experiment. Resources were defined to meet the experimenter's requirements for both safety and physics. The AGS/RHIC Program Committee reviewed the proposals and experimenters made formal presentations. An AGS liaison physicist and liaison engineer were formally assigned to approved experiments. The Department identified and allocated resources to build the experiments, and the users worked on a detailed design with AGS staff.</p> <p>The Associate Director for High Energy and Nuclear Physics, in consultation with AGS staff, established the final scheduling priorities. Scheduling issues between experiments were coordinated by the AGS Scheduling Physicist. The Scheduling Physicist also coordinated the weekly Time Meeting between department staff and users.</p> |
| <p>3.2. Managing Customer Relations</p> | <p>Managing Customer Relations</p> <p>AGS users regularly met with departmental management to discuss needs, etc. The office doors were always open for these one-on-one discussions with experimenters.</p> <p>Additionally, a liaison physicist and a liaison engineer was assigned to each experiment. The liaison physicist was responsible for beam tuning, and the liaison engineer acted as a "general contractor" ensuring the experiment was built to the user's satisfaction. These AGS liaisons defined the major contact point for interaction between users and AGS. During operations, a round-the-clock Experimental Area Watch was assigned to assist the users.</p> <p>All written correspondence from experimenters are retained in the experimental records file of the EP&S Division. Both satisfaction and dissatisfaction were acted upon by the EP&S Division Head and/or the AGS Department Chairman. All correspondence can be obtained from the AGS EP&S Division Office.</p> <p>DOE Office of Energy Research reviewed the AGS performance, including all AGS ES&H issues. The review consisted of two days of formal presentations, meetings, and facility tours. Letter reports were filed by the DOE Director for the Division of High Energy Physics, and specific actions to recommendations were undertaken by the BNL Associate Director for High Energy and Nuclear Physics and the AGS Department Chairman. The review was held April 21 and 22 of 1999.</p> |
| <p>3.3. Determining Customer Satisfaction</p> | <p>Determining Customer Satisfaction -As stated above, all correspondence was filed under the experiment number. The measure of satisfaction at unique accelerator facilities can only be measured as to how the experimental community votes with their feet. The AGS "foot" vote now covers an unprecedented 40 years. The AGS / RHIC Users Committee is a committee that represents the user community in various matters,</p> |

| CRITERIA | PERFORMANCE |
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| | such as programmatic satisfaction and dissatisfaction, quality of life matters, etc. They communicate both verbally and in writing to the directorate as well as the line managers. |
| 3.4. Using Customer Feedback Results | Using Customer Feedback Results - the weekly time meeting allowed user feedback to be acted upon quickly, and experiments ran more efficiently. During construction of experiments, users met with liaison engineers on a weekly and sometimes daily basis, to layout experimental apparatus in a beam line. This interaction allowed users to have input at the design stage and this led to the optimum layout for efficient running of experimental apparatus. |
| <p>Strengths:</p> <ul style="list-style-type: none"> • During operations, the weekly Time Meeting allow experimenters to discuss status, identify scheduling priorities, identify user requirements for the upcoming week, voice complaints and at the same time, provided easy immediate access to all the department's resources and staff. All essential players attended. • This year, the members of the experimental community were asked to complete a survey that rated the scientific and management programs. (All correspondence can be found in the files of the Associate Director of High Energy and Nuclear Physics.) | |
| <p>Improvement Opportunities:</p> <ul style="list-style-type: none"> • The survey completed by the experimental community has caused us to re-design training programs, and improve support services. | |

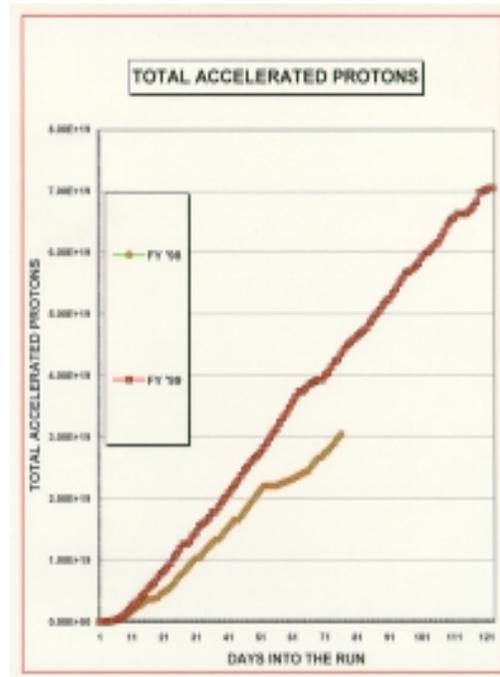
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PERFORMANCE

4. Process Management

4.1. Designing and Introduction of Product Services

Designing and introduction of product services are taken to mean new AGS experiments and changes to the accelerator. New experiments were designed with the assistance of liaison engineers and liaison physicists who helped experimenters prioritize requirements, and helped identify the most critical requirements to integrate into designs. Experimenter requirements were then translated into engineering specifications and drawings. Evidence that experimenter requirements were incorporated was the successful commissioning and completion of scheduled experiments. The process for designing changes to the accelerator is thorough and efficient as evidenced by the AGS machine performance which continued to set reliability and performance records. As an example, the AGS intensity reached 7.2×10^{13} protons per pulse, well over a factor of two greater than either CERN or FNAL proton synchrotrons. The average intensity delivered was 6×10^{13} per pulse. It is noted that we achieved these record beam intensities while reducing radiation exposure to personnel.



Success was also evinced by supporting the commissioning of the RHIC Collider on time and within the rules prescribed by the Accelerator Safety Order.

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| 4.2. Managing of Product, Services, Delivery Mechanisms (Facilities/Equipment) | Managing of product/services and delivery mechanisms was done in several ways. For example, new accelerator systems were introduced into operations using AGS OPM 2.27, "Release of New Systems To Operations." Performance of new systems was captured in the operations statistics database. New system owners were clearly identified and held accountable for proper introduction of a system via the use of check-off lists in AGS OPM 2.27. A formal process for identifying and analyzing subsequent problems, AGS OPM 2.9, Trouble reporting, was implemented and 160 Trouble Reports were resolved. |
| 4.3. Designing and Managing Support Services | Designing and managing support services was handled via the Work Permit system. The record of Work Permits can be examined to show that support groups used the process. Conflicts between the support group and the AGS were resolved through meetings and in some cases documented via memoranda. Support Division's staff such as RCD and ESH safety professionals were formally assigned to participate in AGS Department reviews of new accelerator components or experiments. In addition, crews of Plant Engineering electricians and riggers were assigned to AGS. Their work was directed and monitored by AGS personnel. Support services were evaluated by participating in surveys and in individual performance evaluations. Additional management of support services will be via the use of Facility Use Agreements which are currently being drafted. |
| 4.4. Compliance to Applicable Requirements | <p>The compliance requirements were communicated to AGS staff through participation on Laboratory committees, Laboratory Work Groups and through the SBMS. Senior AGS Electrical Engineers and senior AGS staff participated on the Laboratory Electrical Planning Committee, Laboratory Environmental, Health and Safety Committee, Radiation Protection Working Group, Environmental Management System Implementation Group, and Laboratory Electrical Safety Committee, all of which met regularly.</p> <p>The AGS measures performance of equipment on a regular basis by reviewing maintenance and testing data. A good example was the oil testing of AGS power transformers. Oil samples were taken from transformers by PE on a regular basis and sent to outside laboratories for testing. The test results were analyzed by Plant Engineering for any potential problems and were sent to the AGS engineering staff for review.</p> |
| 4.5. Managing Supplier Performance | Vendor performance is monitored by each of the AGS group leaders. Item/material deficiencies are documented on the BNL Inspection/Test Record. Vendors which deliver nonconforming material are contacted by the cognizant engineer or group leader. When required AGS Quality Assurance and BNL Division of Contracts and Procurement will assist in resolving vendor related issues. |

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| <p>Strengths:</p> <ul style="list-style-type: none"> • Ability to achieve record beam intensities while reducing radiation exposure to personnel. • Staff were monitored for compliance to procedures under the AGS QAP 901, Management program. Corrective actions were fed back to Group supervisors. | |
| <p>Improvement Opportunities:</p> <ul style="list-style-type: none"> • None identified. | |
| <p>5. Business and Operational Results (Not required in this part of the report)</p> | |
| <p>6. Compliance to Laws, Regulations, and Contractual Requirements.</p> | <p>Compliance to Laws, Regulations, and Contractual Requirements.</p> |
| <p>6.1. Compliance Areas</p> | <p>The Department maintained compliance with the following except where noted:</p> |
| <p>6.1.1. Conduct of Operations</p> | <p>Conduct of operations - AGS Conduct of Operations Conformance Matrix, January 31, 1997. This matrix was updated October 1, 1999 to reflect TVDG and CAD operations.</p> |
| <p>6.1.2. Configuration Management</p> | <p>Configuration management - The following procedures were implemented to maintain configuration management</p> <ul style="list-style-type: none"> OPM 2.5, "AGS Operational Safety Limits / Accelerator Safety Envelop" OPM 2.5.1, "TVDG Operational Safety Limits / Accelerator Safety Envelop" OPM 2.5.2, " RHIC Commissioning Operational Safety Limits / Accelerator Safety Envelop." Note: The Department erred on the side of safety by posting Controlled Area signs in an area that was designated as Uncontrolled in the safety envelop. The signs were removed shortly after posting and the DOE requested that the Department not post signs in this area without approval beforehand. OPM 2.27, "Release of New Systems to Operations" QAP 603, "Configuration Management" OPM 4.15, "Access Control System Modifications and Bypass" RHIC/AGS OPM 4.91, "Configuration Management Plan for the RHIC Particle Accelerator Safety System" |

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| | <p>OPM 8.12.2, "Securing Explosive Gas Devices From Operation" OPM 8.12.3, "Introduction of Explosive Gas Into the Experimental Area" OPM 8.13, "Shielding, Barrier Removal, Removal of Primary Area Beam Line Components, or Modifications" OPM 8.15.3, "Chipmunk Radiation Monitors" OPM 9.1.2.a, "AGS/RHIC Radiation Safety Committee Check-Off Items Master Index" OPM 9.2.4.b, "Experimental Safety Review Committee Checkoff List" OPM 9.3.2.a, "Accelerator Systems Safety Review Committee Checkoff List" OPM 9.5.4.a, "Radiological Area Designations"</p> |
| 6.1.3. Documents and Records | Documents and records - Training documents were transferred to the BTMS. Operations procedures and the quality manual were made available on the web. |
| 6.1.4. Emergency Management | Emergency management - OPM Chapter 3, Emergency Procedures were updated to reflect RHIC commissioning. Local Emergency Coordinators were listed on the web. |
| 6.1.5. Environmental Protection | Environmental protection - The Department is implementing the BNL EMS program. Full implementation is expected May 30, 2000. The Department complied with Programmed Improvements of the Alternating Gradient Synchrotron Complex at Brookhaven National Laboratory, Environmental Assessment, US Department of Energy, DOE/EA #0909, and AGS Final Safety Analysis Report, 1993, Chapter 4, Design Criteria. A NESHAPS Review was performed for the Department. Corrective actions were assigned to staff and are in the process of being closed out. EPA Phase II Process Evaluations were performed for the Department. Corrective actions were assigned to staff and are in the process of being closed out. |
| 6.1.6. Finance /Contracts | Finance/contracts - The Department followed the Supervisors Personnel Manual (Payroll, LCDS, Human Resources) and the Standard Practice Instructions (Fiscal, Accounting, Budgets, S&M, Travel, etc.) |
| 6.1.7. Maintenance / Work Control | Maintenance/work control - The Department complied with OPM 2.28, "Enhanced Work Planning" and OPM 1.11, "BNL Department/Division Requirements for Interaction With AGS" |
| 6.1.8. Operational Safety & Health/Fire Protection | Operational safety & health/fire protection - The Department complied with |

| CRITERIA | PERFORMANCE |
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| | <p>OPM 1.5, "Electrical Safety Implementation Plan"</p> <p>OPM 1.6, "Mechanical Systems Safety Implementation Plan"</p> <p>OPM 1.7, "Supervisory Practice For Working With Hazards"</p> <p>OPM 1.8, "Hazard Communication"</p> <p>OPM 1.9, "Fire Safety Program"</p> <p>OPM 1.10, "AGS ESH Policy"</p> <p>OPM Chapter 9 Procedures For Safety Committees</p> |
| 6.1.9. Personnel / Diversity | <p>Personnel/diversity - The Department complied with</p> <p>BNL Equal Opportunity Program</p> <p>BNL Employee Assistance Program</p> <p>BNL Employee Relations Program</p> <p>BNL Women's Program</p> |
| 6.1.10. Procurements/ Subcontracts | <p>Procurements/subcontracts - The Department complied with BNL Procurement Operations Manual (Chapters 1-10)</p> |
| 6.1.11. Radiation Protection | <p>Radiation protection - The Department complied with</p> <p>OPM Chapter 4 Access Security Procedures</p> <p>OPM 6.1.10, "ALARA Strategies for Tuning During Proton Beam Operations"</p> <p>Chapter 9 Procedures For ALARA Committee and Radiation Safety Committee</p> <p>BNL Rad Con Manual on the SBMS</p> |
| 6.1.12. Safeguards & Security / Property | <p>Safeguards & security/property - The Department complied with BNL Computer Security Manual and Accountable materials rules for uranium shield blocks and uranium calorimeters</p> |

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| 6.1.13. Training / Qualifications | <p>Training/qualifications - The Department complied with</p> <p>OPM 1.1, "Authorization"</p> <p>OPM 1.12, "Conduct of Training Policy (Training Plan)"</p> <p>OPM 1.12.1, "Training for Contractor Employees Overseen by the AGS Department"</p> <p>Job and Training Assessments</p> <p>OPM 8.21.1, "Establishing Required Training and Retraining Intervals"</p> <p>OPM 8.21.2, "Establishing Instructor Qualifications"</p> <p>OPM 8.21.3, "Qualifying a Student: Pass by Challenge Examination"</p> |
| 6.1.14. Waste Management | <p>Waste management - The Department complied with</p> <p>OPM 8.20, "Handling and Disposal of Hazardous Waste"</p> <p>As of 6/30/1999, 27.62 cu-ft of AGS hazardous were was shipped from BNL.</p> <p>OPM 8.20.1, "AGS Hazardous Waste Collection Station (HWT)"</p> <p>OPM 8.20.2, "Radioactive Waste Disposal"</p> <p>As of 6/30/1999, 0.1 cu-ft of AGS radioactive waste was shipped from BNL.</p> <p>It should be noted that 800 cu-ft of radioactive waste has been awaiting pickup by the Waste Management Division since February 1999. 1200 additional cu-ft are in various stages of the waste disposal process.</p> <p>OPM 8.21, "Handling & Disposal of Nonhazardous & Recyclable Solid Waste"</p> <p>As of 6/30/1999, 55.54 cu-ft of AGS industrial waste was shipped from BNL.</p> |
| 6.1.15. Environmental Management Systems | <p>Environmental management systems - Except as noted in the NESHAPS review, the Department complied with</p> <p>AGS OPM Chapter 9 Procedures for Review of Experiments and Accelerator Modifications</p> <p>AGS OPM 1.10, AGS ES&H Policy</p> <p>AGS OPM 1.14, "General Requirements For Storage Tanks."</p> <p>AGS OPM 1.15, "Liquid and Airborne Effluents."</p> <p>The Department is in the process of implementing the BNL Environmental Management System.</p> |
| 6.1.16. Other | Other: none. |

| CRITERIA | PERFORMANCE |
|--|---|
| 6.2. Risks and Regulatory and Other Legal Requirements Addressed in Planning and Setting Operational Requirements and Target | Risks and regulatory and other legal requirements were addressed in planning and setting operational requirements - See Low Hazard Class Determination for the Ion Accelerator Complex, Brookhaven National Laboratory, June 1, 1995; Improvements of the Alternating Gradient Synchrotron Complex at Brookhaven National Laboratory, Environmental Assessment, US Department of Energy, DOE/EA #0909; and AGS Final Safety Analysis Report, 1993 |
| 6.3. Assessment of Possible Regulatory Impacts / Price Anderson Issues | Assessment of possible regulatory impacts / Price Anderson issues - There were no regulatory impacts for FY99. There were no Price Anderson proposed fines for FY99 events. |
| 6.4. Compliance to Applicable Requirements | Ensuring compliance to applicable requirements was handled via scheduled inspections, audits, Department management assessments, and self-assessments. These programs were documented in AGS OPM Chapter 9 procedures and the AGS QAP 901, Management Assessments. Appropriate reports were filed. |
| 6.5. Response to Significant Occurrences / Incidents and Handling of Off-Normal Occurrences or Notices of Violation | Response to significant occurrences/incidents and handling of off-normal occurrences or Notices of Violation were recorded in the DOE Occurrence Reporting System (AGS OPM 10.1). During FY99, the Department had one off-normal occurrence, CH-BH-BNL-AGS-1998-0004, " Lack of Work Planning Leads to Radiation Exposure in Excess of Administrative Control Limits (ACL)." All associated corrective actions were closed out. |