



FY 2006

June 1, 2006 – September 30, 2006

**Performance Evaluation
of
Jefferson Science Associates, LLC**

**for the
Management and Operations of the
Thomas Jefferson National Accelerator Facility (TJNAF)**

Contract No. DE-AC05-06OR623177



TABLE LISTING

TABLE #	TITLE	PAGE
Table 1	FY 2006 JSA Evaluation Score Calculation	4
Table 2	FY 2006 JSA Letter Grade Scale/Numeric Score Scale	4
Table 3	Final Percentage of Performance-Based Fee Earned Determination	4
Table 4	Goal 1.0 Performance Rating Development	9
Table 5	Goal 1.0 Final Letter Grade	9
Table 6	Goal 2.0 Performance Rating Development	14
Table 7	Goal 2.0 Final Letter Grade	14
Table 8	Goal 3.0 Performance Rating Development	19
Table 9	Goal 3.0 Final Letter Grade	19
Table 10	Objective 4.1 Performance Rating Development	27
Table 11	Goal 4.0 Performance Rating Development	29
Table 12	Goal 4.0 Final Letter Grade	29
Table 13	Objective 5.1 Performance Rating Development	33
Table 14	Objective 5.2 Performance Rating Development	36
Table 15	Objective 5.3 Performance Rating Development	38
Table 16	Goal 5.0 Performance Rating Development	38
Table 17	Goal 5.0 Final Letter Grade	38
Table 18	Objective 6.1 Performance Rating Development	41
Table 19	Objective 6.2 Performance Rating Development	43
Table 20	Objective 6.3 Performance Rating Development	47
Table 21	Objective 6.4 Performance Rating Development	49
Table 22	Objective 6.5 Performance Rating Development	51
Table 23	Goal 6.0 Performance Rating Development	52
Table 24	Goal 6.0 Final Letter Grade	52
Table 25	Objective 7.1 Performance Rating Development	54
Table 26	Objective 7.2 Performance Rating Development	56
Table 27	Goal 7.0 Performance Rating Development	57
Table 28	Goal 7.0 Final Letter Grade	57
Table 29	Objective 8.1 Performance Rating Development	59
Table 30	Objective 8.2 Performance Rating Development	62
Table 31	Objective 8.3 Performance Rating Development	64
Table 32	Objective 8.4 Performance Rating Development	65
Table 33	Goal 8.0 Performance Rating Development	66
Table 34	Goal 8.0 Final Letter Grade	66



SUMMARY

As President of Jefferson Science Associates (JSA) and Jefferson Lab Director, I am pleased to report that JSA has established a record of performance in all management areas in this quarter, living up to the goals and objectives set forth in JSA's winning proposal. Jefferson Lab currently serves about one-half of the U.S. users of DOE operated national facilities in Nuclear Physics. The latest S&T Review found the quality and productivity of the research program to be outstanding. New and exciting experimental results have yielded discovery-caliber insights into the structure of matter. We have made real progress on the 12 GeV Upgrade Project, completing the CD-1 review successfully and moving closer to CD-2. The accelerator is running well, meeting our users' specifications and delivering high caliber scientific results. Through reorganization of our cryogenics processes we have yielded a savings of \$1,000 per day in the Lab's accelerator cooling bill. The Free Electron Laser continues to break records for delivery of laser light with new, promising applications emerging.

Strides have also been made to bring JLab closer to best-in-class business practices while sustaining and capitalizing on our unique scientific and technological capabilities for our user community. We have sharpened our focus on safe operations, improving our safety performance in the TRC and DART statistics and strengthening our safety culture through Dupont STOP training of key personnel. We have developed a Work Breakdown Structure (WBS) and a new Lab organization to facilitate communication and accountability. Under JSA leadership, Jefferson Lab continues to deliver excellent science and technology results, contribute substantially to DOE/SC goals including the production of new scientific knowledge and preparation of the next generation of scientists and engineers, develop new and exciting technology applications and build a culture of performance where excellence in safety and business practices is a critical enabler for scientific leadership.

JSA faced a number of unique challenges during this period. Due to the new contract, and despite the efforts of both DOE and JSA, the FY06 PEMP was not finalized and incorporated into JSA's contract until September 22, 2006, only one week before the end of the performance period. In addition, our ability to adequately reflect our performance for a short four month period is limited given the nature of the work. Also, we transitioned to a new contract on June 1st and proceeded to execute a significant reorganization of the Jefferson Lab. Our management team and employees should be commended for their extraordinary efforts to stay focused on the Lab's operations and PEMP goals during this unsettling time. Lastly, we were presented with an 8% budget reduction this fiscal year which resulted in the need to freeze all open positions and execute a voluntary reduction in force of approximately 25 employees. This decrease in workforce could have had a significant impact on performance across the Lab if not for the extra efforts of our employees to absorb the additional workload left from these open positions during this period. Despite these challenges, JSA continued to provide world class science and a safe work environment while implementing several process and system improvements in management and operations as documented in this report.



Table 1. FY 2006 JSA Evaluation Score Calculation

S&T Performance Goal	Numerical Score	Letter Grade	Weight	Weighted Score	Total Score
1.0 Mission Accomplishment	4.14	A+	45%	1.86	
2.0 Construction and Operations of User Research Facilities and Equipment	3.99	A	30%	1.20	
3.0 Science and Technology Research Project/Program Management	3.92	A	25%	0.98	
Total Score					4.04
M&O Performance Goal	Numerical Score	Letter Grade	Weight	Weighted Score	Total Score
4.0 Leadership and Stewardship of the Laboratory	4.0	A	25%	1.00	
5.0 Integrated Safety, Health, and Environmental Protection	3.93	A	30%	1.18	
6.0 Business Systems	3.95	A	25%	0.99	
7.0 Operating, Maintaining, and Renewing Facility and Infrastructure Portfolio	3.6	A-	10%	0.36	
8.0 Integrated Safeguards and Security Management and Emergency Management Systems	4.03	A	10%	0.40	
Total Score					3.93

Table 2. FY 2006 JSA Letter Grade Scale/Numeric Score Scale

Total Score	4.3-4.1	4.0-3.8	3.7-3.5	3.4-3.1	3.0-2.8	2.7-2.5	2.4-2.1	2.0-1.8	1.7-1.1	1.0-0.8	0.7-0
Final Grade	A+	A	A-	B+	B	B-	C+	C	C-	D	F

Table 3. Final Percentage of Performance-Based Fee Earned Determination

Overall Fee Determination	
Percent S&T Fee Earned from Table C	97%
M&O Fee Multiplier from Table C	X 100%
Overall Earned Percentage of Performance-Based Fee	97%



GOAL 1.0 PROVIDE FOR EFFICIENT AND EFFECTIVE MISSION ACCOMPLISHMENT (QUALITY, PRODUCTIVITY, LEADERSHIP, & TIMELINESS OF RESEARCH AND DEVELOPMENT)

Goal Requirement:

The Contractor produces high-quality, original, and creative results that advance science and technology; demonstrate sustained scientific progress and impact; receive appropriate external recognition of accomplishments; and contribute to overall research and development goals of the Department and its customers.

JSA Performance:

The Laboratory has made great progress towards the 12 GeV project which has several experiments rated as having significant discovery potential. The 6 GeV program has produced world-leading results in parity violating electron scattering, deeply virtual Compton scattering and the measurement of transition form factors to excited baryons. It was rated as “outstanding” by the S&T Review in June 2006. The Theory Center is extremely highly rated for its innovation and support of the experimental programs. The lattice QCD program is innovative, cost effective and scientifically highly rated. The SRF group is a world leader with its development of superconducting cavities performing near the theoretical limit – a result with implications across the SC portfolio. The cryogenics group has developed innovative methods to save energy which have been transferred across the SC complex. The program of applied science has led to numerous patents, especially in detector technology of relevance to medicine. The FEL has achieved outstanding power levels and led to a number of exciting applied programs, notably in carbon nano-tube production and targeted fat cell destruction. Many staff are leaders in their fields at national and international levels.

Objective 1.1 Science and Technology Results Provide Meaningful Impact on the Field

Objective Requirement:

In determining the performance of the Objective the DOE evaluator(s) shall consider the following as measured by progress reports, peer reviews, Field Work Proposals (FWPs), Program Office reviews/oversight, etc.:

- The impact of publications on the field;
- Publication in journals outside the field indicating broad impact;
- Impact on DOE or other customer mission(s);
- Successful stewardship of mission-relevant research areas;
- Significant awards (R&D 100, FLC, Nobel Prizes, etc.);
- Invited talks, citations, making high-quality data available to the scientific community; and
- Development of tools and techniques that become standards or widely-used in the scientific community.

Performance Level Achieved:

Performance Level	Grade	Score
Changes the way the research community thinks about a particular field; resolves critical questions and thus moves research areas forward; results generate huge interest/enthusiasm in the field.	A+	4.1



JSA Performance:

JLab leads the world in extracting the contributions of individual quark flavors to the form factors of the proton using parity violating electron scattering. As recognized by the S&T Review this truly outstanding science has only been possible because of outstanding contributions by the User community, Accelerator Division and the Physics Division. The Theory Center made essential contributions to the analysis of the data. The results have been featured at important international conferences as well as high profile Letters journals, notably the Physical Review Letters. The S&T Review also noted the impressive progress with respect to the Excited Baryon Analysis Center (EBAC) as well as the innovative design of the BONUS experiment. It was especially impressed by the high quality of the lattice QCD program and its close connection to the experimental program at 6 and 12 GeV.

The Laboratory has outstanding connections with the local community, notably in education and the public understanding of science. The public lecture by Nobel Laureate David Gross is an outstanding example.

The FY06 S&T Review conducted in June noted the following accomplishments in this area:

- The recently announced HAPPEX data halved the errors of the previous world data.
- With the completion of the Neutron Electric and Magnetic Form Factor experiments it should be possible to obtain high accuracy form factors up to a Q^2 of 4 GeV² allowing for a fertile testing ground for theories constructing nucleons from quarks and gluons.
- The recently completed BONUS experiment will provide data of unprecedented accuracy on the d/u ratio at large x, and will constrain models of the nucleon.
- Data of the quality provided by CLAS on the transition form factors, coupled with the analysis tools to be provided by EBAC could ultimately unravel the true nature of the Roper resonance.
- Studies of nucleon-nucleon correlations provide the long sought for experimental confirmation of the traditional theoretical picture of nuclei.
- EBAC was established this year and the collaborative efforts of this group have been very productive. EBAC has potential impact on the Lab's experimental program by relating measurements of cross-sections to properties of baryons and aiding in discovery of new states of matter.
- LQCD program calculations achieved relevant results that could ultimately provide a detailed understanding of nuclear structure; reviewers appreciated the synergy among the LQCD group, theorists, and experimentalists.

In addition, here are some additional accomplishments that support the grade in this area:

- For the first time, a simple Dirac optical model has been derived from three-body Bethe-Salpeter equation along with correct effective current operator corresponding to the optical potential - - possible implications for the interpretation of several experiments performed at Jefferson Lab.
- Coordinated a public lecture by Physics Nobelist David Gross on "The Coming Revolutions in Fundamental Physics".
- Results of a recent study of the accuracy of the widely used ladder-rainbow truncation of quark Dyson-Schwinger and meson Bethe-Salpeter equations have been submitted for publication.
- In FY06, the following metrics were achieved:
 - ✓ PhDs = 26*
 - ✓ Journal Publications = 183*
 - ✓ Invited Talks = 49*
 - ✓ US Patent Awards = 5
 - ✓ Conferences = 26*



* Numbers are tentative and could change in the next few months.

Objective 1.2 Provide Quality Leadership in Science and Technology

Objective Requirement:

In determining the performance of the Objective the DOE evaluator(s) shall consider the following as measured by progress reports, peer reviews, Program Office reviews/oversight, etc.:

- Willingness to pursue novel approaches and/or demonstration of innovative solutions to problems;
- Willingness to take on high-risk/high payoff/long-term research problems, evidence that the Contractor’s previous risky decisions proved to be correct and are paying off;
- The uniqueness and challenge of science pursued, recognition for doing the best work in the field;
- Extent of collaborative efforts, quality of the scientists attracted and maintained at the Laboratory;
- Staff members visible in leadership position in the scientific community; and
- Effectiveness in driving the direction and setting the priorities of the community in a research field.

Performance Level Achieved:

Performance Level	Grade	Score
Laboratory staff lead Academy or equivalent panels; laboratory’s work changes the direction of research fields; world-class scientists are attracted to the laboratory, laboratory is trend setter in a field.	A	4.0

JSA Performance:

The S&T Review noted the world leadership in parity violating electron scattering and lattice QCD. It recognized the unique, world-class capabilities in SRF science and technology as well as photon science at the FEL.

The FY06 S&T Review conducted in June noted the following accomplishments in this area:

- The Laboratory staff (implicitly nuclear experimentalists and theorists) was identified as “Leaders in the field, serving on high-level committees.”
- The Lab’s accelerator R&D program was deemed unique with world-class expertise in SRF, polarized beams and energy-recovering linacs, as well as high-power FELs.

In addition, here are some additional accomplishments that support the grade in this area:

- Over eight major projects are underway in Biomedical Instrumentation including:
 - ✓ Positron Emission Mammography imager is being used for clinical breast cancer detection (Duke University Medical Center; DOE funds).
 - ✓ Development of a four module PEM imager to guide breast biopsy is nearing completion (West Virginia University; NIH funds).
 - ✓ Positron and gamma cameras for a portable cardiac imager are being fabricated (University of Florida; U. S. Army funds).
 - ✓ New prototype cameras for an awake animal imaging system are undergoing tests (Johns Hopkins University; DOE funds).



Objective 1.3 Provide and Sustain Science and Technology Outputs that Advance Program Objectives and Goals

Objective Requirement:

In determining the performance of the Objective the DOE evaluator(s) shall consider the following as measured through progress reports, peer reviews, Field Work Proposals (FWPs), Program Office reviews/oversight, etc.:

- The number of publications in peer-reviewed journals;
- The quantity of output from experimental and theoretical research; and
- Demonstrated progress against peer reviewed recommendations, headquarters guidance, etc.

Performance Level Achieved:

Performance Level	Grade	Score
Not failing	Pass	4.3

JSA Performance:

The S&T Review rated the Laboratory’s scientific programs as outstanding and specifically commented on the high impact publications from the Theory Center which were of direct relevance to the experimental program. It also recorded satisfactory progress towards meeting all DOE Milestones of relevance to JLab.

The FY06 S&T Review conducted in June noted the following accomplishments in this area:

- Securing 12 GeV Upgrade’s Critical Decision-1 and the opportunity to revolutionize knowledge of the distribution of charge and current in the nucleon was noted.
- The achievement of unprecedented beam polarization of 85% and the capability to conduct parity violation experiments and three-hall operations. Also noted the well-trained, highly motivated operations staff who contend with high demands while delivering excellent operations.
- Members of the review team were impressed with publication record for JSA staff and found the record to be indicative of the Lab’s productivity; they noted also that the Theory Center put out several high impact publications resulting in an increased number of Physical Review Letters being published.
- CASA was recognized as contributing to performance improvement in accelerator operations and for training young accelerator physicists.

Objective 1.4 Provide for Effective Delivery of Science and Technology

Objective Requirement:

In determining the performance of the Objective the DOE evaluator(s) shall consider the following as measured by progress reports, peer reviews, Field Work Proposals (FWPs), Approved Financial Plans (AFPs), Program Office reviews/oversight, etc.:

- Efficiency and effectiveness in meeting goals and milestones;
- Efficiency and effectiveness in delivering on promises, and getting instruments to work as promised;



- Efficiency and effectiveness in transmitting results to the community and responding to DOE or other customer guidance.

Performance Level Achieved:

Performance Level	Grade	Score
Not failing.	Pass	4.3

JSA Performance:

In spite of a budget cut of more than 10% the Laboratory avoided an involuntary Reduction in Force (RIF) and still produced a science program rated “outstanding” by the S&T Review. In particular, the Laboratory carried out experiments in parity violating electron scattering which reduced the error in the determination of the contribution of strange quarks to the form factors of the proton by a factor of two. The polarization of the electron beam was raised to typically 85%, resulting in more accurate scientific output in a given running period. Research in the cryogenics group which led to savings of \$1,000 per day was immediately transferred to other SC Laboratories with comparable levels of savings there.

The FY06 S&T Review conducted in June noted the following accomplishments in this area:

- Optimization of the Lab’s cryogenics operations led to a 20% overall reduction in energy consumption saving \$1,000 per day in accelerator cooling costs. Portions of this process, dubbed the Ganni Cycle, have been implemented at other DOE research facilities resulting in substantial savings in electricity costs. A patent is currently pending.
- Continued development of innovative shields and detectors that allow experiments to run at higher and higher energies.

Table 4. Goal 1.0 Performance Rating Development

ELEMENT	Letter Grade	Numerical Score	Objective Weight	Total Points	Total Points
1.0 Efficient and Effective Mission Accomplishment					
1.1 Impact	A+	4.1	40%	1.64	
1.2 Leadership	A	4.0	30%	1.20	
1.3 Output	Pass	4.3	15%	0.65	
1.4 Delivery	Pass	4.3	15%	0.65	
Performance Goal 1.0 Total					4.14

Table 5. Goal 1.0 Final Letter Grade

Total Score	4.3-4.1	4.0-3.8	3.7-3.5	3.4-3.1	3.0-2.8	2.7-2.5	2.4-2.1	2.0-1.8	1.7-1.1	1.0-0.8	0.7-0
Final Grade	A+	A	A-	B+	B	B-	C+	C	C-	D	F



Goal 2.0 Provide for Efficient and Effective Design, Fabrication, Construction and Operation of Facilities

Goal Requirement:

The Contractor provides effective and efficient planning; fabrication, construction and/or operations of Laboratory research facilities; and is responsive to the user community.

JSA Performance:

The 12 GeV project is on schedule and has passed all DOE reviews with outstanding grades. This is a tribute to the scientific, engineering and technical staff and the project management capabilities of the laboratory. In spite of a budget cut of more than 10% the laboratory avoided an involuntary RIF and still produced a science program rated “outstanding” by the S&T Review. In particular, the laboratory carried out experiments in parity violating electron scattering which reduced the error in the determination of the contribution of strange quarks to the form factors of the proton by a factor of two.

Objective 2.1 Provide Effective Facility Design(s) as Required to Support Laboratory Programs (i.e., activities leading up to CD-2)

Objective Requirement:

In determining the performance of the Objective the DOE evaluator(s) shall consider the following as measured by scientific/technical workshops developing pre-conceptual R&D, progress reports, Lehman reviews, Program/Staff Office reviews/oversight, etc.:

- Effectiveness of planning of preconceptual R&D and design for life-cycle efficiency;
- Leverage of existing facilities at the site;
- Delivery of accurate and timely information needed to carry out the critical decision and budget formulation process; and
- Ability to meet the intent of DOE Order 413.3, Program and Project Management for the Acquisition of Capital Assets.

Performance Level Achieved:

Performance Level	Grade	Score
In addition to meeting all measures under B+, the laboratory is recognized by the research community as the leader for making the science case for the acquisition; takes the initiative to demonstrate the potential for revolutionary scientific advancement. Identifies, analyzes and champions novel approaches for acquiring the new capability, including leveraging or extending the capability of existing facilities and financing. Proposed approaches are widely regarded as innovative, novel, comprehensive, and potentially cost-effective. Reviews repeatedly confirm potential for scientific discovery in areas that support the Department’s mission, and potential to change a discipline or research area’s direction.	A-	3.7



JSA Performance:

Here are some accomplishments that justify the grade in this area:

- Successfully completed annual DOE Project Status Review for the 12 GeV Upgrade on June 27-28, 2006 with notable high marks for excellent progress in both R&D and advancing the development of the Conceptual Design. Additional high marks were received for the detailed project plan including a resource-loaded schedule which leads up to Critical Decision 2 (CD-2) approval in September of 2007.
- An internal design and safety review of the architect-engineer's (A-E) 35% design submittal for the Hall D civil facilities was held July 12-13, 2006. The review comments will be incorporated into the next design submittal by the A-E.
- Concurrently with this review, an independent value engineering (VE) workshop was held on the Hall D civil construction. The VE was performed by a team of experienced multi-disciplined professionals and resulted in a list of potential design alternatives for the Hall D Complex which could decrease cost and/or technical complexity.
- Successfully completed the 12 GeV Cryomodule Design and Cryomodule/Cryogenics Failure-Mode Review on September 6-7, 2006. The review committee was impressed with the development of the cryomodule design and good use of JLab's experience with the original CEBAF cryomodules and the more recent SNS cryomodules. The failure-mode analysis was deemed complete and well thought out for this stage of the project.
- An independent value engineering (VE) study was performed on the 12 GeV Upgrade Central Helium Liquefier Addition (conventional facilities) and presented to the 12 GeV Project Team members the week of September 25, 2006. The VE Team, a team of experienced multi-disciplined professionals, was tasked with reviewing the preliminary design to identify alternatives to meeting the design requirements with the greatest potential for cost savings and project enhancement.
- Successfully completed the 12 GeV Conceptual Design and Safety Review of Superconducting Magnets on September 26-28, 2006. The conceptual design of the seven new superconducting magnets planned for the upgrades of Halls B and C was evaluated. The committee commended the 12 GeV Team for professional presentations and significant progress on the design effort in a relatively short period of time. While the committee felt that no issues or formal recommendations were necessary, they provided much insight through many detailed comments and suggestions, both in the presentation sessions and in their closeout.

Objective 2.2 Provide for the Effective and Efficient Construction of Facilities and/or Fabrication of Components (execution phase, Post CD-2 to CD-4)

Objective Requirement:

In determining the performance of the Objective the DOE evaluator(s) shall consider the following as measured by progress reports, Lehman reviews, Program/Staff Office reviews/oversight, etc.:

- Adherence to DOE Order 413.3 Project Management for the Acquisition of Capital Assets;
- Successful fabrication of facility components;
- Effectiveness in meeting construction schedule and budget; and
- Quality of key staff overseeing the project(s).

Note: Objective not applicable to this period per PEMP.



Objective 2.3 Provide Efficient and Effective Operation of Facilities

Objective Requirement:

In determining the performance of the Objective the DOE evaluator(s) shall consider the following as measured by progress reports, peer reviews, Program/Staff Office reviews/oversight, performance against benchmarks, Approved Financial Plans (AFPs), etc.:

- Availability, reliability, and efficiency of facility(ies);
• Degree the facility is optimally arranged to support community;
• Whether R&D is conducted to develop/expand the capabilities of the facility(ies);
• Effectiveness in balancing resources between facility R&D and user support; and
• Quality of the process used to allocate facility time to users

Performance Level Achieved:

Table with 3 columns: Performance Level, Grade, Score. Row 1: Performance of the facility exceeds expectations... Grade: A, Score: 4.0

JSA Performance:

Here are some accomplishments that justify the grade in this area:

- Successfully completed the 2006 Scheduled Accelerator Down as planned including the Personnel Safety System (PSS) segmentation project...
• 41 undergraduates were involved in research programs at the Laboratory during 2006...
• In FY06, the following metrics were achieved:

Table with 3 columns: Metric, Goal, Actual. Rows include: Weeks of Operation (29.1/28), Reliability (85%/94.6%), Accelerator Availability (70%/78.4%), Max Energy (5.5 GeV/5.26 GeV), Research Hours (3,813/4,471), Beam Studies Hours (345/641), Unscheduled Shutdown (734/305), Physics Output Wks (28.8/38.8), # of Users (754/1,199), Hall Multiplicity (1.9/2.03), Hall Availability (81%/92%)



Objective 2.4 Utilization of Facility to Grow and Support Lab's Research Base and External User Community

Objective Requirement:

In determining the performance of the Objective the DOE evaluator(s) shall consider the following as measured by peer reviews, participation in international design teams, Program/Staff Office reviews/oversight, etc.:

- The facility is being used to perform influential science;
Contractor's efforts to take full advantage of the facility to strengthen the Laboratory's research base;
Conversely the facility is strengthened by a resident research community that pushes the envelope of what the facility can do and/or are among the scientific leaders of the community;
Contractor's ability to appropriately balance access by internal and external user communities; and
There is a healthy program of outreach to the scientific community.

Performance Level Achieved:

Table with 3 columns: Performance Level, Grade, Score. Row 1: Reviews document that multiple disciplines are using the facility in new and novel ways... Grade: A+, Score: 4.3

JSA Performance:

Here are some accomplishments that justify the grade in this area:

- The FEL upgrade established new power records at 1.0, 1.6, and 2.8 microns.
The FEL system specifications were achieved that benchmark the design of next generation (100 kW+) FELs including record energy acceptance (12%), record lasing efficiency (2.3%), and a test of injection energy at 4.75MeV (2x lower than the original specification).
The FEL User Facility was made available for productive experiments:
- Laser damage studies by Dahlgren NSWC.
- Laser ablation of rock samples by the Gas Technology Institute and NETL.
- Record production (> 7g/hr) of high purity nanotubes by NASA-LaRC.
- Pioneering experiments on differential heating of fat tissue by Harvard -MGH.
- First measurements of THz thermal effects on biological samples by the USAF and EVMS.
- SRF involvement with ILC.
- CASA pushing next generation facilities.
- New education/training program in Accelerator Science.
- Cryogenics R&D



Table 6. Goal 2.0 Performance Rating Development

ELEMENT	Letter Grade	Numerical Score	Objective Weight	Total Points	Total Points
2.0 Construction and Operations of User Research Facilities and Equipment					
2.1 Provide Effective Facility Design(s)	A-	3.7	20%	0.74	
2.2 Provide for the Effective and Efficient Construction of Facilities and/or Fabrication of Components	N/A	N/A	0%	0	
2.3 Provide Efficient and Effective Operation of Facilities	A	4.0	65%	2.6	
2.4 Effective Utilization of Facility to Grow and Support the Laboratory's Research Base	A+	4.3	15%	0.65	
Performance Goal 2.0 Total					3.99

Table 7. Goal 2.0 Final Letter Grade

Total Score	4.3-4.1	4.0-3.8	3.7-3.5	3.4-3.1	3.0-2.8	2.7-2.5	2.4-2.1	2.0-1.8	1.7-1.1	1.0-0.8	0.7-0
Final Grade	A+	A	A-	B+	B	B-	C+	C	C-	D	F

GOAL 3.0 PROVIDE EFFECTIVE AND EFFICIENT SCIENCE AND TECHNOLOGY PROGRAM MANAGEMENT

Goal Requirement:

The Contractor provides effective program vision and leadership strategic planning and development of initiatives; recruits and retains a quality scientific workforce; and provides outstanding research processes, which improve research productivity.

JSA Performance:

Jefferson Lab currently serves 49% of the US Users of DOE operated national facilities in nuclear physics. As endorsed by the S&T Review in June 2006, the Users Group is strongly supportive of Lab management and its support of the User community. The close cooperation with the community led to the 17 A-rated proposals being accepted at the first PAC (August 2006) which considered experimental proposals for the 12 GeV Upgrade. All involved a commitment to contribute to the base equipment.

The Chief Scientist is providing international leadership in the field through his Chairmanship of the IUPAP Working Group on International Cooperation in Nuclear Physics and membership in the OECD Global Science Forum which is developing a landscape for nuclear physics worldwide. Nationally, JLab has one staff member and two Users on the NSAC Long Range Planning Group. Members of our User community are organizing pre-meetings and the Town Meeting which will develop white papers for consideration in the long range planning exercise.



Objective 3.1 Provide Effective and Efficient Stewardship of Scientific Capabilities and Program Vision

Objective Requirement:

In determining the performance of the Objective the DOE evaluator(s) shall consider the following as measured by peer reviews, existence and quality of strategic plans as determined by SC and scientific community review, Program Office reviews/oversight, etc.:

- Efficiency and Effectiveness of joint planning (e.g., workshops) with outside community;
- Articulation of scientific vision;
- Development of core competencies, ideas for new facilities and research programs; and
- Ability to attract and retain highly qualified staff.

Performance Level Achieved:

Performance Level	Grade	Score
Providing strong programmatic vision that extends past the laboratory and for which the laboratory is a recognized leader within SC and in the broader research communities; development and maintenance of outstanding core competencies, including achieving superior scientific excellence in both exploratory, high-risk research and research that is vital to the DOE/SC missions; attraction and retention of world-leading scientists; recognition within the community as a world leader in the field..	A	4.0

JSA Performance:

SURA/TJNAF is tightly and seamlessly coupled to its stakeholders and particularly its 2000 member user community through a well communicated vision, a 5-year business plan, the PAC process that results in an independent peer assessment of proposed research, and finally the internal scheduling process allocating research time for a 15 month period. The business plan – first formulated in 2005, updated in 2006 – defines core competencies crisply and identifies implementation strategies.

Planning for the scientific direction of our core mission of basic research in nuclear physics (and its communication to the scientific community) takes place in many ways. It is advanced by a series of workshops and conferences sponsored (or partially sponsored) by the laboratory and held both here and at venues around the world. In FY2006 there have been eleven such meetings focused on JLab science, beginning with the 5th Workshop on Nucleon Form Factors held in Frascati, Italy in October 2005 and ending with the 3rd Topical Workshop on Lattice Hadron Physics (LHP06), held at the laboratory in July, 2006. Participation of lab staff in a broad variety of national and international conferences, advisory boards and panels, and , in particular, in such boards and panels within the Department of Energy, further enhances planning and communications. Communications with the user community includes literally dozens of meetings of collaborations focused on individual experiments, bi-annual meetings of the larger collaborations carrying out measurements in each of the three experimental halls, focused quarterly meetings of senior lab management with the elected User Group Board of Directors, and an annual meeting of the User Group at the laboratory. A similar effort takes place on a smaller scale for the FEL program and for other efforts, such as the initiation of SRF R&D for the ILC.

A visible result of this effort has been the development of a five-year research plan (using CEBAF at energies of up to 6 GeV) consisting of some thirty, high-impact experiments, together with the well-articulated and documented vision for the science program for the 12 GeV Upgrade. There is also a

transition plan for moving from the present research program to one using the new research capabilities of the Upgrade. In 2006 our Program Advisory Committee reviewed the first set of formal proposals for experiments to be carried out using the capabilities of the upgraded (12 GeV) CEBAF and the experimental equipment to be constructed as part of the project. The interest and level of commitment expressed by the international user community was outstanding. This PAC meeting was a critical first step in converting the science priorities as articulated in the Conceptual Design Report for the Upgrade and reviewed by DOE in April 2005 into concrete, peer-reviewed experiments that have been worked out in detail. We have formal recommendations from the PAC (accepted by the laboratory) for the highest scientific priority experiments to be included in the first five years of operation of the Upgrade.

Independent judgment on the overall effectiveness of this effort can be obtained from the DOE July 2006 peer review of our Science and Technology. With respect to the present (6 GeV) experimental nuclear physics research program, the review noted that:

“The reviewers considered the quality, productivity and significance of the research program to be outstanding. Recent results include the completion of experiments to determine the electromagnetic form factors of the proton and neutron. These data, along with the soon to be completed parity violation electron scattering experiments G0 and HAPPEX III, will allow TJNAF to complete one of the major milestones of the medium energy program: the determination of the flavor separated nucleon form factors out to a Q^2 of 4 (GeV/c)². Also, an analysis of Deeply Virtual Compton Scattering (DVCS) data indicates that the hypothesized dominant scattering mechanism is correct. This is an important requirement for determining the Generalized Parton Distribution Functions (GPD), a major component of the 12 GeV CEBAF Upgrade research program.

The growing synergy between theory and experiment at the laboratory, and the development of and planning for theoretical nuclear physics using Lattice QCD were also highly praised:

“The theory group continues to demonstrate strong leadership in advancing the research program of the laboratory and is well integrated with the experimental program.”

“The lattice gauge effort in nuclear physics is considered outstanding and the group members are considered national leaders in applying lattice gauge to nucleon structure.”

“The LQCD group proposed a detailed and well thought out plan for additional computing capabilities.”

The committee also commented on our progress in planning for the future and articulating the vision:

“The future program of the laboratory is centered on the 12 GeV Upgrade of CEBAF and the laboratory’s successful achievement of Critical Decision 1 is considered an important accomplishment.”

“The reviewers considered the facility operations to be highly effective and appropriate considering the reduced budget level for FY 2006.”

Progress in research in our Accelerator Physics core competency areas has also progressed substantially in FY2006. The S&T review commented that:



“TJNAF has four areas of technical core competency: superconducting radio frequency cavities (SRF), intense polarized electron beams, energy recovery linacs (ERLs) and high power free electron lasers (FELs), and cryogenic facilities. TJNAF is playing a lead role in developing next generation SRF accelerator cavities for the Nation and is the only national SRF cavity manufacturing facility.”

Finally, our ability to attract and retain outstanding staff is perhaps best quantified by the judgment of our peers about the quality of the staff that has been assembled; they noted:

“Overall, the laboratory has a strong staff with highly productive senior and energetic junior scientists. The research staff members continue to play leadership roles in the national community, serve on important committees and make significant contributions at conferences and workshops.”

Objective 3.2 Provide Effective and Efficient Science and Technology Project/Program Planning and Management

Objective Requirement:

In determining the performance of the Objective the DOE evaluator(s) shall consider the following as measured by peer reviews, existence and quality of strategic plans as determined by SC and scientific community review, Program Office and scientific community review/oversight, etc.:

- Quality of R&D and/or user facility strategic plans
- Adequacy in considering technical risks;
- Success in identifying/avoiding technical problems;
- Effectiveness in leveraging (synergy with) other areas of research; and
- Demonstration of willingness to make tough decisions (i.e., cut programs with sub-critical mass of expertise, divert resources to more promising areas, etc.).

Performance Level Achieved:

Performance Level	Grade	Score
Research plans are proactive, not reactive, as evidenced by making hard decisions and taking strong actions; plans are robust against budget fluctuations – multiple contingencies planned for; new initiatives are proposed and funded through reallocation of resources from less effective programs; plans are updated regularly to reflect changing scientific and fiscal conditions; plans include ways to reduce risk, duration of programs.	A	3.9

JSA Performance:

The Science and Technology Review noted the outstanding scientific achievements in a difficult financial situation. It also commended the laboratory on the synergy between CEBAF and FEL R&D. The Applied Program continues to produce new technology which is being successfully licensed.

FY06 with its decrease in operating funds of order \$10M provided a stringent test of management’s ability to make tough decisions and set priorities. By deferring work on lower priority experiments the lab was still able to produce world-leading accuracy in the HAPPEX experiment, reducing the previous errors by a factor of two. The 12 GeV project schedule was maintained and a refurbishment program for



cryomodules initiated. The latter clearly demonstrates the laboratory’s pro-active role in anticipating future problems and taking action to avoid them.

In terms of synergy we note the beneficial interaction between CEBAF and the FEL which was especially commended in the S&T Review. The outstanding medical imaging program is a second outstanding example of the Lab’s ability to leverage world leading science to generate new technology.

Objective 3.3 Provide Efficient and Effective Communications & Responsiveness to Customer Needs

Objective Requirement:

In determining the performance of the Objective the DOE evaluator(s) shall consider the following as measured by Program Office reviews/oversight, etc.:

- The quality, accuracy and timeliness of response to customer requests for information;
- The extent to which the Contractor keeps the customer informed of both positive and negative events at the Laboratory so that the customer can deal effectively with both internal and external constituencies; and
- The ease of determining the appropriate contact (who is on-point for what).

Performance Level Achieved:

Performance Level	Grade	Score
Communication channels are well-defined and information is effectively conveyed; important or critical information is delivered in real time; responses to HQ requests for information from laboratory representatives are prompt, thorough, correct and succinct; laboratory representatives <i>always</i> initiate a communication with HQ on emerging issues.	A	3.8

JSA Performance:

Effective communication of information to the customer is highly valued and important to JSA. Timely, accurate responses to customer requests through well-defined channels have been achieved consistently and are deemed vital for the continued progress and success of the Laboratory. In meeting this objective, several mechanisms are in place to maximize the effectiveness of the communications process. During the performance period, weekly meetings between the Lab Director and the TJSO Manager and meetings of the Lab Director and the NP Program Director have taken place to allow for frequent and open exchange of information, keeping the customer informed on all fronts. Lab priority meetings to review operational data take place weekly; subsequently, a bi-weekly operations report is generated by the Lab Director for the Program and Site Offices that highlights experimental, ES&H, operations and productivity goals and actual for year-to-date time periods. Additionally, at the end of each quarter, operations and data metrics are requested by the NP Program Office – we have consistently furnished these reports by the required deadlines.

During the performance period, the Lab staff has delivered on several intermittent data requests from the DOE Program and Site Offices in a thorough and timely manner, often under very short turn-around time constraints. More than 250 transmissions of key information from the Laboratory were conveyed to DOE during the performance period in areas such as operations, budget, finance, facilities, procurement, project



management and safety and security. Examples of some non-routine data requests fulfilled include a listing of cumbersome DOE orders and mandates (7/06) and numerous cyber security requests for data.

New in this reporting period is the addition of regularly scheduled contract performance reviews led by the Lab’s Chief Operating Officer. These updates are intended to further augment communications between the Lab and TJSO, allowing for a broad participation including key Lab and TJSO personnel. The presentation format provides an evaluation of the progress of each goal in a user friendly format (green, yellow, red stoplight indicators that correspond to PEMP performance levels). Our impression was that the first meeting, held September 25, 2006, was very beneficial to both parties, setting the stage for discussion of issues and allowing for feedback and corrective actions if necessary. TJSO and JSA have agreed to commence with quarterly performance reviews.

We are pleased to report the launching of JLab Insight, a web-based information portal that houses critical data, and provides access to that data on a near real time basis. While implementation and customization has just begun, we are confident that this new system will be of tremendous benefit not only to Lab staff, but to TJSO and Program Offices, allowing easy access to timely performance and operational data. We look forward to the efficiencies this new system will provide in responding to customer requests.

Table 8. Goal 3.0 Performance Rating Development

ELEMENT	Letter Grade	Numerical Score	Objective Weight	Total Points	Total Points
3.0 Science and Technology Research Project/Program Management					
3.1 Effective and Efficient Stewardship	A	4.0	40%	1.6	
3.2 Project/Program Planning and Management	A	3.9	40%	1.56	
3.3 Communications and Responsiveness	A	3.8	20%	0.76	
Performance Goal 3.0 Total					3.92

Table 9. Goal 3.0 Final Letter Grade

Total Score	4.3-4.1	4.0-3.8	3.7-3.5	3.4-3.1	3.0-2.8	2.7-2.5	2.4-2.1	2.0-1.8	1.7-1.1	1.0-0.8	0.7-0
Final Grade	A+	A	A-	B+	B	B-	C+	C	C-	D	F

Goal 4.0 Provide Sound and Competent Leadership and Stewardship of the Laboratory

Goal Requirement:

The Contractor’s Leadership effectively provides direction in strategic planning to meet the mission and vision of the overall Laboratory; is accountable and responsive to specific issues and needs when required; and corporate office leadership provides appropriate levels of resources and support necessary for the overall success of the Laboratory.



JSA Performance:

In the first four months of the new contract JSA has met or exceeded the requirements and expectations of this goal and its objectives. JSA has implemented in a very short period of time an innovative approach to the management of the Laboratory. For the first time a Laboratory Work Breakdown Structure (WBS) has been created and implemented. This WBS will serve as the cornerstone for the newly implemented Performance Based Integrated Management System. The new integrated management system has also been substantially integrated and applied to most Laboratory activities. In only 120 days JSA has reorganized the Laboratory structure to address operational inefficiencies and has strengthened many activities to improve management and leadership at all levels. JSA has also implemented its new integrated management system (JLAB Insight) to improve the integration of performance and operational data for more informed and timely decisions. JSA has reviewed and updated its 20-year vision that fully addresses the long range goals and objectives of the Office of Science and the Office of Nuclear Physics. JSA has also implemented an annual work planning process that will provide greater insight into operational costs, enable the timely identification of efficiencies and provide for full accountability for cost, schedule and performance at appropriate levels of the organization. This annual planning process will directly and efficiently relate organizational elements to mission requirements in a cost-effective manner, with well-defined scope, goals, performance standards and measures and clearly defined deliverables.

The progress that JSA has made in the first four months of the new contract to provide sound and competent leadership and stewardship of Jefferson Laboratory has set it on a course to easily exceed this important goal and its objectives by the end of the first year of the new contract.

Objective 4.1 Provide a Distinctive Vision for the Laboratory and an Effective Plan for Accomplishment of the Vision to Include Strong Partnerships Required to Carry Out those Plans

Objective Requirement:

In measuring the performance of this Objective the DOE evaluator(s) shall consider the following:

- Quality of the Vision developed for the Laboratory and effectiveness in identifying its distinctive characteristics;
- Quality of Strategic/Work Plan for achieving the approved Laboratory vision;
- Quality of required Laboratory Business Plan;
- Ability to establish and maintain long-term partnerships/relationships that advance/expand ongoing Laboratory missions and/or provide new opportunities/capabilities; and
- Effectiveness in developing and implementing commercial research and development opportunities that leverage accomplishment of DOE goals and projects with other federal agencies that advance the utilization of Laboratory technologies and capabilities

JSA Performance:

The Laboratory's Vision is effective in identifying its distinctive characteristics and reflects alignment with the DOE Office of Science national priorities and OMB milestones. The vision is regularly reviewed and maintained in a dynamic way and is modified when necessary to ensure its programs and timelines remain consistent with the priorities of the Office of Science. In carrying out our vision, much progress has been made during the performance period toward developing an Annual Work Plan based on the implementation of the new Work Breakdown Structure. This activity-based accounting system will



allow for a bottoms-up approach to budgeting and will provide management with an accurate accounting of what resources are needed on projects throughout the Lab. It will also provide for accountability of performance at the activity level.

The Lab continues to establish new, and maintain long-standing, collaborations that advance the ongoing mission and provide new opportunities/capabilities with academe, the Laboratory system and commercial research sector including the addition of new MOUs and joint faculty positions during the performance period.

Measure 4.1.1 Requirement: The vision (20-year outlook) addresses outstanding science questions of national priority to DOE. The vision informs and is aligned with that of the DOE Office of Science and the NSAC long range plan and is maintained in a dynamic way to carry out and adapt to changes in these plans, and to allow for innovative initiatives that maximize the benefit to the Office of Science.

Performance Level Achieved:

Performance Level	Grade	Score
JSA takes extra measures, such as drawing on outside expertise (e.g. the JSA Board’s Science Council and Programs Committee, the NSAC Long Range Plan subcommittee, the JLab User Group, the Global Sciences Forum Working Group on Nuclear Physics, the WG9 of IUPAP, the IM and S&T peer review experts) to ensure a proper level of involvement of the Laboratory’s staff and users in activities that affect the future of nuclear physics in general and the science of the Laboratory in particular. Including especially the NSAC planning process; service on relevant committees of the American Physical Society (Nuclear Physics Division, especially); participation in conferences and workshops that relate to the Laboratory’s scientific mission, engagement with working groups focused on next-generation accelerators and related technologies; coordination of the Laboratory’s 12 GeV upgrade and eLIC goals with the OECD Nuclear Science Working Group; and more generally assisting, as appropriate and as called upon by DOE, to help advance the DOE’s broader agenda.	A	4.0

JSA Performance:

The Lab’s vision addresses outstanding science questions of national priority to DOE. JSA has taken extra measures, such as drawing on outside expertise (e.g. the JSA Board’s Science Council and Programs Committee, the NSAC Long Range Plan subcommittee, the JLab User Group, the Global Sciences Forum Working Group on Nuclear Physics, the WG9 of IUPAP, and most recently, the 2006 S&T peer review experts) to ensure a proper level of involvement of the Laboratory’s staff and Users in activities that affect the future of nuclear physics in general and the science of the Laboratory in particular. Including especially the NSAC planning process; service on relevant committees of the American Physical Society (Nuclear Physics Division, especially); participation in conferences and workshops that relate to the Laboratory’s scientific mission; engagement with working groups focused on next-generation accelerators and related technologies; coordination of the Laboratory’s 12 GeV Upgrade and eLIC goals with the OECD Nuclear Science Working Group; and more generally assisting, as appropriate and as called upon by DOE, to help advance the DOE’s broader agenda.

The vision is maintained in a dynamic way to carry out and adapt to changes in plans, and to allow for innovative initiatives that maximize the benefit to the Office of Science. Such changes include for



example, references to the 12 GeV CEBAF Upgrade to reflect the recent CD-1 approval and revised project schedule, changes to JLab involvement in an exotic meson facility in light of an anticipated delay of the project, and our increasing level of leadership in SRF technology for the nation projected over the next ten years, most notably our increasing participation in the ILC.

Measure 4.1.2 Requirement: The Business Plan (5-year) establishes the management agenda and identifies the opportunities, risks and required resources needed to realize Laboratory goals. The business plan sets the framework to optimize scientific output in a cost effective manner. Integrally, JSA develops a 5 year budget plan as a mechanism by which the Laboratory can ensure its goals are met.

Note: Measure not applicable to this period per PEMP. We expect to update the plan this fall per recent DOE communications to NLIC.

Measure 4.1.3 Requirement: The Laboratory has formalized vital collaborations and understandings within and among institutions in academe, users of the Laboratory, other national laboratories, and private sector entities for advancing priority issues in science, scientific workforce, and applications of science and technology.

Performance Level Achieved:

Performance Level	Grade	Score
JSA takes extra steps (e.g., conferring with the JSA Board’s Science Council and Programs Committee) to assure that the laboratory optimizes opportunities to develop and promote effective collaborations with other organizations such as: entering into new MOUs for financial or in-kind support of the 12 GeV upgrade; partnering to offer JLab SRF expertise that adds measurable value to the Office of Science ILC initiative. The degree of JSA’s influence in the NSAC planning process is notable and the number and quality of joint and bridged faculty appointments is extensive.	A	4.0

JSA Performance:

The Laboratory has taken extra steps to ensure that opportunities to develop and promote effective collaborations with other organizations are maximized. We have begun dialogue with our new JSA Board of Directors’ Programs committee, both in our July and October Board meetings, to discuss enhancing collaborations vital to the Lab. In August, we hosted the head of CNRS, the French Nuclear Physics program, to solidify French financial commitment and support of the 12 GeV Upgrade. In the performance period, we have entered into two new MOUs including: The University of Adelaide and The University of Virginia. In addition to maintaining our Halls and experimental collaborations internationally, we have continued to participate in the International Linear Collider initiative in support of the DOE Office of Science, by providing JLab SRF expertise among the SC laboratories involved in the project, thus adding measurable value to the US contribution to the initiative. JLab has visibly participated in and wielded considerable influence in the NSAC long range planning process. The number and quality of joint and bridged faculty appointments is extensive with the addition of four new joint and bridged appointments during the performance period.

In addition to the work of the Laboratory in fostering collaborations, SURA, as majority owner of JSA, has continued its efforts to enhance Jefferson Lab collaborations with the academic user community. These efforts are illustrated by JSA financial support of living expenses for faculty members on sabbatical



at the Lab. During the evaluation period sabbatical support for the Chair of the Lab’s User Group came to its planned end but support for two others on sabbatical continued and support for a new faculty member was added. The presence of these scientists on sabbatical at the Jefferson Lab assists in invigorating the research program of the Lab.

Contributing to collaboration with academia are several other JSA support programs, ongoing from SURA, including eight graduate fellowships awarded annually for research at the Jefferson Lab and the annual thesis and poster awards for graduate students engaged in research at the Lab.

During the evaluation period SURA also hosted and funded a meeting at its headquarters of principals from the Jefferson Lab and RIA communities to plan a workshop in support of the complementary science of these two groups. The workshop took place in October 2006.

Measure 4.1.4 Requirement: The Laboratory has corporate citizenship programs that encourage community support of the Laboratory and its programs and that draw on Laboratory competencies and meet community needs. These corporate citizenship efforts include public outreach and improved scientific literacy. This responsibility of the Laboratory is measured by metrics and peer reviews. The Laboratory also has an outreach program to the broader scientific community to increase the awareness and scientific community support of the Laboratory and its accomplishments.

Performance Level Achieved:

Performance Level	Grade	Score
JSA takes extra measures (working as appropriate in conjunction with the JSA Board’s Relations Committee) to ensure that the laboratory has model programs in public relations, community awareness, and science education. Initiatives demonstrate a high level of quality or effectiveness that exceeds expectations or is noted as an example program at SC.	A	4.0

JSA Performance:

JSA has fully supported TJNAF’s science education activities. JSA/TJNAF’s **Science Education Program** contributes to the Commonwealth and the nation’s science education and literacy as evidenced in annual Public Participation metrics. The educational centerpiece is the Lab’s K-12 Science Education Program, **Becoming Enthusiastic About Math and Science**, most often referred to as BEAMS. The 16th year of BEAMS began in September 2006. The BEAMS program serves all sixth, seventh, and eighth grade students and teachers from two local schools with the most “at-risk” students (~1200 students annually). Students and teachers visit Jefferson Lab for two to five days of hands-on math and science activities conducted by Jefferson Lab scientists, engineers, and technicians. This continued interaction has yielded measurable results, increasing test scores of these students in Virginia Standards of Learning tests in Math and Science.

During the summer of 2006, 17 middle school science teachers participated in the Lab’s **Teacher Academy in the Physical Science (TAPS)** program, a four-week summer classroom and research program for 5th - 8th grade teachers designed to:

- Build teachers’ content knowledge and skill base in the physical sciences;
- Equip teachers with more engaging and advanced teaching methods;



- Increase teachers' ability to positively influence students' interest and understanding of the physical sciences; and
- Acknowledge the important role that teachers play in maintaining the educational "pipeline" that develops students with the critical thinking skills needed to solve the nation's future challenges.

JLab's **Science Undergraduate Laboratory Internship (SULI)** program supports the advancement of undergraduate students interested in careers in scientific and engineering fields. Students are selected from a competitive, nationwide pool and work with scientists or engineers for ten weeks during the summer on projects related to Jefferson Lab's research program. SULI prepares students to pursue professional careers and graduate school opportunities as they become part of the Lab's research environment and establish long-term research relationships with JLab scientists and engineers. Eighteen students participated in SULI in the summer of 2006.

The **High School Summer Honors Program** draws the region's highest achieving high school students. Jefferson Lab scientists transfer essential technical knowledge and enthusiasm for science to young people at the critical time they begin to make career choices. Seven students spent seven weeks working under the guidance of JLab scientific staff during the summer of 2006.

All participants from the three summer programs described presented a summary of their projects to their peers and to the Lab's scientific community at a well-attended Lab-wide poster session on August 2, 2006. JLab's unique research environment and expertise in science, math, and technology create the basis for extraordinary educational opportunities that are solidly grounded in the Laboratory's scientific programs. These "pipeline" education programs are essential for providing a knowledgeable citizenry and the next generation of scientists and engineers critical for the nation's success.

Metrics for June 1, 2006 - September 30, 2006

Number of Students Served: 850

Student Contact Hours: 10,700

Number of Teachers Served: 200

Teacher Contact Hours: 3,840

Metrics for FY 2006:

Number of Students Served: 11,170

Student Contact Hours: 31,000

Number of Teachers Served: 1,250

Teacher Contact Hours: 8,000

Public visibility and awareness of the Department of Energy and Jefferson Lab is reinforced by interaction with the media and programs designed for the public. National, regional and local news articles covered topics related to Jefferson Lab including the Lab's science, public lectures, and technology development. The Lab's major science announcements are always between April and September during the two major Nuclear Physics conferences sponsored by the American Physical Society; therefore, this reporting period resulted in no significant independent press coverage. However, JSA/JLab has submitted and published several articles on the Lab's activities in the *CERN Courier*, an international scientific magazine published by CERN. The Lab is increasing its attention to its website and is increasing its publication of scientific features as home page articles.



The science education section of the website receives more than 500,000 hits each day during the weeks leading up to the Standards of Learning tests given to all Virginia students. The site continues to be lauded by Virginia schools as the one tool that helps students practice for the test effectively.

In addition to the significant contribution of the Jefferson Lab and its staff to corporate citizenship, SURA, now as majority owner of JSA, has continued to vest in staff time and resources in corporate citizenship on behalf of the programs of the DOE Office of Science and on behalf of science in general.

SURA has continued to be an active member of the Energy Science Coalition (ESC), the Task Force for the Future of American Innovation and the Alliance for Science and Technology Research in America (ASTRA). While the ESC is geared toward support and advocacy for DOE’s Office of Science, the other two organizations aim for broader public support of the sciences and broader understanding of the importance of basic research in the physical sciences to the future of the nation. SURA has continued to participate in their efforts to arm policymakers and opinion leaders with the rationale for greater support of science in the national interest. Work by the Task Force and ASTRA has been instrumental in advancing bipartisan support in the Congress for the President’s “American Competitiveness Initiative”.

During the past four months, SURA has further strengthened its commitment to support of science through the initiation of its Distinguished Friend of Science Award. The purpose of the award is not only to recognize individuals who have worked to support the SURA mission of enhancing the research capability of the region and nation, but to bring recognition to the critical importance of science to the nation’s future. The first awardee, announced in September 2006, is Senator Lamar Alexander of Tennessee, a champion of increasing DOE’s Office of Science funding as well as the primary advocate for the Gathering Storm report which led to the President’s “American Competitiveness Initiative”. It also led to Congressional attention which resulted in doubling the nation’s investment in basic research in the next seven years. Senator Alexander will be honored at the November meeting of the SURA Board of Trustees.

SURA believes that to be a good corporate citizen and responsible steward of Jefferson Lab requires that it participate in public debate and advocacy that will inform and sustain policy discussion to support its mission of advancing science and building our nation’s research capacity.

Measure 4.1.5 Requirement: JSA and its corporate owners have developed and implemented technology transfer, commercial applications and projects with other agencies and organizations to augment Laboratory efforts and to enhance utilization of Laboratory-developed and related technologies. (Metrics for laboratory technology transfer activities are reported under Goal 6, Objective 6.5.)

Performance Level Achieved:

Performance Level	Grade	Score
JSA and its corporate owners take extra measures to strengthen technology transfer activities at the Laboratory, such as providing unique opportunities for its spin-out companies to obtain outside funding from venture capitalists and other private sources; providing JSA funding for investment or commercialization assistance; or creating cross-agency programs to bundle technologies for commercialization opportunities.	A	4.0



JSA Performance:

In its role as majority owner of JSA, SURA continues to play an active role in numerous technology commercialization activities that benefit Jefferson Lab. The regular and ongoing functions that SURA fulfills in support of the Lab's technology transfer mission include serving on the Technology Review Committee, the body that reviews all new invention disclosures and determines which of them should be patented, identifies potential licensing candidates, and negotiates licenses. Also, SURA purchased and manages the Inteum Intellectual Property database, a sophisticated commercial program that allows the efficient management of all aspects of intellectual property, from invention disclosure through patenting to licensing. Additionally, SURA created and maintains the online Web-Based Invention Disclosure system (www.jlab.org/invent), the service that allows inventors to put all their inventions directly into the database via a secure connection from anywhere in the world. In addition to these ongoing activities to fulfill its technology commercialization mission at the Lab, SURA has also instituted a number of special activities to accelerate the transformation of innovations from Jefferson Lab into the marketplace. A few examples from the June 1-September 30, 2006 timeframe include the following:

- SURA sponsored and hosted the third annual SURA Terahertz Applications Symposium on June 1-2, 2006. Over 75 attendees from around the world represented private sector corporations, government agencies and labs, and the university sector. The presentation from Mike Klopff of Jefferson Lab's Terahertz User Facility at the FEL covered the world's highest-power THz source and generated significant interest. As a direct result of these events, the Air Force Research Lab conducted the first of a series of experiments at Jefferson Lab this past summer to characterize the biohazards associated with exposure to terahertz radiation. This is an important step in the commercialization of terahertz-based sensors and detectors that are already being developed for passenger screening at airports and the early detection of skin cancer.
- SURA again sponsored COVITS (Commonwealth of Virginia Innovative Technologies Symposium) on September 10-12, 2006. This important event saw Jefferson Lab highlighted by several of the speakers and served to introduce or reconnect technologists from private sector companies across the country with the important work being done at the Lab, both in the nuclear physics/accelerator technology areas as well as the high-performance computing arena.
- SURA has established a new mechanism for early-stage startups emanating from Jefferson Lab and SURA member universities to obtain seed funding. Called SURAFund, this initiative connects venture capitalists from within and outside our region with spinout companies seeking gap funding (\$100,000-\$500,000). This funding will help these companies bridge the "valley of death" by providing private sector financing to develop prototypes, complete marketing efforts, and build out an experienced management team.

Through these ongoing and special events, SURA has gone above and beyond the standard technology commercialization programs in finding new ways to capitalize on the innovations emanating from the brilliant minds at the Lab for the benefit of society.



Table 10. Objective 4.1 Performance Rating Development

ELEMENT	Letter Grade	Numerical Score	Objective Weight	Total Points	Total Points
4.1 Provide a Distinctive Vision for the Laboratory and an Effective Plan for Accomplishment of the Vision to Include Strong Partnerships Required to Carry Out those Plan					
4.1.1 The vision addresses outstanding science questions of national priority to DOE.	A	4.0	25%	1.0	
4.1.2 5-Year Business Plan sets framework to optimize scientific output in a cost effective manner.	N/A	N/A	N/A	N/A	
4.1.3 Lab has formalized vital collaborations for advancing priority issues in science and technology.	A	4.0	25%	1.0	
4.1.4 Lab has corporate citizenship programs that encourage community support of Lab and its programs.	A	4.0	25%	1.0	
4.1.5 Developed/implemented tech transfer to augment efforts to enhance use of technologies.	A	4.0	25%	1.0	
Objective 4.1 Total					4.0

Objective 4.2 Provide for Responsive and Accountable Leadership throughout the Organization

Objective Requirement:

In measuring the performance of this Objective the DOE evaluator(s) shall consider the following:

- Leadership’s, to include Corporate Office Leadership’s, ability to instill responsibility and accountability down and through the entire organization; and
- The effectiveness and efficiency of Leadership, to include Corporate Office Leadership, in identifying and/or responding to Laboratory issues or opportunities for continuous improvement.

Note: Objective not applicable to this period per PEMP.

Measure 4.2.1 Requirement: JSA has a responsive Board of Directors and corporate owners that provide timely and effective policy guidance and oversight; offers subject matter expertise; facilitates corporate reach back; and provides entrée to vital, external resources. JSA establishes an efficient organization that:

- Focuses the Laboratory Director on corporate, strategic, customer and stakeholder goals, priorities and issues.
- Empowers the Chief Scientist to provide overall direction for balanced, highest impact science.
- Empowers COO to integrate operations and business management functions-deliver more science with efficiencies.



- Optimizes matrix support functions to assure efficient deployment of resources.
- Fully integrates safety throughout the organization.
- Formalizes and documents roles and responsibilities and accountability and authorities (R2A2).

Note: Measure not applicable to this period per PEMP.

Measure 4.2.2 Requirement: Fully implements a performance based integrated management system including: A Work Breakdown Structure (WBS) developed to at least the fourth level for all Laboratory activities; and proposed management information systems (Applied Insight/AQIS/Maximo) implementation underway.

Note: Measure not applicable to this period per PEMP.

Objective 4.3 Provide Efficient and Effective Corporate Office Support as Appropriate

Objective Requirement:

In measuring the performance of this Objective the DOE evaluator(s) shall consider the following:

- Corporate Office involvement in and support of business and other infrastructure process and procedure improvements;
- The willingness to enter into and effectiveness of joint appointments when appropriate; and
- Where appropriate, the willingness to develop and work with the Department in implementing innovative financing agreements and/or provide private investments into the Laboratory.

Note: Objective not applicable to this period per PEMP.

Measure 4.3.1 Requirement: The corporate owners offer reach back to their own corporate expertise and that of outside, nationally recognized experts serving on the Board of Directors subcommittees in areas such as scientific leadership, project management, IT organization, risk assessment, and a variety of business disciplines to address emerging problems and for a process of continuous improvement.

Corporate commitments include a \$500K per year Initiatives Fund to support initiatives and activities that promote the science and technology of the Jefferson Lab in ways complementing and enhancing its basic and applied research programs, particularly activities that leverage commitments by others and that support the Laboratory's extended user community. Examples of specific initiatives and activities include: scientific outreach programs (e.g. graduate fellowship, post doctoral fellowship, faculty sabbatical and research leave support, thesis prizes, poster contests, MSI initiatives, Director's discretionary fund, and tech transfer activities.

Note: Measure not applicable to this period per PEMP.

Measure 4.3.2 Requirement: The JSA Board will facilitate close connections of key staff to academe and assist the Laboratory in taking steps to strengthen ties to the user community. To this end, the owners will work with the Laboratory Director to arrange for university appointments for key staff – including Governor's CEBAF Distinguished Professorships (GDCP) and Scientists (GCS) – and facilitate joint and bridge appointments between universities and the Laboratory.

The JSA Board's Programs Committee will allocate and manage the annual \$500K Initiatives Fund established by the JSA owners, including especially scientific outreach programs (e.g. graduate



fellowship, post doctoral fellowship, faculty sabbatical and research leave support, thesis prizes, poster contests, MSI initiatives).

Note: Measure not applicable to this period per PEMP.

Measure 4.3.3 Requirement: When appropriate opportunities arise and are agreed to by DOE, JSA and its corporate owners will pursue creative financing options and implement those that make prudent business sense and that are approved by the DOE.

Note: Measure not applicable to this period per PEMP.

Table 11. Goal 4.0 Performance Rating Development

ELEMENT	Letter Grade	Numerical Score	Objective Weight	Total Points	Total Points
4.0 Provide Sound and Competent Leadership and Stewardship of the Laboratory					
4.1 Provide a Distinctive Vision for the Laboratory and an Effective Plan for Accomplishment of the Vision to Include Strong Partnerships Required to Carry Out those Plan	A	4.0	100%	4.0	
4.2 Provide for Responsive and Accountable Leadership throughout the Organization	N/A	N/A	N/A	N/A	
4.3 Provide Efficient and Effective Corporate Support	N/A	N/A	N/A	N/A	
Performance Goal 4.0 Total					4.0

Objectives 4.2 and 4.3 are not applicable to this period and therefore their weights were moved to 4.1.

Table 12. Goal 4.0 Final Letter Grade

Total Score	4.3-4.1	4.0-3.8	3.7-3.5	3.4-3.1	3.0-2.8	2.7-2.5	2.4-2.1	2.0-1.8	1.7-1.1	1.0-0.8	0.7-0
Final Grade	A+	A	A-	B+	B	B-	C+	C	C-	D	F



Goal 5 Sustain Excellence and Enhance Effectiveness of Integrated Safety, Health, and Environmental Protection

Goal Requirement:

The contractor shall sustain excellence and enhance effectiveness of integrated safety, health, and environmental protection. (The goal shall measure the Contractor’s overall success in preventing worker injury and illness; implement ISM down through and across the organization; and provide effective and efficient waste management, minimization, and pollution prevention.)

JSA Performance:

JSA has either met or exceeded expectations during this performance period. This is particularly noteworthy given the potential distractions of the contract transition and challenging FY06 budget that resulted in the inability to fill some key ESH&Q positions, and resulted in one employee going from full-time to part-time. In addition to accomplishments noted in the performance discussions below, JSA initiated several continuous improvement items to further enhance and sustain excellent integrated safety, health and environmental protection.

Objective 5.1 Provide a Work Environment that Protects Workers and the Environment

Measure 5.1.1 Requirement: The Contractor’s progress in achieving and maintaining “best-in-class” ES&H program performance as measured by the day away, restricted or transferred (DART) case rate. This rate includes: All JSA/Jefferson Laboratory staff, nuclear physics users, and contractors, official travel, and personnel paid under joint arrangements.

Performance Level Achieved:

Performance Level	Grade	Score
DART Rate less than 0.38 and implement Behavior Based Safety program in high injury rate areas such as Engineering. Implement causal analysis program consisting of training and application.	A	3.9

JSA Performance:

The Lab’s DART rate was 0.0 (0.39 including Users and all subcontractors). The performance measure for a B+ score is 0.38 for the population of staff and subcontractors with > ten employees. For that population our rate was 0.0. When including all persons at the laboratory as described in the measure above for A score our rate is 0.39. This is the impact of a single DART injury. While this is higher than the 0.38, JSA believes the following significant efforts justify a score in the A range. The Lab has been actively implementing a behavior based safety program (DuPont STOP) and trained targeted line managers and workers in the principles of that program. Currently, all line managers in the Engineering Department have been trained in the DuPont STOP Program and about ten percent of the Engineering workforce has been trained on STOP for Employees. Over 300 STOP field audits, including over 3,500 observations by Engineering Department line managers of ongoing work, have resulted in thousands of worker behavior data points. These observations provide valuable precursor data and can help focus safety efforts on areas most in need of improvement.



Training of Engineering Department employees will continue and additional STOP for Supervision training is scheduled for the Operations Department Crew Chiefs and the ISRF Department line managers in the near future.

In addition the Lab has implemented a causal analysis program with training provided by a DOE and nationally recognized expert in the field. Approximately 20 staff members from across the Lab participated in a one and a half day training. This causal analysis training has been applied to all recent notable events and the ESH&Q Reporting Manager is the lead for conducting quality causal analysis on events.

Because of the successful implementation of behavior based safety programs and Causal Analysis Training, JSA recommends a score of 3.9 on Measure 5.1.1.

Measure 5.1.2 Requirement: The Contractor’s progress in achieving and maintaining “best-in-class” ES&H program performance as measured by the total reportable case rate (TRCR). This rate includes: All JSA/Jefferson Laboratory staff, nuclear physics users, contractors, official travel, and personnel paid under joint arrangements.

Performance Level Achieved:

Performance Level	Grade	Score
TRCR less than 0.91 and implement Behavior Based Safety program in high injury rate areas such as Engineering. Implement causal analysis program consisting of training and application.	A	4.0

JSA Performance:

At 0.0 (0.39 including Users and all subcontractors), the Lab’s TRCR was less than 0.91.

As mentioned in the justification for Measure 5.1.1, the Lab has implemented a behavior based safety program and trained line managers and workers in the principles of that program. Currently, all line managers in the Engineering Department have been trained in the DuPont STOP Program and about ten percent of the Engineering workforce has been trained on STOP for Employees. Over 300 STOP field audits, including over 3,500 observations by Engineering Department line managers of ongoing work, have resulted in thousands of data points on worker behavior. These observations provide valuable precursor data and can help focus safety efforts on areas most in need of improvement. Training of Engineering Department employees will continue and additional STOP for Supervision training is scheduled for the Operations Dept. Crew Chiefs and the ISRF Department line managers in the near future.

Also mentioned in the justification for Measure 5.1.1, the Lab has implemented a causal analysis program with training provided by a nationally recognized expert in the field. Approximately 20 staff members from across the Lab participated in a one and a half day training. This causal analysis training has been applied to all recent notable events and the ESH&Q Reporting Manager is the lead for conducting quality causal analysis on events.

Because the TRCR was less than 0.91 and the Lab successfully implemented a behavior based safety program and Causal Analysis Training, JSA recommends a score of 4.0 on this measure.



Measure 5.1.3 Requirement: 100% of all jobs for which the projected collective TEDE exceeds 100 mrem per Job Specific RWP are reviewed (pre and post job) by a radiological engineer for ALARA considerations. 90% of jobs for which an RWP is generated where the collective TEDE does not exceed 100 mrem are reviewed (pre and post task) by a radiological engineer for ALARA considerations.

Performance Level Achieved:

Performance Level	Grade	Score
50% of all radiological work permits (RWP) generated in the performance period (June 1 to Sept. 30, 2006) FY06 are audited independently for accuracy. Assist local, state and federal entities in radiological advisory role or assistance/augmentation. Submit at least one best management practice on radiological safety to DOE Office of Science.	A+	4.3

JSA Performance:

During the June 1 to September 30, 2006 timeframe, three job specific RWPs were initiated, worked and terminated. RWP No. 06-J005 involving work in the Experimental Hall C high power beam dump enclosure had a pre-job estimate of 100 mrem. Net SRPD readings indicated a collective dose of approximately 10 mrem. RWP No. 06-J006 involving work in the Hall A target chamber had a prejob estimate of 20 mrem. Net SRPD readings indicated a collective dose of less than 1 mrem. RWP No. 06-J007 involving work in the Experimental Hall C high power beam dump enclosure had a pre-job estimate of 100 mrem. Net SRPD readings indicated a collective dose of approximately 24 mrem. All three (100%) of these RWPs were reviewed by a radiological engineer (either the Radiation Control Department Head or Radiation Control Department Deputy Head) for ALARA considerations before and after work was completed. These reviews are documented and provided in the evidence binder provided to the DOE Safety Specialist.

Other performance factors for this measure have also been met:

- A best management practice on radiological safety, “Use of the Radiation Budget Concept at Jefferson Lab”, was submitted to the DOE Office of Science.
- The Jefferson Lab Radiation Control Department Head and Deputy Head continued to support the U.S. Department of Transportation Maritime Administration through membership on the NS SAVANNAH Emergency Radiological Assistance Team. This subcontracted work entails being on call 24 hours a day in the event of a radiological event or emergency drill involving the NS SAVANNAH. The Jefferson Lab Radiation Control Department members are responsible for assembling onsite, and providing technical guidance for radiological conditions in the event of an emergency.
- The Jefferson Lab Deputy Radiation Control Department Head taught classes and modified radiation detection instrumentation as a part of the Virginia Science Teacher Workshop that took place from July 19-22, 2006 in Richmond, Virginia. This training event contributed to expanding the knowledge and understanding of radiation for science teachers throughout Virginia.
- The Jefferson Lab Radiation Control Head performed an assessment of the area radiation monitoring, airborne radioactivity monitoring, and contamination monitoring and control programs at Brookhaven National Laboratory during the period of September 18-21, 2006.

With all components of the top performance level met, JSA believes that performance against this measure merits a score of 4.3.



Measure 5.1.4 Requirement: Sealed Source Radioisotopes are accounted for and controlled in accordance with all relevant procedures.

Performance Level Achieved:

Performance Level	Grade	Score
100% compliance with the requirements in 10 CFR 835.1201 for sealed sources that exceed Appendix E quantities and 95% accountability for all "non-accountable" quantity radioactive sealed sources.	A+	4.3

JSA Performance:

During the July to August time period, 100% of the 13 “accountable” and 100% of the 102 “non-accountable” quantity radioactive sealed sources were inventoried by a Radiation Control Department Technologist. These sources are listed in the radioactive sealed source inventory documentation.

With all components of the top performance level met, JSA believes that performance against this measure merits a score of 4.3.

Table 13. Objective 5.1 Performance Rating Development

ELEMENT	Letter Grade	Numerical Score	Objective Weight	Total Points	Total Points
5.1 Provide Work Environment that Protects Workers and the Environment					
5.1.1 Progress in achieving/maintaining “best-in-class” ES&H program performance as measured by DART.	A	3.9	35%	1.37	
5.1.2 Progress in achieving/maintaining “best-in-class” ES&H program performance as measured by TRCR.	A	4.0	35%	1.40	
5.1.3 100% of all jobs in which TEDE exceeds 100 mrem are reviewed for ALARA considerations.	A+	4.3	20%	0.86	
5.1.4 Sealed Source Radioisotopes accounted for/controlled in accordance with all relevant procedures.	A+	4.3	10%	0.43	
Objective 5.1 Total					4.06

Objective 5.2 Provide Efficient and Effective Implementation of Integrated Safety, Health and Environment Management

Objective Requirement:

In measuring the performance of this Objective the DOE evaluator(s) shall consider the following:



- The maintenance and appropriate utilization of hazard identification, prevention, and control processes/activities; and
- An open reporting culture is maintained at the Laboratory while appropriately responding to ESH&Q incidents/emergencies
- Identification of root causes to ES&H non-compliances and implementation of corrective actions
- Extent of the Laboratory’s participation in working with other SC Laboratories or other entities/organizations outside SC in both giving and receiving external safety program audits as to advance staff skills and facilitate the sharing of lessons learned.

Measure 5.2.1 Requirement: 100% of Management Self Assessments (MSAs) (4 of 4) conducted and reviewed and accepted by ESH&Q Division (100% means that Physics, Accelerator, Administration, and EH&S will perform at least one MSA (meaning a department, group or division level can perform this MSA to meet this measure) during the 4th quarter of FY06). Independent Assessments (IAs) Completed = 100% - means two IAs (2 of 2) conducted and draft reports are in written. Meet the milestone commitments identified in memorandum from Christoph W. Leemann to James A. Turi: JSA Acceptance of SURA ESH&Q Documents, dated May 16, 2006. Conduct 15 work observations during the scheduled accelerator down (SAD) (June – July 2006).

Performance Level Achieved:

Performance Level	Grade	Score
MSAs completed during 4 th quarter of FY06 is 100% (4 of 4); and the issues management system is set up to start tracking MSA findings by 09/30/06. Ability to trend results is demonstrated by 09/30/06. IAs completed 100% (2 of 2) and joins EFCOG and become member of an EFCOG working group. Benchmark other DOE and non-DOE laboratories for best management practices by September 30, 2006. Develop plan for an external assessment of JLAB’s ISMS in 1 st quarter of FY07. Conduct 16 or more work observations during the SAD (June-July 2006).	A	4.0

JSA Performance:

During the fourth quarter of FY06 five Work Planning and Execution MSAs were completed by the line divisions, accepted by the QA/CI Department of the ESH&Q Division, and posted on the Lab’s web site. In addition, the Project Management Department completed an MSA on their Earned Value Management System. This too has been posted on the web site. These six MSAs exceed the four scheduled for the quarter.

Three IAs were undertaken as scheduled. One, looking at 10 CFR 835 Subpart L Area Monitoring, was completed using internal resources. The other two independent assessments of JSA Earned Value Management System and Environmental Management System (EMS) relied on external resources as lead assessors. An unscheduled IA, Feedback and Continuous Improvement, also using an external assessment team, was completed in the fourth quarter. These four IAs exceed the number scheduled.

Reports for all except the EMS IA have been finalized, accepted by the Laboratory Director and posted on the web site. The EMS IA was performed late in the quarter because of scheduling constraints on the ORO member of the assessment team. Recognizing that the delay in completing this assessment was



outside JSA’s control, TJSO has agreed that the Lab will not be penalized for finalizing the report in early October.

Other performance factors for this measure have also been met:

- CATS, the Lab’s issues management tool, is being used to track MSA findings. To support trending, a system of causal codes has been established and incorporated into CATS. Early in the new fiscal year this enhanced version of CATS will be rolled out with appropriate training for users.
- Jefferson Lab joined EFCOG and the Lab’s ESH&Q Reporting Manager is a member of the EFCOG Price-Anderson Working Group. Also the QA/CI Manager is a member of the EFCOG Value Management Working Group. This exceeds the expectations of this measure.
- JLab ESH&Q management conducted benchmarking on several subjects including: ISMS, accelerator radiation safety, approaches to EMS awareness refresher training, electrical safety, and LO/TO program review approaches.
- The plan for the ISMS IA scheduled for the first quarter of FY07 is complete.
- Over 100 work observations were conducted in FY06; more than 25 of these occurred during the June/July SAD; this exceeds the 16 or more specified for the top performance level.
- Both milestone commitments in the May 16, 2006, memo from Leemann to Turi, titled JSA Acceptance of SURA ESH&Q Documents were completed on schedule.

With all components of the top performance level met, JSA believes that performance against this measure merits a score of 4.0.

Measure 5.2.2 Requirement: Maintain an open reporting culture through an established employee concerns program, infusing management expectations in performance appraisals, conducting Director’s Safety Council and Worker Safety Committees, re-establishing the “stop work” authority for every employee via a policy memo from the Laboratory Director and additional training, and rewarding safety performance.

Performance Level Achieved:

Performance Level	Grade	Score
Chief Scientist and COO to hold quarterly round table with randomly selected cross-section of staff to solicit feedback. The Laboratory will develop and implement a recognition program for positive reinforcement of safety by 09/30/06.	A	4.0

JSA Performance:

The lab has benefited from informal positive reinforcement activities for several years. These activities included vouchers for a free lunch at the CEBAF Center Cafeteria supplied by the (then) Associate Director (AD) for Administration Division, and tokens (flashlights, weather radios, etc.) that were supplied by the AD, ESH&Q Division, for voluntary participation in safety minutes or recognition of a potential safety issue followed by the appropriate action.

On September 19, 2006, a certificate of appreciation and dinner voucher was supplied to an employee that identified an electrical component with design characteristics that rendered it unsuitable for the intended use.



On September 29, 2006, a draft safety award plan, developed by the AD, ESH&Q, was submitted to and approved by the COO. The plan includes a graded approach of small awards to larger cash awards. Small awards currently include recognition items such as coffee cups.

The COO held eight roundtables with broad representation of staff to solicit feedback during this period. The measure called for the COO and the Chief Scientist to hold one quarterly feedback meeting each for a total of two meetings. This measure was exceeded by the eight meetings held.

The following other related 5.2.2 actions were completed during the period; establishing an “employee hot line” for employee concerns, the reissuing of the Lab ESH&Q Policy including stop work, quality, and ES&H aspects by July 15, 2006, and active engagement in safety issues by the Workers Safety Committee. JSA believes that a score of 4.0 is appropriate for this measure.

Table 14. Objective 5.2 Performance Rating Development

ELEMENT	Letter Grade	Numerical Score	Objective Weight	Total Points	Total Points
5.2 Provide Efficient and Effective Implementation of Integrated Safety, Health and Environment Management					
5.2.1 100% of MSAs and IAs conducted, completed, reviewed, and accepted by ESH&Q Division.	A	4.0	80%	3.20	
5.2.2 Maintain an open reporting culture through an established employee concerns program.	A	4.0	20%	0.80	
Objective 5.2 Total					4.0

Objective 5.3 Provide Efficient and Effective Waste Management, Minimization, and Pollution Prevention

Measure 5.3.1: Number of environmental incidents resulting in administrative or technical permit violations and EMS Action Plan implementation: 1 administrative, 0 technical permit violations. Complete remaining EMS Action Plan items scheduled for completion by September 30, 2006. Apply causal analysis principals to environmental incidents if one occurs in this period.

Note: Administrative and technical violations are those issued by the regulatory agency.

Performance Level Achieved:

Performance Level	Grade	Score
≤ 2 administrative, 1 technical permit violations and complete all but one of the EMS 2005 Action Plan items by CATS due dates.	B	3.0



JSA Performance:

The targets set for this measure “Number of environmental incidents resulting in administrative or technical violations and EMS Action Plan implementation...and applying causal analysis principles to environmental incidents if one occurs in this period” were in part met during this reporting period.

There was an environmental permit exceedence on September 29, for an insignificant discharge (of low pH water) over a short period of time, regarding the Lab’s Hampton Roads Sanitation District (HRSD) industrial wastewater discharge. There was no harm to either personnel or the environment from this minor incident. However, this pH exceedence resulted in HRSD issuing DOE a Notice of Violation, received 12/01/06.

ESH&Q Division staff along with the members of the Environmental Management System (EMS) Committee and line management have been working to address the December 2005 EMS review issues. Jefferson Lab is addressing all identified EMS issues to the extent possible. One noted situation built into practicing and implementing the EMS is that as individual corrective actions to address issues are addressed other continual improvement items are being identified. Through implementing these improvement items the Lab has gotten more experience to better integrate EMS principles and programs into existing Lab procedures and practices.

Note that though one item of 22 correction actions due by September 30 had not been completed, the responsible manager was in the process of addressing that issue from other vantage points that were not exactly noted as such in CATS.

Though the Lab did not submit a Virginia Department of Environmental Quality or Environmental Protection Agency applications for environmental program recognition, the Lab did take other opportunities to gain recognition for practicing environmental stewardship. One was that the Lab nominated its environmental practices for its new CEBAF Center Phase I Addition for a Pollution Prevention (P2) Award from the HRSD. Though an actual P2 award was not received, HRSD acknowledged the Lab’s P2 and other sustainable practices at its annual awards recognition celebration.

Internally identified corrective actions, from the EMS Committee and others involved with EMS implementation, were added to CATS this year. This was done to ensure that the applicable responsible manager remains aware of their commitment to address the issue. CATS also keeps responsible managers updated as to the status of each designated action. Almost all were actions identified necessary to address portions of the 2005 EMS Action Plan that were not specifically in CATS but needed attention. There are other ongoing EMS implementation actions that are not deemed applicable for entry into CATS that are also being addressed by involved staff.

The Lab has an active used oil collection program that provides an appropriate building where oil is collected and stored until it can be recycled. The total quantity of oil recycled is collected, but no formal goal to improve the Lab’s use of this program is yet established for FY07.

The remaining action items scheduled for completion between June 1 and September 30 were completed except for the one noted above.

A causal analysis, with a graded approach, was or is being performed on all environmental incidences that have taken place since June 1, 2006.



In conclusion, with most of the top or equivalent performance components met, many of the others met, and that the EMS was formally designated by the DOE as complete during the fiscal year, JSA believes that performance against this measure merits no less than a score of 3.0.

Table 15. Objective 5.3 Performance Rating Development

ELEMENT	Letter Grade	Numerical Score	Objective Weight	Total Points	Total Points
5.3 Provide Efficient and Effective Waste Management, Minimization, and Pollution Prevention					
5.3.1 # of environmental incidents resulting in admin or technical permit violations and EMS Action Plan implementation.	B	3.0	100%	3.0	
Objective 5.3 Total					3.0

Table 16. Goal 5.0 Performance Rating Development

ELEMENT	Letter Grade	Numerical Score	Objective Weight	Total Points	Total Points
5.0 Sustain Excellence and Enhance Effectiveness of Integrated Safety, Health, and Environmental Protection					
5.1 Provide a Work Environment that Protects Workers and the Environment	A	4.06	45%	1.83	
5.2 Provide Efficient and Effective Implementation of Integrated Safety, Health and Environment Management	A	4.0	45%	1.80	
5.3 Provide Efficient and Effective Waste Management, Minimization, and Pollution Prevention	B	3.0	10%	0.30	
Performance Goal 5.0 Total					3.93

Table 17. Goal 5.0 Final Letter Grade

Total Score	4.3-4.1	4.0-3.8	3.7-3.5	3.4-3.1	3.0-2.8	2.7-2.5	2.4-2.1	2.0-1.8	1.7-1.1	1.0-0.8	0.7-0
Final Grade	A+	A	A-	B+	B	B-	C+	C	C-	D	F



Goal 6.0 Deliver Efficient, Effective, and Responsive Business Systems and Resources that Enable the Successful Achievement of the Laboratory Mission(s)

Goal Requirement:

The Contractor sustains and enhances core business systems that provide efficient and effective support to Laboratory programs and its mission(s).

JSA Performance:

In this short four month period, JSA made great strides to improve upon the Lab’s business systems by implementing several proposal initiatives including the development of a Chief Operating Office (COO) position with newly developed or enhanced divisions that report directly to the COO such as the CFO, Project Management, CIO and IT Division, Engineering, and Facilities Management and Logistics. Meaningful examples of key activities in this area include: development and implementation of a project-based WBS and completion of preparation activities to develop an Annual Work Plan in FY07; the institution of a dedicated Quality and Continuous Improvement department led by an experienced manager that specializes in value engineering; the development of a Quality Improvement Plan; and institution of an IT Steering Committee to help forecast the future Information Technology Architecture needs to support the mission of the Laboratory.

Objective 6.1 Provide an Efficient, Effective, and Responsive Financial Management System(s)

Measure 6.1.1 Requirement: Effectively track costs against budgets to ensure cost performance.

Performance Level Achieved:

Performance Level	Grade	Score
In addition to meeting expectations (B+), adhoc reports requested by the customer are responded to in a timely manner. Cost variance is less than or equal to 5% for organizational budgets and G&A and fringe pools.	A	4.0

JSA Performance:

The CFO organization effectively tracked costs against budgets to ensure cost performance during the review period. Costs and commitments did not exceed available funding in the contract at the cost level of the budget and reporting code in the financial plan at any point during the fiscal year. The G&A (Indirect) rate was estimated at 36%, with the actual rate coming in at 35.52%. The fringe rate was estimated at 50.5%, with a resulting actual rate of 49.64%. The budget staff developed monthly Estimates at Completion (EACs) to track actual costs against estimated budgets. Actual costs for the Lab were 5% below the Estimate at Completion, although not all organizational budget to actual variances fell within the 5% range. These results demonstrate accurate estimation and efficient financial management and are less than or equal to the 5% target for the higher level rating. Regular accounting and budget reports were accurate, timely and complete in accordance with requirements for key activities/deliverables, as evidenced by the fact that no rework was required on these reports. Ad hoc reports prepared during the review period included the Estimated FY2006 Cyber Security Costs, the Continuing Resolution Impact Summary, Commonwealth of Virginia Key Agency Objectives, and FEL expenditure status report.



Measure 6.1.2 Requirement: Demonstrate an effective financial management system through accurate, timely and complete financial reports to DOE, external reviews, internal and external audits, and self-assessments.

Performance Level Achieved:

Performance Level	Grade	Score
In addition to meeting B+ expectations, significant financial management process improvement or best practice implemented as a result of benchmarking with outside expertise.	A+	4.1

JSA Performance:

The CFO organization continued to demonstrate an effective financial management system during the period under review. Accurate, timely and complete financial reports were provided to DOE in accordance with Departmental requirements for key activities/deliverables including accelerated financial statement reporting and other financial data calls, as evidenced by the fact that there was no rework required on any submittals. Jefferson Lab met all transition deadlines for finance as part of the transition to the new JSA contract. The CFO organization set up the books for JSA including converting all open Purchase Order items from SURA and bringing over year-to-date earnings information for employees as a successor employer which allowed for FICA and State Unemployment savings to the Lab. During the transition, the finance personnel also worked with DOE to correct millions of dollars of incorrect uncoded balances in the ORO BEARS system. There were no material/major findings as defined in DOE Order 413.1A Attachment 2 and no unallowable cost findings from internal/external audits/reviews. All previous findings/recommendations have been addressed and implemented as agreed upon. No repeat findings were identified in internal or external reviews, as there have been no findings in recent years. All recommendations for improvement resulted in action plans to address the improvements, with due dates assigned, and all action plans were completed in a timely manner. The key activity during this reporting period was the setup of a new Work Breakdown Structure (WBS) and a new Lab Organization. The WBS supports the Lab’s integrated performance-based management approach, which is industry’s best practice in project management. Budget staff worked with their customers to assure the new structure would meet their operational needs from the financial planning and implementation perspective. 90% of all Lab staff participated in the WBS training given in late September and early October and all CFO staff was trained and available to help Lab personnel implement the new WBS.

Measure 6.1.3 Requirement: Financial attestations accurately reflect the status of internal controls and are provided in a timely manner.

Performance Level Achieved:

Performance Level	Grade	Score
In addition to meeting the requirements for B+, meet all requirements for OMB Circular A-123 Appendix A within DOE timelines identified.	A	4.0



JSA Performance:

The CFO organization continued to maintain a strong foundation of control and accountability. No reportable financial management internal control weaknesses were identified in the annual financial statement audit. Financial managers and staff in the CFO organization review their processes regularly to look for efficiencies and to validate internal controls. In consultation with DOE, the Cost Accounting Standards (CAS) Disclosure Statement was updated to reflect a special Large Construction Project rate to be used by the 12 GeV Project. The Disclosure Statement clearly describes Jefferson Lab’s actual cost accounting practices. All DOE deliverables for OMB Circular A-123 Appendix A were completed in a timely manner, including final testing of internal controls for high risk areas. Completion of these deliverables was accomplished in addition to the transition to a new contract and in a year when Lab budgets had been reduced by 8%. Testing related to OMB Circular A-123 revealed no material internal control weaknesses, therefore financial attestations accurately reflect the status of internal controls.

Table 18. Objective 6.1 Performance Rating Development

ELEMENT	Letter Grade	Numerical Score	Objective Weight	Total Points	Total Points
6.1 Provide an Efficient, Effective, and Responsive Financial Management System					
6.1.1 Effectively track costs against budgets to ensure cost performance.	A	4.0	35%	1.40	
6.1.2 Demonstrate effective financial management system through accurate, timely and complete financial reports.	A+	4.1	35%	1.44	
6.1.3 Financial attestations accurately reflect status of internal controls and are provided in a timely manner.	A	4.0	30%	1.20	
Objective 6.1 Total					4.04

Objective 6.2 Provide an Efficient, Effective, and Responsive Acquisition and Property Management System(s)

Measure 6.2.1: Demonstrate efficacy of the acquisition system through outstanding results on annual performance measures (Procurement Balanced Scorecard) that cover critical aspects of the procurement process.

Additional credit for exceptional performance in areas outside the balanced scorecard purview may be given (i.e., system enhancements, improvements in procedures and practices, implementation of new programs, etc.)

Note: Measure not applicable to this period per PEMP.



Measure 6.2.2 Requirement: Effectiveness of JSA’s Small Business Program Outreach- Small Business Program Goal Achievement.

Performance Level Achieved:

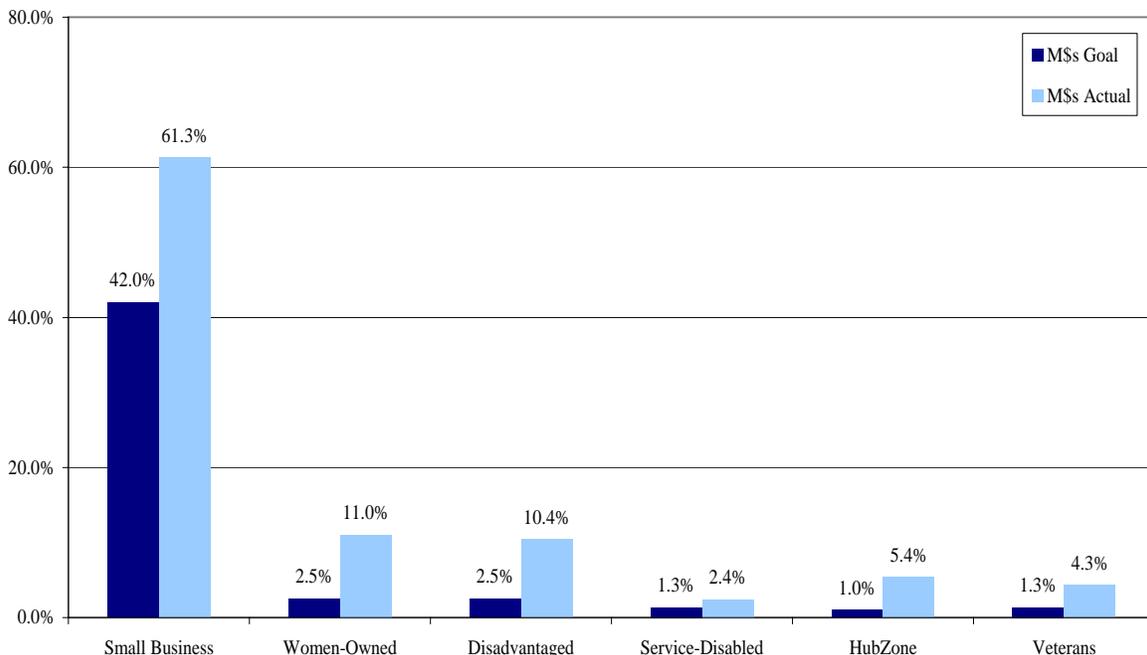
Performance Level	Grade	Score
Exceed all Small Business Goals established in JSA’s Annual Small Business Plan and identify at least two Protégé mentor firms by 9/30/2006 that are viable candidates for Protégé Mentor agreements.	A+	4.2

JSA Performance:

JSA has exceeded all six FY06 Small Business Program Goals as provided in the chart below. Over \$9.8M was subcontracted or procured out to small business during this period, surpassing our targeted procurement dollars by over \$1.5M.

In addition, three companies were identified as candidates for the Protégé Mentor Program and submitted to TJSO ahead of schedule on September 18, 2006. The candidates offer a wide spread of services and small business types and include: Sierra Lobo, Inc. (Small Disadvantaged Business) for Engineering & Technical Services; JLWS Enterprises, Inc. (Disadvantaged, Service-Disabled, Veteran-Owned, and HUBZone Small Business) for Office Supplies/Remanufactured Toner Cartridges; and Environmental Planning and NEPA (Woman-Owned Small Business) for Environmental Consulting Services.

The Small Business Program Manager (Danny Lloyd) is a member of the DOE Integrated Contractor's Purchasing Team, a member of the Executive Board of Directors for the Virginia Minority Supplier Development Council (VMSDC), and was selected as a representative on the DOE Headquarters Team to assist in the drafting of guidance and procedures for the proper issuance of Small Business Plans for DOE. Mr. Lloyd was also a co-recipient of the VMSDC “Chairman's Challenge Award” for 2006. The Chairman's Challenge Award is based on extraordinary service to the Board of Directors and to the VMSDC network. In addition, as part of JSA’s Small Business Outreach efforts, the Small Business Program Manager attended and operated a JSA booth at the annual DOE Small Business Conference.





Measure 6.2.3 Requirement: Demonstrate efficacy of the property management system through outstanding results on annual performance measures that cover critical aspects of JLab’s personal property management.

Note: Measure not applicable to this period per PEMP.

Table 19. Objective 6.2 Performance Rating Development

ELEMENT	Letter Grade	Numerical Score	Objective Weight	Total Points	Total Points
6.2 Provide an Efficient, and Responsive Acquisition and Property Management System					
6.2.1 Demo efficacy of acquisition system by outstanding results on annual Procurement Balanced Scorecard.	N/A	N/A	N/A	N/A	
6.2.2 Effectiveness of JSA’s Small Business Program Outreach/Goal Achievement.	A+	4.2	100%	4.2	
6.2.3 Demonstrate efficacy of property management system through outstanding results on annual performance measures.	N/A	N/A	N/A	N/A	
Objective 6.2 Total					4.2

Objective 6.3 Provide an Efficient, Effective & Responsive Human Resources Management System

Measure 6.3.1 Requirement: Balanced Score Card Results Based on the Following:

A. Measure 1-Diversity- Protected Class Representation: Representation of protected classes (PC) within each EEO-1 category at the end of the fiscal year compared to the beginning of the fiscal year (adjusted for voluntary separations).

Scoring:

$$\text{PC Assessment Factor} = \frac{\% \text{ of PC to total workforce at the end of FY within each EEO-1 category}}{\% \text{ of PC to total workforce at the beginning of FY within each EEO-1 category}}$$

where:

Total Workforce = Total number of regular and term employees (excludes casuals, temps, and students)

EEO-1 Category = Occupational job categories as defined by EEOC (N=10)

Protected Classes (PC) = Women and minorities as defined by EEOC (N = 20): 2PC * 10 EEO-1 CATEGORIES

Note: EEO-1 categories where Utilization percentages meet or exceed 80% of availability percentages are determined to be fully in compliance with this metric.



B. Measure 2- Benefits - Premium Increases vs. the Market: Three-year rolling average of annual increases in medical insurance premium cost relative to market.

Scoring: Difference in the laboratory’s percent increase in medical insurance premium compared to the market trend percent increase in medical insurance premiums averaged over three years.

C. Measure 3- Compensation - Alignment with the Market: Achieve compensation positions aligned with market practices to reflect the Laboratory’s mid-market compensation philosophy.

Scoring:

$$\text{Compensation Factor} = \frac{\sum (\text{weighted average salary within each classification})}{\sum (\text{weighted salary range midpoint* within each classification})}$$

*Assumes salary range midpoints reflect mid-market position

D. Measure 4- Retention of Talent- Attrition rate of Top Performers.

Scoring: Percentage of top performers (employees who receive the top two performance ratings) who voluntarily separate from the Laboratory

Note: Excludes involuntary terminations due to funding issues, restructuring or contractor turnover. Excludes voluntary terminations due to retirement, or participation in a voluntary separation program or early retirement program.

E. Measure 5- Internal Business Practices- Annual Review of Policies/Procedures.

Scoring: Number of policies/processes reviewed for the fourth quarter of Fiscal Year 2006.

F. Measure 6 – Timely reporting to DOE

Reports:

- Baseline Employment Data (7/15)
- Report of Contractor Employment (7/15)
- Postretirement Benefits Other Than Pensions (June 14, 2006)
- Any Additional Reporting required by DOE

Scoring: Reports submitted by due date.

MEASURE	TARGET
Diversity	
1. Protected class representation	85%
Benefits	
2. Premium increases vs. the market	+2%
Compensation	
3. Alignment with market	±3.0%
Retention of Talent	
4. Attrition rate of top performers	2.5%
Internal Business Process	
5. 4 th quarter review of policies/procedures	4
Timely Reporting	
6. 4 th quarter DOE required reports submitted by due date	100%



Note: Jefferson Laboratory may be given additional credit for exceptional performance in areas outside the balanced scorecard purview (i.e., system enhancements, improvements in procedures practices, implementation of new programs).

Performance Level Achieved:

Performance Level	Grade	Score
6 of 6 BSC Measures Meet Target	A	4.0

JSA Performance:

- A. Measure 1 – Diversity – Protected Class Representation
 - a. Met objective score of 85%
- B. Measure 2- Benefits – Premium Increases vs. the Market
 - a. Rolling Three Year Average = -8.4%
 - b. Exceeded objective of 2%
- C. Measure 3- Compensation- Alignment with the Market
 - a. Met target range
 - b. The compensation factor was 99.4% (-0.6%) which was well within the target range of $\pm 3.0\%$.
- D. Measure 4 – Retention of Talent – Attrition of Top Performers
 - a. Number of Employees that received the top two performance ratings that voluntarily separated from the Lab = 5
 - b. Attrition of Top Performers is 0.83%
 - c. Expected Goal = 2.5%
 - d. Based on figures from the latest merit increase program, we are exceeding our target goal of retaining our top performers
- E. Measure 5 – Internal Business Practices – Annual Review of Policies/Procedures
 - a. Met objective of reviewing/changing 4 internal policies/procedures to include:
 - i. Exit Interview Process
 - ii. New Hire Orientation
 - iii. Internal Recruiting Procedure
 - iv. Merit Increase Program – COMPA Ratio
- F. Measure 6 – Timely Reporting to DOE
 - a. Met objective for Quarterly Reporting to DOE
 - i. The following quarterly reports were completed and submitted to DOE by their deadline:
 1. Report of Contractor Employment – submitted July 14, 2006
 2. Baseline Employment Data Report – submitted July 14, 2006
 3. EEOC Report – submitted electronically – September 30, 2006
 4. Post Retirement Benefits Other Than Pension (PRB) report- submitted June 15, 2006



Measure 6.3.2 Requirement: Completion of Outstanding Contract Activities - Timely reporting to DOE on:

- Appendix A Negotiations finalized (H.4(1))
- Benefits Value Study submitted to DOE (H.18(5))
- Compensation Plan finalized (H.18(6))
- Compensation Increase Plan Submitted (H.18(7))
- Submit for Certification of Compensation System (H.18(7))

GOAL	TARGET
Appendix A	9/30/2006
Benefits Value Study	7/28/2006
Compensation Plan	8/31/2006
Compensation Increase Plan	9/30/2006
Request Certification of Compensation System	8/21/2006

Performance Level Achieved:

Performance Level	Grade	Score
5 of 5 Measures Meet Target	B+	3.1

JSA Performance: Our active cooperation with DOE on these milestones is evident of our performance on these milestones and warrants the grade above.

Appendix A – Draft submitted on 07/28/06. JSA actively worked with TJSO and ORO over the next two months, including coordination and support of two ORO site visits for negotiation, resulting in a revised submittal on 09/30/06. Plan was finalized on 10/05/06.

Benefits Valuation Study – JSA submitted our original comparator organizations to DOE on 04/25/06. On 05/03/06 DOE requested additional information on the comparator organizations which JSA provided on 05/04/06. JSA requested an extension of this milestone to eight weeks after the comparator organizations were approved by DOE on 05/05/06. DOE approved this extension on 05/19/06. On 05/22/06, JSA provided additional information on the comparator organizations as requested by DOE. DOE approved the comparator organization on 05/22/06. JSA completed and submitted the Benefits Valuation Study eight weeks later.

Compensation Plan – Preliminary draft submitted 05/25/06. ORO comments were provided on 06/26/06. During negotiation of Appendix A, ORO agreed to provide further guidance on elements that needed to be incorporated into the Compensation Plan. These were provided on 09/26/06 with a requested due date for an updated plan by 10/27/06. JSA modified the plan accordingly and resubmitted to DOE on 10/24/06.

Compensation Increase Plan – Submitted to DOE on 08/22/06 and approved by DOE on 09/26/06.

Request for Certification of Compensation System – A request for certification of JSA’s compensation system can not be made until the items above are finalized and approved. During this period we did engage in discussion with ORO and TJSO regarding this certification and requested additional information from ORO regarding the process, which we are waiting to receive.



Table 20. Objective 6.3 Performance Rating Development

ELEMENT	Letter Grade	Numerical Score	Objective Weight	Total Points	Total Points
6.3 Provide an Efficient, Effective, and Responsive Human Resources Management System					
6.3.1 Balanced Scorecard Results based on diversity/benefits/comp/retention/business process/timely reporting.	A	4.0	90%	3.6	
6.3.2 Completion of outstanding contract activities and timely reporting to DOE.	B+	3.1	10%	0.31	
Objective 6.3 Total					3.91

Objective 6.4 Provide Efficient, Effective, and Responsive Management Systems for Internal Audit and Oversight; Quality; Information Management; and Other Administrative Support Services as Appropriate

Measure 6.4.1 Requirement: Oversight Through Internal Audit - Internal audits completed in accordance with annual audit plan.

Performance Level Achieved:

Performance Level	Grade	Score
Complete all audits in accordance with annual audit plan and provides at least one advisory service agreement.	A-	3.6

JSA Performance:

All audits completed in accordance with annual audit plan, excluding Internal Audit no. 06-03, Transaction Testing FY2006, which is a FY2007 PEMP. Close-out conferences completed and the issuance of Preliminary Results provided to JLab Management on or before September 30, 2006. In addition to completion of the annual audit plan, substantive audit effort was provided for the contract required Internal Audit Implementation Design (IAID). The IAID was completed and submitted to the TJSO on June 7, 2006.

Measure 6.4.2 Requirement: Oversight Through Internal Audit - Consistent with Professional Auditing Standards and DOE contract requirements receive an overall satisfactory rating from an external peer review by qualified persons from other DOE contractor internal audit organizations every five years.

Note: Measure not applicable to this period per PEMP.

Measure 6.4.3 Requirement: Develop a Quality Improvement Plan



Performance Level Achieved:

Performance Level	Grade	Score
Develop a JSA Laboratory Director approved Quality Improvement Plan (QIP) by 9/30/06 that contains the following elements: quality improvement objectives and measures, process improvement/efficiency methodology (including Value Methodology), AQIS implementation, work activity and process quality enhancement, issues management and closure quality, procurement quality, work closeout quality objectives and methodology, and documentation and recordkeeping supporting the quality program objectives. QA and continuous improvement manager hired and fully integrated into the organization.	B+	3.4

JSA Performance:

JSA believes that performance against this measure merits a score of 3.5 or higher based on the following:

For performance score of 3.5 – 4.3:

- JSA **completed** sessions with Accelerator, Engineering, Physics, Procurement, ESH&Q, and Facilities Management for development of both the QIP and QAP. JSA should receive partial credit for completing this part of the performance measure.
- JSA **did not** complete the QIP by 9/1/06.
- JSA **did not** complete and submit the QAP for submittal to TJSO by 9/30/06.

For performance score of 3.1 – 3.4 JSA **completed** the following:

- Laboratory Director approved Quality Improvement Plan by 9/30/06 including all the element objectives as stated in the performance measure.
- JSA completed and hired a full time QA and Continuous Improvement Manager who was quickly integrated into the organization.

Measure 6.4.4 Requirement: Deliver an integrated efficient and effective Information Technology Architecture that supports the mission of the Laboratory and benchmarks favorably with respect with other DOE laboratories, research universities and commercial industry best practices.

Performance Level Achieved:

Performance Level	Grade	Score
IT Steering Committee is fully operational by September 1, 2006 and a charter has been developed.	A	4.0

JSA Performance:

The IT Steering Committee held its first meeting on August 30, 2006. There are 15 participants from across the Lab plus CSC and W&M participants and a JLab Site Office observer. The charter has been accepted by the Committee and the CIO. The Committee is currently meeting monthly.

The Committee is addressing several areas including: the aggressive cyber security upgrade plan put in place following the DOE SC-OA Site Assistance Visit in mid September, preparations for the new IT



Division put in place October 1, 2006, i.e. immediately following this evaluation period; user satisfaction and requests for IT services; and the development of MIS applications including JLab Insight.

In addition, IT and ESH&Q worked together for development and implementation of IT solutions related to the ESH&Q organization. The activities completed in this area were:

- Conducted information and analysis Webex with CSC to investigate AQIS solutions.
- Assigned two individuals as liaisons for interfacing needs relative to Applied-JLab Insight solutions. ESH&Q needs were discussed with JLab IT department for Insight expectations.

Measure 6.4.5 Requirement: The Laboratory’s Information Technology favorably benchmarks with other DOE laboratories, research universities and commercial industry best practices.

Note: Measure not applicable to this period per PEMP.

Table 21. Objective 6.4 Performance Rating Development

ELEMENT	Letter Grade	Numerical Score	Objective Weight	Total Points	Total Points
6.4 Provide Efficient/Effective/ Responsive Management Systems for Internal Audit, Quality, Info Management, and Other Admin Support					
6.4.1 Oversight through Internal Audit. Audits are completed in accordance with annual audit plan.	A-	3.6	35%	1.26	
6.4.2 Receive satisfactory rating from external peer review by persons from other DOE orgs every 5 years.	N/A	N/A	N/A	N/A	
6.4.3 Develop a Quality Improvement Plan.	B+	3.4	30%	1.02	
6.4.4 Deliver an integrated Information Technology Architecture that supports the mission of the Lab.	A	4.0	35%	1.40	
6.4.5 Info Tech favorably benchmarks with other DOE labs/research univ/commercial industry best practices.	N/A	N/A	N/A	N/A	
Objective 6.4 Total					3.68



Objective 6.5 Demonstrate Effective Transfer of Technology and Commercialization of Intellectual Assets

Objective Requirement: The effectiveness of Technology Transfer activities at Jefferson Lab can be measured by three specific measures listed below. Note: Jefferson Lab may be given additional credit (points) for exceptional performance in areas outside the performance measures (i.e., system enhancements, improvements in procedures practices, implementation of new program, etc.).

In addition to the performance listed in the Measures below, here are some additional accomplishments:

- New Work For Other/CRADA projects were negotiated including: Linde for cryogenics R&D; Muons, Inc. for advanced accelerator design with CASA; and AES, Inc. for continued development of the THz User Lab.
- Biomedical Photonics Consortium expanded to include Yale and Bionetics, Inc. in preparation of final NIH proposal due in December 2006.

Measure 6.5.1 Requirement: The proper stewardship of intellectual assets and Laboratory owned or originated technology as measured by Invention Disclosures and Patent Applications. Intellectual Property Stewardship as indicated by the annual number of Invention Disclosures and/or Patents awarded.

Performance Level Achieved:

Performance Level	Grade	Score
Number of Invention Disclosures Greater than or Equal to 9 and Number of Patents Awarded Greater than or Equal to 4	A	4.0

JSA Performance:

The number of Invention Disclosures in this period was four and the number of Patents awarded this period was two. Please note that the goals listed in the Performance Level are annual goals as confirmed in the final approved FY07 PEMP. Therefore if the goals listed in the highest performance level (9 Invention Disclosures and 4 Patents Awarded) are modified for the four month period they would be 3 and 1 respectively. Therefore, we have rated ourselves in this range accordingly.

Measure 6.5.2 Requirement: The market impacts created/generated as a result of technology transfer and deployment activities as measured by licenses and/or options agreements executed.

Performance Level Achieved:

Performance Level	Grade	Score
Greater than or equal to 2 licenses awarded or greater than or equal to 2 option agreements executed.	B+	3.4



JSA Performance:

A License of Rights Agreement with Hampton University was developed, effective September 2006. This technology is for use of JSA's WEB based on-line catalog system entitled, "Electronic Stockroom and Catalog". In addition, we received income from two licenses during this period. Dillon Technologies produced royalty income of \$31,536.15 and Rayvisions generated \$24.34 in royalties. Please note that the goals listed in the Performance Level are annual goals as confirmed in the final approved FY07 PEMP. Therefore, if the goals listed in the B+ performance level (2 license agreements or 2 option agreements) are modified for the four month period they would be 1 license agreement or 1 option agreement. Therefore, we have rated ourselves in this range accordingly.

Measure 6.5.3 Requirement: Contributions to the transfer of Laboratory originated knowledge and technology as measured by customer assessments.

Points will be awarded based on the customer's overall adjectival rating of the system.

Performance Level Achieved:

Performance Level	Grade	Score
N/A – see below.		

JSA Performance:

No annual customer survey was conducted in FY06 and therefore this Measure can not be graded. Please note that we are currently modifying our customer feedback process to facilitate collection of customer feedback throughout the year versus an end of the year survey. This will help reporting on this Measure in FY07.

Table 22. Objective 6.5 Performance Rating Development

ELEMENT	Letter Grade	Numerical Score	Objective Weight	Total Points	Total Points
6.5 Demonstrate Effective Transfer of Technology and Commercialization of Intellectual Assets					
6.5.1 Intellectual Property Stewardship as indicated by annual number of Invention Disclosure/Patents awarded.	A	4.0	50%	2.0	
6.5.2 The market impacts created/generated as a result of technology transfer and deployment activities.	B+	3.4	50%	1.7	
6.5.3 Contributions to transfer of Lab originated knowledge/technology as measured by customer assessments.	N/A	N/A	N/A	N/A	
Objective 6.5 Total					3.7



Table 23. Goal 6.0 Performance Rating Development

ELEMENT	Letter Grade	Numerical Score	Objective Weight	Total Points	Total Points
6.0 Deliver Efficient, Effective, and Responsive Business Systems and Resources that Enable the Successful Achievement of the Laboratory Mission(s)					
6.1 Provide an Efficient, Effective, and Responsive Financial Management System(s)	A	4.04	25%	1.01	
6.2 Provide an Efficient, Effective, and Responsive Acquisition and Property Management System(s)	A+	4.2	25%	1.05	
6.3 Provide an Efficient, Effective, and Responsive Human Resources Management System	A	3.91	20%	0.78	
6.4 Provide Efficient, Effective, and Responsive Mgt Systems for Internal Audit/Oversight; Quality; Info Mgt; and Other Admin Support Services	A-	3.68	15%	0.55	
6.5 Demonstrate Effective Transfer of Technology and Commercialization of Intellectual Assets	A-	3.7	15%	0.56	
Performance Goal 6.0 Total					3.95

Table 24. Goal 6.0 Final Letter Grade

Total Score	4.3-4.1	4.0-3.8	3.7-3.5	3.4-3.1	3.0-2.8	2.7-2.5	2.4-2.1	2.0-1.8	1.7-1.1	1.0-0.8	0.7-0
Final Grade	A+	A	A-	B+	B	B-	C+	C	C-	D	F

Goal 7.0 Sustain Excellence in Operating, Maintaining, and Renewing the Facility and Infrastructure Portfolio to Meet Laboratory Needs

Goal Requirement:

The Contractor provides appropriate planning for, construction and management of Laboratory facilities and infrastructures required to efficiently and effectively carry out current and future S&T programs.

JSA Performance:

With completion and occupancy of CEBAF Center Addition which replaced about 65% of total aging trailers the Asset Condition Index (ACI) increased from 0.92 in FY05 to 0.96 in FY06. Facility maintenance continues at above the 2% of Replacement Plant Value (RPV). The Jefferson Lab FY06 Ten Year Site Plan was successfully updated to be in line with the current business plan. While no major



projects were completed since 1 June, projects completed earlier in the fiscal year were completed at a high performance level.

Objective 7.1 Manage Facilities and Infrastructure in an Efficient and Effective Manner that Optimizes Usage and Minimizes Life Cycle Costs

Measure 7.1.1 Requirement: Asset Condition Index (ACI):

ACI = 1 minus the Facility Condition Index (FCI). FCI is the ratio of Deferred Maintenance to Replacement Plant Value. The FCI is derived from data in FIMS.

Performance Level Achieved:

Performance Level	Grade	Score
Greater or equal to 95%	B+	3.4

JSA Performance:

FIMS Category	Deferred Maintenance (DM)	Replacement Plant Value (RPV)	FCI	ACI
Buildings	\$4,574,173	\$116,955,500	3.91	96.09
Real Property Trailers	\$1,916,200	\$1,961,322	97.70	2.30
OSF	\$2,490,921	\$126,457,191	1.97	98.03
Total	\$8,981,294	\$245,374,013	3.66	96.34%

Completion of CEBAF Center Addition increased building RPV by ~ \$12M and decreased Real Property Trailer RPV by ~ \$3M. Construction escalation increased overall Building RPV by ~ \$8M and Other Structures and facilities (OSF) by ~\$6M. Real property trailers deferred maintenance will be eliminated as trailers are eliminated based on completion of future scheduled projects. Facility Condition Assessments updated costs for deferred maintenance projects not yet completed.

Measure 7.1.2 Requirement: Extent Contractor validates accuracy of data in the Facilities Information Management System (FIMS).

Note: Measure not applicable to this period per PEMP.

Measure 7.1.3 Requirement: The efficiency and effectiveness of contractor efforts for sustainment, recapitalization, and acquisition of required facilities and infrastructure to support laboratory programs through the performance of maintenance by achieving MII of at least 2%.

Performance Level Achieved:

Performance Level	Grade	Score
MII = 2% and the contractor has demonstrated that maintenance activities, recapitalization and acquisition of facilities and infrastructure to support laboratory programs have been performed efficiently.	B+	3.4



JSA Performance:

Actual Maintenance for FY06 was \$2,810,870. FY06 RPV is \$120,171,142

$$\begin{aligned}
 \text{MII} &= \text{Actual Maintenance/RPV} \\
 &= \$2,810,870 / \$120,171,142 \\
 &= 2.34\%
 \end{aligned}$$

Maintenance activities were closely coordinated with Accelerator and Physics divisions so as not to negatively impact the experimental or SRF production schedules. Consolidation of office space allowed elimination of more aging trailers than originally planned. Roofing projects for the Test Lab and the VARC buildings were completed extending their life. The lead storage building was completed providing a space to store and environmentally manage site wide lead.

Table 25. Objective 7.1 Performance Rating Development

ELEMENT	Letter Grade	Numerical Score	Objective Weight	Total Points	Total Points
7.1 Manage Facilities and Infrastructure in an Efficient and Effective Manner that Optimizes Usage and Minimizes Life Cycle Costs					
7.1.1 Asset Condition Index.	B+	3.4	50%	1.7	
7.1.2 Validates accuracy of data in the Facilities Information Management System.	N/A	N/A	N/A	N/A	
7.1.3 Sustainment/recapitalization/acquisition of required facilities/ infrastructure to support Lab programs.	B+	3.4	50%	1.7	
Objective 7.1 Total					3.40

Objective 7.2 Provide Planning for and Acquire the Facilities and Infrastructure Required to support Future Laboratory Programs

Measure 7.2.1 Requirement: The Ten Year Site Plan is recognized by funding entities as providing a sound strategy for acquisition of required facilities and infrastructure to support future laboratory programs.

Performance Level Achieved:

Performance Level	Grade	Score
The contractor takes extra measures, such as drawing on outside expertise, to assure that the strategy is appropriately developed, reviewed, updated, in line with the Laboratory Business Plan, and utilized as a Laboratory management document in a timely fashion.	A	3.8



JSA Performance:

Ten Year Site Plan development was coordinated with individual divisions and used in the development of the Business Plan and Operations Efficiency Review. Options were presented for budget baseline as well as defined facility requirements above baseline.

Measure 7.2.2 Requirement: Cost Performance on projects greater than or equal to \$100K.

Maintain level of construction control to limit change orders and cost overruns to only those which bring added value to the project or are appropriate to produce the desired end product. Performance level will be calculated by taking the average of initial bid (contracted) amounts compared to the final contract amounts considering all applicable funding increases for all appropriate contracts closed out during the rating period. Increases considered not applicable are those whose root cause is:

- Post-design programmatic change by user (physical or schedule)
- New technology deemed a value-added inclusion (post-award)
- Value engineering proposals accepted (both additive and deductive)

Performance Level Achieved:

Performance Level	Grade	Score
N/A – see below.		

JSA Performance:

Note: No projects greater than or equal to \$100K were complete in this review period. The below performance level is for all of FY06.

Measure 7.2.3 Requirement: Scheduled performance on projects greater than or equal to \$100K.

Calculation of performance toward this goal will be the average of the actual number of days to completion of identified projects (or designated milestones) to the number specified by the original contracts. This will be expressed as a coefficient of actual divided by contracted. Additional time attributed to the following categories will not be included for the purpose of this metric:

- Acts of God (as contractually accepted)
- Labor disputes/strikes
- Documented material unavailability (contractually accepted)
- User desired post-award change orders for which additional time is appropriate

For purposes of this report, “completion” shall be when the project is physically complete; turned over to user or beneficial occupancy taken.



Performance Level Achieved:

Performance Level	Grade	Score
N/A – see below.		

JSA Performance:

Note: No projects greater than or equal to \$100K was complete in this review period. The below performance level is for all of FY06.

Table 26. Objective 7.2 Performance Rating Development

ELEMENT	Letter Grade	Numerical Score	Objective Weight	Total Points	Total Points
7.2 Provide Planning for and Acquire the Facilities and Infrastructure Required to Support Future Laboratory Programs					
7.2.1 Ten Year Site Plan recognized as providing sound strategy for acquisition of required facilities/ infrastructure.	A	3.8	100%	3.8	
7.2.2 Cost performance on projects greater than or equal to \$100K.	N/A	N/A	N/A	N/A	
7.2.3 Scheduled performance on projects greater than or equal to \$100K.	N/A	N/A	N/A	N/A	
Objective 7.2 Total					3.8



Table 27. Goal 7.0 Performance Rating Development

ELEMENT	Letter Grade	Numerical Score	Objective Weight	Total Points	Total Points
7.0 Sustain Excellence in Operating, Maintaining, and Renewing the Facility and Infrastructure Portfolio to Meet Laboratory Needs					
7.1 Manage Facilities and Infrastructure in an Efficient and Effective Manner that Optimizes Usage and Minimizes Life Cycle Costs	B+	3.4	50%	1.70	
7.2 Provide Planning for and Acquire the Facilities and Infrastructure Required to support Future Laboratory Programs	A	3.8	50%	1.90	
Performance Goal 7.0 Total					3.6

Table 28. Goal 7.0 Final Letter Grade

Total Score	4.3-4.1	4.0-3.8	3.7-3.5	3.4-3.1	3.0-2.8	2.7-2.5	2.4-2.1	2.0-1.8	1.7-1.1	1.0-0.8	0.7-0
Final Grade	A+	A	A-	B+	B	B-	C+	C	C-	D	F

Goal 8 Sustain and Enhance the Effectiveness of Integrated Safeguards and Security Management (ISSM) and Emergency Management Systems

Goal Requirement:

The Contractor sustains and enhances the effectiveness of integrated safeguards and security and emergency management through a strong and well deployed system.

The Sustain and Enhance the Effectiveness of Integrated Safeguards and Security Management (ISSM) and Emergency Management Systems Goal shall measure the Contractor’s overall success in safeguarding and securing Laboratory assets that supports the mission(s) of the Laboratory in an efficient and effective manner and provides an effective emergency management program.

JSA Performance:

During this period, JSA took significant steps to enhance JLab’s emergency management system through the coordination and participation in multiple table-top exercises and readiness reviews. Many of the exercises included participation from third party organizations which allowed for effective benchmarking of emergency management programs at similar sites. In addition, we continued to partner with local emergency response agencies to strengthen our commitment to protecting the safety of our employees and the public during emergency events.

We also increased our focus on cyber security in response to DOE’s revitalized commitment to ensuring the safeguarding and securing of JLab’s intellectual assets.



Objective 8.1 Provide an Efficient and Effective Emergency Management System

Measure 8.1.1 Requirement: An emergency response exercise is conducted. Response to an actual or simulated emergency event demonstrates an above average level of proficiency and opportunities for improvement are identified and acted upon. Completion of the remaining FY05 Emergency Management Program peer review elements.

* An actual emergency may be counted as an exercise in the quarter in which it occurs.

Performance Level Achieved:

Performance Level	Grade	Score
100% and document final laboratory-wide pandemic response plan by September 30, 2006 and assists in the revision of the final COOP. Demonstrate laboratory-wide hurricane readiness through a corporate assessment of hurricane preparedness activities by August 31, 2006.	A	4.0

JSA Performance:

Jefferson Lab requested an impartial critique of our hurricane preparedness and response procedures from Duane Johnson, Director, Security & Emergency Preparedness, with DynMcDermott Petroleum Operations at the Strategic Petroleum Reserve (SPR). As with JSA, DynMcDermott is a CSC affiliate. Given the SPR’s Gulf Coast exposure, and the national resource status of the reserves, hurricanes are more of a threat than here at JLab adjacent to the Atlantic Coast. We received his preliminary overview in the 4th quarter of FY06. He made a number of useful comments and suggestions that are under consideration by JSA.

In the 4th quarter of FY 2006, Jefferson Lab conducted four (4) emergency exercises, drills, and mobilization for actual events.

Jefferson Lab was invited and participated in a June 22, 2006 regional tabletop exercise and planning session for possible avian influenza pandemic conditions. This was subsequent to the Newport News Public Health Director and a member of his staff participating in a Jefferson Lab tabletop on the same topic.

JLab and the Newport News Fire Department’s Technical Rescue unit collaborated on the planning and conduct of an August 31, 2006 emergency exercise that entailed rescue of an unconscious “victim” from a confined space. Fire Department learning objectives were incorporated into the exercise plan along with JLab’s.

All of the 2005 EM Peer Review recommendations were evaluated thoroughly, and those appropriate for Jefferson Lab were adopted such as:

- Develop flow charts for actions in various foreseeable events. Use events that have already occurred as model.
- Review the roles and responsibilities of the DCS in regard to standing memberships and activation guidance.



- Increase the frequency of full participation exercises, in lieu of table top exercises, incorporating well-defined objectives and external (community) evaluators.
- It should be noted that these are not one-time actions. They will continue to influence EM planning and processes over time.

Due to the successful completion of all activities associated with PEMP Objective 8.1, JSA believes a score of 4.3 as appropriate.

Table 29. Objective 8.1 Performance Rating Development

ELEMENT	Letter Grade	Numerical Score	Objective Weight	Total Points	Total Points
8.1 Provide an Efficient and Effective Emergency Management System					
8.1.1 An emergency response exercise is conducted.	A	4.0	100%	4.0	
Objective 8.1 Total					4.0

Objective 8.2 Provide an Efficient and Effective System for Cyber-Security

Objective Requirement:

Assure appropriate level of cyber security risk assessment and program planning and that Jefferson Lab computer systems are not compromised or used in attacks on other Internet locations.

Measure 8.2.1 Requirement: Number of times JLAB computer systems were compromised or were used to attack other systems and that any incidents were reported within the required timeframes. Potential Cyber Security Incidents (CSI) considered in this metric include system level (root) compromises on Computer Center and Accelerator Controls managed systems, as well as situations where nodes in the jlab.org domain are used to carry out cyber attacks on other locations on the Internet. Computer Center and Accelerator Controls staff will track incidents and report on them at the end of the fiscal year.

$$CSI = RC + 0.5(CA)$$

RC = the number of incidents of system level (root) compromises on Computer Center or Accelerator Controls managed systems per year

CA = the number of incidents in which a node in the jlab.org domain is used to carryout a cyber attack on other locations on the Internet.

Performance Level Achieved:

Performance Level	Grade	Score
CSI = 0; and favorable results on internal/external reviews, surveys and inspections that demonstrate the cyber security program is: effective, integrated into laboratory culture, and laboratory leadership's commitment to strong cyber security performance.	A	4.0



JSA Performance:

All cyber security incidents were reported to CIAC and certified via requisite monthly “null reports.”

There was one root compromise of a system used in Hall B. This system has been counted as an “RC” even though it is not actually managed by the Computer Center or Accelerator Controls, thus

$$CSI = (RC + 0.5(CA)) = (1 + 0.5 * 0) = 1$$

Measure 8.2.2 Requirement: Performance on addressing identified cyber security vulnerabilities. The metric will measure the average completion date and/or percent of systems complete for addressing identified cyber security vulnerabilities versus the scheduled completion date and/or percent of systems complete. The scheduled completion dates and/or percent of systems to be completed will be negotiated between the TJSO Cyber Security Manager and the CIO at the beginning of the performance period with an agreement in place within the first six weeks of the performance period. Two types of identified cyber security vulnerabilities will be used:

Type A = A vulnerability correlated to completion date.

Type B = A vulnerability which correlates to a percentage that an identified system has been completed.

In the paragraphs below, M is the total number of elements for Type A, and N is the total number of elements for Type B.

Type A with M vulnerabilities – Scoring for vulnerabilities that have completion dates: The percentage of available points earned for each vulnerability (A1, A2, ..., AM) shall be numerically equal to 100 plus (minus) 10 times the number of months (including fractions thereof) that the completion date for addressing the identified cyber security vulnerability is ahead (behind). No points will be awarded for a given vulnerability if the completion date is more than five months behind schedule. For the mid-year score, the coefficient shall be 20 rather than 10. The Contracting Officer may make allowance for project plan changes and/or schedule adjustments associated with causes beyond JLab’s control. The dates used in evaluating performance at midyear and end-of-year are the project schedule dates in place at the time of evaluation.

$$\text{Score } A_i = 100 \pm 10 \times (\text{no. of months}) \text{ either ahead (+) or behind (-) for vulnerability } A_i$$

Type B with N vulnerabilities – Scoring for vulnerabilities that have percent of systems complete: The percentage of available points earned for each vulnerability (B1, B2, ..., BN) shall be numerically equal to 100 times the ratio of the number of systems that are complete divided by the number that were scheduled to be complete on the specified date (mid-year or end-of-year as appropriate) for addressing identified cyber security vulnerabilities. The Contracting Officer may make allowance for project plan changes and/or schedule adjustments associated with causes beyond Jlab’s control.

$$\text{Score } B_i = 100 \times (\text{actual completed/scheduled completed}) \text{ for vulnerability } B_i$$

The scores for the two types of vulnerabilities will be combined as follows with the composite constrained to lie between 0 and 100:

$$\text{Score} = (\text{Score}A_1 + \text{Score}A_2 + \dots + \text{Score}A_M + \text{Score}B_1 + \text{Score}B_2 + \dots + \text{Score}B_N) / (M + N)$$

One Type A milestone is due in 4Q06:



Under Authentication/Authority finding: Establish a pilot project that will test 2-factor authentication and the new model for separation of privilege for core system administrators (due 9/30/2006).

Zero Type B milestones are due in 4Q06.

Performance Level Achieved:

Performance Level	Grade	Score
Score > 97%	A+	4.1

JSA Performance:

Two-factor authentication and separation of privilege. A pilot program for testing of 2-factor authentication is in place with access to 27 machines being fully controlled by 2-factor technology. A procedure-based model for separation of privilege using pre-2-factor technologies was evaluated for the Computer Center's system administrators. This model will now be modified to rely on the 2-factor technology.

Score = 100% for 8.2.2.

Measure 8.2.3 Requirement: Establish a SANS top-twenty scanning program to track the scanning and remediation of SANS “Top Twenty” vulnerabilities. Measure the number of completed scans including remediation of discovered vulnerabilities.

Note: The target performance level for 4Q06 is scanning and remediation of SANS Top Twenty vulnerabilities complete on 300 machines (B+), with a scanning and remediation count of 425 machines necessary for an A+ rating.

Performance Level Achieved:

Performance Level	Grade	Score
Scanning and remediation of SANS top-twenty vulnerabilities on 425 machines of the active database (currently varying between 1,300 and 1,400 machines).	A+	4.3

JSA Performance:

Scanning and remediation of SANS Top Twenty vulnerabilities was completed on 495 machines in the 4th quarter of FY06. Documentation of the process is available via the StillSecure VAM console with access available on request.



Table 30. Objective 8.2 Performance Rating Development

ELEMENT	Letter Grade	Numerical Score	Objective Weight	Total Points	Total Points
8.2 Provide an Efficient and Effective System for Cyber-Security					
8.2.1 Number of time JLAB computer systems were compromised or used to attack other systems.	A	4.0	40%	1.6	
8.2.2 Performance on addressing identified cyber security vulnerabilities.	A+	4.1	30%	1.23	
8.2.3 Establish scanning program to track scanning/remediation of “Top-Twenty” vulnerabilities.	A+	4.3	30%	1.29	
Objective 8.2 Total					4.12

Objective 8.3 Provide an Efficient and Effective System for the Protection of Special Nuclear Materials, Classified Matter and Property

Measure 8.3.1 Requirement: Maintain an effective Security Program, demonstrated by:

- Ensuring non-U.S. citizens’ from sensitive countries who have badged access to JLab facilities, or perform work on CRADAs or Work for Others are identified, and are entered into the Foreign Access Central Tracking System.
- Current timely and approved security-related Admin Policy and Security Plans.
- Reportable and accountable “Other Nuclear Materials” are inventoried and reported with DOE approved procedures.

Performance Level Achieved:

Performance Level	Grade	Score
Maintain effective professional relations with threat reduction officials at DOE Headquarters, FBI Norfolk, and Newport News Police Department by participating in opportunities to share information in security, community policing, and incident management. Update JLab Security policy and plans to optimize and assure effective support with external support agencies.	A	3.9

JSA Performance:

An independent survey of JSA’s Foreign Visits & Assignments program was conducted June 6-7, 2006 during the 2006 Safeguards and Security Survey, and all non-U.S. citizens whose country of origin was from a sensitive country who were issued JLab badges were entered in FACTS as required. No sensitive country nationals have been disclosed or detected as working on JLab CRADAs or Work-for-Others agreements that are not already badged and entered in FACTS.

The following JSA security policy, procedures, and plans were updated in preparation for the Survey:



- JLab Site Security Plan
- JLab Nuclear Materials Control & Accountability Plan
- JLab Export Control Procedures,
- JLab Foreign Visits & Assignments Policy
- JLab Counterintelligence Support Plan
- Top Guard Security Standard Operating Procedures

All JSA procurement transactions and complete in-use inventory of reportable and accountable “Other Nuclear Materials” were reported to the Nuclear Materials Management & Safeguards System within the proscribed reporting period in July and October 2006.

JSA representatives prepared and coordinated written jurisdictional agreements involving TJNAF between the Chief Magistrate, Seventh Judicial District, Chief of Police, Newport News Police Department, and the Site Manager of the DOE Thomas Jefferson Site Office in August 2006. They met regularly with HQ DOE regional and FBI Norfolk agents to exchange information and met on September 14, 2006 with Chief of Police and the senior staff of the Newport News Police Department to share information, and discuss community policing and incident management.

JSA representatives also updated a support agreement with the U.S. Air Force Air Combat Command Program Management Squadron on October 2006 to enable DOE TJSO cleared personnel to use near-by secure space and secure communications equipment discuss threat information with DOE headquarters.

Measure 8.3.2 Requirement: Demonstrate effective Security Program through internal, self-assessment and external reviews, surveys and inspections.

Performance Level Achieved:

Performance Level	Grade	Score
Receive a Satisfactory rating in all evaluated areas during the independent Security Survey and receive at least one laudatory comment in the final report. .	A-	3.7

JSA Performance:

Results of the 2006 Safeguards and Security Survey are as follows:

Received an overall rating of Satisfactory in 31-rated areas including Program Management and Support, Physical Security, Cyber Security, Personnel Security, Unclassified Visits & Assignments by Foreign Nationals, and Nuclear Material Control & Accountability.

Received laudatory comments in the report about “the professionalism of the senior staff” and that “the survey team judged JLab to have an excellent security program that is managed and implemented by knowledgeable, dedicated staff.”

Other supporting comments in the report give examples of excellent security planning and implementation, “An example of excellent security planning involved the Biennial Open House where over 8,000 visitor’s cars were parked at a fringe parking area and thousands of riders were screened prior to entering buses for access to the CEBAF Accelerator. Security planning included close coordination



with the FBI, Joint Terrorism Task Force, Newport News Police, Fire, Rescue and local airport Transportation Security Administration officials.”

Measure 8.3.3 Requirement: Complete all corrective actions in accordance with approved Corrective Action Plans (CAPS).

Performance Level Achieved:

Performance Level	Grade	Score
Complete all corrective actions associated with formal CAPS on schedule.	B+	3.4

JSA Performance:

2006 Safeguards & Security Survey Corrective Action Plan completion dates are as follows:

DOE TJSO Letter dtd 21Sep 2006, Concurrence with Security Deviation Request SC-TJSO-06-001 closed Finding 06Jun07-OR-037-FVA.1-001. Some foreign national visitors are permitted access to the facility before validating US Citizenship and Immigration Services information.

DOE TJSO Letter dtd 12 Oct 2006, Approval of Jefferson Lab Security Training Plan closed Finding 06Jun07-OR-037-SSPS-PMS.4-001. JLab has not prepared or submitted to DOE for approval, an annual training plan that meets directive requirements.

Table 31. Objective 8.3 Performance Rating Development

ELEMENT	Letter Grade	Numerical Score	Objective Weight	Total Points	Total Points
8.3 Provide Efficient an Effective System for the Protection of Special Nuclear Materials and Property					
8.3.1 Maintain an effective Security Program.	A	3.9	40%	1.56	
8.3.2 Demo effective Security Program through internal self-assessment/external reviews/surveys/inspections.	A-	3.7	40%	1.48	
8.3.3 Complete all corrective actions in accordance with approved Corrective Action Plans (CAPs).	B+	3.4	20%	0.68	
Objective 8.3 Total					3.72



Objective 8.4 Provide an Efficient and Effective System for the Protection of Classified and Sensitive Information

Measure 8.4.1 Requirement: Effectively operate a sensitive information system for the Laboratory’s Business Sensitive and Personnel Sensitive information

See discussion below for the several activities underway during this time period. Note the full documentation is not planned to be complete until FY2007.

Performance Level Achieved:

Performance Level	Grade	Score
Documentation complete and reviewed; and favorable results on internal/external reviews, surveys and inspections that demonstrate the cyber security program is: effective, integrated into laboratory culture, and laboratory leadership’s commitment to strong cyber security performance.	A	4.0

JSA Performance:

Two efforts were launched during this period:

- A survey of all of the Lab’s sensitive information in IT systems. The survey was 80% complete by the end of September. The goal is to be complete by the end of the calendar year.
- Training for all computer account holders on Personally Identifiable Information (PII) and what to do if they believe that any has been lost or compromised. They have to individually take the web based training and certify that they did or did not have access to PII and if they had it on any portable electronic media. Also included in the training was an acknowledgement of the lack of expectation of privacy on DOE owned IT systems, and social engineering training on cyber attacks. About 85% of the staff had completed the training by the end of September and about 50% of the Users, contractors, etc. had completed the training, thereby meeting goals for this time period. Note 100% was achieved for all computer account holders as of October 24th.

Table 32. Objective 8.4 Performance Rating Development

ELEMENT	Letter Grade	Numerical Score	Objective Weight	Total Points	Total Points
8.4 Provide Efficient and Effective Program for the Protection of Sensitive Information					
8.4.1 Effectively operate sensitive info system for Lab’s Business and Personnel Sensitive information.	A	4.0	100%	4.0	
Objective 8.4 Total					4.0



Table 33. Goal 8.0 Performance Rating Development

ELEMENT	Letter Grade	Numerical Score	Objective Weight	Total Points	Total Points
8.0 Sustain and Enhance the Effectiveness of Integrated Safeguards and Security Management (ISSM)					
8.1 Provide an Efficient and Effective Emergency Management System	A	4.0	30%	1.20	
8.2 Provide an Efficient and Effective System for Cyber-Security	A+	4.12	50%	2.06	
8.3 Provide an Efficient and Effective System for the Protection of Special Nuclear Materials, Classified Matter, and Property	A-	3.72	10%	0.37	
8.4 Provide an Efficient and Effective System for the Protection of Classified and Sensitive Information	A	4.0	10%	0.40	
Performance Goal 8.0 Total					4.03

Table 34. Goal 8.0 Final Letter Grade

Total Score	4.3-4.1	4.0-3.8	3.7-3.5	3.4-3.1	3.0-2.8	2.7-2.5	2.4-2.1	2.0-1.8	1.7-1.1	1.0-0.8	0.7-0
Final Grade	A+	A	A-	B+	B	B-	C+	C	C-	D	F