



DOE Office of Science

FY 2008

**Performance Evaluation of
Fermi Research Alliance, LLC**

for the

**Management and Operation of the
Fermi National Accelerator Laboratory**

February 2009



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I. OVERALL SUMMARY RATING/FEE

Performance-Based Score and Adjectival Rating:

The basis for the evaluation of Fermi Research Alliance, LLC, (the Contractor) management and operations of the Fermi National Acceleratory Laboratory (the Laboratory) during FY2008 centered on the Objectives found within the following Performance Goals:

- 1.0 Provide for Efficient and Effective Mission Accomplishment
- 2.0 Provide for Efficient and Effective Design, Fabrication, Construction and Operations of Facilities
- 3.0 Provide Effective and Efficient Science and Technology Research Project/Program Management
- 4.0 Provide Sound and Competent Leadership and Stewardship of the Laboratory
- 5.0 Sustain Excellence and Enhance Effectiveness of Integrated Safety, Health, and Environmental Protection
- 6.0 Deliver Efficient, Effective, and Responsive Business Systems and Resources that Enable the Successful Achievement of the Laboratory Mission(s)
- 7.0 Sustain Excellence in Operating, Maintaining, and Renewing the Facility and Infrastructure Portfolio to Meet Laboratory Needs
- 8.0 Sustain and Enhance the Effectiveness of Integrated Safeguards and Security Management (ISSM) and Emergency Management Systems

Each Performance Goal was composed of two or more weighted Objectives and most Objectives had a set of performance measures, which assisted in determining the Contractor's overall performance in meeting that Objective. Each of the performance measures identified significant activities, requirements, and/or milestones important to the success of the corresponding Objective. The following describes the methodology utilized in determining the Contractor performance rating.

Each Objective within a Goal was assigned a numerical score by the evaluating office. Each evaluation measured the degree of effectiveness and performance of the Contractor in meeting the Objective and was based on the Contractor's success in meeting the set of Performance Measures/Targets identified for each Objective as well as other performance information available to the evaluating office from other sources to include; but not limited to, the Contractor's self-evaluation report, operational awareness (daily oversight) activities, "For Cause" reviews (if any), other outside agency reviews (OIG, GAO, DCAA, etc.) and the annual 2-week review (if needed). If no performance measures/targets were utilized, the description of the general expectations for the success of the objective was utilized as the baseline of the effectiveness and performance of the Contractor in meeting the corresponding Objective and in determining the score assigned. The Goal score was then computed by multiplying the numerical score by the weight of each Objective within a Goal. These values were then added together to develop an overall score for each Goal. This score was then compared to Table A to determine the overall grade for each Goal. A set of tables is provided at the end of each Performance Goal section of this document to assist in the calculation of Objective scores to the Goal score. The raw score (rounded to the nearest hundredth) from each calculation was carried through to the next stage of the calculation process. The raw score for Science and Technology and Management and Operations was rounded to the nearest tenth of a point for utilization in determining fee as discussed below. A standard rounding convention of x.44 and less rounds down to the nearest tenth (here, x.4), while x.45 and greater rounds up to the nearest tenth (here, x.5).



Final Grade	A+	A	A-	B+	B	B-	C+	C	C-	D	F
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

Table A. FY 2008 Contractor Letter Grade Scale

Based on the evaluation of Fermi Research Alliance, LLC, performance against the Goals and Objectives contained within the FY2008 Performance Evaluation and Measurement Plan (PEMP), the scores and corresponding grades awarded for each are provided within Table B below. Specific information regarding the Contractor's performance in meeting each of the Goals and their corresponding Objectives is provided within Section II of this report.

S&T Performance Goal	Numerical Score	Letter Grade	Weight	Weighted Score	Total Score
1.0 Mission Accomplishment	3.8	A	30%	1.14	
2.0 Design, Fabrication, Construction and Operations of Facilities	3.9	A	50%	1.95	
3.0 Science and Technology Research Project/Program Management	3.7	A-	20%	.74	
Total Score					3.8
M&O Performance Goal	Numerical Score	Letter Grade	Weight	Weighted Score	Total Score
4.0 Leadership and Stewardship of the Laboratory	3.4	B+	30%	1.02	
5.0 Integrated Safety, Health, and Environmental Protection	3.8	A	30%	1.14	
6.0 Business Systems	3.3	B+	15%	.50	
7.0 Operating, Maintaining, and Renewing Facility and Infrastructure Portfolio	3.5	A-	15%	.53	
8.0 Integrated Safeguards and Security Management and Emergency Management Systems	3.4	B+	10%	.34	
Total Score					3.5

Table B. FY 2008 Contractor Evaluation Score Calculation

Performance-Based Fee Earned:

Utilizing Table B, above, the scores for each of the Science and Technology (S&T) Goals and Management and Operations (M&O) Goals were multiplied by the weight assigned and these were summed to provide an overall score for each. The percentage of the available performance-based fee that was earned by the Contractor was determined based on the overall weighted score for the S&T Goals (see Table B) and then compared to Table C below. The overall numerical score of the M&O Goals from Table B was then utilized to determine the final fee multiplier (see Table C), which was utilized to determine the overall amount of performance-based fee earned for FY2008 as calculated within Table D. Based on the overall performance within the S&T and M&O Goals, the Contractor is awarded \$3,443,500.00 in performance based fee for FY2008.



Overall Weighted Score from Table A	Percent S&T Fee Earned	M&O Fee Multiplier
4.3	100%	100%
4.2		
4.1		
4.0	97%	100%
3.9		
3.8		
3.7	94%	100%
3.6		
3.5		
3.4	91%	100%
3.3		
3.2		
3.1		
3.0	88%	95%
2.9		
2.8		
2.7	85%	90%
2.6		
2.5		
2.4	75%	85%
2.3		
2.2		
2.1		
2.0	50%	75%
1.9		
1.8		
1.7	0%	60%
1.6		
1.5		
1.4		
1.3		
1.2		
1.1		
1.0 to 0.8	0%	0%
0.7 to 0.0	0%	0%

Table C. - Performance-Based Fee Earned Scale

Overall Fee Determination	
Percent S&T Fee Earned from Table C	97 %
M&O Fee Multiplier from Table C	X 100 %
Overall Earned Performance-Based Fee	\$3,443,500.00 (\$3,550,000.00 X 97%)

Table D. – Final Percentage of Performance-Based Fee Earned Determination

Performance Fee and Rating Adjustment Factor:

No issue or concern which necessitated a performance fee and/or rating adjustment factor occurred in FY2008. Therefore, this section is not applicable to the FY2008 performance evaluation of the Laboratory.



II. PERFORMANCE GOALS, OBJECTIVES, AND MEASURES/TARGETS

1.0 Provide for Efficient and Effective Mission Accomplishment

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

The weight of this Goal is 30%.

The Provide for Efficient and Effective Mission Accomplishment Goal measured the overall effectiveness and performance of the Contractor in delivering science and technology results which contributed to and enhanced the DOE's mission of protecting our national and economic security by providing world-class scientific research capacity and advancing scientific knowledge by supporting world-class, peer-reviewed scientific results, which were recognized by others.

The combined scores of each objective in 1.0 rolled up to an overall letter grade of A (with a numerical score of 3.8).

Performance Summary:

The Tevatron experimental program continues to be the world's leading program at the energy frontier. Fermilab has provided leadership for the US CMS program. Fermilab is leading the development of the future of the U.S. intensity frontier program. The Education Office at Fermilab hosts a small number of undergraduate interns and educators, therein lies the strength of their program. The interns are given individual attention and a research experience along with "enrichment" activities tailored to meet the needs of the participant. Fermi has a strong DOE ACTS and pre-service (PST) program.

Objectives:

1.1 Science and Technology Results Provide Meaningful Impact on the Field

The Tevatron remains the leading facility at the energy frontier and the CDF and D-Zero experiments had a very productive year, pushing to new levels of sensitivity in electroweak physics and discovering new B hadrons and measuring their properties to new levels of precision.

CDF and D-Zero announced that they excluded the standard model Higgs boson with a mass of 170 GeV/c² at 95% confidence level. The excluded mass range is expected to expand as the Tevatron data set becomes larger.

The production of dibosons, Z_0Z_0 , has the smallest cross section of all diboson processes but those involving the Higgs boson, and it was measured this year by CDF and D-Zero. The radiation amplitude zero in W, g production was measured by D-Zero, confirming a long standing prediction of gauge theory.

The Tevatron continues to produce results on B flavored hadrons, especially those that are not produced at the B-factory. D-Zero has observed the W_b , a baryon made up of a b quark and two s quarks. CDF has measured the lifetime of the L_b to new precision.

Outside the Tevatron program, the most precise measurement of neutrino mixing mass difference has been made by the MINOS experiment using the NuMI beam at Fermilab, and the MiniBoone experiment



has excluded the LSND neutrino oscillation result, which had lead to speculation about the existence of sterile neutrinos. The CDMS and COUPP experiments are world leaders in the search for dark matter.

Interns and educators do have access to the very best instructional material about high-energy physics. During their internship, they are guided through a process of fully understanding high-energy physics, the discoveries, and how they are relevant to real-life applications.

DOE Office of High Energy Physics Score for Objective 1.1: A (4.0)

DOE Office of Workforce Development for Teachers and Scientists Score for Objective 1.1: A- (3.5)

1.2 Provide Quality Leadership in Science and Technology

Fermilab has become the center for US efforts on the CMS experiment through the development of the Remote Operations Center and the LHC Physics Center, in addition to the Tier 1 computing center that they operate for CMS.

Fermilab has a key role in the development of the Intensity Frontier concept endorsed in the P5 report issued this year. The Fermilab Steering Group on US based accelerator program provided key input to P5 on the physics case and the Project X concept. Fermilab is now building a national collaboration to fully develop the Project X concept and to then construct it.

A review of all OHEP supported theory groups this year singled out the Fermilab particle theory group as exemplary for its alignment with the HEP mission, with well-chosen research thrusts that emphasize a unique lab contribution.

Fermilab has remained attractive to physicists as a place to work despite the difficult financial situation this year. Fermilab has the new head for Particle Astrophysics, a distinguished scientist, recruited from the University of Washington, and the lab continues to maintain a 100% track record in obtaining our first choice of Wilson and Peoples Fellows.

Hugh Montgomery, the Associate Director for Research, has been hired to be the Director of Thomas Jefferson National Accelerator Facility.

Fermi provides one of the best in class "informal education" on their web page. It is segmented by target audiences, (i.e., educator recourses, students K- 12), student and core science concepts are reinforced through multiple methods, such as worksheets, puzzles/games, reference material, and hands-on activities. The laboratory has extensive science education opportunities and uses multiples avenues throughout the laboratory to deliver the greatest learning impact. These include facility tours, workshops, seminars, and web-based classroom projects.

DOE Office of High Energy Physics Score for Objective 1.2: A (3.8)

DOE Office of Workforce Development for Teachers and Scientists Score for Objective 1.2: A- (3.5)

1.3 Provide and Sustain Outputs that Advance Program Objectives and Goals

The CDF and D-Zero experiments are extremely productive having published about 80 papers, presented 150 conference reports, and graduated about 75 PhDs over the last year, which this year's peer review of the lab found to be an extraordinary record.



Fermilab runs a large computing facility of 15,000 processors plus disk and tape storage to support the CDF and D-Zero experiments. In addition it supports the software needed to utilize remote computing provided by collaborators. The reconstruction and analysis of the data has kept pace with the large volumes of data being delivered by the detectors, which supported the production of physics papers just cited.

This year's peer review called out that Fermilab Computing Division has been ahead of the curve in dealing with power and cooling issues.

The SciBooNE experiment completed its run this year in the Booster neutrino beam. The annual peer review called out how efficiently it had been carried out.

The laboratory specifically targets undergraduate pre-service teachers and has structured an effective program that takes advantage of their unique resources, such as the Fermilab's and the Eisenhower National Clearinghouse Demonstration Site, to encourage individual educator development, as well as motivating ongoing development as the undergraduate moves into the classroom to teach. The science education office is a "trusted partner" within the laboratory, having a history of hosting well-prepared and serious interns.

DOE Office of High Energy Physics Score for Objective 1.3: A- (3.6)

DOE Office of Workforce Development for Teachers and Scientists Score for Objective 1.3: A- (3.5)

1.4 Provide for Effective Delivery of Products

All aspects of Run II of the Tevatron were done in a very effective manner. The accelerator ran superbly, the detectors' deadtime and downtime were minimized, and the reconstruction and storage of the data was handled efficiently.

The CMS operations program is managed by Fermilab acting as the host laboratory. They have successfully delivered the planned Tier 1 computing on schedule, supported the commissioning of the detector at CERN with a "surge" of physicists and engineers this year, and met the US commitments to CERN for shared costs. All of this has been accomplished within the planned budgets.

Fermilab supports a very active test beam program that was well reviewed in this year's peer review of the lab conducted by OHEP. It is open to the world wide particle physics community and it has been upgraded to better serve the community.

The laboratory makes every effort to maintain an alumni connection with the interns/educators in their program in an effort to develop/encourage persistent learners in high-energy physics. The education office is very willing to help current and former interns with access to research, teaching materials and support in how best to communicate complicated information about physics to students.

DOE Office of High Energy Physics Score for Objective 1.4: A (3.8)

DOE Office of Workforce Development for Teachers and Scientists Score for Objective 1.4: B+ (3.3)



Science Program Office	Letter Grade	Numerical Score	Weight	Weighted Score	Overall Score
Office of High Energy Physics					
1.1 Impact	A	4.0	30%	1.20	
1.2 Leadership	A	3.8	30%	1.14	
1.3 Output	A-	3.6	30%	1.08	
1.4 Delivery	A	3.8	10%	.38	
Overall HEP Total					3.8
Office of Workforce Development for Teachers and Scientists					
1.1 Impact	A-	3.5	25%	.88	
1.2 Leadership	A-	3.5	30%	1.05	
1.3 Output	A-	3.5	30%	1.05	
1.4 Delivery	B+	3.3	15%	.50	
Overall WDTS Total					3.5

Table 1.1 – 1.0 Program Office Performance Goal Score Development

Science Program Office	Letter Grade	Numerical Score	Funding Weight (BA)	Weighted Score	Overall Weighted Score
Office of High Energy Physics	A	3.8	99.9%	3.80	
Office of Workforce Development for Teachers and Scientists	A-	3.5	.01%	0.00	
Performance Goal 1.0 Total					3.8

Table 1.2 – Overall Performance Goal Score Development

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 1.3 – 1.0 Goal Final Letter Grade



2.0 Provide for Efficient and Effective Design, Fabrication, Construction and Operations of Research Facilities

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

The weight of this Goal is 50%.

The Provide for Efficient and Effective Design, Fabrication, Construction and Operations of Research Facilities Goal measured the overall effectiveness and performance of the Contractor in planning for and delivering leading-edge specialty research and/or user facilities to ensure the required capabilities are present to meet today's and tomorrow's complex challenges. It also measured the Contractor's innovative operational and programmatic means for implementation of systems that ensures the availability, reliability, and efficiency of these facilities; and the appropriate balance between R&D and user support.

The combined scores of each objective in 2.0 rolled up to an overall letter grade of A (with a numerical score of 3.9).

Performance Summary:

The lab performed well in a very unfavorable budget environment. Laboratory leadership put priority on maintaining a high level of operations. The Tevatron performed at record levels and the projects made acceptable progress despite adverse conditions.

Objectives:

2.1 Provide Effective Facility Design(s) as Required to Support Laboratory Programs

The Dark Energy Survey and the NOvA Project both received CD-2 during FY2008. In the case of NOvA, the project was ready for CD-2 when the Omnibus appropriation in December 2008 provided no fiscal year funds for the project. The lab managed to keep enough of the project team together using carryover funds to redo the resource loaded schedule with a new funding profile, pass an independent project review, and an external independent review. NOvA received CD-2 approval in September 2008.

DOE Office of High Energy Physics Score for Objective 2.1: A- (3.7)

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

The MINERvA Project is the only project at Fermilab to have CD-2 at the beginning of the year. The project has made acceptable progress during the year, which was confirmed by a review conducted by the Office of High Energy Physics. There was some schedule slip during year, but remedial actions have been taken and the project is expected to be completed on time and within budget.

The Dark Energy Survey moved from CD-2 to CD-3B according to the planned schedule. The major fabrication effort (post CD-2) at FNAL for the CMS project was completed. FNAL has met all of their milestones on time and on budget.

DOE Office of High Energy Physics Score for Objective 2.2: B+ (3.3)



2.3 Provide Efficient and Effective Operation of Facilities

The Tevatron delivered a record performance despite the surprising reduction in funding in the FY2008 Omnibus appropriation. The lab chose to implement rolling furloughs rather than reduce the operations of the Tevatron. The integrated luminosity delivered to CDF and D-Zero for FY2008 was 1786 pb^{-1} compared to 1311 pb^{-1} in FY 2007. This was accomplished despite the fact that critical operations personnel were lost for a week out of every 8 weeks during the period of furloughs. NuMI met its Joule goal with $1.97\text{E}20$ protons on target in FY2008.

DOE Office of High Energy Physics Score for Objective 2.3: A+ (4.3)

2.4 Utilization of Facility to Grow and Support the Laboratory's Research Base and External User Community

Not Applicable to this Contract.

Science Program Office	Letter Grade	Numerical Score	Weight	Weighted Score	Overall Score
Office of High Energy Physics					
2.1 Provide Effective Facility Design(s)	A-	3.7	25%	.925	
2.2 Provide for the Effective and Efficient Construction of Facilities and/or Fabrication of Components	B+	3.3	25%	.825	
2.3 Provide Efficient and Effective Operation of Facilities	A+	4.3	50%	2.15	
2.4 Utilization of Facility to Grow and Support the Laboratory's Research Base and External User Community	N/A	N/A	0%	N/A	
Overall HEP Total					3.9

Table 2.1 – 2.0 Program Office Performance Goal Score Development

Science Program Office	Letter Grade	Numerical Score	Funding Weight (BA)	Weighted Score	Overall Weighted Score
Office of High Energy Physics	A	3.9	100%	3.90	
Overall Program Office Total					3.9

Table 2.2 – Overall Performance Goal Score Development

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 2.3 – 2.0 Goal Final Letter Grade



3.0 Provide Effective and Efficient Science and Technology Research Project/Program Management

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.

The weight of this Goal is 20%.

The Provide Effective and Efficient Science and Technology Research Project/Program Management Goal measured the Contractor's overall leadership in executing S&T programs. Dimensions of program management covered included: 1) providing key competencies to support research programs to include key staffing requirements; 2) providing quality research plans that take into account technical risks and identify actions to mitigate risks; and 3) maintaining effective communications with customers to include providing quality responses to customer needs.

The combined scores of each objective in 3.0 rolled up to an overall letter grade of A- (with a numerical score of 3.7).

Performance Summary:

Management demonstrated a strong commitment to scientific priorities in a very difficult budget environment. Fermilab was instrumental to the new P5 roadmap, in particular the intensity frontier and a world-class neutrino program. Fermilab management makes significant efforts to keep headquarters informed of the state of the lab. The educational office has done an excellent job of advancing the science education culture at the laboratory. The programs supported by WDTS are validated via peer reviewed research abstracts, surveys of interns and mentors, and laboratory self-evaluation.

Objectives:

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

As noted under the facilities section, laboratory management was faced with an extremely challenging budget situation this year due to reductions in funding in the FY2008 Omnibus appropriation. The lab made difficult choices to have rolling furloughs (unpaid leave) for the entire staff rather than reduce Tevatron operations. Managing the laboratory during the furloughs was difficult with critical personnel missing one week out of eight; but the Tevatron, NuMI and the projects all performed well and the physics output was high as noted under Goal 1.

The laboratory education office instills in its intern/educators the brilliance and rewards of pursuing science education and then transferring knowledge (teaching) to others.

DOE Office of High Energy Physics Score for Objective 3.1: A+ (4.1)

DOE Office of Workforce Development for Teachers and Scientists Score for Objective 3.1: B+ (3.4)

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

Fermilab management provided a vision for a US-based neutrino program and valuable input to the P5 process that influenced the recommendations in the report. The lab immediately went to work to implement the recommendations but had not completed their five year resource plan, so that they could fully understand the resources available to execute the P5 recommendations.



The education group develops and shares generously with other labs their best practices for multiple approaches for communicating and equipping educators to teach very complicated science.

DOE Office of High Energy Physics Score for Objective 3.2: A- (3.6)

DOE Office of Workforce Development for Teachers and Scientists Score for Objective 3.2: A-(3.6)

3.3 Provide Efficient and Effective Communications and Responsiveness to Customer Needs

Communications with headquarters at a high level are regular and very effective. Headquarters is quickly notified when problems develop. The lines of communications between the lab and office for different areas of responsibility have been formalized and are regularly updated.

The quality of budget information provided to headquarters has improved, but some problems still remain. Justifications for financial plan changes are not always clear and consistent, and some very worthwhile scientific initiatives are not clearly visible in the budget, such as COUPP.

The initiative to start an ATLAS group at Fermilab has raised many concerns in the CMS community that the lab has not been able to successfully address.

The Laboratory education office is very responsive to education programs at other laboratories by making available best in class practices and procedures that help to lift the quality of the programs.

DOE Office of High Energy Physics Score for Objective 3.3: B+ (3.2)

DOE Office of Workforce Development for Teachers and Scientists Score for Objective 3.3: A-(3.6)



Science Program Office	Letter Grade	Numerical Score	Weight	Weighted Score	Overall Score
Office of High Energy Physics					
3.1 Effective and Efficient Stewardship	A+	4.1	40%	1.64	
3.2 Project/Program Planning and Management	A-	3.6	40%	1.44	
3.3 Communications and Responsiveness	B+	3.2	20%	.64	
Overall HEP Total					3.7
Office of Workforce Development for Teachers and Scientists					
3.1 Effective and Efficient Stewardship	B+	3.4	20%	.68	
3.2 Project/Program Planning and Management	A-	3.6	40%	1.44	
3.3 Communications and Responsiveness	A-	3.6	40%	1.44	
Overall WDTS Total					3.6

Table 3.1 – 3.0 Program Office Performance Goal Score Development

Science Program Office	Letter Grade	Numerical Score	Funding Weight (BA)	Weighted Score	Overall Weighted Score
Office of High Energy Physics	A-	3.7	99.9%	3.72	
Office of Workforce Development for Teachers and Scientists	A-	3.6	0.1%	0.00	
Overall Program Office Total					3.7

Table 3.2 – Overall Performance Goal Score Development

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 3.3 – 3.0 Goal Final Letter Grade



4.0 Provide Sound and Competent Leadership and Stewardship of the Laboratory

The Contractor's Leadership provides effective and efficient 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 for the overall success of the Laboratory.

The weight of this Goal is 30%.

The Provide Sound and Competent Leadership and Stewardship of the Laboratory Goal measured the Contractor's Leadership capabilities in leading the direction of the overall Laboratory. It also measured the responsiveness of the Contractor to issues and opportunities for continuous improvement and corporate office involvement/commitment to the overall success of the Laboratory.

The combined scores of each objective in 4.0 rolled up to an overall letter grade of B+ (with a numerical score of 3.4).

Objectives:

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

The Laboratory earned an overall letter grade for this objective of A- (with a numerical score of 3.6).

Effective development and implementation of Laboratory Vision and Business Plans (both strategic and annual).

Fermilab took a strong lead in developing a strategic plan for future U.S. leadership in high energy physics through the Fermilab Steering Group effort. The Steering Group Report articulated a balanced, multi-pronged strategic plan for maintaining Fermilab and U.S. leadership roles in world-wide particle physics. The strategic plan was well aligned with the Office of High Energy Physics (OHEP) national priorities and gained widespread community support. Fermilab provided valuable input to the High Energy Physics Advisory Panel (HEPAP) P5 Committee during the development of the national high energy physics roadmap. Lab management has endorsed the P5 roadmap. Fermilab's Business Plan aligns with the P5 recommendations, and the Laboratory has begun the detailed planning required for future projects.

Establish strategic partnerships and communications that effectively support the Laboratory vision, plans and mission accomplishment.

Fermilab leadership has worked effectively in maintaining, developing, and strengthening strategic partnerships in support of their long-range plans. The Laboratory is working to form strong collaborations for potential future projects. International relationships, which will be critical to the success of any large future efforts, are being regularly nurtured.

The lab's efforts promoting the U.S. role in the LHC have been excellent, especially for the CMS experiment. The lab has put in place two key facilities, the Remote Operations Center and the LHC Physics Center, that continue to enhance doing physics with CMS from the U.S.

Communication and outreach activities continue as key strengths of the Laboratory. Fermilab's policy of transparency in communications serves the Laboratory well. *Fermilab Today* and *Symmetry* continue to be top-notch publications for a wide variety of venues, including the local community and policy



makers. The move to an online *Symmetry* magazine is reaching a broader audience with timely news at a lower cost. The ILC Citizens Task Force effort concluded this year with a published report that will likely become a model roadmap on early, meaningful participation of local citizens and stakeholders in future large science projects. The Fermilab Office of Communications provided outstanding assistance in the redesign of the OHEP website, which was enthusiastically received. The national high energy physics community's recognition of Fermilab's communication expertise was evident when the Laboratory's communication director was tapped to serve in the key role as editor of the P5 Report. Her valuable efforts were lauded by the P5 Committee. To encourage U.S. media coverage of the LHC start-up at CERN on September 10, Fermilab held a Pajama Party beginning at 2 a.m. local time. The media event captured people's imagination and resulted in overwhelming response, including participation by local citizens, mayors and state representatives. This media event received widespread positive news coverage in many major U.S. news markets.

Also, it is important to note that citizen involvement in prior outreach activities at Fermilab has clearly created strong relationships within the local communities. In response to the significant budget cuts and possible layoffs at Fermilab, more than a dozen mayors, city councils, state representatives, union officials, industry groups and civic organizations wrote letters, passed resolutions and talked to the press in support of restoring science funding.

Develop a baseline for understanding and trending the cost of doing business.

For the "cost of doing business" initiative, Fermilab worked with FSO to develop a baseline cost structure from which a better common understanding of future impacts on costs could be surmised. The Chief Financial Officer delivered the baseline cost structure for consideration ahead of the requested deadline. Reporting and analysis of this information are continuing to be refined.

4.2 Provide for Responsive and Accountable Leadership throughout the Organization

The Laboratory earned an overall letter grade for this objective of B+ (with a numerical score of 3.3).

Leadership proactively identifies and addresses opportunities for improvement.

The Laboratory Leadership has proactively pursued various opportunities for improvement. Highlights of some of the notable improvements are provided below.

An external, independent, root cause analysis of the inner triplet magnet failures that occurred during LHC pressure testing in FY07 resulted in a comprehensive and responsive report identifying potential quality assurance improvements. A Laboratory Engineering Task Force has been developing a manual to formalize the engineering practices of the Laboratory and ensure that these practices are applied uniformly across all Divisions and Sections.

As part of the FRA contract commitment for ES&H system improvements, Laboratory leadership pursued certifications in both ISO 14001 and OHSAS 18001. Notably, Fermilab achieved dual certification in both ISO 14001 and OHSAS 18001:2007 in FY2008. As part of the registration process, the Laboratory is reviewed every six months, whereby strengths are identified along with areas of improvement. These dual registrations are strengthening the Laboratory's safety systems. FRA and Laboratory leadership are commended in pursuing these registrations.

The Assurance Council, established last year, meets twice a month and is starting to track lab-wide improvement activities through an issues management system. As an advisor to the Laboratory Director, the Council follows improvement activities and alerts the Director when concerns arise. This year, the Council positively influenced additional attention and resources to the management dashboard initiative and the development of the lab-wide Earned Value Management System. The Council also emphasized



the need to move quicker on the lab-wide Quality Assurance Program development and implementation. The Assurance Council includes the FRA Board Secretary, which creates a strong link to the FRA Board Chair and increases corporate awareness of issues and the ability to provide timely corporate support when needed.

Leadership response to Laboratory issues and review team recommendations is timely and immediate mitigating actions were identified and implemented as appropriate. Leadership maintains cognizance of corrective action plans, ensuring timely and effective implementation of corrections.

The Laboratory faced significant challenges this year, notably in budgets, workforce planning, strategic planning, quality assurance, and safety performance.

In December, 2007, the FY2008 Omnibus appropriation cut significant funding for Fermilab, including activities for vital future projects. Laboratory leadership responded responsibly to the funding cuts, evaluated the impacts, consulted with DOE, and informed employees. The Laboratory quickly made difficult decisions to preserve Tevatron operations through implementation of rolling furloughs for all staff and to create an all-involuntary workforce restructuring strategy. DOE's suggestion to create a two-phase voluntary/involuntary separation program was not pursued. A Fermilab Workforce Restructuring Task Force, composed of senior managers across the Laboratory, worked for 6 weeks and recommended a plan for reducing the staff by 10%. The Laboratory Director then met with all Division, Section, and Center leaders, who prepared the supporting documents over the next month. An ad hoc committee of senior leaders reviewed all the scientists on the involuntary separation list and made recommendations to the FRA Board, who endorsed the plan. The involuntary plan was delivered to DOE in mid-April and following deliberations at senior levels, the Department informed the Laboratory in mid-May that the DOE could not accept the plan due to some of the adverse impacts seen in the disparate impact analysis. At the end of May, some good news came; rolling furloughs were canceled due to a \$5M Work-for-Others agreement with the University of Chicago. Meanwhile, with assistance from DOE General Counsel, the Laboratory expeditiously responded with a phased workforce restructuring plan including a targeted voluntary separation program. Time was of the essence as financial benefits from workforce restructuring were rapidly eroding. The targeted voluntary was successfully completed in early July. About the same time, an emergency supplemental bill provided \$29.5M to Fermilab, which allowed for the cancellation of involuntary separations and provided some funding for vital future projects.

Throughout the entire process, Laboratory leadership held steady on their accountability to mission accomplishment and their vision and strategic plan for Fermilab. Scientific priorities and mission were key in their decision making. The Tevatron was operated for its planned run and delivered record luminosity, despite the disruptions caused by rolling furloughs, which affected all staff including critical operation personnel. All Laboratory projects made progress. Even the NOvA project, which took a large cut in funding, was preserved.

Along with the Laboratory's successes, there are some lessons learned. The Laboratory's workforce restructuring planning process needs to be streamlined. From the time of first announcement to employees to implementation, many months passed. The lengthy process added to employee stresses and negative publicity concerning morale issues. Laboratory communications linked to Congressional affairs must be carefully aligned with all levels of DOE. Sufficient time must be provided for DOE reviews before scheduling major announcements. In addition, Office of Science personnel gained important lessons learned about disparate impact analyses and other recently implemented NNSA and DOE workforce restructuring processes. The collective gained knowledge and experience should result in more streamlined workforce restructuring efforts, if they are required in the future.

In terms of strategic planning, Fermilab developed an excellent long-range plan and provided valuable leadership to the national planning effort of the U.S. high energy physics community (discussed in section 4.1). Laboratory-wide workforce planning remains a critical component of Fermilab's strategic planning effort. The Organizational and Human Asset Plan (OHAP) was useful during the



workforce restructuring effort. Additional development should improve the Laboratory's ability to respond quickly to future needs.

Unfortunately, progress on the development of a robust Laboratory-wide quality assurance program is slow. The Laboratory team is significantly behind in delivering on commitments made in the December 2006 Corrective Action Plan. After a critique from the Visiting Committee for Fermilab Administration and Operations Support in August 2008 raised this key compliance issue to the FRA Board and the Fermilab Assurance Council expressed concerns to the Laboratory Director, the Laboratory-wide QA program is finally moving forward into the initial stages of implementation.

Another challenge for the leadership was improvement in the Laboratory's safety performance from the prior year. After a variety of initiatives and intense focus throughout the year, safety performance at Fermilab significantly improved in FY2008. The laboratory achieved historically low injury rates. The TRC and DART rates both showed substantial improvements with reductions by a factor of 2 and 3, respectively.

4.3 Provide Efficient and Effective Corporate Office Support as Appropriate

The Laboratory earned an overall letter grade for this objective of B+ (with a numerical score of 3.3).

Corporate Leadership directs independent peer reviews of Laboratory management systems and processes that result in an effective overall assessment of key Laboratory administrative and operations support functions and management systems.

The FRA Visiting Committee for Fermilab Scientific Programs completed a successful review in April 2008. The FRA Visiting Committee review of Fermilab Administration and Operations Support was completed in August 2008. The FRA Visiting Committees provided quality recommendations for improvement. The Board tracked progress on these recommendations at subsequent meetings.

Corporate Leadership provides timely and effective policy guidance and oversight, facilitates corporate reach back and provides vital resources to effectively address emerging issues and facilitates a process of continuing improvement.

FRA, the University of Chicago, and URA leadership helped in developing support for the Office of Science and OHEP in response to the significant budget cuts in the Omnibus Bill. FRA drew on their broad base of support to assist in outreach. In May, the University of Chicago received an anonymous \$5M donation that allowed for the establishment of a Work for Others agreement in support of Fermilab future programs.

The FRA Board has helped to shape the Laboratory's multi-pronged strategic plan and address critical issues. The Board continues to attract high-quality members to serve on the Board. In response to the budget crisis, the Board reviewed the furlough plan, the workforce restructuring plans, and the layoff plan for scientists whose appointments had been previously approved by prior Boards. The Board also helped to drive improvements in key areas, such as safety, through their oversight activities. The ES&H Committee of the Board discussed ways for the Laboratory to address safety challenges, encouraged the Laboratory Director to conduct frequent safety walkthroughs, and also initiated safety tours prior to the Board Committee meetings.

Corporate Leadership maintains cognizance of significant commitments made and assures their timely accomplishment and acts as an effective advocate for the Laboratory.

Corporate leadership continues to deliver on commitments made in their contract proposal. All commitments are being tracked in FRA's issues management system and have been assigned to Board Committees for monitoring and oversight.



FRA has encouraged a more outward orientation for the Laboratory and introduced a culture of best practices. Corporate leadership continues to stimulate joint efforts between Fermilab and Argonne through the Lab Collaboration Council. The Chief Operating Officers from both labs are meeting routinely. FRA is drawing on expertise in both laboratories to serve on key operational assessments as independent reviewers. The two laboratories are discussing Fermilab’s Management Dashboard initiative and a number of potential cost-cutting collaborative efforts. The General Counsel offices for the laboratories and University collaborated on best practices on various workforce restructuring issues.

FRA is strategically employing joint appointments, especially with local universities, to strengthen the HEP program. Five key positions were filled in FY2008 through joint appointments with University of Chicago, University of Illinois-Chicago, or Northern Illinois University. The opportunity for undergraduate tuition remission by both the University of Chicago and Northwestern University has been utilized by a number of Fermilab families. The Strategic Laboratory Leadership Program, which trains promising scientific and operational managers from Fermilab and Argonne in conjunction with the University of Chicago, Graduate School of Business, ran another successful program in FY2008 for ten Fermilab and fifteen Argonne employees.

The University’s Strategic Collaborative Initiative program for Fermilab awarded \$270K for new and continued joint research projects. The funding for the joint initiatives with the University, Argonne, and Fermilab has stimulated important long-range projects in areas such as superconducting RF technology and computational cosmology. The University of Illinois at Urbana-Champaign (UIUC) provided support for two collaborative research projects involving Fermilab and UIUC graduate students. URA’s Visiting Scholar Program provided \$400K to fund researchers from URA institutions to work at Fermilab for periods up to one year.

ELEMENT	Letter Grade	Numerical Score	Objective Weight	Total Points	Total Points
4.0 Effectiveness and Efficiency of Contractor Leadership and Stewardship					
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	A-	3.6	35%	1.26	
4.2 Provide for Responsive and Accountable Leadership throughout the Organization	B+	3.3	35%	1.16	
4.3 Provide Efficient and Effective Corporate Office Support as Appropriate	B+	3.3	30%	.99	
Performance Goal 4.0 Total					3.4

Table 4.1 – 4.0 Goal Performance Rating Development

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 4.2 – 4.0 Goal Final Letter Grade



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

The Contractor sustains and enhances the effectiveness of integrated safety, health and environmental protection through a strong and well deployed system.

The weight of this Goal is 30%.

The Sustain Excellence and Enhance Effectiveness of Integrated Safety, Health, and Environmental Protection Goal measured the Contractor's overall success in preventing worker injury and illness; implementation of ISM down through and across the organization; and providing effective and efficient waste management, minimization, and pollution prevention.

The combined scores of each objective in 5.0 rolled up to an overall letter grade of A (with a numerical score of 3.8).

Objectives:

5.1 Provide a Work Environment that Protects Workers and the Environment

The Laboratory earned an overall letter grade for this objective of A- (with a numerical score of 3.6).

Combined Days Away, Restricted, Transferred (DART) for Fermilab employees and subcontractor workers for the performance period (October 1, 2007 - September 30, 2008).

For the performance period, there were three injuries that resulted in either restricted work activity or days away from work. This equates to a rate of 0.16 which is significantly less than the target rate of 0.25. The overall improvement is especially evident when compared to the previous year's rate of 0.57. The injury rate reduction is even more impressive considering the reduced work hours (furloughs), planned involuntary and eventual voluntary layoffs, and severe budget restraints the Laboratory endured during FY2008. It is obvious that the commitment from senior level management and employees throughout the laboratory has paid off in this reduced injury rate. The performance of this program has exceeded expectations.

Combined Total Recordable Case Rate (TRCR) for Fermilab employees and subcontractor workers for the performance period (October 1, 2007 – September 30, 2008).

For the performance period, there were 12 injuries that resulted in medical treatment beyond first aid. This equates to a rate of 0.66 which essentially met the SC target. The overall improvement is evident when compared to the previous year's rate of 1.56. The injury rate reduction is even more impressive considering the reduced work hours (furloughs), planned involuntary and eventual voluntary layoffs, and severe budget restraints the Laboratory endured during FY2008. It is obvious that the commitment from senior level management and employees throughout the laboratory has paid off in this reduced injury rate.

Reporting of non-compliances with 10 CFR 835, 10 CFR 850 and 10 CFR 851 into the ORPS/NTS tracking system is done in a timely manner, including corrective action follow-up and closure tracking.

Laboratory management and staff have been forthright with FSO in identifying, notifying, categorizing and reporting incidents that have occurred during FY2008. Laboratory and FSO staff have worked together cooperatively in meeting internal and DOE reporting timeframes. The Laboratory ES&H Section reviews each incident for classification versus the criteria for 10 CFR 835, 850, 851 and the criteria for ORPS and Noncompliance Tracking System (NTS) reporting. In addition, incidents that do NOT meet these criteria and those that do are all tracked and analyzed quarterly on a rolling twelve-



month timeframe to gather any identifiable trends. The Laboratory should consider reporting into NTS events that are reoccurring, but may fall outside the twelve-month performance period (e.g., copper radioactive material thefts, minor contaminations, etc.).

Innovations or improvements that can credibly improve the control of future radiation exposures are documented. One point will be credited for each identification. An additional point will be awarded for implementation of the identified improvement.

FSO reviewed entries in the ALARA Opportunities for Improvement database. FSO credited the Laboratory with seven of the nine entries reviewed. This exceeds the five required to meet performance expectations. In June 2008, the FSO manager issued notable observations for capturing ALARA Opportunities for Improvements and sharing ALARA project descriptions with DOE Headquarters. Also, favorable comments on the ALARA program were documented in the Internal Peer Review of the Laboratory's Radiation Protection Program conducted during April 24-26, 2007, and fully documented in a February 2008 report.

All work involving significant potential for radiation exposure to the workforce is subjected to an ALARA Radiological Work Permit review.

FRA and the Laboratory have a policy for Radiological Control Organizations to prepare a formal ALARA review of non-routine or complex work activities if the estimated individual doses are greater than 200 person-mrem for the task. During this performance period, a total of 1461 tasks were screened for radiation protection implications. Of these, 46 were identified as having the potential for a TEDE exceeding 100 person-mrem. Of these 46 tasks, 23 were found to actually result in a TEDE exceeding 100 person-mrem. All tasks where the TEDE exceeded 100 person-mrem received both pre-job and post-job ALARA reviews. The Laboratory has clearly exceeded the metric for this measure (which is based on a criterion of 200 person-mrem). The Laboratory has gone beyond expectations in protecting its employees and continues to improve on an already excellent program. The Laboratory shares its ALARA project descriptions and successes with DOE Headquarters and these are captured by the Office of Science in annual reports.

Recognizing the recent changes in the Laboratory's electrical safety program, all energized electrical work on AC power distribution systems over 50 volts is to be performed under a rigorous review process requiring approval by the Fermilab Chief Operating Officer.

It is evident that the Laboratory's policy against working on energized power distribution systems has permeated throughout the laboratory. No electrical work permits were submitted to the Chief Operating Officer (COO) seeking permission to perform manipulative energized work on power distribution systems. One job required excavating around an energized duct bank. The hazard analysis was reviewed and approved by the COO in much the same manner. It is apparent that alternatives to working on energized manipulative systems are being actively sought. Improved job planning was responsible for assuring that work on power distribution systems that in the past may have occurred on energized systems, no longer is necessary or justifiable. Credit can be given to the intensive training effort made by the Electrical Safety Subcommittee and the ES&H Section. The Electrical Safety in the Workplace NFPA 70E training that has been provided to employees, subcontractors, and visitors, emphasizes the laboratory's policy to work in a de-energized state. The Electrical Safety Subcommittee has developed policy and guidance on electrical utilization equipment which has been published in FESHM 5041. This is an area in which little guidance is available in NFPA 70E. With these improvements to the Laboratory's Electrical Safety Program, the requirements established in 10 CFR 851 are achieved as well. The performance of this program has exceeded expectations.



Analyze OSHA-recordable injuries for human performance issues.

The Laboratory experienced 13 recordable cases during this performance period. All of these cases were investigated promptly and entered into the CAIRS database. Part of each investigation included a formal causal analysis that was entered into a blank field on the CAIRS form. The causal analysis of the cases identified a variety of contributing factors. Communications, human performance and management problems were all identified as causal factors. The Injury Illness Subcommittee (IIS) reviews each case and discusses causes and corrective actions. FSO has a representative who participates in the IIS meetings and listens to the discussion of each case. Beginning in July 2008, the CAIRS database was upgraded to include causal analysis fields. This assures that the analysis is done and entered before the CAIRS can be verified and uploaded. One hundred percent of the recordable cases were analyzed for causal analysis, thus exceeding our goal of 95%. The Fermilab additional effort in upgrading the system to allow for capturing of this key information was critical and Fermilab exceeded expectations for this metric.

Perform a series of division/section assessments on the implementation of the 10 CFR 851 standard for the Laboratory and subcontractor staff.

FSO verified that the Laboratory has established the required schedule of reviews for the three-year period. The Laboratory had now conducted the initial five topical reviews against 10 CFR 851 requirements. The reviews documented results, but the reports could have been a bit more robust and thorough. Follow-on actions related to the Occupational Medical Program review compliance issues appear too tentative and indecisive.

Enhance the oversight of corrective actions and closure of items from the Fermi Site Office Operational Awareness reviews.

During this performance period there were five FSO Operational Awareness Reviews conducted including: Site Wide Air Emissions Review; Contractor Assurance System (CAS); Respiratory Protection Program; Injury/Illness Recordkeeping Review; and EMS Implementation Status. The first three audits occurred earlier in the fiscal year and FSO transmitted final reports to Fermilab containing a total of 17 findings. Of these findings, 11 have been completed and are considered closed by the Laboratory. Five remaining actions have a due date of 12/31/08 or later and one action is past due (i.e., was due to be completed on 9/30/08). Therefore, the Laboratory has addressed 11 of the 12 findings scheduled for completion during FY2008, or 91% on schedule. This falls a bit short of the expectation of 95% completion. Failure to meet this target is partially due to unanticipated personnel losses in the ES&H Section during the fiscal year.

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

The Laboratory earned an overall letter grade for this objective of A (with a numerical score of 3.9).

The Laboratory obtained OHSAS 18001 certification in April 2008. Fermilab is now dual certified in ISO 14001 and OHSAS 18001 and is one of only two Office of Science Laboratories that have dual certification. Certification reviews performed every six months are driving noticeable self-improvements.

Safety-related training for line managers and staff is developed, identified in Individual Training Needs Assessments (ITNAs), and implemented.

The Laboratory maintains and uses a very effective tool to ensure that employees receive all necessary safety training (initial and updates) commensurate with their responsibilities. The preparation of Individual Training Needs Assessments (ITNAs) by supervisors for all employees is used to identify



required ES&H training. Completion of training is tracked through the leading-lagging indicators that are reviewed at weekly Scheduling Meetings. Division/Section Heads monitor the ES&H training of their own staff through the TRAIN database. The Laboratory reports that during this performance period, 1879 of the Laboratory's 1903 employees (98.7%) had an ITNA performed for them. Many of the division/sections review the ITNAs as part of the employee performance evaluation process. Of the 24,202 required ES&H courses, 23,172 (95.7%) were completed. The bulk of the non-completed classes are those that are required before access is allowed into the accelerator tunnel or enclosures. The Main Control Room monitors training completion prior to issuing keys to individuals. If someone is either not trained or has not renewed his/her training as needed, access to radiation areas, etc., is denied. The Laboratory continues to have a strong safety training program.

Safety-related training for visiting scientists/users is developed, identified in Individual Training Needs Assessments (ITNAs), and implemented.

The ITNAs for scientific Users are done systematically on the 15th of each month, so the Laboratory maintains a completion rate at or near 100%. New Users must have, at a minimum, New Employee Orientation in order to get an identification card. During this year, the Laboratory has moved the training documentation to an open web port to allow for greater off-site training program access. [Previously, access was restricted to on-site access only.] The availability of New Employee Orientation training on-line has streamlined the User training process and enabled many Users to complete necessary training prior to their arrival at the Laboratory. Just as for Laboratory employees, Scientific Users are denied access to accelerator tunnels, enclosures or detector halls without appropriate ES&H training. These new efforts in FY2008 and those completed in prior years have contributed to Users reaching a level of training completion comparable to the general lab population.

Staff demonstrates cognizance and engagement in the safety program through participation in the Laboratory Safety Committee (LSC) and its various Subcommittees. The LSC meets on a monthly basis to discuss issues of ES&H import. Activity reports from the subcommittees are provided at these meetings to inform and engage the committee members. Minutes are also posted on the ES&H website for all to view.

The ES&H program includes a very effective Laboratory Safety Subcommittee (LSC) and thirteen technical subcommittees that report to the LSC. The integration of representatives from all divisions/sections into the LSC is extremely useful in getting individuals involved and knowledgeable of lab-wide issues and transporting lessons learned back to their own division/section for implementation, as needed. The areas handled by the LSC subcommittees makes for a comprehensive ES&H program and utilizes knowledgeable individuals to best advantage. Each of the subcommittees are made up of technical experts and interested employees. The LSC meets on a monthly basis and is provided updates from the subcommittees on their activities. The meeting schedules of the subcommittees varies from bi-weekly to quarterly, with most meeting at least monthly. The minutes of the LSC and its subcommittees are posted on the ES&H website for good communication laboratory wide. During this performance period, the LSC met 12 times as scheduled. Per the performance target, the minutes for each of these meetings were posted within ten working days, exceeding DOE's expectations.

Another way employees participate in the Laboratory's ES&H program is through their own division/section ES&H committees. These committees allow employees to raise issues, concerns, and suggestions within their own organizations and track follow up actions. There are also experiment ES&H review committees, another avenue for employee participation. Finally employees can make a safety suggestion, or raise an anonymous safety concern through the ES&H website. Many excellent opportunities exist for employee involvement on safety committees and for exchange of ideas across the Laboratory.



An open reporting culture is maintained at the Laboratory while appropriately responding to ESH&Q incidents. FSO and the Laboratory will meet on a monthly basis to optimize communication between the two organizations on ESH&Q topics. Agenda items will include: new DOE initiatives and status of action items associated with them; current DOE-SC action items and requests; recent non-routine events; lessons learned from various sources, and opportunities for program improvements.

This activity has been quite successful and useful for both the Laboratory and FSO. The monthly meetings provided time for uninterrupted discussions about timely topics. Twelve meetings were held during the performance period. Topics ranged from standing agenda items such as progress on performance measures, to status of implementation of 10 CFR 851 and ISO 14001 and OHSAS 18001 registration activities, to results of conferences attended and up-coming DOE reviews. Minutes were kept and were posted on the ES&H website for all to view. This exceeded the performance target.

Fermilab senior management clearly demonstrates their commitment to strong safety performance.

This measure consisted of two metrics; the first involves walkthroughs of work spaces by the Laboratory Director and the second concerns top Laboratory management communication of safety topics to employees. The Laboratory Director and Deputy Director conducted fifteen management walkthroughs during this performance period. During each walkthrough, they took the opportunity to talk with employees about safety in their workplace. The Director visited each Division and Section at least once, covering both of the large collider detector facilities; areas in Wilson Hall; all of Shipping and Receiving; two of the busiest tech shops at the Laboratory; a machine shop, and the daycare center. Other areas toured included the Main Injector and FESS Operations. The tours were very well received by Laboratory employees and scientists. It was an excellent opportunity for the Director to connect with the general population and his presence in the field was especially important during this performance period because of the high level of uncertainty due to budget restraints that ultimately led to furloughs and voluntary separations. The target for this measure was exceeded.

In regard to the second metric, during the first six months of the performance period alone, there were 78 articles on ES&H published in *Fermilab Today*. Fourteen of these articles were written by Senior Management. In addition, several of the Divisions/Sections/Centers published their own internal newsletters on a monthly or quarterly basis. In two of the operating divisions, the division heads send out the newsletter electronically, with a statement about safety. On occasion, the senior level managers may contribute to the content of the newsletters as well. The Laboratory's performance exceeded expectations.

Fermilab divisions and sections maintain their organizational ES&H Plans as a grass-roots foundation of the Fermilab ES&H program.

Divisions and Sections provided to the Director their updated ES&H Plan for CY2008. Also, at the end of calendar year 2007, all of the Laboratory divisions and sections turned in accomplishments against their CY2007 ES&H Plans. Eighty of the 92 (87%) planned actions in CY2007 plans were fully implemented and five were partially completed. For CY2008, divisions and sections have planned and detailed 76 specific actions to improve the efficiency and effectiveness of how they perform their activities. The Laboratory has met the specific goal of updating division/section local ES&H Plans.

Fermilab will continue to strongly support the Highly Protected Risk (HPR) Inspection Program as a foundation of the Fermilab safety program.

There were 140 HPR assessments scheduled during this performance period and 100% of them were completed. Beginning in January 2008, findings from the assessments were entered into ESHTRK for trending and analysis purposes. This data was reviewed to determine if there were any identifiable programmatic trends or opportunities for improvement. It was not expected that any trends would be immediately identifiable, as this type of review was only recently begun. The findings in many cases resulted in immediate abatement. Quarterly trending of the findings will continue and be reviewed for



lessons learned and/or opportunities for improvement. In July 2008, the HPR process was expanded to provide feedback to senior management about the findings in their areas of responsibility. Updates to the HPR reports will be coordinated, when necessary, between the D/S/C SSO and the ES&H Section. This method provides a more concise report for management, while still maintaining the integrity of the program through the Senior Safety Officers. The performance of this program has exceeded expectations.

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

The Laboratory earned an overall letter grade for this objective of A (with a numerical score of 3.9).

Success in minimizing waste generation from major Fermilab programmatic and support activities.

The Laboratory has exceeded the measure for 95% of construction design and NEPA reviews during the performance period.

The Laboratory received accolades from a regulator with the U.S. Environmental Protection Agency who stated that Fermilab's waste management practices were the best of the federal facilities that he had inspected. Both U.S. and Illinois EPA inspectors found no compliance violations. DOE Fermi Site Office oversight review found exemplary practices and no violations in hazardous materials shipping documentation. In accordance with DOE waste minimization efforts for work performed at DOE facilities, the Laboratory encourages subcontractors at all levels to use recycling vendors.

The Laboratory received a White House award as a winner of the FY07-08 Federal Electronics Reuse and Recycling Challenge.

Incorporating a screening tool to evaluate potential environmental impacts of FESS construction and demolition projects is a proactive and beneficial step for work planning that meets two critical standards for environmental protection: 1) consideration of potential environmental issues prior to commencing work; and 2) employee awareness. This important step has a far-reaching and multiplying potential to strengthen and improve the environmental culture at the Laboratory.

Successful User involvement in environmental planning, minimizing waste generation, and avoiding adverse environmental effects from experimental activities.

The Laboratory has met the standard for 95% of Operational Readiness Clearance reviews to be done on proposed experiments by Users. The involvement of Users in environmental analysis for purposes of experimental design conveys the expectation that the community should identify and address potential environmental issues and solutions during work planning.

The Laboratory received a DOE P2 STAR Award and an Honorable Mention from the DOE Office of Science for the SciBooNE Experiment for recycling and reusing experimental components, saving the project about \$3M.

Fermilab also received the Chicago Wilderness and U.S. Environmental Protection Agency 2008 Conservation and Natural Landscaping Award which honored efforts to reclaim an oxidation sewage pond. The sewage pond is now a beautiful marsh which contains native plants and provides habitat for birds.



Successful lab-wide implementation of an Environmental Management System, as demonstrated by performing opportunity assessments that evaluate the potential to improve specific environmental aspects.

The Laboratory has demonstrated site-wide implementation of an Environmental Management System. As a result of several findings during the Laboratory's first ISO status review, Laboratory environmental officers identified specific steps and documentation that will position the laboratory organizations well for planning internal assessments and identifying opportunities for improvement. By creating a robust core program and relevant documentation, the laboratory is providing the tools and guidance necessary to encourage and support Divisional and Sectional self-evaluation in terms of environmental management function within the overarching organization. Engaging the Divisions and Sections in developing this core program brings an involved interest to institutionalizing, evaluating, and sustaining appropriate environmental performance.

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-	3.6	35%	1.26	
5.2 Provide Efficient and Effective Implementation of Integrated Safety, Health and Environment Management	A	3.9	35%	1.37	
5.3 Provide Efficient and Effective Waste Management, Minimization, and Pollution Prevention	A	3.9	30%	1.17	
Performance Goal 5.0 Total					3.8

Table 5.1 – 5.0 Goal Performance Rating Development

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 5.2 – 5.0 Goal Final Letter Grade



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

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

The weight of this Goal is 15%.

The Deliver Efficient, Effective, and Responsive Business systems and Resources that Enable the Successful Achievement of the Laboratory Mission(s) Goal measured the Contractor's overall success in deploying, implementing, and improving integrated business systems that efficiently and effectively support the mission(s) of the Laboratory.

The combined scores of each objective in 6.0 rolled up to an overall letter grade of B+ (with a numerical score of 3.3).

Objectives:

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

The Laboratory earned an overall letter grade for this objective of B+ (with a numerical score of 3.3).

Effective Cash and Debt Management Practices. (Vendors are paid on time.)

The Laboratory's invoices show that 98.7% of standard purchase orders and 98.9% of Ordering Agreements are being paid on time, which exceeds the target. It is noted that the percentage of standard purchase orders being paid on time improved from 97.7% in FY2007 to 98.7% for FY2008 and Ordering Agreements improved from 97.4% in FY2007 to 98.9% for FY2008. We expect that the Laboratory will continue to identify any weaknesses that prevent all invoices from being timely paid. 100% of major vendors were paid on time in FY2008, despite furloughs and loss of staff in Fermilab's Finance organization. The Laboratory has met the performance objective.

Effective Budget Management (Budget Formulation).

The FY2010 budget validation was conducted in September, 2008. No exceptions were taken in the FY2010 budget validation. The Laboratory has met the performance objective.

Effective Budget Management (Budget Execution).

Of the \$340M in costs reported in FY2008, less than 0.6% required B&R category reclassification. All transfers between B&R's were identified by Lab employees in their normal course of business. Further, the FY2008 OMB A-123 Internal Control Assessment found no deficiencies involving internal controls related to proper costing practices. The A-123 work included evaluation and testing of identified controls. Control testing was performed by Fermilab's Internal Audit Group. Costs did not exceed total budget authority provided in the contract at any time during FY2008. The Laboratory has met the performance objective.

Number of material findings resulting from financial audits, reviews, and other assessments or appraisals which highlight weakness in the Laboratory business and management control structure.

There were no findings resulting from financial audits, reviews, or other assessments or appraisals indicating material weakness in the Laboratory's business and management control structure. DOE has



reviewed the Erroneous Payment reports for the year. The Erroneous Payment report is an OMB Circular A-123 requirement in which Field Offices have to monitor the number of payments, dollar amount of payments, number of erroneous payments and dollar amount of erroneous payments made for payroll, travel, and vendor/contractors. When the number of erroneous payments exceeds 1.50% of total payments, a corrective action plan has to be submitted. For FY2008, the Laboratory has made \$261,424,408 of payments with only \$558,761 being classified as erroneous. This equates to 0.214% which is well within the threshold of 1.50%. The Laboratory has met the performance objective.

Fermilab has met all quarterly reporting due dates to DOE and has completed requirements for documentation, evaluation, testing, and corrective action plans related to the A-123 assessment for FY2008. The DOE-CH CFO does not provide formal certifications to contractors and has advised that DOE has no plan to certify contractors under A-123. The A-123 testing by Internal Audit in FY2008 resulted in no new findings requiring corrective action plans.

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

The Laboratory earned an overall letter grade for this objective of A- (with a numerical score of 3.7).

Evaluation of the Property function in accordance with the DOE-approved Property Balanced Scorecard.

The Property and Inventory Control Department is responsible for the implementation, development and administration of policies, programs and procedures for effective and economical receipt, storage, use, control, physical protection and disposition of government personal property in the custody of the Laboratory. The Property Office currently has a certified Property Management System, which DOE re-approved on August 24, 2007. The Laboratory and DOE agreed to use the DOE Contractor Personal Property Balanced Scorecard (BSC) to assess the Laboratory's performance in Property Management. This plan targets four perspectives: Customer, Internal Business Processes, Learning & Growth and Financial. The Property function at the Laboratory is conducted in an effective and efficient manner. Performance exceeded DOE's expectations.

The Laboratory Property Management function exceeded National Target Expectations in 11 of the 18 required BSC metrics and met the National Target Expectations in six additional metrics. In the remaining two areas, the Property Management function did not meet expectations. In one of the performance areas not met, the make-up of the Laboratory's fleet vehicles was established prior to the measure's inclusion in the Balanced Scorecard. Vehicle substitution, which will assist in the Laboratory's ability to meet the measure, is proceeding as they become due for replacement. As the impact of following prescribed replacement procedures is small, and few such vehicles remain in the inventory, using current replacement procedures is reasonable. The other metric not met was to increase the number of unneeded items disposed of within 180 days. Due to the duration and number of furloughs which the Laboratory underwent as a result of its significant FY2008 funding shortfall, the Laboratory determined to accumulate computer assets for disposal rather than to sanitize ADPE assets on an individual basis as they arrived, a required process prior to disposal, donation or sale. As a result of this time saving determination, time to dispose of assets received was increased slightly from the previous performance period, rather than decreased. As the Laboratory-wide furloughs continued for months, the delay in disposal processing is reasonable. The Department does very well each year in exceeding the core requirements for inventory management as evidenced by the inventory results.

A review of the annual GSA Exchange/Sale Report (41 CFR 102-39-75) and Excess Personal Property Furnished to Non-Federal Recipients Report (41 CFR 102-36.295) identified no deficiencies.

The Laboratory increased its use of electronic methods to dispose of surplus items by 14.14%, exceeding the 10% goal. The use of electronic methods has decreased the Laboratory's cost of disposing of surplus and also generally increased the financial return on many such items. The Computers for Learning is successfully supported by the Laboratory, which provided 138 assets to 17 different schools. Also



notable is the Laboratory's support for reutilization of Governmental property assets through the GSA Excess system, which is an important value-added component of the property management function. The Laboratory obtained assets valued at over \$452,000 for use at the site and excessed on or about 350 Laboratory assets valued at over \$675,000 for use elsewhere within the Government. The Laboratory also participated in the Federal Electronics Challenge and won the FY2008 award in the Midwest medium civilian facility category.

The Laboratory exceeded annual petroleum consumption reduction requirements and alternative fuel increased usage requirements contained in Executive Order 13423, Strengthening Federal Environmental, Energy and Transportation Management Efficiency.

DOE performance expectations for FY2008 were exceeded.

Evaluation of the Procurement function in accordance with the DOE-approved Procurement Balanced Scorecard.

The Procurement Department acquires goods and services for the Laboratory using a best value procurement philosophy. The mission of the Office is to provide reliable, cost effective service to the user communities in accordance with appropriate government regulations and directives. The Laboratory and DOE agreed to use the Balanced Scorecard (BSC) Performance Measurement Model to assess the Laboratory's performance in Procurement Management, which considered customer perspectives, internal business practices, financial considerations (efficiency of the procurement process) and employee learning and growth feedback.

Procurement operations real time customer feedback addressed their effectiveness in providing quality material and services in a timely manner. A 43% survey return rate utilized to make this assessment was achieved. The Laboratory procurement's customer perspective for FY2007 equated to a value of 93%. This response exceeds the national target of $\geq 92\%$. The response rate and positive feedback both showed a slight decline from FY2007.

The internal business perspective assures that customer requirements and expectations are understood, and that the appropriate procurement processes are in place to support customer needs. As measured through the sub-elements of effective internal controls and supplier management (on-time deliveries), use of effective competition and alternative procurement approaches, timely support and good corporate citizenship (socioeconomic goal achievement) through purchasing, the Laboratory received a score of 27.8 out of 32 potential points, a small decline from FY2007.

The Laboratory met the 100% local target for employee satisfaction and exceeded the 98% national target for alignment as measured by employee satisfaction and alignment with organizational goals.

The Laboratory, for every dollar spent to purchase an item, expends 15 cents to do so, a four cent per dollar savings from FY2007. The efficiency of the cost of doing business exceeds the local target to maintain the cost of accomplishing the Laboratory's procurements at fewer than 20 cents per dollar expended.

The Department underwent a Procurement Evaluation and Re-engineering Evaluation Team (PERT) assessment resulting in a finding of "adequate and no observations of a significant nature exist that would warrant disapproval of the contractor purchasing system". DOE re-approved the Laboratory's Procurement System for three years, effective October 1, 2008. The Department adequately responded to FSO oversight review concerns by updating contract terms and conditions and initiating and completing training in several areas where improvement in procurement practices was warranted.

DOE performance expectations for FY2008 were exceeded.



6.3 Provide an Efficient, Effective, and Responsive Human Resources Management System and Diversity Program

The Laboratory earned an overall letter grade for this objective of B+ (with a numerical score of 3.3).

Attain certification of compensation system.

Several items identified in the corrective action plan have been completed, thus certification was granted in March 2008. Unfortunately, two remaining items have continued to remain uncompleted through the entire FY2008 PEMP period with one item being of significance and well within the control of HR, the completion of the Equal Pay Act Study. This activity was conducted by a third party for FNAL. Following submission of the report by the provider, HR did not take adequate steps to bring this initiative to closure (validate, determine impact, and effect the necessary pay actions) and to date this item remains open. The other item that was not validated during the compensation review was the supervisory hierarchy as a result of the Laboratory implementing a new Organization Chart program. To date this also has not been accomplished, although it is outside of the control of HR. The labor intense process of implementing and validating all of the completed items in the corrective action plan when offset by the two still pending warrants a determination that the Laboratory has met this measure.

The Contractor's success in meeting human resource management and diversity program goals and expectations.

Of the HR FY2008 Balanced Scorecard Goals, 93% (25 of 27) were achieved. For the most part, the majority of the BSC represents independent transactional items that are in response to customer focus groups, quality of life improvements, or seeking out and implementing cost saving measures relative to health benefit programs, prescription drug programs, etc. Some are continuing actions from the previous performance review periods, such as Alternate Work Schedule pilot, leave donation program, and the development of the expatriate policy. Other items resulted from the remaining issues of the compensation program corrective action plan, i.e., adhering to a cycle for the review of jobs lab-wide (review of computer profession job descriptions).

Significant funding cuts to the Fermilab programs in the FY2008 Omnibus appropriations resulted in labor-intensive human resource management actions. The Laboratory developed and executed new policies and procedures for administering a rolling furlough program. An all-involuntary separation program was created that involved lengthy analyses, discussions and approvals so as to withstand legal challenges. Unfortunately, after many months of effort, the DOE was unable to approve the involuntary plan due to some of the adverse impacts seen in the disparate impact analysis. When informed of the DOE decision, the Laboratory responded quickly and effectively in putting together a phased workforce restructuring plan that included a targeted voluntary separation program. The Laboratory implemented timely execution of the voluntary separation program. Employee outreach throughout the budget crisis was successfully achieved via the creation of a special website featuring a Question and Answer format.

The Laboratory earned recognition awards from the Minority Engineering Recruitment and Retention Program at the University of Illinois at Chicago and from the Quad County Urban League for Support of Tomorrow's Scientists, Technicians and Managers.

The Laboratory successfully implemented a corrective action plan resulting from the Benefits Value Study. This involved changes to the retiree medical premiums for retirees, ultimately resulting in a savings of \$600,000 per year and improving the Benefit Value study index to 103.8. An extensive communication plan for retirees was also devised to introduce the medical benefits changes including tele-meetings for out of state retirees.

The Laboratory's timely negotiation of three collective bargaining agreements reflect positively on the union/employer relations at the laboratory, especially following a difficult budget year.



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

The Laboratory earned an overall letter grade for this objective of B (with a numerical score of 2.8).

Demonstrate effective Internal Audit and Oversight (IA) as assessed through external reviews, surveys and inspections of IA.

For the most part, Fermilab's internal audit management system is efficient, effective, and responsive to the needs of the Laboratory and the Department. The Internal Audit Department understands customers/clients needs and interacts with them in an effective and positive manner. The Department effectively assumes responsibility for ensuring that commitments are met and considers consequences before taking actions. Language and behavior promote "win-win" solutions. Departmental Management and staff members act promptly to resolve inquiries/issues.

The Internal Audit Manager seeks better ways to accomplish the task at hand. She strives to be innovative, challenges established thinking, and works effectively to advance new ways of doing/improving business.

The IG Statement of Cost Incurred Audit conducted during the evaluation period identified no weaknesses within Internal Audit. The IG review noted that Internal Audit in limited circumstances inappropriately assumed that certain findings were aberrations and consequently did not conduct enough testing. As a result, questioned costs that could have been identified were not.

Internal Audit's tracking system effectively allows FRA and DOE to track internal audit findings/issues easily. FY2008 Internal Audit reports were well written and findings were well documented. Audits were conducted in accordance with applicable auditing standards. Although understaffed for a portion of FY2008, Internal Audit exceeded the requirements of the DOE approved audit plan.

Contractor's success in meeting Internal Audit and Oversight management goals and expectations.

We are unaware of any deficiencies that would preclude efficient and effective Internal Audit and Oversight through external reviews, surveys and inspections. The Laboratory conducts Internal Audits in accordance with applicable auditing standards. The Laboratory has met the performance objectives.

Contractor's success in meeting Information Technology management goals and expectations.

One Information Technology (IT) project meeting the target criteria of schedule, budget and technical milestones achievement in the approved IT project plan over \$500K occurred. This project was only partially completed due to a redirection of resources needed to plan and execute the furlough program.

The Laboratory provides effective tactile Information Technology planning in support of the Laboratory's mission and goals.

The Laboratory maintains a Strategic Information Systems Plan (SISP) for business computing on site. The FY2008 SISP was implemented in accordance with resource-laden plans and budget constraints. The FY2009 plan is in place and is being implemented. The Laboratory has met the target requirement.

Information Management products and services meet customer requirements.

Formal surveys used by the Laboratory to review their previous year's performance and to identify future opportunities to apply technology to help solve business problems resulted in a composite rating of 4.4 (on a 5-point scale with 5 defined as excellent). The responses further indicated that 88% of



customers rated Information Management services at 3.5 or better. Based upon the survey results, the Laboratory has met target requirements.

Quality Assurance Issues.

While expending considerable time and effort drafting Fermilab Quality Assurance (QA) Program documentation during this performance period, Fermilab management continued to struggle with what constitutes an acceptable program for meeting DOE expectations and at the same time being acceptable to Fermilab management and staff for lab-wide implementation. Although progress has been made during the year, the schedule with which the process has proceeded has not met DOE-FSO's expectations. Concerns about the status of the Fermilab QA program development and implementation have been expressed by FSO management before, including as part of the mid-year feedback to Fermilab. Although the *Fermilab Integrated QA Program* document was approved by FSO during the first quarter of FY2009, FSO remains concerned enough to have scheduled a Fermilab QA Program review for September 2009 to ensure significant progress continues to be made.

6.5 Demonstrate Effective Transfer of Technology and Commercialization of Intellectual Assets

Not Applicable to this Contract.

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)	B+	3.3	25%	.83	
6.2 Provide an Efficient, Effective, and Responsive Acquisition and Property Management System(s)	A-	3.7	25%	.93	
6.3 Provide an Efficient, Effective, and Responsive Human Resources Management System	B+	3.3	25%	.83	
6.4 Provide Efficient, Effective, and Responsive Management Systems for Internal Audit and Oversight; Quality; Information Management; and Other Administrative Support Services as Appropriate	B	2.8	25%	.70	
6.5 Demonstrate Effective Transfer of Technology and Commercialization of Intellectual Assets	N/A	N/A	N/A	N/A	
Performance Goal 6.0 Total					3.3

Table 6.1 – 6.0 Goal Performance Rating Development

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 6.2 – 6.0 Goal Final Letter Grade



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

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.

The weight of this goal is 15%.

The Sustain Excellence in Operating, Maintaining, and Renewing the Facility and Infrastructure Portfolio to Meet Laboratory Needs Goal shall measure the overall effectiveness and performance of the Contractor in planning for, delivering, and operations of Laboratory facilities and equipment needed to ensure required capabilities are present to meet today's and tomorrow's complex challenges.

The combined scores of each objective in 7.0 rolled up to an overall letter grade of A- (with a numerical score of 3.5).

Objectives:

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

The Laboratory earned an overall letter grade for this objective of A- (with a numerical score of 3.5).

Effectiveness and efficiency of maintenance activities to maximize the operational life of facility systems, structures, and components (scheduled hours vs. total hours, measured as a percentage).

Achievement of an average of 91% scheduled maintenance hours verses total maintenance hours notably exceeds the expectation of 80%. This performance significantly exceeds the target metric. Monthly averages for scheduled maintenance hours vs. total maintenance hours ranged from a low of 90% to a high of 94%. Each month of performance notably exceeded the target expectation.

Level of maintenance investment in real property assets. The MII is calculated by dividing the total annual contractor funded maintenance for active conventional facilities by the Replacement Plant Value (RPV) from FIMS for these same facilities. Multiplying this decimal number by 100 expresses the index as a percentage.

$$\text{MII} = (\text{Annual Contractor Maintenance} / \text{RPV}) \times 100$$

The Laboratory slightly exceeded the 2.0% maintenance investment target, achieving 2.1% as a percentage of the Replacement Plant Value. The performance metric goal was met.

For the performance period, the percentage of milestones completed (number of milestones completed/number of milestones planned), as documented in Construction Directives for General Plant Projects, In-House Energy Management and Accelerator Improvement Projects (AIP).

All eighteen FY2008 project milestones for small projects were met; or 100%, significantly exceeding the goal of 90% completion of all milestones.



An update to the Ten Year Site Plan is developed and is approved by DOE that adequately addresses the site's contribution to meeting the Agency-wide goals of the Secretarial Transformational Energy Action Management (TEAM) initiative, and the goals set forth in Executive Order 13423.

The Laboratory submitted an executable plan on the September 30, 2008, due date. The Laboratory incorporated all Site Office comments and the plan was considered by the Site Office to be acceptable. The Laboratory met the performance target.

Support of SC Mission Readiness

In addition to exceeding metrics, the Laboratory Chief Operating Officer (COO) and Facility Manager participated on the contractor committee developing the Mission Readiness concept and peer review guide plus lines on inquiry. The Laboratory COO served as co-lead spokesperson for the DOE.

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

The Laboratory earned an overall letter grade for this objective of A- (with a numerical score of 3.6).

Percent of new GPP projects that were identified in the Ten Year Site Plan at least one year before the authorization was approved. This shall exclude programmatic projects that have arisen out of rapidly changing program requirements as described by the Laboratory and agreed to for exclusion by the Fermi Site Office.

One new project was authorized in FY2008. That project was identified in the previous year's Ten Year Site Plan. The Laboratory exceeded the requirement that 80% or more projects are so identified.

Amount of Scheduled Tevatron run time lost due to a failure of the electrical distribution system that is under the control of the Laboratory Infrastructure Management Group. Failure of the electrical distribution system will immediately shut down the Tevatron. Therefore, maintaining this system is critical.

The Laboratory achieved a downtime of 0.03%, which far exceeds the target of less than 5% of downtime due to failure of the electrical distribution system. On a monthly basis, downtime ranged from no downtime for multiple months to a high of 0.9% for a single month.

Amount of scheduled Tevatron run time lost due to a failure of the industrial water cooling system that is under the control of the Laboratory Infrastructure Management Group. Failure of the industrial water cooling system will shut down the Tevatron within a very short period of time. The Tevatron can not run without cooling. Therefore, maintaining this system is critical.

There was no downtime as a result of failures associated with the industrial water cooling system in FY2008, which far exceeds the target of less than 5% downtime. The performance metric was exceeded.

The Laboratory's Internet bandwidth is maintained or improved to accommodate strategic research collaborations requiring extensive computation resources and transfer of large data sets.

The Laboratory's offsite network data channel capacity increased by 31%. The bandwidth capacity is now spread across multiple network paths, minimizing the impact of outages to a single path. This increase exceeds what would be expected in the maintenance and improvement of the Internet bandwidth.



Develop a strategy for increasing investment in infrastructure which minimizes increases to the cost of doing business.

A strategy was developed which included using the Utility Incentive Program third party financing savings/payment stream to support increased GPP investment, meeting the target of developing a cost savings strategy for increasing investment in infrastructure.

Support to SC and DOE initiatives.

In addition to exceeding metrics, the Laboratory provided valuable support to the SC Laboratory Infrastructure Modernization Initiative (SLI) by participating as technical committee members in independent CD-1 readiness reviews of three SLI projects (Lawrence Berkeley National Laboratory, Thomas Jefferson National Laboratory and Brookhaven National Laboratory).

The Laboratory also provided strong support to the DOE Energy Savings Performance Contracting proposal review process.

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	A-	3.5	60%	2.06	
7.2 Provide Planning for and Acquire the Facilities and Infrastructure Required to Support Future Laboratory Programs	A-	3.6	40%	1.48	
Performance Goal 7.0 Total					3.5

Table 7.1 – 7.0 Goal Performance Rating Development

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 7.2 – 7.0 Goal Final Letter Grade



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

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

The weight of this Goal is 10%.

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

The combined scores of each objective in 8.0 rolled up to an overall letter grade of B+ (with a numerical score of 3.4).

Objectives:

8.1 Provide an Efficient and Effective Emergency Management System

The Laboratory earned an overall letter grade for this objective of B+ (with a numerical score of 3.3).

Complete corrective actions for reviews in accordance with approved Corrective Action Plans.

There were six identified recommendations resulting from drill critiques that had actions due for completion during this performance period. Two recommendations related to the need to identify new emergency wardens to fill vacated positions and three concerned need for improved signage. All six recommendations have all been addressed appropriately and are considered closed, meeting performance expectations.

Employee and Management awareness of their Emergency Management responsibilities.

There was some evidence of a few Laboratory locations not documenting participation in the October 2007 fire drill. A Business Services Section Emergency Preparedness Tripartite Review identified that drills are predominantly table-top drills and as such may not provide the full range of practical experience that could be gained from a broader drill. FSO encourages active drill participation in all cases and also recommends that Divisions and Sections conduct a third type of drill specific to other types of hazards having the potential to contribute to accidents in their specific areas.

Each Division, Section and Center has submitted Local Area Emergency Plans (LAEPs) for their respective occupied buildings. The number of LAEPs now totals 64. They have all been reviewed, received comments by the Emergency Coordinator, and posted in the appropriate areas and buildings. The Laboratory ES&H Section tracks fire and tornado drill critiques received from Division/Section drill participants in all occupied facilities.

The Laboratory did cooperate and participate in the No Notice Exercise on November 15, 2007. Some positive feedback was obtained, but a final report has not yet been received by the Laboratory or FSO.

8.2 Provide an Efficient and Effective System for Cyber-Security

The Laboratory earned an overall letter grade for this objective of A- (with a numerical score of 3.7).



Amount of time that the Tevatron does not run, or CDF/D0 experiments cannot take data, or business systems are unable to operate, that is attributable to a successful cyber attack.

The Laboratory reported that no downtime of the Tevatron, CDF/D-Zero experiments, or business systems could be attributed to a cyber attack. This performance substantially exceeds the goal of less than 20 hours of time lost.

Amount of experiment data that is irrecoverably lost attributable to a successful cyber attack.

The target for this measure was less than or equal to 1 TB of data. The Laboratory reported that no experiment data was irrecoverably lost as a result of a cyber attack, exceeding expectations.

Ability to complete planned cyber-security actions per established schedule.

The Laboratory completed all actions in Plans of Actions and Milestones on or ahead of schedule. This meets the goal and with the increased demands in this area the Laboratory is considered to have performed very well.

Continuous monitoring is performed annually by the Laboratory and reported to the DOE Designated Approval Authority (DAA).

The target established for this measure was continuous monitoring is performed annually by the Laboratory and reported to the DOE Designated Approval Authority (DAA). In addition to the Laboratory's monitoring, an independent contractor assessed the controls for each NIST system categorized as having moderate impact. This performance exceeds the goal.

The Laboratory and Computer Security staff maintains awareness of their Cyber-Security responsibilities.

The target established for this measure was 90% of the Computer Security staff, Desktop Administrators, System Administrators, and computer users will complete role-specific computer security training each fiscal year. The Laboratory reported that 93% of the personnel serving the designated positions completed role-specific training. This performance somewhat exceeds the goal.

Support to SC and DOE initiatives.

The Laboratory cyber security program exceeded expectations on all metrics and provided assistance to various SC and DOE initiatives. Laboratory staff led an Authentication and Credentialing work group for the Office of Science Cyber Enhancement Initiative. Laboratory staff provided member support to the DOE-CIRC CONOPS task force, to the Governance Board for the Office of Science PCSP, and to DOE cyber teams led by the Associate Chief Information Officer for Cyber Security. The Laboratory worked with two other SC labs on two cyber security-related projects (one related to attack spread paths based on social networking, and the other on anomaly detection toward grid infrastructure).

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

The Laboratory earned an overall letter grade for this objective of B+ (with a numerical score of 3.7).

Radioisotopes are accounted for and controlled in accordance with all relevant procedures.

A Peer Review was conducted of the Laboratory Radiation Protection Program during FY2007 and documented in a February 2008 report. The report contained very favorable comments on sealed



radioactive source control at the Laboratory. All required reports and activities described in the Laboratory Nuclear Material Control and Accountability Implementation Plan were completed on time during FY2008. DOE Notice 234.1 directs contractors to submit their initial inventory of accountable sealed sources to the Radioactive Source and Tracking System. FSO commends the Laboratory's ES&H Section for a timely response to HSS' data call, reporting sealed radioactive source information, on September 30, 2008. The Office of Science recognized the short turn around and extended the deadline.

Employees, management and users maintain awareness of the Fermilab's designated Property Protection Areas (PPAs) and their associated security responsibilities related to PPAs access and wearing of badges.

Uniformed security officers conducted walk-throughs of all PPAs over a designated seven day period in each quarter of the performance period. The officers conducted two walk-throughs per eight hour shift, at random times, each day of the designated survey period. Security conducted the first quarter FY2008 badge display compliance survey the week of December 5, 2007. Of 1148 persons encountered, 1131 were properly wearing their badges. During this quarter, the southeast card reader equipped door at D-Zero was found unlocked. The Laboratory locksmith checked the lockset for proper operation and re-locked it. Security conducted the second quarter compliance survey the week of March 27, 2008, using the same methodology. During this survey period, security officers encountered 1151 individuals and 1134 of them were properly wearing their badges. Observance of proper wearing of badges during these two quarters was 98.5%. Security conducted a formal badge display compliance survey for a seven day period beginning June 10th. Compliance was 99.0%. During this survey period security officers encountered 1337 individuals in various PPAs. Thirteen individuals were not properly displaying their badge. During this survey, all card readers and doors were found to be functioning normally. The survey for the 4th quarter was conducted during the first week of September. Survey security officers encountered 762 individuals in the PPAs. Five individuals were not properly displaying their badge. Badge wearing compliance was 99.3%. During the survey, the main entry door at CHL was found not to be securing properly. It was determined power to the electric door strike had dropped due to a building electrical problem. Building officials resolved the problem and power was restored. The Laboratory locksmith verified that the door was securing properly. Throughout FY2008, most of the individuals found not to be properly wearing badges either had the badge on their person, but not visible, or had it in their nearby work space. Total badge wearing compliance in FY2008 was 98.8%, exceeding expectations.

Fermilab will support smooth transition of the current security contract to the new DOE-managed small business contractor.

The Laboratory had some success in facilitating the transition from the previous Laboratory awarded and managed site security contract to the new DOE-awarded and managed small business contractor. Not all aspects of the assistance provided by the Laboratory was completed in a timely fashion, most notably the transition to the use of Laboratory supplied vehicles. The vehicles furnished by the Laboratory were not fully equipped, properly identified and provided for the contractor's use at the beginning of the contract term. While they became available relatively soon thereafter, the Laboratory had sufficient notice of the requirement to have made additional progress towards fulfilling that need when the contract commenced.

Laboratory staff had some difficulty adjusting to their supporting role in the administration of the contract as it pertains to immediate direction provided to site security employees. While the Laboratory does have an advisory and oversight role, and emergency responsibilities, observance of the appropriate direct lines of authority over the contractor has not always been maintained. Cognizant staff has been diligent in notifying FSO of site security motor vehicle accidents and certain contractor personnel performance issues that have arisen and have been very helpful as additional contractor performance monitors on behalf of FSO. Also, the Laboratory has had to provide unanticipated and frequent motor vehicle repair and maintenance and additional following the frequent accidents and other motor vehicle issues involving the site security contractor staff. Laboratory-specific training was promptly provided to contractor staff and continues to be promptly provided upon contractor personnel turnover.



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

The Laboratory earned an overall letter grade for this objective of B (with a numerical score of 3.1).

Provides an effective system for protection of any sensitive and technology transfer information and export control items.

The Property Office has an effective process in place to protect sensitive and technology transfer information. The office maintains a spreadsheet that lists current high risk assets in the Laboratory's possession. Any high risk assets that are retired to the Excess Center are processed for shipment to, and destruction by, United Scrap in Chicago. Asset destruction is witnessed by one of the property clerks.

Several employees in the Property Office have taken the non-proliferation training that was offered recently by DOE and fully utilizes available resources for non-proliferation determinations. The Laboratory also engages an attorney specializing in Export Control matters to ensure up-to-date guidance for individuals responsible for Export Control. There were no instances of export control violations in FY2008.

The Laboratory's work presently does not involve sensitive subjects. If that situation were to change, a subject list would be maintained by the Office of Research and Technology Assessment. There have been no identified issues/events involving protection of sensitive or technology transfer information or export control items. This performance slightly exceeds expectations for this performance period.

Provides information to employees regarding their responsibilities in support of the counterintelligence (CI) program.

The annual CI reporting requirements briefing for all laboratory employees was accomplished by an all employees memorandum dated August 11, 2008. The memorandum method of providing the required annual briefing has been approved by CH-CI. Some modifications to the memo used this year were made in consultation with CH-CI. This year CH-CI did not request or offer any special CI presentations; however, the laboratory fully supports such presentations when offered.

Counterintelligence Initiative Issues

During FY2008, Laboratory staff received a request for additional support to DOE in gathering important information to assist in a high priority Counterintelligence (CI) initiative. While there were arguably legitimate Fermilab concerns related to fully complying with this request, the CD staff did not follow appropriate internal and DOE-Chicago Office (CH) CI protocols established in the approved CH-CI Support Plan by raising these concerns to Fermilab management quickly.

Absent timely communication about specific issues related to the data collection request, the Fermilab CI Representative was unable to share them with FSO and the CH-CI staff. FSO encourages the communication of any future issues to the Fermilab CI Representative for speedier attention and resolution. Had that been done, a communication channel would have been established to quickly understand and then resolve the concerns in a timely way.



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	B+	3.3	40%	1.32	
8.2 Provide an Efficient and Effective System for Cyber-Security	A-	3.7	40%	1.48	
8.3 Provide an Efficient and Effective System for the Protection of Special Nuclear Materials, Classified Matter, and Property	B+	3.4	10%	0.34	
8.4 Provide an Efficient and Effective CI System for the Protection of Classified and Sensitive Information	B	3.1	10%	0.30	
Performance Goal 8.0 Total					3.4

Table 8.1 – 8.0 Goal Performance Rating Development

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 8.2 – 8.0 Goal Final Letter Grade