

FY 2003 Summary Appraisal Report

Fermi National Accelerator Laboratory

October 1, 2002 through September 30, 2003

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Introduction

On December 27, 2001, the Universities Research Association (URA) and the U.S. Department of Energy (DOE) executed a new, 5-year, performance-based contract for the management and operation of Fermi National Accelerator Laboratory (Fermilab). The new 5-year contract began January 1, 2002. This contract includes a performance fee based on a set of performance measures for critical outcomes. The performance measures established at the beginning of each performance period serve as standards for evaluating URA's performance, both for the Critical Outcomes and the Self-Assessment Measures. The performance period for this evaluation extends from October 1, 2002, through September 30, 2003.

The DOE Fermi Site Office (FSO) uses the URA Self-Assessment Report, the DOE Headquarters (HQ) performance evaluation, input from the DOE Chicago Office (CH) staff that directly supports the FSO, and the FSO Operational Awareness Program to determine DOE ratings for the six Critical Outcomes and the Self-Assessment measures.

DOE also reviewed the Self-Assessment quality for each measure and for each division's and section's performance beyond the performance measures. DOE considered whether the Self-Assessment Report either addressed directly or otherwise incorporated the following efforts:

- Assessment of performance against a contract performance measure;
- Description of status of a program/project/activity;
- Description of the bases for determining performance, e.g., procedures, business systems, records, tracking/trending, performance reviews, statistics, etc.;
- Identification of successes;
- Identification of weaknesses and/or needs for improvement; and
- Identification of the path forward to address needs.

Performance Fee Earned

In accordance with Appendix B, Attachments 2 and 2a, following is a summary of earned performance fee based on the performance ratings contained in this appraisal:

Performance Measure	Rating	Fee Earned \$
Science	Excellent	711,900
Leadership	Outstanding	81,360
ES&H	Outstanding	122,040
Mission Support	Outstanding	122,040
Self Assessment	Good	20,340
Stakeholder Relations	Outstanding	40,680
TOTAL		1,098,360

Contract Clause I.102, Payment and Advances, includes a provisional fee payment based on a rating of Outstanding in Science and Excellent in Operations that resulted in a provisional fee payment of \$1,254,300. The total fee pool available was \$1,356,000. The fee earned as outlined above amounted to \$1,098,360. The overpayment of \$155,940 will be re-deposited to the payments cleared financing arrangement in accordance with Contract Clause I.102.

Overall Performance

This section summarizes overall performance ratings for the contract performance measures. The following ratings reflect DOE's overall assessment of URA's performance, including all sources of input and information such as activities, performance measures, and the 2003 URA Self-Assessment Report. The organization of the performance ratings follows the organization presented in the FY 2003 Performance Plan (Appendix B to the DOE-URA contract).

Functional Area	DOE Rating
PERFORMANCE AREA 1: CRITICAL OUTCOMES	
I. Science Programs (70%)	Excellent
A. Science	Excellent
A.1 Quality of Research (30%)	Outstanding
A.2 Success in Constructing and Operating Research Facilities (25%)	Excellent
A.3 Effectiveness and Efficiency of Research Program Management (15%)	Excellent
A.4 Relevance to DOE Missions and National Needs (0%) Pass/Fail (P/F)	Pass
II. Operations Management (30%)	Outstanding
B. Leadership – 6%	Outstanding
B.1 Integrated Management and Leadership	
C. Environment, Safety and Health – 9%	Outstanding
C.1 Integrated Safety Management Systems Implementation (4%)	Outstanding
C.2 Sustained Excellence in safety, health, and environmental protection	
C.2.1.1.1 Injury Cost Index, Fermilab (1%)	Outstanding
C.2.1.2.1 Injury Cost Index, Subcontractors (1%)	Outstanding
C.2.1.3.1 Lost Workday Case Rate, Fermilab (1%)	Outstanding
C.2.1.4.1 Lost Workday Case Rate, Subcontractors (1%)	Outstanding
C.2.1.5.1 Total Effective Dose Equivalent (.50 %)	Good
C.2.1.5.2 Unplanned Radiation Exposure (.25%)	Outstanding
C.2.1.5.3 Radioactive Material Control (.25%)	Excellent
D. Mission Support - 9%	Outstanding
D.1 Dependable Facilities (6%)	
D.1.1.1.1 Scheduled Maintenance	Outstanding
D.1.2.1.1 Small Projects	Outstanding
D.1.3.1.1 Energy Requirements Accomplished	Outstanding
D.2 Best Value from Subcontractors (3%)	
D.2.1.1.1 Subcontractor Performance Evaluation	Outstanding
E. Self-Assessment - 3%	Good
E.1.1 Peer Reviews	
E.1.2 Safeguards and Security Self-Assessment	

E.1.3 Management System Self-Assessments	
F. Stakeholder Relations - 3%	Outstanding
F.1.1 Community Involvement Plan (1.5%)	
F.1.2 New Publications (1.5%)	
PERFORMANCE AREA 2: SELF-ASSESSMENT	
Directorate	
G. Intellectual Property	
G.1.1.1 Timely Invention Disclosures	Marginal
G.1.2.1 Subcontracts Reviewed for IP Considerations	Outstanding
H. Financial Management	Outstanding
H.1.1.1 Uncosted Balances	
H.1.1.2 Delinquent Receivables	
I. Counterintelligence	
I.1.1.1 Foreign Travel Notifications (P/F)	Pass
I.1.1.2 Employee Counterintelligence Briefing (P/F)	Pass
Business Services Section	
J. Property	
J.1.1.1.1 FY 2002 Balanced Scorecard	Pass
J.1.1.1.2 % Improvements Implemented	Not Rated ¹
J.1.2.1.1 Assess 1/3 of Processes (P/F)	Pass
K. Procurement	
K.1.1.1.1 FY 2002 Balanced Scorecard	Pass
K.1.1.1.2 % Improvements Implemented	Outstanding
K.1.2.1.1 Certified Procurement System (P/F)	Pass
L. Legal Management	
L.1.1.1 Number of Legal Non-Compliances	Outstanding
L.1.1.2 Sound Analysis	Outstanding
Environment, Safety and Health Section	
M. Waste Reduction	
M.1.3.1 Pollution Prevention/Waste Minimization (P/F)	Pass
N. Environmental Management Systems	
N.1.1.1 Gap Analysis, Plan, and Implementation Schedule (P/F)	Pass
O. Safeguards and Security	
O.1 Integrated Safeguards and Security Management (P/F)	Pass
Facilities Engineering Services Section	
P. Real Estate Management	
P.1.1.1 Accuracy of Square Footage	Outstanding
Q. Facility Maintenance and Engineering	
Q.1.1.1 Maintenance Investment Index	Outstanding
Q.1.2.1 Self-Assessment of Construction Safety Program (P/F)	Pass
Laboratory Services Section	

¹ The prior performance appraisal identified no opportunities for improvement.

R. Human Resources	
R.1.1.1 Balanced Scorecard – Human Resources	Excellent
S. Training	
S.1.1.1 Training Needs Assessment	Outstanding
S.1.1.2 ES&H Training Completion	Outstanding
T. Diversity	
T.1.1.1.1 Professional Offers to Women	Outstanding
T. 1.1.1.2 Professional Offers to Minorities	Marginal
U. Science & Technology Information	
U.1.1 Electronic Deliverables (P/F)	Pass
Computing Division	
V. Cyber Security	Pass
V.1.2.1 Self-Assessment and Peer Review (P/F)	
V.1.2.2 Review Recommendations (P/F)	
V.1.3.1 Cyber Security Review of Business Services Critical System (P/F)	

Performance Area 1: Critical Outcomes

I. Science Programs

A. SCIENCE REVIEW

Critical Outcome: Advance the understanding of the fundamental nature of matter and energy by conducting research at the frontier of high-energy physics and related disciplines.

1. Quality of research
2. Success in constructing and operating research facilities
3. Effectiveness and efficiency of research program management
4. Relevance to DOE missions and national needs

DOE Rating: Excellent.

Attachment 1 contains the DOE Assessment.

II. Operations Management

B. LEADERSHIP

Critical Outcome: Provide the leadership to ensure operational excellence and foster responsible stewardship of the DOE resources.

1. Management systems and processes
2. Resolution of issues
3. Identification of opportunities for improvement
4. Response to review teams

DOE Rating: Outstanding.

URA, both at the corporate level and at the Laboratory, provided the integrated management and leadership necessary to enhance the operations and management processes that are necessary to ensure execution of the Fermilab mission in a safe, effective, and efficient manner. URA leadership provided a strong focus on Run II, the highest priority, and took important steps to improve Run II management and management systems. Difficult programmatic decisions with regard to Run IIb CDF and D-Zero Detector Projects were made in a timely and effective manner. Programs and projects were conducted effectively and in a manner that resulted in the best safety record since Fermilab's inception. Fermilab is clearly on a path of continuous improvement that should well serve its high energy physics mission.

URA directed a management review in 2003 that assessed key Fermilab operations functions and management systems managed by laboratory sections. Review objectives included: 1) affirming each section's alignment with the

Laboratory mission, vision and goals; 2) soliciting customer feedback; 3) evaluating each section's ability to accomplish its mission cost effectively and efficiently; 4) performing on-site inspections of facilities and operations; 5) providing recommendations for improvements; and 6) providing feedback to improve the self-assessment process. This management review met its objectives, and its findings were consistent with DOE observations and other DOE reviews conducted at various times.

URA management also effectively addressed and resolved other important issues. Some of these issues were related to Run II, including important changes to Run II leadership and management. These changes included a new Accelerator Division Head, an Accelerator Division reorganization, and a difficult decision regarding CDF and D-Zero upgrades. By the end of the fiscal year, it was evident that the new management team appeared to be working well and that URA responded well to recommendations made in the Office of Science's July 2003 review.

Another significant issue that management addressed effectively was the need to improve safety performance. While safety performance will always require management attention on an on-going basis and a commitment to continuous improvement, the laboratory's safety performance dramatically improved during FY 2003. Fermilab's safety performance now compares favorably with both industry and other DOE laboratories. URA provided the leadership that made this possible.

Finally, URA leadership has contributed to Fermilab's success in project management. Both internal and external reviews validated this success. Laboratory management appropriately responded to recommendations from these reviews, and all Fermilab projects were on schedule, on time, and within budget. Further, URA initiated appropriate project management tools to Run II to add additional discipline, structure, and focus to this important effort.

In conclusion, there has been an overall improvement in performance that is a direct reflection of leadership.

C. ENVIRONMENT, SAFETY, AND HEALTH

Critical Outcome: Protect the safety and health of the Fermilab workforce, subcontractors, the community, and the environment in all SC program activities.

1. **Integrated Safety Management System (ISMS) implementation**
2. **Injury Cost Index – Fermilab employees**
Injury Cost Index – subcontractor employees
3. **Lost Workday Case Rate – Fermilab employees**
Lost Workday Case Rate – subcontractor Employees
4. **Total Effective Dose Equivalent (TEDE)**
5. **Unplanned radiation exposure**
6. **Radioactive material/contamination control**

DOE Rating: Outstanding.

FY 2003 was the best period of safety performance in Fermilab's history. The significant improvements are evident in the Lost Workday Case Rate (LWCR) and Injury Cost Index (ICI) for both Fermilab and subcontractor employees. These reductions continue a long-term improving trend.

The combined Fermilab and subcontractor numbers for FY 2003 place Fermilab performance for LWCR in the 1st quartile for the Bureau of Labor listing for private industry [Standard Industrial Code (SIC) 873, Research and Testing Services with greater than 1,000 employees]; and for Total Recordable Case Rate (TRCR), just outside the 1st quartile. This achievement is significant for Fermilab and places the lab well on track to meet the current DOE Office of Science goal of being in the 1st quartile of SIC 873 facilities for LWCR and TRCR by FY 2005.

The general downward trend in Fermilab's safety statistics resulted from the laboratory's long-term focus on safety and continual improvements to its safety-related programs. Some of the specific Fermilab actions contributing to this gradual improvement over time include:

1. Leadership by the Fermilab Director in emphasizing safety; communicating safety expectations to line managers and discussing progress against Fermilab's set of leading and lagging indicators with managers at the weekly "Scheduling Meeting;" embracing DuPont's safety philosophy and setting goals; establishing the Director's Safety Panel to study ways to improve the Subcontractor Safety Program; and inaugurating rewards and recognition for safety achievements;
2. Implementation of a number of important improvements to the safety program over the last three years, e.g., by strengthening the work planning process, establishing clearer definition of roles and responsibilities, ensuring better flow down of safety requirements, and strengthening processes for incident reporting and evaluation, sharing of lessons learned, and implementing corrective actions that are more effective to prevent recurrence;
3. Continuation of a lab-wide focus on implementation of Integrated Safety Management (ISM) principles and core functions through the Tripartite reviews;
4. Continuation of emphasis and focus on lab-wide safety issues through the hard work of members of the Laboratory Safety Committee headed by the Associate Director for Operations Support and all of its subcommittees; and
5. Continuation of efforts to bring about the desired level of the safety program maturity across all laboratory and subcontractor activities.

ISMS Implementation: DOE rates performance for this measure as **Outstanding**. URA successfully completed all four scheduled tripartite assessments of Integrated Safety Management implementation on time (Outstanding: 4). The organizations assessed were the Accelerator Division, Facilities Engineering Services Section, Laboratory Services Section and Environment, Safety and Health Section (ESHS). These assessments were

collaborative efforts among the three participating organizations, i.e., representatives of: the organization being assessed, ESHS and FSO. FSO, through its participation in each of these reviews, affirms that the assessments were thorough, and the results were positive.

Injury Cost Index (ICI) and Lost Workday Case Rate – Fermilab Employees: DOE rates performance in these two areas as **Outstanding**. There were 28 recordable injuries to employees during this performance period. URA's achievements of 1.9 for ICI and 0.35 for LWCR were decreases of 88% and 76%, respectively, compared to the 2002 performance period (Outstanding: ICI < 11.0; LWCR <1.0).

Injury Cost Index (ICI) and Lost Workday Case Rate– Subcontractor Employees: DOE rates performance in these two areas as **Outstanding**. Subcontractors' achievements of 6.90 for ICI and 0.99 for LWCR were decreases of 88% and 76%, respectively, compared to the 2002 performance period (Outstanding: ICI < 21.0; LWCR <3.2). These numbers compare favorably to the FY 2002 ICI of 32.29 and LWCR of 6.16, indicating decreases of 79% and 84%, respectively.

Total Effective Dose Equivalent (TEDE): DOE rates performance in this area as **Good**. URA achieved a TEDE of 18.78 person-rem (Good: 17.1 - 20.0 person-rem).

Unplanned radiation exposure: DOE rates performance in this area as **Outstanding**. There were no unplanned radiation exposure events during the performance period (Outstanding: 0).

Loss of control of radioactive material/spread of radioactive contamination: DOE rates performance in this area as **Excellent**. URA self-identified two uncontrolled events (Excellent: 1-2 events). During FY 2003, Fermilab identified two events involving materials with radiation levels slightly above the lab threshold. Both instances involved radioactive items that either were not labeled or were labeled improperly. In each case, radiation levels were below the DOE Occurrence Reporting and Processing System threshold, and neither event resulted in the receipt of a measurable dose equivalent. Subsequently, the Radiation Safety Subcommittee recommended, and DOE concurs, that the line management communicate the need for all radiation workers to perform thorough surveys with the proper radiation instrument and label activated materials when taking them from the beamline areas.

DOE also notes that URA has developed the Fermilab Radiological Control Manual which contains a process for disclosing incidents involving uncontrolled radioactive materials to DOE; sharing corrective actions as lessons learned; and tracking corrective actions to closure.

D. MISSION SUPPORT

Critical Outcome: Manage and enhance business and management systems, work processes, and facility support to provide an effective and efficient work environment that enables the execution of Fermilab's mission.

1. **Scheduled maintenance**
2. **Small projects**
3. **Energy requirements accomplished**
4. **Subcontractors – best value**

DOE Rating: Outstanding

Scheduled Maintenance: DOE rates performance in this area as **Outstanding**. Monthly numerical scores ranged from 87% to 93% (Outstanding: > 80%). September data were missing from the graph presented in the Self-Assessment Report; nevertheless, given the superior Fermilab performance in the months October 2002 to August 2003, the rating for the measure would be outstanding independently of September's percentage.

Small Projects: DOE rates performance in this area as **Outstanding**. URA completed nine of nine General Plant Project milestones on schedule (Outstanding: >90%). There were no Accelerator Improvement Project or In-House Energy Management milestones due during the performance period.

Energy Requirements Accomplished: DOE rates performance in this area as **Outstanding**. URA completed over 95% of the energy requirements identified in the energy plan (Outstanding: >95%). In addition to the formal performance measures this year, a side-bar agreement was made to assess energy use reduction, purchase low standby power devices, and to apply sustainable design principles. Fermilab far exceeded the goal for energy use reduction, far exceeded the expectation for low standby power devices by implementing the purchase of the devices into the procurement process, and met their expectations in the application of sustainable design by completing one baseline assessment in Leadership in Energy and Environmental Design.

Subcontractors – Best Value: DOE rates performance in this area as **Outstanding**. URA completed subcontractor performance reviews for four of four construction subcontracts greater than \$100K before contract closeout (Outstanding: = 100%). The Fermilab Procurement Department faced at least two significant issues relevant to this performance measure during the performance period: 1) the need to review contract performance before closing out construction contracts that exceed \$100K; and 2) appropriate administration of existing modified construction subcontracts.

Implementing a process for reviewing performance before contract closeout was instrumental in assuring that the laboratory awards future contracts to deserving candidates. The Procurement Department also took an extra step and invited

Fermilab divisions and sections to review subcontractor performance for eight construction contracts valued under \$100K.

The Fermilab internal auditor issued Internal Audit Report FNAL 2003-4, Subcontract Administration, dated October 2, 2003. This report documented several conditions regarding modified construction subcontracts: 1) the laboratory no longer uses modified construction subcontracts; 2) the laboratory has set alert controls for dollar value and contract duration for existing modified subcontracts, and uses them appropriately; and 3) oversight for such contracts is appropriate. Finally, the Procurement Department completed a self-assessment of modified subcontracts. These improved subcontract administration practices support and underscore the outstanding rating.

E. SELF-ASSESSMENT

Critical Outcome: The self-assessment process will evaluate URA's ability to meet critical outcomes and meet performance objectives, measures and expectations, and to control its processes.

1. Peer reviews
2. Self-assessment for integrated safeguards & security management systems
3. Self-Assessment Report – all divisions & sections

DOE Rating: Good.

The objective of this critical outcome measure is to use self-assessment as a management tool in operating the laboratory. The 2003 Self-Assessment Report demonstrated that URA management seriously pursued a considered assessment of science, systems, and operations performance. Nevertheless, the quality of the self-assessment remains uneven across the various Fermilab Divisions and Sections.

DOE agrees with the URA Administrative Review Team's finding that the 2003 Self-Assessment Report was an improvement in both content and over-all quality. Notwithstanding many improvements, further improvements are still needed. Selected examples include:

1. Construction Safety: The Self-Assessment Report would be improved by taking credit for many accomplishments and for evolving program improvements;
2. Radiation Control: Except for beam parameters, the Accelerator Division self-assessment lacked descriptive goals and accomplishments. This self-assessment would be improved by providing a basis for assessing performance and paths forward. The radiation control self-assessments from the Computing and Technical Divisions included well-written group descriptions, objectives, and project status; and
3. Environment, Safety and Health: The Environment, Safety and Health Section self-assessment generally was more focused on describing activities than in analyzing and evaluating the effectiveness of how those activities are being accomplished. Without effective evaluation,

identifying weaknesses and planning incremental improvements to systems are difficult.

Also taken into consideration in assigning the rating was the fact that the self-assessment process has been changing. URA undertook the first full Self-Assessment Report in 2002, and DOE recognizes that it may take several iterations and course corrections before the process can be stabilized and self-assessment becomes a fully-developed management tool.

URA effectively utilized the peer review process, which provided important input into the self-assessment process. URA completed all planned peer reviews for Fermilab programs and projects which included Neutrinos at the Main Injector, Run IIb CDF and D-Zero Detector Projects, CKM, US Compact Muon Solenoid, Run IIb Accelerator Improvement Projects, BTeV, and the various physics programs.

The Self-Assessment Report covering the Fermilab Integrated Safeguards and Security Management System detailed important roles of both the Business Services Section and the Security Department of the ES&H Section in safeguarding property, equipment and supplies. Laboratory management has communicated its expectations to all employees regarding their responsibilities for property protection. The roles of division/section security points-of-contact and their managers are important in coordinating information utilized for threat analysis efforts. These efforts aid implementing appropriate security measures to secure property protection areas that are critical to the laboratory's programmatic mission. The Self-Assessment Report identified and addressed some opportunities for improvement. Review and modification of security operations to meet changing conditions is continuous.

In evaluating the overall quality of the Self-Assessment Report, it was evident that portions of the report considered the basic elements of program/project/activity status; the basis for determining performance; identification of successes and improvement opportunities; and identification of the path forward, including a plan or schedule to address needs. For example, the Laboratory Services Section addressed most of these elements and produced an informative self-assessment that helps identify achievements and priorities. As the overall quality of the self-assessment process improves across the Fermilab divisions and sections, it will become a more beneficial management tool.

F. STAKEHOLDER RELATIONS

Critical Outcome: The laboratory is regarded as a good corporate citizen and conducts its affairs in a manner that leads to public confidence in the laboratory.

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| <ol style="list-style-type: none">1. Community Communications Plan2. New Publications |
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DOE Rating: Outstanding.

URA has shown considerable leadership in initiating and sustaining effective communication activities in support of DOE objectives, as evidenced in part by the 2003 Strategic Communication Plan and the Self-Assessment Report.

URA successfully completed the 2003 Strategic Communications Plan and has achieved more than 95 percent of the milestones in the Plan. The online publication *Fermilab Today*, and the major new Web site, www.interactions.org, are two important developments that URA completed and launched successfully. The Fermilab Public Affairs Office has shown strong leadership in collaboration with other DOE Office of Science laboratories and support for particle physics research worldwide.

URA has demonstrated its commitment to provide contributions to all appropriate Office of Science collaborative communication efforts. The partnerships with CH and FSO continue to demonstrate a commitment to a close and productive relationship.

Community involvement continues to improve. In FY 2003, URA laid initial groundwork for a new Fermilab Community Task Force that began monthly meetings in March 2004.

Performance Area 2: Self Assessment

Directorate

G. INTELLECTUAL PROPERTY

Objective: URA promotes utilization and development of inventions and discoveries in support of the laboratory's science and technology transfer missions.

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| <ol style="list-style-type: none">1. Timeliness of invention administration2. Protection of intellectual property rights |
|---|

DOE Rating: Good.

Timeliness of Invention Administration: URA filed zero of four invention disclosures on time, translating to a performance rating for this individual metric of **Marginal** (<88%). Although URA has not always been timely in reporting inventions, the lateness has had no adverse impact on the intellectual property (IP) rights associated with those inventions.

Percent of Subcontracts Reviewed for IP Considerations: The URA Self-Assessment Report indicates that 100% of subcontracts were reviewed for IP consideration, translating to a performance rating for this individual metric as **Outstanding** (Outstanding \geq 97%).

H. FINANCIAL MANAGEMENT

Objective: A financial system that is sound, responsive, and has economical financial management programs to safeguard DOE financial assets.

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| <ol style="list-style-type: none">1. Uncosted balances2. Delinquent receivables |
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DOE Rating: Outstanding.

URA performs this function in an effective and efficient manner. DOE based the rating on the following conditions:

- The two compliance items for uncosted balances and delinquent receivables disclosed no compliance problems;
- The Self-Assessment Report indicated major accounting system improvements/upgrades;
- The budget validation review performed in FY 2003 disclosed no problems;
- The functional cost submission met the DOE Headquarters requirements;
- Quarterly reviews of travel costs disclosed no deficiencies;
- The requirements for the uncosted balance measure were met; and
- Based on operational awareness discussions during the year with budget and accounting personnel, DOE noted no exceptions.

I. COUNTERINTELLIGENCE

Objective: Implement a counterintelligence program which is in accordance with applicable DOE orders and policies.

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| <ol style="list-style-type: none">1. Notification of foreign travel2. Annual employee counterintelligence briefing |
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DOE Rating: Pass

Notification of Foreign Travel: DOE rates performance for this function as a **Pass** (Pass >90%). The performance measure requires URA to meet notification requirements for contractor employees who travel officially to sensitive countries. The measure also requires coordination with the DOE Chicago Office of Counterintelligence to furnish those travelers with counterintelligence briefings and/or debriefings.

URA determined that the timeliness of trip reports for travel to sensitive foreign countries did not meet expectations, i.e., most reports were late. Nevertheless, URA has demonstrated that the evolving counterintelligence program at Fermilab has several other components that contribute to overall performance. These activities include stocking the Foreign Travel Management System with information to enable pre-trip counterintelligence briefings for travelers; briefing appropriate high-level managers jointly with classified counterintelligence status; and providing a counterintelligence briefing by the DOE Counterintelligence Central Training Academy to Fermilab division/section heads.

Collectively, the broader program performance indicates a more robust counterintelligence effort at Fermilab than does the strict interpretation of foreign travel notification requirements described by the narrow performance measure. DOE consequently determined that a Pass rating is appropriate.

Annual Employee Counterintelligence Briefing: DOE rates performance in this area as a **Pass**. URA met the expectations for the annual Counterintelligence briefing 100% of the time (Pass = 100%). URA achieved this rating using a memorandum to all employees dated July 10, 2003, which DOE deemed appropriate for a facility with no classified or proprietary work.

Business Services Section

J. PROPERTY

Objective: Deliver Laboratory support functions in a manner consistent with applicable laws, regulations, and contract terms and conditions.

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| <ol style="list-style-type: none">1. FY 2003 Balanced Scorecard Plan2. Percent of improvements implemented3. Maintenance of a certified property management system |
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DOE Rating: Pass.

FY 2003 Balanced Scorecard Plan: URA successfully completed the Balanced Scorecard, which earned an **Outstanding** rating. The Property Department satisfactorily improved its 180-day Excess and Surplus Assets disposition rate from 42% to 73% in FY 2003. URA did not achieve its goal of 90% in this area due to: 1) time taken to implement necessary upgrades to the Sunflower property tracking database system; and 2) an appropriate decision to participate in an online sales program (Bid4Assets). These actions benefited the overall program. The Property Department exceeded the objectives in Customer and Financial Perspectives.

An opportunity for improvement that was identified in the FY 2002 Balanced Scorecard was a local measure to determine the accuracy of storage locations. The storage location accuracy improved from 93.6% in FY 2002 to 98.4% in FY 2003, and thereby met the goal of 98%.

Percent of Improvements Implemented from the Previous Performance Appraisal: DOE did not rate performance in this area because no opportunities for improvement from the prior performance period were identified in the FY 2002 Performance Appraisal.

Certified Property Management System: DOE rates performance in this area as a **Pass**. DOE approved the Fermilab Property Management System December 20, 2000, and extended that approval until June, 2004. URA has met the fundamental requirements to retain approval thus far. These requirements include: 1) comprehensive coverage of property from the need identification through its life cycle to final disposition; 2) employee responsibility and accountability for government-owned property; and 3) integrating other administrative financial systems with a method for continuously improving property management practices through identifying best practices proved by "best in class" performers.

K. PROCUREMENT

Objective: Deliver best value products and services to Fermilab Procurement customers in a manner consistent with applicable laws, regulations, and contract terms and conditions.

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| <ol style="list-style-type: none">1. FY 2003 Balanced Scorecard Plan2. Percent of improvements implemented that were identified in the opportunities for improvement from the prior performance period3. Maintenance of a certified procurement system |
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DOE Rating: Pass.

FY 2003 Balanced Scorecard: The DOE rating for this area is **Pass**. URA completed the Balanced Scorecard Plan and subsequent analysis to show progress toward meeting targets in the four perspectives of the Balanced Scorecard: 1) the customer; 2) internal business; 3) financial; and 4) staff learning and growth. The Procurement Department achieved an overall score of 91%.

Percent of Improvements Implemented from the Previous Performance Appraisal:

DOE rates performance in this area as **Outstanding**. The Procurement Department implemented 100% (5 of 5) of the “opportunities for improvement” identified in DOE FY 2002 Performance Appraisal. The changes should strengthen the overall procurement program.

Certified Procurement System: DOE rates performance in this area as a **Pass**. DOE approved the Fermilab procurement system on January 15, 2003 for three years. DOE based its approval on: 1) satisfactory completion of the URA self-assessments over the previous three years; 2) satisfactory completion of the Procurement Balanced Scorecard for three years, earning passing scores; 3) daily interactions and awareness by the FSO; 4) Fermilab Internal Audits; and 5) a review of the Fermilab purchase card program.

L. LEGAL MANAGEMENT

Objective: Ensure quality, timely, and cost-effective legal services; promote the protection and utilization of inventions and Fermilab-generated data in support of the Research and Development mission.

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| <ol style="list-style-type: none">1. Number of major non-compliances with Legal Management Plan2. Sound analysis and counsel |
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DOE Rating: Outstanding.

Major Non-Compliances: URA’s collaborative relationship with the DOE is exemplary. Both Fermilab attorneys routinely contact the Contracting Officer Representative (COR) and FSO personnel with case status updates and to discuss significant developments. Fermilab Counsel also frequently consulted the COR regarding interpretations of DOE legal management requirements, involved the COR prospectively in the development of the solicitation for outside counsel in the NuMI matter, and provided opportunities for the COR to meet with outside counsel and Fermilab officials on complex and controversial matters.

Sound Analysis and Counsel: The discussion in the Self-Assessment Report for this measure includes examples of sound analysis and timely and thoroughly-researched legal advice. The Self-Assessment Report did not identify weaknesses in this performance area, although DOE has identified one matter that merits mention for improvement.

Laboratory management raised questions in response to the DOE Deputy Secretary’s memorandum of April, 2003, which directed all DOE Management and Operations contractors to require organizations’ foreign national visitors and assignees at their laboratories to notify DOE promptly of all changes in the status of any foreign national. The Fermilab Legal Office responded by paraphrasing a California law that provided guidance on complying with the DOE direction without violating a California Privacy Law. The response did not answer the specific question of what to do, and this issue ultimately was referred to the CH Counsel to research and recommend solutions. The Fermilab Counsel’s response therefore was not considered “sound and thoroughly researched legal advice.”

Generally, URA's collaborative relationship with DOE in this area is good. Fermilab attorneys meet regularly with CH attorneys and frequently create opportunities for improving collaboration with FSO and Office of Chief Counsel personnel. These efforts include project briefings, tours of relevant facilities and equipment, and meetings with outside interested parties.

Environment, Safety, and Health Section

M. WASTE REDUCTION

Objective: Minimize waste and promote recycling.

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| <ol style="list-style-type: none">1. Pollution Prevention/Waste Minimization (P2/WMin) incorporated into work planning and experimental review2. Employee/experimenter involvement in P2/WMin opportunities3. Divisions and sections demonstrate participation in P2/WMin efforts |
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DOE Rating: Pass.

Waste reduction efforts have succeeded in part due to excellent program implementation as demonstrated by the Self-Assessment Report; documented policy, procedures, and practices; external inspection results; regulatory compliance; personnel qualifications; programmatic achievements; and FSO field observations.

URA pursued waste reduction, reuse, and recycling opportunities. Routine recycling continued despite space management challenges posed by the protracted DOE moratorium on commercially recycling scrap metals originating from radiological areas. As DOE has moved toward resolving this issue, URA has segregated, surveyed and stored affected scrap metals anticipating final disposition.

DOE notes URA efforts to incorporate pollution prevention/waste minimization into work planning and experimental review. DOE anticipates that these efforts will inspire more widespread consideration of environmental, waste management, and life-cycle issues in all work planning initiatives, including construction, demolition, fabrication, maintenance and experiments.

The Fermilab Environmental Protection Subcommittee demonstrated commitment to waste reduction by exploring and promoting opportunities for pollution prevention/waste minimization within the divisions/sections. DOE perceives that increased employee involvement and interest will identify more waste reduction opportunities for projects, experiments, and routine operations. URA also has sought helpful ideas from Argonne National Laboratory for developing a trial decision-making procedure for process waste assessments.

DOE asked that divisions/sections participate in pollution prevention and waste minimization efforts by assessing waste-generating operations within their departments. This means that these organizations needed to seek, propose, and to the extent possible fund, waste reduction opportunities. DOE considers that

despite successes in 2003, URA needs to continue such efforts within the divisions and sections.

In 2003, DOE removed restrictions on budgeted waste management funding with the expectation that those monies would be available for operations and that the waste management programs and waste reduction efforts would continue unabated. These circumstances present a management challenge to consider viable pollution prevention/waste minimization initiatives in the face of other operational demands. DOE recognizes that a variety of priorities, circumstances, and budget pressures affect such decisions. Nevertheless, the expectations remain for divisions/sections to continue to explore waste generation life-cycle costs and waste reduction opportunities in all work planning and execution.

N. ENVIRONMENTAL MANAGEMENT SYSTEMS

Objective: Demonstrate environmental management and leadership through development and implementation of environmental management systems (EMSs) that will strengthen Integrated Safety Management at Fermilab.

1. Gap analysis, plan and implementation schedule
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DOE Rating: Pass.

URA performed a self-assessment of its environmental management systems (EMS) by benchmarking against International Standards Organization (ISO) standard 14001, an accepted industry standard. In so doing, URA identified essential elements for Fermilab environmental management systems, compared existing Fermilab systems to those in ISO 14001, and performed a gap analysis. Beyond identifying gaps in its programs, URA identified potential actions and milestones for closing those gaps. DOE recognizes that URA is not pursuing ISO certification but is using the industry standard as guidance.

URA succeeded in enlisting participation from all divisions and sections and from DOE. The result is a comprehensive and in-depth examination of existing and needed elements for environmental management. The benchmarking, gap analysis, self-assessment, and lab-wide participation collectively have provided essential guidance for needed improvements and the path forward. Progress toward the December 31, 2005 goal to be EMS compliant with Executive Order 13148 ("Greening the Government through Leadership in Environmental Management", April 21, 2000) appears to be on track.

O. SAFEGUARDS & SECURITY

Objective: Implement a safeguards and security program to ensure internal monitoring of compliance and performance with safeguards and security requirements.

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| <ol style="list-style-type: none">1. Self- assessment2. Implementation of corrective actions or mitigative measures for deficiencies involving nuclear materials or security interests3. Monitoring of corrective actions |
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DOE Rating: Pass.

The Self-Assessment Report addresses achievement in three topical areas of URA's Safeguards and Security Program.

The Chicago Operations Office performed an Integrated Safeguards and Security Inspection of Fermilab during the period December 6-18, 2002. Fermilab received a satisfactory rating, which is the highest available rating. A Training Approval Program (TAP) team from the Nonproliferation and National Institute reviewed the laboratory's TAP self-assessment report in April 2003 and granted approval through September 2006. Based on these assessments, and numerous internal assessments in all topical areas of the Integrated Safeguards and Security Management (ISSM) program, DOE agrees that the Fermilab ISSM program is acceptable and recommends that Fermilab continue to address all topical areas of the ISSM program and update the Site Security Plan as needed.

Facilities Engineering Services Section

P. REAL ESTATE

Objective: Effective and efficient real estate management.

- 1. Management systems reflect the classification and square footage of DOE facilities**

DOE Rating: Outstanding

URA reconciled within 4 % the square footage data in the Federal Information Management System (FIMS) and the Energy Management System 4 (EMS4) databases . In September 2003, URA performed an internal audit of the performance measure and has completed and closed all findings and recommendations.

Q. FACILITY MAINTENANCE AND ENGINEERING

Objective: Efficient and effective facility management.

- 1. Maintenance investment index**
- 2. Construction safety program**

DOE Rating: Outstanding.

Maintenance Investment Index: DOE rates performance in this area as **Outstanding**. URA achieved an index of 1.6 (Outstanding \geq 1.4). The DOE Office of Science has established goals of meeting a Maintenance Investment Index of 1.4 in FY 2004 and 2.0 in FY05. In a commendable achievement, the laboratory has exceeded the FY 2004 goal in FY 2003.

Construction Safety Programs: DOE rates performance in the area of Construction Safety Programs as a **Pass**. Although the URA Self-Assessment Report did discuss the topic, it did so very briefly and really did not assess the

effectiveness of construction safety programs for work done in divisions/sections by Time-and-Materials and Fixed-Price contractors". The Self-Assessment Report did reference correctly and take credit for: 1) performing tripartite review(s) specifically targeting the construction safety program; and 2) the Director's Safety Panel on Subcontractor Safety which addressed construction safety issues. However, the self assessment did not reference the conclusions of those reviews, which in effect were an assessment of the effectiveness of the construction safety program. Likewise, the Office of Science conducted a thorough review in December 2002 of the Construction Safety Program at Fermilab. The conclusions from that assessment could also have been referenced in the Self-Assessment Report as support for the very real, incremental improvements that have been made in this program.

Laboratory Services Section

R. HUMAN RESOURCES

Objective: Fermilab implements a Human Resources performance system which contains goals tied to the organizational mission and which provides feedback on the impact of, and value added by, Human Resources.

1. FY 2002 Balanced Scorecard Plan

DOE Rating: Excellent.

URA performance against its Balanced Scorecard Plan supported an Excellent rating. The Plan is designed to show progress toward specific goals in four areas: Financial, Internal Business Processes, Customer, and Learning and Growth. The Self-Assessment Report narrative provides information on accomplishing the goals listed in the Human Resources Balanced Scorecard. Although URA did not meet the VISA measure, the Human Resources Office made notable effort in this area, given the additional requirements this year.

Implementing the new performance management system and the 99.7% usage in the first year are noteworthy achievements. Efforts made in 2002 to promote the system and training in goal setting enabled the success in 2003.

The Fermilab Human Resources Office continues to enhance keeping its program-related policy information available. The FY 2002 Self-Assessment Report identified a need to update personnel policy guidance used by managers and supervisors. In FY 2003, the Human Resources Office was able to reformat this guidance for inclusion in a new "Working at Fermilab" website.

The Fermilab Human Resources Office also continues to identify and assess the features of all of its programs with the intention of improving them to meet organizational demands and to automate where appropriate. DOE considers that URA may find opportunities to validate more completely cost and program soundness by comparing its program features with best practices at similar organizations to the extent practicable.

S. TRAINING

Objective: Employees receive appropriate training.

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| <ol style="list-style-type: none">1. Supervisors complete ES&H-related training needs assessment2. Verification of ES&H training completion |
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DOE Rating: Outstanding.

Complete ES&H Training Needs Assessment: DOE rates performance in this area as **Outstanding**. The percentage of employees who have training plans developed from the Individual Training Needs Assessment was 99.4% (Outstanding: >95%).

Verification of ES&H Training Completion: DOE rates performance in this area as **Outstanding**. The percentage of employees who completed required ES&H training was greater than 97% (Outstanding: >95%).

T. DIVERSITY

Objective: A diverse professional workforce.

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| <ol style="list-style-type: none">1. Offers in the Professional Job Groups made to women2. Offers in the Professional Job Groups made to minorities |
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DOE Rating: Excellent.

Offers to Women: DOE rates performance in this area as **Outstanding**, based on a 16.1% increase in offers to women (Outstanding >14.9%).

Offers to Minorities: DOE rates performance in this area as **Marginal**, based a 3.2% increase in offers to underrepresented minorities (Marginal <4.1%).

Ideally, DOE would observe progress in diverse hiring at Fermilab; however the apparent absence of historical data currently makes tracking progress difficult. Of 62 hires during the performance period, ten were women and two were underrepresented minorities. For the 135 people hired at Fermilab in 2002, URA provided no information on the number of women and underrepresented minorities. Continuing the data collection done in 2003 in the future would enable progress comparisons for diversity.

URA commendably has continued targeted recruitment during a time of limited hiring and has continued its support of the pipeline programs.

U. SCIENCE & TECHNOLOGY INFORMATION

Objective: Improve the number of electronic deliverables submitted to the Office of Scientific and Technical Information (OSTI).

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| <ol style="list-style-type: none">1. Percent of deliverables submitted to OSTI electronically |
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DOE Rating: Pass.

URA exceeded the metric by submitting 100% of its scientific and technical information deliverables to the Office of Science and Technical Information (OSTI) electronically (Pass: >95%). Using the SPIRES database appears to have enabled the Fermilab Information Resources Department to expand its outreach, and find reports and documents that need to go to OSTI.

Computing Division

V. CYBER SECURITY

Objective: Maintain a cyber security program in accordance with applicable DOE orders and policies.

1. Implementation of prior self-assessment and peer review recommendations

DOE Rating: Pass.

URA performed a self-assessment and peer review of the Fermilab computer security program in April, 2003. Concurrently, to conserve resources, an independent cyber security review of the Business Services Critical System took place. URA addressed the resulting recommendations in a memorandum to the FSO Manager dated September 29, 2003.



Department of Energy
Office of Science
Washington, DC 20585

July 6, 2004

Office of the Director

Ms. Jane Monhart
Manager
Fermi Area Office
U.S. Department of Energy
P.O. Box 500
Batavia, IL 60510

Dear Ms. Monhart:

For fiscal year 2003 the Fermi National Accelerator Laboratory's (FNAL) overall performance on Office of Science (SC) science and technology programs is rated as Excellent. This rating relates to a scale that includes Unsatisfactory, Marginal, Good, Excellent, and Outstanding. It is based on performance evaluations provided by all the program managers in SC's Office of High Energy Physics (HEP) who oversee program elements at FNAL.

FNAL continues to be one of the leading high energy physics research laboratories in the world, and FNAL researchers are engaged in research programs at FNAL as well as participate in the Large Hadron Collider (LHC) at the European Organization for Nuclear Research (CERN) and small scale non-accelerator particle physics experimental programs. Across the Laboratory's programs, the accomplished quality of the research continues to be Outstanding. Performance of the Tevatron operation has been clearly improved and management of the construction projects and research program continues to be effective.

FNAL has demonstrated a strong commitment to safety performance by making a substantial improvement in its safety record from previous years. I expect their trend of improvement to continue through 2004. I firmly believe that safety is an integral part of producing outstanding science, and for that reason I am working toward a revision in the methodology by which we score laboratories so that safety performance will have a more direct influence on the S&T performance ratings.

The full narrative evaluation from HEP is also attached.

Sincerely,

Raymond L. Orbach
Director

Enclosures
cc: Marvin Gunn



Enclosure 1

**OFFICE OF SCIENCE
FY 2003 APPRAISAL OF
FERMI NATIONAL ACCELERATOR LABORATORY**

Measure 1: Quality of Research
Rating: **Outstanding (3.6)**
Weighting Factor = 0.30

Measure 2: Success in Constructing and Operating Research Facilities
Rating: **Excellent (3.2)**
Weighting Factor = 0.25

Measure 3: Effectiveness and Efficiency of Research Program Management
Rating: **Excellent (3.2)**
Weighting Factor = 0.15

Measure 4: Relevance to DOE Missions and National Needs
Rating: **Pass**
Weighting Factor = 0.0 *

OVERALL WEIGHTED RATING: EXCELLENT (3.37) **

SCORING RANGES FOR FERMI NATIONAL ACCELERATOR LABORATORY:

Outstanding	3.5 - 4.0
Excellent	2.5 - 3.49
Good	1.5 - 2.49
Marginal	0.5 - 1.49
Unsatisfactory	0.0 - 0.49

* Note: This measure was evaluated for FY 2003 on a Pass/Fail Basis

** Normalized to 100%

**Office of Science
Office of High Energy Physics
FY 2003 Performance Appraisal for Fermi National Accelerator Laboratory**

This evaluation is based on peer reviews of Fermilab conducted by and for Office of High Energy Physics (OHEP) such as the annual program review in March 2003, the review of Tevatron luminosity performance held in July 2003 and the minireview of Tevatron luminosity performance held in October 2003. The URA visiting committee's report was provided to OHEP as part of Fermilab's self-assessment and was an input to this evaluation. The observations of relevant OHEP staff were also used.

1. Quality of Research

There were still more results from Run I of the Tevatron published in FY 2003. The topics spanned top quarks, weak gauge bosons, searches for extra dimensions, B physics, quantum chromodynamics. The first results from Run II appeared in FY 2003 as conference talks and preprints. The results on heavy quarks were the most developed in FY 2003. Final peer reviewed publications started to appear in FY 2004.

The MiniBoone experiment took significant data in FY 2003. The first results, which were not on neutrino oscillations, were shown this year, and the primary physics results is expected to be ready in 2005. The MINOS far detector has begun taking data using cosmic muons and has a small sample of upward going muons with the charge of the muons measured.

Astrophysics continued to represent a large fraction of publications with the Sloan Digital Sky Survey (SDSS) contributing very strongly. SDSS had two major results on dark energy. One was an independent measure of dark energy and the other was combined with data from the Wilkinson Microwave Anisotropy Probe. These results provided strong confirmation that dark energy is a real effect.

Both the HEP peer review and the URA visiting committee found the theory group to be strong in phenomenology, perturbative QCD, lattice gauge theory and supersymmetry. The theoretical astrophysics group was also praised by the URA visiting committee as a world leader in their field

Results continue to be published from the fixed target program including the E791, E835, E706, FOCUS, KTeV, and SELEX collaborations.

The scientific productivity of the lab has somewhat increased, although it is a minor disappointment that no Run II peer-reviewed publications appeared in FY 2003. The rating is increased to 3.6, an **Outstanding**.

Weighting Factor = 0.30

2. Success in Constructing and Operate Research Facilities

Fermilab continues construction management of the NuMI/MINOS, US CMS, US LHC Accelerator, CDMS, Auger, and Run IIb CDF and DZero Detector projects. The focus of the laboratory and its largest effort continues to be the operation of the Tevatron collider and upgrade of the accelerator complex to achieve a higher luminosity for the colliding beam detectors and fixed target program.

In FY 2003, the NuMI Project achieved all six of the planned DOE milestones scheduled for completion in FY 2003, and the milestones were completed ahead of schedule. In addition, two milestones scheduled for completion in FY 2004 were completed in FY 2003. During FY 2003, over \$30 million worth of work was accomplished. The project is 92 percent complete and is forecast to be complete well ahead of the DOE completion milestone (CD-4) of September 2005.

DOE reviews and assessments of the US LHC Accelerator project concluded that there is good technical progress on the accelerator technical components at each laboratory, particularly in successfully getting the cryogenic feedboxes into production during FY 2003. The project progressed from 79 percent complete to 89 percent complete based on earned value and is on track to meet the CD-4 milestone set for the end of FY 2005. The cost and schedule performance indexes are within acceptable range, and the US LHC Accelerator Project management is aggressively managing the project's contingency and has effectively employed good international working relationships with CERN/LHC.

DOE reviews and assessments of the US CMS project concluded that there is good technical progress on US CMS across the detector sub-systems. During FY 2003, the project progressed from 71 percent complete to 80 percent complete based on earned value and is on track to meet the CD-4A milestone set for the end of FY 2005. Cost and Schedule indexes remain within the acceptable ranges. US CMS has made excellent progress completing the project milestones for FY 2003. Particularly noteworthy is the successful completion of Endcap Muon chamber projection, testing and delivery to CERN.

The Run IIb CDF and DZero Detector projects obtained CD-1, CD-2 and CD-3A on February 6, 2003. Due to the reduced integrated luminosity projection for out years, the scope of these detector projects has been reduced in December 2003. Overall, the detector projects are progressing well and are on schedule and within baseline.

The operation of the Tevatron for FY 2003 has improved over the last fiscal year. Based on the Office of Science reviews performed in July and October 2003, the following can be stated:

- The new management team appears to be working well;
- Coordination and communication of Tevatron issues and activities has improved;

- Tevatron performance became more stable and showed improved consistency before the shutdown at the end of the fiscal year; and
- Shutdown work in support of the Run II upgrades was well coordinated, and the laboratory responded well to the recommendations made in the Office of Science review of July 2003.

The cumulative store time for the collider was 3556 hours, total integrated luminosity delivered was 239.9 pb^{-1} to each of the (CDF and DZero) detectors and the peak weekly integrated luminosity was 9.7 pb^{-1} . Based on the metrics for the Tevatron of store hours (Outstanding), average integrated luminosity delivered to CDF and Zero (Outstanding), and peak weekly integrated luminosity (Excellent), and the clear improvement in the luminosity performance over FY 2002. Based on these metrics the Tevatron portion of this category would rate an excellent.

The performance of the construction management in FY 2003 was similar to that in FY 2002 and clearly of high quality. The performance of the Tevatron clearly improved and at the end of the fiscal year the future looked promising, although success is not guaranteed. For these reasons the OHEP rating is increased to **3.2**, an **Excellent**.

Weighting Factor = 0.25

3. Effectiveness and Efficiency of Research Program Management

The lab's research program includes accelerator based physics, non-accelerator based physics, theory, and technology R&D, dominantly accelerator R&D. For topics in accelerator-based and non-accelerator research the lab has used its Program Advisory Committee (PAC) extensively and seriously to set its research priorities. The PAC provided advice on how to maximize the physics potential of Run II, which resulted in the decision to descope the CDF and D-Zero upgrades. The PAC has also been heavily involved in developing the policy on proton use in the neutrino program. The lab also sought the advice of the PAC on the proper role that Fermilab might play in a future dark energy experiment. The membership of the PAC has been augmented with more expertise in astrophysics to allow it to better address those topics.

The lab uses its Accelerator Advisory Committee (AAC) to peer review both its accelerator operations and its program of accelerator R&D. The November 2003 AAC report looked at the lab's accelerator R&D program and while generally pleased with technical progress within the constraints of available funding found that the lab needed to a better job at setting priorities. There were insufficient funds to pursue all desired research directions effectively. This is consistent with the findings of the HEP peer review.

Fermilab's long range planning was inadequate in FY 2003. The 2003 HEP peer reviewers clearly expressed concerns on long range planning. The URA visiting committee pointed out that the transition from Run II to LHC was not being addressed in FY 2003, and recommended more effort on that. There now appear to be

significant opportunities in neutrino physics, but the lab has not yet formulated what might follow NuMI/MINOS. A long range planning committee was formed in the summer of 2003 and open sessions of the committee started just before the end of the fiscal year. A report is expected sometime in the middle of 2004. A high quality report should improve the evaluation in this category next year.

The OHEP evaluation is **Excellent (3.2)**.

Weighting Factor = 0.15

4. Relevance to DOE Missions and National Needs

There have been no significant program shifts in the last year, so the relevance to DOE missions and national needs is unchanged. The comments are only slightly modified from last year reflecting this fact. The lab's physics priorities are still well aligned with those of the national HEP program, as they should be for a flagship program. Tevatron Run II is one of the highest national HEP priorities due to its potential for significant physics discoveries. FNAL is also the center of U.S. effort in neutrino physics, and maintains important efforts in B-meson physics, complementary to the SLAC B-factory. FNAL also provides management and research expertise to several forefront experiments in particle astrophysics. Efforts in accelerator R&D and detector and information technologies are providing the tools needed for next-generation experiments. Maintaining this strong and diverse program in the face of budget constraints is a continuing challenge for lab management.

As host laboratory for the U.S. CMS experiment, as well as the future U.S. CMS computing center, the lab has carried out an important leadership role for this vital future experiment at the LHC over the last few years. FNAL is also host laboratory for the U.S. LHC accelerator effort, and is making important contributions of magnets for the LHC accelerator project. The rating is **Pass**.

Weighting Factor = 0.0

(Note: This measure was evaluated for FY 2003 on a Pass/Fail basis.)

Weighted Average for Science: 3.37 (Excellent)