

Goal 1: Provide for Efficient and Effective Mission Accomplishment (40%)

- Objective 1.1 – Science and Technology Results Provide Meaningful Impact on the Field (50%)
 - Notable Outcome: Effectively Execute the Remainder of the 6 GeV Experimental Program to Obtain Publishable Scientific Results
- Objective 1.2 – Provide Quality Leadership in Science and Technology (50%)

Notable Performance Items: (See JLab Insight for additional performance data)

JLab met performance requirements for the Objectives and Notable Outcomes through August 31, 2012.

- 1.1
- **NOTABLE OUTCOME:** Effectively Execute the Remainder of the 6 GeV Experimental Programs to Obtain Publishable Scientific Results: The 6 GeV beam operations successfully ended on May 18th.
 - Theoretical and Computational Physics continued to produce innovative results that support the Lab’s experimental program. An extension to the standard Domain Wall Fermion (DWF) formulation, which could potentially result in an order of magnitude reduction of the computational cost of LQCD calculations, was presented in a new paper during this performance period. The results could significantly impact JLab’s LQCD program to reliably compute observables that will be measured in future experiments. A first systematic study of the effects of the input scale in global determinations of parton distribution functions (PDFs) was also presented in a new paper; relevant for future extractions of PDFs as well as predictions for present and future measurements in JLab experiments.
 - Significant refereed publications from Experimental Nuclear Physics highlighted in scientific journals during this period include The Jefferson Lab Frozen Spin Target (*Nuclear Instruments & Methods in Physics Research*, Section A, Vol. 684) and Density Measurement through Elastic Electron Scattering with a Gaseous Target at the Jefferson Lab (*Chinese Physics C*, Vol. 36, Issue 7). Publication statistics for FY12 include 115 journal articles, 172 invited talks, and 66 contributed papers that were compiled for various meetings and workshops.
 - Major JLab cryogenics advancements are currently being used by NASA. The 20K Helium refrigerator designed for the NASA James Webb Telescope Test stand was recently commissioned and illustrated a tenfold improvement in temperature stability and more than a factor of two efficiency improvement when compared to traditional operations. In addition the liquid Nitrogen cooled shields of the Johnson Space Center Space Chamber were also brought into operation. This is both a technical breakthrough and an economic winner because it uses less nitrogen. This program has been very successful and other countries with space chamber facilities similar to NASA’s are watching closely.
 - JLab provided assistance to the National Superconducting Cyclotron Laboratory (NSCL) at Michigan State University (MSU) during this period by utilizing work completed for the 12 GeV Upgrade project to find solutions that will save them considerable engineering costs for the FRIB project.
 - The Laboratory Deputy Director for Science Robert McKeown were invited to present an overview of Jefferson Lab’s science at The Fourth Workshop on Hadron Physics in China and Opportunities in U.S. held in Beijing, China July 16 – 20; the Annual Meeting of the International Union of Pure and Applied Physics (IUPAP) Working Group 9 (International Cooperation in Nuclear Physics – ICNP) held in Toshima-Ku Tokyo, Japan August 17 – 18; the International Workshop on the Physics Opportunities at an ElecTron Ion Collider (POETIC 2012) held in Bloomington, IN August 20 – 22; and the 20th International Symposium on SPIN Physics (SPIN2012) held in Dubna, Russia September 17 – 20.
 - JLab staff member Jenord Alston was a recipient of the Dalton E. Hamilton Memorial Certified Welding Inspector (CWI) of the Year Award that is sponsored by AWS in memory of Dalton E. Hamilton; who contributed greatly to the success of the Society’s Certified Welding programs. Announced August 1, 2012 and a featured article in the Inspection Trends Magazine that shows how the welding industry views this award.
- 1.2
- Staff and users continued to be actively involved in scientific organizations throughout this period and are members of numerous Review and Advisory Committees sponsored by DOE and Laboratories. As noted in previous reports, JLab’s Director, Hugh Montgomery, serves on the International Advisory Committee for the Rare Isotope Science Project in Daejeon, South Korea and acts as a referee for the Atlas Upgrade proposal that was submitted to the United Kingdom, Science and Technology Facilities Council (STFC). Montgomery has recently agreed to serve on the International Policy Committee of the newly created National Research Centre in Russia, which will be attached to the Kurchatov Institute. The Deputy Director for Science, Robert McKeown, is Chair of the Division of Nuclear Physics (DNP) of the American Physical Society (APS); a 2012 APS ex-Officio member of the Nuclear Science Advisory Committee (NSAC); member of the review team for the S&T review of Fermilab; and an active participant in the quarterly CRO meetings. The Associate Director Accelerator, Andrew Hutton, was elected to serve on the executive committee of the 2012 American Nuclear Society (ANS)

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– Accelerator Applications Division and continues as Chair of the SuperKEKB Accelerator Advisory Committee. The Deputy Associate Director Accelerator, Fulvia Pilat, is the elected Vice-Chair of the APS – Division of Physics of Beams (DPB) Executive Committee and in this role is also serving as Chair of the APS DPB 2012 Fellowship Committee. Gina Dixon, an Environmental Engineer in the Radiation Control group, is an invited member of the review committee for Fermilab’s Director CD-1 Review of the Long-Baseline Neutrino Experiment (LBNE) Project.

- JLab appointed a team to lead the negotiations with LBNL regarding collaboration efforts to develop a design for the Next Generation Light Source (NGLS). A set of meetings between the Lab and LBNL has been conducted; an MOU has been approved by both sides and is currently ready for signature by the two Laboratory Directors.
- Reza Kazimi of the Accelerator Division has developed a scheme to enable all four experimental Halls to take beam simultaneously instead of only three. Implementation of this proposal is now being evaluated.
- JLab was awarded funds to develop a test of the electron cooling scheme for the MEIC at the FEL.
- A joint proposal submitted by Jefferson Lab, Dilon Technologies, and the University of Virginia (UVa) was awarded \$97,996 in requested funding. The proposal submitted to the UVa Cancer Center Technology Partnership Initiative (CCTPI) program is to modify and use the hand held gamma camera that was built by JLab using silicon photo multipliers (SiPMs) that are located at UVa.

Goal 2: Provide for Efficient and Effective Design, Fabrication, Construction and Operation of Facilities (40%)	
●	Objective 2.1 – Provide Effective Facility Design(s) as Required to Support Lab Programs (Activities Leading Up to CD-2) (0%)
●	Objective 2.2 – Provide for Effective/Efficient Construction of Facilities (Post CD-2 to CD-4) (45%)
●	Objective 2.3 – Provide Effective/Efficient Operation of Facilities (40%)
●	Objective 2.4 – Utilization of Facility to Provide Impactful S&T Results and Benefits to External User Communities (15%)
Notable Performance Items: (See JLab Insight for additional performance data.)	
JLab met performance requirements for the Objectives and Notable Outcomes through August 31, 2012.	
2.1	N/A
2.2	<ul style="list-style-type: none"> ▪ The new SL23 zone (C100-5 cryomodule and new radiofrequency system) operated at 109 Megavolts in the linac; a full test with beam loading will be done later. There are four operational 12 GeV cryomodules plus associated new radiofrequency zones installed in CEBAF, with two additional cryomodules staged in the tunnel awaiting installation. Excellent progress was made on the rework of the beamlines, including completion of nearly 50% of the total required machining on the re-used dipole magnets. Work on the installation and check-out of the compressors and coldbox for Central Helium Liquefier-2 is nearly complete. The fit-out of the Hall D complex with services and beamline items continued with cryogenics and solenoid magnet service module progressing well. The first sections of the several hundred tons of steel yokes for the Q2, Q3, and dipole magnet for the SHMS spectrometer have been cast and readied for final machining. Steady progress continues on all detector construction and read-out electronics.
2.3	<ul style="list-style-type: none"> ▪ Warm-up of the Central Helium Liquefier-1 and the CEBAF Linacs begin on August 1st; a critical activity for the Long Shut Down.
2.4	<ul style="list-style-type: none"> ▪ The Test Lab Addition, funded by the DOE SLI program, was turned over to the SRF Institute to complete the production and R&D facilities. This is nearing completion for cavity welding and furnace treatment, and is close to completion for a subset of the chemical processing tools. During this entire time, the C100 cryomodule assembly has continued. While work for other laboratories has been impacted, we have nevertheless made significant progress on the crab cavities for the ANL-SPX project.

Goal 3: Provide Effective and Efficient Science and Technology Program Management (20%)

- Objective 3.1 – Provide Effective/Efficient Stewardship of Scientific Capabilities and Program Vision (40%)
 - Notable Outcome: Develop and Disseminate a “White Paper” Documenting the Scientific Case for an EIC.
- Objective 3.2 – Provide Effective/Efficient Science and Technology Project/Program /Facilities Management (35%)
- Objective 3.3 – Provide Effective/Efficient Communications and Responsiveness to Customer Needs (25%)

Notable Performance Items: (See JLab Insight for additional performance data.)

JLab met performance requirements for the Objectives and Notable Outcomes through August 31, 2012.

- 3.1 ■ **NOTABLE OUTCOME** Develop and disseminate a “white paper” documenting the scientific case for an electron-ion collider:
- A first draft of the white paper documenting the scientific case for an electron-ion collider was circulated for further comments amongst the steering committee, BNL and JLab management. Iterations have been ongoing amongst the steering committee, and with assistance from BNL and JLab management a final version of the executive summary is available. The final complete white paper is expected to be available in October. In addition, a summary of the EIC science case was published by Jefferson Lab scientists: “Nuclear physics with a Medium-energy Electron-Ion Collider”, A. Accardi, V. Guzey, A. Prokudin and C. Weiss, Eur. Phys. J. A (2012) 48: 92. To further support and document the accelerator and fully integrated detector and interaction region of JLab’s EIC design, as summarized in the white paper, a pre-conceptual zero’th order design report has been prepared for publication and is posted on the arxiv (<http://arxiv.org/abs/arXiv:1209.0757>).
- JLab, working with its wide User base, has updated the 12 GeV science case. The resulting white paper “Physics Opportunities with the 12 GeV Upgrade at Jefferson Lab” has been widely circulated throughout the U.S. Nuclear Physics community.
 - Future projects identified include the Super Bigbite Spectrometer (SBS), MØLLER, SoLID, and HPS. DOE/NP sent formal approval of the project management plan of the three sub-projects comprising the SBS. An external validation by MIT-Bates of the engineering concepts of the planned Moller apparatus is discussed. Cornell provided a detailed technical description of the CLEO-II superconducting magnet. Follow-up discussions with Cornell have been ongoing, and the possible suitability of this magnet for the SoLID experiments has been studied based upon axial force and magnet implementation studies. Construction on the HPS apparatus for a parasitic test experiment in Hall B was completed, and the apparatus was installed in the Hall B photon tagger beam line for a successful parasitic test.
 - The FEL team had a great start of operations of the infrared beamline with the DarkLight Experiment in place, successfully achieving 99.999% transmission through the 2 millimeter aperture for 100 kilowatts of continuous wave beam and creating beam images with five orders of magnitude dynamic range for visualization of the beam halo.
 - JLab worked with several organizations throughout the U.S. and internationally to plan and/or host several workshops, conferences, and meetings during this performance period, including: the International Low Energy Nuclear Reactions Symposium (ILENRS-12) July 1 – 3 (37 participants); Geant4 Tutorial July 9 – 13 (109 participants); 7th SRF Materials Workshop (SRFMW) July 16 – 17 (69 participants); 5th International Workshop on Thin Films and New Ideas for Pushing the Limits of RF Superconductivity July 18 – 20 (69 participants); International Workshop on Neutrino Factories, Super Beams and Beta Beams (NuFACT 2012) July 23 – 28 (148 participants); The 7th International Workshop on Chiral Dynamics (CD12) August 6 – 10 (142 participants); Nucleon Resonance Structure in Exclusive Electroproduction at High Photon Virtualities (EmNN*2012) August 13 – 15 (37 participants).
- 3.2 ■ JLab prepared the foundation for a LDRD Program with an anticipated start date beginning in FY2014 provided that budget prospects are sufficiently favorable. During FY12, an exploratory exercise to collect Letters of Intent was performed to assess the potential scope of needs for a future LDRD program. Seventeen letters of intent (LOIs) were received.
- 3.3 ■ The Laboratory Director, the 12 GeV Project Manager and, on occasion, the Chief Operating Officer participate in the biweekly teleconference with TJSO and the Office of Nuclear Physics. In like manner, but by video conference, the Project Manager and his Deputy and often the Laboratory Director participate in the monthly televideo conference about progress on the 12 GeV Upgrade Project. The Laboratory Director meets on a weekly basis with the TJSO Manager and every other week, this meeting continues with participation of the TJSO Deputy and the Laboratory COO. In addition, on a quarterly basis the COO participates in a meeting with SC-3, all Site Office Managers and COOs.
- FY12 Science Education outreach statistics through August 31st include interactions with 9,800 students (35,600 contact

hours) and 560 teachers (3,165 contact hours). Additional highlights noted below:

- The 12th Annual Student Poster Session, attended by ~150 staff members, took place on August 3rd and included research posters developed by the following 36 summer interns:
 - Twelve High School Summer Honors participants who spent 6 weeks working on JLab-related technical projects,
 - Sixteen Science Undergraduate Laboratory Internship (SULI) students, funded by the DOE Office of Science, who worked on research projects for 10 weeks, and
 - Eight JLab/ODU Research Experience for Undergraduates (REU) students, funded by the National Science Foundation, who worked on accelerator physics projects for 10 weeks
- JLab Science Education Administrator Lisa Surles-Law was invited to assist the Virginia Science, Technology, Engineering, and Applied Mathematics (STEAM) Academy as a science education expert. In this capacity, she will serve on a 15 member standards setting panel to review the proposed educational curriculum which is geared towards high school and middle school students. The first meeting will be held in November 2012.
- The lab's response to interest in and information about the lab is multifaceted. In the past year, the lab deployed a new website that provides ready access to information about the lab. In addition to serving the general public, the website has a special section for policymakers, featuring a host of information about the lab that includes downloadable copies of all informational brochures produced by the lab. This family of brochures is also available in print, with copies provided to all visitors and also made available in the lobby of the main administration building. To meet the need for information by both internal and external audiences, the lab has deployed a series of informational wall panels that have been installed in the main administration building. The panels provide details about the lab's history, historical research and ongoing research programs. The lab also has expanded its SWIS – Systemwide Information System – to include more immediate information about the daily events at the lab. SWIS is a system of TV monitors deployed in public areas throughout the lab campus. In addition, the lab produces a monthly electronic newsletter targeting internal and external audiences that is distributed via e-mail and posted on the lab's website. There is also a weekly internal newsletter for employees and users that is distributed via email. Further, the lab makes use of social media to expand its reach and share information with a variety of audiences, an effort that has been highly successful. The lab's YouTube page, for instance, had more than 12 million views by August 2012, far more views than all the national labs and the Department of Energy combined. A recent online survey of lab staff and users confirmed the success of the lab's newsletter, which was highly praised for its content and quality. It should be noted that the lab's director also participates in the communication process, producing a regular article for the website. In these articles, known as Montage, the director discusses issues of importance to the community. Readership of Montage is very high.

Goal 4: Provide Sound and Competent Leadership and Stewardship of the Laboratory

- Objective 4.1 – Leadership and Stewardship of the Laboratory (33%)
- Objective 4.2 – Management and Operations of the Laboratory (33%)
 - Notable Outcome: Continue Evolution of TJNAF CAS
 - Notable Outcome: Leadership in Developing and Coordinating the Assessment of Regional Energy Coalition Concepts Involving Internal and External Resources to Determine the Viability of Concepts
- Objective 4.3 – Contractor Value-Added (34%)
 - Notable Outcome: Continue to deliver on commitments of non-DOE resources, both those detailed in H.30, Agreements and Commitments, and other contributions that help to deliver on the Lab’s science mission.
 - Notable Outcome: Complement evolution of CAS by ensuring the contractor’s governance structure and function support JLab and DOE to capitalize on opportunities and address challenges that arise at the Lab.

Notable Performance Items: (See JLab Insight for additional performance data.)

JLab met performance requirements for the Objectives and Notable Outcomes through August 31, 2012.

- 4.1
- The Science Laboratory Operations Improvement Committee (SLOIC) conducted a workshop at Argonne National Laboratory July 23 – 24. Four specific areas with the greatest immediate potential for improvement activities were identified for implementation: (1) Information Technology – reduce IT Infrastructure and sustainability costs through server virtualization; (2) Human Capital – outsource Retiree Medical while providing retirees with more options; (3) Infrastructure Management – reduce and optimize facility footprint; and (4) Requirements Management – remove unnecessary requirements from the system. The recommended initiatives will be supported by all of the Office of Science laboratories; contribute to Lab efficiency and effectiveness; and provide reportable and verifiable results. Immediate efforts could potentially result in cost savings up to \$17M with additional annual savings.
 - The Jefferson Lab senior management developed and presented a vision of the future of the lab, which depended on a vigorously supported and funded program of experimental nuclear physics based on the 12 GeV CEBAF Upgrade. In the longer term, the nuclear physics program would involve development and construction of a Medium Energy Electron Ion Collider. This primary path would be supplemented by focused experimentation with the FEL machine, and participation in the R&D, and eventual construction of a Next Generation Light Source. Other US scientific projects would be supported by the forefront cryogenic and superconducting radio-frequency capabilities, which Jefferson Lab would, to the extent possible, continue to encourage US industry to adopt.
- 4.2
- **NOTABLE OUTCOME** Continue evolution of TJNAF CAS:
 Continued inculcation of effective tri-party communications and actions, demonstrated by actions from CAS Functional and Senior Leadership meetings, including:
 - Incorporation of Human Performance Improvement (HPI) error precursors into CATS, a result of benchmarking with other Labs and intended to enable better root cause identification
 - Functional level tri-party teamwork in reviewing and submitting changes to the CAS Program Description
 - Leadership role within the COO Operations Improvement Committee concerning CAS implementation progress within DOE/SC
 - Continued successful use of Notable Outcome review meetings to address potential issues at the functional level, including Configuration Management and Pressure Vessel Inspection Criteria.
 - Participation of JLab personnel in CAS Boards and Committees at other SC Labs; both the Chief Operating Officer and ESH&Q Associate Director took part in review sessions at FNAL and Argonne, respectively.
 - Continued evolution and use of the Corporate Dashboard and Risk Registry; this information was reviewed and acted upon during the recent Lab Leadership meeting; the automated hit-counter shows that all three entities continue to review the information independently.
 - **NOTABLE OUTCOME** Leadership in developing and coordinating the assessment of regional energy coalition concepts:
 During this period, multiple meetings were held relating to regional and onsite energy solutions with potential sustainable

energy providers under non-disclosure or confidential arrangements; DOE is being briefed on the appropriate details. In addition to supporting the Hampton Roads Energy Corridor activities, some of the energy solutions have JLab specific components.

- 4.3 ■ **NOTABLE OUTCOME** Continue to deliver on commitments of non-DOE resources, both those detailed in H.30, Agreements and Commitments, and other contributions that help to deliver on the Lab's science mission:

Owners Commitment: JSA Initiatives Fund Program. JSA continues to deliver on its commitment for the JSA Initiatives Fund (IF) Program. A monthly update on specific activities has been provided to the TJSO. The year-end report will be provided upon final audit of program expenditures. Descriptions of the individual projects in this program are contained in the mid-year report and at <http://www.jsallc.org/IF/IFIndex.html>. July and August IF activities include:

- Carnegie Mellon student Nidhi Doshi (2011 REU participant) is the first recipient of support in the *Undergraduate Student Support in Theoretical Physics* project which extends the summer research experience of former REU and SULI students allowing them to continue to participate at the Lab while pursuing their education.
- Old Dominion University student Ryan Roussel (2012 REU participant) is the sixth recipient of support in the *Undergraduate Support in Accelerator Sciences* project which has been in place since FY2011. Similar to the theory support (see above), this project enables the extension of the REU and SULI summer research experience to selected students.
- The five-day *Geant4 Tutorial*, held at the Lab and organized by Hampton University professor Paul Gueye, brought over 100 participants who spent the week listening to instructional lectures and getting hands-on experience on the use of the Geant4 Monte Carlo simulation toolkit used by the Lab as a tool to model various aspects of the detector packages and beam diagnostics in the physics and accelerator programs.
- The IF program continues to provide for the Lab's membership in the *Hampton Roads Partnership* (HRP), a public-private organization, in which the Lab Director has a seat on the Board. The HRP is helping to address the DOE's energy and sustainability goals through the Hampton Roads Energy Corridor activities, such as the joint effort to develop a multi-tier electrical rate structure with the option of procuring low CO₂ emission electrical power. The HRP is helping to maintain the local network needed to realize the benefits of science and technology to the Lab and local economy – a network that supports the transfer of Lab technology and integrates efficiently with local companies, providing access to a reservoir of expertise and resources in such areas as terahertz, nanotechnology and cryogenic applications.
- Fifty students from 15 African countries attended the *Second Biennial African School on Fundamental Physics* in July and August in Ghana. The program included lectures and discussion sessions on theoretical physics, experimental subatomic physics, accelerators and technology, and grid computing. The school was an opportunity for young African students to receive training in cutting-edge physics research. Final report pending.
- Continued monthly support for IF projects: *Director's discretionary fund; Nathan Isgur fellow Pawel Nadel-Turonski; Graduate fellowship program; Junior scientist conference travel support; Graduate student activities; Mechanical engineering student Jie Zhou continued in the Cooperative Education program; Undergraduate support in accelerator science to SUNY student Anton Zvezdin.*

Owner Commitment: Skillport, Applied Insight. Corporate owner CSC/ATD continues to provide upgrades to and support for Applied Insight and access to Skillport training and distance learning resources.

- *Applied Insight* is a suite of technology tools and management processes that act as the data warehouse for important management and performance information, including the Corporate Dashboard, in support of the Lab's contractor assurance systems. Continuous update of relevant information posted to *Insight* enhances communications internally, and with DOE, users, and external parties interested in doing business with the Lab and facilitates issues management and resolution. Currently in process, enhancements to *Insight* include the "performance" and "business intelligence" tabs to provide more user-friendly and comprehensive interfaces for PEMP performance information and more effective reporting capabilities for use by management.
- *Learning Place*, a distance learning program through CSC Skillport, continues to be an integral part of the Lab's training and professional development program. CSC provides for 200 seats per calendar year to the *Learning Place*, where numerous courses are available in topical areas as varied as communications, leadership skills, project management, succession planning, procurement, software applications, Sarbanes-Oxley regulations, etc. Additionally, component modules from *Learning Place* are integrated in the Lab certification programs in Project Management Qualification, Procurement Certification, Diversity and Inclusion Council Certification, and Computer Software Qualifications. As of

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August, 227 seats are filled at the *Learning Place*, including 26 seats newly filled this fiscal year. Integration of *Learning Place* courses has replaced fee-based training in many areas and has replaced almost entirely fee-based training for many non-scientific computer applications

Owner Commitment: Relations and Outreach Program. Corporate owner SURA continues to provide support to the Lab in its relations and outreach program. The intent of the program is to establish an effective working relationship with federal, state, and local authorities and with universities and industry leaders that have a vested interest in the Lab and in support of the nation's science goals. During July and August, SURA supported the Users Group Board in its letter-writing campaign to garner support for FY2013 federal funding for the Lab's nuclear physics program; continued to monitor the implementation of the state's general appropriations of \$1.2M and a \$3M award to Old Dominion University for equipment improvements to the Free Electron Laser; signed on to a Task Force for American Innovation letter to the Senate in support of the National Science Foundation funding and science (similar to the TFAI letter of support to the House reported in 3rd quarter). SURA is currently discussing a response to the state's call for second year of the biennial state funding. The owner representative and board liaison attended the NSAC subcommittee meeting (in September) at which the Lab presented its major scientific accomplishments, future compelling science, funding impact under different scenarios, operational needs, and discussed with the subcommittee the Lab's vision and international role.

Other Owner Contributions. Corporate owners SURA and CSC/ATD continue to provide support beyond the Initiatives Fund, Applied Insight, Skillport, and Relations program.

- Corporate owner SURA continues to provide all services and functions related to its role as the Administrative and Tax Member of JSA.
 - Corporate owner SURA hosted the Computational Nuclear Physics meeting, a town meeting leading to the NSAC meeting later this year, at which ~50 participants discussed current status and future expectations of computational physics and concluded with resolutions and recommendations.
 - Corporate owner SURA continues to manage and operate the Residence Facility for use by researchers and students at the Lab. The 42-room Residence Facility provides reasonably priced, on-site accommodations for guests. The Facility is operated on a break-even basis, with SURA subsidizing operations by foregoing its overhead charge in order to maintain a lodging rate schedule that is below the GSA per diem rate. During July and August, Facility guests included researchers and users on shift work, participants for the CHIRAL meeting, Geant4 workshop, SRF/TSFR workshop, SULI program, ODU REU program, and UVa teachers program.
 - JSA owner representative (SURA) continues to be engaged with DOE M&O contractors Group and was elected to the executive body of the group.
 - SURA general counsel is an active member of the DOE M&O attorneys group looking at legal issues and impact across the DOE lab complex.
 - Corporate owner CSC/ATD and corporate owner SURA continue to provide representatives to the Lab's IT steering committee bringing corporate and university insight and recommendations for shaping IT policy and direction at the Lab.
 - Corporate owner CSC/ATD includes the Lab CIO in the CSC IT monthly phone conferences allowing the Lab to benefit from lessons learned and IT-related issues such as upgrades to software applications, in other CSC facilities.
 - Corporate owner CSC/ATD is beginning a cyber security technical testing exercise (both external and internal penetration testing) of the Lab systems to be completed in FY2013.
- **NOTABLE OUTCOME** Complement evolution of CAS by ensuring the contractor's governance structure and function support JLab and DOE to capitalize on opportunities and address challenges that arise at the Lab:
- Members of the JSA Board, company officers, Committee members, the owner representatives, and the board liaison continue to provide governance support for the Lab through regularly scheduled and ad hoc meetings, teleconferences, reports, and on-site visits. During July and August:
- JSA provided feedback to the TJSO regarding proposed notable outcomes for the FY2013 PEMP.
 - JSA and Lab management, with input from the TJSO, have updated the CAS Program Description. After final concurrence review by the Lab Director, the owner representatives will review and submit the September 2012 revision

to the TJSO.

- The Board reviewed and discussed updates to corporate governance matters including 3rd quarter PEMP assessment and TJSO's comments to assessment, Lab's key performance metrics status and risk registry, monthly safety reports and incidents, external assessment of Lab record keeping and incident reporting practices, status on response to internal audit on state funds; tri-party (TJSO/JSA/Lab) CAS steady state vision – formerly the CAS end state statement; Lab management participation in DOE initiatives.
- The Science Council discussed completion of the 6 GeV program, plans for the 12 GeV science program, PAC issues, Science & Technology Review results, NSAC preparations, status on the MEIC initiative, and progress on the Lab's strategic planning efforts.
- The Operations and Safety Committee reviewed and distributed the report of the external review by independent safety professionals of the Lab's injury categorization and record keeping practices and the Lab's action plan in response to the results. In addition to a daylong on-site interview session with Lab management, safety and medical staff, and the DOE Site Office safety specialist, the assessment included a review of 100 cases from the period January 2010 to mid-May 2012, with detailed reviews of 51 of these cases. The final report cites positive observations and recommendations to improve incident categorization, reporting, and follow-up practices. The Committee and Board continued to monitor the Lab's monthly safety reports. The Committee chair and board liaison heard a briefing from the Lab counsel on Tecom legislation and potential liability, and from the Lab COO on status of ISO 9001 certification, the Operations Improvement Committee's report to the Office of Science, and conference management requirements and potential liabilities.
- The Lab Director notified the Board chair and vice chairs of the flooding situation brought about by the late August unexpected and sudden rainfall. Lab management continues to apprise the JSA Board and Committee of the impact and recovery plans.
- The board liaison discussed with the TJSO status of and updates on governance and corporate matters (new board and committee members, corporate involvement with the M&O contractors group, quarterly CAS meeting, status of resolution of state funds audit); status of the Initiatives Fund Program (see above); and relations and outreach activities (see above)
- The Finance and Audit Committee reviewed the OIG report on audit coverage of FY2006-FY2010 cost allowability resulting in no exceptions. The OIG acknowledged that Internal Audit had addressed corrective actions and that it did not question any costs or make any recommendations. JSA corporate, Lab management, and DOE (TJSO and Oak Ridge) addressed and resolved the specific items in the DOE's combined comments in response to the internal audit on state funds and the DOE Contracting Officer has issued guidance regarding the proper treatment of state funds. The Committee reviewed and discussed the internal auditor's summary report of the results of the internal control testing performed as part of the DOE's Financial Management Assurance Program, to comply with OMB A-123 management responsibility for internal control, including the noted exceptions (none of which are considered to be material or reportable), auditor's recommendations, and management responses.
- The JSA Programs Committee chair appointed the FY2013 Initiatives Fund Evaluation Committee to review 32 proposals received in response to the call for proposals for support from the IF Program. JSA owners SURA and CSC/ATD have committed to continue to support the Program for FY2013. First round reviews by the Lab management of proposals with Lab PI's and by the Users Group Board of proposals with user PI's have been conducted. The IF Evaluation Committee is reviewing the proposal submittals along with five historically supported projects and will make recommendations for project awards in November.
- The board liaison, TJSO representatives, and Lab management participated in the quarterly CAS meeting discussing the annual CAS effectiveness review process, H. Clause CAS tenet "rigorous, risk-based, credible self-assessments," and work of the Operations Improvement Committee. The board liaison, Lab QA manager, and TJSO CAS representative discussed the changes and updates to the CAS Program Description and process for approval and transmittal (see above).

The JSA Board continued to address the TJSO's concerns regarding the independence of the internal audit function and rigor of its Lab oversight. Full details of the governance responsibilities, many of which were already in place, were reported in the mid-year and third quarter assessments. The following is the status of governance responsibilities that remained to be implemented and/or completed. Reference should be made to the mid-year and third quarter assessments for details concerning responsibilities already in place.

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- Governance responsibilities of the Finance and Audit Committee:
 - Approves internal audit position description. Final draft under review by Committee clarifying reporting relationship of position and strengthening independence of function. *Estimated completion September 2012.*
 - Conducts internal auditor performance review. Performance appraisal system has been modified to accommodate committee's review. *Estimated completion with FY2013 cycle.*
 - Recommends internal auditor salary adjustments to JSA Compensation Committee. *Estimated completion with FY2013 cycle.*
 - Approves internal audit charter (in place pre FY2012). Updated charter under review by Committee to be signed off by Committee chair and Lab Director. *Estimated completion September 2012.*
- Governance responsibilities of the Compensation Committee: reviews and approves the Finance and Audit Committee's salary recommendation for internal auditor. *Estimated completion with FY2013 cycle.*
- Solicitation to establish on-going support for the internal audit function through engagement with a qualified firm to provide staff resources to work under the direction and supervision of the JSA Internal Auditor, bringing a broader source of specialized skill to assist the internal audit function as needed. *Completed.*

Goal 5: Sustain Excellence and Enhance Effectiveness of Integrated Safety, Health and Environmental Protection (30%)

- Objective 5.1 – Provide Efficient/Effective Worker Health and Safety Program (80%)
- Objective 5.2 – Provide Efficient/Effective Environmental Management System (20%)

Notable Performance Items: (See JLab Insight for additional performance data.)

JLab met performance requirements for the Objectives and Notable Outcomes through August 31, 2012.

- 5.1
- The Worker Health and Safety Program is operating efficiently and effectively. This is based upon the ISMS Effectiveness Review completed September 2012. Eight OFIs resulting from this review are noted below:
 - Continued close monitoring of construction safety management on the TEDF project,
 - Improvements to the JTA process,
 - Assuring required ES&H training is completed,
 - Reviewing actions taken in response to the FY10 WP&C assessment,
 - Continued emphasis/communication on over-reliance on worker experience
 - Continued focused efforts on emergency management
 - Improvements to the connection between assessment reports and corrective actions in CATS, and
 - Improvements to the method of communicating lessons learned
 - Two particular challenges moving forward into FY2013 include:
 - Jefferson Lab experienced 13 recordable injuries in the first 11 months of FY12; six of which were categorized as DART cases. This equates to a Recordable Injury Rate of 1.22 and a DART rate of 0.56. All were investigated, subjected to a causal analysis, and corrective actions have been tracked through the Lab’s Issues Management process. The injury rates are the highest experienced since 2004. The injuries and other Notable Events are being analyzed to identify trends and management actions to implement in FY2013.
 - Construction safety management at the TEDF project was a challenge in FY2012.
 - Four of 13 Recordable injuries and seven of the 20 other Notable Events were associated with the TEDF project, including exposure to silica above the TLV. Although the injury rates for the construction subcontractors (TRC = 1.9, DART = 0.38) are low compared to the construction industry average (TRC = 4.0, DART = 1.5), there were some significant near-misses experienced this past year.
 - Various construction safety management tools were used to address concerns with Mortenson, including fines, increased ES&H oversight by Jefferson Lab, and auditing the AHAs used for Phase 1 of the project.
 - Mortenson GC replaced their project manager with one more familiar with expectations associated with a government contract for the renovation portion of the project, and has increased the visibility of senior level management on the project. A monitoring strategy was developed to assure controls were sufficient to prevent exposure above the TLV.
 - In response to a recent event involving a sub-tier contractor cutting a known energized temporary power line, the GC suspended hand demolition operations until the work and associated hazards were re-evaluated. However, Jefferson Lab fined the GC \$10K for poor work planning and required the submittal of a corrective action plan to be approved by Jefferson Lab prior to re-starting hand demolition.
 - In addition, Jefferson Lab has expressed concerns to the CG regarding fall protection and work planning. Increased ES&H oversight has been put into place and a follow-up audit of the project’s work planning process has been scheduled for early September 2012.
 - This will continue to be an ongoing concern in FY2013 and will be closely monitored by Senior Management.

- 5.2 ■ The Environmental Management System operated effectively and efficiently in FY2012. Examples include:
- EMS related feedback stemming from management review, as well as the OFIs from the ISO 14001 Conformance Audit is being managed within CATS. Three actions have been closed on time and the remaining three are on schedule.
 - Based on feedback from senior management review, the EMS Committee charter was revised to reflect increasing emphasis on sustainability. The repurposed Sustainability and Environmental Management Committee now has a dual focus; 1) to advise on the implementation of the EMS, and 2) increase awareness and staff participation in meeting the Lab's sustainability goal.
 - Jefferson Laboratory has a robust materials clearance process, which has been demonstrated during the removal of stands, girders, etc. from the tunnel and experimental halls during the LSD. As a result a significant amount of scrap material not affected by the Secretarial Metals Moratorium/Suspension has been segregated and recycled.
 - The Central Helium Liquefier shutdown was planned so that the helium inventory would be captured and recycled through the Laboratory's helium vendor. 13, 990 pounds of helium were recovered, preventing a loss to the environment, as well as potential cost savings by the Laboratory.
 - Rather than purchase additional lead in the form of lead bricks, the Laboratory used the lead sheeting already in inventory. This sheeting was smelted into lead brick at no cost to the Laboratory, save transportation costs to the smelter.

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Goal 6: Sustain and Enhance Core Business Systems that Provide Efficient/Effective Support to Lab (25%)

- Objective 6.1 – Provide Efficient, Effective, Responsive Financial Management System (15%)
 - Notable Outcome: Demonstrate Efficient, Effective Execution of all ARRA Activities
- Objective 6.2 – Provide an Efficient, Effective, Responsive Acquisition Management System (15%)
- Objective 6.3 – Provide an Efficient, Effective, Responsive Property Management System (15%)
 - Notable Outcome: Develop and Implement a Disposal Plan for Unneeded Property
- Objective 6.4 – Provide Efficient, Effective, Responsive Human Resources Management System and Diversity Program (15%)
 - Notable Outcome: Continue to Implement FY10 JWISE Recommendations – Implicit Bias and Mentoring Training
 - Notable Outcome: Continue Implementation of JLab’s Succession Planning Activities
- Objective 6.5 – Provide Efficient, Effective Management Systems for Internal Audit, Quality, Info Mgt, Other Admin (25%)
- Objective 6.6 – Demonstrate Effective Transfer of Technology and Commercialization of Intellectual Assets (15%)

Notable Performance Items: (See JLab Insight for additional performance data.)

JLab met performance requirements for the Objectives and Notable Outcomes through August 31, 2012.

- 6.1 ■ **NOTABLE OUTCOME** Efficient, Effective Execution of ARRA Activities: Through July 31, 2012, costed \$81.2M or 94% of total DOE obligations; costed/committed \$83.4M or 96.4% of total DOE obligations; total lab and first tier subcontract jobs to date 548.4 FTEs. All reports have been submitted as scheduled.

Project	Total Obligations by DOE (FY09)	FY09/12 Costed \$	FY09/12 Costed %	FY12 Commits	% Costed & Committed	Costing Projections			Total
						Balance of FY12	FY13	FY14	
Advance Funding of 12 GeV CEBAF Upgrade	\$ 65,000	\$ 63,213	97.3%	\$ 1,595	99.7%	\$ 191	\$ -	\$ -	\$ 65,000
Lattice Quantum ChromoDynamics Computing	\$ 4,965	\$ 4,806	96.8%	\$ 129	99.4%	\$ 30	\$ -	\$ -	\$ 4,965
TJNAF Infrastructure Investments	\$ 10,000	\$ 9,998	100.0%	\$ -	100.0%	\$ 2	\$ -	\$ -	\$ 10,000
Enhanced AIP Funding at NP User Facilities	\$ 2,760	\$ 888	32.2%	\$ 64	34.5%	\$ 903	\$ 525	\$ 380	\$ 2,760
Advanced Technology R&D Augmentation	\$ 1,948	\$ 1,306	67.0%	\$ 307	82.8%	\$ 335	\$ -	\$ -	\$ 1,948
Nuclear Science Workforce	\$ 1,834	\$ 1,070	58.4%	\$ 2	58.5%	\$ 489	\$ 272	\$ -	\$ 1,834
JLab Total	\$ 86,507	\$ 81,281	94.0%	\$ 2,098	96.4%	\$ 1,951	\$ 797	\$ 380	\$ 86,507

- JSA CFO and Business Operations activities continued to perform well throughout this period:
 - Successfully completed several reviews without any material weaknesses or reportable findings: review of property capitalization, biennial review of prices for material and services, review of A-123 FMFIA entity and process controls, Procurement Evaluation and Re-engineering Team on the Procurement System, Financial System Review of Accounting for Unallowable Costs, were the most significant.
 - Reviewed by Internal Audit for Funds commitment and de-commitment procedures, with no significant weaknesses or reportable findings.
 - Worked with the Site Office, ORO and JSA Corporate to satisfactorily attend to the matters of VA funds treatment (resulting from the internal audit for VA funds usage), per the Contracting Officer's July 9 letter with guidance on the matter.
 - Working with ORO, the OIG, TJSO, and JSA Internal Audit, successfully completed the Audit Coverage of Cost Allowability for JSA under the Contract during FYs 2006-2010, where the OIG made no recommendations and a management decision was not required for costs expended and claimed of \$550.642M.
 - Developed an Improper Payments Elimination and Recovery Act (IPEARA) Proposed Implementation Plan accepted by TJSO and ORO to be used to report in improper payments in FY13 as required by the DOECFO.
 - Submitted accurate and timely reports as required for Cost Management, Pricing Exceptions, Institutional Costs, and various ad hoc requests and data calls (Software development and capitalization, technology transfer WFO, CRADA and

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business development, etc.)

- Supported Operations Improvement Committee initiatives on Cost Savings initiatives by reporting on procurement savings at the Lab, conducting DOE Complex wide procurement for publications and journals and working on the development of a complex wide procurement for Gases (e.g. Helium) to leverage volume procurement on regional basis with vendor community.
- JSA CFO participated in DOE CFO and NLDC CFO and Contractor Financial Management Alliance meetings and initiatives in support DOE-wide activities.
- Aggressively implemented the guidance on conference cost management received initially in July 2012, to provide DOE HQ information on planned conference attendance for FY12 and the development of an FY13 Conference Management Plan used by the DOE to aggregate cost, provide review and approvals and waivers as determined by the Secretary, when appropriate to advance the science mission.

6.2 ■ JLab will exceed three of the five FY12 Small Business Program Goals as noted below; Service-Disabled and HubZone are behind target despite best efforts and do not anticipate meeting these two mandatory set goals.

	FY12 GOALS		ACHIEVED THROUGH AUGUST 31, 2012	
	M\$s	%	M\$s	%
Small Business	\$26.028	36.0%	\$39.505	55.6%
Women-Owned	\$3.615	5.0%	\$8.132	11.4%
Disadvantaged	\$3.615	5.0%	\$8.529	12.0%
Service-Disabled	\$2.169	3.0%	\$1.138	1.6%
HubZone	\$2.169	3.0%	\$1.511	2.1%
BASE	\$72.300		\$71.103	

- JSA’s Small Business Manager attended the DOE/NNSA Regional Small Business Summit being held July 9 -11, 2012 in Knoxville, TN. In addition, JLab operated a booth as part of the lab’s “Out Reach Program” at this summit. The president of JSA’s Protégé, NSC Technology, attended the summit and shared the booth.
- The overall JSA Small Business Program received the high mark of “Strength” as a result of the Procurement Evaluation and Reengineering Team (PERT) audit conducted on-sight at JLab August 2012.
- JSA was recently recognized in the August 20, 2012 edition of Inside Energy. The article noted that JSA, in support of their outreach program and DOE Oakridge (ORO) initiatives, was able to award a contract to a woman-owned, small disadvantaged company that was referred by the ORO Small Business Manager to Jefferson Lab.
- Procurement Balanced Scorecard targets are exceeding expectations in the aggregate through August at a score of 94.7%, which is in the BSC Outstanding (92-100%) range. Final results will be posted at year end and are expected to be at least what is currently recorded.
- JLab received a 2012 Department of Energy Sustainability Award for the nomination of Green Electronic Procurement Implementation and Tracking. Highlighted in the September 2012 issue of DOE Sustainability SPOTlight, this project exemplifies the innovation and commitment to sustainability the awards program is designed to recognize.

6.3 ■ **NOTABLE OUTCOME** Develop and Implement a Disposal Plan for Unneeded Property:

This notable outcome was achieved. A total of 37 additional items have been disposed of from the FY2011 Walk-Thru: Total weight 66 tons with \$20,838 received for the scrap metal.

- Property Balanced Scorecard (BSC) performance year to date is at or above target levels except for one item as noted below:

JLAB PROPERTY BALANCED SCORECARD	TARGET	RESULTS FYTD
Internal Customer Satisfaction	≥ 80%	100%
Equipment Inventory Accuracy	98%	99%
Sensitive Property Inventory Accuracy	98%	99%
High Risk Property Inventory Accuracy	100%	100%
Annual Inventory of Stockroom Items Variance	1%	0.3%
High Risk Property Recorded within 15 Days of Receipt	100%	100%

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Sensitive Property Recorded within 15 Days of Receipt	98%	100%
Accountable Equipment Recorded within 30 Business Days After Receipt.	98%	100%
Motor Vehicle Utilization Standards % Meeting Goals	98%	100%
Property Utilization Non Motor Vehicle Asset Utilization	Recording Cost of Redeployed and/or Excess Property	<ul style="list-style-type: none"> – Redeployed at JLab \$79,624.67 – Redeployed elsewhere \$57,463.00 – From Excess = \$1,300,934
Review and Improve Property Management System	Biennially	<p>Internal auditor performed audits of:</p> <ul style="list-style-type: none"> – Management of Power and Hand Tools – Financial Management Assurance (Testing of Property Controls) <p>System Improvements</p> <ul style="list-style-type: none"> – Six property forms moved to web based – Outside stored items captured in database (~ half complete)
Property Disposal Effectiveness	90% of 5 Year Average	90%
Property Disposal - Sale of Excess Property	90% Sold within 60 Days	72%
	Overall Score	98.30%

- In addition to the property identified in the balanced scorecard, the Property Office sold or recycled the following items: recycled metal 229 tons; recycled paper and cardboard 15 tons; ADPE 12 tons; total sales \$56,527.15; donated items 228 (original acquisition cost of \$38,569.30). Also during this period, work bikes were procured and golf carts redistributed in lieu of procuring additional carts or vehicles.

6.4 ▪ **NOTABLE OUTCOME** Continue to Implement JWISE Recommendations – Implicit Bias and Mentor Training:

Performance highlights noted include chartering the Lab Diversity and Inclusion Council; nominating diverse membership representatives of the Lab population; and holding a kick-off meeting in early September. Two seminars for Mentoring postdocs was conducted during this quarter. JLab continues to promote its Co-Op Program and has employed three students via this program in FY12. All three are returning Co-Op students from across the country who have chosen to continue their education and professional career development with the Lab, which blends academics with real-world job experience.

- **NOTABLE OUTCOME** Continue Implementation of JLab’s Succession Planning Activities:

Skill profiles for 50 critical positions were completed and individual development plans for potential internal candidates for these positions are underway. All information has been captured in the Lab’s Job Task Analysis training database to ensure that activity and progress can be monitored. During this period, the Lab held focus groups and worked with varying levels of management to identify core leadership skills. This effort resulted in the ability to grandfather current employees some leadership skills based upon supervisor assessments.

- JLab’s Human Resources Manager, Rhonda Barbosa, played a significant leadership role on the DOE O 350.1 Contractor Human Resources Management Piloting Enterprise Risk Management (ERM) team. At a meeting held the first week in September, the ERM team made recommendations to remove the Contractor Requirements Document (CRD) from the directive and to implement all related contractor requirements through an “H” clause in site contracts. This action will result in the removal of duplications; essentially delegate authority down to senior acquisition officer; and enable more effective management of necessary variances.
- Human Resources attended a total of eight job fairs and recruiting events in FY12, continuing its efforts to promote the Lab as an employer of choice among STEM related careers. The job fairs include those targeted at minorities as well as female students.

6.5 ▪ Progress continues to be made on internal audits in accordance with the Audit Plan. The Funds Commitment and De-Commitment Procedures audit is complete and the final report will be distributed prior to year end. In addition, the audit of the Management of Power and Hand Tools is on track as scheduled. The Financial Management Assurance (FMA) and Entity

Assessment (EAT) tools were submitted to DOE in a timely manner. A professional audit firm has been selected to co-source the Internal Audit function to leverage external resources to supplement the existing Internal Audit Staff to acquire extra capacity and specialized skills. In August, the Office of Inspector General (OIG) issued its report on the *Audit Coverage of Cost Allowability For Jefferson Science Associates, LLC under Department of Energy Contract Number DE-AC-05-06OR23177 During Fiscal Years 2006 – 2010*. The review of Internal Audit's allowable cost testing revealed no exceptions, acknowledged that Internal Audit had already addressed corrective actions, and the OIG did not question any costs or make any recommendations.

- The Quality Assurance & Continuous Improvement (QACI) department continued to work closely with the Lab and TJSO in improving performance and resolving issues as demonstrated:
 - Collaboration with both TJSO and JSA on FY2013 assessment scheduling. Coordinating activities into one schedule allows us to streamline assessments and save time for the Lab as well as the assessors.
 - Continued transparency and partnering with TJSO in areas such as 5% audits of levels 0-2 CATS actions, as well as team updates on corrective action progress for the ORPS / NTS submissions on “TEDF-12-0329 - Recurring Subcontractor Failure to Recognize Silica as a Hazard”
 - Release of a Safety Culture Survey; this information will allow us to identify specific improvement actions within high opportunity areas. The survey questions are similar to those used at PNNL, ORNL and LBNL, which will allow us to benchmark as well.
 - Inclusion of TJSO in planning and implementation of JLab's automated Assessment database. This database has been structured to eliminate many of the administrative functions and error opportunities associated with Assessments, such as routing of paper copies, scanning documents after signature, and filing in different locations
- Progress towards optimizing management systems support highlighted by the following activities:
 - Successfully working with ESnet to fund a redundant network connection to ESnet at Ashburn, VA. This is to provide redundancy to the Lab's 10 gbit/sec path to ESnet.
 - Procured a new contract for local telephone service and backup Internet connection. A 100 mbit/sec backup Internet connection was procured for the Lab to maintain minimal Internet connectivity in the event of an outage with ESnet.
 - Migrated Lab staff to a new Zimbra calendar system. The new system consolidates email and calendar functionality into a single service and provides support for mobile devices and interoperability with MS Exchange and other external calendar systems.
 - Enabled IPv6 functionality on external public services. They include Internet peering, Domain Name System (DNS) and the www.jlab.org and education.jlab.org web servers. Email will be IPv6 capable by the end of the September.
 - Switched local and long distance phone services from Avaya to the new Cisco VoIP system. All offsite phone calls are now managed by the Cisco VoIP system.
 - Continued migrating older Avaya phones over to the new VoIP system.
 - Became a member of InCommon for federated identity management. The InCommon service provides a secure and privacy-preserving trust fabric for authenticating users between research and higher education institutions.
 - Added processes to electronic Travel Authorization system to better track conferences, for compliance with new DOE order.
 - Worked on system to enhance PEMP process, for more efficient and automated management of quarterly metrics.
 - Deployed new system for automated tracking and planning of assessments.
- To better manage engineering projects supporting the Accelerator and Physics Divisions and their research, the Information Technology and Engineering Divisions have been working together to migrate JLab's engineering projects to the NX and Teamcenter applications. NX is an advanced computer-aided design (CAD) application and Teamcenter is a product lifecycle management application for managing engineering projects, data, drawings, and work flows from design to manufacture. The SRF group's Short-Pulse X-ray (SPX) project is being developed using NX and recently migrated its engineering data into Teamcenter. SPX is not the first project to use NX, but they are the first project to migrate their data into Teamcenter. This migration marks a major step forward in the Laboratory's CAD migration project. The results are predicted to improve productivity, accuracy, and configuration management.

- 6.6 ▪ FY12 technology transfer and intellectual stewardship statistics through August 31st include 23 Invention Disclosures (FY12 Goal 23), 11 Patents (FY12 Goal 6), and 2 Licenses (FY12 Goal 2) awarded.

Goal 7: Sustain Excellence in Operating, Maintaining, Renewing the Facility and Infrastructure Portfolio (25%)

- Objective 7.1 – Manage Facilities/Infrastructure in Effective Manner to Optimize Usage/Minimize Life Cycle Costs (40%)
 - Notable Outcome: Develop Boiler and Pressure Vessel Inspection Criteria for JLab Pressure Vessels
 - Notable Outcome: Implement FY2012 Deliverables for JLab’s Configuration Management (CM) Program
- Objective 7.2 – Provide Planning for and Acquire Facilities/Infra Required to Support Future Lab Program (60%)
 - Notable Outcome: Establish Baseline to meet DOE Sustainability Goals

Notable Performance Items: (See JLab Insight for additional performance data.)

JLab met performance requirements for the Objectives and Notable Outcomes through August 31, 2012.

7.1 ■ NOTABLE OUTCOME Develop Boiler and Pressure Vessel Inspection Criteria for JLab Pressure Vessels:

Boiler and pressure vessel inspection criteria were submitted during Q3 in May 2012. Development of a pressure relief inspection program document is in final draft and under review. During this period, JLab benchmarked with Langley Pressure Systems staff.

■ **NOTABLE OUTCOME** Implement FY2012 Deliverables for JLab’s CM Program:

Six of eight deliverables are complete and agreed upon, including all Gap Analyses. The remaining two deliverables, Training and FY13 Plan Revision, are approximately 80% complete as of August 31. There are no anticipated delays to their accomplishment.

■ Other Facilities Management efforts towards this objective include:

- Operations Improvement Committee (OIC): JLab’s Facilities Management Director, Rusty Sprouse, chaired the SC Complex Infrastructure brainstorming to identify cost reduction programs in preparation of the July OIC workshop at Argonne National Laboratory. Three initiatives were presented to the SC Lab COOs which accepted the proposed Space Optimization/Reduction initiative. The Lab has identified space that will be eliminated as well as lease reductions for the remainder of 2012 and 2013. In addition JSA continues to lead best practices working groups among the SC Labs for computerized maintenance management systems and predictive maintenance. The purpose of these working groups is to identify efficiency improvements and/or cost savings.
- Continual improvement of the Dig and Blind Penetration Permit Process:
 - Splitting the Dig and Blind Penetrations efforts into two separate permits for better clarity to each process.
 - Use of a radar penetrating device to aid in identifying utilities prior to drilling or cutting into walls.
- Working with the Newport News Department of Engineering regarding recent flooding events and areas of flood control improvements
- Design and Construction:
 - Tunnel Penetration Repair Contract underway; on track for completion FY13 Q1
 - Counting House Renovation project awarded; on track for completion FY13 Q3
 - Building 68 Extension bid opening is September 2012
 - Installation of Kitchen Grease Interceptor; design completed and is scheduled for award FY13 Q1
 - Sustainability Renovation of building 87; obtaining requirements from future tenants

7.2 ■ NOTABLE OUTCOME Establish Baseline to meet DOE Sustainability Goals:

This notable outcome was completed during Q1 with the submission of JLab’s 2012 Site Sustainability Plan (SSP) in December 2011. Additional highlights noted during this period:

- Met with energy companies to discuss energy savings and green energy opportunities to meet sustainability goals.
- PNNL water assessment team completed on site portion of JLab water consumption study, focusing primarily on major water consumption equipment (i.e.; cooling towers, ultra-pure water system, etc.) operations, and water reuse sources (i.e.; experiment hall ground water discharge, ultra-pure water system waste water) as alternative water

supply to supplement the Lab's process requirements. Water sample collection/content evaluation, analysis of onsite data collection, and final assessment report/recommendations to occur in FY13 Q1. The team noted JLab's completion of meters and metering QA program.

- Test Lab Cool Roof awarded; on track for completion FY13 Q1.
- MCC Cool Roof and HVAC Replacement are out for bids.
- Other Facilities Management efforts towards this objective include:
 - TEDF Project progress is 88.3 %. The Technology and Engineering Building as well as the Test Lab Addition are occupied and in use. Preparing the Test Lab for restart of cryomodule and cavity testing. Cost Performance Index = 1.01 with Schedule Performance Index = 1.02. Overall construction safety for the lifetime of the project is well above average with a DART = 0.38 and TRC = 2.31 (Bureau of Labor Statistics General Construction Average Dart=2.1 and TRC=4.0). Renovation of the Test Lab is underway with demolition of the concrete mass and major interior structures being complete. Project is on track for completion more than 8 months ahead of schedule. Other notable activities during this period:
 - The TEDF building is fully occupied. SRF operations have moved from the Test Lab to the Test Lab Addition. Renovation of the Test Lab is underway. Major interior structure demolition is complete.
 - TEDF Transition in progress. Existing equipment installed. New equipment installation in progress and scheduled for completion FY13 Q1.
 - Construction of the 40 to 22 MVA Tie Feeder was completed under budget and ahead of schedule
 - CHL1 Cooling Tower Replacement on schedule for completion FY13 Q1
 - Test Lab Cool Roof contract awarded scheduled for completion FY13 Q1
 - Sustainability Renovation of building 87; planning underway for a construction award in FY13

Goal 8: Sustain/Enhance Effectiveness of ISSM and Emergency Management Systems (20%)

- Objective 8.1 – Provide an Efficient/Effective Emergency Management System (EMS) (25%)
- Objective 8.2 – Provide an Efficient/Effective System for Cyber Security (50%)
- Objective 8.3 – Provide Efficient System for Protection of SNM, Classified Matter, and Property (10%)
- Objective 8.4 – Provide Efficient/Effective System for Protection of Classified/Sensitive Information (15%)

Notable Performance Items: (See JLab Insight for Additional Performance Data.)

JLab met performance requirements for these Objectives during August 31, 2012.

- 8.1
- The Emergency Management System continued to operate effectively. The Technical Basis Document, including the hazard survey and basis for classifying Jefferson Lab as an Operational Base Program was submitted and approved by TJSO on March 8, 2012. The Emergency Management Plan and various implementing procedures and desk instructions revised/created as appropriate to incorporate improvements identified through table tops, training meetings, and critiques of actual events. The revised Emergency Plan will be submitted to TJSO for approval in September 2012.
 - Focused attention on completing all identified improvements arising from the recently completed Management Self-Assessment will continue in FY2013. Actions are being tracked in CATS.
- 8.2
- Cyber Security Incidents = 0; Percent of scanned machines with severe vulnerabilities = 0.98%; Number of working days to remediate systems identified by intrusion detection in this quarter was unknown due to a system upgrade. Additional highlights during this period:
 - Continued to participate in the JC3 Integrated Project Team (IPT) as the SC representative to enhance JC3’s ability to perform incident response, information sharing, reporting and to better coordinate cyber operations across the DOE enterprise.
 - Began working with DOE, SC, JC3 (NNSA IARC) to set up for providing 24x7 monitoring for network intrusions at the Lab’s perimeter.
 - Began working with DOE, SC and JC3 for providing additional email and Domain Name System (DNS) filtering using the DEX service
- 8.3
- Efficient System for Protection of SNM, Classified Matter, and Property highlights: completed JLab Open House security operations incident free by effectively integrating public safety, event management, and lab resources in an efficient manner; shared lessons learned by attending the Export Control Coordinators Organization training conference at the Idaho National Lab; JLab’s USAccess Light Credentialing Station has been installed and is certified as operational by GSA. The system is used to maintain approximately 20 USAccess credentials at JLab; nine JSA and eleven DOE TJSO personnel. Acquired a trailer mounted speed radar to calm traffic and excessive speed at roads near construction zones. Exercised Security & Safety procedures to include tests of silent duress alarms with JLab guard force and receptionists at business centers. Developed a template to plan increased physical security procedures for situations where manning assistance is required. Implemented a plan to provide trained and qualified off-duty police officers using Newport News police officers in support of the JLab Site Security Plan.
- 8.4
- Events involving loss of business/personnel sensitive data = 0; Root level compromises on managed systems or attacks from JLab on external systems = 0. Additional highlights during this period:
 - Continued participating in the SC Program Cyber Security Plan (PCSP) update process to meet the requirements of Department of Energy (DOE) Order 205.1B.
 - Scheduled site penetration tests with CSC for Q1 FY13 as part of our contractor assurance for cyber security and in preparation for a scheduled site penetration test with DOE’s Office of Health, Safety and Security (HSS) for Q2 FY13.
 - Working with DOE, CS and JC3 to obtain Encase tools for additional cyber security monitoring and forensics capabilities.